Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) | Initiating a Project (IP) | Controlling a Stage (CS) | Managing a Stage Boundary (SB) | Closing a Project (CP)

12 | 14 | 15 | 17 | 18

Managing a Stage Boundary (SB) | 16 | Managing Product Delivery (MP)

Section: 1   Page: 1 of 541

1 **Table of Contents**

2   Power, Elegance and Subsidence

2.1.1   PRINCE2® is...

PRojects **I**n **C**ontrolled **E**nvironments (Second, Non-IT Specific version). A method to manage <u>any</u> and every project.

I'm a fan of PRINCE2®. It is powerful, economical and elegant. *Surprised?*

PRINCE2® is a Registered Trade Mark of the Office of Government Commerce in the United Kingdom and other countries

I'm dismayed by the official manual and the exam-cram culture that surrounds it. The official manual omits many basics elements that are vital; for example how to create a resource levelled schedule. It is fragmented, repetitive, incomplete, in places unworldly and arguably wrong.

It also provides a first class structure for control of any project, regardless of simplicity or complexity, formality or agility.

2.1.1.1.1.1   Simple Passion

My passion for PRINCE2® is purely from its capabilities. In truth my passion is for any simple well structured approach to projects.

PRINCE2® wasn't the first to describe what that looks like but is the only widely known name with a core process model. The other widely available bodies of knowledge have many pros and a few cons. Crucially they lack the procedural, process oriented description of the required decision making.
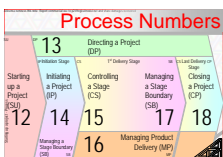
SOOP-1.   A project is a decision making architecture.

SOOP-2.   Projects are a means by which people create change to the status quo that enables some form of return on the effort expended.

This text is a commentary, inspired by many sources on how to master projects, fill common guidance gaps, capitalise on each source of guidance's strengths and move beyond their weaknesses. My hope is in total the observations will improve the project management 'state-of-the-art'. *SOOP = Simon's Observations on Projects:* observations distilled from experience of real-world needs.

2.1.1.1.1.2   PRINCE2® Is Damaging Project Management

If your mindset is "that PRINCE2® stuff is rubbish" I don't blame you for having what is a very common impression: but you have been poorly informed to have arrived at it. While not so commonly seen PRINCE2® or any project management

method can be much much more than is set forth in the official manual or a typical week's exam-cram.

2.1.1.1.2   PRINCE2® Alone is Not Enough

But also, to manage a project requires much more than PRINCE2® describes. In this manual I seek describe solid conceptual foundations then build technique, tool and procedure 'ground-up', I hope to say something useful on most if not all required topics. This text is aimed at real-world usage not certificate-in-a-week exam-cramming.

This manual is not 'the' way to run projects but it is 'a' collection of tools and approaches that work for me. With effort and support you can make your preferred sub-set work for you too. It will take effort. Most projects are complex mixtures of people, process and product.

It will probably take more than one reading of key topics to see how the elements interlink. I suggest you make notes as you go, re-phrase ideas that are important to you in your own words. At chapter ends you should summarise the contents if you want to learn it.

2.1.1.1.2.1   Projects Alone Are Not Enough

It isn't just PRINCE2® that is insufficient on its own: so are projects.

SOOP-3.   The idea that "project management" is the discipline that matters is wrong to start with! The fact is no one undertook a project for its own sake. A project is the transition from current-state-business-as-usual to future-state-business-as-usual.
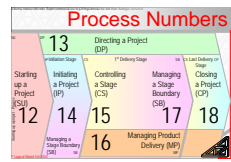
SOOP-4.   A project is the enabling phase of an investment. The discipline we need to discuss is benefits management: we need roles such as the sponsor and mechanisms such as portfolio level decision making.

SOOP-5.   Project management is a collection of techniques. A 'project' management method provides a procedure but one whose boundaries are too narrowly drawn. Set where 'project' places the boundaries un-links the techniques and procedures from their driving force which is the return to equity holders of dividends and capital growth. Without that link fault-lines (such as distorted capabilities to handle risk attitude) arise in any method.

Note: By "equity holders" I don't just mean the shareholders I mean all stakeholders with 'skin in the game' whether the capital is money or skills, career and livelihood.

2.1.1.1.3   Why You've Been Poorly Informed

PRINCE2® started out as additional advice for those who already know how to manage a project. The PRINCE2® advice is to be applied on top of competence in the day-to-day skills in order to add the control environment at project board

level. Since this advice helped to control projects better it became popular. But then two, perhaps four aspects entered the scene.

1. It became mandated perhaps by those with out knowledge, who believe rule is substitute for skill and mistake guidance for prescription.
2. Then, worse it came to be sold versus an exam.

   Industry's pressure is for novices to be back at their work within the constraints of the following week. Constraint dictates the scope that can be covered.

   The false but visible badge of achievement became the certificate not the capability. Certificate in a week pressure to cover so complex a subject, and one based on guidance that assumes a start point of project management competence explains why typical PRINCE2® training courses have such a high risk of delivering people with certificates but without capabilities matched to the realities of many commercial contexts.

3. 0.

Thirdly and saddest the badge became the de-factor entry ticket for mobility in the jobs market. Recruitment agencies settled on the badge to filter invites to interviews. Many competent people are rejected without interviews while the interviewed may carry just the badge with out any depth of experience. The qualification is called "practitioner" but unlike say the PMP or APM-PQ qualifications it needs no experience to gain.

Fourth parochial commercial interests mixed with public sector bureaucracy and access to bottomless legal resources fuel a zeal in some quarters to restrict even use of the word to name it. The result is the inescapable tone surrounding it and diversion of energy away from where creativity would grow capability.

2.1.1.1.3.1   Misleading Claims

PRINCE2® has many strengths. It also has many issues (I will address them once we have shared enough to make discussion worthwhile. The impatient could *skip ahead to Chapter* 8*: Concepts and Issues section:page 6.1.7:- 167 -*) – some issues are generic to 'project management' and some are of PRINCE2®'s own making: perhaps PRINCE2®'s issues start with paragraph 1.1 of the official manual!

PRINCE2® is not as is claimed in the opening paragraph "for entry level project management personnel". The official manual assumes and builds upon a wide set of foundational skills in project planning and tracking without explaining the techniques required. For example how to perform stakeholder analysis, how to define goals, build consensus, balance demands across resourced schedules of activities or track progress. These are all omitted.

Amazingly stakeholder management isn't considered likely to be much of a project manager's concern, "It [stakeholder engagement] is usually carried out at the programme level" (sic) [5.3.5.20 – In my humble opinion suggesting stakeholder management isn't a project management concern is bull-shit - plain wrong!]

2.1.1.1.3.2   Exam's Omissions

The exam syllabus makes six specific omissions:

➢ "Techniques and planning rules used for estimating or scheduling will not be tested within the Foundation or Practitioner qualifications."

Because these topics are not in the manual they can't be in the exam. Because they are not examined they are not trained in a typical cram-week. All are required to perform the project manager role in reality. The others are:

➢ [Business Case] The different types of Business Case or the techniques that can be used for Investment Appraisal will not be tested
➢ [Business Case] Stakeholder engagement will not be tested
➢ [Quality] Quality methods, side-benefits of the quality review technique and the purpose of quality inspection will not be tested
➢ [Risk] Levels of risk management, risk identification techniques, risk estimation techniques and risk evaluation techniques will not be tested
➢ [Progress] Progress evaluation techniques will not be tested

If you don't know how to perform these project tasks you will not be able to plan or control a project. Tools, techniques and insights to address all these topics ARE covered in this guide.

2.1.1.1.3.3   PRINCE2®'s Insights (Are Difficult To Extract)

Within the pages of the official manual there are many solid foundations as well as the gaps and some quiet debateable suggestions.

The tautologies and fragmentation of topics are an annoyance that is not easily distilled by the beginner. As presented in the official manual PRINCE2® is neither complete guidance nor easy to assimilate.
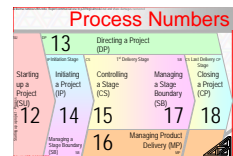
Simple issues such as illustrations that cannot be aligned with the text they are the subject of seem to be wholly avoidable problems that the official manual should not burden the reader with.

Within this manual topics are gathered into one place as best as I can manage with such an interconnected topic. Partial repetitions are distilled and gaps filled (your extra 'distance' will help you spot the errors and weaknesses I'm too close to see – please tell me at p2@logicalmodel.net).

2.1.1.1.3.4   Basic Strength

While some parts of the official manual have weaknesses that result in a few flaws in the method a little tailoring easily repairs the flaws. A few additions fill the guidance gaps: my suggestions for additions and tailoring are offered as we explore.

Overall the PRINCE2® method provides a fundamentally reliable framework for controlling projects. A structure from which one can tailor support for any and every project's specific needs.

2.1.1.2   Two Parts: Time and Theme

By the time we've reach the end of this manual we (you and I) will have covered the details of all the elements that make–up projects and make-up PRINCE2®. I will add elements to address all the omissions. For now I'll paraphrase the required elements as a time-view and a topical or thematic view. These two perspectives are inter-woven, the warp and weft of the project's fabric.

The time-view is the process model. It says "do this and this and this, **then** this and this and this. The thematic view describes each 'this'. There are seven of these themes: business case and risk and quality and planning and organisation and progress and change.

When we combine process based timeline with themes we get procedural guidance. To illustrate: "Appoint the team, decide the goal and confirm approval. **Then** establish the controls and costs, the benefits and risks and reconfirm approval" and so on. While this is a couple of dozen words their upcoming full explanation takes many more.

2.1.1.2.1.1   Heartbeat

The PRINCE2® process model provides a rhythm like a heartbeat that drives project control of progress. A PRINCE2® project implements controls tailored specifically to meet 'this project's' needs for agility and rigor. Armed with an understanding of the principles it is possible to tailor PRINCE2®'s application to any specific need. Skilfully used PRINCE2® is a powerful and **light-weight** tool. Its capabilities are an asset to any organisation embarking on the management of change.

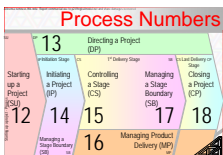### 2.1.1.2.1.2   Method is Guaranteed To Add Cost and Can Add Value

It is ironic but every method adds to the skills needed. Many people consider methods are a substitute for skill. Used without insight PRINCE2® or any method adds cost more than value.

First we need the skills in the discipline itself, second we add a few defined procedural constraints on top of the millions of process options, third we must know when to relax, enforce or change the procedural constraints: this is called 'tailoring' in the official manual and skill or judgement or craftsmanship in the work-place.

One thing is guaranteed: method adds cost and constraint. Another is possible: method adds more value and safety than it costs. To repurpose Philip Crosby' famous "Quality is Free" – "PRINCE2® is free! but only when done right (and only when extended with basic project management skills)".

2.1.1.2.1.3   Some solid Foundations

As we go I will show many places where PRINCE2®'s conceptually solid foundations support techniques of real value. I will also analyse the places where omissions mean the footings are suffering subsidence. At those points I will

suggest how you can extend and tailor PRINCE2® application to your projects specific needs.

2.1.2 Making Soup

Applying a method is very much like the preparation and serving of a bowl of soup!

If you make vegetable soup then before the ingredients such as the carrots and tomatoes go into the pot they are clearly and discretely visible.

2.1.2.1.1.1   Red Soup

Once the soup is made its red colour is clear indication that there are tomatoes in the melange. With the aid of a spoon it is easy to find a discreet piece of carrot and the peas but not any longer possible to isolate the salt, remove the water or see all the ingredients as the separate items that the recipe called for to be prepared and combined.

2.1.2.1.1.2   The Official Manual Is A Book of Ingredients

PRINCE2® describes discreet ingredients (in the themes like risk) that are combined within the work context (processes like initiation). Your challenge when translating any method into a practical tool is to move from 'collection of ingredients' to 'soup'. It is the assimilation of explicit facts into implicitly understood behaviours that marks transition from knowledge to skill.

Most graduates of the PRINCE2® exam have knowledge, few have skill. As the training courses and the work environment they return to both omit consideration of skill development the unused knowledge quickly withers.

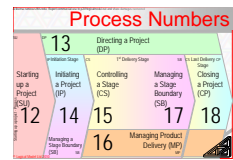### 2.1.2.1.1.3   The PRINCE2® Melange

The PRINCE2® manual writes one example recipe. However the themes such as Business Case and the activities of the time-line such as 'Appointing the Executive & the Project Manager' can be combined in an endless variety of ways.

As the project is executed a single conversation such as "Hey Simon can you drop by my office this afternoon and bring Jane and Fred – we have a new product to launch by trade-expo. I'd like to rough-out a timeline" has just followed guidance (combined ingredients) for appointing the team from two of the initial three activities of Starting up a Project (SU) and touched on two or three themes without necessarily finishing any of them entirely yet.

That simple corridor chat has set the scene for overlapping some of the project initiation work with start-up activity. In the official manual they are separate and well bounded, in the work place overlapping and merged.

2.1.2.1.1.4   PRINCE2® Doesn't Impose Formality

This corridor conversation may, without further paper-work, be at a level of rigour sufficient for the organisation to be in control and comfortable with that

control level. PRINCE2® guidance avoids unproductive bureaucracy – but sadly that isn't its reputation!

2.1.2.1.1.5   Combining the Elements

From a time-line perspective PRINCE2® starts activities in Starting up a Project (SU) with description of appointing the team. Guidance from a topical perspective starts in the Organisation theme. These are discrete sections in the official manual.

Work-place implementation of the guidance does not require two discrete sets of action. A book like the official manual that describes the same topic separately twice is hard work to understand. As far as possible I have avoided it.

Most of the official guidance on appointing team members is in the time-line activity 'Design and appoint the project management team', <u>activity</u> number one within chapter 12 the Starting up a Project (SU) <u>process</u> section 4. In reality gathering the team often drags-on past SU's end and maintaining the team persists through every stage (sprint, release or phase – pick your term) as the organisation theme discusses.

There is no discrete boundary in practice only in the chapter boundaries of the official manual. This manual explores the topics as encountered on the timeline. Occasionally, unavoidably that will give rise to chicken-and-egg conundrums: each time I'll cross-reference forward and backward.

I suggest that any text on a topic as inter-connected as project management will benefit from some parts having (at least) two readings to grasp well!

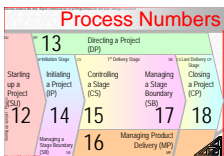## 2.1.2.1.2   The Discrete Ingredients of 'Method'

Within a project the ingredients to mix that will result in the soup are:

➢ Products. Projects that don't produce results (products) are meaningless.

'Products' has many synonyms beside 'results': Products are also known as (aka) Deliverables, aka Outputs that lead to Outcomes aka Impacts aka Configuration Items. Products all have Acceptance Criteria (Product quality specifications).

Note everything the project makes, amends or acquires is a '<u>product</u>'. Products are not necessarily physical: a culture change is a product.

Those products that are passed-on to the customer (the <u>outputs</u>) or those products passed-on to people exercising control external to the project are also project <u>deliverables</u>. Hopefully <u>outputs create an</u> impact aka an <u>outcome</u>. Some products may stay within the scope of the project EG low-level test results and team member's progress reports.

➢ Processes and activities – sequenced steps,
➢ Roles – assigned collections of activities
➢ Responsibilities – decision making rights and duties,

> ➢ Business case – the motivating force that justifies the investment of money, effort, time, skill and will to create the products
> ➢ Risks – uncertainties about rewarding result or safe project conduct
> ➢ Plans and agreements –contracts, baselines and tolerances
> ➢ Progress assessment and expression in reporting and escalations
> ➢ Concerns – handling actual or potential off-plan situations

PRINCE2®'s term for **any** form of request for change, new risk or problem is *project issue*. Having given so broad a definition and being shy of accusations of bureaucracy the official manual then suggests some 'issues' be handled 'informally': a source of weakness in the method's formulation.

The official manual's insights around 'issues' has not matured sufficiently to provide comprehensive vocabulary and thus guidance is incomplete and unreliable. For example: in Risk we need to differentiate uncertainty of outcome that is good from bad. Likewise for both 'Issue' and 'Problem' we need terms for 'good off-plan' from 'bad-off plan'. We also have to differentiate significant from not and urgent from not and a variety of other axis.

Sadly the incomplete description of all the interacting elements means the procedure to handle them in an integrated manner does not always stand-up to real-world pressures. (Arguably "always" is unachievable but the official manual's procedure needs to be and is easily improved).

2.1.2.1.2.1   Another View or Set of Ingredients

A project timeline is comprised of integrated activities. If separated out (the ingredients before the soup is made) PRINCE2® describes the following seven processes divided into 40 activities. Not all activities are required in all projects. An alternate suggestion is made in the appendices *See X on Y*.

Process Numbers

	13	Directing a Project (DP)		
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
		Managing Product Delivery (MP)		
		16		

Activities in Levels & Processes

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CoPM
- 12.4.1 Appoint the Executive and

Project Board
- the Project Manager
- 13.4.1 Authorize initiation
- 13.4.2 Authorize the project
- 13.4.3 Authorize a Stage or Exception Plan
- 13.4.4 Give ad hoc direction
- 13.4.5 Authorize project closure

Project Manager
- 12.4.2 Capture previous lessons
- 12.4.3 Design and appoint the project management team
- 12.4.4 Prepare the outline Business Case
- 12.4.5 Select the project approach and assemble the Project Brief
- 12.4.6 Plan the initiation stage

- 14.4.1 Prepare the Risk Management Strategy
- 14.4.2 Prepare the Configuration Management Strategy
- 14.4.3 Prepare the Quality Management Strategy
- 14.4.4 Prepare the Communication Management Strategy
- 14.4.5 Set up the project controls
- 14.4.6 Create the Project Plan
- 14.4.7 Refine the Business Case
- 14.4.8 Assemble the Project Initiation Documentation

- 15.4.7 Escalate issues & risks
- 15.4.6 Capture and examine issues and risks
- 15.4.5 Report highlights
- 15.4.8 Take corrective action
- 15.4.4 Review stage status
- 15.4.1 Authorize a Work Package
- 15.4.2 Review Work Package status
- 15.4.3 Receive completed Work Packages

- 17.4.1 Plan the next stage
- 17.4.2 Update the Project Plan
- 17.4.3 Update the Business Case
- 17.4.4 Report Stage End
- 17.4.5 Produce an Exception Plan
- 17.4.14 Manage Stage Boundaries
- 17.4.1 May include Team Planning

- 18.4.1 Prepare planned closure
- 18.4.2 Prepare premature closure
- 18.4.3 Hand over Products
- 18.4.4 Evaluate the Project
- 18.4.5 Recommend project closure

Team Manager
- 16.4.1 Accept a Work Package
- 16.4.3 Deliver a Work Package

Team Member
- 16.4.2 Execute a Work Package

Higher resolution images are available from www.logicalmodel.net.

2.1.2.1.2.2   Other Techniques

Successful projects requires many techniques besides just the two PRINCE2® provides. The official manual provides just:

➢ Cursory guidance on Product Based Planning

Product Based Planning (PBP) would be better named Product Based Scoping as it is a long way short of all the steps and techniques to create resource levelled schedules or time-phased budgets and cash-flows or project controls or risk responses.

Product based planning doesn't cover the scope of 'planning' only the scope of scoping. <u>For what it does cover it is the best tool available</u> – but it is poorly understood, poorly explained in the official manual and meaningful explanation is too time-intensive for proper treatment in a certificate driven cram-week.

➢ Quality Review Technique

The official manual describes a generic procedure to raise comments on a project's products (final or intermediary products). The official manual's treatment is document oriented although review must be applied to all work-steps and their results.

2.1.2.1.2.3   Omitted Techniques

PRINCE2®'s fist weaknesses might be how it is sold as an exam-in-a-week crammer but its most serious weakness is omission of guidance on tools and techniques that the project manager really does need in the tool bag.

Not every tool is needed in every project, some tools can be usefully abused to fulfil a role that they are not really suited too (EG a Gantt Chart can be used for planning although it should be restricted to reporting status versus schedule and float and assessing resource loadings per period).

2.1.2.1.2.4   Tools and Techniques Required

What is missing from the PRINCE2® tool-kit is easily supplied although there is a lot of it. Suggestions to fill the gaps are proposed as we proceed. Tools and techniques that we all need competency in include (but this isn't exhaustive of what we will cover as we go):

➢ Stakeholder identification and engagement that generates buy-in from senior management and all other stakeholders, builds teams and maintains communications

➢ Product oriented scope definition that captures product[1] acceptance criteria for use in estimating and in tracking of achievement

---

[1]   ***Recall*** Product aka Deliverable aka Result aka Impact aka Output that leads to outcome

- ➢ Activity oriented scope definition that captures process acceptance criteria for use in estimating and tracking achievement
- ➢ Creation of agreements (contracts whether legally significant or not)
- ➢ Identification and management of constraints and assumptions to support the escalation of contradictory constraints and the negotiation between project success criteria: "faster, better, cheaper – boss, pick up to two"
- ➢ Creating accurate estimates at acceptable precision IE the inclusion of allowances for uncertainty in budgets and schedules and scope and quality constraints
- ➢ The use of estimates in project execution for tracking achievement and forecasting out-turn at completion
- ➢ Critical path analysis and resource profiling, smoothing and levelling based on dependency modelling and calculation of durations
- ➢ Risk identification, assessment and integration into constraints such as scope, schedule and budgets
- ➢ Determination of achievement and tracking to baselines
- ➢ Managing change that has occurred or is desired

2.1.3 References

References such as [Page 313], **A22-**Quality Management Strategy, [9.9.9.3] or **[13.4.1** Authorize initiation**]** are references to the naming and numbering of the chapters and sub-sections of the official manual 2009 edition first impression. They are all in square brackets, although square brackets are used for other things as explained below.

2.1.3.1.1.1   Appendix A

The PRINCE2® manual provides suggested contents for reports, registers and baselines in Appendix-A. Entries such as "**A22-**" means the 22nd template in Appendix A. There are 26 entries given in the 2009 manual. Ive also added some extras or repeated some from 2005 guidance.

The 'templates' are called 'product descriptions' and each is written using the template **A17-**Product Description.

Rather than remove the templates to an appendix I have included the product descriptions 'in-line' with the topic discussing them. The list is:

- ➢ **A1-**Benefits Review Plan Product Description   Section:Page 10.1.4:- 433 -
- ➢ **A2-**Business Case Product Description   6.1.6:- 147 -
- ➢ **A3-**Checkpoint Report Product Description   11.1.2:- 467 -
- ➢ **A4-**Communications Management Strategy Product Description   9.1.8:- 322 -
- ➢ **A5-**Configuration Item Record Product Description   9.1.5:- 265 -
- ➢ **A6-**Configuration Management Strategy Product Description   9.1.5:- 289 -
- ➢ **A7-**Daily Log Product Description   6.1.5:- 92 -
- ➢ **A8-**End Project Report Product Description   11.1.4:- 534 -
- ➢ **A9-**End Stage Report Product Description   10.1.5:- 440 -

- ➢ **A11-**Highlight Report Product Description   11.1.3:- 495 -
- ➢ Exam Oriented **A10-**Exception Report Product Description   11.1.4:- 509 -
- ➢ **A11-**Highlight Report Product Description   11.1.3:- 495 -
- ➢ **A12-**Issue Register Product Description (Exam only)   9.1.6:- 293 -
- ➢ **A13-**Issue Report Product Description (Exam Only)   9.1.6:- 293 -
- ➢ **A14-**Lessons Log Product Description   6.1.5:- 93 -
- ➢ **A15-**Lesson Report Product Description   6.1.5:- 94 -
- ➢ **A16-**Plan (Project) (Stage) (Team) Product Description   5.2.3:- 64 -
- ➢ **A17-**Product Description Product Description   9.1.5:- 282 -
- ➢ **A18-**Product Status Account Product Description   9.1.5:- 288 -
- ➢ **A19-**Project Brief Product Description   6.1.6:- 160 -
- ➢ **A21-**Project Product Description Product Description   6.1.6:- 134 -
- ➢ **A22-**Quality Management Strategy Product Description   9.1.7:- 308 -
- ➢ **A23-**Quality Register Product Description   9.1.7:- 317 -
- ➢ **A24-**Risk Management Strategy Product Description   9.1.4:- 231 -
- ➢ **A25-**Risk Register Product Description (Exam only)   9.1.6:- 294 -
- ➢ A25-Risk Register Product Description   9.1.4:- 230 -
- ➢ **A26-**Work Package Product Description   11.1.2:- 456 -
- ➢ Tailored Register Of Concern Product Description   9.1.6:- 294 -
- ➢ Acceptance Criteria Defined   6.1.6:- 131 -
- ➢ Estimate Product Description   10.1.3:- 399 -
- ➢ Follow-On-Action-Recommendations (FOAR) Product Description 11.1.4:-   536 -
- ➢ Project Approach Product Description   6.1.6:- 145 -
- ➢ A Project Mandate Product Description   6.1.4:- 86 -
- ➢ Role Product Description   6.1.5:- 91 -

Templates are available from the website **_XREF-SalesURL_**

2.1.3.1.1.2   Product Description Groupings

The Defined Management Products:
Baselines/ Records/ Reports

Baselines
A1   Benefits Review Plan
A2   Business Case
A4   Communication Management Strategy
A6   Configuration Management Strategy
A16 Plan (Project) (Stage) (Team)
A17 Product Description
A19 Project Brief
A20 Project Initiation Documentation
A21 Project Product Description
A22 Quality Management Strategy
A24 Risk Management Strategy
A26 Work Package

Records
A5   Configuration Item Records
A7   Daily Log
A12 Issue Register
A14 Lessons Log
A23 Quality Register
A25 Risk Register

Reports
A3   Checkpoint Report
A8   End Project Report
A9   End Stage Report
A10 Exception Report
A11 Highlight Report
A13 Issue Report
A15 Lessons Report
A18 Product Status Account

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28

There are other management products whose content is not defined by PRINCE2® 2009, eg project mandate
Previous versions of PRINCE2® had 36 defined products eg the set included the project mandate!

2.1.3.1.1.3   Seven Processes in Seven Chapters

The official manual describes the 7 process' activities in section 4 of seven chapters. All my references to 'officially' defined activities are referred to by their paragraph number and name: thus **[12.4.1** Appoint the Executive and the Project Manager].

The process number to chapter mapping is

➢ Starting up a Project (SU) is chapter 12
➢ Initiating a Project (IP) is chapter 14
➢ Controlling a Stage (CS) is chapter 15
➢ Managing Product Delivery (MP) is chapter 16
➢ Managing a Stage Boundary (SB) is chapter 17
➢ Closing a Project (CP) is chapter 18 and …
➢ Directing a Project (DP) is unfortunately chapter 13

Within chapters 12 to 18 sections 1, 2 and 3 are the process' Purpose, Objectives and Context which are explain 'in-line' in this manual. The graphic in the top corner of each page is intended as a quick-reference.

Process Numbers

SU　DP 13 Directing a Project (DP)

IP Initiation Stage　CS　1st Delivery Stage　SB　CS Last Delivery CP Stage

Starting up a Project (SU) 12

Initiating a Project (IP) 14

Controlling a Stage (CS) 15

Managing a Stage Boundary (SB) 17

Closing a Project (CP) 18

Managing a Stage Boundary (SB) SB

16 Managing Product Delivery (MP) MP

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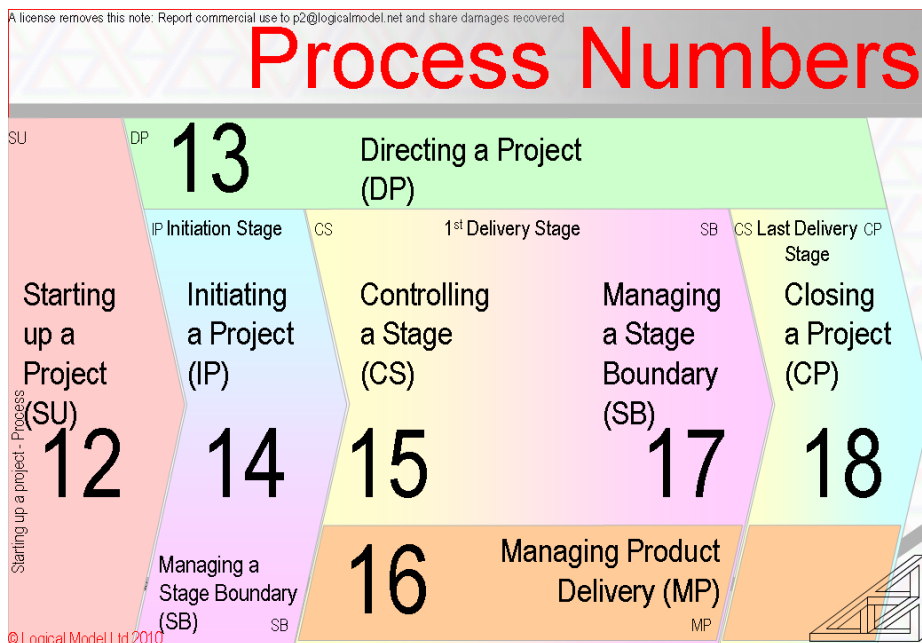
2.1.3.1.1.4　References in [ ]

Square brackets are used for three things.

1. to signal activity names like **[13.4.1** Authorize initiation**]**. Since all PRINCE2® 'activities' are described in section 4 of their respective chapters 12.4.1 can be read as 12.4 = SU thus "SU-1" but beware when talking to 'old-hands' as what they are familiar with as "SU-1" or "CS-5" was changed by the 2009 version of the official manual ☹.

   Each time you come to an activity reference such as **[12.4.1** Do this**]** then silently ignore the "**[12.4.1**" and read the "Do this" as part of the containing sentence.

2. "[ ]" are used for syllabus references as explained below
3. Advice, commentary and critique on the official manual that I believe has merit in the real-world is within square brackets. Advice in "[ ]" is for real-world use and definitely not correct in any PRINCE2® exam context (but frequently is correct in an APM exam or Project Management Institute exam context). Obviously the job in the real-world doesn't change based on which book you read, just the right answer in an exam ☹.

2.1.3.1.1.5　Exam Syllabus References

References such as [OV-01 F:1 Six aspects of project performance to be managed] are to the exam syllabus.

➢ OV-01 is item one of the Overview syllabus area,

> F: or P: indicate the highest level at which this topic is questioned – Foundation or Practitioner and

> 1, 2, 3, 4 define if the question type requires 1-Recall of facts from the manual, 2-Explanation of the relevance of elements of PRINCE2® to projects, 3-Application of an element to a scenario or 4-Appraisal of use of an element in a scenario.

The foundation exam <u>just</u> uses level 1 and 2 questions. The practitioner is <u>mainly</u> levels 3 and 4.

The syllabus is paraphrased, the levels explained and exam analysis provided in *See Exam Syllabus Section:Page 15.1.1:- 540 -*

2.1.3.1.1.6   References in "double quotes"

Fragments of text in double quotes are more often paraphrasing of the official manual than direct quotes. Mostly direct quotes are noted 'sic'. Certainly all quotes marked 'sic' are literal extracts from the official manual. Mostly I've added "sic" when I don't think what-ever is marked is best advice! A sort of "that really is what it says!"

2.1.3.1.1.7   References in { }

Items between braces signify "is composed of" thus PRINCE2® { 7 Principles, 7 Themes, 7 Processes, 26 Management Product descriptions (document templates), 9 Roles and a couple of Techniques} where the list of techniques "is composed of" { Product Based Planning and Quality Reviews }.

A description of the official manual's composition and how that relates to what your already qualified colleagues where taught in guidance prior to 2009 is given in *Official Manual's Structure Section:Page 15.1.2:- 540 -*.
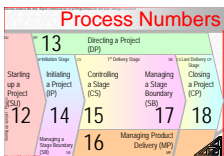
2.1.3.1.1.8   SOOP: Simon's Observations On Project Management

SOOPs describe what I think are important insights or concepts that lead towards project competence or skill – IE pointers to successful achieving change to business-as-usual IE 'corporate soup making'. Many of them contradict accepted thinking. They all extend the official manual and mostly extend the other published guides on PM too.

2.1.3.1.1.9   Use of "etc."

When "etc." is used it will either be to refer to entirely generic lists EG "furry animals include cats and rabbits etc." or a list will have been previously introduced EG "cost in a project relates to money but also the will and skill to achieve the results, the resources consumed, the impact on morale and the ability to absorb the change into business-as-usual…" and later "cost (will, skill etc.)"

I don't think there are any fur-ther references to rabbits etc ☺.

2.1.3.1.1.10   Other Conventions

A few other reference conventions are used in places and explained when you get there.

2.1.3.1.2   Redraft

The PRINCE2® manual was redrafted in 2009. Apparently the redraft was at least in part an attempt to overcome a perception of bureaucracy and difficulty to learn.

2.1.3.1.2.1   Unhelpful changes

In the redraft changes where made to concepts that won't help conversation with old-hands or integration with existing project quality systems that are pre-2009 based.

Features of the method were lost such as shorthand names for the sub-processes (now called activities). The shorthand was blamed as a barrier to adopting PRINCE2®. Really it just illustrates a symptom of the difficulty involved in learning a complex topic. The short-hand was useful for the cognoscenti. Unix™ (Linux) and MSWindows® have the same difference in philosophy – ease of adoption by the novice versus power and convenience in use by the professional.

Activity numbers and product description designations were unnecessarily and unhelpfully changed in the redraft.

#### 2.1.3.1.2.2   Changed Truths

Obviously the concepts required for meaningful project management were not change by new words in a redrafted book but what were once right answers in an exam became wrong answers (EG "Who is accountable for the project's benefits?" was previously and meaningfully the exec taking the accountability of sponsorship. Now in an exam the answer is "the senior user". Later I'll suggest lots of project governance issues that arise from this change.

As someone noted recently in an experts panel "PRINCE2® doesn't evolve. Every few years it lurches from change to change…".

In my view the 2009 manual is more Information Technology centric, more supplier-side centric and weaker than the 2005 guidance. Topics have become confused. San-Andreas sized fault-lines now run through sponsorship and issue management, more minor faults exist elsewhere and real omissions such as stakeholder analysis and "how to create plans" remain un addressed in the official manual.

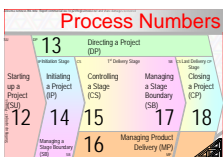#### 2.1.3.1.2.3   The Method Is Designed To Be Tailored

I will present the official manual's views with commentary that explains, supports, contradicts, challenges and tailors the official guidance. The official manual is quiet clear that "…the method is designed to be tailored. So tailoring PRINCE2® appropriately is 'full PRINCE2®'. [19.2]"
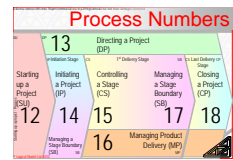
2.1.3.1.2.4   Review Comments

Note: the official manual lists many 'contributors'. The implication is the book embraces their wisdom. In some cases the fact is the list simple means "sent in comments" rather than "influenced content".

If you have comments on this text please forward to: p2@LogicalModel.Net. Errors will be actioned and opinions reflected whether agreed with or not. Project management is too complex for one opinion to be universally correct.

3   What Projects Are About

Starting with 'projects' is wrong! There is really only one 'discipline' and that is business-as-usual.

SOOP-6.   BAU is the portfolio of activities that uses equity and debt to return utility to stakeholders. Utility might be physical safety, security and health or utility might be beauty and excellence or capital growth or utility might be revenue return to the capital's owners.

BAU maintains a portfolio of demands on capital (human capital, process capital, plant and money) that mixes sustainment of the status quo and transition to a future-state-business-as-usual. Transitions are projects.

SOOP-7.   Projects are the collection of activities required to transition current-state-business-as-usual to future-state-business-as-usual.

Current and future-state are systems in stable (possibly dynamic) equilibrium while projects are systems whose purpose is to adjust the current-state's agents or boundaries or rule-set or inputs or outputs or any or all of these.

3.1.1.1.1.1   Project Control

Thus all project governance begins and ends in business-as-usual. Any project management method is a subset of governance and must know how to initiate transition and establish stable future-state-business-as-usual.

The bit in the middle (projects) should be situational IE flexible, responsive, reactive and back-cast from the future-state-business-as-usual rather than (hopelessly) forecast from current-state. Thus metrics for change such as the **A2-**Business Case are (should be) rooted in descriptions of the future as if they were history.
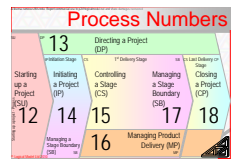
SOOP-8.   Any project, indeed every project

➤ *is commissioned to change the state of the world in some way,*
➤ *is uncertain as to degree of success,*
➤ *will create unintended consequences,*
➤ *is ultimately a part of the pursuit of gain or to avoid loss and so*
➤ *is incomplete on its own.*

A project is a sub-contract for deliverables within some wider initiative to move to a future-state-business-as-usual. If the supplier of product development skills and those who deliver the return on investment during the future-state-business-as-usual are different people the project is the inferior contract (the transition) within one or more superior contracts (that care for participant's equity).

3.1.1.1.1.2   PRINCE2® Projects Create Change

PRINCE2® [4.2.2] declares that projects create <u>outputs</u> from which the change (called the "<u>outcome</u>" by the official manual) is derived. PRINCE2® observes that

the differences between the 'before project' state and the 'state after the change' are the <u>measurable benefits</u>. Hopefully the balance of the impacts of the outcome are an overall benefit to all significant <u>stakeholders</u>.

3.1.1.1.2   Project Definitions

There are many definitions of what a project is: many are weak. Some, when analysed falter around unimportant terms such as "unique". Definitions are even worse when "programme" is added to the mix.

Whenever we struggle with definition it shows our grasp of concept is incomplete or our perspective is from the wrong angle.

3.1.1.1.2.1   Modern Project Management is Immature

It is important to note that vocabulary gaps illustrate our immaturity as a discipline. Language shapes the way we think and what we can think about. Project management is sufficiently immature that the concepts are not isolated and separately labelled.

When we find a vocabulary gap it is because we've better understood a previously incomplete concept or seen with insight how to isolate separate topics from what was previously a mixture. Better vocabulary improves application and thus results. Project management is an immature discipline, yet to be well described.

3.1.1.1.2.2   Better Vocabularies

If you wonder about the degree to which words matter then consider the cause of fashionable avoidance of "Chair-man", "Black-board" and "Brain-storm". Consider the use of mathematical notations that allow exploration of relativity or quantum mechanics. Managing projects needs good vocabulary and it is, in part lacking.

3.1.1.1.2.3   Projects Run Late Because of How We Think About Them

Little wonder that projects run late when we see (hear, speak of, realise, conceive) that we have no words for the conditions that would accumulate to faster-better-cheaper delivery if we managed them. Negatives accumulate without management, while positives only accumulate with management. Management requires communication to coordinate actions. Communication depends upon words that matched to concept and vice-versa.

We need definition for 'project', for 'planning' and 'plan', for 'concern' and more.

3.1.1.1.2.4   PRINCE2® Definition Of Project

PRINCE2® defines a project as "*a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case.*" (sic) A good definition that highlights:

> ➤ Temporary thus actions are required at the start to get the project up and running and other actions are needed to end it,
> ➤ Organisation thus a structure of authorities for making decisions, a procedure for delegation and for escalation,
> ➤ Results not activity are the key,
> ➤ Justification or value over effort for the participants.

3.1.1.1.2.5   An Alternate Definition

I suggest a project might also be usefully described as:

SOOP-9.   A project is: the collection of necessary, sufficient and interdependent activities that together are designed to achieve some controlled change to the current state of the world for which some, one or all of us have some degree of utility.

Useful I think because:

> ➤ It looks outward to the world and our project's contribution to the future not inward to the project's mechanics and costs.
> ➤ Links state change in the future to the activity required and only the minimum activity.
>
> > SOOP-10.   Projects ARE activity but activity is never their purpose.
>
> ➤ Is explicit that the activities must be designed from knowledge of the desired state change (when we don't know the required future state work should not move beyond attempts to define it: as Thomas Carlyle said (apparently) "Nothing more terrible than activity without insight").
> ➤ Is explicit the activities are interdependent and thus need coordination together
> ➤ Recognises inter-action between 'this collection of activities' and the wider, current state of the world of all other activities that are other projects or are business-as-usual activity.
> ➤ Acknowledges every participant's utility (view of value) are that participants' own drivers for involvement

3.1.1.1.3   BAU & Management of Change

There are distinctions between the nature of activity that is 'business as usual' (BAU) and work that is 'project based'. PRINCE2® recognises and discuses the differences [Paragraphs 1.2 & 1.3 of the official manual].

For the correct benefits focus we need to do more than recognise it. We need to understand and grapple with the implications. We will explore much of those discussions as we cover the themes and timeline of projects and the project's containing structure which is an investment (**See X on Page Y**).

3.1.1.1.3.1   Business-As-Usual (BAU) Defined

BAU can perhaps be described as preserving the state of the world. BAU is characterised as ongoing and routine. The cyclic activities of the enterprise

(business, government agency etc) that generate (spend) income from (on) servicing a customer base.

SOOP-11.   Business-as-usual's defining criteria are that 1) during its normal existence its end point is not envisaged and 2) while often cyclic it is in a stable equilibrium with its context. Business projects are about change to business-as-usual. A project's defining criteria are 1) it takes us out of equilibrium; its purpose is to create a future-state-business-as-usual and 2) its normal existence is wholly focussed on terminating end-conditions.

SOOP-12.   <u>BAU requires supervision</u> rather than management. Typically bau has a staff contingent whose assignment is considered 'permanent', a funding mechanism that authorises expenditure on an annualised basis and a defined set of standard <u>procedures that repeat in some predictable pattern driven by the sun and the moon</u> (EG every day, every month, quarterly or annually).
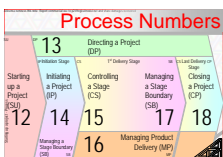
3.1.1.1.4 Differences: Initial Observations

The differences between a project and business-as-usual might be described as:

➢ As we saw above projects are temporary endeavours.

A project starts with an expectation of an end, even if the conditions for the end are not known at the start. BAU starts with an expectation of being never ending – even if we know that 'never' is unrealistic. BAU must have started at some point, as must a project, even if we aren't sure when that was!

➢ Projects create a new state in a future world. BAU preserves the state of the world.

Business-as-usual is the recipient of project outputs, IE bau is impacted by the changes projects create. Hopefully at the request of bau's management and for benefit of bau's stakeholders (although often not so clear cut).

➢ A project's staffing structure is created at the beginning, maintained and amended through out the project as differing development phases demand. The staffing structure is dismantled as we achieve objectives.

In a project the staff involved are often drawn from across a range of business-as-usual skill sets, borrowed from bau and returned to bau post-project.

SOOP-13.   If there is one crucial skill that differentiates a project manager from a business-as-usual-manger it is knowing "how to focus a disparate group of contributors on an emerging common goal".

➢ Project budgets are authorised on an as-needed, event driven, piecemeal basis: purely to render a change to the business-as-usual state of the world.

The budget for project**s** may be allocated annually but a project's budget is disbursed on the events linked to it such as initiation.

➢ Projects 'impact on' or 'supply outputs to' business-as-usual.

➢ Reactive is often the right approach in projects, less so in business-as-usual.

> *SOOP-14.   Projects are inherently reactive: the legal profession handle this via contracts composed or terms (stuff we must do or must not do) and conditions (the trigger for the terms). Full, richly defined, risk relevant project plans ARE contracts.*

Some citizens of the corporate world have been indoctrinated to believe reactive is bad. That is a simplistic view. A project follows defined procedures and they are triggered reactively by events. Events such as "product ready for review", "product passes review" or "product fails review" or even "oh shit we didn't see that coming!"

Reactive is only bad when on the balance of probabilities a 'cheaper' proactive solution is available. Possibly reactive is being confused with 'unprepared' which is bad in most cases.

In a BAU context the indoctrination of "be proactive, reactive is bad", is often because if we've seen the problem before we shouldn't pay avoidable overheads for its resolution twice. BAU 'proactive' often really means 'reactive the first time and prepared for subsequent times'.

➢ <u>Projects (aka changes) require management</u> because change (novel combinations of circumstance) is almost guaranteed to have unforeseen elements.

Unforeseen elements will be positive as well as negative. Good project management detects both, capitalises on the positive while reducing the negative. As project complexity rises so good project management is increasingly about mechanisms tuned to reaction over prescription and removal of escalation mechanisms to keep decision making latency as low as possible.

Note; this list is wider that the official manual's discussion.

3.1.1.1.4.1   Boundaries Are Not Black and White

Reality allows for a lot of blurring of the definitions of project and business-as-usual. For example annual budgets may be set for long running projects. No staff assignment is ever actually permanent or 'forever'. Some organisation's 'business as usual' is to run projects on behalf of clients - each project for 'them' is thus a piece of BAU for 'us'.

3.1.1.1.4.2   You Should Internalise

Business-as-usual maintains the status quo – even if in cycles.

Projects change the state of the world and so change the content of future business-as-usual. Projects change the cycles (rules and context) business-as-usual operates within.

3.1.1.2 Customers and Suppliers

PRINCE2® describes the producers and receivers of the project's outputs as "<u>customer</u> and <u>supplier</u>", even if both groups are in the same organisation. A

customer supplier relationship exists even if they are the same people taking both roles. Customer and supplier(s) participate in an exchange of value or a contract that establishes who carries which elements of ~~risk~~ uncertainty and reward.

3.1.1.2.1.1   *Customer is Business-as-Usual*

The 'customer' lives in a business-as-usual, benefits harvesting world.

PRINCE2® declares itself to be about the customer's perspective and that is where a project management method's thinking must be. Unfortunately almost all project management authors are so ingrained with supplier-side thinking that they often don't see their own biases. For Example:

SOOP-15.   Suggesting that projects are temporary and the project board can be disbanded at project end is a supplier side view. "Temporary" totally misses the return on investment focus that should be ingrained in project guidance.

Mostly the benefits harvesting view is missing. Suppliers (including in-house teams) are 'paid-off' at project closure so for them project end IS end of initiative and realisation of return. For the customer it is typically the point of deepest investment, greatest challenge and least support.
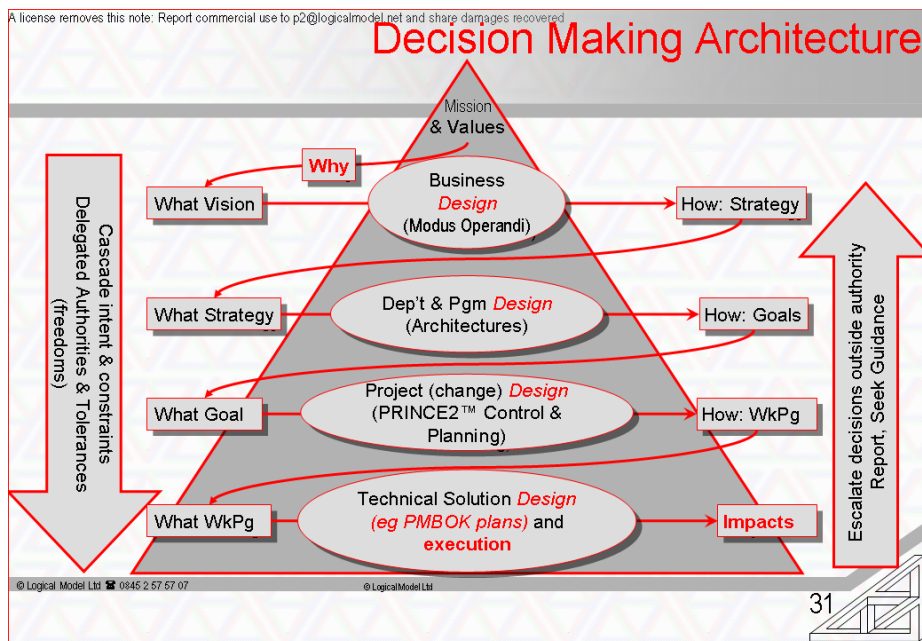
Where I see these crass oversights I've attempted to correct them: doubtless I've missed some too – mail me p2@logicalmodel.net and I'll address them.

3.1.2   *Decision Making Architecture*

The customer and supplier relationship casts one party in the role of specifying **what is wanted within what constraints**. The other party's duty is to determine **how** to provide it within constraints and **escalate the contradictions** between mutually exclusive expectations (Eg do 'this' by 'then').

Contradictions are escalated for decisions elsewhere in the organisation. Generally escalation is to project board or through them up the corporate management's chain-of-command. (Note 'escalation' of technical issues is often effectively 'downward' for 'management' perspectives, but 'up' for expertise to those with 'design authority' roles in technical disciplines.)

Process Numbers

	13	Directing a Project (DP)		
Starting up a Project (SU) 12	Initiating a Project (IP) 14	Controlling a Stage (CS) 15	Managing a Stage Boundary (SB) 17	Closing a Project (CP) 18
		16	Managing Product Delivery (MP)	

Section: 2   Page: 3.1.2:25 of 541

3.1.2.1.1.1   Cascading Objectives and Constraints

The decision making architecture should cascade objectives. Alongside any objectives must also be some authority and will always be the constraints IE boundaries that cannot be overstepped and assumptions IE facts whose values are unknown but are material dependencies.

The job of each management level receiving a work-package (whether called task, programme, project, sprint or stage) is to design 'how' to achieve what is being requested within constraint.

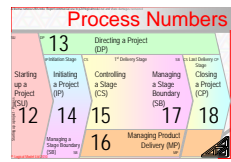### 3.1.2.1.1.2   Escalated Contradictions

Where constraints and aspirations are in contradiction it is the duty of the commissioning level to receive the escalated concern and provide their support to resolve the contradiction.

It is the duty of the commissioned level, typically the project manager to identify contradictory expectations and raise them for examination. Not all contradictions can be resolved.

3.1.2.1.1.3   Issue

When something cannot be resolved it is an 'issue'. Escalated contradictions are a concern that properly deserves the label 'issue'.

While I will cover the complexity that arises from all the dimensions of 'concerns' in full later the definition of issue and problem I will use from now is:

SOOP-16.   An issue is a decision-making need in the hands of someone who lacks either the authority <u>or</u> the knowledge to resolve it. A Problem is an off-plan situation in the hands of someone who has both the knowledge (skill) <u>and</u> authority to resolve it.

This definition is WRONG in the PRINCE2® exam, but only in the PRINCE2®exam. It is useful in reality and correct in the IPMA-D exam. This definition is also too simplistic but will do for now: handling concerns is non-trivial. It is the topic for which I just could not find any way to collect all the discussion into one place.

3.1.2.2 Products and Outputs

A project transforms a set of input resources to create (acquire) the set of output products. So does a phase, a <u>stage</u> (release, sprint), and a <u>work-package</u> and a programme.

Those <u>products </u>(aka – also known as – outputs, impacts etc as listed earlier) that are<u> delivered into use</u> in the <u>customer's</u> <u>business-as-usual</u> operations will cause change from the status quo. The 2009 official manual calls the changes <u>outcomes</u>. The project's sponsor hopes the outcomes will create <u>benefits</u>.

Every work-package, stage, sprint, phase or project produces products (or should be terminated!) Not all products are delivered to the customer or used in business-as-usual by the post-project user staff: for example a progress report is a product but probably doesn't out-live the project except as filed away for future audits, a specification may be a product that is only an intermediary step towards a product that is delivered as an output.

3.1.2.2.1.1   Official Manual's Assumption: That Product Scope is King

The official manual is written with the explicit mind-set that scope is king. Cost and schedule are assumed to be derived, subservient to product scope. <u>PRINCE2®</u> <u>is explicit that you have to known scope clearly at the outset. No you don't, it is</u> <u>helpful but not mandatory.</u>

Typical customers are vague about what they want! PRINCE2® doesn't have to be used in the "must know scope" way. Project controls function just as well when resource to be consumed is the constrained factor and scope is managed with an agile mind-set.

IE the official manual is written from a "you must know the scope to start" paradigm, whereas in reality PRINCE2® will cope just as well when (say) delivery date is the absolutely non-negotiable constraint.

For now suspend judgement, tolerate "start with scope" discussions as illustrative, not prescriptive until we have shared enough that you can see that "constrain what-ever dimension you care too" works just as well. Whenever you encounter a passage that implies 'start with scope' consider the procedure to be 'explore trade-offs between *faster-better-cheaper*'.

3.1.2.2.1.2   Faster Better Cheaper: Constrained, Controlled Consequential

In any endeavour there are constraints. For projects there are typically three quoted: Scope (which may alternatively be spelt 'quality'), cost and time.

SOOP-17.   Before planning is conducted attempting to impose all three as constrainted as in "to time, to cost and to quality" is generally baseless wishful thinking.

Planning must determine the balance between them. Projects are also required to balance many other constraints for example: tolerance of uncertainty, health and safety, reputation, strategic and tactical imperatives, resource availability and access to decision makers as well as cost, time, scope, and quality.

SOOP-18.   The typically quoted triplet of time, cost, scope or 'Faster, Better, Cheaper' is only illustrative of success criteria, not exhaustive.

Of the three only one or perhaps exceptionally two can be constrained. Of the many potential constraints at least one will always have to be consequential or derived from the balance between all other constraints imposed and targets set.

Planning is the act of determining options and how they trade-off against each other. Selecting between options is the sponsor or portfolio management board's duty: they may delegate the duty, for example to the Project Executive or senior user(s) roles on the project board.
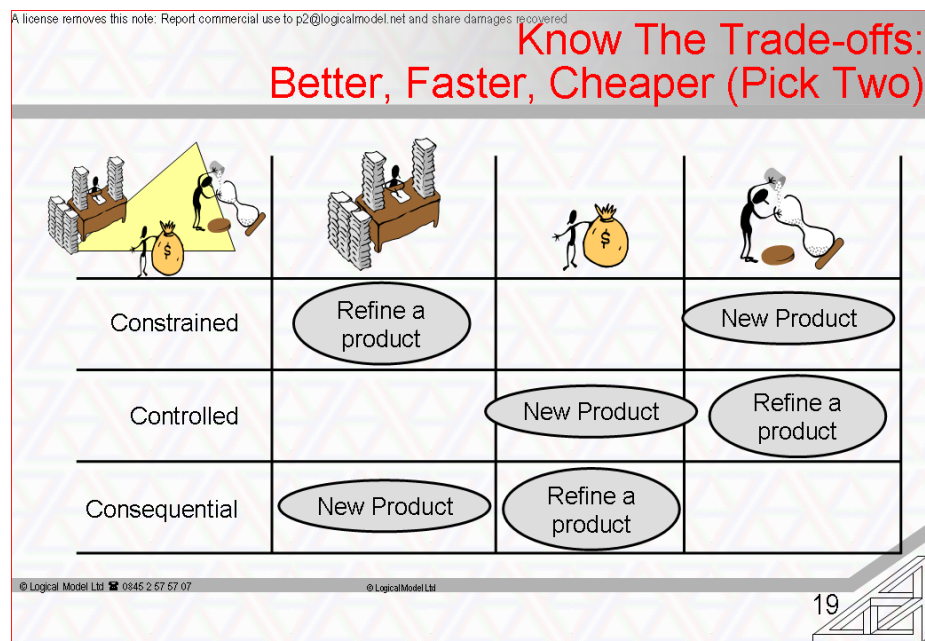
3.1.2.2.1.3   Success Factors

Projects are always dependant on the power of the sponsor, the skill of the technicians, the competency of the project manager and the clarity of the
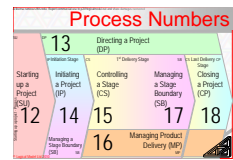
customer's wants. <u>These are success factors</u> and some are critical. Success factors are the enablers whose timely presence is necessary for success and whose abundance and quality affect achievement of success criteria of time, cost, quality (safety…etc).

3.1.2.2.1.4   Success Criteria

*SOOP-19.   Success criteria are narrow, inward facing measures of the project. Probably defined towards the start of project definition and mostly applied at project, stage or work-package end to measure the <u>project team performance versus the</u> **<u>base-line agreed AFTER planning</u>**. Success Criteria are supplier side.*

Achievement of constraints such as the illustrative three of cost time and scope firstly depends on planning to expose the trade-offs between them. Then it depends on the project's key stakeholders who have agreed a baseline of resources and support actually providing it.

A baseline plan defines the agreed terms (duties and actions) of the 'contract' that applies to sponsor and project board on the one hand and project manager and technicians on the others .

3.1.2.2.1.5   Project Success Criteria Aren't Investment Success Criteria

But beware: a project is merely the enabling phase of the sponsor's investment in change.

Measures of success that matter are the sponsor's (and all other stakeholders) achievement of a return on their investment.
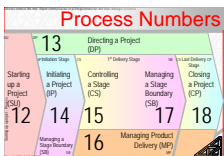
To repeat:

➢ Success criteria measure the project against its post-planning baseline
  Thing done right.
➢ Real outward facing measures are the comparison of the pre-project business-as-usual and post-change world IE the future-state-business-as-usual
  Right thing done.

A project that meets its project success criteria greatly aids the project's sponsor achieve their benefits targets, but ultimately the benefits (utility, outcome) delivered from the project's outputs are the only targets that really matter (to the customer).

3.1.2.2.1.6   Benefits Depend on Success Criteria Depend on Success Factors

Achieving success criteria is dependant on the sponsor ensuring the success factors are helping not hindering. For the sponsor and the project manager the use of PRINCE2® is a 'two-way agreement'. PRINCE2® establishes a project contract that when honoured by all parties will deliver results.

3.1.2.2.1.7   Sponsor

Sponsor is a very un-princely term. [Page 313] says "Sponsor: The main driving force behind a programme or project. PRINCE2 does not define a role for the sponsor…" (sic! Unbelievable but fact). As of the 2009 guidance PRINCE2® has garbled the details of sponsorship.

When we have covered enough of the foundational concepts to support debate we will explore why the 2009 official manual's guidance is 'debateable'. The 2005 term 'project executive' was (is) clear, correct in the real world and agrees with other well known and accepted guidance such as the Association For Project Management's excellent Body of Knowledge (APM-BoK).

The PRINCE2® manual makes a reasonable suggestion: the sponsor and the exec can be the same person. Without explicit guidance parts of the official manual's guidance on control is stressed or fails if exec and sponsor are not the same person.

4   PRINCE2®'s First Real Target Is Its Own Implementation

The real target of a project management method (like PRINCE2®) is to deliver business change with increased certainty of success.

Often the first change required on return from an exam-cram course is to attempt to implement PRINCE2® into the organisation. PRINCE2® certificate training is a waste of everyone's time and money if the method is not implemented.

Implementation isn't easy, there is little 'how-to' guidance in the official manual. Since implementation is limited as an exam cram topic of [OV-09 P:2 Difference between embedding and tailoring PRINCE2] it is worth few marks. So it gets little or none of a typical crammer's air-time. See the syllabus appendix *Exam Syllabus Section:Page 15.1.1:- 540 -* for how little!

4.1   Embedding and Tailoring

The official manual divides implementation into two aspects: embedding and tailoring [Table 19.1].

For implementation there will be initial one-off actions to <u>adopt</u> PRINCE2® and per-project actions to <u>adapt</u> to each project's needs. The one-offs are the 'embedding' actions the per-project adaptations are referred to as 'tailoring'.

To successfully embed PRINCE2® requires a small amount of education for a large number of people which they then act on. Most notable of whom are the senior management who commission and fund changes. <u>Embedding also requires a large amount of education for the few, like you, who also act on it</u>.

I offer implementation as a specific consulting service and/or training events: eMail me p2@LogicalModel.Net for details.

4.1.1   Embedding

Embedding starts when the organisation decides "We will use PRINCE2®". Embedding is the integration of the PRINCE2® approach to projects by the organisation's staff into *'its just how we ensure confidence in and value from our investments in change'*.

Embedding requires adoption of a portfolio level view of projects. The portfolio view establishes a governance regime over the allocation of the enterprise's resources. The regimen rations resources into business-as-usual as it stands today (current benefits) and changes that will deliver a future-state-business-as-usual (future benefits).

4.1.1.1.1.1   *Successful Embedding*

If you are to successfully embed effective project (investment) control you must read-on with the question in your mind: "who will need what duties in their role description if we are to apply this to the work-place?"

Mostly the required people are the senior managers.

You must consider if you are to bring about change to senior role holder's defined duties and accountabilities "how will that be achieved?"

The other questions you must keep in mind as you read are:

➢ "What embedding and applications oriented actions will be taken by who and when?" and finally
➢ "Why will they: *what is in it for them* (wiift)?"

If they see the answer to the last question as 'nothing' then PRINCE2® won't become adopted.

4.1.1.1.1.2   *PINO*

Failure to embed PRINCE2® is common enough to have a name! PINO: Prince In Name Only: meaning we claim PRINCE2®, perhaps personally because we passed the practitioner exam but can't recall anything because we crammed in a week or corporately probably because we spent money on training we don't want to acknowledge had less of an outcome than we had hoped for.

In both cases PINO means "…but we don't actually do much if anything that is PRINCE2® compliant." This is a bankrupt result of:
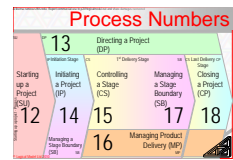
➢ method that omits foundations being sold as complete,
➢ an exam cram, badge-in-a-week approach that doesn't address true needs,
➢ an exam that requires demonstration of detail over principle and
➢ the result of industry missing action to support returnees convert class-room acquired knowledge into work-place based skill.

4.1.1.1.1.3   *Embedding Means Actions Are Aligned to PRINCE2® Guidance*

Embedding happens when you develop shared behaviours across enterprise staff: IE everyone expects the same activities to be conducted in the same way, by the same role-holders, for the same reasons, from the same triggers, leading to the same decision set during the projects we undertake. They also know it will be different every time based on the demands of the moment.

Embedding means:

➢ integration with business-as-usual revenue (service) generating processes
➢ linking cycles of strategic planning and governance,
➢ linking project decision making authorities to organisation structures that control budgets and allocation of resources, ultimately linked to the enterprises form of incorporation and legal responsibilities of the company's officers to the company's participants (public, staff and shareholders),

> ➢ agreeing policies such as how project risk and enterprise risk management connect,
> ➢ agreeing common support tools and the procedure by which PRINCE2® will be applied to projects of differing nature or scale.

The official manual talks of some trivial steps such as defining process responsibility, templates and training but much more thought and action is needed. I'll point it out as we go.

4.1.1.1.1.4　Embedding Is Generally Difficult

Embedding normally struggles when the few returnees from a course find generating useful action from "the many" too hard. Within the many if nobody has a personal reward linked to action then everyone waits until they see that everybody else has acted.

When senior management realise PRINCE2® makes their accountabilities and mistakes visible then unless they are shareholders or correctly incentivised they are often a lot less than enthusiastic to aid embedding. See also "Responsive When Required" Section:-Page 6.1.5:- 105 -.

4.1.1.1.1.5　The Right Incentives

The worst incentives in any environment seeking to improve through change are operational incentives based on utilisation or efficiency.

When improvement comes from change then change almost always demands a short-term drop in efficiency before improvements follow..

SOOP-20.　Efficiency incentives promote sabotage of change. To achieve change first replace efficiency based incentives with measures of 'difference' EG number of initiatives started and sustainable.
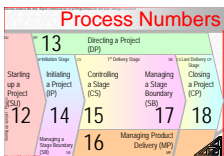
Later replace 'difference' incentives with 'percentage of the initiatives that are delivering improvements' (to ensure step one only has initiatives of merit and isn't bulked-out just for bonus generation) and then reinstate efficiency incentives some time later.

4.1.2　Tailoring

Tailoring occurs when a project's management team creates project specific strategies and controls that adapt the standard 7 themes (eg quality or risk management) and 9 role descriptions to the project's own vocabulary, management structures and working practices.

Tailoring amends embedding's "sameness" of the project management process model and project management products (actions like [12.4.3 Design and appoint the project management team] and templates like the A25-Risk Register).

Tailoring extends, amends and consolidates embedded elements to balance the cost implications of control needs. Most 'costs' relate to the commitment of

management time and the organisation's resources. Control needs relate to 'this project's specific challenges'.

4.1.2.1.1.1   *Tailoring Rarely Deletes Controls*

Note: In general tailoring should not delete any process's purpose or role's responsibilities. They may be regrouped. Emphasis, timings and contents may be changed and most likely extended in places for specific project needs. Reduction in places is common and often cost-effective but complete omission of any element is generally a mistake.

4.1.2.1.1.2   *Correctly Embedded and Tailored PRINCE2® Should Pay For Itself*

Using PRINCE2® is about merging principle and theme and not just blindly applying process: if it hurts you are doing it wrong!

SOOP-21.   Process adds extra cost that is only justified if it is more than paid for in effectiveness and reduced uncertainty.

When effectiveness and certainty aspirations have been met then efficiency might be a third target or even a bonus result.
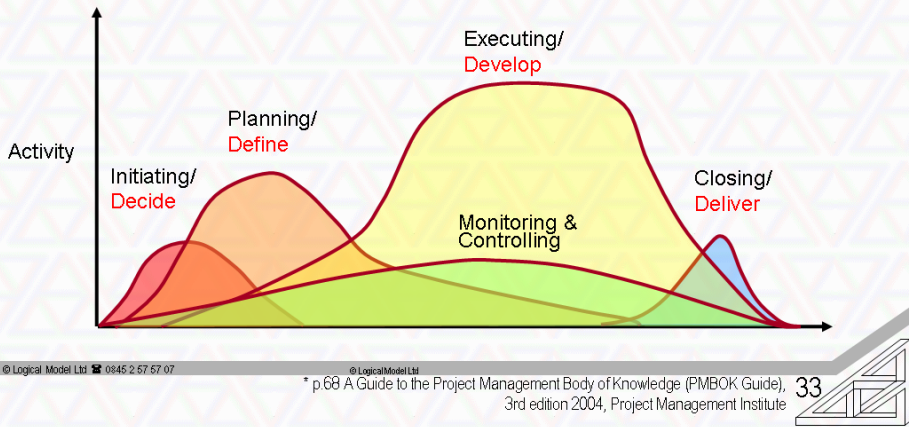
4.2 Weight of Words

In a project the bulk of the subject matter expert's effort is in welding or brick-laying, in writing press releases or web-pages, installing machinery or agreeing future operating procedures. The bulk of the project management team's effort is in initiating the project (defining exit criteria and the steps to achieve them) and in closing the project (confirming acceptance of results and transfer of accountabilities).

The project management team's work-load peaks at project (stage, sprint etc) start and end while the subject matter expert's peak is in the middle of the assigned work after the scope is known and the resourced schedule agreed.

Process Numbers

13 Directing a Project (DP)		
12 Starting up a Project (SU)	14 Initiating a Project (IP)	15 Controlling a Stage (CS)	17 Managing a Stage Boundary (SB)	18 Closing a Project (CP)
16 Managing Product Delivery (MP)		

Relationship of Process Groups

- 5 stages of a project, a phase and a stage (sprint, A26-Work Package etc)

PMI Initiate, Plan, Execute, Monitor & Control, Close*

* p.68 A Guide to the Project Management Body of Knowledge (PMBOK Guide), 3rd edition 2004, Project Management Institute

33

How the project management team's workload varies is more or less independent of how the technical work is organised: phased or iterative make little difference to the control regimen.

Development & Management Stages

34
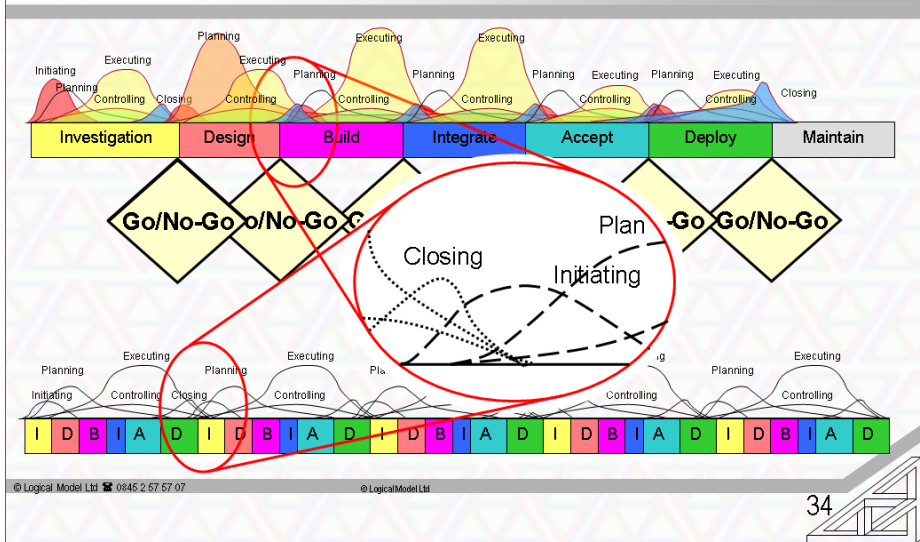
4.2.1.1.1.1   *PRINCE2® is about "Controlled Environments".*

Everywhere we describe an aspect of project control the weight of words is massively front-loaded and slightly back-loaded.

My descriptions of project management spend 100 words in Starting up a Project (SU) and Initiating a Project (IP) for every 10 of closure guidance or word needed for guidance during execution. Words-wise it takes a lot to travel the logic from start through to the middle and almost nothing (well, less) from middle to end, while project technical-activity-wise the work-rate is more-or-less the other way around.

4.3 A Second Reading

Like several other sections this one should probably be re-read when you've finished the journey through the whole of the detailed process model.

I would welcome interim comments – waiting to the end makes it harder, and writing comments will help your retention and linking of the ideas discussed. You might pause here to consider "How am I going to extract the value from a project methodology if I have to get others to buy in too?" Later we will explore the tools that promote buy-in.

5   Introduction to The PRINCE2® View of Projects

5.1.1.1.1.1   *Helicopter View*

Our first view won't be a helicopter view. It will be at jet-fighter speed (but at helicopter altitude). Two very fast perspectives of the total terrain: one in process order, one in thematic groupings.

The terrain has three epochs in the process model's timeline during which the themes are active and integrated: the start, the middle and the end.
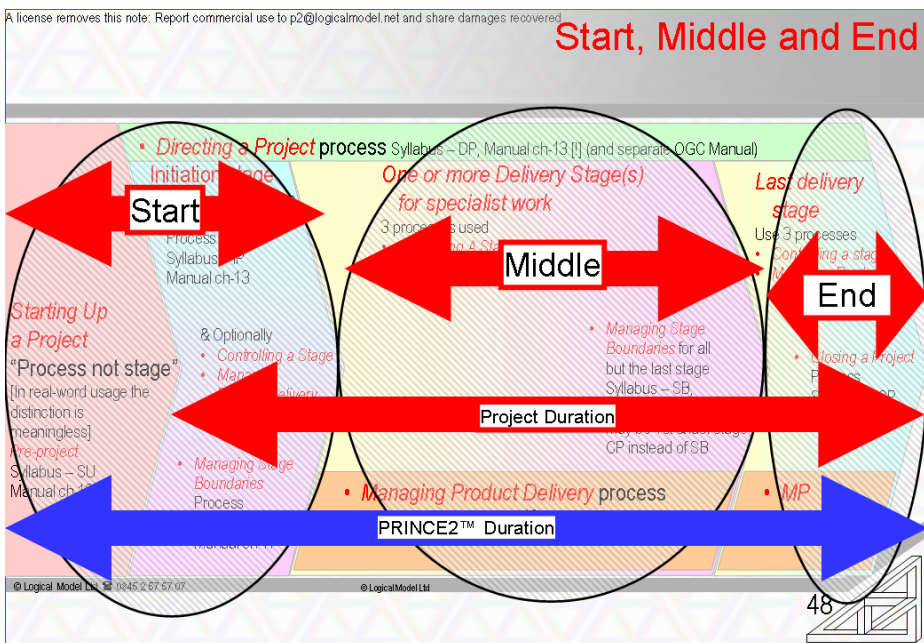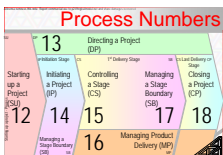

Later-on we will explore the process model's time-line step by step. Then each time we encounter a new theme we will explore it in detail, for now just notice that everything overlaps and links to everything else. After we are some-way down the time-line and thus have sufficient knowledge of the themes as PRINCE2® sets them out we will reflect on errors, omissions and difficulties in the method. To reconsider all the topics that warrant a challenge will require several pauses for reflection.

5.1.2   *Roles With-In Activities*

Everything that happens in a PRINCE2® project happens within an <u>activity</u> of one of the <u>processes</u> within either a <u>stage</u> or <u>Starting up a Project (SU)</u>.

Everything that happens in a PRINCE2® project is performed by one of the <u>9 role holders</u> within one of the <u>40 activities</u> of the <u>7 processes</u>.

SOOP-22.   Nothing happens in a project without people. People don't need process to succeed, but if done right process improves the chances of success and possibly the speed of achievement and size of impact.

SOOP-23.   Process without people (who understand and use it) is valueless. All those PINO people wasted their time, effort and money.

5.1.2.1.1.1   The Roles People Hold

We will explore the details of the role holder's duties later. For now the defined roles they hold are:
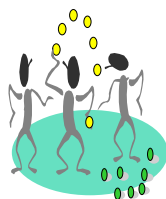
> The <u>executive</u> who has "<u>the</u>" vote in <u>project board</u> decisions,
> The <u>senior user(s)</u> who say <u>what is wanted</u> or provides resources that can say,
> The senior supplier(s) who provide resources that can build what is specified.

Together they are the project board. The project board may appoint some <u>project assurance</u> staff as 'eyes-and-ears' to help the project board members with project over-sight duties.
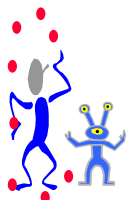
> The <u>project manager</u> who orchestrates all day to day activity, possibly helped by some…
> <u>Team managers</u> to oversee specialist technical team activity.
> <u>Project support</u> staff may help the project manager with management and admin task, and finally some
> <u>Technical staff</u> to do the 'real' work of creating, acquiring and amending outputs from which the outcomes arise to generate the benefits.
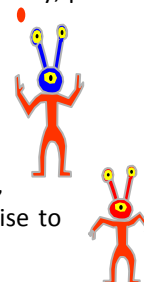
5.1.2.1.1.2   The Missing Roles

The exec may or may not be the sponsor. The sponsor may or may not be the investor.

The investor's interests may be looked after by a portfolio management board whose role must be to ration the organisation's resources across its entire portfolio of activity: business-as-usual benefits generation and project based transition to future-state-business-as-usual – and all other claims to return on capital employed. More later: ***See X on Y***

5.1.2.1.1.3   My Diagram Conventions

Often within my diagrams role-holder's involvements are illustrated using the icons above. Technical activity and staff are red in body and mind, project control blue and business-change management is grey: portfolio considerations that span projects and operational business-as-usual are black. Thus the project

manager must think from the business change perspective and take action to manage the project by juggling the technical activities: project managers have blue, management bodies and grey heads, while team managers have blue, project management heads and red, technical day-job bodies. Many real-world project managers would have red-legs on most days in my diagrams!

5.1.2.2   The Jargon: A Staring Point

Part of what makes PRINCE2® powerful is the assistance it provides for clear communication. People communicating complex topics develop jargon. Jargon is short hand for important concepts shared by those who are constantly involved in discussing some topic.

Jargon is great for the 'cognoscenti' - it helps develop conversations that explore subtleties: it is also a barrier when seeking to communicate to those who lack knowledge of the jargon words and phrases.

5.1.2.2.1.1   Breaking The Jargon Circle

I have to break the circle of "To fully explain the jargon you need an understanding of the jargon"! So here is an incomplete expression of some jargon. As we go we will explore more complete definitions and definitions of more terms. For now:

➢ A work-package is a 'chunk' of work, collection of linked tasks or more properly an objective and some constrained allocation of resources that is agreed between two parties to create some desired result.

Most work packages in a project allocate responsibility to subject matter experts to create project outputs that enable the benefits.

➢ A PRINCE2® "activity" is a project management work-package whose tasks accomplish some part of project planning and control.
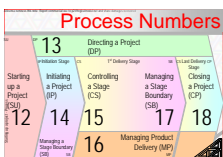
Activities are carried out by the project manager and project management team members. An example might be the activity to [14.4.6 Create the Project Plan]. Two activities are triggered by the routine arrival at a point in time (both of these are reporting activities). All the rest are triggered reactively by events.

➢ A PRINCE2® "process" is a collection of activities.

The processes of PRINCE2® describe the structure through time and across management layers by which the project is controlled. There are 7 processes with between three and eight defined activities within each one.

The Directing a Project (DP) process covers all project board activities. The Managing Product Delivery (MP) process covers all team member/ manager activity and the other 5 cover the project management team's activities through project start, middle and end.

➢ A "stage" is the PRINCE2® term for **a period of time** (and other constrains such as budget) within which the project manager has authority to operate day-to-day project control.

A PRINCE2® project has a minimum life-span of the Starting up a Project (SU) process plus two stages. PRINCE2® projects always have an Initiation Stage and at least one Delivery [Benefits Enabling] Stage.

Every stage requires the project management team to use guidance from two or more of the processes. Benefits enabling stages mostly execute the activities of Controlling a Stage (CS) and Managing Product Delivery (MP) and conclude with the activities of either Managing a Stage Boundary (SB) or if it is the last benefits enabling stage it will close by following the activity guidance within the process Closing a Project (CP).
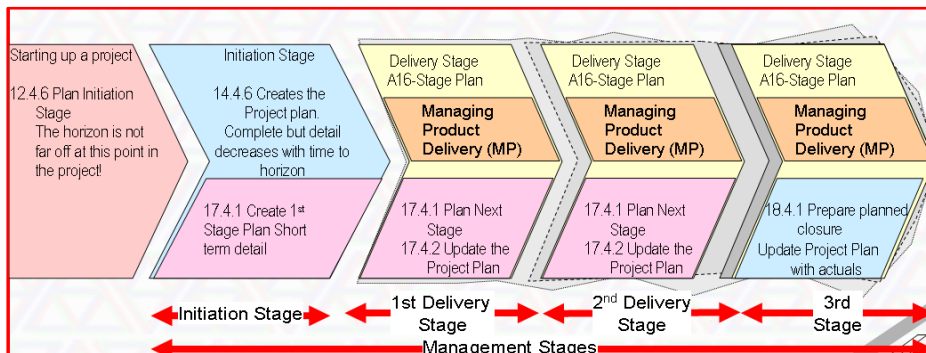
> PRINCE2® imposes control via tolerances and Management By Exception

A required result is delegated in outcome terms. Once a plan for its achievement is authorised those charged with its deliver are left to get on with the work so long as they stay within agreed tolerances.

Should a tolerance become threatened by a breach then the potential exception must be escalated to the next higher level of management (who may also have to escalate it).

> PRINCE2® describes an Organisation structure that defines escalation routes across a tiered hierarchy.

PRINCE2®'s hierarchy is: Team member, Team manager, Project manager, project board and corporate or programme management. IE The four top levels are management levels and the fifth, bottom level is home to the subject matter experts who perform specialist technical activities.

The bottom level are my 'all red' characters who to develop the project's products (and are clearly 'from another planet' to those in project management or business-as-usual).

Management role-holders delegate objectives and provide resources to the level below them and receive escalated requests for help to resolve exceptional situations.

PRINCE2® simple defines the top level of the five is "Corporate or Programme Management (CoPM) who are above the project. When we get to detailed discussions we will investigate the chain of command in greater detail.

Below CoPM PRINCE2® therefore describes <u>three management levels within the project</u>: project board, project manager and optionally team manager(s).
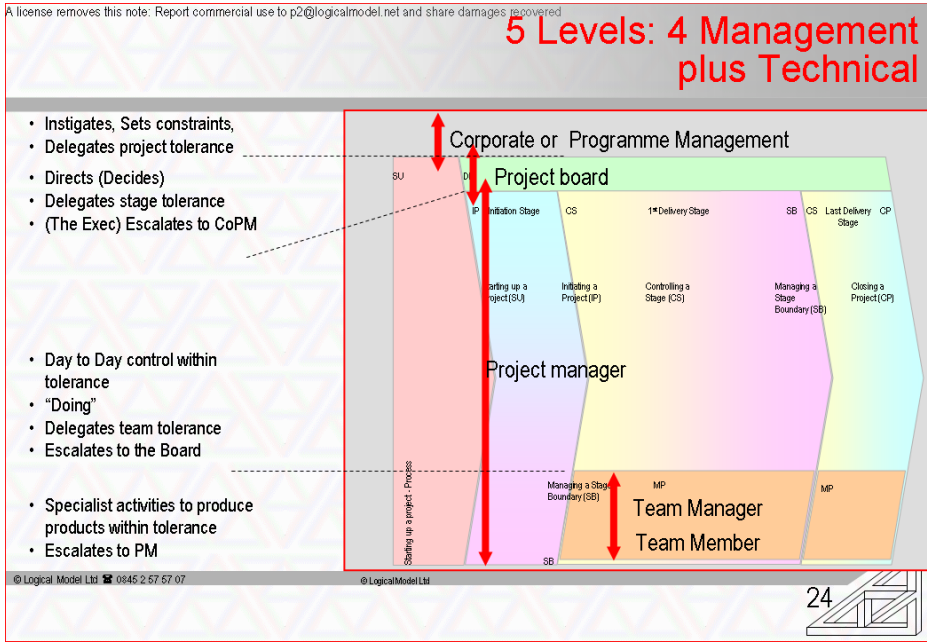
More complete definitions and explanations follow later.

5.2   Overview: PRINCE2® in a Nutshell

PRINCE2® is made up of 7 processes that support 7 themes and follow 7 principles. First the process overview.

5.2.1.1   The Process Model Is The Heart-Beat

The process model sets out the PRINCE2® timeline through the 7 processes as grouped and repeated in the stages (See the diagram below).

Relationship of Processes to Principle #4 Management By Stages

5.2.2 The Process Model in 666 Words

5.2.2.1.1.1   The Process Zoom-Past!

"These 666 words summarise the entire process model within the 327 page PRINCE2® manual. Brevity is at the price of some loss of detail!

As the picture shows. PRINCE2® has some structure, some players, some sequence and some <u>output</u> Less obviously from the picture is that the trigger (the project mandate) is Produced ("P:") by "CoPM".

5.2.2.1.1.2   Start-up

Arrival of a **Project Mandate** triggers the process Starting up a Project (SU). Creation of the mandate is outside PRINCE2®'s control so it will be in any format the producer chooses.

In SU Programme Management or Corporate Management appoint the project's Executive and perhaps the project manager. Exec and project manager then select a team, define project end point and the route to it, outline the Business Case, and plan the planning of the project.

After SU we (here "we" means "anyone running a project") proceed into the <u>Initiation Stage</u>. Progression from SU to Initiation requires <u>approval of the outline business case and plans by the project board</u> who are Directing a Project (DP). If the project board like what they receive then they authorise the first project stage - Initiation.

5.2.2.1.1.3   The Initiation Stage

In the initiation Stage the team first execute the activities of the Initiating a Project (IP)<u> process</u> and then the activities of the Managing a Stage Boundary (SB) process to:

1. Create four control strategies (quality, risk, change, and communications) that match the project's challenges.
2. Create the <u>A16-Project and A16-Stage Plan </u>to implement the strategies and <u>controls</u> in a manner appropriate to this project's needs for speed, caution, benefits targets and cost consciousness.

   The plans describe the timings and resourcing of work that creates the project outputs required.
3. Extend the definition of the project's justification into a full <u>A2-Business Case</u>

   Costs and timescales to refine the business case are taken from the fully developed but possibly high level <u>project plan</u>.
4. The team working on Initiation assemble planning's outputs into the <u>A20-Project Initiation Document and A16-Stage Plan</u>. The baseline for all future project decisions.

5.2.2.1.1.4   'Delivery' [Benefits Enabling] Stages

Next, and again arrived at via project board approval, this time of the A20-Project Initiation Document and A16-Stage Plan is the first Delivery (aka a 'Specialist' aka benefits). Stage

<u>Benefits enabling stages</u> are controlled by the three internal activity cycles of Controlling a Stage (CS):

1. the project manager hands-out <u>work-packages</u> to the specialist technicians,
2. everyone <u>reports</u> progress and concerns upwards,
3. everyone participates in the handling of <u>concerns</u> about off-plan situations.

Most of the work in a delivery stage is carried out by the technical specialists building the products the customer wants. The management of the project adds some overhead which must add more value than cost otherwise the embedding and tailoring is wrong!

The three activities of MP are each used once per specialist **A26-**Work Package within a stage's scope. <u>Execution of a work-package results in some product or sub-product moving through some or all of its development life-cycle.</u> Eventually the supply of A26-Work Packages is exhausted.

5.2.2.1.1.5   End of Stage and End of Project (Start of Benefits)

If more than one specialist stage is needed then the activities of Managing a Stage Boundary (SB) once again define how to prepare the next request to the project board for authorisation to proceed. Preparations include refreshing the A2-Business Case, risk summary, A16-Project Plan and creating a new day-to-day level A16-Stage Plan. Controlling a Stage (CS) and Managing Product Delivery (MP) repeat.

Eventually we reach "start of benefits realisation" and management activity focuses on Closing a Project (CP). The project manager should:

1. Check the products have been accepted and handed-over into business-as-usual,
2. summarises the project's performance in an A9-End Stage Report and
3. pass the A1-Benefits Review Plan to Corporate or Programme Management to measure benefits at some future time.

Then the project board grant approval for the project to end and benefits delivery starts to repay project investment costs. Tada! 666 words" ☺

Obviously 327 pages adds a little more detail.

The 666 words omits some products such as the end stage report and omits all discussion of how to handle concerns about off-plan situations but we will cover all of the details soon.

5.2.2.2 The 7 Principles and Themes Woven Through The Processes

The official manual makes the correct observation that principles are important. I would suggest "concept" is a better label than principle but that doesn't matter much.

What does matter is whether the concepts are the right ones, correctly exposed and described. I think the official manual presents some points of importance, missed cogent description of others and assumes knowledge of yet others.

5.2.2.2.1.1   The Importance of Concepts

Project management is a complex topic: mostly the parts are trivial but there are a lot of parts and a lot of interlinking between them.

Many non-trivial relationships exist between the large collection of success factors and supporting techniques or tools. To discuss project management with insight needs identification and isolation of the underlying concepts so we can describe them.

When concepts are wrong then logic arising from different places arrives at contradictions. When concepts are right then logic from different start points arrives together to interlock, to reinforce and create synergy and strength

greater than the parts. Sound understanding of estimating in planning and in execution is a good example (and explained later *See X on Y*).

PRINCE2® has many places where concepts interlock: products plus quality plus configuration management plus progress being the core ones for you to internalise as we explore.

5.2.2.2.1.2   *Shortcuts over Principles*

While this manual presents topics from first principles I will suggest where short-cuts are worth considering. Of course the threats and opportunities any short-cuts introduce should only be considered once the first principles are understood enough to evaluate opportunity and threat!

I suggest that you are starting as an apprentice PRINCE2® user (and certainly not a 'practitioner' until some year or more of experience is gained). When in doubt apprentices should follow first principals because first principles are all there for reasons that are linked to future needs. When as a skilled crafts-person you know the future consequences, their warning signs and remedies you can take short-cuts knowing whether the consequences will be a concern or not.

5.2.2.2.2   *Principles and Themes in Processes*

Each process (like Starting up a Project (SU)) whose guidance we apply on the journey to deliver the project's outputs will contribute to many of the continuous needs within a project. PRINCE2® calls the continuous needs "themes" and "principles".

The official manual's separation of 7 themes and 7 principles probably just confuses by fragmenting and repeating 2/3^{rds} of the same idea in two places. I'd say that out of 14 bullet points there are a good solid 7 and four halves in total.

The 7 principles and themes add-up to:

➢ **Define** the project's <u>outputs at the start</u>.

Products are always defined in <u>acceptance criteria</u> terms. Verified creation and hand-over of the project's outputs into 'business as usual' not only enables the project's '<u>outcome</u>' but also acknowledges the supplier's discharge of their duty.

Outcomes result in the '<u>benefits</u>' that are claimed in the <u>A2-Business Case</u> to be worth the cost, time and trouble of carrying out the project. (Product focus principle, quality theme, and a touch of business case theme).

➢ The **identification**, evaluation and ongoing maintenance of the A2-Business Case and the managing of the threats and opportunities (risks) associated with it. (Business justification principle & business case and risk themes.)

Note: <u>Every</u> participant in a project has at least one business case, the one in their head (or their heart) and possibly a second one that is expressed 'out-loud'.

> ➤ The **initial development** and subsequent maintenance of a team with defined skills, levels of authority and tolerance limits matched to the challenge of the project's objective and uncertainties. (Define roles and responsibilities principle, Management by Exception principle, Organisation, Risk, Progress and Change themes.)

> ➤ Successive creation of plans for approaching work with a monitoring and control regimen that allows us to verify status and apply corrective or perfective adjustments - whether those adjustments are minor or are serious enough to require escalation for decisions from higher authority. (Plans, progress and controls themes, stages and management by exception principles).

Plus 'use history as a guide to the future' (Learning from experience principle and Estimating if it were a theme as it should be).

5.2.2.2.2.1   *The Start Creates Controls, The Middle Uses Them and Maintains Them (The End Dismantles Them)*

Perhaps obvious is that all "definition", "identification" or "initial development" in the previous bullet-points occurs early in the process model (SU and IP processes). Less obvious at the moment may be that verification of results-created-as-planned is ongoing through out the Controlling a Stage (CS) process and is finalised in Closing a Project (CP).

Even less obvious may be the fact that Managing Stage Boundaries (SB) is a sort of interim verification of performance AND a revisit to all the project definition and planning activities of the Initiation Stage. SB ensures that project justification, plans, team skills etc are aligned to the next cycle of product development activity.

5.2.2.2.2.2   *Principles Not Made Explicit*

There are several principles that the official manual does not state explicitly but are none the less present. They are:

> ➤ Project success depends on a project board that is involved, supportive, available and responsive when needed (and otherwise absent in order to have the bandwidth to run the enterprise).

> ➤ The project board is accountability for (continued) provision of suitable resource and other Critical Success Factors.

> ➤ Always work to a plan (that doesn't mean a Gantt Chart).

5.2.3 Foundations For Projects

5.2.3.1.1.1   *Every Project Is Different*

The first PRINCE2® principle to consider is that every project needs an appropriate mix of rigor and freedoms, reactive and proactive controls applied to the procedures that are followed. (Tailoring principle).

One of the great ironies of embedding PRINCE2® into your organisation's projects is the reputation that it is bureaucratic and heavy handed. I can only surmise the reputation arises from people with no understanding of the principles who then demand some notion of "complete and slavish adherence". PRINCE2® goes to great pains to: 1) involve senior decision makers at the right times and 2) not involve them unnecessarily there-after. It does this via the concepts of Tolerance and Management By Exception.

5.2.3.2 Exceptions And Tolerance

PRINCE2® involves key decision makers in framing plans and then says "leave those who are authorised 'to get on with it'. IE conduct project execution while they are on plan and within authority limits." Since every project wavers a little versus baseline some tolerance is required.

5.2.3.2.1.1   Tolerance Defined

Tolerance is *the allowable variation between actual status (or forecast status) and agreed base-line*. Tolerance is a key concept for the governance of any hierarchical organisation structure based on delegated authorities: including projects.

Tolerance is discretion for decision making. Being actually or predictably 'out of tolerance' means breaching some constraint and by definition being 'in exception'.

Tolerance is another name for the imprecision in both our 'estimating ability' and 'status tracking ability'. Tolerance is the degree of natural or un-assignable variance in the system.

5.2.3.2.1.2   Tolerance Breach or Threatened Breach = Exception

Any <u>actual breach of a constraint</u> or any <u>threatened breach</u> (known as a <u>Tolerance Threat</u>) immediately <u>creates an exception</u> situation that <u>removes authorisation</u> until restored by explicit permission and possibly also some remedial action.

An exception is triggered as soon as it is suspected that a tolerance will be breached by any amount (a small breach will probably evoke a small, rapid response but is still a breach and invalidates existing authority to proceed; no matter how small. (This is a typical 'no such thing as a trick' exam question)).

5.2.3.2.1.3   Exception = Escalation

The next step after discovering an exception is <u>always</u> escalation up through the management levels as high as is required to reach a level of discretion to deal with the exception (Management by Exception and Roles and Responsibilities principles and Plans, Progress and Organisation themes).

How to handle exceptions aka 'project issues' aka 'concerns' is discussed <mark>much later after we reach detailed discussion of a benefits enabling stage.</mark> ***See X on page Y.***
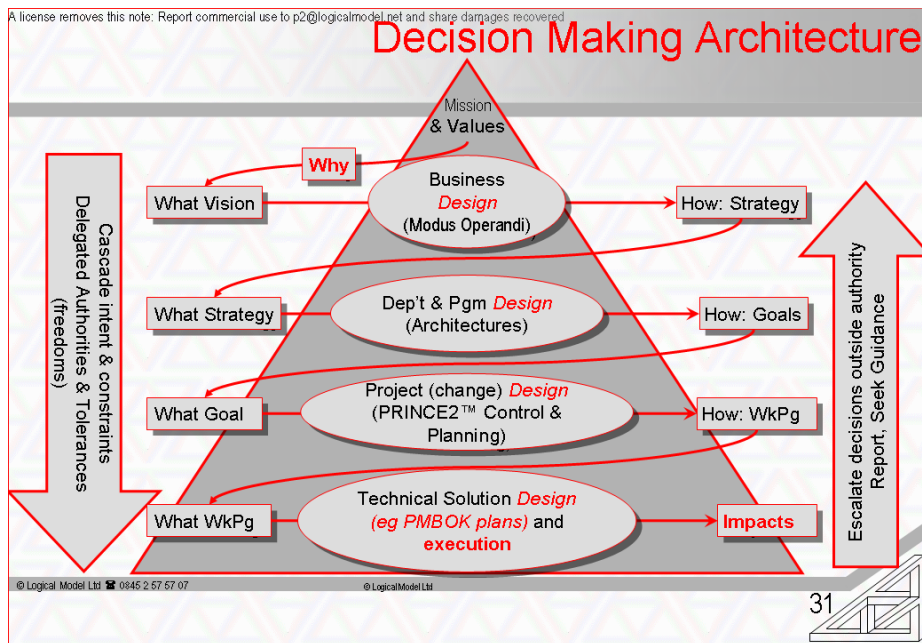
5.2.3.2.1.4   Types of Tolerance

Tolerance exists in each dimension of stakeholder interest IE each degree of project freedom allowed between two management layers.

The constrained degrees of freedom, also known as types of tolerance are at a minimum officially 6, viz:

➢ Project benefits (as defined in the **A2**-Business Case),
➢ Quality (which applies at project-product and individual-product levels rather than stage or work-package and has a cross-over with acceptance criteria as expressed in ranges such as "…weight should be in the range 100kg to 120kg),

Applied at Project, stage and work-package level are:

➢ Scope (the products to be delivered, each defined by its **A17**-Product Description),
➢ Time (Schedule),
➢ Cost (Budget) and
➢ Risk (as described for the project in the **A24**-Risk Management Strategy, possible amended for a stage in the **A16-**Stage Plan and possible amended by each **A26-**Work Package)

5.2.3.2.1.5   Real-World Constraints

Your constraints actually include anything that either human nature, project board wishes or the laws of physics place a limit on. A more complete but still not a full set for your local demands might be:

➢ Ability to absorb change,
➢ Willingness to cooperate,
➢ Available Resources,
➢ Staff morale,
➢ Motivation,
➢ Benefits,
➢ Management availability,
➢ Reputation,
➢ HSE/ SHE,

• Safety affects,
• Health affects,
• Environmental impacts

➢ Political impacts,
➢ Customer satisfaction,
➢ Conformance to specification,
➢ Fitness for purpose,
➢ Absolute cost,
➢ Cash-flow and expenditure timings,
➢ Schedule/ Duration,
➢ Strategic alignment or Intent or "What" scope,
➢ Configuration management change freezes,
➢ Approach or "How" scope,
➢ Off-set work under international contract,
➢ Counter-party exposure,
➢ Currency or commodity exposure
➢ Et. al.

This longer list is right for reality and wrong in the exam.

When we get to discussing risk this is also a starter for the list of risk impact scales that may be required in the **A24-**Risk Management Strategy (See **X on Page Y**). It will also be the right set of impact scales for managing concerns aka project issues: *see x on Y.*

5.2.3.2.1.6   Tolerance Sets A Range

Tolerance is expressed as a range. Probably asymmetrical around a target value for any of the types listed above and for the official six of {(project) Benefits, (Product) Quality, Stage: Scope, Time, Cost, Risk }. The range that is set must reflect the precision achievable from our ability to estimate, our ability to track status and the tone or rigour of the project board's demand for control. ***See X on Y.***

Tolerance is normally expressed as separate over and under figures. Absolute values such as £100 may be used, percentages are often used to help express significance. EG £4k out of £5k is probably more significant than £4k out of £500k. As a figure its £4k in both cases. As a percentage it is 80% or <1%.

Over and under figures need not be symmetrical about the target, EG "over 6 weeks early or two weeks late is a problem, within that range is OK." Either limit could be zero: "on-time or early is OK but don't be late". Tolerances change with political context: a recent screw-up (even someone else's) often moves the spotlight. The goal-posts and even the playing field!
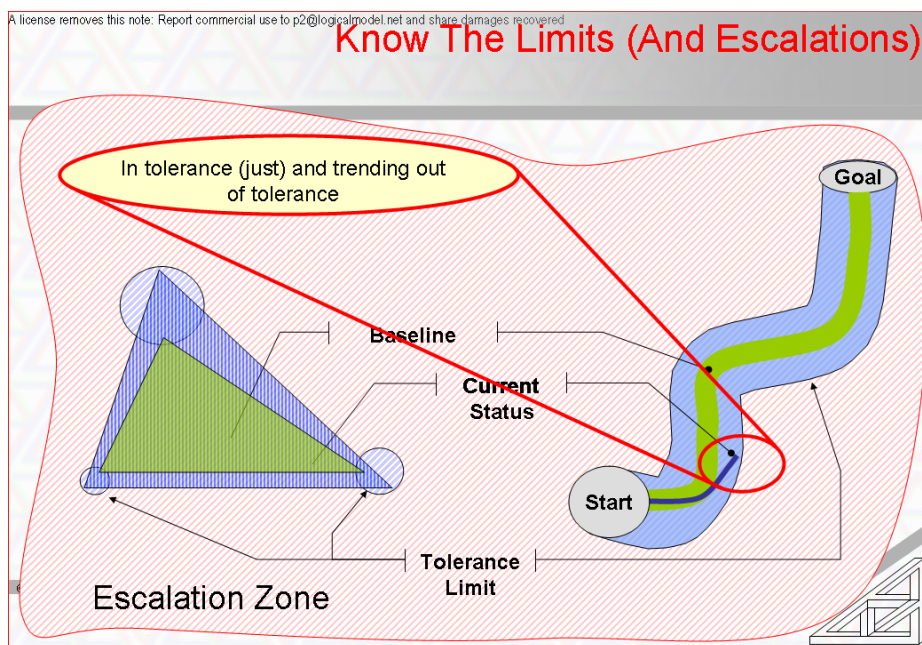
5.2.3.2.2 Tolerance, Corporate Governance And Embedding PRINCE2®

Tolerances or "allowable variations" as established within the project controls at each management level must link to the authority levels defined in the organisation's framework for corporate governance.

The organisation's competency model, grading structure, corporate job descriptions and PRINCE2® role descriptions should agree on the level of discretion decision makers may exercise. Taking action to match them is one of the tasks of increasing the organisation's project management maturity by embedding PRINCE2®.

5.2.3.2.2.1   Finance's Obligation

Tolerances must also match the organisation's reporting capabilities. "Within budget" demands that the finance department can actually support project manager's needs for up to date project specific management accounts!

5.2.3.2.2.2   Tolerance is Agreed Between Management Levels

Tolerances are delegated across the boundaries between each management level.

➢ CoPM define tolerances for the project board at project level,
➢ the project board define tolerances ranging from zero up to their own project limits for the project manager at an individual stage level and
➢ the project manager delegates a set of tolerances that may range up-to the stage's tolerance on the team managers or team members when handing out **A26**-Work Packages.

For example a project manager may have a month's schedule tolerance at stage level and specify a week's tolerance on work-packages.

5.2.3.2.2.3   Tolerances Not Delegated

[Officially] Benefits tolerance remains with the project board. Benefits tolerance exists only between project board level and CoPM but not between project board and project manager. In reality the people involved decide what works for them independently of an exam answer, because…

PRINCE2® says CoPM will set tolerance limits on the project board for the project as a whole, expressed in terms of variation around size and timing of target benefits and resource consumption (Time/Cost/Skills) [and we might add reputation and health, safety and environmental performance et. al.]. So…**.**

If the project manager has (for example) schedule tolerance for delivery of outputs and outputs generate benefits then it seems to me that independent of the manual's fiat a tolerance that affects benefits has, ipso facto be delegated.

Real world conversations WILL include discussion such as "..done by then in order to be in this financial year…".

5.2.3.2.2.4   Project Manager Tolerances

The project board will set tolerance limits on (agree tolerances with) the project manager on a stage by stage basis for product quality and as a minimum against each of PRINCE2®'s defined set of Time (Schedule), Cost, Scope, Quality and Risk.

In reality access to skilled resources, access to project board members and the organisation's ability to absorb change will also be limited but probably not well expressed as a tolerance needing escalation if breached. Impact on project performance from timely decision making and resource availability should have explicit tolerance and escalation linkage to the project board's accountabilities for both. [A principle to add to those PRINCE2® makes explicit and an example of Critical Success Factors.]

5.2.3.2.2.5   Benefits Tolerance Is Project Level

To Repeat: for exam purposes benefits tolerance is considered to be exclusively a project level tolerance agreed between CoPM and Exec and quality tolerance applies to each product via its **A17**-Product Description (or the **A21**-Project Product Description). The other tolerances are imposed at the project, stage and **A26**-Work Package level.

5.2.3.2.2.6   Constraints Caused by People May Be Negotiable

Constraints and thus tolerances are imposed by the laws of physics, evolution and the rules of people.

SOOP-24.   All constraints imposed by people are capable of being changed. Change the people or change the people!

5.2.3.2.2.7   Setting Tolerances

Project level tolerances are first set when CoPM issue the project mandate. These may be of the 'faster and better and cheaper pre-planning wishful thinking' variety we discussed earlier. Project tolerance will be under review by the project board throughout Starting up a Project (SU) and the Initiation Stage, restated or revised in the **A19**-Project Brief and the **A20**-Project Initiation Document.

Project tolerance levels may be negotiated by the Exec and project level tolerance threats are escalated by the Exec to CoPM.

Tolerances for the Initiation Stage and the initial view of project tolerances (as stated in the **A19**-Project Brief) are set when the project board **[13.4.1** Authorise initiation].

Each benefits enabling stage's tolerances are set when the project board **[13.4.3** Authorise a Stage or Exception Plan] and the project manager sets a technical team's tolerances when they **[15.4.1** Authorise a Work Package].

5.2.3.2.2.8   Changes to Tolerance

Changes to tolerance can be imposed downward at any time by the appropriate management level. Upward requests for changes may be initiated at any time via the project issue handling process while suspected tolerance threats MUST be escalated as exceptions (a type of project issue) as soon as identified. **See X on Page Y**.
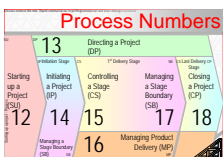
5.2.3.2.2.9   Tolerance's Foot-Print in PRINCE2®

Section: 2　　　　　　　　　Page: 5.2.3:52 of 541

Process Numbers

13	Directing a Project (DP)
Starting up a Project (SU) 12	Initiating a Project (IP) 14	Controlling a Stage (CS) 15	Managing a Stage Boundary (SB) 17	Closing a Project (CP) 18
		Managing Product Delivery (MP) 16		

We have yet to deal with the whole of PRINCE2®'s contents at the most detailed level and so some chicken-and-egg forward references are inevitable when presenting the thematic view. The following is an exhaustive, definitive and

Tolerances

A license removes this note: Report commercial use to p2@logicalmodel.net and share damages recovered

CoPM

12.4.1 Appoint the Executive and the Project Manager
1. COPM Set project level tolerances

*x-Ref correct tolerance handling
** Strictly ANY forecast of an "out-of-tolerance" situation is by definition being "in Exception" and deserves 15.4.6

The activities & roles involved in using tolerance

Project Board

13.4.2 Authorize the project
1. Board check Pj Tol from CoPM realistic
2. Exec renegotiates Pj Tol if relevant
3. Board agree project budget including cost tolerance (and risk and change budget) and project timescales including schedule tolerance (and risk & change time-budget)

13.4.3 Authorize a Stage or Exception Plan
1. Board set Stage Tol for last stage consider what to do with unused Tol [wrong thinking*]

13.4.4 Give ad hoc direction
1. Board consider their direction in response to a Tolerance Threat (TT): Increase Tol., Request an Exception Plan, Defer if TT contingent on a Risk Cause (event), Reject (eh?)

Project manager

12.4.2 Capture previous lessons
1. PM Captures relevant lessons

12.4.4 Prepare the outline Business Case
1. SU expresses Customer Quality Expectations & PM captures as driver for quality tolerance
2. PM (Exec) starts defining each benefit's tolerances and aggregate benefits tolerance
3. PM records SU's quality tolerance (ie limits on Acceptance Criteria) in A21-Project Product Description

12.4.5 Select the project approach and assemble the Project Brief
1. PM documents Pj tolerances received by Exec in project mandate (or by discussion) prior to transfer to A16-Pj Plan at 14.4.6

14.4.1 Prepare the Risk Management Strategy (A24-RMS)
1. PM includes Risk Tol in A24-RMS IE the thresholds for risk escalation from management level to level, specially from PM to Board (possibly using a Probability Impact Grid or Matrix

14.4.3 Prepare the Quality Management Strategy
1. Q-Tol is defined in each A17-Product Description

14.4.5 Set up the project controls
1. PM confirms Tol levels and escalation mechanisms between CoPM/ board/ PM/ TM

14.4.6 Create the Project Plan
1. PM includes specification of Pj tolerances in A16-PjPln (Cost/ Time/ Scope/ not quality–See below or Benefits– See A2-BC or Risk–See 14.4.1)
2. PM includes spec. of quality & scope tolerance in each A17-Product Description (& A21-PjPD)
3. PM notes scope to Tol in A17-PDs and project level Product Breakdown Structure (PBS)
4. PM (Exec) consider affect of part-time-teams on schedule and consider compensation in other tolerances

14.4.7 Refine the Business Case
1. PM (Exec) refines quantified definition of each benefit's Best/ Expected/ Worst target and (as) expresses tolerances and aggregate benefits tolerance
2. PM (Exec) considers affect of timescales on benefit tolerances including delivery dates

15.4.8 Take corrective action
1. PM acts within Stage Tol EG to resolve A26-WkPkg exception

15.4.7 Escalate issues & risks
1. PM converts & extends A13-Issue Rpt into A10-Exception Report giving Overview of which tolerances are threatened by how much and when and why, the consequences of each possible response (including none)

15.4.6 Capture and examine issues and risks
1. PM create A13-Issue Report considering affect Tols

15.4.5 Report highlights
1. PM gives board confidence of operating within Tol by regularly reporting stage status vs Tol & TT early warnings** in A11-Highlight Reports

15.4.4 Review stage status
1. PM determines from controls (project Records, Registers and Logs) any tolerance threat & Escalates via 15.4.7

15.4.1 Authorize a Work Package
1. PM/ TM make joint agreement on A26-WkPkg Cost/ Start & End date, Milestone, Quality (from A17-PDs) targets and A26-WkPkg tolerances (Cost/ Time/ Risk & Scope. Zero time tolerance and higher scope tolerance implies iterative/ agile methods such as SCRUM

17.4.1 Plan the next stage
1. PM includes specification of Stage Tolerances (Cost/ Time/ Scope/ Risk, not quality–See below or benefits–See 14.4.6)) in A16-Stage Plan
2. PM (team) create stage PBS and A17-PD with product quality tolerances defined (probably as attribute ranges (eg "Customer call duration between 1 and 3 minutes*)
3. PM notes scope to tolerance in A17-PD and stage PBS

17.4.3 Update the Business Case
1. PM Checks for change in CoPM/ board Risk tolerance per Risk and in total

17.4.4 Report Stage End
1. PM reports Pj objectives and Stage objectives vs all tolerances, and forecasts tol for rest of project in A9-End Stage Report

17.4.5 Produce an Exception Plan
1. PM creates a new A16-Stg or Pj Plan to suggest recovery options from Stage or Pj TT

18.4.4 Evaluate the Project
1. PM reports on Pj performance & objectives vs. tolerances in A8-End Project Report

Team Manager

Plan Delivery Stage

16.4.1 Accept a Work Package
1. As 15.4.1

16.4.2 Execute a Work Package
1. TM makes corrections within WkPkg Tol or raises an Issue to the PM (to log in the A7-Daily Log and handle at 15.4.8)
2. TM reports tol status in A3-Checkpoint Report

© Logic

faithful reflection of the official manual – IE Reliable for the exam.

It is also entirely made-up of processes to be covered in detail later. The guidance PRINCE2® provides for tolerance and the places in the process and organisational model where it is provided are:

5.2.3.3 Concept: Stages, Plans and Levels Of Plans

Plans are predictions of our future actions to create a new state of the world. To be reliable requires consideration of many factors. Stages are chunks of the plan dolled out to the project manager over which to exercise day-to-day authority.

5.2.3.3.1 Concept: Stage = Project Manager's Domain

Recall: each stage is the <u>time</u> during which the project manager has authorisation from the project board to run the project, within tolerance limits on a day-to-day basis.

Stages have a calendar based start and an end. They are not phases or processes (as is discussed in Stage versus Phase Page 5.2.3:- 54 -.)

5.2.3.3.1.1   Stage Authority

A stage and with it project manager authority starts at the point at which authorisation is granted by the project board using guidance from one of the DP activities.

The project manager's authority starts with the 'non-stage' work of Starting up a Project (SU)). For SU authority starts when <u>CoPM</u> **[12.4.1** Appoint the Executive and the Project Manager], and then the exec **[12.4.1** Appoint the Executive and the Project Manager].

Subsequently authority to run the Initiation Stage is granted as part of the project board's action to **[13.4.1** Authorise initiation]. Authority to run all enabling stages is given by the board when they **[13.4.3** Authorise a Stage or Exception Plan].

Authorising the first enabling stage combines **[13.4.3** Authorise a Stage or Exception Plan] with **[13.4.2** Authorise the project].

5.2.3.3.1.2   Agreed Stage Tolerances

Project board authorisations confirm their own agreement to imposed (or renegotiated) project tolerances as well as imposes stage tolerances on the project manager.

5.2.3.3.1.3   PRINCE2® Says "Starting up a Project is before a project formally starts"

[To be explicit about the 'non-stage' note above. PRINCE2® starts when the project mandate arrives, but the official manual explicitly says this work is not a stage and is "pre-project". At some point this idea passed into exam legend "SU is not to be called a stage" and this is now stuck as a mantra that adds complexity without value. ☹ In the exam you need to know the distinction as you could fail to be recognised as a 'practitioner' by not making the distinction. In reality the distinction is artificial, meaningless, probably just confusing and not how your company's funding and resourcing authorities will see it

5.2.3.3.1.4   When PRINCE2® and When The Project Start

Also note: 'The project' 'officially' starts when the project board approve the **A19-**Project Brief to **[13.4.1** Authorise initiation]. PRINCE2® provides guidance labelled "**[13.4.2** Authorise the project]" but that is not the start of the project in exam terms (or reality!) It just signifies the start of specialist activity in a delivery/ benefits enabling stage. Later we will raise further concerns about these labels. ***See X on Y***]

5.2.3.3.1.5   Stage End: Natural and Exceptional

The project manager's authority runs to either the point at which the stage-plan's time, budget and tasks are exhausted within tolerances, IE work completes as expected or until the project encounters an "oh shit" moment, which ever comes sooner.

Technically PRINCE2® calls the "oh shit" an 'exception'. How issues (of which an exception in one) are handled is a topic we will address much later. ***See X on Y***.

13.4.3 Stage Plan = ESA: End Stage Assessment (and Exception Plan = EXA is Exception Assessment)
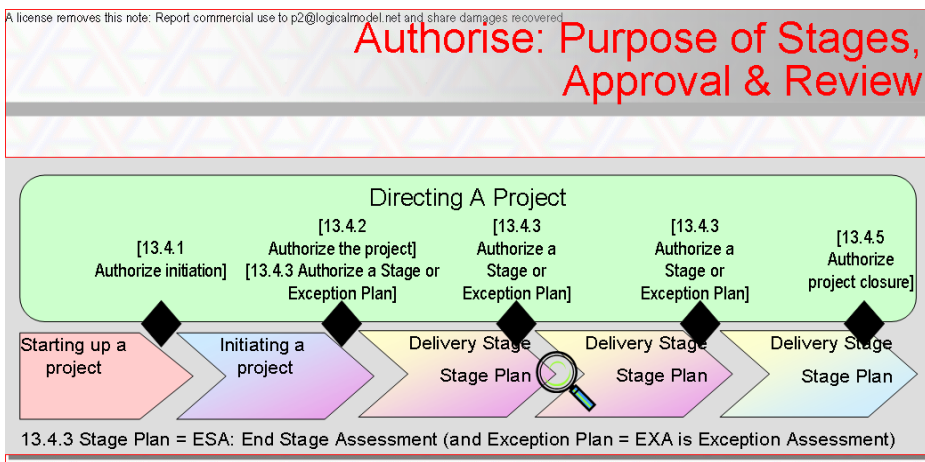
5.2.3.3.2   Stage versus Phase

PRINCE2® uses the terms: management stage and "specialist stage".

5.2.3.3.2.1   Management Stages

The management stages contain all the activity between project board reviews that **[13.4.1** Authorise initiation] and **[13.4.3** Authorise a Stage or Exception Plan] and eventually **[18.4.5** Recommend project closure].

Management Stages are named the "Initiation Stage" of which there is one and "Delivery Stages" or better [Benefits Enabling Stages] of which there is at least one and possibly many.

5.2.3.3.2.2   "Specialist Stages"

In the 2009 official manual "specialist stage" refers to the natural chunking of work performed by specialist subject matter experts. Specialist stages run in parallel and can overlap as different groups work on their own tasks.

[A better term for a specialist stage is "Development Phase". Phase is not a word used by the official manual and is therefore 'wrong' in the exam (but only in the PRINCE2® exam ☹ it is right in 'real-life' and other exams such as the APMP exam).]

Phases are cohesive, bounded groupings of **A26-**Work Packages that are related in some fashion by what is being done by the technicians (eg "Design" or "Requirements capture" or "rough construction").

Phases are generally labelled in a way that alludes to the lifespan of the project's outputs that are being worked on. EG a project to build a new corporate head office might have a "Land acquisition phase" and a "Construction phase".
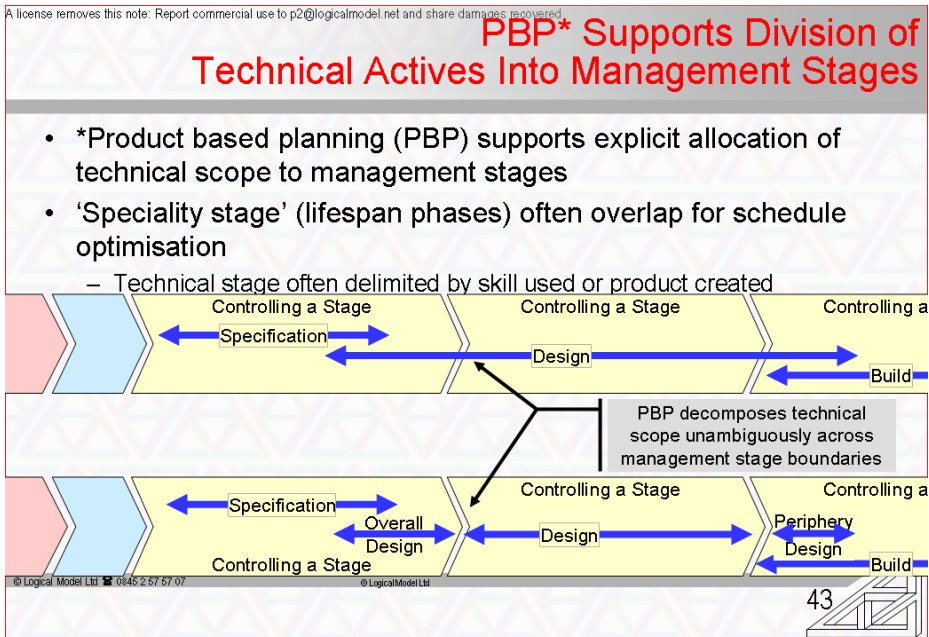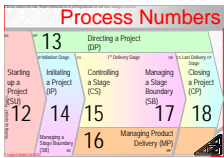
5.2.3.3.2.3   *Phases Can Be Parallel*

Phases may run in parallel with different skill groups working alongside each other on different sub-goals of the project. Phases can overlap, for example design may start before requirements gathering is complete. Stages cannot run in parallel. Stages are periods of time.

Phases end at delivery of some result that marks a milestone in the project's progress.

5.2.3.3.2.4   *Stage End Often Coincides With A Major Phase's End*

A stage end is often selected to coincide with the end of one of the phases currently in execution. The phase end point that triggers stage end is typically a major technical product or the management products that provide the information needed to reassess project viability or direction.

That several phases are in execution in parallel is often due to a desire to speed up project delivery. Executing phase work in parallel runs the risk that if at the stage end the project is not authorised to continue then there will be some work wasted.

Alternatively if authorisation is granted then there is opportunity for the project to be delivered earlier than a more cautious serial approach would have achieved.

Parallelising phases also increases the project complexity and thus affects consideration during the Initiation Stage of the regimen required for 'adequate' control.

Initiation Stage	1st Delivery Stage	2nd Delivery Stage	3rd Delivery Stage

Gather Customer Requirements Phase

| Concept (Work- Packages 1 to 8) | Detailed Requirement (WP 9-19) | Sign-off Review (WP 20&21) | | |

Solution Design, Selection and Approval   Phase

Identify Supplier (WP 22)   Technical Options (Work Packages 22 to 29)   Agree Contract (WP30)

Testing of Business & Technology Integration Phase

Model Office (WP 58 & 59)   Draft Test Scenarios (WP 60 to 118)   (WP 119)

Execute Tests (WP T-1 to T-834)

5.2.3.3.2.5   *Stage Boundary Selection*

Steps to select stage boundaries might be:

➢ Create the **A16-**Project Plan's schedule component, even if only crudely.

> Then 'draw lines, at right-angles to the timeline through major points of accomplishment' to select appropriate chunks of work to delegate to the project manager as a budgeted and resourced stage.

> The number of stages will balance the project board's availability for End Stage Assessments (ESA) to deliberate if the project board will **[13.4.3 Authorise a Stage ~~or Exception~~ Plan]**) with their willingness to pay for controls and their willingness to make larger allocations of funds with fewer end-stage assessment review points to check status.

The 'lines' will split some phases. We will use product based planning to identify discrete boundaries to the budgeted, authorised scope of each stage that removes the ambiguity that might otherwise result from splitting a phase's work.

5.2.3.4 Plans, Planning and Standards

Plans are compound collections of information that may be presented in any format agreed by stakeholders. Often corporate standards define expected content and presentation. Embedding should adopt, adapt the organisations standard set or more likely if you are embedding PRINCE2® it is because you need to implement a standard set. All subsequent projects should tailoring the set for project specific needs.

(Focus on Products principle, Plans theme, PBP technique)

5.2.3.4.1   What Is A Plan?

SOOP-25.   A plan is the statement of objectives, the 'WHAT' that we want to have achieved when we have finished the project. After 'what' everything else to do with a plan is rather more uncertain.

Planning defines the collection of options available to the project management team for HOW to achieve the what. The current plan is the currently selected set of options.

As Eisenhower said "In preparing for battle I have always found that plans are useless…"

5.2.3.4.1.1   Planning is Indispensible

Eisenhower's quote ends "…but planning is indispensible". Planning delivers shared consciousness, shared understanding of options available.

> By planning the project management team seek to identify where work must be coordinated and integrated and where coordination is not vital.
> Most importantly the results of planning are the project management team's shared knowledge of the options available for use during execution that can be adopted as and when the context demands reappraisal of intentions.

5.2.3.4.1.2   Plans ARE Estimates

A plan contains <u>forecasts</u> of the tasks (how) and timeframes (when) and assignments (who/ what resources) we <u>think</u> are required to achieve the objectives.

Since <u>all elements of a plan are estimates</u> or predictions then they include uncertainty. To be accurate in the context of uncertainty requires specification of tolerances. If accuracy (veracity, truthfulness, reliability) is to be maintained then precision reduces if we are to maintain accuracy. Tolerances must be wider when:

➢ our experience is low or
➢ we look further into the future.

Plans are estimates.

SOOP-26.   Estimates differ from guesses because they INCLUDE an audit trail to justify their contents: both can be wrong but in an estimate you can spot it, tell why and make corrections.
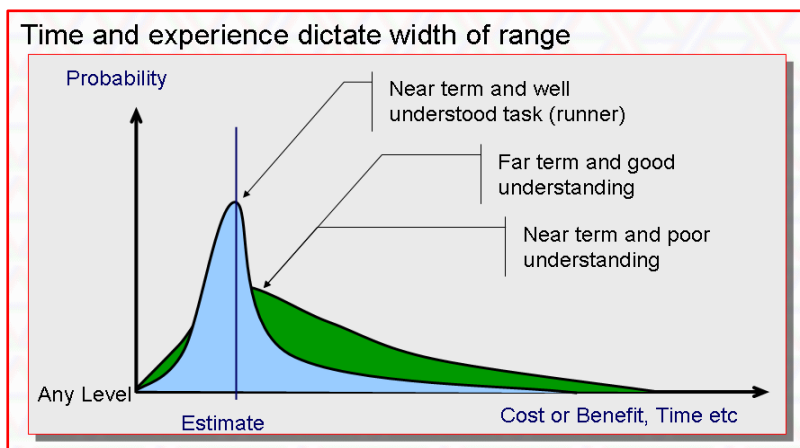
5.2.3.4.1.3   Forecasting Improves With Experience

A plan is a 'pre-diction' or 'fore-cast' of the future. If you could predict the future reliably you would have placed a few bets and retired long ago! Obviously we cannot predict the future with certainty.

If we are sensible planners then we base the contents of plans on as much <u>previous experience</u> as we can bring to bear. To be experienced in some technical discipline equates to 'able to link causes and effects reliably'. Reliable means what we say will happen does happen!

The more our experience and the less the number, range and instability of the variables in the plan then reliability extends a greater level of detail further into the future, than was possible when we were not experienced.

5.2.3.4.1.4   Balancing Detail and Time-Frame

All planning must balance detail with time frame. The aim is always to be as precise as is useful, while still being accurate given what we currently know. The closer the match between our suggestion of causes and effects will be and the greater the <u>confidence</u> we can place in the plan at narrower ranges further into the future.

(Learning from Experience principle – which is partially a synonym for 'estimating technique', Plans and Risk themes).

5.2.3.4.1.5   Simplicity and Complexity

SOOP-27.   Another way of expressing how far ahead we can plan is to say simplicity means 'cause and effect are known in both directions: defined results and only those results from defined triggers, defined triggers and only those triggers to generate defined results'. In the 'simple' case we can plan to infinity with absolute confidence. As complexity rises so we suffer an increasing degree of failure in ability to state or link cause and effect and thus reduced capacity to plan with precision into the future while maintaining accuracy.

5.2.3.4.1.6   Simplicity = Knowledge of Cause and Effect

The opposite is also true: decreasing knowledge of case and effect = growing complexity. Command and control versus a plan doesn't work in a complex environment.

In the command and control mind-set uncertainty is eliminated by the creation of the plan and all decisions outside of following the plan are escalated. Like all long held beliefs this has lots of truth in it: it just isn't the whole or even the only truth.

5.2.3.4.1.7   An Agile or Complex Adaptive Systems Approach

The notion that all uncertainty goes upwards for decision making is unhelpful in the complex project for several reasons.

➢ Our ability to predict cause and effect (which is profoundly what a plan is – a prediction of cause and effect – decreases when either or both of "what" and "how" are unclear.
➢ In more complex projects the influence of decisions (causes and effects) spreads through a wider set of linkages (more connections),
➢ and often faster and more dramatically than in simple projects (multiple linkages reinforce, resonate or cancel-out),
➢ The number of situational decision required increases and thus
➢ The time available per decision with more factors, less visibility and wider affects decreases.

Conclusion: the escalation path (project manager first, exec and project board second) becomes a decision making bottleneck whose reaction time is insufficient to make adaptive correction or catch perfective opportunities.

The solution is in a different form of project control to that described in the official manual. In these contexts PRINCE2® has a wholly usable architecture. As it is based on management by exception and tolerances it suits "objective/ incentive/ trigger/ monitor and adapt solution design and delivery" approaches. With understanding of the principles PRINCE2® can easily be applied.

The interested reader is referred to Surfing the Edge of Chaos by Pascale, Millemann & Gioja ISBN-10 0-609-80883-4.

I offer consulting services on this aspect of project delivery.

5.2.3.4.2   Plan = Shared Consciousness

The planning of a project has many outputs. The most important for project success is the shared involvement, understanding and thus motivation that it creates.

5.2.3.4.2.1   Planning Is A Collaborative Activity

Social planning uses involvement to generate understanding and thus the ability to explore objections and disbelief.

SOOP-28.   A usable plan is a shared consciousness: however it is represented or arrived at.

Expression of disbelief allows for debate and exploration of options to find acceptable solutions. Debate brings participants through understanding and options development to a position of belief and onwards to willingness to contribute.

If during planning we create understanding then amending schedules (and all other project elements) is comparatively easy, and without it may be impossible.

5.2.3.4.2.2   Doubts are OK But Commitment is Required for Sucess

If belief and willingness to contribute are not created in project stakeholders then releasing them from project involvement (or cancelling the project) should be considered. Those who cannot commit will be correct when they say "Can't". Objections should be encouraged but must be satisfied by provisions in the baseline and sound reasoning.

"Whether you say you can or you can't you are right" – Walt Disney (apparently).

SOOP-29.   Creation of a usable plan must be (is best) done as a social activity. Planning is about understanding and buy-in not schedules. Schedules change.

5.2.3.4.2.3   *Planning = Identifying Options*

Also important is the exploration of options that will be available when risk or issue (possible or inevitable, mandatory or discretionary change) requires consideration of alternate routes forward.

SOOP-30.   'Making a plan' mostly involves selection between options whose merits we cannot distinguish while planning. Later, during execution the shared consciousness from planning allows for swift and coordinated revision of the currently selected route to achieve the one certain part of the plan: the objective.

SOOP-31.   Useful plans are understood, agreed, committed to, achievable and subject to situational change: ultimately plans are a bunch of options and the mind-set to treat the options flexibly.

5.2.3.4.3   Plan Backwards from the Outcomes

An assertion above was "A plan is the statement of objectives, the 'WHAT' that we want to have achieved when we have finished the project…" The 'solid' part of the plan is the statement of objective.

Planning as a process is thus conducted first by defining the end result and then second by working backwards: sometimes called 'right to left planning' or back-casting to define the actions to achieve the end result.

1. first know the desired result or target
2. then we iteratively decompose 'what is to be delivered' until 'what' has no further useful decomposition
3. then decompose 'what' by its life-cycle to expose 'how to make or acquire and use it' (physical deliverables) or 'how to make it happen' (non-physical deliverables).
4. 0.

PRINCE2® uses product based ~~planning~~ scoping within these steps. NLP practitioners should recognise the "from the end back to today" approach to achieving success.

5.2.3.4.4   Concept: Project Managers Do Not Plan

The official manual makes two observations that sadly bear repeating (with a little adjustment) as they are not as well known as they should be.

1. "Project managers do not plan (the technical activity)". The project manager orchestrates planning activity to combine the contributions from all parties.
   - Those who define 'what' is wanted and
   - those who define 'how' to create it,
   - those with an interest in product quality standards and
   - those with development skills and knowledge of process quality standards.

The project manager's skill should be in focussing a group on an end point and creating a team whose shared contributions will achieve the results required.

2. Resourced schedules of activity include the activities to create plans, to maintain plans and registers, to analyse status, to report and to take actions on the results. Plans also include provision for uncertainty.

   IE plans include the project management activities or 'control overheads' as well as the technical activities and contingencies.

   The controls embedded within the plan are the elements that the project manager contributes. Controls describe activity to ensure 'project safety' at a level of rigor required by the project board.

3. 0.

The project manager and exec should recognise the size of item 2 is based on how much shared understanding and humour the senior user(s) constituents show and how much solution specific domain knowledge (and humour) the senior supplier(s) staff possess.

5.2.3.4.5 Planning IS NOT Based On The Gantt Chart

The Gantt Chart is an excellent visual summary of a project's scope of work and schedule. It is an excellent reporting tool.

The Gantt chart is however very limited as a planning tool. It lends itself to determination of required resource profiles and then to calculation of time-phased budgets but little else.

[This is one of those 'first principle' rules you can break when you know the consequences.]

Planning with a Gantt chart means resolving every project planning question simultaneously with one generalised tool (and generally as a solitary activity in front of a computer screen).

Possible for well understood problems where buy-in is unimportant. A mistake the rest of the time. Solitary planning of group action is highly likely to end in failure, as is believing that software tools can plan - they only document what people have planned.

5.2.3.4.5.1   Planning For Challenging Environments

Where cause and effect are less well understood, where 'what' or 'how' are unclear then producing reliable plans is harder. Planning in this context will be easier if we resolve each 'what', 'how', 'who', ;when' question one at a time with powerful tools focussed on the specific questions in hand. The Gantt is irrelevant until we get to resolving 'who and when' resource constraints.

5.2.3.4.5.2   Software Can't Plan (But It Can Schedule)

After social planning sessions to determine 'what' and 'how' then planning may be assisted by software tools. Software tools can rapidly recalculate resource profiles, critical paths and cash-flows as trade-offs are attempted to accommodate resource constraints – but recalculation is all that software can do.

5.2.3.4.5.3   Gantt and Iceberg

If viewed as an iceberg then the tools and techniques of planning are all the precursory steps "below the water-line" that support the final visible Gantt summary of so much sharing, analysis and synthesis. The "plan" in total adds all the acceptance criteria, risk responses, control strategies and assigned roles and responsibilities and diary of tasks together to form a common understanding and willingness to contribute amongst the stakeholders.

5.2.3.4.5.4   Jet Fighter Speed Pass: Planning Procedure

The mechanics of planning are easy to describe. The basic process-flow for planning is the same in every project and every stage and every work package (and programme). We will cover the details when we get to **[14.4.6** Create the Project Plan]. In brief for now…

…to plan the *master task list* is:

1. Find the stakeholders with power and interest. Use influence maps to decide your communications strategy
2. Define powerful stakeholder's view of the end point as clearly as is practical using Goal Statements, Product Breakdown Structures (PBS) and **A17-**Product Description for product Acceptance Criteria (AC).

   Ensure that appetite for risk is explored and all outcome oriented, benefits related, or strategic risk ss seen by the stakeholders is noted and analysed.
3. Ensure the tasks to build the products, manage the project and respond to tactical and strategic risk are defined as completely and clearly as practical, using **A26-**Work Packages. Cross-reference process acceptance criteria from the Quality Management System (QMS). Ensure all tasks to achieve the end point under control and with regard to threats and opportunity are within the Work Breakdown Structures

   [PRINCE2® says Product Flow Diagram (PFD)s are used to indentify tasks and their sequencing in this and the next step but since planning the Polaris Submarines project 50 years ago PFD's place in reality has been overtaken by other techniques – IMHO. Polaris also gave us the PERT estimating formula whose usefulness persists but Activity on the Arrow networks (IE PFDs) do not. More later]
4. Put the tasks (product realisation tasks, quality and risk driven tasks and management tasks) in sequence using Network Precedence Diagrams aka Activity on the Node diagrams – for a long time Microsoft® Project wrongly called these PERT Charts.

5. Determine task work-content with as much precision as is practical using cheap and quick estimating methods, approaches and techniques,

6. Apply available resources and compute durations based on (Work / (Availability * Productivity)). Compute costs based on (Resources * Unit Rates * Durations). Where there are choices note them and make a selection

7. Perform a first crude critical path calculation

8. Analyse 'hot-spots'.

   - Where there are choices note them and make a selection
   - Re-jig resourcing (using smoothing, levelling and 'crashing')
   - Re-jig dependencies (using 'fast-tracking')
   - Re-estimate key elements of the plan with more refined (more expensive) estimating techniques

   Repeat until an acceptable balance of resources, schedule, provision for change and risks and any other factors of concern results.

   Re-jigging and re-estimating work and resources is situational: for example improving the precision of durations on the critical path is worth the cost if delivery date is the sponsor's key measure of project success.

9. Review and if desirable revise any choices made.

10. Baseline the balance of resources and schedule committed to goal-oriented tasks (product, quality & control), and to provision (±) for risks and change.

11. 0.

At least steps 5 and 6 (perhaps 3 thru 9) happen in parallel or either order. All the steps have a degree of iteration.

*SOOP-32.   The planning steps are used when planning from scratch **AND** when replanning to affect the minor corrections needed to steer the current course under control **AND when conducting Impact Analysis for change management**.*

After planning the team should work to the baseline until tasks are done and thus results achieved, then close the project.

If at any point clarity increases, or actual status is off the plan, or stakeholders want a new end point or a new way to achieve the currently desired end point emerges then just repeat planning from the earliest step you have to.

5.2.3.4.5.5   *A16-Plan (Project) (Stage) (Team) Product Description*

Any of the plans produced by the steps above might contain (all elements will be explained and techniques for deriving them discussed as we go) {

➢ Description of project, stage or team objectives the plan is intended to deliver including context such as delivery approach and whether this is a response to an exception.

   References to the **A14**-Lesson Log and **A15**-Lesson Report may be appropriate to explain some aspects of approach, assumptions etc.

➢ All prerequisite success factors whose presence aids success.

Specifically Critical Success Factors (CSFs) that must be in place for the plan to succeed. EG Dependencies such as provision of the requirements specifications, resources and access to decision makers such as project board members.

➢ Unknown or uncertain material facts upon which planning and execution are based. Also known as 'Assumptions and Risks'.

➢ All technical and management products to be progressed through phases of their life-spans that overlap this project or stage's duration. For each:-

- (cross reference to) **A17-**Product Descriptions in the plan's scope and the Product Breakdown Structure (PBS) elements that model them
- The tasks required to create products
- The resources consumed
- The timing of tasks.

   Tasks includes those technical activities to create outputs that deliver the senior user(s)'s requirements, the quality tasks to verify, monitor, report and control product creation and all tasks for progress monitoring and control and reporting

   All tasks for the upkeep of project management products (A1 to A26) used for control as dictated by the four strategies created in the Initiation Stage or updated at Managing a Stage Boundary (SB)

- all contingent (militating) tasks for identified risks (±)
- any tasks for realisation of benefits within planning scope

   Exam wise work may be expressed in a Product Flow Diagram (PFD). In reality a Work-Breakdown Structure extension of the PFD followed by an Activity on the Node (AON) precedence network and then Time-scaled Network Diagram (Gantt chart that includes dependencies) are more appropriate.

In the **A16-**Stage Plans work is recorded at the level of individual **A26-**Work Packages.

➢ Allocations of resources (human, material, plant and machinery) to tasks

May include a representations such as a Responsibility Assignment Matrix and time-phased resource histograms by resource type

➢ Budgets (Expected rates of resource consumption).

These may be expressed in time-phased cash-flows and resource histograms.

Budgets include

- primary allocations (known work) plus
- tolerances (natural variation in known work),
- contingencies (allowances for known unknowns),
- reserves (allowances for unknown unknowns) and
- allowances for change (provision for future as yet unspecified requirements and the rework of screw-ups).

Where these are expressed in time they extend the critical path, where expressed in currency they will increase the budget at completion (BAC). Budgets and allowances may by expressed in other dimensions such as variations in scope or quality. Product quality tolerances are included in the **A17**-Product Description and project benefits tolerance in the **A2**-Business Case.

}

5.2.3.4.5.6   *An Exception Plan*

Any plan that is replaced due to a tolerance breach (or any other reason?) is an 'exception plan'. Exam wise PRINCE2® says "It runs from the point of exception to the end of the plan it replaces and is identical in format". Reality is it runs from 'now' to the when now seems sensible for it to stop in a format or detail level that now seems appropriate.

5.2.3.4.6   *Planning Levels*

PRINCE2® uses plans at several levels: **A16**-Plan (Project) (Stage) (Team). The top level is the mandatory **A16**-Project plan, below that are the required **A16**-Stage Plans and below those are optional **A16**-Team Plans.

The **A16**-Project Plan should plot a course to the end of the project [and be below the sponsor's investment or strategic plan that plots the course of the benefits management regime (BMR) that includes this project and beyond up to the end of the return on investment.]

5.2.3.4.7   *Mandatory and Required Terminology*

The **A16**-Project plan should be couched in terms of achievements, outcomes not actions. The project board's interest should be to manage achievement not get sucked into the detail of technical activity without specific diagnostic needs.

PRINCE2® says "Project plans are **mandatory**" and **product** focussed while stage and team plans are **task** focussed. PRINCE2® also says "At least some form of task or day-to-day level of plan (stage plan) is **required** for adequate control".

5.2.3.4.7.1   *Mandatory versus Required*

The mandatory versus required vocabulary means the **A16**-Project Plan may include the **A16**-Stage Plan. The vocabulary covers varying project size: in small projects tiered plans may not help and so task level may be included in the project plan.

In larger projects multi-tier plans may be essential. In a technically diverse project task detail may be broken out into individual team plans. Plan content, and presentational format should be varied to suite the project management team's needs.

5.2.3.4.8 Correct Detail: Board's Desire For Detail

In some cases the project board may insist on stage level detail in the plan they monitor the project against. In these cases the stage-plan's detail may be included within the project plan and thus mandatory and required stipulations are met within a single schedule. Project planning tools support the mechanism well too.

	Task Name	Duration	07:59	08:00	08:01	08:02	08:03	08:04	08:05	08:06	08:07	08:08	08:09	08:10	08:11	08:12	08:13	0
1	☐ Breakfast	13 mins																
2	Start	0 days	◆ 15/03															
3	☐ Cup Of Tea	7 mins																
9	☐ Toast & Marmalade	5 mins																
14	☐ Laid Table	2 mins																
18	☐ Meal	10 mins																
24	Ask Kids to Wash-Up	1 min															Mum	
25	Done	0 days															◆ 15/03	

5.2.3.4.8.1 Correct Detail: A16-Project Plan

The PRINCE2® **A16**-Project Plan has the correct content when it covers the entire duration of the project and is at the correct level of detail when it <u>matches the project board's appetite for control</u>.

The **A16**-Project Plan provides the baseline against which the project board should monitor progress. The **A16**-Project Plan is created during the Initiation Stage (activity **[14.4.6** Create the Project Plan]) and is refreshed at each stage end (**[17.4.2** Update the Project Plan] and **[18.4.1** Prepare planned closure]).

The **A16**-Project Plan covers the project's whole scope in product terms. It is created by back-casting from the project's end-point. Therefore the pre-requisite to creating the **A16**-Project Plan is the **A19**-Project Brief { Project definition { <u>Project objectives, Desired outcome</u>, … }, … **A21**-Project Product Description, … }. (Recall "{" introduces the "is composed of" relationship).

The **A16**-Project Plan must identify stage boundaries, technical reviews required for project board control and costs and timescales sufficiently for **A2**-Business Case appraisal of the investment.

5.2.3.4.8.2 Correct Detail: A16-Stage Plan

The **A16**-Stage Plan is a day-to-day level task oriented view of just the next stage (period of time).

Stage plans (and Team plans if used) are at the correct level if they provide the baseline for progress control of all <u>activities</u> by project manager and team member/ managers.

A16-Stage Plans and **A16**-Team Plans are created by back-casting the activities of the Work Breakdown Structure (WBS) from the lifecycle of the products in the Product Breakdown Structure (PBS).

5.2.3.4.8.3   Creating **A16-**Stage Plans

Detailed **A16-**Stage Plans are prepared at three [actually four] points in the time-line:

➢ Towards the end of SU when the Initiation Stage Plan is created,
➢ At the end of the Initiation Stage and
➢ At the end of benefits enabling stages that are followed by another stage (if any)
➢ [As we approach transition of outputs into business-as-usual and thus the benefits harvesting activities].

5.2.3.4.8.4   Managing a Stage Boundary (SB) Creates **A16-**Stage Plan

Within stages (and SU) that are followed by another stage the project management team follow Managing a Stage Boundary (SB)'s **[17.4.1** Plan the next stage] to create each *next* **A16-**Stage Plan.

For SU the official manual doesn't provide guidance on "how to plan Initiation": probably because of the 'religious assertion' that "SU is not a stage" (***See PRINCE2® Says "Starting up a Project is before a project formally starts" pg 5.2.3:- 54 -***). I recommend that to plan the Initiation Stage you follow the same steps as describe for **[17.4.1** Plan the next stage] *See X on Y*.

Once created and approved stage plans are used by the project manager to guide activity in the Initiation and each benefits enabling (new) *current* stage (Stages principle, Plans theme).

5.2.3.4.9   The 'Real' Project Plan

[The 'view to the end of the project' or overall 'Project Plan' is not a less precise plan identical in form to **A16-**Team Plans and **A16-**Stage Plans. The official manual does describe the **A16-**Project Plan and the other two plans as all based on the same A16 template in the management product's appendix. Truly the 'Project Plan' without the "**A16-**" prefix is the whole **A20-**Project Initiation Document: it says what result will be achieved with all the contextual information about alternate options and control strategies.

The **A16-**(Project) (Stage) (Team) Plans (with the prefix) are each the description at some level of detail of the currently selected route to the current target around the current constraints.

While the A16 template is clearly wider in scope than a schedule and resource profile the official manual mostly treats all 'plans' based on it as 'schedules in Gantt format' while saying explicitly that that isn't what they are. As long as you view and use the **A20-**Project Initiation Document as the project plan then all A16 products can be regarded and used as 'mostly schedule'.]

5.2.3.4.10 Evolution of The Detail

Detail evolves over time as the project management team learn more about the project. The first level of detail is the project mandate.

Second is the **A19-**Project Brief and contained { Project definition { Project objectives, Desired outcome…}, … and **A21-**Project Product Description, … }.

The **A19-**Project Brief and its component parts define what the project's outcome will be when we reach project closure. It is prepared while the project management team **[12.4.4** Prepare the outline Business Case].

[12.4.4 Prepare the outline Business Case]'s view is a preliminary view created in Starting up a Project (SU). Through out the Initiation Stage the project management team prepare and refine that view to create the **A20-**Project Initiation Document { Project definition { Project objectives and desired outcomes, … }, … **A16-**Project Plan, … }. The **A20-**Project Initiation Document clarifies and extends the definition of the outputs to be created with schedule and cash-flow up-to project closure.

==The project board must provide resource and support determined by target and constraint to achieve the result.]==

5.2.3.4.10.1   Product Checklist

Depending on the project board's preferences the **A16-**Project Plan may be restricted to the level of just project outputs and their delivery dates (or as we've seen it may extend in detail to also fulfil the needs of the project manager for **A16-**Stage Plan levels of day-to-day control).

When the project plan stops at the level of product delivery dates (and other key milestone) it may be called a Product Check-List.

5.2.3.4.11 Rolling Wave Planning

"Rolling Wave" is a name sometimes given to the planning and scheduling regimen where objectives, outputs, tasks and resource allocations are defined at varying levels of granularity. Detail is matched to the reducing visibility between today and project horizons. Granularity of plans is periodically extended to recognise that while we have moved forward we know more, but also that the horizon has also moved onwards.

The PRINCE2® concept of stages and the Project Management Institute's A Guide to the Project Management Body of Knowledge (PMBOK® Guide) concept of Rolling Wave planning are at least compatible perhaps even identical. Release and sprint planning are simply other labels for the implementation of rolling wave planning.

5.2.3.4.11.1   Time Frames

Typically:

> During the concept phase – which should perhaps align to the Starting up a Project (SU) process and Initiation Stage – the details are sketchiest, tolerances are widest and the **A16**-Project Plan is least definitive.

  The **A16**-Project Plan must reach a level of detail sufficient to sanction the investment required to capture requirements and preferably to the end of the investment. In an agile world the amount to invest may be the specified constraint.

> During any requirements and design phases – typically the first specialist stage – tolerances and detail of future stage plans will be tightening.

  The **A16**-Project Plan must reach a level of detail sufficient to sanction the investment or the project should stop.

> For construction and delivery phases – typically the last specialist stage – both **A16**-Project Plan and **A16**-Stage Plans may be capable of the same detail: only differing needs of the audience separate the contents as <u>work</u> in stage plans and <u>products</u> in project plan.

5.2.3.4.11.2   Evolving Detail = Periodic Planning

The project management team's task to **[17.4.1** Plan the next stage] towards each stage end is the implementation of "Rolling Wave Planning" aka 'continual elaboration' aka 'successive elaboration' concept. The **A20**-Project Initiation Document's details are extended in depth (and possible distance into the future) to match our appetite for prescribed control versus reactive control.
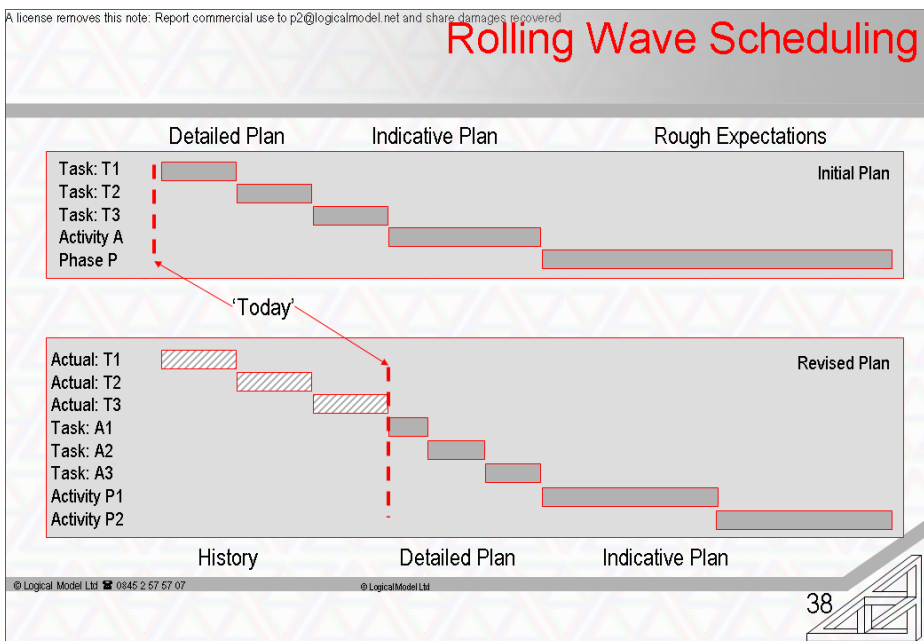
5.2.3.4.11.3   Base-Lining of Plans

The **A16**-Project Plan is baselined when the project board **[13.4.2** Authorise the project] and reaffirmed when the **A16**-Stage Plan is baselined to **[13.4.3** Authorise a Stage or Exception Plan]. The **A16**-Team Plan is baselined by the project manager either while the project management team **[17.4.1** Plan the next stage] or during the dialogue to **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package].

5.2.3.4.12 Concerns: Being Or Wanting to Be Off-Plan

PRINCE2® defines a control structure: "PRojects IN Controlled Environments". The assumption is that having put time and effort into creating a good plan the project will run to it. Reality isn't often like that. The focus of the control structure is on detecting and responding to potential or actual variances versus baselines whether good or bad.

5.2.3.4.12.1   Creating the Baseline

If appropriate effort is spent during planning then the project management team will know who is currently agreed to be doing what when and why. Anything different is 'change control'.

Well conducted social planning sessions not only create baselines. They also create teams that know what options are available to do something differently or at a different time, with different people or in a different way to that defined in the current plan. They will also know the circumstances that where foreseen but whose responses could not be fully decided or scheduled (IE contingent threat and opportunity responses) and what was outside of any thinking that influenced the plan's contents.

5.2.3.4.12.2   Executing The Baseline

During project execution potential to be off-plan or failure to be 'on-plan', or an emergent desire to be 'off-plan' gives rise to variances aka changes. Variances need consideration of alternate responses if change is to be under control. IE a possible need for planning of new options but a definite need to select between options available (fresh authorisations) and thus amendment to plans, perhaps within tolerances or maybe not.

5.2.3.4.12.3   Change Control and Exception Handling Procedure

The official manual's activities of **[15.4.4** Review stage status], **[15.4.6** Capture and examine issues and risks] and **[15.4.7** Escalate issue and risks] combine into one procedure the consideration of concerns across a continuum that ranges at one extreme from the handling of minor questions, progresses through the resolution of discretionary Requests For Change (RFC), handling of uncertainties (risks) and 'ends' with the mandatory contractual liability to remedy screw-ups.

The attempt to integrate the handling of all the various causes of concerns that the project management team may encounter is desirable and well intentioned.

It has advantages, it is 'real-world' but a universally applicable procedure must be based on clear and complete insight. The official manual's insights are incomplete (EG 'issue' like risk can be positive or negative, and risk like issue can be within tolerance or out of tolerances), all can be 'treatable' or not as explored shortly.

5.2.3.4.12.4   Separate Strategies

The project execution process thus combines risk and issue handling. The work of the Initiation Stage to define risk and issue management strategies is not described in an integrated manner in the official manual but probably should be in your embedding and tailoring. For example it makes sense to combine the **A12-**Issue Register and **A25-**Risk Registers, to use a single set of assessment scales and merge the assessment procedures, also described shortly ***See X on Y***.

5.2.3.4.12.5   Authority Determines Treatment Path

It is not the label on the concern (Off-Specification, Risk, Request for Change, Query or other) but the authority needed to alter baselines that determines processing: the official manual missed an insight here. A risk and a request for change are essentially identical:

➢ RFC: what if we did this, how would the **A2-**Business Case stack-up? And
➢ Risk: this might happen, how will we respond and how will the **A2-**Business Case stack-up as a result?

PRINCE2®calls all these and more 'project issues' and this is the root of the biggest weaknesses in the method's formulation. Elimination of the weaknesses is easy.

5.2.3.4.13 The Issue with Issues

How to handle all the different causes and consequences of variance to baseline requires recognition of a set of characteristics whose combinations create complexity.

5.2.3.4.13.1   Wide Definition

To support an integrated approach PRINCE2® chose a very wide definition of 'issue'. Their definition of issue [pg 307] is:

➢ "A relevant event that has happened, was not planned, and requires management action. It can be any concern, query, Request For Change, suggestion or Off Specification raised during a project. Project issues can be about anything to do with the project." (sic.)

   Elsewhere [pg 176 and 9.2.3] the definition adds up to "any question raised at any time by anyone".

The "Issue" may actually be a risk or may be neither a risk or an 'issue' at all! This vocabulary is far too vague.

Creation of practical, industrial strength solutions to complex topics starts with precise language that leads to accurate definitions and then appropriate, cost-effective procedures. 'ISSUE' is a key concept that needs clear definition. I will label all of this 'anyone at any time' stuff to be 'concerns' and I will define and use the term 'issue' with care.

5.2.3.4.13.2   Unsatisfactory Management of Concerns

The broad and unsatisfactory definition of issue may have arisen from the current official manual's authors noting the similarities between Risk, Question, Request For Change and Off-Specification (and all other concerns) mean common handling is possible.

That the definition is unsatisfactory does arise from not analysing the dimensions completely.

5.2.3.4.13.3   Mistake Leads To Mistake

If everything is an 'issue' then this creates a spectre of bureaucracy for trivial questions passing through the same procedure as major items of concern. Everything passing through the same procedure WOULD be a strength but the method places the safety valve in the wrong place!

The official manual says "If the concern is considered trivial it is logged to the **A7-**Daily Log and is treated 'informally' " – here be dragons: this advice needs discussion and I am about to contradict it.

Appearing to be bureaucratic (even if the perception is wrong) touches a raw nerve for some stakeholders in the method. There sensitivity to accusations of the method being an administrative burden generates a reaction, perhaps an incorrect reaction. One mistake (the definition of issue) leading to another mistake (a misguided escape route from the common procedure).

5.2.3.4.13.4   Informal is Inconsistent

In the 'informal' route the official manual suggests the concern is only recorded in the **A7-**Daily Log. Sadly this weakens good governance of 'concerns'. As the official manual itself says "…they [risks and issues] will need to be captured in a consistent and reliable way" [pg 176]. The manual then spoils its own advise by saying "if an issue can be dealt with by the project manager informally then this should be done and a note made in the daily log" [(sic) pg 177].

Recording some issues to the issue register, some to the risk register and some to the **A7-**Daily Log is not "consistent". This muddled approach opens a dangerous but easily avoided exposure to a breakdown in procedure. As defined the method encourages rather than eliminates the potential for any given concern being either duplicated, missed or mishandled. No Audit department should sanction recording project issues other than in the project's mainstream and public records.

5.2.3.4.13.5   Decisions Before Assessment

The official manual's procedures stumble over the resulting inconsistencies. For Example: the distinction of 'formal' versus 'informal' is an <u>assessment</u> yet we are only in the <u>capture</u> step not the examine step when this assessment is made. Further which register the item raised should be recorded in also needs to be assessed before assessment!

The right answer, as explained later is that the first action for every concern is that they are captured to a single Register of Concerns. ***See X on Y.***

5.2.3.4.13.6   'Informal' Is A Wrong Distinction Anyway!

The project manager handling something within the defined activities of the **A20-**Project Initiation Document's control strategies IS, by definition, 'formal' ["in accord with defined form or standards"**]**. The correct insight is "requires escalation (or not)", that decision is AFTER assessment, which is after capture and does segregate concerns in a way that reflects handling needs that balance the concerns significance with its handling's effort, cost and rigour.

5.2.3.4.13.7   Pre-Assessment Assessments

Two post capture and pre-assessment assessment that are useful are:

➢ "Is the concern likely to be expensive to assess (or not)?"
➢ Will <u>action</u> to resolve it sit entirely with the project manager, will it create or amend **A26-**Work Packages assigned to others? Or will it need escalation for analysis or for resolution?

These two preliminary assessments, and all other actions should be taken after recording the concern.

5.2.3.4.14 Definition of Concern

To start with I will re-label and extend "anything that <u>has</u> happened…" to be "anything that has or<u> may</u> happen":…Concerns may arise because of what is in the future as much as what is in the past.

SOOP-33.   *[**A concern** is anything outside of current plans raised at any time by anyone for any purpose.*

'Concern' covers the need to consider any aspect of the initiative of which the project is a part: whether current or future, with any degree of (un-) certainty, whether responses is mandatory or discretionary, major or minor, in tolerances or not, intolerable or not, desirable or not, possible or not and no matter who is affected or who funds or who decides its treatment.]

5.2.3.4.15 Definition of Problems or Issue

Risks are differentiated from issues (and problems) by the dimension of 'uncertainty'. <u>All concerns are either certain or not</u>. Those that are not certain are risks.
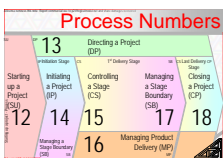
Those that are certain are either issues or they are 'problems': issue and problem are vocabulary that is missing from PRINCE2® although "off-plan outside tolerance" and "off-plan within tolerance" almost match issue and problem.

SOOP-34.   A problem is an off-baseline state within my (our) skill AND authority to resolve. IE a problem is an inevitable and treatable concern.

SOOP-35.   An issue is an off-baseline state outside my skills OR authority. IE an issue is a concern that is inevitable and untreatable by me.

These extend the definitions supported by the APM BoK 5th edition section 3.8 first paragraph. The APM are explicit that issue always has a negative outcome and note only an authority limit not an expertise shortage whereas I recognise reality provides positive and negative situations outside my ability and or authority to tackle.

Note: 'inevitable' – the state of concern may have already arrived or may still be in the future, but now unavoidable

5.2.3.4.15.1   Treatable or Not

For a **risk or issue** to be treatable we need authority **and** knowledge. If either is missing the concern is untreatable. Note this distinction is separate from a concern's urgency or its significance.

*SOOP-36.   An untreatable concern is any actual or imaginable off-baseline that we are not authorised **OR** not knowledgeable/ skilled enough to deal with. The concern becomes treatable by presenting it to someone with (access to) sufficient knowledge and skill to understand the options **AND** authority to make a decision. There are risks and issues that are untreatable with the resources of the enterprise (or planet).*

5.2.3.4.15.2   Untreatable Project Concerns

Not all concerns are treatable: not all project issues have a known destination and/ or affordable solution that down-grades them into treatable concerns.

For example everyone on this planet lives with the concern that another large chunk of rock will crash into it and the Yellowstone caldera will at some point explode. Both are events whose probability is certain and cannot be altered, which ever comes first will remove management of projects and much else from the survivor's thoughts for a very long time.

Untreatable project issues will rise to the executive to discuss with sponsor or portfolio management board and can remain untreatable - outside knowledge/ skills/ resources to resolve. The choice now is "are they tolerable?"

If the project continues to consume resources with an untreatable concern that bears upon the benefits then the project is proceeding "at a risk" and that risk is being accepted by the investors: Exec, sponsor and portfolio management board.

5.2.3.4.15.3   Good Ideas in Management of Concerns

Making the process to raise a concern "anyone at any time may raise anything as a concern" is a good idea - it improves our chances of finding items of significance and finding them earlier.

Labelling what is raised generically as a 'concern' until after assessment is a good idea, dropping the idea of "informal treatment" is also a good idea.

Together they improve the chances that all concerns will now be correctly recorded (for reality but not in an exam-cram) in the Register of Concerns and thus be visible, auditable and addressable.

5.2.3.4.15.4   Starting up a Project (SU) and the Initiation Stage Lay the Foundations For Management of Concerns

Starting up a Project (SU) and the Initiation Stage are where stakeholders are identified, their interests, skills and contributions are identified, the clarity and stability of their goals assessed. These are the inputs to creation of the baselines that all concerns are relative too.

Ease of management of concerns, volume of concerns encountered, and adequacy of budget to run the procedures to manage concerns and address the concerns being managed is proportional to the effort spent in Starting up a Project (SU) and the Initiation Stage.

➢ If social planning techniques were used in earlier phases of the project then stakeholders will find a preliminary scan of newly raised issues quick and easy to perform and they will be well prepared for impact analysis activities.
➢ If change control is unexpectedly frequent it is because development of the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, … } and the **A20-**Project Initiation Document were not well performed.
➢ If change control is under resourced and under funded it is because stakeholder analysis was not well performed or didn't feed into realistic allowances (look-out for 'humour' in discussions of stakeholder assessments and planning).
➢ If impact assessment is tough it is because social planning was skipped or poorly performed at team, stage or project level.

5.2.3.4.16 Summary of the Principles of Plans

A meaningful approach to plans rest on the following good observations:

1. the further into the future your schedule runs the wider the tolerances must be if it is to represents a possible reality
2. the project board should focus on results/ impacts that enable benefits not the specialist's tasks.
3. The project manager should focus on the specialist's activity at task-level or "day-to-day" control level and

4. the project manager cannot be (should not try to be) a guru in any of the technical team's skill-sets.

5. Reality doesn't follow the plan, therefore social planning is crucial to enabling swift handling of concerns

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The 2009 official manual clouded the issue on point 2 and reporting against plan by adding activity reporting to the **A11-**Highlight Report. We'll address good concept later.

5.2.3.4.16.1   Must Know The Goal. Not Normally!

It is an often repeated falsehood that we must know the goal at the start of the project with complete specification. People like to insist the project has a Specific, Measurable, Agreed or Achievable, Relevant or Realistic, Time or Triangle bounded, Economic and Resourced definition. Clearly, frequently and obviously this isn't always or even often the reality.

SOOP-37.   'Reality' in planning terms is when the plan's total set of uncertainties match each other. EG Not sure what you want = not sure when you get it or how much it costs.

6 **The Process Model in Detail**

Up to now I have been omitting details in favour of breadth. From now on there is no more detail that could be described.

6.1.1 *The Controlled Start*

The controlled start comprises two steps that lead-up to the first benefits enabling stage:

1. the Starting up a Project (SU) process produces:
   - **A19**-Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21**-Project Product Description, underline **A2**-Business Case… }
   - The Initiation Stage plan

   Which are used in the project board's consideration to **[13.4.1** Authorise initiation]

2. the Initiation Stage produces:
   - The **A20**-Project Initiation Document (which contains the [initial full] **A2**-Business Case, **A16**-Project Plan and all the strategies and controls) for consideration to **[13.4.2** Authorise the project],
   - The next stage's **A16**-Stage Plan and the Initiation Stage's **A9**-End Stage Report for consideration to **[13.4.3** Authorise a Stage ~~or Exception~~ Plan].

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6.1.1.1.1 *Small Projects & Projects in Programmes*

For small projects these two steps may well be combined around production of the **A20**-Project Initiation Document, **A9**-End Stage Report and **A16**-Stage Plan. A project in a programme may also have little to do as the programme may look after the majority of the project commissioning activity prior to setting specialist technicians to work in benefits enabling stages.

In a programme context "delivery" (of infrastructure such as ICT) to the programme may be the right label for stages.

6.1.1.1.1.1 *Preceding Feasibility Studies*

A project that started as "don't know what" or "don't know how" may have run as a feasibility study project (perhaps wholly under PRINCE2® control) that generated options (of what and how) and selected between them. Its conclusion may thus be presented as a fully formed **A20**-Project Initiation Document. We may thus be 'starting a new project' to do implementation and the 'old project' equated to SU and the Initiation Stage.

6.1.1.1.2   Purpose and Scale of Starting up a Project (SU)

The official manual suggests that Starting up a Project (SU) is a very short process. Its purpose is to bring us quickly and without undue cost to the point where the project board can be asked for approval to invest in the Initiation Stage or stop a bad idea cheaply.

6.1.1.1.2.1   Starting up a Project (SU)'s Deliverables

During Starting up a Project (SU) the project management team carries out the most important element of planning: to determine the project's target as described in the **A19-**Project Brief's { Project Definition {…<u>Project Objectives, Desired outcomes</u>…}, **A21-**Project Product Description… }.

SOOP-38.   To define the <u>project</u> target means define the criteria under which the supplier's obligations are ended – the acceptance criteria. <u>Acceptance criteria come from discussion with the project's stakeholders.</u>

It is for this reason that I suggest projects per se are a supplier-centric concept and PRINCE2® specifically is, despite saying explicitly to the contrary, supplier oriented in its thinking and bias.

(Note: the **A21-**Project Product Description could just as happily be called a Product Backlog.)

Starting up a Project (SU)'s results are:

➢ an appointed project management team,
➢ the **A19-**Project Brief which contains {
  • a description of the project's context and
  • outcome,
  • an outline business case and
  • suggested 'approach' to the project (which means choosing between doing the work in-house, via sub-contractors, or purchased as a 'turn-key' solution)
  },
➢ plus the Initiation **A16-**Stage's Plan.

6.1.1.1.2.2   The Initiation Stage

The controlled start concludes with the Initiation Stage that:

➢ sets-up the four strategies for project control (Risk, Quality Configuration Management, Communications),
➢ creates the **A16-**Project Plan and
➢ refines the **A2-**Business Case and
➢ then, via Managing a Stage Boundary (SB)'s activities plans the next stage in detail.

The results are submitted for approval from the project board to invest in earnest, or not.

6.1.1.2   SU is So Short We Don't Need a Risk Register!? – [Wrong]

The official manual suggests that during Starting up a Project (SU) little or no project control regimen such as Risk Management or Configuration Management is available or needed.

[This is plain wrong.]

6.1.1.2.1   Goal and Risk From The Start

*SOOP-39.   During SU the **A19-**Project Brief { **Project definition { Project objectives, Desired outcome, … }, … A21-Project Product Description**, … } is defined. If you do not capture strategic risks and risk appetite during the definition activities then the project is unnecessarily and quiet avoidably weakened right from its start.*

6.1.1.2.1.1   What Is Fair

That little is available might be a fair assertion in an organisation where project management is immature, EG a method has not yet been embedded (adopted) and no one has read any project management insights - but then you are reading this manual so before you finish it you will be able to rough-out a decent risk assessment scale and risk register (log) in your favourite spreadsheet (as described in **X on Page Y**).

Perhaps the "no risk register yet" is supposed to reinforce the idea that SU is very brief but it doesn't match my experience of what is NEEDED or the 2005 manual's view that [rightly] said start the risk register immediately the project is triggered. Many organisations corporate risk management processes will mean consideration of risk starts before the project is brought into existence and risk treatment is inherited by the project.

6.1.1.2.1.2   Start-Up Takes Time Even If Not Much

Creating the **A19-**Project Brief and defining the **A21-**Project Product Description (refining the project's description of objectives and defining a matched set of deliverables or 'specifying the project end-point') depends on stakeholder engagement, is political, needs diaries coordinated and so takes time.

It is better to have controls, especially logging controls like **A25-**Risk Register and configuration management capabilities in place before needed, even if the issue register is not needed until we have a baseline against which to raise changes and concerns.

Later I will suggest that **A25-**Risk Register and **A12-**Issue Register are replaced by a single Register of Concerns. *See X on Y*

6.1.1.2.2 We Need Configuration Management (CM) From Starting up a Project (SU)

Organisations with project management experience will start a project knowing that the moment we start to identify project outputs we must be able to record as much of the details of those outputs as is known. The permanent place to make the records of what is in the project's scope is in the Configuration Management System.

6.1.1.2.2.1 Trace FROM the Initial Specification

Solid Configuration Management (CM) capabilities are a great enabler of project success. Start CM before the most important definitions, project end-point, are exposed – everything else must traceably flow (back-cast) from them!

CM is a **product** life-span oriented capability, not a transient capability like projects. CM should exist in the organisation at project start. Every organisation that has assets requiring logging or maintenance or has run even one project should have a configuration (asset) management capability. No project in an organisation that already has a configuration management capability should have to wait till Initiating a Project (IP) to define the CM strategy.

6.1.1.2.2.2 CM Procedure Is Normally An Imposed Constraint

How CM operates will be an constraint imposed on the project in any mature organisation. The project manager should go see those who operate CM and ask for support. Lack of support should be immediately escalated to the project board for resolution.

We will cover concepts and procedures for how to do configuration management thoroughly when we get to **[14.4.2** Prepare the Configuration Management Strategy]. *See X on page Y*

6.1.1.2.3 No Second Project Should Lack Controls

Most organisation that have run at least one project have a head-start on all of the project infrastructure needs of subsequent projects. Anyone who has read PRINCE2® guidance (as you are doing now) will approach their next project knowing what project management disciplines and records are useful.

6.1.1.2.3.1 Pages of The **A7-**Daily Log May Be Enough

If setting up **A25-**Risk Register and other records truly warrants little attention then headings covering "**A17-**Product Descriptions", "**A5-**Configuration Item Records" as well as "**A25-**Risk Register" on reserved pages of the **A7-**Daily Log may be appropriate. These records must persist for the duration of the project and its audit needs. IE be "permanent". More "formal" record storage may not be required.

6.1.1.2.3.2   *Know How To Make Good Records*

Be sure you know how to record meaningful entries– Especially for risk. Good description is key and is non-trivial. (See **X on Page Y**).

6.1.1.2.3.3   *The PSO*

Organisations with Project (Programme) Support (Management) Offices where the work to 'embed' PRINCE2® is normally centred should have adopted standard solutions for controls. Project needs should be easily met with off-the-shelf solutions that can be quickly adapted to project local needs.

6.1.1.2.3.4   **A7-***Daily Log Dangers*

Suggesting the project manager (and team member/ managers) maintain a note book is a great idea: everyone benefits from a note-book when it is a mechanism for aide-memoirs and private reflections. BUT: unless it is explicitly a publicly available resource it is no substitute for other project records as just suggested above.

Projects need good public record keeping. If something is recorded in any **A7-**Daily Log that is not open to public access then it must either be:

➢ newly captured information on its way to public records, registers, reports or baselines or be

➢ copied from a public record, register, report or baseline as a trigger for action 'today'.

'Note-book' can happily be a blog or notes on a PDA/ smartphone. Paper is often easiest to use with the best 'battery life' but is not required, is hard to back-up and hard to 'publish' widely.

6.1.2 *A Potential Project's Trigger*

The driving forces for projects are one or more of Political, Economic, Social, Technical, Legal or Environmental (PESTLE) factors. A change in one or more of these factors creates an opportunity to cause a beneficial change in one or more other PESTLE factors or reveals a threat from change in one or more of the factors.

SOOP-40.   A project is an exercise in applied threat and opportunity management.

For example we might experience:

➢ Changes to market conditions

 • typically through the act or omission of action by competitors, or peers, or "Competent Authorities" (IE Regulation or Legislation from governments)

➢ Emergence of new needs or capabilities

 • either through emergence of new technologies or fashions or

 • through the demise/ obsolescence of historic technologies, capabilities or fashions.

6.1.2.1.1.1   Light-Bulb Plus Authority or Influence

Projects arise when someone spots any of the project triggers above and has sufficient resources or influence over others that resources are used to respond to the trigger. PRINCE2® calls the manifestation of any and all project triggers a "Project Mandate".

6.1.2.1.1.2   Project Birth

The trigger for a project causes corporate management or programme management (CoPM) to ask "can we change the state of the world so that we:

➢ curtail a threat to our current or future well being (individually or corporately) or

➢ perpetuate a current benefit that changes elsewhere in the world would otherwise affect or

➢ enhance a current benefit or

➢ grasp a new benefit.

For example President Kennedy launched the Apollo space programme in the State of the Nation speech on 25th May 1961 on the basis of a threat from soviet mastery of space. (See www.jfklibrary.org and search (in quotes) for "urgent national needs" to find the relevant State of the Union speech).

6.1.2.1.1.3   Know the Project's Triggering Reason

Knowing why the project has been triggered is not mandatory for the project manager, but is extremely useful context during planning and execution when countless small trade-off options will be encountered. The result of each trade-off decision should be guided by what is most important to key stakeholders between speed of delivery, cost of development or capabilities of output.

SOOP-41.   The project manager's planning mantra should be "Faster, Better, Cheaper: please pick two but understand that the third will be the consequence of thousands of decisions during planning and execution".

6.1.3 Starting up a Project (SU)

The project mandate's arrival triggers the Starting up a Project (SU) process. SU's work-packages are parallel, iterative and inter-linked.

The first responsibility is carried out by CoPM and SU ends with the project board considering whether to **[13.4.1** Authorise initiation] or not. IE they make a Go/No-Go decision.

6.1.3.1.1.1   (SU)'s Basic Thrust

Five trains of activity run within the envelope of the Starting up a Project (SU) process:

1. The appointment to their posts of the people who will deliver the project is started and perhaps even finished - the organisation theme.

Primary amongst the people is the Executive – chosen from CoPM's own ranks. Also crucial is the project manager. As many of the project board role-holders as possible will also be appointed (ideally just one senior user and one senior supplier).
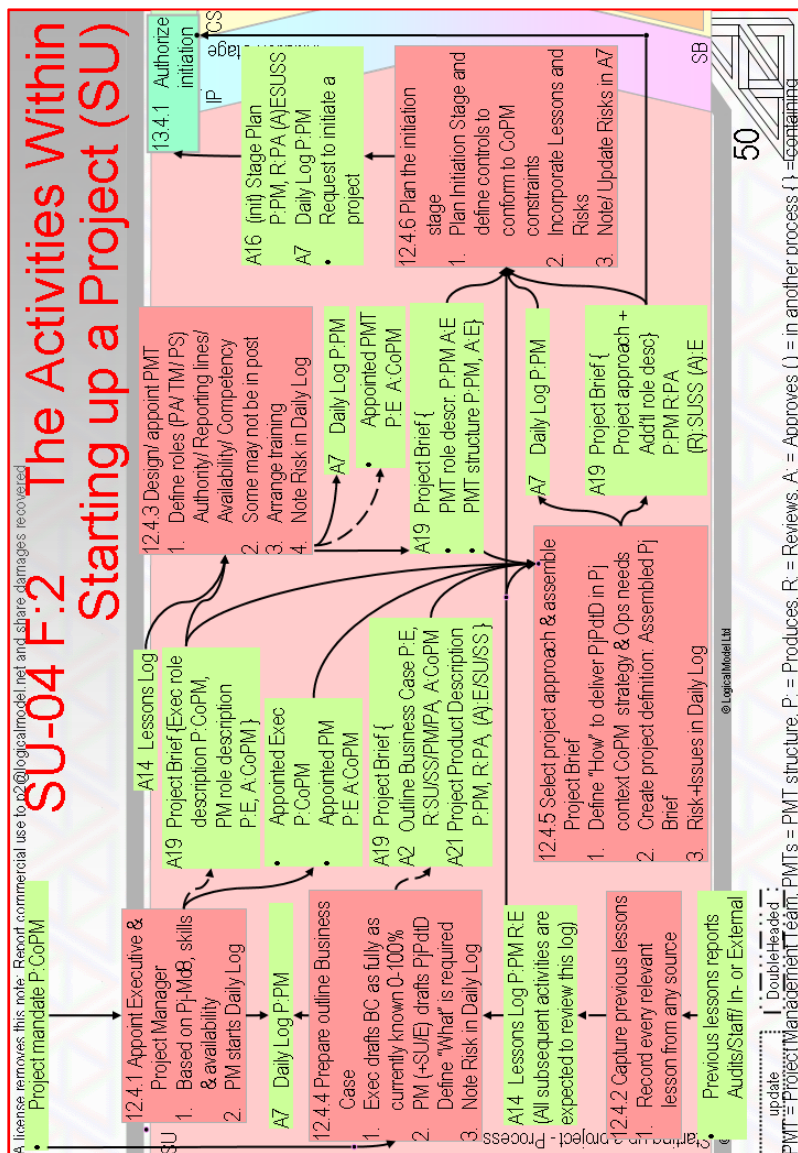
Creating the project management team accounts for two SU activities.

2. Assessment of lessons from any and all previous project's are identified for application to this project. (The learning from experience principle.)

3. Review and if necessary enhance the description of the project's objectives as provided in the project mandate. The project's outputs will be described in the **A21**-Project Product Description during SU.

4. As the objective crystallises consider and select an approach to creating the project's results. All the conclusions or observations are recorded in the **A19**-Project Brief either directly or in the contained outline **A2**-Business Case and contained **A21**-Project Product Description.

   At this point-in-time the business case is a sub-section of the brief. During the initiation stage it will become a sub-component of the **A20**-Project Initiation Document.

5. Plan the Initiation Stage and define the control regimen of tolerances, reporting and escalation that will operate in the Initiation Stage.

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6.1.3.1.1.2   Approval

Once Starting up a Project has run its course the newly appointed project board meet. They consider the project's readiness to achieve the goals described in the **A19**-Project Brief and the suitability of the Initiation **A16**-Stage plan.

If the project board consider the project is 'a risk worth taking' or the project's drivers (for example response to legislation) are sufficiently close to irresistible then they **[13.4.1** Authorise Initiation]. Later we will discuss why this is inappropriate. *See X on Y.*

The project manager is thus authorised to start the first stage (the Initiation Stage) and with it the formal start of a PRINCE2® project.

6.1.3.1.1.3   Tailoring

Recall SU and the Initiation Stage may be combined, may be unnecessary or may be a whole feasibility project in their own right. These factors will affect the form of the Directing a Project (DP) discussion that approves progression to the next stage and what that stage is.

What ever is received to trigger the project, what ever step, decision or stage is next the project manager must be sure to validate what is received for completeness and suitability.

➢ Classically what is received is the project mandate, the next step and decision are (SU) and **[13.4.1** Authorise initiation]

➢ Possibly what is received is suitable as the **A19**-Project Brief and the next decision and stage are still **[13.4.1** Authorise initiation] and the Initiation Stage.

➢ Possible what is received is effective as a complete **A20**-Project Initiation Document and the next decision and stage are the combination of **[13.4.2** Authorise the project] and **[13.4.3** Authorise a Stage or Exception Plan] and the first benefits enabling stage.

6.1.4 Un-Controlled Start – Project Mandate

In an immature (or relaxed or busy!) organisation the project mandate's form is unpredictable – it precedes PRINCE2® rigor. The mandate's fitness for triggering a project may be marginal.

6.1.4.1.1.1 A Project Mandate Product Description

The 2009 official manual omits a product description.

Recall "{" introduces "composed of". A mandate produced in a mature organisation <u>might</u> be {

➢ Who is the project's driving force, (the exec or the exec's reporting line). A (singular) point of ultimate decision making over the span of the investment.
➢ Who might be appointed to the exec and project manager roles,
➢ What objective we are trying to achieve.

  It is best if the objective is described using a short statement of how the world will be when the project is complete together with a definitive list of outputs. 'Best' is not always practical at this stage.

➢ What the motivation or justification for the project is. An explanation of the cause and context. IE why are we considering the suggestion of a project. This might be anywhere on the continuum of nothing to a complete **A2-**Business Case, **A21-**Project Product Description and Acceptance Criteria (AC).
➢ Constraints and tolerances that apply to the project in cost, time, scope, quality, benefits, health, safety, reputation, environment, morale, will, customer impact, staff affects or any other constrained terms.
➢ Who the project's stakeholders might be (at least as a starter), possibly also who the triggering authority was.
➢ Interfaces the project will need to establish or maintain or honour: Political, technical, product or any other worth a mention.
➢ Anything else useful to exec, project manager or investment authority in considering benefits versus costs (will, skill etc)

}.

6.1.4.1.1.2 Mandate May Just Be a Chat

Equally a mandate may be just "Simon, can I have a quick chat…" in which case compiling the **A19-**Project Brief to be considered by the project board prior to approving the Initiation Stage will be a bigger task.

6.1.4.1.1.3 Project Mandate to **A19-**Project Brief

Since the project trigger could be at any degree of completeness PRINCE2® suggests the results of SU be collated into the **A19-**Project Brief so that when we arrive at the request to the project board to **[13.4.1** Authorise initiation] they will receive information of known quality. If what is received is already good enough it may just be renamed as the **A19-**Project Brief.

The **A19**-Project Brief or more specifically the outline **A2**-Business Case it contains is the basis of the first real investment decision: IE to [**13.4.1** Authorise initiation].

6.1.4.1.1.4   We Need A PID

In the Initiation Stage the information required for a fully informed commitment to the full project investment is gathered, collated and any gaps filed. That full collection of information is called the **A20**-Project Initiation Document (PID). It is used to authorise the major commitment: IE the benefits enabling stages.

6.1.4.1.1.5   We May Start With A PID

In a mature organisation or programme that has sound project definition, appraisal and selection processes what is received as the mandate may be a full **A19**-Project Brief or even a full **A20**-Project Initiation Document. The 'project' may therefore start at any point PRINCE2® would describe upto the end of the Initiation Stage.

6.1.4.1.1.6   Evolving Decision Support Pack

PRINCE2® suggests that at the start of Starting up a Project (SU) "The project mandate should provide the terms of reference for the project" [page 123] and that the mandate is not maintained. At the end of Starting up a Project (SU) the basis for decision is the **A19**-Project Brief which replaces the mandate. After the Initiation Stage the brief is replaced by the **A20**-Project Initiation Document [p. 309].

PRINCE2® is therefore suggesting a migration of the 'current' terms of reference in document terms from project mandate to **A19**-Project Brief to **A20**-Project Initiation Document.

6.1.4.1.1.7   Agreed Terms Of Reference

When the project board [**13.4.2** Authorise the project] at the end of the Initiation Stage they must make a full commitment to CoPM that they accept their Terms of Reference. IE the balance of goals and constraints expressed in the **A20**-Project Initiation Document.

6.1.4.1.1.8   **A20**-Project Initiation Document From Then On

Decision making on entry to every Deliver Stage and after any exception is then based on the submission to the board of the (possibly updated) **A20**-Project Initiation Document.

6.1.4.1.1.9   Simpler Approach

In reality the **A19**-Project Brief and **A20**-Project Initiation Document are so close in content that with a little tailoring both templates are not needed. Almost all mandate and **A19**-Project Brief content is directly replicated in the **A20**-Project Initiation Document.

A simple, more expedient approach that may suit your needs is to forget the **A19-**Project Brief and maybe even the mandate and simply use the **A20-**Project Initiation Document's structure from the very beginning. Simply provide guidance to "complete only what is currently known" as project mobilisation gathers pace: this is my recommendation.

6.1.4.1.1.10   Need The Description of Outputs

If adopting this suggestion then the **A21-**Project Product Description needs to be added to the **A20-**Project Initiation Document's definition so that it is available when the project management team need it.

The description of the project's deliverables is a pre-requisite to **[14.4.6** Create the Project Plan]. Normally the **A21-**Project Product Description is included in the **A19-**Project Brief which is used as input to **[14.4.6** Create the Project Plan] and then archived.

The **A20-**Project Initiation Document product description is on the next page.

6.1.4.1.1.11   Archiving of the Mandate

Whatever is received as project mandate at start-up is archived, as is whatever is approved (IE the PID) at the end of the Initiation Stage.

6.1.4.1.1.12   Embedding Choice

I suggest consideration of the following variations from the official manual during your embedding activities:

1. Ditch the **A19-**Project Brief in favour of a **A20-**Project Initiation Document that matures throughout the project and whose contents before and during SU is only 'as complete as practical'
2. Represent the **A21-**Project Product Description as a project level Product Breakdown Structure (PBS) of the outputs required by the project board together with **A17-**Product Descriptions and include in the **A20-**Project Initiation Document's definition.
3. 0.

6.1.4.1.1.13   Forward Reference

Some of what follows references management products created in the Initiation Stage. If in doubt return to this discussion after completing the initiation stage's description.

6.1.4.1.2   Life and Times of the Project's Terms Of Reference

6.1.4.1.2.1   The **A20-**Project Initiation Document PID's Product Description

The **A20-**Project Initiation Document is comprised of a number of elements with a great deal of tautology between them. The official manual's description includes repetitious entries such as "Background and Reasons in the **A2-**Business

Case and the main body of the template with Objective, Outcome, Scope". I suggest some consolidation is useful.

NOTE: The PID is more likely to be a collection of cross-references than a single physical document. A PID might {.

➢ Project definition { (almost all copied from the project mandate or determined during **[12.4.4** Prepare the outline Business Case] and refined during **[14.4.6** Create the Project Plan] and **[14.4.7** Refine the Business Case])

The project's

- Context and cause (Why are we exploring changing the world in some way),
- Business objectives and Exclusions from objectives (Otherwise known as the Goal Statement describing the future state we are seeking to achieve),
- Constraints and dependencies (Factors whose continued presence or absence are 1: critical to project success, and either 2: negotiable or 3: outside either project manager or project board ability to influence),
- Assumptions or material unknowns upon which planning and evaluation is based,
- The stakeholders and their stakes (expectations or parochial business cases), the required contributions from them and promised (expected?) rewards,
- Interfaces between the project's stakeholders, activities and products relevant to project success.

}

➢ Strategy ('Project Approach' determined in **[12.4.4** Prepare the outline Business Case]) for achieving the business objective

➢ **A2-**Business Case [perhaps tailored so as to reduce it to just **]** comparing the anticipated benefits and required investment [this is not what the official manual suggests: it includes lots of duplication – for example "reasons" as recorded at "Context and causes" above]. The **A2-**Business Case product description is at *See X on Y*

➢ Project management team - The holders of defined roles, their reporting lines, duties and decision making authorities (established in **[12.4.1** Appoint the Executive and the Project Manager], **[12.4.3** Design and appoint the project management team], **[14.4.5** Set up the project controls] and refreshed at stage boundaries by **[17.4.1** Plan the next stage].

➢ The Four Strategies or procedures, standards, duties and authorities to be followed by project stakeholders with defined roles for the care of:

{

- **A22-**Quality Management Strategy for achieving fitness for purpose and conformance to specification of the project's products
- **A6-**Configuration Management Strategy for tracking the maturing status of the project's intermediate and final products, their safe storage across development steps and their transfer into use and maintenance

- **A24**-Risk Management Strategy dealing with uncertainty in the project
- **A4**-Communications Management Strategy to define who communicates what to who, when, how and how often

[Mature organisations, perhaps with permanent project support offices/ centres of excellence (PSO/ CoE) will have no trouble establishing the control regimen, at least a default regimen, before the Initiation Stage where the first 4 activities will ensure gaps are filled and rough edges filed.**]**

}

➢ **A16**-Project Plan to describe the baseline of what is to be achieved by who, when, to create what intermediate and final project outputs across all of the project's stages.

The **A16**-Project Plan may be at sufficient detail to serve as the **A16**-Stage Plan as well.

[if method definition during embedding or project tailoring omitted the need for the **A19**-Project Brief then prior to **[14.4.6** Create the Project Plan**]** this heading of the PID may be blank, may be just a target end date, may be a list of dates and associated outputs and/or may be a full project plan from a feasibility study or containing programme.

Project managers should understand that often in commercial projects a list of milestone dates arrived at during the sales process for political, seasonal and cash-flow reasons are passed to the planning team as constraints input to planning.**]**

➢ Project controls expressing who monitors what when and how against what base-lines with what levels of discretion or tolerance, the actions triggered at what levels of variance and all resulting report formats, contents, triggers and responsibilities across project stages (time dimension) and delegation/ escalation (authority dimension).

[Starting up a Project (SU) will create those that apply to the Initiation Stage. The Initiation Stage will define those that apply to Enabling Stages. In a mature organisation a PSO/ CoE probably supplies on 'day-one' a standard set for adaptation during project tailoring. **]**

➢ Adaptation, extensions and exclusions applied in this project to the standard PRINCE2 implementation with reasons [Mature organisations will know how they tailor PRINCE2® before the project specific considerations are applied.]

} End of the PID's contents.

6.1.4.1.2.2   Investment Definition

The **A20**-Project Initiation Document (PID)'s name simply reflects: where it came from – 'Initiation', it is a 'document' (well information collection), and it is for an entity of type 'project' Gee Whiz – hardly useful!

More descriptively it is the definition of an investment and the roles, authorities and procedures (strategies) to be applied to realising the benefits. It describes either a reaction to some threat that we wish to avoid being impacted by (some

change to the current status quo) or an opportunity that we do wish to be changed by.

6.1.4.1.2.3   Renaming the PID

A better name would therefore be "Investment Definition" with individual instances of documents being named in the form "Warehouse-6 Automated Picking-System Investment Definition".

6.1.5   SU Part One: Team & Learning From Experience

6.1.5.1.1   CoPM Must [12.4.1 Appoint the Executive ~~and the Project Manager~~]

The very first action of every PRINCE2® based initiative is taken by CoPM.

6.1.5.1.1.1   Appearance of a Project Mandate

Where ever the idea arises the project mandate is created within the ranks of the business (Corporate) management or the management of a programme that is starting off this PRINCE2® project. When a mandates appears CoPM then **[12.4.1** Appoint the Executive ~~and the Project Manager~~**]** from amongst their own ranks.

6.1.5.1.1.2   Appoint the executive and project manager

The executive must be some one with influence and capability matched to the project's stresses and strains. The executive (normally) then appoints the project manager, perhaps in consultation with peers. Between CoPM, the Exec and project manager the project manager's and executive's role descriptions are written and agreed.

6.1.5.1.1.3   Role Product Description

PRINCE2® gives no guidance on the contents of a role description.

It might contain {

➢ Duties to be performed
➢ Decision making authority
➢ Resources to be provided/ Contribution expected
➢ Competencies, skills and experience required

}.

Authorities in the role description must be linked during embedding to the authorities with in the organisation for making legally binding commitments over resources such as budgets, employment and contracts. During project tailoring the authorities are conferred on individuals.

6.1.5.1.2   Start the A7-Daily Log

As soon as the project manager is assigned they should start a note-book for aide-memoire notes – perhaps titled "Project -X Daily Log". As discussed already

some notes will be in advance of more appropriate registers and logs being set-up. Of immediate importance will be any threats and opportunities that can be spotted within the project's scope and any project dependencies outside of the executive's ability to direct and commit. Project manager's and team member/ manager's **A7-**Daily Log may be in any medium or format.

6.1.5.1.2.1   *A7-Daily Log Product Description*

Daily Logs are used as diary and aide-memoire to record actions and events the project manager and team member/ managers need to remember, as extracted from or not recorded in other PRINCE2 registers or logs.

A7-Daily Logs may be the repository during the Starting up a Project process for registers that have not yet been set up. In this case entries should abide by the relevant entry's format and contents specified in its own **A17-**Product Description. Otherwise content is likely to be free form notes that might {

➢ Date of entry, What needs to be achieved by when and who has what role in the achievement and all interim points of monitoring or communications for any concern, pending action, event or comment.

If extracted from a register EG 'for action today' then the register record's cross-reference.

➢ All notes on their way to a register as a result of recent, probably verbal communications, eg results of project definition workshops
➢ Points of note or reference
➢ 'Ear-marked pages' As an alternate to separate registers and logs

}

As a general rule of thumb terse notes are unintelligible to anyone having to step into the project and to their author after often just a few days. It is good discipline to structure notes as something like: topic of interest/ Reason for Note/ Actions arising/ Conclusion/ Now Closed? And to write legible comprehensible scentences!

By default all **A7-**Daily Logs should be publicly accessible to all project stakeholders.

6.1.5.1.2.2   *Small Project/ Formal Project*

All PRINCE2® logs and registers are of a form that suits the project manager and project board. A page or three in the back of a paper based **A7-**Daily Log works for some. A centralised web-based project collaboration tool works for others. Something built on SharePoint works for still others.

See pm-sherpa.com or www.pmtoday.co.uk's online search of "software tools" or Wikipedia's Comparison of PM Software for lots of options.

6.1.5.2 Apply experience: [12.4.2 Capture previous lessons]

Once appointed the project manager and executive with what ever degree of cooperation is necessary from other stakeholders consider "how have other projects we know of run in this (these?) organisation(s)?", "How might we copy the best and avoid the pitfalls of the worst?". The activity might be better named "Prepare to Apply Previous Lessons" as this is its purpose.

Thus we **[12.4.2** Capture previous lessons**]** before further project start-up work is done. Previous lessons will also be a guide as we proceed through the whole project. The exec and project manager start the **A14-**Lessons Log.

6.1.5.2.1.1   This Log Starts With Other People's Experiences

A "log" is normally a record of what we have done in the project. The **A14-** Lessons Log starts at least, as a record of what others have done that we want to use as inspiration as we set-up and manage our project. We (the project management team) will record our own lessons in it when we observe them and report against them as required (**See XREF**) in **A15-**Lesson Reports.

6.1.5.2.1.2   Look For The Positive

When gathering lessons always search hard for the positive, and do the positive ones first. Our psychology is such that the negative thrusts itself forward on its own.

6.1.5.2.1.3   Activity Guidance is Iterative and Inter-linked

The development of the **A14-**Lesson Log benefits from the input of the whole project management team. As presented in the official manual it would appear that the team is just exec and project manager so far. But **[12.4.2** Capture previous lessons**]** must be repeated when or may be delayed until **[12.4.3** Design and appoint the project management team**]** is underway or finished.

The official manual sets out guidance as discrete activities; the practitioner applies the themes continuously within concurrent, iterative and inter-linked activities. The actions to **[12.4.2** ~~Capture~~ [Apply] previous lessons**]** should be repeated at the **start** of every management activity anywhere in the PRINCE2® timeline: recall ingredients and soup.

6.1.5.2.1.4   **A14-**Lessons Log Product Description

A slightly tailored view of the **A14-**Lesson Log is a repository of {

➢ What happened (we may add cross-references to risk or issue register entries once these are created) and
➢ why and how it affected us and
➢ what we would do differently or the same next time,
➢ what we might do to spot and avoid future bad lessons or repeat good ones

}.

The official definition of the **A14**-Lesson Log suggests an indicator of whether the lesson applies at project or corporate level, a record of who wrote it, when and its priority. I'll omit or include these and any other headings as adds value.

SOOP-42.   As a golden and general rule when using any form of template or checklist: never omit something because there was no "official heading" and never write crap to populate a heading where no value accrues; just write "no observation of valuable " or similar.

6.1.5.2.1.5   *A15-Lesson Report*

While we are considering the log lets also lay out the report. The report can be produced at any useful time for any useful subset of observations. At a minimum PRINCE2® suggest during Closing a Project (CP) when the project management team **[18.4.4** Evaluate the Project**]**.

The amount reported (and recorded in the log) should be commensurate with the significance of the lessons – add or subtract headings and volume as is valuable.

6.1.5.2.1.6   *A15-Lesson Report Product Description*

The report might {.

➢ Summary, perhaps with highlights specific to different audiences,
➢ What topics, project or timeframe (eg stage) is covered in the report.
➢ Events and circumstances with a consequence worth recording:
- What were the conditions, their causes and their consequences?
- How these could be spotted, anticipated, encouraged or avoided in future – perhaps against some standard topics such as:
  - project management strategies and controls,
  - use of PRINCE2® tailoring,
  - technical techniques,
  - standards,
  - processes and
  - tools.

➢ Metrics or measures and responses found to be useful, or useless.

}.

Sensible Learning from Experience (LfE) circulates subsets of the experience to specific interest groups in small targeted chunks (and perhaps holds a central library).

SOOP-43.   Writing reports (logs and registers) is valueless until they are read.

6.1.5.2.1.7   *Add Lessons As You Go*

Entries should be made to the **A14**-Lesson Log when-ever something can be usefully captured, and reports are written from the log whenever lessons can

usefully be shared. Important lessons should be shared more than once via more than one medium.

6.1.5.2.1.8   At The Start

Many organisations are good at "lessons observed" and fail completely to achieve "lessons applied". A lesson is only "learned" when it has been applied. PRINCE2® is dead right to observe that <u>learning from experience is a front-end task</u> not an end of project task.

SOOP-44.   'Learning' only occurs through application (experimentation) not through observation, although observation is a prerequisite.

6.1.5.2.1.9   Life & Times for LfE

The foot-print of where the **A14**-Lesson Log and **A15**-Lesson Report are specifically referenced are noted in the diagram. It is exhaustive and exam safe (faithful to the official manual).

Every PRINCE2® activity's guidance should be considered with an explicit "what does the **A14**-Lesson Log or any other source of experience suggest to us?". The official manual repeats the guidance umpteen times. I've said it just this once, you should apply it umpteen times.

reflection on the experience. The application of lessons observed requires the analysis of cause and effect and the synthesis of possible new or repeated patterns of activity. Whether a hypothesis works can only be confirmed by experimentation and thus the generation of new experiences that restart the cycle.
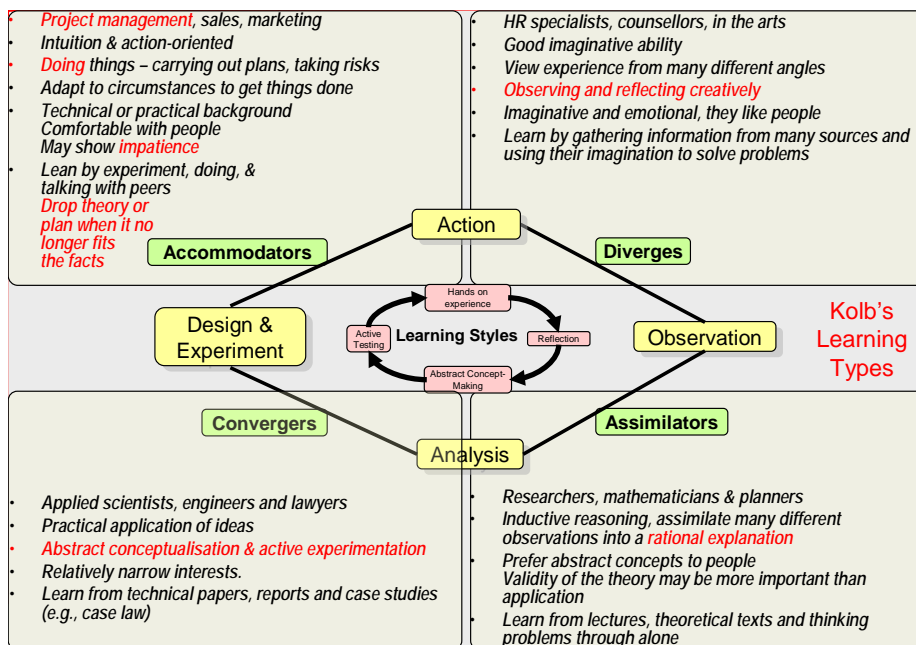
LfE Cycle

6.1.5.2.1.11   Internalising

Shewart said it as "Plan Do Check Act" and Six Sigma says it as "Define Measure Analyse Improve Control". The same basic message: observe, think, hypothesis, try-out, observe….

6.1.5.2.1.12   Towards Unconscious Competence

We start most learning as unconsciously incompetent, as learning starts we gain consciousness of our incompetence. If we do not give-up at this point we achieve conscious competence which with practice becomes unconscious competence. You are involved in this cycle at this very moment.

The 2009 manual rewrite appears to me to be an attempt to negate the truth that big, highly inter-linked subjects take effort to learn. A week directed at cramming rather than basic comprehension is just about long enough to arrive at consciously incompetent – "I now appreciate how much I don't know".

Process Numbers

13	Directing a Project (DP)
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
	16	Managing Product Delivery (MP)

Section: 2   Page: 6.1.5:97 of 541

Knowledge Cycle

Best Practices

		To	
		Tacit	**Explicit**
From	**Tacit**	Fluency: learning on the job through socialising e.g. "Sit with Mary" & practicing	Externalisation: essential & most difficult e.g. creating a procedure, defining a job role, giving a presentation
	Explicit	Internalisation: building new observations e.g. by discussing & exercising the capability	Combining: adding to what I know to fill a need e.g. by training

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77

The value of education is not learning of many facts but the training of the mind to think something that cannot be learned from textbooks - Einstein.

Context Graphic

6.1.5.3 [12.4.3 Design and appoint the project management team]

Armed with the **A14-**Lessons log and their own job descriptions the project manager and exec will continue to **[12.4.3** Design and appoint the project management team**]** based on the needs of the project, who is available or will be during the project and the exec's influence with resource owners within CoPM.

6.1.5.3.1.1   Concepts of the Organisational Theme

Design of the project management team structure assigns task and decision making rights and duties to people in the project management team. PRINCE2® starts with responsibilities grouped in nine roles which are vital for project delivery.

The organisation structure must involve decision makers who represent each project perspective – Business, User and Supplier. The Business and User perspectives are normally both from the 'customer' side of the project. IE they receive the outputs, pay for them and make their return on investment after the project has gone-away.

6.1.5.3.1.2   Role versus Person

Any role may take more than one person to fulfil. Some roles may be combined in the responsibilities of a single person or split across several people.

6.1.5.3.1.3   *Defines Roles*

How the roles are split and combined is decided by the exec and project manager.

Assignments are tuned throughout the Initiation Stage and refreshed before the start of each Enabling Stage when the project management team **[17.4.1** Plan the next stage**]** and therefore consider the skills needed for the **A26-**Work Packages in the next stage's scope.

Skills needed are those to carry out the work of coming stages and also review (assure) the results. Change of stage that reflects changes of phase often require new technical roles and possibly new project management team role holders.

6.1.5.3.1.4   *Directing, Managing and Delivering Layers*

Recall that roles are organised across three management layers within the project's hierarchy. There is also the business' management that forms levels above the project and a technical or 'non-management' layer below the three 'in-project' management layers. The technical level below the project management team is staffed by team members who are technical subject matter experts.

The three layers within the project are labelled "Directing, Managing and Delivering" [5.3.1] by PRINCE2®. Those who are directing perform the activities of Directing a Project (DP) while those who are delivering perform the activities of Managing Product Delivery (MP).
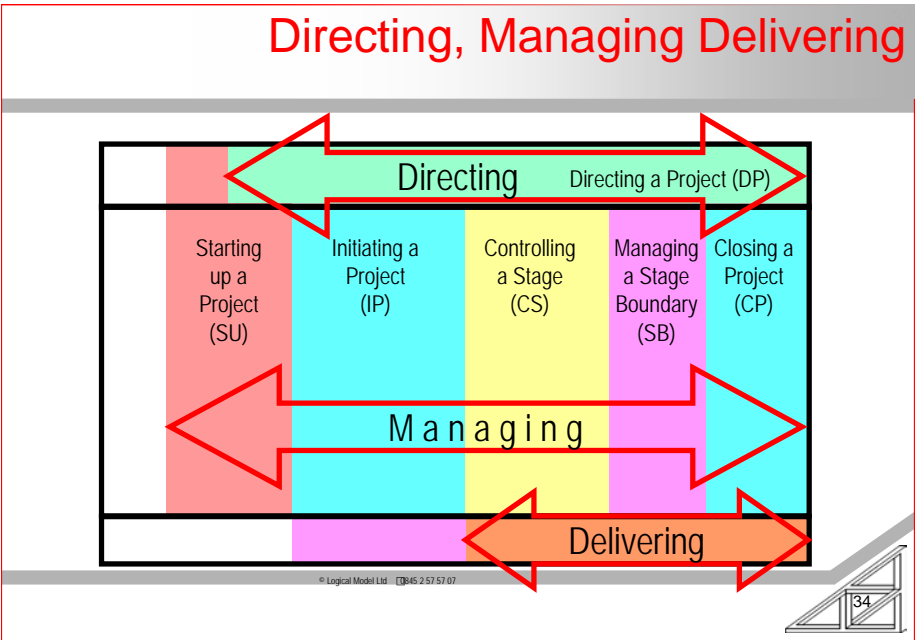
6.1.5.3.1.5   Stay with the Role

PRINCE2® guidance wisely advises that 'directing and managing' role-holders should if possible be assigned on the understanding that they stay with the project for its whole duration. [Customer side directing role holders should stay with the investment for its whole duration.]

6.1.5.3.1.6   Primary Roles

The primary roles (explained below) are: The Executive, Senior Users, Senior Suppliers - jointly the project board or "directing" layer of management, The Project Manager and team member/ managers are the "managing" and "delivering" layers.

6.1.5.3.1.7   Support Roles

In addition roles are defined for the collection of duties that fall to those directing and managing that may be delegated to people with more time and/ or expertise. These roles (fully explained below) are: Project Support, Project Assurance and Change Authority.

6.1.5.3.1.8   Timing For Appointing The Team

It is likely that early in SU we don't know enough about the project or who is relevant or available to make all appointments. For example: will we appoint sub-contractors? If so who from their staff will have a role on the project, perhaps as a senior supplier. Which teams might need a team manager?

Appointment of the team often runs into the Initiation Stage and in any case is reviewed at each stage boundary. In the early stages [and in the exam] supplier side roles may [will] be represented by customer side procurement managers.

6.1.5.3.2   Team Design Considerations

The "design the team" activities establish the project management team structure that is capable of effective project decision making. By structure I mean the paths by which delegation, reporting and escalation operate. Good team design results from consideration of the governance concepts of accountability and responsibility.

6.1.5.3.2.1   Accountability versus Responsibility

PRINCE2® uses accountability and responsibility without precision and actually without expressing the underlying concept. Differentiation of the two word's meanings and (an attempt at) careful use will help describe how to run projects better than we can without these ideas.

SOOP-45.   I use 'responsible' to refer to the duties of those who combine their skills and the resources provided to them to achieve the targets set for them within the constraints imposed on them. Responsible = Does the work, a task may have many responsible contributors.

Where constraint, resources and targets are contradictory the responsible person(s) escalate(s) to the accountable person (singular) for resolution.

SOOP-46.   I use 'accountable' to refer to the duties of those people who set targets for and provide resources to those who are responsible Accountable = has the power to impose and relax constraints. Any delegated commission has a Single Point of Accountability.

Thus in any organisation chart we might say "I am accountable for the work of those I have commissioned, IE those who look to me for their success factors. I am responsible for achieving what was delegated to me as described in the agreed success criteria and balanced against the success factors I operate within.

See Success factors and Success Criteria *See X on Y*

SOOP-47.   *Delegating passes responsibility for achievement of a target within constraints to someone along with enabling resources including some level of authority. Delegation always retains the accountability for the achievement. That is: the obligation to support and facilitate to resolve contradictions discovered by the delegate.*

6.1.5.3.2.2   Delegate to A Competent Authority

Mostly we view delegation as targets handed 'down' the management hierarchy and escalation as decisions passed 'up' the hierarchy.

SOOP-48.   *The project manager should consider that often strategic and financial decisions are 'delegated upwards' to higher authority and technical expertise decisions are 'escalated downwards' to greater knowledge based authorities.*
IE Delegation and escalation are identical in intent – the project manager is placing a duty to respond on someone with either financial or technical 'authority'.

6.1.5.3.3 Project Board Structure

The organisation structure defines who will instruct and who reports to who (Organisation theme, Roles and Responsibilities principle), and links to the Plans theme for who will do what and when they will do it.

Process Numbers
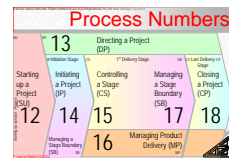
- "Hold the Senior User(s) to account (sic!) for realizing the post-project benefits enabled by the project's products."

  [Later we will explore how "account" rather than "responsible" in this suggestion is unworkable when not combined with authority]

- Provide the project mandate and with it all project level constraints and tolerances.
- Defines Business Case (investment presentation) standards
- [Accountable for the benefits realisation post-project

  The official manual says "responsible for the benefits review plan" which is insufficient and we will explore with the two notes above at ***See X on Y***
  ]

➢ Change

- Provides applicable (ratifies the organisation's standard) strategies for configuration management including change control and risk and issue management.

➢ Plans and Progress

- Sets/ agrees variation to project tolerances
- Provide (ratifies) applicable planning standards.
- Approves project level exception plans (or not)

➢ Quality

- Provides access to applicable quality management systems
- Performs or delegates or provides access to quality assurance (IE the people who maintain the quality management system not project assurance who check project results match their board member's interests).

➢ Risk

- Provides applicable corporate risk management policy and process guidance
- [Ultimate bearers of all risk costs and benefits, thus ultimate owners of the content of the risk (threat and opportunity) management process.

6.1.5.3.5   The Exec's duty

The executive's duty is to ensure there is return on investment (ROI). Firstly that requires ensuring cost and benefit conscious creation of the correct project outputs and the output's post-project beneficial use.

6.1.5.3.5.1   What The Exec Does

The exec must do, be or ensure {

➢ Ensure project board activities are carried out well and in a timely manner. The exec should chair relevant meetings,

➢ Be the ultimate in-project point of accountability IE ultimate point of escalation for all project participants,

➢ Ensure creation and maintenance through out the project's duration of a clear, strategically aligned, and complete description of:

- the project end-point,
- the benefits arising,
- the route to benefits, and
- the uncertainties within the project,

via the tiers of project monitoring and controls that operate through the **A2-**Business Case, **A25-**Risk Register and **A16-**Project plan, **A9-**End Stage Report, **A11-**Highlight Reports and **A3-**Checkpoint Reports and DP activities.

➢ Secure (perhaps via the senior user(s) and senior supplier(s)) an adequate number of adequately capable resources to specify, provide and verify project results.

Resource provision must balance all aspects of affordability and desirability: IE cost, quality, scope, urgency or schedule aspirations (expectations). Specifically this means:

- Secure the funding for all resource consumption
- Appoint the project management team and ensure they fulfil their roles. (see Senior user, Senior supplier and project manager roles below),
- Approve any contracts (at least from the project's perspective and possibly as corporate, legal representative)

➢ Decide the response to stage level issues and escalate project level issues to CoPM.

}.

The Exec will likely delegate the checking aspects of the role to project assurance staff, and approvals of requests for change may be delegated to a Change Authority as described below.

6.1.5.3.5.2   No Democracy

The exec holds the only vote on the project board and is thus the party accountable for the project. <u>As sole vote holder the exec is the point of escalation or recourse for all other project participant's needing assistance</u>. Equally the other project participants are only there to support the exec achieve the investor's aims – Value for money.

6.1.5.3.5.3   The Exec's Involvement in the Themes

➢ Business Case

- Develop (or ensure development of) a viable **A2-**Business Case that is aligned with corporate strategies
- Secure project resources (money, skill and will)
- "Responsible (sic) for the **A1-**Benefits Review Plan (for the duration of the project) (sic) unless being managed by corporate or programme management."

- "Responsible for the **A2-**Business Case for the duration of the project." (sic!)

  [Later we will have to explore that a business case MUST encompass the benefits generation activity not just the steps to incur costs and whether the exec is accountable or merely responsible for benefits. *See X on Y*]

➢ Change

- Set or approve severity and priority scales against which concerns are assessed
- Establish the size of the change budget
- Fully or partially delegate or be the Change Authority
- Deicide actions to address, in light of the **A2-**Business Case all concerns escalated beyond the change authority.

➢ Organization

- Appoint the Project Manager or ratify CoPM's choice
- Assist the Project Manager as requested (irrespective of theme)
- Approve the **A4-**Communications Management Strategy.
- Appoint or ratify project management team role holders, their authority levels, reporting lines, decision and delegation rights

➢ Plans / Progress

- Approve the **A16-**Project Plan

  [After explanation of Starting up a Project (SU) we will explore the sense of, or limits on this approval]

- Escalate project level exceptions and recommended remedies to CoPM

  [Which illustrates that the exec can't approve a **A16-**Project Plan except within CoPM's constraints]

- Approve (or not) **A16-**Stage Plans or stage-level Exception Plans and thereby commit resources. Includes ratifying or setting stage tolerances (Money and morale, Skill, Will, etc)
- Monitor progress and take action when objectives are threatened

➢ Quality

- At project start-up define and agree or at least ratify the **A21-**Project Product Description [really the **A20-**Project Initiation Document { Project definition { **Project objectives and desired outcomes, … }, … A16-Project Plan**, … }] and at Closing a Project (CP) accept or ratify acceptance of the project's outputs.
- Set or ratify the project **A22-**Quality Management Strategy.

➢ Risk

- "Be accountable for all aspects of risk management and, in particular, ensure a project **A24-**Risk Management Strategy exists." (sic)

  [After SU we will explore that the exec is (or CoPM are) the default and initial owner of all risk impacts, not just "<u>accountable for the process</u>".

The official manual also says "control risk to the **A2-**Business Case" and "escalate as required to CoPM" asif there are risks that are not to the business case or don't ultimately have to be paid for. Risks CAN ONLY, ultimately be to the **A2-**Business Case! and everything must be escalated to the equity holder's or their representative (EG CoPM or dealt with under a delegated authority from CoPM).] for benefits versus costs assessment.

6.1.5.3.5.4   Exec's Specific Business Case _Assurance_

➢ **A2-**Business Case and **A1-**Benefits Review Plan

- Develop or delegate and support development of the **A1-**Benefits Review Plan and **A2-**Business Case
- Ensure their ongoing maintenance in the light of concerns (Risk, Change, Performance) whether discretionary or mandatory, project internal or external.
- Initially and repeatedly assess **A2-**Business Case, **A16-**Project Plan and project status (eg actual costs, progress achieved and expected) for realism, value for money and alignment with programme or corporate strategies

6.1.5.3.6   Project Board Involvement

Generally project success requires that during Starting up A Project and the Initiation Stage the project board members will be highly involved, participating very frequently to define trade-offs that establish goals, Acceptance Criteria (AC), budgets, resource allocations and schedules. After that the project board are expected to be involved only when new decisions are required: ideally only to sanction the renewal of the **A16-**Stage Plan and refreshed **A2-**Business Case, **A25-**Risk Register and **A16-**Project Plan.

6.1.5.3.6.1   Responsive When Required

During project execution the project board members must be responsive on an as needed basis without delay. They are not required to meet routinely without meaning to drink tea, eat biscuits and thus across the portfolio of projects and bau to be "too busy" when really needed.

[This is a principle the official manual does not make explicit but is never the less present. For some senior managers it is an unwelcome surprise to realise they are accountable for project decisions that directly affect success so should respond immediately when called upon. The realisation of the transparency PRINCE2® creates is one of the real reasons embedding of PRINCE2® can be sabotaged].

6.1.5.3.6.2   Complementary Roles of Senior User and Senior Supplier

Senior user and senior supplier have responsibilities and accountabilities that are partly a mirror image of each other. The roles of both include project assurance

(oversight of product realisation) and impact assessment of concerns: these duties are often delegated to someone holding project assurance roles and change authority roles respectively.

The SU and SS are the liaison points (IE ensure two way communications and representation) between the project board and all those who will:

➢ for the SUs specify, operate, use, maintain or otherwise be impacted by the results delivered by the project.

This is a 'customer' perspective and continues after PRINCE2® defines the project (change initiative) as ended.

➢ For the SSs representation is of those who will design, acquire, build or implement the solution.

This role ends with the project's end or transforms into the support organisation.

The SUs and SSs provide their constituency's perspective on the Political, Social, Technical, Legal and Environmental (PESTLE) based changes in the project's context and on any concerns escalated to the project board after appropriate canvassing of their constituents.

6.1.5.3.7 Senior user(s)

The Senior User(s) is responsible for ensuring the customer's needs are stated at the beginning, ensuring contributions to quality reviews are made as the project progresses to verify needs are being met and validation that an appropriate solution has been delivered at the end of work-package, stage and project. The senior user provides user representatives and resources (or escalates an issue to the executive).

6.1.5.3.7.1   The Senior User's Crucial Role in Specification and Links to Quality

The senior user must ensure that the Customer's Quality Expectations (CQE) are expressed, and should arbitrate contradictory needs during translation of customer quality expectations to Acceptance criteria (AC). If the senior user can't arbitrate between contradictory wants the exec must. *See X on page Y*

6.1.5.3.7.2   Disruption to BAU

The SUs must consider and devise the means to implement outputs into business-as-usual that will be absorbable and then to act at implementation and hand-over to ensure the impacts on BAU of the project's results are absorbed, that open issues and risks (from Follow on Action Recommendations in the **A8-**End Project Report) are handed to appropriate BAU staff who deal with them, and that benefits generation commences.

6.1.5.3.7.3   Benefits

The senior user must also be able to express an opinion that evolves with project performance [and beyond] of the likely benefits given the project's history and outlook [and takes action to maximise the benefits].

6.1.5.3.7.4   The Senior User(s)'s Involvement in the Themes

➢ Business Case

[The official manual requires the senior user(s) to "ensure the benefits are realised". With only a subservient authority to that of the exec, and potentially multiple role holders the senior user(s) can assist, advise, influence and exercise responsibility but not ultimate accountability.]

- Oversee, contribute to and promote the definition and verification of as complete and appropriate a specification of user requirements, expectations of, and acceptance criteria for, the outcomes and the benefits of the project, as is possible (also covers the quality theme)
- Continuously review production of the project's products for evolving capability to deliver the desired outcomes and react to promote the best outcome
- Oversee and promote as complete as possible use of the project's outputs to realise desired outcomes
- Continuously measure and re-forecast benefits achievable versus possible actions.

➢ Change

- Provide the user (and maintenance) community perspective on escalated concerns.

➢ Plans (Organisation) and Progress

- Respond to project manager requests for assistance as required (also covers the change theme)
- Review and raise user-community concerns on the appropriateness of plans and controls.
- Commit user resources to **A16-**Stage Plans (also Organisation themes) for specification and verification and validation activities (also Quality theme)
- Review progress and raise user-community concerns on progress achieved and likely

➢ Quality

- Provide user approval of **A17-**Product Descriptions at project and sub-product level as appropriate
- Approve and accept products against Acceptance Criteria
- Approve the **A22-**Quality Management Strategy.

➢ Risk

- Raise, express opinion on, and oversee management of risks with an affect on user interests such as benefits, operations or maintenance.

6.1.5.3.8   Senior supplier(s)

The Senior Supplier(s) must ensure that the project is provided with adequate numbers of adequately skilled technical resources (or escalate the issue to the executive) to deliver the requested result.

The senior supplier should be able to express an evolving opinion on the viability of approach and will have their own business cases with benefits from involvement in the project to manage.

6.1.5.3.8.1   Senior supplier(s)'s Involvement in the Themes

➢ Business Case
  - "Responsible for the supplier Business Case(s)" (sic) [19.6.1.1]
  - Confirm products can be delivered within constraint "and remain viable" [whatever that means!]
➢ Change
  - Provide the supplier perspective on escalated concerns "(with a focus on the integrity of the complete solution)"
➢ Plans and Progress
  - Respond to the project manage's requests (includes Change theme)
  - Commit supplier resources (also Organisation theme) EG for planning, for the building of products and conducting of quality activities
  - Ensure that plans and progress towards the outcome remains consistent with the supplier interests.
➢ Quality
  - Provide supplier approval of **A17-**Product Descriptions at project and sub-product level as appropriate
  - Approve and accept products against Acceptance Criteria
  - Approve the **A22-**Quality Management Strategy.
  - Approve the quality methods, techniques and tools adopted in product development.
➢ Risk
  - Raise, express opinion on, and oversee management of risks with an affect on supplier interests such as product creation and supplier business case.

6.1.5.3.8.2   Committees :(

"In matters of decision making I have always found it best to have an odd number, and in my opinion three is too many" – Attributed to the Head of Fiat Cars.

PRINCE2® observes that a functioning project board has only a few members. As boards grow in size the time to make decisions goes up and the probability that the decision stays made goes down.

However there may be several senior users claiming appointment to the board. In this case PRINCE2® suggests forming a sub-committee with one member

appointed to the project board as 'Senior' user. This only works when the appointed senior user fairly reflects the views of the committee members.

6.1.5.3.8.3   Supplier Committee

A Senior Supplier (SS) 'opposite number' to the senior user is also needed on the board. The senior supplier(s) will represent all those areas, teams, groups and sub-contractors who will supply specialist skills to create the requested outcomes. Again there may be several holders of this role on the board. As a guide don't have more senior supplier(s) than senior user(s) on the project board.

PRINCE2® also suggests that if too many senior suppliers have a claim to sit on the project board a sub-committee may be convened and the chair take the Senior Supplier role on the board. In my experience a supplier sub-committee idea only works when contractual obligations make one supplier the prime-contractor. Otherwise factional interests make the politics of the supplier sub-committee idea difficult in reality.

6.1.5.3.8.4   Sub-Committees Equal Potential for Problems

[Also beware that sub-committees need to communicate before and after every project board decision in order to 1) inform and 2) take actions away for resolution. The potential for undesirable costs, especially miss-communication and delay is great.

Where multiple providers of requirements and resources exist then they should be directly involved in sessions to capture (**A20-**PID or) **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, … } and to **[17.4.1** Plan the next stage]. Then project board Directing a Project (DP) activities can more safely be performed without direct involvement of all those claiming a seat.

6.1.5.4   The Board's Decisions

The board jointly discuss project status prior to the decision making. Ultimately all project board decisions are made by the exec and implemented by the rest of the project board and the project manager making aligned, local, situational decisions.

The involvement in the change initiatives direction of senior decision makers has been shown repeatedly over the years to be the pivotal factor in project outcome. Project board involvement is a duty upon which success rests.

The interested reader should seek on the web for Standish Group's "Unfinished Voyages" paper. Less well known than the Chaos Report but with more concrete guidance.

6.1.5.4.1.1   The Exec Not the Senior user(s) is Really Accountable

PRINCE2® defines the senior user(s) as "accountable for realising the post-project benefits". [Pages 28 (sic) and 281]. The assertion is dubious.

[No, the assertion is wrong! The APM's BOK says it correctly right up front: page 2 section 1.1 6th bullet "the sponsor is accountable for the achievement of the defined benefits")

In a PRINCE2® exam you lose the mark if you say sponsor because the book says senior user(s) while in the APMP exam it is the other way around. Clearly this is a nonsense versus reality.

I suggest for now that the senior user(s) may meaningfully be accountable for specifying products that are fit for purpose, and for bringing them into use but no more: the debate in detail is **See X on Page Y**.]

6.1.5.4.2 *The Assurance Role Holders Support the Board*

All three board roles (exec, senior user, and senior supplier) have a duty of responsive involvement to ensure that the project is conducted to the best of the abilities of their staff and is aligned to their interests. They are accountable for project success as defined by those they represent. IE Understanding expectations, resolving contradictions and ensuring the project is on-course to achieve what is agreed.

To succeed requires appropriate availability and skills that the project board members may not feel able to bring to the project directly.

6.1.5.4.2.1 *Decision Making Capability and TIME*

The board members must have the decision making capability but may not have the time, the skills in depth, or the attention to detail that controlling a project's product delivery can demand.

The holders of exec, senior user and senior supplier roles are likely (even expected in most projects) to delegate these duties to people with time and expertise to actually carry the duties out. Each board member may appoint one or more people, full or part time to project assurance roles.

6.1.5.4.2.2 *Project Assurance*

The delegated, detail oriented board responsibility is called the 'Project Assurance' role. PA is a guidance and over-sight role that independently assesses the project manager's and project team's performance on behalf of one or more project board members. Project assurance and project manager or project support duties cannot rest with the same person (or people).

6.1.5.4.2.3 *Independent and Fair*

The assurance role splits into Business assurance User assurance and Supplier assurance. Project assurance role holders report directly to one or more board members. They are the project board's eyes and ears.

Project assurance role holders must be independent of the project manager (and unbiased) to give a fair reflection of project status.

Project assurance as a subset of the three board accountabilities is the checking process to ensure that the expectations of each board member's constituency are being met by those to whom they have delegated responsibility and authority.

6.1.5.4.2.4   Involved in Every Project Activity

Within every activity of the official manual is a reminder to include project assurance involvement. The three assurance role's duties are broad, many and actually very similar: so we can mostly cover them once here meaningfully instead of 99 tautologous repetitions.

Project assurance should involve themselves in all project activities and continually ask:

- are the right people involved?,
- Is communications between the people effective?
- Were the inputs received by those involved adequate?
- Are they making sound decisions in "my" board member's interests?
- Are they pursuing the right targets and pursuing them competently?
- Have they the skills and the required experience, appropriate regulations, quality standards and tools? in order that the project delivers "my" board member's interests.

Project assurance should consider every project management activity, the conduct of every specialist work package, and the qualities of every product produced by either project management team or specialist team members: In short EVERYTHING.

Project assurance is required at each key decision point and routinely to express their opinion on whether the project is progressing 'safely'.

6.1.5.4.2.5   Approved by the Board

Most expressions of "approved by the board" anywhere in PRINCE2® guidance should be read as "probably on advice from project assurance, who may have looked in rather more detail and possibly with more insight than the project board member could manage and hopefully throughout the activity's performance".

Within the context of **[16.4.2** Execute a Work Package**]** within Managing Product Delivery (MP) the project assurance role holders are assessing specialist activities and products whereas in every other activity they are assessing project control over project management products.

A number of project assurance staff with different domains of expertise may be (are) required for safest (if most expensive) delivery.

6.1.5.4.2.6   Project assurance Involvement With The Themes

The exec's assurance role in the **A2-**Business Case was covered with the exec's role.

Assure, review and suggest improvements to or actions in respect of:

- ➢ the examining and resolving of concerns (Change theme)
- ➢ selection of project team members (Organization theme)
- ➢ engagement of stakeholder. (Organization theme)
- ➢ communications are received and understood (Organization theme)
- ➢ the project and plans reflect <u>current</u> needs of the business in the external current context and progress achieved and forecast (Plans and Progress theme)
- ➢ progress against agreed tolerances. (Plans and Progress themes)
- ➢ suitable **A22-**Quality Management Strategy, quality reviewers and approval authorities. (Quality theme)
- ➢ reviewing all **A17-**Product Descriptions including the **A19-**Project Brief { Project definition { <u>Project objectives, Desired outcome, … }, … </u>**A21-**<u>Project Product Description</u>, … } and **A20-**Project Initiation Document { <u>Project definition { Project objectives and desired outcomes, … }, … </u>**A16-**<u>Project Plan</u>, … }. (Quality theme)
- ➢ implementation of the **A22-**Quality Management Strategy, project management procedures and quality procedures. (Quality theme)
- ➢ risk management practices match a relevant and useful **A24-**Risk Management Strategy. (Risk theme)

6.1.5.4.3   Change Authority

All project management products (EG the **A20-**Project Initiation Document) exchanged between the project manager and project board are base-lined by the act of approval by the board. All specialist products are baselined when approved by their competent authority (as defined in the **A17-**Product Description (**see X on Page Y**)).

6.1.5.4.3.1   Baselined Means No-Change

Once a product is base-lined it is 'frozen'. It may not have further time or money spent on amending it unless explicitly authorised. Its allocated budget is closed (if only notionally and temporarily).

PRINCE2® says the duty to inspect <u>all</u> off-specifications and Requests for Change to <u>any</u> baselined product rests with the project board.

6.1.5.4.3.2   Delegation of Change Authority

For considerations of expertise and availability the actual approval authority is often delegated to one or more people to act as a 'Change Authority'.

During the Initiation Stage or at stage boundaries the duties and authority limits of those appointed to the change authority are agreed and recorded in role descriptions. (For details **see X on Page Y**).

Candidates for roles as part of the change authority are often selected from those with project assurance duties. The duty may be assigned to the project

manager, perhaps with tiered limits for different levels of discretion allowed by the project manager and project assurance when acting as change authority with the project board retaining the ultimate sanction.

6.1.5.4.3.3   Change Budget

The change authority will exercise control over a 'change budget'. IE Time [**and** money, skilled resource, will and possibly discretionary items of scope]. The change budget is set aside at project or stage start for allocation if required. Often the authority is limited to impacts under some individual and aggregate limit [in any of the scales discussed for tolerances earlier.] *See X on Y*

The allocated change budget is included within specific plans. Where a time oriented change (or time based contingency budget) is allowed then the variability of timing of resource assignments must be considered during scheduling, as discussed later.

6.1.5.4.3.4   Ready For Review

A product is actually baselined, frozen from change when 'ready for review'. When successfully reviewed it is deemed 'releasable' and its budget for this development step truly closed. (*See X on Y CM Release*)

If the review of the product makes recommendation for amendments that are inside **A26-**Work Package and or **A16-**Stage Plan budgets and tolerances then the product is re-worked from its assigned budgets (time, will, skill etc) without change authority intervention.

If amendment is requested or required (off-specification) at any other time, or is outside of delegated tolerances then the concern must be escalated to the first point at which authority and skills can resolve it.

6.1.5.4.3.5   Limited Thinking About Change

The change budget is intended primarily to allow the introduction into scope of new products and acceptance criteria and be able to accommodate them into resource needs, schedule and budget without generating a project level exception to CoPM ever time.

[Several considerations are relevant:

➢ The change authority reviews off-specifications and requests for change. Resolution of both is thus potentially provided for from the change budget.

PRINCE2® specifically says "don't use tolerance for changes" but also says "change may be funded by altering scope" [Table 9.2] which is effectively using scope tolerance to fund requests for change and fixing screw-ups (off-specifications).

The project management team should use their discretion situationally to use any and all allowances. Where tolerances are calculated based on uncertainty in estimates for existing elements of the baseline then using those allowances

Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) Initiating a Project (IP) Controlling a Stage (CS) Managing a Stage Boundary (SB) Closing a Project (CP)
12   14   15   17   18

Managing a Stage Boundary (SB) Managing Product Delivery (MP)
16

to expand the baseline's contents is a mistake. Expansion of the baseline should also bring expansion of the tolerances covering variation in estimates.

➢ In reality change can be initiated in any scale described for tolerance. Re-planning must then accommodate balance in all project variables.

➢ As we will discuss further later the size of each change allowance can often be estimated by observing the demeanour, skills and clarity of vision of project stakeholders, particularly those appointed to project roles during Starting up a Project (SU) and the Initiation Stage.]
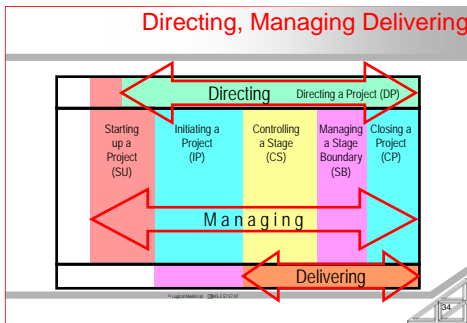
6.1.5.4.4   Project manager

The second layer of management in the project is occupied by the project manager who runs the project on a day-to-day basis under the delegated authority of the project board.

The project manager is responsible for all PRINCE2® activities except:

➢ those of Directing a Project (DP)

➢ the specific activity of **[12.4.1** Appoint the Executive and the Project Manager] which is the CoPM's

➢ Managing Product Delivery (MP) which are the team member/ manager's responsibility and the project manager's accountability.

6.1.5.4.4.1   Project Manager Involvement In The Themes

➢ Ensure initial preparation and continuous currency of the Business Case in response to progress and concerns (Risk, Issues and changes) by

• 'Managing upward' the exec's responsibility for the project's investment description or performing or delegating the necessary activities on behalf of the exec (Business Case theme).

• Carrying out analysis of the evolving project status and context.

➢ Routinely report on the project's current desirability, viability and achievability versus intentions described in the **A20-**Project Initiation Document { Project definition { Project objectives and desired outcomes, … }, … **A16-**Project Plan, … } and precursors (Business Case theme). IE via:-

• **A11-**Highlight Reports and

- occasionally via **A15-**Lesson Reports and
- at stage ends via **A8-**End Project Report and **A9-**End Stage Reports.

  (Progress theme)

➢ Create, maintain and operate the risk, quality, communications and configuration management strategies and systems (as documented in the **A20-**Project Initiation Document and **A16-**Stage Plans). Create and use:-

  - All registers and logs,
  - Role descriptions and
  - Reports

  To ensure all concerns and needs are identified and assessed and corrective, perfective or adaptive control is applied to activities up-to project closure.

  Assisted by Project Support wherever possible. (Risk theme, Quality Theme, Change theme, Organisation Themes and Progress theme)

➢ Update any and all aspects of the **A20-**Project Initiation Document and **A16-**Stage Plan in response to concerns and take appropriate adaptive, corrective or perfective actions. (Change theme).

  - Define the planning strategy
  - Orchestrate the creation and maintenance of

      - Goals (as described in the **A19-**Project Brief and **A21-**Project Product Description and the **A20-**Project Initiation Document and **A16-**Project Plan),
      - Product Breakdown Structures (PBSs),
      - Work breakdown structures (WBSs),
      - Precedence networks,
      - Resource profiles and task schedules,
      - Including technical reviews and project performance reviews (end of stage gate reviews)

  - Ensure plans reflect customer's quality expectations and acceptance criteria (AC), that acceptance criteria are embodied in **A17-**Product Descriptions and that team member/ managers work to all quality standards appropriate to each **A17-**Product Description and **A26-**Work Package.

    IE create and use **A16-**Plans for the Project and Stages and Teams and Exceptions as needed.

  - Monitor status of all aspects of the project and its context upto project closure and delegate, manage or escalate appropriate responses.

  - Authorise use of budget and execution of **A26-**Work Packages from the baseline schedule or as a result of **[15.4.8** Take corrective action], EG when resolving **A26-**Work Package level Tolerance-Threats.

    (Plans theme and Progress theme)

> ➢ Design, maintain, appoint and build the project management team, their competencies, role descriptions, communications needs and duties (Organisation theme)

6.1.5.4.4.2   Help With Specialist Tools

The project manager may be part time and have technical or non-project duties as well as project management duties. PRINCE2® says project support duties such as configuration management falls to the project manager if not otherwise staffed.

The operation of tools and techniques to support the project may require time or skills the project manager doesn't have. One or more persons in a full or part time Project Support role may provide time for administrative duties and perhaps specialist skills such as Risk management as well as Configuration management (CM) or.

For example skills in the use of tools and techniques such as:

➢ the product breakdown structure and the running of effective workshops to capture their contents, or
➢ techniques such as earned value management to present achievement versus baseline,
➢ the calculation of discounted cash-flows or
➢ the representation of precedence networks and resource profiles in software tools like Primavera or Microsoft Project
➢ Project support aid all members of the project management team as requested.

6.1.5.4.4.3   Specialist Support

Operation of configuration management tools particularly represents skills the project manager may not have (and shouldn't be spending time on!). Configuration management is vital but it is also domain specific – IE specific to the discipline whose products are being controlled. PRINCE2® has noted the cross-over to project status reporting from well kept CM data but this doesn't make the whole topic a project manager's accountability.

It seems unlikely to me that anything but trivial configuration management could be performed by someone without expertise in configuration management and configuration management tools. CM *See X on Y*.

Configuration management is discussed when we get to **[14.4.2** Prepare the Configuration Management Strategy] as part of the Initiation Stage.

In contrast risk management is a skill the project manager must have as it **requires** constant dialogue with the project board members. The project manager probably can't afford the time to conduct configuration management but can't afford NOT to make the time to conduct risk management.

6.1.5.4.4.4   *Project Support Involvement With The Themes*

➢ Operate the administrative elements of all project strategies and procedures in order to maintain the project registers and records. (EG Compile and update **A16-**Stage Plan, Concerns { **A12-**Issue Register, **A25-**Risk Register }, Product controls, **A5-**Configuration Item Records and all other appendix-A items)

- Store and provide appropriate, authorised access to all base-lined CIs – Management products and specialist products (Configuration Librarian/ Change theme)
- Produce Product Status Accounts (Change theme)
- Organise travel, room bookings. Diary coordination, meetings and other administrative tasks.
- Provide services as meeting scribe. Particularly the arranging of, and minute-taking for quality reviews.

➢ Assist with the creation and distribution of any or all reports such as **A11-**Highlight Report, **A10-**Exception Reports, **A13-**Issue Reports. (Progress theme).

6.1.5.4.4.5   *Project Manager is From the Customer Side*

PRINCE2® tells us that the project manager is a member of the same organisation as exec and senior user(s) rather than from the organisations represented by the senior supplier(s) and technical team members. Note this thought as later we will have to explore how this affects risk perception.

[In my experience if there is only one person with the project manager title they are normally from the supplier side (whether the project is conducted in-house or results are provided by a sub-contracted provider). If there is a customer side project manager then they are not the only person within the project with that title.

In general projects should be "by the business, for the business" not "done too the business". Thus 'the' full-cycle investment manager should always be the exec!]

6.1.5.4.5   Team Manager and Team Members

The bottom management level is the home of the technical team leaders, this is an optional role, [PRINCE2®' s term is "team manager" but these people should be providing their teams with technical leadership rather than just the administrative actions of management].

The role falls to the project manager to perform where project staff don't have team managers to report to.

Below each team manager are the technical staff who contribute to planning and build the project's products. IE create the project's impacts.

6.1.5.4.6   Designing the Management Team Concluded

As project manager and exec progress through **[12.4.3** Design and appoint the project management team**]**, as far as is possible with what we currently know we write role descriptions and appoint people to post.

Role descriptions will be expanded during the Initiation Stage with specific control accountabilities.

Reality often invades and we finish or just continue assigning roles through Initiating a Project (IP) and beyond.

SOOP-49.   All the procedures in the world are of no use without people, while good people without procedures can succeed. The actions to appoint the team are 99% of the determinants of project outcome.

SOOP-50.   Nothing happens in a project without people.

6.1.5.4.6.1   The Life & Times of the Project Management Team

The structure and appropriate staffing of the project management team is maintained throughout the project, primarily by a review of who holds which role as we change stages. At each stage boundary some staff may be released and some engaged.

EG imagine the project board senior supplier(s) and team managers on a project to build a new hotel as it moves from land-acquisition to building design, from design into construction and construction to decoration and furnishing.

Managing a Stage Boundary (SB)'s **[17.4.1** Plan the next stage**]** provides the advice under normal stage ends or **[17.4.5** Produce an Exception Plan**]** for premature stage ends. At premature stage ends staff changes are not uncommon [persecution of the innocent, promotion of the guilty – normal project stuff].

6.1.5.4.6.2   Project End

Project staff resources are released as the exec and project manager **[18.4.1** Prepare planned closure**]** and the project board **[13.4.5** Authorise project closure**]**.

Process Numbers

13 Directing a Project (DP)

12 Starting up a Project (SU)
14 Initiating a Project (IP)
15 Controlling a Stage (CS)
16 Managing a Stage Boundary (SB)
17 Managing Product Delivery (MP)
18 Closing a Project (CP)

Initiation Stage | 1st Delivery Stage | 1st Last Delivery or Stage | Managing a Stage Boundary (SB)

Section: 2   Page: 6.1.5:119 of 541

CoPM

12.4.1 Appoint the Executive and the Project Manager
1. CoPM define Executive's & project manager's role descriptions & appoint based on skills & availability:
Exec has duty to deliver a product that will return the forecast benefits that justify the cost

Organisation

OR-04 F:2   In which process(es) the Organization theme is applied and which roles are responsible for this

Project Board

13.4.1 Authorize initiation	13.4.2 Authorize the project	13.4.3 Authorize a Stage or Exception Plan	13.4.5 Authorize project closure
1. Board confirm PMT members accept roles	1. Board obtain/ commit resources to deliver project	1. Board ratify team appointments or changes	1. Board advise resources providers they are being freed
2. Board obtain/ commit resources to deliver Initiation Stage		2. Board obtain/ commit resources to deliver stage	2. Board transfer concern for resourcing benefits review

Project manager

12.4.3 Design and appoint the project management team	14.4.1 Prepare the Risk Management Strategy	15.4.4 Review stage status	17.4.1 Plan the next stage	18.4.1 Prepare planned closure
1. PM perform stakeholder analysis	1. PM assigns risk management roles in A24-Risk Management Strategy	1. PM considers resource utilisation, status, availability, suitability & outlook	1. PM Reviews changes to the PMT structure and roles	1. PM seeks approval to advises board to release resources to CoPM
2. Consider tailoring of P2 Org theme to split & combine roles	14.4.2 Prepare the Configuration Management Strategy		2. PM assesses resources to deliver next stage	
3. Define roles & appoint SU & SS based on project size & significance, people's skills & time & CoPM agreement	1. PM assigns config mgmt roles in A4-Communications Management Strategy		17.4.2 Update the Project Plan	18.4.2 Prepare premature closure
4. Consider Project Assurance, Team managers, Project support	2. Board consider need for Change Authority		1. PM revises Pj Plan to reflect changes to the PMT structure and roles	1. PM seeks approval to advises board to release resources to CoPM
5. Define reporting lines	14.4.3 Prepare the Quality Management Strategy	15.4.1 Authorize a Work Package		
6. Consider training needs (eg quality methods)	1. PM Assigns Q mgmt roles in A22-Quality Management Strategy (consider links to Corp "QA")	1. PM Assigns A26-Work Packages to Team members/ managers	17.4.4 Report Stage End	
	14.4.4 Prepare the Communication Mgmt Strategy		1. PM reports on team performance in A9-End Stage Report	
	1. PM Assigns comms roles in A4-Communications Management Strategy			
	14.4.5 Set up the project controls		17.4.5 Produce an Exception Plan	
	1. PM adds control duties, authority limits to Role descriptions	15.4.3 Receive completed Work Packages	1. PM Reviews changes to the PMT structure and roles	18.4.4 Evaluate the Project
12.4.5 Select the project approach and assemble the Project Brief	2. Finalise PMT structure (as far as can)	1. PM acknowledges assignment complete	2. PM considers resources to deliver exception plan	1. PM reports on team performance in A8-End Project Report
1. PM Adds to/ updates PMTs & roles to match Pj brief & Pj approach	14.4.6 Create the Project Plan			
	1. PM Updates role descr. If needs			
	2. Confirm resource needs (estimating skills)			
	3. Include control duties in project plan			
	14.4.8 Assemble the Project Initiation Documentation			
	1. PM includes all PMT structure & role definitions			
	Plan Delivery Stage			

Team Manager

16.4.1 Accept a Work Package
1. Team create A16-Team plan to confirm work and resource constraints are in balance

45

Process Numbers

	13 Directing a Project (DP)		
Starting up a Project (SU) 12	Initiating a Project (IP) 14	Controlling a Stage (CS) 15	Managing a Stage Boundary (SB) 17	Closing a Project (CP) 18
	Managing a Stage Boundary [SB] 16	Managing Product Delivery (MP)	

Organisation

In which process(es) the Organization theme is applied and which roles are responsible for this

CoPM

12.4.1 Appoint the Executive and the Project Manager
1. CoPM define Executive's & project manager's role descriptions & appointment based on skills & availability
2. Exec has duty to deliver a product that will return the forecast benefits that justify the cost

Project Board

13.4.1 Authorize initiation
1. Board confirm PMT members accept roles
2. Board obtain/ commit resources to deliver Initiation Stage

13.4.2 Authorize the project
1. Board obtain/ commit resources to deliver project

13.4.3 Authorize a Stage or Exception Plan
1. Board ratify team appointments or changes
2. Board obtain/ commit resources to deliver stage

13.4.5 Authorize project closure
1. Board advise resources providers they are being freed
2. Board transfer concern for resourcing benefits review

QR Q4 F2

Project manager

12.4.3 Design and appoint the project management team
1. PM perform stakeholder analysis
2. Consider tailoring of P2 Org theme to best split & combine roles
3. Define roles & appoint SU & SS based on project size & significance, people's skills & time & CoPM agreement
4. Consider Project Assurance;
5. Team managers, Project support
6. Define reporting lines
7. Consider training needs (eg quality methods)

12.4.5 Select the project approach and assemble the Project Brief
1. PM Adds to/ updates PMT's & roles to match Pj brief & Pj approach

14.4.1 Prepare the Risk Management Strategy
1. PM assigns risk management roles in A24-Risk Management Strategy

14.4.2 Prepare the Configuration Management Strategy
1. PM assigns config mgmt roles in A4-Communications Management Strategy
2. Board consider need for Change Authority

14.4.3 Prepare the Quality Management Strategy
1. PM Assigns Q mgmt roles in A22-Quality Management Strategy (consider links to Corp "QA"

14.4.4 Prepare the Communication Mgmt Strategy
1. PM Assigns comms roles in A4-Communications Management Strategy

14.4.5 Set up the project controls
1. PM adds control duties, authority limits to Role descriptions
2. Finalise PMT structure (as far as is can)

14.4.6 Create the Project Plan
1. PM Updates role descr. if needs
2. Confirm resource needs (estimating skills)
3. Include control duties in project plan

14.4.8 Assemble the Project Initiation Documentation
1. PM includes all PMT structure & role definitions
Plan Delivery Stage

15.4.4 Review stage status
1. PM considers resource utilisation, status, availability, suitability & outlook

15.4.1 Authorize a Work Package
1. PM Assigns A26-Work Packages to Team members/ managers

15.4.3 Receive completed Work Packages
1. PM acknowledges assignment complete

17.4.1 Plan the next stage
1. PM Reviews changes to the PMT structure and roles
2. PM assesses resources to deliver next stage

17.4.2 Update the Project Plan
1. PM revises Pj Plan to reflect changes to the PMT structure and roles

17.4.4 Report Stage End
1. PM reports on team performance in A9-End Stage Report

17.4.5 Produce an Exception Plan
1. PM Reviews changes to the PMT structure and roles
2. PM considers resources to deliver exception plan

18.4.1 Prepare planned closure
1. PM seeks approval to advise board to release resources to CoPM

18.4.2 Prepare premature closure
1. PM seeks approval to advise board to release resources to CoPM

18.4.4 Evaluate the Project
1. PM reports on team performance in A8-End Project Report

Team Manager

16.4.1 Accept a Work Package
1. Team create A16-Team plan to confirm work and resource constraints are in balance

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Roles: 2.3, 13.1 org, 4.3 3bp5, 4.4, 14.1, .5* 6.3.1, p55, l6.3, 7.4, l7.1, 8.3 l7.2, 8.3.5 l7.4, l8.3, 9.3.1, 9.4, l9.3, 10.2.3, 10.4, l10.2, l12.1/2, 12.4.1xl/3xr5x, 13.3, 13.4.1/2, 14.4.1-7, 15.3, 16.1, 17.2, 17.4.1/2/5, 19.2, l19.1, l19.2.5d6, 19.4.1.2, p219, l19.3, l19.2, 19.5.1.1, 19.6.1.2x, 19.8.1, 19.9.1, l19.3, Ainto, a4/ 5.2/ 8.5/ 9.5/ 15.5/17.5/19.2/20.2/ 20.5/22.2/23.2/24.2/25.2, Tb1, ApxO2, e/14/18/45/a6p9.5, g309-pmfpm5/pd.310-qrffp5, 312-rdks, 313fm/5u/s

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6.1.5.5 Recap Of Starting up a Project (SU) So Far

So far arrival of the mandate has:

➢ caused appointment of the executive and project manager,
➢ consideration of relevant lessons and the
➢ design and assignment, as far as is possible of roles to people.

6.1.6 SU Part Two: Task

By the time Starting up a Project (SU) is complete the project's terms-of-reference [officially the **A19-**Project Brief but perhaps more pragmatically a tailored **A20-**Project Initiation Document] must set-out { Project Definition {…Objectives, Desired outcome…}, **A21-**Project Product Description…}.

In total the project's goal and deliverables in acceptance criteria terms.

In some circumstances, eg Research and Development, the goal may lack definition, EG "Explore and see what we discover that might be commercially

viable". In others it might be very specific "We have established operations from a new company HQ in the existing, refurbished building at 1 The High Street".

6.1.6.1 Overview of (SU)'s Parallel Work Streams

The work of Starting up a Project (SU) happily forms two parallel, highly integrated main thrusts. The guidance of the three activities discussed so far will 'currently' be establishing the team and capturing relevant lessons. We also need to be scoping the project and capturing "clear and complete requirements" [12.3] for the objective the project team are asked to tackle.

6.1.6.1.1.1 Who and What and How and Who and What…

Scoping is more or less in parallel and iterative with the development of the team because the **A2-**Business Case, **A21-**Project Product Description and Project Approach will affect who is suitable as senior user(s) and senior supplier(s).

What outputs are desired will affect who is impacted by the project (which business-as-usual staff and customers are affected). How the outputs are created or acquired will affect who qualifies for supplier representation, possibly changing who is (are) a suitable senior supplier(s).
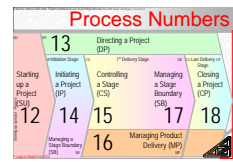
Senior user(s) and senior supplier(s) will in turn influence what the business proposition is in total. All stakeholders influence the project's goals and vice-versa.

[In exam questions when the scenario is before supplier selection the best SS is generally the 'Contracts Manager'!]

6.1.6.1.1.2 Official Manual's Grouping Of The Work

The official manual groups remaining SU activity as:

➢ **[12.4.4** Prepare the outline Business Case] which
  • Creates the description of **WHAT** the project's end point is in output terms in the **A19-**Project Brief and **A21-**Project Product Description and
  • Describes the end point in benefit versus cost and timescale terms in the **A2-**Business Case.
➢ **[12.4.5** Select the project approach and assemble the Project Brief] which functionally have nothing to do with each other, they just occur around the same time in the project. The breakdown is:
  • Describe in high level terms HOW to deliver the results in the Project Approach (The project approach covers our considerations such as "make or buy" rather than specific tasks) and
  • Consolidate information from the project mandate, project approach and **A21-**Project Product Description and call it the **A19-**Project Brief. Then…
  • Create the detailed control regimen, resourced schedule and budget for the Initiation Stage – the 'Initiation **A16-**Stage Plan'.

How these items are grouped in the official manual exhibits what in process design terms is labelled low cohesion and coincidental coupling. A re-grouping that matches a reasonable way to organise the work for real might be the following three steps in parallel with the fourth finishing as everything else in Starting up a Project (SU) draws to a close.

➢ Create the **A21-**Project Product Description and Project Approach,
➢ Prepare the outline **A2-**Business Case,
➢ Create the Initiation Stage Plan,
➢ Prepare submission of all materials to the project board.

[Readers interested in process design might search out Larry Constantine's 1970's work on coupling and cohesion.]

6.1.6.1.1.3   Project Definition: Scoping

At the end of Starting up a Project (SU) we need a definition of the project's end point and a description of the project's context or start point: in total the project's scope. Scope should be defined as clearly as is possible. Business Case and plans should be in a form that can be presented to the project board for consideration of whether to invest further.

6.1.6.1.1.4   From Nothing to Goal

There a probably an endless number of ways to develop specification of the project's scope. My preferred approach for what we need to do is:

1. Identify significant stakeholders
2. Define the project's overall closure criteria (the Goal)
3. Decompose the goal to discrete impacts, outputs and management products with Acceptance Criteria (AC) – collectively the project's 'products' although this does not mean they must be physical items and includes items the customer walk-away with and those used for project control such as **A24-**Risk Management Strategy, **A25-**Risk Register and **A11-**Highlight Reports.
4. Expand every product's definition by describing the portion of its life-span that overlaps project's boundaries of time and budget.

SOOP-51.   More broadly and more correctly expand every project product's life-span where it overlaps the period of the sponsor's investment and return on investment (a through life view).

5. 0.

Some thoughts to suggest how to do it follow.

6.1.6.1.1.5   Starting up a Project (SU)'s Input and Outputs

We may receive a full **A2-**Business Case in the project mandate or we may create a full **A2-**Business Case but typically we don't know enough during Starting up a Project (SU). Normally we create just an outline. All the project context, objective and justification information is gathered together to create the **A19-**Project Brief.

The Initiation Stage is assumed by PRINCE2® to be big enough to need a reporting regimen and stage tolerances and an assigned schedule of activity: so in SU we must also create an Initiation Stage Plan. [The guidance given in **[17.4.1** Plan the next stage] is appropriate but that isn't what the official manual says.]

6.1.6.1.2   [12.4.4 Prepare the outline Business Case]

Some elements of the **A2**-Business Case will have been known since it was talked about enough to generate a Project Mandate but to create even an outline **A2**-Business Case means that we have to approximate the costs and timescales.

6.1.6.1.2.1   The **A2-**Business Case Depends on Costs So Depends On **A21-**Project Product Description.

Either cost and timescale are derived from the work to be done with the resources available or the scope achievable is derived from the cost, timescale and resource constraints imposed.

Either way the project's end-point must be defined in Acceptance Criteria (AC) terms before the business case's investment appraisal can be calculated. Thus to **[12.4.4** Prepare the outline Business Case**]** the crucial <u>first step</u> is to define the project's end point in terms of its outputs (deliverables).

6.1.6.1.2.2   Product Based ~~planning~~ Scoping is The Method of Choice

"Product Based Planning" (PBP) is a deliverable oriented approach to scoping. PBP is the best method available for defining a project's results in customer oriented terms.

PBP provides a concrete definition of known Acceptance Criteria (AC) and explicit recognition of omission and gaps for any other AC. The official manual says PBP starts with creation of the **A21**-Project Product Description.

I suggest scoping starts with identification and analysis of stakeholders, proceeds to the definition of the project's goal aka objective as seen by the powerful and then describes the products (plural) that when delivered resolve the project objective and enable the return that justifies the investment.

Product based ~~planning~~ scoping uses the technique of decomposition and the ~~Product~~ [Results] Breakdown Structure (PBS) tool with **A17**-Product Descriptions to record the results. ~~Product~~ Results breakdown structures must be created collaboratively is success is to be achieved.

6.1.6.1.2.3   Resolving Needs and Wants

Definition of the project's objective and the creation of the **A21**-Project Product Description requires that we address four elements of quality:

➢ Customer Quality Expectations (CQE)

CQE are the potentially contradictory and often ill defined expectations of those involved in the project. [A better label would be "Stakeholder Expectations"].

> Acceptance Criteria (AC)

Acceptance criteria are the synthesis of the expectations that the project is explicitly planned to meet. Translation is often 90% analysis and 90% politics.

> Fitness For Purpose (FFP)

The Customer is accountable for expressing AC that match their perception of Fitness For Purpose (FFP), and monitoring product development proceeds towards a product that will be FFP when delivered.

> Conformance To Specification (C2S)

In contrast the technical development team is responsible for producing products that are "Conformant to Specification (C2S)" and no more and no less.

PRINCE2®'s two terms CQEs and ACs characterise early and late phases of the process to agree and commit to a definition of the project's scope.

6.1.6.2 Stakeholder Analysis

6.1.6.2.1.1 Stakeholders Defined

SOOP-52.   *Stakeholders are* all those with an interest in or ability to exert an influence on the project. *Note interest does not have to be a vested interest nor does influence have to be a positive influence to count as a stakeholder.*
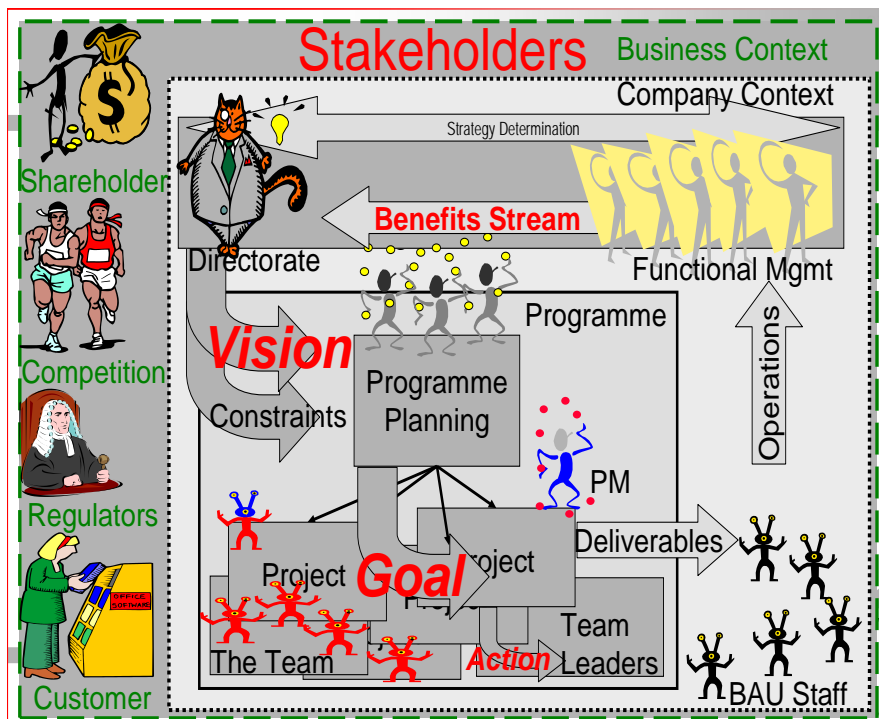
6.1.6.2.1.2   Project Politics Is A Fact

Those stakeholders with power need to be engaged. Those with power and a parochial interest that isn't aligned to the exec's interest should be top of the engagement list. Engage them early, at the very least to understand why they hold different priorities.

6.1.6.2.1.3   PRINCE2® ISN'T Best Practice in Stakeholder Analysis

[Outside of the official manual's guidance best practice at this point in project definition centres on stakeholder analysis.

The official manual contradicts most accepted project wisdom. The official manual de-emphasises the need for stakeholder analysis in projects by saying "If a formal stakeholder engagement procedure is needed" (sic! pg 158) and suggests that stakeholder engagement "is usually carried out at programme level". <u>Stakeholder analysis is vital whatever the levels.</u>

The official manual actually suggests we start identifying those with power and deciding the management strategy applied to them after the determination of the project's goal is completed! The official manual says the **A21-**Project Product Description is determined in Starting up a Project (SU) while stakeholder analysis is not performed until the Initiation stage **[14.4.4** Prepares the Communications Management Strategy].

The advice is wrong.]

6.1.6.2.1.4   Cross-Sell MSP

Too little emphasis starting too late. When we get to Initiation the single most important communications: "What are we aiming for?" and "Can you commit to it?" are supposed to be over.

PRINCE2®'s guidance is coloured by being part of a stable of OGC guidance that attempts to integrate with (cross-sell) the OGC's MSP programme management guidance.

6.1.6.2.1.5   Project Killers

I suggest that stakeholder analysis starts on project day-one and is repeated to some degree every day. Characterising the attitude to risk can only be done with stakeholder involvement, knowing customer (quality) expectations and agreeing acceptance criteria without having a solid stakeholder analysis are all mistakes that are normally project killers.

6.1.6.2.1.6   Goal Determination Equals Opportunity to Motivate

Creation of goal statements and definition of outputs describe the drivers of organisational changes that will heat-up the politics, deliver benefits for some and disadvantage others, generate revenues and incur costs. The project end-point is the submerged counter-part of the ice-berg to the visible part that is the **A2-**Business Case.

Failure to engage stakeholders at this time is the first potentially terminal threat to the project's success. Success in engaging stakeholders early and positively is a huge boost to the probability of project success. Omitting industrial strength stakeholder management is naive.

Stakeholder analysis must start when exec and project manager **[12.4.3** Design and appoint the project management team] and perhaps **[12.4.2** Capture previous lessons] and be a constant consideration from then onwards, and for the investment's sponsor (the exec?) beyond project closure.

6.1.6.2.1.7   Lack Of Buy-In is Incompetence

Project manager's often complain that their projects suffer from lack of buy-in. Lack of buy-in is incompetent stakeholder management by project manager, senior user(s), exec or all three.

Every project manager who complains about lack of buy-in should reflect that generating buy-in is 90% of what their job is about. – then they should ask "what are the techniques and tools to achieve it?".

PRINCE2® doesn't say it, but creation of the **A21**-Project Product Description is a crucial step for ensuring buy-in (commitment) at every level of staffing. Commitment is created through the simple act of involving people and listening to them.

> SOOP-53.   The project manager should appreciate the question in hand at the start of planning is "how to create a shared, agreed view of what we will have achieved when the project ends" The tools are the white-board and breakdown structure. The techniques are social sessions that 'decompose' products and 'back-cast' activities.

6.1.6.2.1.8   Buy-In: White Boards

After Stakeholder Analysis (to identify the powerful) the techniques to achieve involvement are goal statements and hierarchical decompositions. The tools for creating buy-in allow simultaneous view of the same information and encourage debate without personal confrontation. They also, literally get people on their feet: the tools and techniques include whiteboards (better if physical but virtual if unavoidable) and maybe even yellow sticky-notes!

6.1.6.2.1.9   Shared Vision is THE Step to Success

Clear expression of acceptance criteria which are debated to address disbelief and incorporate the concerns (of the powerful) is THE most important step in improving project probability of success. Knowing that stakeholders do not have a common view is almost as valuable: then the project manager can ensure the exec and senior user(s) addresses it!

> SOOP-54.   Achieving a shared view of the end point (and escalating irresolvable contradictions to the exec and perhaps CoPM) IS the project manager's job. The biggest focus on this aspect is during definition of project

*(stage, **A26**-Work Package) end-point. Subsequently focus is required during change control.*

See X on Y.

6.1.6.2.1.10   Willingness to Voice Doubts & Idea

Involvement generates willingness to voice doubts and ideas. Only with knowledge of people's doubts can we address them, resolve causes of dis-belief and define project objectives and approaches that are believed, agreed and committed to.

6.1.6.2.1.11   Every one Arrives with Expectations

SOOP-55.   At the beginning of a project (stage, phase or work-package) everyone arrives with their own expectations. Expectations may be unspoken, immeasurable and contradictory. By the time we've finished defining scope the hope is that all targets are agreed, aligned and explicit. 'All' is unlikely, people often keep personal desires unspoken, but 'All', including the personal is the target.

6.1.6.2.1.12   Expectation of Benefits

All parties expect some form of benefit in order to justify their involvement.

The total set of outcomes must look attractive to *each* party. IE each individual person's view of the benefit they perceive must outweigh their view of the cost and effort of their contribution if we are to gain and sustain their motivation.

No party that expects a net loss will contribute although 'gain' is much more complex than just money (EG why do people write Wikipedia entries? For recognition as a maven, not for money). If any party's view of benefits evaporates during the project then their contribution will too. If they start without a view of benefit then commitment will stop at lip-service and if they start with an expectation of disadvantage then they will resist and sabotage openly or subversively. The interested reader might search for 'the Capability **Im**maturity Model (CIMM)'.

Recall: Nothing happens in projects without people.

6.1.6.2.1.13   Stakeholder: Don't Omit the Powerful Project Killers

The omission of powerful stakeholders from the "define the end point" steps during Starting up a Project (SU) poses the threat that they may later bring negative influences to bear and misses the opportunity that they may have been willing to help if handled correctly.

SOOP-56.   If some stakeholder might kill a project the best time is before much has been invested. Involving the negative stakeholders early (even if only to decide how to side-line them!) is always best.

6.1.6.2.1.14   Wake the Sleepers

Project teams that define end points in absence of stakeholders find their political difficulties proportional to the number and power of the omitted stakeholders multiplied by the instability and obfuscation of the goals.

Wake the 'sleepers', find out if they have an interest and allows those without interest to go back to sleep.

6.1.6.2.1.15   Neutral And Positive Stakeholders

Those with power who are neutral should be engaged and asked for a frank opinion. They are often the source of good feedback and if possible the best ambassadors to the negative. Those with power who are positive should be asked to donate resources and make public their commitment (and probably kept away from the negative!).

Those without power who are positive should be grouped to increase their power and those without individual power who are negative should be kept apart. (I feel like I should be saying "so said Sun Tzu" and he might have but I don't recall and haven't checked.)

6.1.6.2.1.16   Stakeholder Engagement IS Politics

Any time people make decisions over prioritisation of resource allocations then by definition we are involved in politics. Project politics is neither good nor bad, but it is a fact. There are two game strategies 1) Lose, 2) Play.

With two protagonists "option 2) Play" above has 4 outcomes i) Win-Win, ii) Win-lose, iii) Lose-Win, iv) compromise (Lose-Lose).

SOOP-57.   I suggest the correct strategy is to agree whether politics will be handled by the sponsor or the project manager or both. It should not be the project manager without explicit recognition in the project manager's role description.

The interested reader might look to the works of William Ury or Thomas and Killman

6.1.6.3 Stake Holder Analysis Process

The exec, senior user(s) and project manager and other project management team members should consider the longest possible list of potential stakeholders and assess each for :

1. significance – which means either direct power to allocate resources or set rules such as acceptance of outputs into business-as-usual or influence over other's opinions, and
2. their parochial view of what a successful project outcome would be for them.
3. 0.

6.1.6.3.1.1   Stakeholders: Shorten The List

Never skimp on making a very long list. Always include everyone's spouse, boss, kids as well as customers, suppliers, project participants, regulators, competition, sources of capital, skill, will, cooperation and dissent.

The long list should be quickly reduced to "those who matter". Exec, senior user(s) and project manager must then decide how to engage them. The major engagement opportunity is in establishing the project's major products and acceptance criteria in **[12.4.4** Prepare the outline Business Case]. Do not wait till IP.

When we get to **[14.4.4** Prepare the Communications Management Strategy] during the Initiation Stage then we should complete assessment all stakeholder's communications needs for the whole project. For now we need to know whose expectations are, and cooperation is vital to agreeing acceptable and realistic results from the project's investment.

6.1.6.4   Synthesis of AC from CQE: What, How and Why

The official manual says the Customer Quality Expectations (CQE) are translated to Acceptance Criteria (AC) while we **[12.4.4** Prepare the outline Business Case**]** and **[12.4.5** Select the project approach and assemble the Project Brief**]**. The official manual also says SU is short. I suggest in reality these may be contradictory: first if we are to succeed then the expectations we need to pay attention to are wider than just the customers, second Stakeholder Expectations

[(SE)] are often still being distilled throughout initiation and perhaps beyond otherwise SU can take a fair while. In an agile world development of CQE/ SE to AC happens without drama through-out the whole project.

6.1.6.4.1.1   Acceptance Criteria Defined

PRINCE2® defines acceptance criteria as: "*A prioritized list of criteria that the project's product must meet before the customer will accept it – i.e. measurable definitions of the attributes that must apply to the set of products to be acceptable to key stakeholders (and, in particular, the users and the operational and maintenance organizations)*" [**sic**! Wow! A direct and great quote from the 1996 manual unchanged in the 2005 and 2009 versions of the official manual. One minor niggle "project's product" could be "project's product**S**".]

Defining project closure criteria (IE acceptance criteria) with as much clarity as is possible contributes to achieving what is wanted in minimum time and at minimum cost.

SOOP-58.   *Lack of clarity about project objectives isn't 'wrong', it is often reality, but it is more expensive.*

6.1.6.4.1.2   Extracting CQEs and Resolve the Contradictions

The requirements analyst's role (perhaps the project manager's joint role) while defining the project's scope is to extract the CQE from the project's stakeholders for examination.

SOOP-59.   *It is to be expected that when Stakeholder Expectations are extracted they are incomplete and contradictory. It is the exec and senior user's roles to resolve contradictions or analyse how the project will be affected by politics and how plans will compensate for it.*

Assessing contradictory CQE is a cross-link to performing stakeholder analysis where stakeholder significance will help shape the project board's and particularly the exec's response to the resolution of incompatible CQEs (IE who gets disappointed!). If contradictions are not resolved by the exec and senior user then the project manager should document the jumble as jumbled – it makes explicit to the board when they **[13.4.1** Authorise initiation] the politics that will have to be managed through later stages.

The finalised set of ACs resolved from the CQE are the tests by which the project manager and other supplier's obligation are seen to be discharged. At that point the obligations of who ever is the Benefits Realisation Authority will start in earnest –IE generating benefits to recoup the investment.

6.1.6.4.1.3   Reality is Somewhere Between CQEs and ACs

SOOP-60.   *Reality will be somewhere between the extremes of jumbled expectation and 100% measurable, prioritised criteria. Throughout the project the project manager and exec must be gauging how complete, certain, stable and agreed the description of the end point currently is. Just because the end*

point was clear in yesterday's context does not mean it is still clear against today's context. Project context changes when powerful stakeholders or share-price or thousands of other factors change.

Once agreed (baselined) AC are strictly maintained throughout project execution by configuration management. That CM discipline could be a morning scrum type discussion so long as relevant parties acknowledge changes to cost, time, scope, quality, benefit et. al. ripple throughout the full set of targets. 'Strict maintenance' doesn't mean paper based, slow or inflexible: it means 'to the satisfaction of all competent authorities'.

6.1.6.4.1.4   *Importance of Acceptable Quality At The Start*

The collective set of required <u>project management product attributes and specialist product attributes is the project's complete set</u> of project closure (acceptance) criteria. It is desirable, but rare to fully establish a complete and stable set during Starting up a Project (SU) (Focus on Products principle and Quality Theme).

ACs dictate the product and process standards required and thus the **A26**-Work Packages that must be performed during the project. So AC determine the tasks, skills, materials, procedures and thus project costs and timescales. ACs not known during planning creates problems for accurate forecast planning so need close monitoring for reactive control. (Use of Stages principle part of the Progress theme, Plans theme and Management by Exception principle).

*SOOP-61.   Since AC drive tasks and tasks drive costs and costs drive the **A2**-Business Case then the more complete and stable the AC the more <mark>reliable</mark> is the cost side of the investment appraisal.*

(For the benefits side See X on Y Business Case).

6.1.6.4.2   *Proving Acceptable Quality*
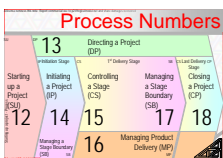
Acceptance criteria are, ideally defined before we do anything and are necessarily applied after we've done something (everything?)

Confirming ACs validates final results are conformant to specification otherwise rework is required. When AC are met the supplier's obligations are discharged and compensation under contracts (formal, informal and 'of employment') is due.

6.1.6.4.2.1   *Verification: In-Process*

Verification with-in every instance of **[16.4.2** Execute a Work Package] confirms correct and complete application of good process. Validated inputs plus verified process should lead to specialist products delivered to the senior user being conformant to specification.

In-process verification activities provides the progress tracking information that shows we are on the way to achieve final acceptance criteria at a 'whole project' level.

6.1.6.4.2.2   Product Quality is Proved With an Audit Trail

The audit trail of test results that is created in the **A23-**Quality Register from verification activity allows us to carry-out closure of each **A26-**Work Package when the team member/ managers **[16.4.3** Deliver a Work Package].

The whole audit trail justifies (or not) total project closure as the project management team **[18.4.3** Hand over Products]. (Quality theme)

(Recall 16.4 refers to Managing Product Delivery (MP) and 18.4 refers to the activities of Closing a Project (CP)).

6.1.6.4.2.3   Customer's and Supplier's Target

The supplier's target is to demonstrate at **A26-**Work Package (Phase, Stage and Project) end that they have met the acceptance criteria agreed with the customer at the beginning. When that is done the products conform to specification (C2S).

The customer then hopes to use the outputs received, to create outcomes that deliver benefits. The customer's objectives are only met if the outputs are Fit For Purpose (FFP). The customer may still have obligations to discharge – like making payments – to complete their side of any legally framed contracts.

6.1.6.4.2.4   FFP and C2S Must Match

The challenge is that the acceptance criteria must define the specification of the result of the project that will be 'Fit For Purpose'(FFP).

SOOP-62.   The Senior User(s) are accountable for the competent expression of complete and correct acceptance criteria. The expression Caveat Emptor reflects the potential gap between Fitness For Purpose (FFP) and Conformance To Specification (C2S).

Through-out the project's development phases the Senior User(s) have accountability for project assurance oversight of what is being created to ensure that when delivered it will be FFP.

6.1.6.4.2.5   Supplier Delivers Conformance To Specification

The senior supplier is accountable for oversight that assures the project approach matches the faster-better-cheaper mantra and is accountable for ensuring that products produced using the approach will conform to their specification (C2S).

SOOP-63.   The senior supplier cannot guarantee Fitness For Purpose (FFP) only Conformance To Specification (C2S).

Note: many approaches to quality define exceeding the specification as poor quality, normally by suggesting that it results from unnecessary extra cost. To

produce a 'fit' product that is an integration of sub-products means each sub-product's specification might have to be higher than the final target. EG a system made of two 90% reliable components is itself 81% reliable. Thus if the system is specified as 90% reliable the components must be 95% reliable.

6.1.6.4.2.6   *Project Accident Black-Spot*

Projects get into trouble around the C2S versus FFP area more often than through most other root cause. Trouble arises because the two concepts of FFP & C2S are so different, so close in most people's perception and both are difficult to capture, target and achieve.

PRINCE2® does an unparalleled job of cutting the Gordian Knot of CQE, AC, C2S and FFP:

➢ via creation of the Product Breakdown Structure (PBS) and Product Description (PD) in Product Based ~~Planning~~ (PBP) scoping. PBP is a user focussed exercise in scope development,

➢ via input of PBS and PD into quality planning and activity planning to ensure selection of the correct quality standards and allocation of the right people at the right time to create the right product correctly,

➢ via the linkage to the **A23**-Quality Register and the **A5**-Configuration Item Records for recording progress made and thus project status.

A description of the ins and outs of Product Based Planning (PBP), the Product Breakdown Structure (PBS), and A23 etc are coming soon.

6.1.6.4.2.7   **A21-***Project Product Description Product Description*

The **A21**-Project Product Description might contain {.

➢ Who will use the project's outputs in what context to respond to what business opportunity or business threat.

This is framing the solution's attributes such as robustness or speed to market to guide both solution design and project planning's trade-offs between 'faster better cheaper'.

➢ Major products (sic) delivered by the project.

Possibly including a suggestion of their source, the skills required to create and verify them – but see the last few items in this template.

- If cost or schedule targets matter then even at the earliest stage of definition the project's scope coverage should be 100% in breadth.

Depth of detail will be as dictated by the stakeholder's desires to specify acceptance criteria. Specification in Starting up a Project (SU) may omit detail and that will reflect in the estimates of money and effort to deliver the acceptance criteria.

The less the detail that is available then the less reliable the business case will be as a guide to the investment decision but the quicker it will be

available and the less cost will be incurred in making the initial "Is it worth pursuing?" decision.

- For each "Major product" record all customer quality expectations (CQE) [stakeholder expectations] that are expressed for any <u>product</u>, for any <u>development processes</u> and for the <u>project's management and control</u>.

- At some point products must be decomposed to the level that relevant stakeholders no longer wish to define further acceptance criteria for the component parts (as explained in **X page Y)**

[Note the <u>senior</u> user(s) have a responsibility to represent "all users" which includes the voice of the '<u>junior</u>' customers and others. A senior user who only states their own opinions rather than the blend of opinions from their constituents is a potential problem.

The 'wider constituency' tends to have power when they band together. This is most likely when their views are not responded to. The project manager should discuss concerns with the exec if senior and 'junior' users have differing messages.]

The **A21-**Project Product Description's "Major Products" are by definition the top level of the project's ~~Product~~ Results Breakdown Structure (PBS) (**fully explained in XREF**).

➢ Acceptance criteria.

ACs must be described sufficiently to define the verifications that confirm project closure - and thus payment due. This applies to projects conducted in-house without a contract or 'payment' as much as 'commercial' projects conducted under legal contract.

Recall: There is no valid equation of "To Time, Cost and Quality (Scope)" until AFTER the AC and constraints have been fed through planning to generate options and one is selected and agreed as the baseline.

A baseline balances the acceptance criteria with resources and thus derives cost and time: the baseline is two 'back-to-back contracts'. One between CoPM and exec and one between exec and project manager.

Incompatibilities between stakeholder's expectations will have to be resolved to arrive at project acceptance criteria. It is always better, but not always possible to complete the resolution before the first Enabling Stage begins. The harder the resolution would be then the greater the justification, when suitable, of using an agile approach.

➢ Project-level quality tolerances that may apply for the acceptance criteria.

If useful the project level quality characteristics like competencies for verification can be summarised here in the **A21-**Project Product Description.

Quality characteristics of each 'Major product' are best documented in their own **A17-**Product Description and cross-referenced by, or perhaps summarised in the **A21-**Project Product Description. During product based ~~planning~~ scoping each project product has its own quality tolerances defined in its own **A17-**Product Description.

- Competencies required to develop and verify each of the major products that make up the top-level of the PBS
- Methods, Competencies and Responsibilities to Accept and Handover the project's products
- Context for the project's product's functions, size, quality, complexity, robustness etc.

  [It may be appropriate to just cross-reference the **A19-**Project Brief or if tailored or a small project then the **A20-**Project Initiation Document's specification**]**

- Product source [or cross-reference the Project Approach in the **A19-**Project Brief or **A20-**Project Initiation Document**]**

}

It is likely that during Starting up a Project (SU) the **A21-**Project Product Description and each sub-product of the project's end result and each of their **A17-**Product Descriptions will start as notes on a white-board and then be notes in the project manager's **A7-**Daily Log. If you have previously done at least one project you will know to start configuration management at this point and record **A5-**Configuration Item Records for each product now. *See X on page Y*.

6.1.6.4.3   From Objective to PBS

A 'Product' Breakdown Structure (PBS) provides a results based definition of the project's scope as expanded from the 'Composition' or 'Major Products' heading in the **A21-**Project Product Description. Delivering outputs matched to the project's scope is the project's (supplier's) obligation to the customer IE the project supplier's exit criteria.

6.1.6.4.3.1   Adding Clarity

For example at the highest level our objective may be "change culture to improve customer service". It is acceptable that we don't really know what this means in tangible terms when said out loud the fist time. Decomposition will add clarity to the point of defining the required acceptance criteria.

As another example our project may be to "design and build a bicycle". Without qualification this is just as unknown: is it mass produced and aimed at six year olds or a one-off for an Olympic athlete? Further if for an athlete then are they a sprinter or a road racer?

6.1.6.4.3.2   PBS to Schedule

As the initial results of product based ~~planning~~ scoping are documented in the **A21-**Project ~~Product~~ Results Description, so they are first represented in the ~~Product~~ Results ~~Breakdown~~ Structures and matched **A17-**Product Descriptions. Results will be further decomposed during planning to create the **A16-**Project ~~Plan~~ schedule and subsequent planning to create each **A16-**Stage's ~~Plans~~ schedule.

For example a project might start as: "Building: 1million square feet usable office space" Later other products like "electrical supply; 240 volts 100 amps" will be added to the Product Breakdown Structure (PBS) and have **A17-**Product Descriptions and **A5-**Configuration Item Records created to control development.

Later still **A26-**Work Packages will be defined such as "Design Office 16 Electricity-Socket Layout" and "Install Electrical Socket Outlets".

6.1.6.4.3.3   *End point – Years of To and Fro*

Project definition or scope is obtained from the opinions of project's stakeholders, perhaps via interviews, perhaps by some workshops. It may take hours, days, weeks or years to conclude although PRINCE2®'s mindset is at the lower end of the spectrum.
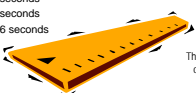
6.1.6.4.3.4   *Scoping Focus on 'WHAT'*

Ideally scoping WHAT the project's outputs are will completely ignore any question of HOW the outputs are created until WHAT is needed is fully defined. Premature specification of HOW creates avoidable constraints. In reality the two are often mixed without project fatal consequences and sometimes HOW is a customer imposed requirement (and sometimes it is an accidental consequence of not knowing how-else to specify results).

Example: I Want A Fast Car

- How much should we budget & schedule for this project ?
- Detailed Requirements: "Boy racer" impressing his friends on the street
  - Scale: Acceleration
  - Test: Time taken to achieve 60 mph from standing start
  - Worst Acceptable: 8 seconds
  - Target   5 seconds
  - Best Required   4 seconds
  - State of the Art   3.6 seconds

The correct measure of "fast" is crucial

Example: I Want A Fast Car

- How much should we budget & schedule for this project ?
- Detailed Requirements: Attempt on World record for wheeled vehicle
  - Scale: Miles per hour
  - Test: Maximum average speed achievable over measured mile
  - Worst Acceptable: 760 mph
  - Target   800 mph
  - Best Required   800 mph
  - State of the Art   750 mph

You don't know the cost or schedule until you know the acceptance criteria

6.1.6.4.3.5   Better A21-Project Product Description Means A More Reliable A2-Business Case

The weaker the definition of the end point that is captured in the A21-Project Product Description the less reliable will be the A2-Business Case's assessment of viability. Reality is that the two evolve together and often well past either Starting up a Project (SU) or the Initiation Stage but through out the project *(More later see X on page Y)*.

6.1.6.5 Creating the A21-Project Product Description

A crucial concept underlying a project (stage, release, sprint or **A26-**Work-Package) is that it must specify a result at the beginning and then deliver that result in order to end (this does not mean change control should be used to try to ban change!). Rarely do Senior Users or most project management team members who are new to project management know the techniques for defining project scope.

The best technique is to use ~~Product~~ Results Based ~~Planning~~ Scoping. Scope must be defined in measurable terms for agreement of what is in or out of scope and to prove when it has been provided. The acceptance criteria (with the qualities listed above such as agreed, prioritised etc) are the specification of scope.

6.1.6.5.1.1   Project Definition

After stakeholder analysis identifies who to involve scoping starts with their expectations.

Scoping activity should then distil an agreed expression of project intent and the products (results) required to achieve that intent. The **A19-**Project Brief and **A21-**Project Product Description are the 'documentary' result of this crucial activity.

Definition of the project's intent as a collaborative exercise between significant stakeholders has a number of advantages and difficulties.

6.1.6.5.2 Pros and Cons of a Work-Shop

Collaborative typically means communal sessions: often called 'Work-shops'. Work-shops are hard to get into peoples diaries, are expensive in staff time consumed and are hard to run to a focus. They take a lot of organising and often return low value. The inefficiencies, duration and wide audience often causes senior people to protest at being 'too busy' to attend.

A workshop approach assumes everyone is in one location or can travel or can access collaboration tools. If the project has politics and isn't worth one of these three solutions don't do it!

6.1.6.5.2.1   If It Matter Then IT IS Worth The Effort of A Work-Shop

When done well work-shops ensure involvement, generate debate, allow for synergy and expose contradictions for resolution. The project manager is rightly

helping (and seen to be helping) those with an opinion (and the power) to determine their own future.

6.1.6.5.2.2   Pros and Cons of Individual Interviews

Individual sessions are easier to arrange. Interviews often discover CQE that would not be voiced in a widely attended forum but also allow every protagonist to say their expectations are the most important. When each stakeholder sees their aims as most important the project manager may be perceived as having promised everyone their parochial and contradictory wants.

6.1.6.5.3 Project   definition   Approach: Interview,   Circulate, Workshop

My suggestion is to blend a combination of approaches. First use interviews that extract parochial and contradictory interests. Then circulate the complete set of wants to the powerful stakeholders (which maybe done 1-2-1, or by eMail or any method in-between).

Then run workshops across different communities to expose and propose resolution of contradictions between views of the powerful. Then extract the decision, by the exec of what is the project's end-point will be. The circulate it.

Ideally the first interview is with the driving force aka sponsor of the project who is also the single point of accountability for the project and is the exec or exec's reporting line in CoPM.

6.1.6.5.3.1   Project Definition Workshop Structure
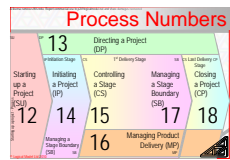
After individual sessions publish an agenda that splits the workshop(s) into

1. Scene setting
2. Break
3. Debate of contradictions as documented in the agenda – there may be a number of these sessions each with a break
4. Recommendations. There MUST be a break between this and the next step
5. Break
6. Decision.
7. 0.

6.1.6.5.3.2   Project Definition Workshop Session Attendees

Insist the exec and powerful stakeholders attend 1) and 4) and set a short time-frame for both. Invite them to the other steps and don't expect attendance.

The exec may wish to reserve 6) to themselves or a select group. Breaks may be 15 minutes or weeks (or more): either way the breaks are to allow for "corridor chats" and ensure no discussion allows 'group think' to move straight from debate into decision made.

6.1.6.5.3.3   *Project Definition Workshops Takes a Lot of Effort*

Sharing or jointly developing and agreeing a vision of the project's end point and selecting a mode of delivery are a major achievement. In reality clarity and agreement may take a very large amount of resource, skill, effort, focus and time and may never happen completely. Generally effort spent here is a sound investment.

6.1.6.5.3.4   *Stakeholder and Reality*

*SOOP-64.   While the **A21**-Project Product Description is being defined you must gauge how freely people share opinions and engage in good natured argument. There should be lots. There should be lots of smiling and joking. If not then opinions are not being aired, options are not being explored or tested or well made. Bad ideas are not being challenged and replaced with good ones. Commitment is not being built. Decisions made are at risk of being unmade later.*

SOOP-65.   How much humour and cooperation is exhibited in defining ACs or how unclear and volatile the ACs are will define how strong, competent and mutually supportive the project manager and exec will have to be throughout the project.

6.1.6.5.3.5   *Volatile AC = Strong PM & Exec relationship*

When scope is incomplete, un-agreed, unstable, or laced with criteria that are "to be decided" then the process informs the project manager and exec how much to allocate to the change budget (will, skill, money and time) – IE how political the project will be.

Adequate provision for greater uncertainty should be built into the baseline. Not just by adding or increasing the change budget in the project but perhaps the exec should divesting themselves of operational business as usual duties in order to bring the focus needed to delivering project based change to the market-place (private sector) or service provision (public sector or in-house project).

6.1.6.5.4   *Decomposition*

Whatever combination of interview and group collaborative session we use to create what will eventually be the **A20**-Project Initiation Document { **Project definition { Project objectives and desired outcomes, … }, … A16**-**Project Plan**, … } perhaps via **A19**-Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21**-Project Product Description, … } the primary technique for moving from goal to outputs is the technique of 'decomposition'.

Decomposition recursively asks the question "what is that composed of" until the customer says "I neither know nor care". The result is a hierarchical decomposition aka a rooted tree structure aka a bill of materials structure aka a Product Breakdown Structure (PBS). For each item we them ask "what are the factors that make it acceptable or unacceptable?"

6.1.6.5.4.1   Start Point

Start by expressing the overall thrust or aim of the project in a short paragraph or better yet a sentence. Decompose this 'goal statement' into the describable products and impacts that in total deliver the require outcome and then for each of these outputs express their acceptance criteria then their life-span and then the boundaries of the project (or investments) involvement in the life-span.

6.1.6.5.4.2   Project Definition Start with the Powerful

The process starts with the most powerful stakeholder. Singular with luck and the project exec with best luck. Extract from them the goal in a short statement. 20 words is a good target. 60 is ok 2000 isn't.

6.1.6.5.4.3   Goal: Short is Best

'Short' ensures stakeholders evaluate the conditions under which faster-better-cheaper trade-offs to be encountered in detailed planning and execution apply. Short is better as short reduces the chance of multiple meanings. Short goals are much harder to create and result in more value from the workshop.

6.1.6.5.4.4   The Test for 'Done'

The short statement MUST say what we will do in terms that define how we will know that we are done. The goal's phrasing should describe 'what the world will look like after we have finished'.

Kennedy's is a fine example: "I believe this nation should commit itself to the goal of landing a man on the moon and returning him safely before this decade is out".

6.1.6.5.4.5   Outcome Language

The use of a future history or outcome language is a good approach: "We have landed a man on the moon and returned him safely". For our change culture project we may find 'culture change' decomposes to "staff always answer the phone to internal and external calls within three rings with a standard script that starts with their name"

6.1.6.5.4.6   Shared Awareness

The primary result of the workshop isn't the goal statement but the shared awareness of options discussed and strategic choices made.

For example 'speed to market' often means selection between features or perhaps a project approach based on a two phased development strategy such as "get to market, generate revenue to fund phase two" or perhaps "capture customers and lock-them-in" or "2nd to market with an enhanced offering".

During project execution all the shared awareness is available as context for tactical, situational, reactive decisions.

6.1.6.5.4.7   Test the Goal: Does It Say 'WHAT'?

Two mandatory, acid tests for a Goal Statement:

➢ "Does it tell us WHAT we will have achieved?" If it does not clearly define "what" it isn't good enough.

➢ "Does it express the agreed aims of those stakeholders powerful enough to stop the project?"

Other tests of a good project objective might include: does everyone agree with it? (a bonus if "yes"), does it omit "how", does it define nonnegotiable constraints, does it say who, why, when, where? If it doesn't clearly define these it may not matter. They become tradable variables during planning.

The "Sponsor's What" is the only 'must have'. Other useful qualities include the replacement of relative terms like "improve" or "better" with expressions that are binary: Eg not "improve profitability", but "minimum of 8% return on equity employed" or "1% improvement month on month compared with today's status quo" so that project closure rests on demonstration of objectively assessable criteria.

6.1.6.5.4.8   Inclusive Exec; Goal Statement Collaboration

If there is no one powerful stakeholder, or if the powerful stakeholder's style is to be inclusive then the goal statement could be work-shopped. The project manager will have to make allowance during planning to compensate for goals being more volatile, decisions taking longer and other affects we will discuss as we go.

If there is one person's will driving the goal then their description of the goal is the scoping activities' start point. Generally the exec (or senior user) should have decided the goal and be able to communicate it, perhaps using the techniques discussed here.

6.1.6.5.4.9   Project Not a Democracy

NOTE inclusive development of a goal statement does NOT equate to "projects are a democracy" in which everyone gets a say in everything. The exec's role should include removing affected stakeholder's choice to act. The exec must have the will, force and influence to make change mandatory even if they don't wish to design all aspects of the end point.

The exec may allow stakeholders to influence the contents of the change by providing them with involvement in determining HOW to achieve it.

6.1.6.5.4.10   Process: Stakeholders Contribute Key Words

However we organise the scoping activities the method starts the same way: each stakeholder involved contributes their view of what defines success – their "Stakeholder Quality Expectations" expressed as key words and phrases.

The key words are then arranged into a sentence or short paragraph by resolving contradictions like "best" and "cheapest". The aim is to foster debate of what is critical, what is nice to have and what is to be excluded.

6.1.6.5.4.11   DSDM's Insight

DDSM Atern ® provides the acronym MoSCoW: MUST of, Should of, Could of, WONT.

Stepping beyond Atern's description I suggest:

➢ Must is mandatory project scope – failure to deliver this equates to loss of the returns that justify the investment. In short: project failure.
➢ Should are the scope tolerance items to omit from scope if other pressures during planning or execution dictate,
➢ Could is scope tolerance that we will add if opportunity presents and
➢ Won't is explicit definition for avoidance of doubt.

6.1.6.5.4.12   2nd List Outputs

Step two is to list the outputs the senior user's constituents say are necessarily required to achieve the desired future state. These outputs (which may be intangible EG "supplier of choice in our industry") are the "products" listed in the **A21-**Project Product Description and modelled at the top level of the project Product Breakdown Structure (PBS).

For each output we specify the stakeholder's non-negotiable acceptance criteria and resolve contradictions between stakeholder wants.

6.1.6.5.4.13   Man to The Moon

For the culture change an output is the script used to guide answering the phone, a uniform for staff with customer facing roles might be another output.

For Kennedy's goal we need a man, perhaps photogenic, some transport to the moon, some recovery capability for return, and a publicity capability.

Kennedy's assumption was transport would be rocket based and initial scoping also shows the need for a launch-pad and mission control.

PICTURE – M2M PBS in MSP

6.1.6.5.4.14   When to Stop

The initial scoping interviews or workshops stop when the sponsor, exec, senior user and other significant stakeholders answer "no" to the questions:

➢ "Is there anything else you want?" and
➢ "Are there any other criteria that if not met will make the outputs unacceptable" and
➢ "Are there any other constraints and controls you wish to put in place?"

If any answer is "Not sure" then the project manager's answer to any "what cost or what time-scale?" questions should be "not sure" and the answer to any "We

need a guarantee" is to ensure the baseline includes unassigned skill, will, time and money in a designated change budget that the project board assess as equal to the size of their "Not sure".

6.1.6.5.5   Scoping Step 2: Project Approach

With a view to "What is wanted" recorded or more normally still evolving in the **A19-**Project Brief and **A21-**Project Product Description and with the outline **A2-**Business Case (as we will cover soon) also evolving then consideration can be given to **[12.4.5** Select the project approach ~~and assemble the Project Brief]**.

6.1.6.5.5.1   Project Approach is Premature 'How'

When the project management team hold discussion of the project approach they are starting down the road to describing "how we deliver the results". Defining "how" before we are clear on "what" will often miss-direct project effort towards the wrong priorities. Premature specification of how should be avoided. Defer discussion of 'how' until 'what' is really well known in acceptance terms.

6.1.6.5.5.2   Affordability

As "What is wanted" is being considered the question of 'affordability' often influences 'what'. Recall 'cost' includes dimensions such as available resource or the ability of business-as-usual to absorb change. These considerations mean that consideration of 'How', at least as affects 'cost' is unavoidable before we can finalise 'What'.

6.1.6.5.5.3   Right Amount of Project Approach 'HOW'

If we accept that Project Approach will usefully influence **A19-**Project Brief, **A21-**Project Product Description and that the **A2-**Business Case is dependant on the results to be achieved then we need guidance on "what is the right amount of 'how'?"

6.1.6.5.5.4   Judgement Call

There is no definitive 'right and wrong' guidance on how much 'How' to define, just an observation that '100% how' with '0% what' must be entirely wrong, (look at how many IT tails wag corporate dogs to develop unused solutions) while 100% pure "what" without any "how" at all is tending towards the impractical.

In Starting up a Project (SU) the project approach should stay at the level of consideration that answers:

➢ "Should we do this in-house or use a specialist sub-contractor?",
➢ "Should we buy-in a complete turn-key solution or self manage the whole venture?",
➢ "Do we go-it-alone or form a joint venture?", and just maybe
➢ "Can we adapt or adopt an existing solution?

6.1.6.5.5.5   Who Affects Project Approach and Target

It is un-avoidable that "who is available to help" will have an influence on project targets and how we execute the project. So defining the **A21-**Project Product Description and Project Approach will interact and affect who holds what role (affecting stakeholder analysis and design and appointment of the team) and perhaps also affect the **A2-**Business Case.

6.1.6.5.5.6   Project Approach Product Description

The official manual no longer separately suggests the contents of the approach but based on 2005's guidance it might contain {.

➢ Solution types considered. Normally includes: made-to-order, modification of existing product, design-from-scratch, ready-made/ off-the-shelf solution
➢ Delivery methods considered. Normally includes: sub-contracted, in-house staff, contracted resources
➢ Description of Target Operational Environment.
➢ Context within which the product will be operated and maintained that affect through-life ownership and thus inform trade-off decisions between acquisition and ownership costs
➢ Options chosen with selection and rejection reasons for conclusions

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6.1.6.6 Recap

The mandate arrived and triggered appointment of an exec and then a project manager. They pulled-in some colleagues and friends to discuss "What will we have achieved when we are done?" and "Who else do we need to involve (or avoid)?" and "What other efforts can we learn from?" and "Does it still look attractive?"

This last consideration is an evolving benefits versus cost argument that is documented in an Investment Appraisal. The official manual "doesn't do investment appraisal": all we get is a rather weak '**A2-**Business Case' supported only by guidance on cost determination – which is rather less than ½ the story and the **A1-**Benefits Review Plan which is as its name says is merely review not a the realisation plan aka benefits management plan that is really needed.

6.1.6.7 A2-Business Case: Concept, Theory, Practice and Flaws

A Business Case is the <u>evolving</u> <u>description</u> of an investment and linked returns as they develop from opportunity to success or disaster.

It is the expression of costs versus benefits.

6.1.6.7.1 Complex Topic

The investment argument is a multi-faceted subject: partly numeric and largely emotional. It is the ultimate basis for all ~~project~~ investment decisions, and is the expression of many mostly uncertain factors. It is driven by: What products are produced and used? By whom? How? When? At what cost and to what advantage?

The **A2-**Business Case is the visible tip of the ice-berg supported by all the planning activity. The quality of the **A2-**Business Case is a direct reflection of the quality of scoping and estimating both of which may be largely guessed in some contexts and partly guessed in every context. Guesses are only inappropriate when not openly declared to be guesses – otherwise they may be the best we have.

6.1.6.7.1.1 Benefits & Business Case

PRINCE2® only considers the justification or Business Case of the customer side of the project. The official manual mentions then ignores consideration of the supplier side business case.

The customer's justification is proposed in the mandate (we hope), verified or defined as we **[12.4.4** Prepare the outline Business Case], extended with project costs and timescales to **[14.4.7** Refine the Business Case] and in multi-stage projects routinely refreshed to **[17.4.3** Update the Business Case] so as to reflect status as of 'today' in Managing a Stage Boundary (SB) (Business Case theme).

Recall section 4 of chapters 12 to 18 detail activities. Activities are the project manager's and project management team's work-packages. 12.4 refers to Starting up a Project (SU), 14.4 to Initiating a Project (IP) and 17.4 to Managing a Stage Boundary (SB)).

6.1.6.7.1.2   *A2-Business Case Product Description*

The business case evolves throughout the project.

SOOP-66.   'Current' in a business case reflects evolution. No project should deliver what was asked for on day-one unless the world is a very stable place or the project is only one day long.

The **A2**-Business Case might contain {.

➢ The motivation for undertaking the project: either the opportunity being pursued or the threat being avoided, expressed in terms that bench-mark the current status quo of anything we intent to change and allow post-project comparisons.

➢ A description of how the project contributes to (affects) corporate strategies and tactics.

➢ Constraints and expectations as currently imposed that will affect future conduct: including but not limited to

- dates for funding cycles and funds available,
- contractually imposed project end-dates or benefits commencement date(s),
- levels of resources available or
- non-negotiable elements of scope
- any other factor subject to tolerances.

If cost time and scope are all set as constraints before planning then the exec should be advised of a probable future need to reconsider at least one of "faster, better, cheaper". At least one of these must be a variable whose final value will be consequential as calculated during planning.

➢ The options available for resolving the business threat or opportunity.

Options should be accompanied by analysis of the pros (benefits) and cons (the official manual awkwardly calls these "dis-benefits" [sic – disadvantage is a better word]) of each option's development, through life operational impacts and costs and how the development and maintenance will be supported and resourced and funded and absorbed into BAU.

To be realistic the assessment must express emotional attractions and repulsions and numerical (normally financial) changes that are anticipated. IE The before and after description of all changes the project introduces expressed as a range of minimum to maximum (targets and tolerances over time) for every claimed benefit.

Impacts whether pro (benefits) or cons often take some time between starting to flow to being in full-flow and perhaps tailing off and ending. A meaningful business case must look forward from 'now' through the

operational state, not just to the end of the capability development. The business case owner must be someone whose involvement persists for the same duration, at least as defined by a role if not necessarily the same person being incumbent throughout.

➢ Investment appraisal: an expression of the financial value and the timing of all money spent and received for each option.

Investment appraisal must follow corporate finance standards and guidelines and will typically include calculation of:

- The time required to repay the investment (Payback period),
- The net value of the investment, perhaps at a variety of time horizons: IE the revenue minus costs.

  It is more meaningful if all amounts are normalised as 'present values' by allowing for the affect of interest rates, inflation or deflation rates, commodity and exchange rate fluctuations etc (IE the Net Present Value using the organisation's chosen discount factor) and perhaps

- The 'leverage' as an average rate that the investment returns as benefit (The Internal Rate of Return or discount factor at which the NPV is zero.)

Assessing through life costs and revenues are inherent in the financial appraisals such as net present value. PRINCE2®'s guidance notes the need for understanding but doesn't provide guidance. For more details ***see X on Y XREF***

➢ A recommendation from the options available with the reason for selection and the reasons why each of the other options were not selected.

➢ The degree of uncertainty attached to all of the above and actions that are included (or could be included) within the appraised costs to address the threats and opportunities.

➢ The above may include a summary, although no one should be encouraged to assess an investment based only on the summary which is one reason NOT to include one. A conclusion that draws the elements of argument into one place is appropriate

}.

6.1.6.8 Outline First

In Starting up a Project (SU) it is common for the **A2**-Business Case to just be an outline. "Outline" mostly means that facts, description and commentary is missing or vague and figures quoted (if we are sensible) are presented as wide ranges to reflect high levels of uncertainty.

We will discuss it more or less fully now but its first 'complete' draft is unlikely in reality before the **A16**-Project Plan is available to supply cost and timing data. Shockingly PRINCE2® provides no benefits side guidance at all!

6.1.6.8.1.1   Project Within an Investment

Producing a realistic business case is the single most important element of a project based investment's management.

Investments start before and end after projects. Within the investment's 'enabling phase' (the PRINCE2® project) there are at least two levels of uncertain decision making.

1. Deciding questions with uncertainty of "is this the <u>right objective</u> to pursue?"

   SOOP-67.   Uncertainty from 'what' can be labelled <u>strategic</u> risk. It concerns choice of one goal over others. The care, the costs and all the impacts (positive and negative) of strategic risk impact on the investor.

2. Expressing the threats or opportunities that arise <u>within</u> 'how' we are pursuing the chosen objective.

   SOOP-68.   Uncertainty from 'how' might be labelled <u>tactical</u> risk. It concerns "HOW we achieve the WHAT". <u>Care for tactical uncertainty lives with the supplier</u> although costs and <u>impacts are often split by contract</u> between investor and supplier. Decisions may be made by the supplier but always under the investor's veto.

   SOOP-69.   Ultimately the supplier charges the investor for all threat carried on the investor's behalf and may keep or share opportunities dependant on contract structure.

3. 0.

6.1.6.8.1.2   A Business Case is A Risk Register Entry

When properly created and complete the business case describes the trigger for and pay-backs from the investment as well as the project costs and time-scales in terms of their uncertainty of size and timing. All elements of a business case (and project plan) are always uncertain to some degree.

The business case is essentially the grandest of project risk register entries or a run of the mill portfolio risk register entry: "we might achieve this advantage/ avoid this threat if we take these actions or these actions…". The pursuit of a project is an exercise in applied risk management.

*SOOP-70.   Another definition of project could run something like "those actions taken in an attempt to create a future state with utility to some (sufficiently powerful) stakeholders". See the definition of risk **XREF** risk definition.*

6.1.6.8.1.3   Business Case Life-Span

An investment germinates from 'a light-bulb idea' and is successively challenged. Initially it sprouts into a project if serendipity strikes and challenge does not overwhelm it.

If it can then demonstrate "continuing merit" eventually the investment moves through being a project to emerge into benefits harvesting. When the justification disappears the investment should be (but often is not) killed off.

Projects (A Script to) Write A New Business Script
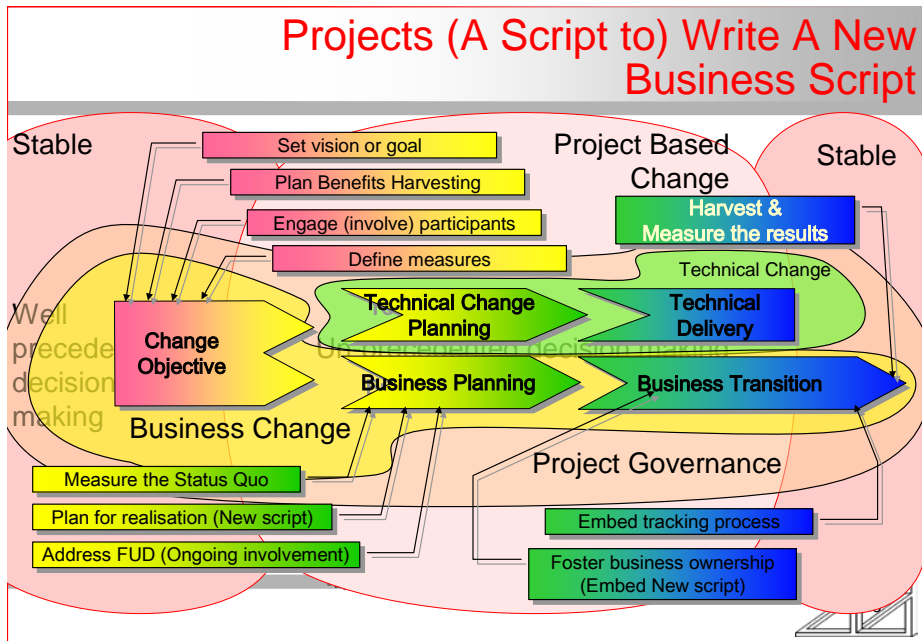
6.1.6.8.1.4   *Business Case Scope in PRINCE2®*

PRINCE2® splits the need for a continuing description of the business justification into two documents. First is the **A2-**Business Case. It mostly focuses on the options as selected at the beginning of the investment enabling phase – the project. Guidance is on gathering data for the cost side of the investment incurred during the project. No guidance is provided on assessing benefits although they are a pre-requisite to investment appraisal.

The major effort to **[14.4.7** Refine the Business Case] also creates the second document that sets-out the actions and timings to audit the income side of the equation.

6.1.6.8.1.5   **A1-***Benefits Review Plan*

The **A1-**Benefits Review Plan is a schedule of assessments of the benefits side of the investment as expected after the project. What we need post project is a strategy and actions to deliver and maximise benefits. The omission needs to be addressed if we are to provide industrial strength guidance.

6.1.6.8.1.6   Project management Has Missed The Point

In my view PRINCE2® and the rest of the mainstream BoK guidance fails real needs here. They have all missed the point. No one does a project for its own sake: no one.

6.1.6.8.1.7   Benefit to Cost

A business case must be an assessment of the benefits and the costs to achieve them. Both of which need to be timed and adjusted for the prevailing interest rates if present values are to be assessed and a meaningful financial assessment made.

We need guidance on defining development costs, consideration of through-life ownership costs and how to forecast or measure benefits.

6.1.6.8.1.8   Little Guidance, And Only Then On Costs

PRINCE2®'s efforts to guide more or less stops with "these should be considered, documented, allocated to someone, scheduled and updated". IE mostly no guidance. PRINCE2® gives a little guidance on cost assessment by pointing out that costs are calculated by project planning.

6.1.6.8.1.9   Maintaining Investment Appraisal After the Project

Since PRINCE2®'s scope ends at Closing a Project (CP) it doesn't provide any guidance for the maintenance of the **A1**-Benefits Review Plan or **A2**-Business Case after Closing a Project (CP).

6.1.6.8.1.10   Forms Of Cost

All elements of PRINCE2® control exist to deliver the products that are the basis for the claimed benefits versus costs. There are several dimensions to 'costs' and to 'benefits' in any business case context: Financial and non-financial, acquisition and ownership.

First 'cost' covers money spent in the project to develop the outputs (acquisition costs). 'Cost' should also be considered to include all negative non financial impacts of acquisition. The most limiting 'cost' is often the ability to disturb business-as-usual and still generate revenue. 'Cost' also includes all ownership effort after the acquisition (project) effort.

6.1.6.8.2   Business Case As Gamble

In essence a business case describes a gamble that the investment authority should be fully prepared to walk away from. My justification for saying that a business case is a gamble is the observation that all business cases express an expense (use of effort, will and skill), which is more or less known at the time of approval versus a return on investment that is in the future and thus of greater uncertainty. A guaranteed expenditure to make an uncertain future gain is a gamble. A balancing of uncertainties: probability and size of investment versus probability and size of return.

6.1.6.8.2.1   Utility

Project returns are an assessment of utility: value in the eye and the heart of the beholder. Sometime this is a cash-value.

6.1.6.8.2.2   Counter Claim: Investment not Gamble

The counterclaim that justifies "investment" might be that in a gamble once the stake is placed it cannot be retrieved whereas in pursuing a business case if the factors influencing any of our investment portfolio can be seen to be changing then more or less of our people, equipment, materials and money should be re-focussed on the new location of their best use (which may be business-as-usual and NOT change).

6.1.6.8.2.3   Portfolio View

If part of business-as-usual or another project's prospects are better (or worse) it may be that an otherwise healthy project should pause or stop (or accelerate) to facilitate the best overall returns to shareholders.

Ability to judge the allocation of resources between projects is Portfolio Management – the only true discipline within the discussions of projects and programmes (Projects are just the 'change' element of business-as-usual and programmes just a fancy name for projects where the manager demands a bigger pay-check).

If having approved a project the resources are committed come what may to the bitter end then the authority isn't investing it is gambling.

6.1.6.8.2.4   Research And Authorisation to Proceed

Typically neither the benefits nor the investment are well-known at the very start. Research such as requirements gathering, planning and revenue and cost assessment is needed to qualify both. The research takes time, effort and money.

Every project starts with a crude or outline assessment that is input to consideration of "is it worth investing enough to do a proper appraisal?"

These considerations In PRINCE2® terms are "Should we raise a project mandate and sanction Starting up a Project (SU)?" and then "Based on the **A19-**Project Brief and the outline **A2-**Business Case it contains should we **[13.4.1** Authorise initiation]?" and then "Based on the evolving **A2-**Business Case should we **[13.4.3** Authorise <the next> Stage or Exception Plan]?"

6.1.6.8.2.5   Stability of Predictions, Benefits and the Portfolio

Business case assessment should consider the stability of the predictions upon which the business case is based, their sensitivity to the factors in the context of the expected benefits stream and their position relative to the rest of the benefits portfolio. These factors help make the business case an information source that facilitates justification (or not) of the investment required.

Process Numbers

13 Directing a Project (DP)

Initiation Stage · 1st Delivery Stage · N-1 Last Delivery or Stage

Starting up a Project (SU) · Initiating a Project (IP) · Controlling a Stage (CS) · Managing a Stage Boundary (SB) · Closing a Project (CP)

12 14 15 17 18

Managing a Stage Boundary (SB) 16 Managing Product Delivery (MP)

Section: 2   Page: 6.1.6:153 of 541

The uncertainty and sensitivity aspect requires appreciation of how to create estimates. **See XREF**.

Portfolio

- A collection of portfolios, programmes and or projects
- What criteria define 'collection'?
  - A common characteristics not related to their goals
  - All delivered from same resource pool
  - All delivered to same client
  - All managed by same senior manager
- Portfolio challenges
  - Primary issue often rationing based on resource demands
  - Solution (mostly) in sound use of project planning techniques

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52

6.1.6.8.2.6   Business Case Bias – Soap Powder

SOOP-71.   Note a crucial distinction: the A2-Business Case IS NOT A JUSTIFICATION of the project. It is the DESCRIPTION of the project's justification.

Some business cases are written as a biased justification of the project. Like soap powder adverts, they are aimed at swaying the reader's opinion. Their author's attempt to persuade those with authority over resources to grant approval to a pet initiative. These authors have pre-judged the desirability of the project, often on personal grounds and often without a portfolio perspective of other opportunities.

6.1.6.8.2.7   Self-Interest

Often the self-interest of the exec and project manager is the prospect of running the approved project versus a stigma if the project is not approved. In a rational world no business case should set out to be a justification of the project it describes; instead the business case should be a fair, unbiased, appraisal of the factors influencing the investment decision from a shareholder (tax payer) perspective all the way through to retirement of the capability the project created.
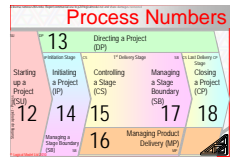
People often make emotional decisions on favourite or 'pet' projects and then bias the numerical data to support the emotional conclusion. The interested reader is again referred to the works of John Kotter.

6.1.6.8.2.8   Pet Projects

A political assessment of a 'pet-project' may still say "go with it!" Pet projects are not necessarily wrong but their politics need to be gauged.

SOOP-72.   As a general rule pet projects are safest when short. Get in, get it done, get out. Successful delivery of pet projects is often a route to promotion.

6.1.6.8.2.9   Erosion of The **A2-**Business Case

Biased business cases are often presented with benefits set-out as based on the best we can envisage and so are the costs.

If the described benefits are 'best case', and the described uncertainties are also 'best case' then each threat and issue that really happens tends to require 'extra' cost and effort or reduces returns so benefits get eroded from both sides.

In these cases a 'worst-case' benefits and uncertainties should also be prepared before a 'rational' assessment of viability and desirability is made.

6.1.6.8.2.10   3 Point Benefits Estimate: Best Most Likely and Worst

PRINCE2® suggests that each benefit and cost should be expressed with three values: a best, expected and worst value [4.3.4.3 p26]. (If working with colleagues familiar with the 2005 manual it used the labels "Good, Average, Poor" or "GAP analysis". Note: Normally a 'Gap Analysis' is understood to be a comparison between a future desired state and the current state or some desired feature set and each solution-option's set of features).

Process Numbers

13	Directing a Project (DP)
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
16	Managing Product Delivery (MP)

Section: 2   Page: 6.1.6:155 of 541

Risk: Cost Vs. Benefits

Worst Imaginable		High Risk		Best Imaginable
Possible				Possible
Best Imaginable				Worst Imaginable
Costs				Benefits

Worst Imaginable		Low Risk		Best Imaginable
Possible				Possible
Best Imaginable				Worst Imaginable
Costs				Benefits

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83

We will cover the concepts of three point estimating and quantification of confidence levels in *See X on Y*.

6.1.6.8.3 Business Case Responsibilities

6.1.6.8.3.1 The Business Case Is The Exec's Responsibility

PRINCE2® says "It is the responsibility (sic) of the Executive to assure the project's stakeholders that the project remains desirable, viable and achievable" [page 23]. The official manual also says that the exec is responsible for the project providing value for money [page 21]

Writing the **A2-**Business Case is the business sponsor's accountability and the executive's responsibility but is probably delegated to the project manager who may further delegate to a combination of roles that can determine needs, revenues and costs and combine these into discounted cash-flows, pay-back periods etc.

6.1.6.8.3.2 Follow Corporate Standards

The **A2-**Business Case must be created according to all corporate standards and conventions. Often standards that relate to investment appraisals and the organisation's adopted accounting practices.

6.1.6.8.3.3   Use Finance's Assistance

SOOP-73.   [The wise project manager (or exec) asks the finance director to appoint someone to the project team to drive the financial calculations. Presentation to a funding body is soooo much less challenged by the finance director when finance staff are the authors and manipulators of the numbers!].

6.1.6.9   Business Case Life-Span In PRINCE2®

6.1.6.9.1.1   Business Case is A Live Document

PRINCE2® is explicit that as the world changes so the business case (and **A1-**Benefits Review Plan) must be updated to remain a firm foundation for future decisions.

The **A2-**Business Case (and **A16-**Project Plan) description of what we are doing, what we can do and the pros and cons of each option is never actually "finished": it evolves continually.

6.1.6.9.1.2   PRINCE2® Recognises The Business Case Is a Live Document

Over time the **A2-**Business Case's contents is created, approved, refined and reapproved. What ever is the current version is the frame of reference for all project decisions. From the time of the **A19-**Project Brief (or mandate) to Closing a Project (CP) PRINCE2® provides good guidance on maintaining the business case.

The project board reassesses the updated business case and **A1-**Benefits Review Plan on the cusp of each stage change while every stage and project level exception situation will perform event based reassessments.

6.1.6.9.2   The Business Case in The Controlled Start

The business case may or may not start life as a component of the project mandate. Even if the initial **A2-**Business Case does arrive in the mandate its reliability may be low. Equally what arrives may be a fully formed **A20-**Project Initiation Document!

6.1.6.9.2.1   Arrival of the Project Mandate to *[12.4.4 Prepare the outline Business Case]*

The reasons for the project and the results required from the project are normally explored by the project management team to **[12.4.4** Prepare the outline Business Case**]** and record the **A19-**Project Brief { **Project definition { Project objectives, Desired outcome, … }, … A21-Project Product Description**, … }. The goal and business case are evolving in parallel.

Knowing the outcome:

➢ defines the products which define the work that define the costs [recall 'costs' are wider than just money] and

> the products are the source of the benefits which must be quantified [benefits are wider than money]

if an appraisal, including the financial appraisal is to be included in the **A2-**Business Case.

6.1.6.9.2.2   *A2-Business Case Needs Project Approach*

To approximate development costs and timescales then at the same time that the outline **A2-**Business Case is prepared "how the senior supplier(s) will deliver it" must also be considered to **[12.4.5** Select the project approach ~~and assemble the Project Brief~~] and thus determine the likely costs.

During Starting up a Project (SU) the project's external suppliers may not have been selected and thus more often consideration is by the exec, project manager and senior user. Of course in-house ICT projects often provide a senior supplier(s) – and may even omit all the other role-holders like exec and user community!

6.1.6.9.2.3   *First Considered at [13.4.1 Authorise initiation]*

The outline **A2-**Business Case created during Starting up a Project (SU) is included in the **A19-**Project Brief and is considered by the project board as they decide whether it offers enough justification to **[13.4.1** Authorise initiation**]**.

6.1.6.9.2.4   *Cash-Flow Known After [14.4.6 Create the Project Plan]*

In the Initiation Stage the project management team considers the challenges of the **A2-**Business Case and of delivering the results described in the **A21-**Project Product Description. Based on these they design a project control structure that matches the stakeholder's needs for controls and appetite to pay for them.

The project management team create the schedule and resource profile of all the technical and project management tasks as they **[14.4.6** Create the Project Plan]. One result is the project's expenditure profile. IE outward, time-phased cash-flow. The expenditure profile is then included in the **A2-**Business Case's investment appraisal.

Creation of the **A16-**Project Plan may provide information to update other parts of the **A2-**Business Case to bring it to an initial base-line state. The initial 'full' **A2-**Business Case is included into the **A20-**Project Initiation Document and assessed by the project board as part of their considerations to **[13.4.2** Authorise the project]: IE decide whether the project should progress into the Benefits Enabling Stages. Enabling stages are generally where the level of investment committed grows rapidly.

6.1.6.9.2.5   *Monitoring Returns*

When approval for benefits enabling stages is granted the PRINCE2® control system created in Initiating a Project (IP) oversees the spending of the funds and an appropriate member of CoPM (EG the project's exec) must take responsibility

for the **A1-**Benefits ~~Review~~ [Realisation] Plan as we will discuss when we cover the Initiation Stage in detail. ***See X on page Y***.

6.1.6.9.2.6   In-Project *A2-Business Case Maintenance*

Unless timescales are very short and the project very stable the business case will have to be re-described periodically. IE maintained as the project progresses and the project's internal and external context changes.

SOOP-74.   Best practice guidance says the A2-Business Case must be re-described periodically throughout the investments life-span overseen at portfolio level rather than just through the project.

6.1.6.9.2.7   Business Case Looks Free-Standing

At **[13.4.2** Authorise the project] the **A2-**Business Case is a component of the **A20-**Project Initiation Document (PID). After assessment of the PID the official manual often appears to suggest that the **A2-**Business Case is a free-standing document. If in your embedding and tailoring you decide that the **A2-**Business Case is always considered within the context of the PID then the high degree of overlap between elements of information in the collection of **A2-**Business Case and **A20-**Project Initiation Document could enjoy some rationalisation.

6.1.6.9.2.8   Middle: Maintaining the *A2-Business Case As Guided by Managing a Stage Boundary (SB)* **[17.4.3** *Update the Business Case]*

If a stage ends normally then a general periodic **[17.4.3** Update the Business Case**]** (and **A1-**Benefits Review Plan) is performed with costs and time-scales from the updated **A16-**Project Plan, any changes to project context or intentions and any benefits actually delivered so far.

During a Benefits Enabling Stage any event based actual or potential context changes (Risks or Issues) are assed for their affect on the **A2-**Business Case as the project management team **[15.4.6** Capture and examine issues and risks**]**.

6.1.6.9.3 At Project Closure

PRINCE2® has some guidance to offer: the **A2-**Business Case is updated to reflect the latest project context and results already achieved and used as the basis to update the post-project **A1-**Benefits Review Plan.

This sentiment is entirely correct but incomplete. After the project the benefits need much more focus than just being verified. To create the benefits is at least as hard as creating the outputs. More guidance is needed. ***See x on Y***.

Process Numbers

13 Directing a Project (DP)		
Starting up a Project (SU) 12	Initiating a Project (IP) 14	Controlling a Stage (CS) 15	Managing a Stage Boundary (SB) 17	Closing a Project (CP) 18
		Managing a Stage Boundary (SB) 16	Managing Product Delivery (MP)	

Section: 2   Page: 6.1.6:159 of 541

A1-Benefits Review Plan, A2-Business Case

BC-06 P:2
BC-08 P:2

In which process(es) the Business Case is developed, verified, maintained and confirmed and which roles are responsible for this.
The recommended composition of a Benefits Review Plan, in which process(es) it is developed and reviewed and which roles are responsible for th...

CoPM

12.4.1 Appoint the Executive and the Project Manager CoPM
1.

Project Board

13.4.1 Authorize initiation
1. Board verify A2-BC (outline) viable justification to invest in the Initiation Stage

13.4.2 Authorize the project
1. Board consider if A2-BC (Detailed) is adequate to justify the project and approve (baseline) it
2. Board (Exec) approve (IE baseline) A1-Benefits Review Plan covers all benefits, meets CoPM needs and Exec, Pgm or CoE is responsible for reviews being held

13.4.3 Authorize a Stage or Exception Plan
1. Board verify the A2-BC (as updated) is a viable justification for continued investment
2. Board approve (updated) A1-Benefits Review Plan will address all benefits due in next Stage

13.4.4 Give ad hoc direction
1. Board consider if A2-BC still viable vs. latest A11-Highlight Reports

13.4.5 Authorize project closure
1. Exec approves, Board compares ¿confirms? original and current versions of A2-BC (to what end?)
2. Board ensure A1-Benefits Review Plan includes post-project review of all side-effects of pj products once in operational use (side effects shared as lessons)
3. Board approve A1-BRP will cost effectively assess benefits not measurable until after the project
4. Board/ Exec transfer responsibility for A1-BRP to CoPM "to hold SU accountable for benefits from their assigned products" Ensure resources are committed

Project manager

12.4.2 Capture previous lessons
1. PM Captures lessons relevant to the A2-Business Case

12.4.4 Prepare the outline Business Case
1. If received from CoPM the Exec reviews A2-BC Exec drafts (delegates drafting) – inline with Corp. standards the A2-BC with Context, Objectives, Strategic alignment, Feasibility Expected contribution, Funding, Contracts, Risks (ie uncertainties) and sensitivities to viability of benefits [SU "accountable for benefits p35 c2.1, 4.3.3, c3"]
2. PM checks timescales (all constraints) applied to A21-Project Product DescriptionA2-BC or Pj-Mandate balance (prior to 14.4.6 cost and timescales may be "rough order of magnitude")
3. CoPM Approve the A2-BC (Outline)

12.4.5 Select the project approach and assemble the Project Brief
1. PM drafts PJ Approach defining Corp. preference/ 'best practice' for delivering the A2-BC into operational use

14.4.6 Create the Project Plan
1. PM determines costs & timescales needed for investment appraisal by planning the project

14.4.7 Refine the Business Case
1. PM Checks A19-PJ Brief for corporate format & presentation standards
2. PM seeks lessons observed relevant to the A2-BC
3. PM adds A16-PJ Plan costs and timescales, Risks, expected benefits & tolerance per benefit to A2-BC investment appraisal
4. PM creates the A1-Benefits Review Plan (BRP) stating for each benefit how it will be measured, tolerances and timing of measurement (EG at stage ends and beyond the project) & the current status quo (a Programme may assume responsibility for this step)
5. PM seeks board approval now or defer to 13.4.2 and A20-PID

14.4.8 Assemble the Project Initiation Documentation
1. PM include A2-BC (detailed) in A20-PID

Plan Delivery Stage

15.4.7 Escalate issues & risks
1. PM assess potential actions to respond to a new risk or issue for their impact on the A2-BC and expresses in A10-Exception Report

15.4.6 Capture and examine issues and risks
1. PM assesses new risks and issues for impact on the A2-BC

15.4.4 Review stage status
1. PM checks A2-BC vs. new (and existing) risks & issues
2. PM checks A1-BRP and executes any Benefits Reviews falling due (NOI should be in the Stage plan)

17.4.2 Update the Project Plan
1. PM determines revised project cost & timescales that may affect the investment appraisal

17.4.3 Update the Business Case
1. PM reflect external changes to project context, updates of costs and timescales, uncertainties, risks and issues into A2-BC for the accountable exec
2. PM updates the A1-Benefits Review Plan for current outlook Results any reviews in stage just ending and need for review in approaching stage

17.4.4 Report Stage End
1. PM reviews status and any benefits in stage & expresses view on A2-BC viability in A9-End Stage Report
2. PM confirms any benefits review activity in stage is complete
3. PM Seeks Board approval of revised A1-BRP & A2-BC at 13.4.3

18.4.3 Hand over Products
1. PM updates A1-BRP if required

18.4.4 Evaluate the Project
1. PM assess project performance vs. expected benefits in the A2-BC & reports in A8-End Project Report

Team Manager

NB in all cases A2-BC is of the Customer, not the suppliers

6.1.6.10 Appendix A Defines the Deliverables from SU

Everything PRINCE2® expects to be produced to manage the project already has a product breakdown structure and **A17**-Product Description provided for it in Appendix A.

For Starting up a Project (SU) they are the **A19**-Project Brief and contained **A2**-Business Case and **A21**-Project Product Description, and the Initiation Stage Plan (as described by product description **A16**-Plan (Project) (Stage) (Team)).

6.1.6.10.1 A19-Project Brief

The culmination of work so far is the **A19**-Project brief [unless you take my recommendation to use the **A20**-Project Initiation Document from pre-project to post-project as an Investment Management Plan.]

6.1.6.10.1.1 **A19**-Project Brief Product Description

The Project Brief (hopefully) describes, as succinctly as possible, the: {.

➢ Project's background and objectives,
➢ Constraints such as politically determined delivery dates and affordability targets that fix allowable costs,
➢ The outcome in goal statement and acceptance criteria terms,
  • CoPM strategies, standards, practices and controls [pg 158]
➢ Material unknowns and our assessments against them - otherwise known as assumptions,
  • 'Material' means facts we don't know but that we required for planning purposes.

  SOOP-75.   Assumptions are assertions we hold to be true, real or certain. Foundations upon which our plans stand without evidence to support the assertions. It is the duty of everyone who comes into contact with an assumption to confirm or contradict it if they can. Assumptions are 'owned' by everyone who ever became aware of it or should have been aware of it. EG every recipient of a document that expresses an assumption owns the assumptions whether they shirked reading the document or read it assiduously.

➢ Material uncertainties and our assessments against them - otherwise known as threats and opportunities aka 'risks',
➢ All people allocated roles, their roles and reporting obligations - If we go beyond PRINCE2® then a full stakeholder analysis (see for example section 2.2 Stakeholder Management of the Association For Project Management's Body of Knowledge 5th Ed.),
➢ All dependencies we have on others or they have on us - otherwise known as the project 'interfaces',
➢ The **A2**-Business Case, which may be outline and will then be refined in the Initiation Stage,

➢ The project's **A21**-Project Product Description
➢ The description of the project's approach to creating the project's products,
➢ Plus any other information thought useful or capable of a cross reference

}.

Note: short is better. Don't pad to impress by weight of pages but by weight of analysis.

Recall: Never omit a material fact for want of a heading, never write rubbish to populate an irrelevant heading, simple note "no contribution of value".

6.1.7 Plan the Planning

The **A19**-Project Brief [or tailored **A20**-Project Initiation Document] is used by the project board to assess the proposed investment's viability and desirability as currently known. Without the **A16**-Project Plan, which is yet to be created, the assessment lacks refined details of cost and timescale: the assessment is based on preliminary information and only asks "is it worth the cost of the Initiation Stage to further qualify the opportunity?".

To assess even this level of investment the costs of initiation must be known.

6.1.7.1.1.1   Work To A Plan

Planning a project could be a large undertaking. PRINCE2® rightly says "always work to a plan" (it could have been a principle!) [although "lets explore today and decide tomorrow what we will do tomorrow is a little lax in PRINCE2® tems!].

So before undertaking what may be a large amount of work without a plan Starting up a Project (SU) creates an Initiation Stage Plan which defines the cost of providing all the information for a full investment appraisal.

The last step of Starting up a Project (SU) is to **[12.4.6** Plan the initiation stage**]**: IE plan the planning. Then at **[13.4.1** Authorize initiation**]** the project board have an estimated cost and timescale for conducting the 'complete' investment appraisal.

If approved the Initiation stage will be monitored and controlled against the Initiation Stage Plan.

6.1.7.1.1.2   Plan Initiation

The Initiation Stage plan details:

➢ What we will deliver from the Initiation Stage (the **A20**-Project Initiation Document which { the project's 4 control strategies, the **A16**-Project Plan, and the carried forward refined contents of the **A19**-Project Brief such as the project's context and **A2**-Business Case }, the Initiation Stage **A9**-End Stage Report and first benefits enabling stage's **A16**-Stage Plan.
➢ What the resources consumed will be, how much they will cost (money, morale, will, skill etc), and how long it will take.

> ➢ How we will control the consumption of resources allocated to the Initiation Stage,
> ➢ The tolerances allowed on initiation and
> ➢ The reporting regimen that will be in-place in Initiation while we construct controls and reporting structures for the Enabling Stages.

6.1.7.1.1.3   [17.4.1 *Plan the next stage*]

Activity **[12.4.6** Plan the initiation stage] tells us zero about how to plan the Initiation Stage! Since initiation is a stage I suggest following the advice of **[17.4.1** Plan the next stage].

The official manual suggests that the Initiation Stage might follow the control structure proposed for a benefits enabling stage. IE the project manager allocate **A26-**Work Package to project management team members by **[15.4.1** Authorise a Work Package], monitor progress via **[15.4.2** Review Work Package status] and maintain control by the **[15.4.4** Review <of> stage status].

I'd say this is the only sensible way to proceed!

6.1.7.1.2   *Assembling Results for Submission*

Each time the project manager approaches the project board for approval to commence the next stage the project's status information is assembled and the board (project assurance) review it as input to the deliberations and decision making.

Project Mandate, A19-Project Brief, A20-Project Initiation Document (PID)

The activities & roles involved in Developing they project mandate A19-Project Brief and A20-Project Initiation Document

CoPM

12.4.1 Appoint the Executive and the Project Manager
1. COPM provides mandate in any form as long as it allows identification of the Exec. It is the project trigger, the Instruction to, or remit or Terms of Reference for the Pj Board. Includes Pj Reason, Pj tolerance, Risks, All standards to be followed

Project Board

13.4.1 Authorize initiation
1. Board approve the A19-Project Brief and trigger the Initiation Stage. The mandate is archive (if it exists)

13.4.2 Authorize the project
1. CoPM review & Board approve (baseline) A20-PID (and its component products)
2. & thus make a 'contract' that marks their commitment and authorises the project
3. PM/PS archives A19-Project Brief (replaced by A20-PID)
   PM/ PS baseline A20-PID in Config. Mgmt System (CfMS) for later review vs. state including approved changes

13.4.3 Authorize a Stage or Exception Plan
1. Board consider whether to re-start a project where CoPM revise the mandate or treat as an RFC
2. CoPM review & Board re-approve (baseline) revised parts of A20-PID & PS store in CfMS

13.4.5 Authorize project closure
1. Board compare original A20-PID to final A20-PID [no guidance as to why and seemingly uncoordinated with 18.4.4]

12.4.1 Appoint the Executive and the Project Manager
1. Exec & PM review & understand mandate
2. PM log mandate's risks to A7-Daily Log

12.4.2 Capture previous lessons
1. PM Captures lessons relevant to the mandate into A14-Lesson Log

12.4.4 Prepare the outline Business Case A2-oBC
1. Exec/ PM understand Pj reason in mandate
2. PM creates (exec oversees corporate alignment) "pre-project" outline A2-Business Case from mandate's contents
3. Exec presents A2-oBC to CoPM
4. PM checks feasibility of milestones, assumptions and constraints from mandate
5. PM/ SU/ Exec create the A21-Project Product Description based on the mandate

12.4.5 Select the project approach and assemble the Project Brief (A19-PjBf)
1. PM refines & extends mandate to create a well defined start-point: the A19-Project Brief to known quality criteria by filling the gaps and applying A4-LL lessons. (An a programme context the A19-PjB has probably been created done by the programme)
   PM/ SS (if in post) define project approach, Supplier standards, guidelines, procedures and development life-cycles
2. PM add mandate's context info, project approach, A21-PjPdD & A2-oBC into A19-PjBf
3.

14.4.1 Prepare the Risk Management Strategy (A24-RMS)
1. PM uses CoPM guidance on CoP strategies in the mandate/ A19-PjBf

14.4.2 Prepare the Configuration Management Strategy(A6-CfMS)
1. PM uses CoPM guidance on CoP strategies in the mandate/ A19-PjBf

14.4.3 Prepare the Quality Management Strategy (A22-QMS)
1. PM uses CoPM guidance on CoP strategies in the mandate/ A19-PjBf

14.4.4 Prepare the Communication Management Strategy(A4-CmMS)
1. PM uses CoPM guidance on CoP strategies in the mandate/ A19-PjBf

14.4.5 Set up the project controls
1. PM uses guidance in the A19-PjBf [manual says "summarise" reality says "detail"]

14.4.6 Create the Project Plan
1. PM derives from guidance in the A19-PjBf on milestones, standards, external dependencies, approach & assumptions

14.4.7 Refine the Business Case
1. PM extends (exec oversee) outline A2-BC to full A2-BC

14.4.8 Assemble the Project Initiation Documentation
1. PM extracts Pj definition (mandate's context info) and Pj Approach from A19-PjBf and combines with initiation products to create A20-Project Initiation Document to serve as basis for commitment, baseline for change assessment and induction pack for new project staff
2. PM suggests P2 tailoring for this project (based on A14-LL)
3.

Plan Delivery Stage

15.4.7 Escalate issues & risks
1. PM actions informed by the A20-PID, specially the A16-Pj Plan

15.4.6 Capture and examine issues and risks
1. PM actions informed by the A20-PID

15.4.5 Report highlights
1. PM reports in A11-Highlight Report against A20-PID

15.4.4 Review stage status
1. PM actions informed by the A20-PID

15.4.1 Authorize a Work Package
1. PM extracts or cross-references A20-PID Strategies/ Controls/ Quality/ Milestones/ CfM & handover requirements

17.4.1 Plan the next stage
1. PM reviews/ updates any aspect of the A20-PID in consultation with board

17.4.2 Update the Project Plan
1. PM reviews/ updates any aspect of the A20-PID (sic)

17.4.3 Update the Business Case
1. PM updates A2-BC (part of A20-PID)

17.4.4 Report Stage End
1. PM actions informed by A20-PID (especially A2-BC & A4-CmMS)

17.4.5 Produce an Exception Plan
1. PM reviews/ updates any aspect of the A20-PID in consultation with board (sic)

18.4.1 Prepare planned closure
1. PM actions informed by A20-PID (especially A16-Pj Plan)

18.4.2 Prepare premature closure
1. PM actions informed by A20-PID (especially A16-Pj Plan)

18.4.4 Evaluate the Project
1. PM prepares A8-End Project Report of "how Pj performed vs original A20-PID-a8" [and separately?] "compares the version of the A20-PID baselined at 13.4.2 and current at 13.4.5-18.4.4"

Team Manager

16.4.1 Accept a Work Package
1. TM actions informed by (relevant extracts of) the A20-PID

Process Numbers

13	Directing a Project (DP)
Initiation Stage	1st Delivery Stage	1/ Last Delivery or Stage
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
Managing a Stage Boundary [SB]	16	Managing Product Delivery (MP)

6.1.7.2 Recap: End of Starting up a Project (SU)

Starting up a Project (SU) was triggered by the arrival of a project mandate which is the reaction to a commercial or societal threat or opportunity. CoPM react by appointing one of their number as project exec who engages a project manager. The pair survey lessons observed elsewhere that are relevant to the current need, involve stakeholders, define the project's results in **A21-**Project Product Description and acceptance criteria terms and plan the next stage in sufficient detail to allow resource holders to accept the executive's recommendation of "Go" or "No-Go".

Starting up a Project (SU)'s results are the **A19-**Project Brief and Initiation Stage Plan

Outputs of (12.4) SU →[13.4.1]

SU   DP

Initiation Notification

- Request to initiate a project
A19 Project Brief
A16 (init) Stage Plan
P:PM, R:PA (A)ESUSS

13.4.1 Authorize initiation (DP1)
1. Board decide to proceed or cancel, Decision can be informal, Pm given auditable instruction from Exec (Senior Supplier may not be in post)
2. Ratify {Project definition/ constraint/ Project approach/ Role holders/ Job descriptions/ A21-Project Product Description/ Customer quality expectations & Acceptance criteria/ outline A2-Business Case/ Initiation Stage Plan/ Risks to initiation
3. For initiation: Set tolerances, Ratify reporting and control, Commit resources
4. Broadcast that a project is being initiated and request logistical support
5. Authorize the Project Manager to proceed with the initiation stage.

Starting up a project - Process

| Initiation Stage | IP | CS | 1st Delivery Stage | SB | CS | Delivery Stage | SB | CS | Last Delivery Stage | CP |

- Authority to initiate a project
- *Project Now Starts!*
A19 Project Brief (Approved)
A16 Approved initiation Stage Plan

SB MP

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P: = Produced By, R: = Reviewed By, (A) = Approved in another process by,
PA=Project assurance, E=Exec, SU=Senior User(s) SS=Senior Supplier(s)

59

7   First Formal Project Board Decision

7.1.1.1.1.1   A Visit to the Project Board

During Starting up a Project (SU) the exec, senior user(s), senior supplier(s), their project assurance, the project manager and their support staff work as the project management team to create the outputs of Starting up a Project (SU).

At the end of Starting up a Project (SU) the exec, senior user(s), senior supplier(s) meet as the project board with their project assurance. The project management team's outputs are assessed and approved, returned for revision or rejected when considering whether to **[13.4.1** Authorise initiation] or not.

Acceptance of the project management team's outputs establishes and maintains the project board's accountability for project success [13.1]

7.1.1.1.1.2   Sufficient Involvement?

If the exec, senior user and senior supplier need to study documents or meet for anything other than the formality of the decision then they were not involved in the Starting up a Project (SU) activities enough.

The die IS cast and the level of support and advice that the project manager is going to get has been demonstrated. The project board have a duty to advise the project manager as required and requested and by now it should be evident if they understand what they are to do and how to do it.

If involvement in scoping has been low then the project manager and exec must consider if the project board members will give sufficient time to the achievement of anything else in this project. The saddest situation is when the project manager cannot get to the exec to express the project's terminal illness.

SOOP-76.   Simple projects don't need much senior management involvement and complex ones do.

During SU the project manager must assess (and project assurance have a formal duty to ask) "was involvement adequate to the scale of the job". If not I suggest that you have a quiet chat with project assurance, the exec or your line manager.

7.1.1.1.1.3   Momentum from Involvement

It would be uncommon for an engaged project board that has shared workshops and thus understanding, that has just created a **A19-**Project Brief (with all its included items such as outline business case and project product description) and initiation stage plan to do other than move into initiation.

We must explore this source of grave concern *See X on Y.*

7.1.1.1.1.4   Approval Confirms Viable, Desirable and Achievable

If approved then the board are confirming they believe the **A2**-Business Case, the rest of the **A19-**Project Brief and the Initiation Stage Plan describe a potential benefit at tolerable levels of uncertainty, costs and trouble for the Initiating Stage to proceed.

The board also confirm the Initiation Stage Plan and contained controls are sound enough for them to maintain adequate control over the Initiation Stage, authority levels are defined and the decision making process is understood and agreed. They are content to manage by exception versus tolerances.

The return on investment from the cost of the Initiation Stage will be a fully formed project proposal IE the project's full (if only initial) **A20**-Project Initiation Document.

7.1.1.1.1.5   Approval Equals Contract

The board and project manager agree the 'contract' for the project management team to deliver the **A20**-Project Initiation Document, the first benefits enabling stage's **A16**-Stage Plan and the **A9**-End Stage Report covering the Initiation Stage.

The board commit the required resources plus their time, care, attention and influence. The project manager commits to manage the team's efforts to follow the initiation plan and report as agreed.

7.1.1.1.1.6   Accepting the Terms Of Reference

When making the first formal project assessment to **[13.4.1** Authorise initiation] the board are ratifying that they can accept (at least pro-temp) the project's constraints such as imposed dates and resource limits as dictated by CoPM.

The project board effectively propose that the project's acceptance criteria (AC) are deliverable, that the AC are a politically acceptable aggregate of expectations and that the potential benefits as described in the **A2**-Business Case and **A19**-Project Brief are true, fair, honest, achievable and worthwhile.

8 Concepts and Issues

Project management is a young discipline. The conceptual foundations are still being isolated and integrated. Current descriptions have errors and gaps in the concepts from which some subsidence and cracks result.

8.1.1.1.1.1   An Example

Understanding of project management's components is still being refined.

For example risk has within the last decade or two been widely re-interpreted from being threat only and is now regarded as "uncertain outcome whether positive or negative". Yet residual risk is still described as "risk remaining after action to reduce the risk" – this is a purely threat oriented definition and illustrates that implications that flow from a correct observation in an opening paragraph don't readily or rapidly permeate into solid guidance.

8.1.1.1.1.2   Supplier Destination

Most project thinking (PRINCE2® included) has been done by suppliers whose bias or mind-set shows through in assumptions and foundations upon which 'best practice' or logical progression of ideas sits. The 'logic' that then follows takes us to supplier not investor destinations.

8.1.1.1.1.3   Some of The Points of Debate

A general project management error and two errors of concept that are PRINCE2® specific are:

1. There is no 'free-standing' discipline of project management (unless you are a supplier).

   Project management is a general management skill that is required when business-as-usual passes through change. Some people may choose to specialise in it, but like driving a car it rarely has any purpose of its own. Both driving a car and driving a project are the means to 'travel' not the purpose of the skill.

The PRINCE2® specifics are:

2. No project board should have the authority to approve its own terms of reference. Project sanction is a portfolio duty.
3. The project sponsor (exec?) is accountable for benefits. Not as the 2009 official manual says "the senior user(s)".
4. 0.

We will explore these points before tackling the activities of the Initiation Stage.

8.1.2 Project Management As A Discipline

PRINCE2® inherits a generic problem from the common 21st century view of project management: that projects are temporary. PRINCE2® tries to deal with it but in the process the problem gets compounded and complicated by the official manual rather than resolved or even explained clearly.

8.1.2.1.1.1 Contradictory Concepts

Like most 'authorities' PRINCE2® observes that a project is temporary. "The defining feature of a PRINCE2® project" according to the official manual is that "it has … an end" [18.3]. The activities of closing a project are described as preventing "a slow drift into use".

Contradictory needs then follow:

➢ Concept 1) "a project is finite therefore must end" and
➢ Concept 2) "projects are justified if they create (enable) benefits".

Since benefits are normally largely delivered after the common view of when the project ends the current official manual has some unresolved contradictions in its guidance.

SOOP-77.   Projects are temporary but investments are long-lived. It is the investment, not (just) the project that needs management.

8.1.2.2 Roles End At Project End

PRINCE2®'s logic follows the assertion that since the project is ending the project's control structures including the assignment of roles also ends. Defining projects as having an end at which the executive and other roles cease to have accountability breaks the 'duty of care' chain that should run from application for investment through to return of benefits.

This is wrong. It is simple to fix by ensuring:

SOOP-78.   The duties of a sponsor are aligned to an investment. If the sponsor chooses to delegate care of the business aspects of the enabling element (aka 'the project') to a role that we might name as "Project Executive" the duties of sponsor (and exec) still need to be defined and executed across the investment life-cycle.

8.1.2.2.1.1 For The Customer A Project is A Phase of Benefits Delivery

Those triggered into action by arrival of a mandate that leave when the money is spent fail to see a project for what it is to the customer.

'The project' is a phase with-in management of change and realisation of benefits. It is just the development or enabling phase in any investment. It is the supplier that sees and defines projects as finite.

8.1.2.2.1.2   *Project Management is Flawed*

The biggest "hole-under-the-water line" in modern project management thinking is that most observers see project management as a temporary endeavour rather than seeing benefits management as the discipline at hand.

8.1.2.2.1.3   *Project Is Supplier Side*

While PRINCE2® starts by saying that the project manager and exec are from the "customer side" the implications have not infused the guidance given. The situation deteriorated in the latest rewrite.

8.1.2.2.1.4   *PRINCE2® Isn't Unique in the Error*

Most modern project management guidance shares the same conceptual fault line running between investment and return on investment since it is typically "suppliers" who write the project management methods.

The developer-oriented, project centric approach is blinkered and business naive. No management system (roles and processes) should allow, let alone instruct departure of those who hold accountabilities part way through the change: at the end of development.

8.1.2.2.1.5   *Project is Only 'Development's End'*

End of development and cross-over into business-as-usual is precisely the point that benefits realisation is toughest, most fragile and most doubtful and so needs the most skilled support.

The last thing any equity participant (eg Tax payer!?) wants is the opportunity for 'slopping shouldered' "not my fault" buck-passing and blame-storming after the money has been spent.

8.1.2.3 *HandOver*

Project management in general describes a transfer at Closing a Project (CP) *from* the project's management team *to* business as usual management. A supplier mind-set of projects are done *to* the business.

8.1.2.3.1.1   *By The Business, For The Business*

There should not be any transition *to* the business. The right view is projects are done *by* the business for the business: thus transition may be into operational use but not from some 'foreign' team.

SOOP-79.   There should not be a transfer of obligations to deliver value from the money and time invested in the project – the writings that say this have the wrong mind-set behind the pen. The problem is deeply rooted in the mentality of the supplier. Project management has grown-up on the supplier side of change initiatives.

8.1.2.4 *Project Are Only Justified When They Return Benefits*

The fact is projects are only (should only be) resourced with money, skill and will when the investors anticipate a return.

An investment (pursuit of opportunity or avoidance of threat) does not end when a project (the enabling phase) ends. What the shareholders want is to ensure that benefits are brought on stream, as fast and as strongly as possible. Well formed guidance should therefore cover the timeframe from investment trigger to capability retirement and redeployment of capital into some new benefits stream.

8.1.2.4.1.1   *Wrong Terminal Conditions*

PRINCE2®'s self imposed limitation of a stage to create controls and stages to deliver products puts the end-point in the wrong place for the customer. It is saddening that so much trumpeting in the very first paragraph about "experience...thousands of... project managers" seems still to leave the project management profession shy of a well grounded insight.

PRINCE2® probably does equal other 'best-practice' guidance but this does not mean it is good guidance. But then project management as a discipline is still growing-up.

SOOP-80.   The required concept is Benefits realisation is the discipline and projects (or better yet "Management of Change") is just a phase in the investment life-cycle between equity injection and equity extraction.

8.1.2.4.1.2   *Benefits Harvesting Responsibilities*

When the enabling stages end the hardest step starts. The step that really will benefit from professional support: the absorption of change. A development team may walk away but an 'investment leader' must never be allowed to escape accountability prior to repayment of the investment.

8.1.2.4.1.3   *The Hardest Work Starts when PRINCE2® says the Exec and Project Manager Leave*

The sponsor's and senior users' tenure IS throughout the investment while the senior supplier(s) is only during the period of change.

Separation of exec and sponsor duties isn't helpful without careful definition: and we don't get that definition in the official manual.

The exec's accountability may start with raising the project mandate. Otherwise it definitely starts at the very beginning of Starting up a Project (SU) and continues visibly while the investment budget is bid for, is spent and if the exec is also sponsor carries on after Closing a Project (CP) while the investment is recouped.

The project manager's duties should (?) be broader than the senior supplier(s)' and narrower that senior user(s) and sponsor's. IE the project manager should

oversee the embedding of new capability until business-as-usual is re-established around the new 'usual'.

8.1.2.4.1.4   Just Another Investment Phase

For the project exec, Senior User(s) and project manager each _stage_ that includes activity that destabilises some old-business-as-usual function should be seen as "time to start benefits delivery activity and re-stabilisation as a new-business-as-usual". IE just another _phase_ change in the investment.

Often these phases will coincide with a stage boundary. The last "start of a benefits stream" marks the end of the development phase IE the end of the project. The investment owner's role simply moves on from 'project exec' role to benefits realisation leader.

The project manager's 'walk way point' should not be before the impacted part of the organisation is again operating in a new-business-as-usual mode.

If project end marks the sponsor's 'walk-away' then the definition of the sponsor's role was wrong. PRINCE2® explicitly says it doesn't define a link between exec and sponsor. If they are not the same person then Closing a Project (CP) must ensure the sponsor understands what the 'project exec' is handing to them before the exec role ends.

8.1.2.4.1.5   Handover Should Be of Actions To Actively Maximise Benefits

When a stage with 'hand-over' activity ends the hand-over must include actions and accountabilities that detail how to react to coax, guide and tune business as new-usual to delivering the best bang-for-the-buck from what the development activity has enabled.

If the senior user(s) has done their job well then transition will be smooth and benefits worthwhile.

8.1.2.4.2   An Investment Has (PRINCE2® Should Describe) 4 Types of Stages

A helpful mindset for considering embedding of the stages in an investment as controlled by PRINCE2® is as follows [Note: item 4 is definitely wrong for exam purposes (and only wrong in the exam ☹)].

Consider a change initiative to be a comprised of three types of stages:

1. Qualification of the idea, that may use a preliminary quick filter to eliminate 'bad-ideas'.
2. Full(er) qualification or an Initiation Stage which builds the control regimen and may be combined with start-up for small projects or a mature context where preliminary work is routinely well done.
3. Enabling which may be multiple stages.
4. Harvesting which may be multiple stages and may encompass disposal.
5. 0.

Apart from the addition of harvesting stages this is mostly just tweaking of PRINCE2®'s current definitions.

8.1.2.5 The Four Chunks

1. Leave Starting up a Project (SU) as is but drop the artificial "not a stage"

   A stage whose start may be hard to distinguish but whose contents and end is as currently described by the results of the Starting up a Project (SU) process. Ie simple removing the artificial distinction that "SU is not a stage".

   Results are therefore an initiation Stage Plan, appointed project management team (PMT) and perhaps appointed product specialists too and a view of the project's success criteria.

   SU's target remains to have done enough to secure budget and establish controls over just the immediate next stage. We will have "planned the planning" and secured the allocation of a budget for the creation of a business case.

   PRINCE2® does exactly this but at some point it passed into exam legend "SU is not to be called a stage" and this is now stuck as a mantra that adds complexity without value. ☹

2. The Initiation Stage. Almost as now.

   The Initiation Stage should control spending the budget suggested by start-up while creating the description of the threats and opportunities of the potential investment.

8.1.2.5.1.1   Must Create a Benefits Delivery Strategy

The project management team's objective in Initiation is to create the truest possible investment appraisal and define a control regimen that matches uncertainty, complexity of the INVESTMENTS challenges. The control regimen is the collection of plans, management strategies, roles and responsibilities - which thus encompass accountabilities. The strategies created must include a benefits realisation strategy and ensure role holders understand that 'project' duties extend through settling change delivered by enabling stages into being a new business-as-usual rather than business-as-un-usual that most project leave in their wake.

8.1.2.5.1.2   Project Approval Must be By Portfolio Management

Also as described below the approval process should pass the **A20-**Project Initiation Document to the project board for vetting and then submission to a corporate portfolio management function for prioritisation.

PRINCE2® declares Initiation to be "the first stage" while in reality we might reasonably call it the second stage.

8.1.2.5.1.3   Enabling Stages

3. One or more "Specialist" stages in which, as now, the subject matter experts responsible for creating the project's technical products will execute their

tasks. Task are assigned in **A26**-Work Packages under the guidance of Managing Product Delivery(MP). We will cover the full details later.

8.1.2.5.1.4   *'Delivery Stage' Is A Supplier Label*

The most recent revision of PRINCE2® calls the stages after Initiation "Delivery Stages": A purely supplier side mindset. Previously they were "Specialist Stages" – a much better expression of implications.

"Delivery Stage" is a bad label to use for the work in the project where budget is being consumed rather than benefit <u>delivered</u>. "Delivery" should be reserved for "Delivery of benefits to equity participants" Including the 'human capital' participants as well as the share capital participants.

PRINCE2® may say "the exec and project manager are from the customer" but like not truly 'understanding' that risk has two side the official manual hasn't yet divested itself of providing guidance from a supplier mindset, in fact it has regressed between 2005 and 2009.

8.1.2.5.2   Benefits Stages

4. Now a departure: PRINCE2® says the last stage ends with Closing a Project (CP) that ensures all handovers are complete, closes the project and dissolves role-holders duties.

    PRINCE2® says the project board's obligations end. For example the official manual's description of the exec role says "transfer responsibility for post-project benefits review" [sic! C.2.1].

    Closing a Project (CP)'s philosophy and name should be changed to reflect "transition to benefits harvesting". PRINCE2® notes the need but doesn't provide guidance for oversight of the delivery of benefits. PRINCE2® stops at merely ensuring the <u>measurement</u> regimen is in place ☹.

5. 0.

8.1.2.5.2.1   *Implementation Stage*

Deliverables are only "implemented" when BAU staff routinely use the products in a (new) BAU context, and DON'T still operate in a pre-change initiative manner.

Part of PRINCE2®'s error here is to call what comes after creation of the products "business-as-usual (BAU)". It plainly isn't BAU until the echo and ripples of the project's impacts on what was BAU have died away.

8.1.2.5.2.2   *New Business-As-Usual Is Hard To Transition*

For any business absorbing change takes time. Management of change takes far more competence and effort than management of product development!

Good 'best practice' provides guidance (processes and roles) to shepherd change into business-as-usual.

'Benefits realisation stages', true 'Delivery Stages' should provide guidance to those who are accountable for the benefits covering how to overcome the shock of the new and settle the revenue (or other benefit) generation into a reliable routine that is the new "business-as-usual".

8.1.3 Sanctioning and Structuring Change

Groupings of linked tasks have many names: activity, job, **A26-**Work Package, stage, sprint, phase, release, project, programme, portfolio, business-as-usual. They are all the same: inputs are consumed by combination with process to create outputs. They are all just parts of one complex continually adapting system.

Project management will be a better discipline when we sort out how to use the labels to convey meaning to decision makers rationing the limited inputs.

8.1.3.1.1.1   Vocabulary Equals Concept Equals Clarity

People are programmed to react to scarcity and ignore abundance, people are programmed to favour familiarity and avoid change. 'Task' sanction is an act of rationing resources to create change. It is mostly driven by psychology IE feelings. How we feel is expressed in the words we use and affected by the words we hear (and even more affected by the images we see). Vocabulary matters.

8.1.3.1.1.2   Portfolio

Besides the legitimate and useful concepts of 'project' (but only as phase in a change) is the concept of the 'portfolio' and NOT the concept of programme. Programme is a flawed supplier side idea arising from incomplete thinking about the customer perspectives of projects and therefore portfolios.

By definition portfolio simple describes a collection of work: projects (bau transitions) and business-as-usual drawn from our limited resource pool.

Collection means linked in some way. Whether linked by project outcome (commonly then called a programme) or linked by just the resource pot the work is delivered from or even linked by the buyer to whom the project's deliverables are provided or perhaps linked by just the accounting period the work is executed in.

8.1.3.1.1.3   Portfolio Management Is The Crucial Role

Managing the portfolio is <u>the most important role in management of corporate (or societal) change</u>. To manage a portfolio means balancing the tension between demands for stability and change from finite resources for the best return to tax payer or equity holder. It is the role of national governments to exercise governance or care for the allocation of public sector resources, likewise for company boards and their managers with private equity holder's resources.

8.1.3.1.1.4   *Portfolio Management Depends on Accurate Business Cases*

Portfolio management is entirely dependant on good project management to provide the raw data needed to see with clarity across the options within the portfolio.

A portfolio contains business-as-usual activity and may contain zero, 1 or more projects; every project exists within some portfolio. A portfolio may contain zero or more portfolios or programmes, which must contain one or more projects to exist.

8.1.3.1.1.5   *Real Terms*

The real concepts and vocabulary are thus: a business operates a portfolio of business-as-usual operations. When a change is required we instigate a project. When many changes are required to bring about connected and coordinated changes whose scope and schedule overlap and whose impacts are all necessary but individually insufficient then we may combine them in a collective structure. Here the word programme is useful if stripped of the overblown supplier generated baggage often added to inflate job description to justify salary differentials.

8.1.3.2 Basis of Decision: Money and People

Appraisal of project desirability and viability always has a money dimension, but money is (time, scope and quality are) fairly flexible compared with three other things generally in shorter supply.

8.1.3.2.1.1   *First: Will to Change*

The first is the will to embrace change. Generally people are psychologically predisposed to resist change, even when the change is beneficial. Change brings uncertainty. Since uncertainty can be positive and negative and mostly we are more sensitive to the prospect of loss (and scarcity) than gain (and abundance) creating change in people is hard.

[The simplistic recipe is:

1. Determine required result,
2. establish incentives attractive to the people and aligned to the desired goal,
3. create the means for people to interact, establish their freedoms (limits of their authority) and escalation routes,
4. create a 'disaster' that removes the choice to act,
5. encourage solution development within authorities towards the incentives,
6. monitor for and remove unintended consequences.
7. 0.

This is outside the mindset displayed by the official manual of a centrally managed command and control structure. It is entirely aligned with the roots of the Agile and complex systems inspired movements. We haven't got to the CS/

MP interface yet but PRINCE2® works just as well when it is used as a distributed and reactive, rather than centralised command and control mechanism.]

> # Management of Change
> # The Prince published. 1515
>
> "Those who by valorous ways become princes…acquire a principality with difficulty, but they keep it with ease.
>
> The difficulties they have in acquiring it arise in part from the new rules and methods which they are forced to introduce to establish their government and its security.
>
> And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new.
>
> This coolness arises partly from fear of the opponents, who have the laws on their side, and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them. Thus it happens that whenever those who are hostile have the opportunity to attack they do it like partisans, whilst the others defend lukewarmly, in such wise that the prince is endangered along with them."
> — Nicoli Machiavelli, 1469–1527
>
> © Logical Model Ltd   ☎0845 2 57 57 07   16
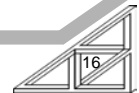
8.1.3.2.1.2   Second: Ability to Absorb Change

The second 'resource' in short supply is the <u>ability to absorb change</u> into the business as usual (BAU) operations. Continued BAU is critical because it generate the revenue to pay salaries and cost-of-capital burdens.

By 'ability to absorb change' I mean 'continue to operate while undergoing change or survive a pause in operation and thus a pause in revenue while changing'.

8.1.3.2.1.3   Third: Availability of Skills

The other resource less readily obtainable than money is skilled personnel:

➢ people who are fluent in the operation of the business or
➢ people fluent in the techniques to create change in BAU operations of all those around them.

8.1.3.3 Project Selection

Mostly selection is a complex comparison between each current and potential project's affect on short and long term desires.

8.1.3.3.1.1   *Mostly Emotional*

Project selection decisions are largely influenced by emotional factors. The final choice is always then justified by numerical analysis, but often the numbers are chosen to fit the desired answer.

The interested reader should look for the works of John Kotter such as The Heart of Change.

PICTURE: See Feel Change

Once the decision is made emotional attachments tend to argue against rational adjustment leading to phrases like "good money after bad".

8.1.3.3.1.2   *Initiatives*

For some organisations the view of change initiatives costs is that most of the resources used are people and most of them are on the payroll already costing the organisation a fixed employment cost. In these cases 'project cost' is often more of an opportunity cost decision to prioritise between support for business-as-usual and competing change initiatives.

Where investment of fresh tax-payers or equity holder's funds is required the decision is one of size and timing of dividends (services) without the project versus size and timing after the project.

8.1.3.3.1.3   *Project Selection Balances Will With Skills Available*

Project selection is (should be) an act of balancing the will to take-on change with what can be successfully absorbed and generates the 'best' returns. Timescales that can be achieved are the result of the number of demands divided by availability and productivity of skilled resource.

SOOP-81.   For many change initiatives cost isn't the driver it is the group's psychological will and capacity to accommodate change.

8.1.3.3.1.4   *So Many Changes of Context That No Progress Is Made*

Some organisations add initiatives to the portfolio beyond the point at which resources can make a contribution to an initiative before turning to a second, third or fifth demand on their time.

When projects share resources beyond the resource's capacity to service them then all projects' tend to progress, if at all, at the speed of the slowest.

8.1.4 *Board Approval of A Project Is Wrong*

PRINCE2® says the project board authorises its own project. A PRINCE2® project board doesn't have the portfolio perspective while it does have a project oriented self-interest.

The advice is wrong and is plainly bad governance – No Audit function should ever sanction the arrangement because:

1. A good project manager should have generated motivation, morale and enthusiasm in the project management team. The team must include the project board members as only they can specify what is wanted, how the view risk and commit those who are to create it and ensure project success through their own committed support. The project board do not have the distance or detachment to review their own outputs.

2. The board (as project board is defined in PRINCE2® terms) does not have the perspective over other investment opportunities. Rationing the will and skill in the organisation in pursuit of a strategic view of all current business cases is a "Portfolio Management" responsibility not a project level one.

3. 0.

Perhaps these short comings are part of the reasons that registered practitioners is numbered in the 100s of thousands and true users is more in order of either hundreds or thousands?

8.1.4.1.1.1   Projects and Portfolios of Projects

Authorisation of change is part of the fiduciary duty of care corporate management hold on behalf of stakeholders (equity participants: whether human or financial capital). To provide the right assurance means enforcing a portfolio wide governance view of balance between stability and change: current utility versus future utility.

Correct thinking about the approval decision will have each project's business case as an input to the process that maintains the <u>best portfolio</u> of benefits realisation across the organisation. Corporate governance is intended to ensure protection of investor interests. Project effort drains the corporate stock of financial capital-money and human capital-will and skill.

Authorisation is (only) appropriate if project results are the <u>best</u> available and will flow into Business As Usual operation and thus 'revenue' generation to shareholders or service provision to the public.

8.1.4.1.2 Portfolio Decision Mechanics

8.1.4.1.2.1   Authorisation

It is corporate management's duty to make project go/ stop decisions based on assessment of the amount of resource (will, skill, money and morale) needed for business as usual and each investment opportunity's or threat's responses so as to maintain the best overall portfolio.

When corporate management sanction a group of linked projects then labelled as a 'programme' then the programme's management take a project authorisation role directly comparable to a PRINCE2® project board's role to approve stages.

8.1.4.1.2.2   Triangle Of Decision Making
Triangle graphic

In most organisations the decision making structure is already established and is hierarchical. Those at the "top" determine why the organisation exists in the form that it does and that drives what the organisation seeks to achieve long term.

Long term aims drive expression of strategic and tactical objectives. IE deciding what to maintain and what to change over both the short and the long term. The authorisation of each project considers the available will, skill and money to deliver the project's results versus the alignment of the project's goals with the organisation's short term (tactical) and long term (strategic) needs.

8.1.4.1.2.3   Correct Embedding Means Changing PRINCE2®'s Definition (A Little)

To correctly embed PRINCE2® means linking to corporate portfolio governance mechanisms. Project evaluation must consider the relative ranking of each project's merits within the portfolio of demands and resources available to deal with everything wanted.

It means **[13.4.2** Authorise the project] must be agreed by corporate management and perhaps **[13.4.1** Authorise initiation] should be too but there is an argument to leave this decision with the project board as it isn't the major commitment – the future disruption to business-as-usual by the introduction of change and the cost of product development is normally the major commitment.

8.1.4.1.2.4   Portfolio Decision

The portfolio authority decides in the context of the complete portfolio of potential and currently active opportunities versus available capacity to absorb change, time, money, skills & will which of the alternate ways resources should be assigned as of today.

The governance authority must periodically compare what returns each initiative that is under way or could be authorised will give versus the current status of all other ways that the organisation's will, skill etc. are currently being used.

8.1.4.1.2.5   Acceptable Levels of Change (Churn)

SOOP-82.   *The most important criteria for project approval is to review 'this project' against those currently active and also delivering into the same business-as-usual area of the enterprise. The portfolio authority should assess if the degree of 'churn' that will disrupt service provision and revenue generation in the target area is below the threshold staff can tolerate.*

8.1.4.1.2.6   Project Index of Virtue

SOOP-83.   *Simon's Project Index of Virtue (SPIV) calculates (Benefits Identified / Effort still to be exerted). The projects with the highest values at any time should be the ones being actively pursued.*

As a project progresses its "effort to go" decreases while other things being equal its benefits remain static. Thus the ratio of "benefit to be received versus what is

still to do." improves as "still to do" decreases. If any new initiative arrives or existing initiative's profile changes to give better (worse) leverage on the resources available then the portfolio mix should be changed.

Obviously the calculation is easier when the terms are expressed in money and probably more viscerally meaningful to decision makers when they are not.

8.1.4.1.2.7   ESA Across The Portfolio

At subsequent end stage assessments (ESA) when the project board **[13.4.3** Authorise a Stage or Exception Plan] the exec should again check with the portfolio authority to reconsider if the allocated resources, including the corporate will to absorb change is still best allocated to this initiative. In most cases the improving SPIV should make re-approval certain unless the project is performing poorly, a fantastic alternative has arisen or the market place has changed radically.

8.1.4.1.2.8   Project Stop Must Not Be A Stigma On Participants

When the mix changes the decision to stop or pause a project should not place a stigma on those involved.

When a stigma arises there is resistance to portfolio changes, facts are distorted, hidden and presented selectively to avoid the stigmatised decision. All of which is against the equity owner's interests.

When presenting a business case the presenter should not have a personal stake that equates lack of approval of the project with disapproval of the proposer. The proposer should walk away with thanks for presenting the opportunity in a fair light that allowed determination that resources are best used elsewhere.

8.1.5 Senior Users Accountable For Benefits?!

Since the 2009 official manual PRINCE2® guidance has got muddled about benefits accountability. The official manual says the senior user(s) are accountable for benefits: wrong! They cannot be more than responsible.

The muddle results from:

➤ sloppy use of the words "accountable" and "responsible",
➤ the general supplier side project management flaw that says "project is temporary" when we should say "investment is phased and long-lived" and
➤ PRINCE2®'s lack of specification of the duties of the sponsor.

8.1.5.1.1.1   Benefits Accountability

SOOP-84.   The best-practice in investment (project) approval should define accountability for benefits to rest, clearly with the single point of authority delegated by the organisation's equity holders: IE through the main board's governance duties, through the portfolio management function to a change's sponsor. A 'Management Handbook' should be written during embedding that sets-out the mechanisms, rights and duties of those involved.

I can help you write it: p2@logicalmodel.net.

8.1.5.1.1.2   Clear Guidance: Sponsor is ACCOUNTABLE

Since the official manual has a supplier mind-set and does not use accountable and responsible with rigour the expression of concept is hazy when it must be clear☹ if we are to discharge projects well.

Other frameworks such as A Guide to the Project Management Body of Knowledge (PMBOK® Guide) from the Project Management Institute and the Association for Project Management's "APM Body of Knowledge" both unequivocally define the Sponsor as accountable for benefits.

8.1.5.1.2 The Official Manual Says The Exec 'Just Creates The Measures'

A smattering of the things the 2009 official manual says of benefits and the exec:

➢ "For post-project measurement activities, responsibility for benefits reviews will transfer from exec to CoPM as the project closes" [4.3.3]
➢ "The role of the exec is vested in one individual, so that there is a single point of accountability" [5.3.2.2:Exec p35]
➢ "The exec is the ultimate decision making authority on the project board" [C.2.1]
➢ "[the exec will] transfer responsibility for benefits review to CoPM" [C.1.1 & C2.1] and
➢ and "The Executive is responsible for ensuring that those benefits specified by the Senior User(s) represent value for money, are aligned to corporate objectives, and are capable of being realized" [4.1 and many other places].

Finally

➢ "The business change manager is responsible for benefits definition and management throughout a programme" **[19.4.1**.2]

Which may just mean this is another attempt, like risk management, to cross-sell other OGC 'wisdom' and as a result has damaged PRINCE2®'s definition in official publications.

8.1.5.1.2.1   The Official Manual Says The Senior user(s)…

To be accountable for benefits requires control over the factors affecting benefits. Two of the many similar statements in the official manual that relate to benefits and the senior user(s) are:

➢ "The Senior Users(s) specifies the benefits and is held to account by demonstrating…" [4.3.3]
➢ "CoPM hold the senior user(s) to account for realising the post-project benefits enabled by the project's products" [Table 4.1-CoPM & C.2.1-exec]

8.1.5.1.2.2   Contradictions

Following each train of logic from the quotes relating to the exec and senior user(s) ends in contradictions and confusions.

The 'benefits single-point-of-<u>accountability</u>' can never be 'the senior user<u>(s)</u>' plural, nor even <u>a</u> senior user singular as defined by PRINCE2®.

Since the exec is "the ultimate decision making authority on the project board" the senior user(s)' accountability is specified explicitly to be without commensurate authority.

8.1.5.1.2.3   Accountability CANNOT be split from Authority

A split of *accountable* for the realisation of the benefits from the authority to direct action to meet the accountabilities most commonly generates politics, recriminations and blame. With control over only some factors unintended consequences are inevitable.

8.1.5.1.2.4   Authority and Accountability Must Match

The only person who can be accountable is the one with the ultimate authority and vice versa. Creating usable guidance pivots importantly on the differentiation of meaning between accountability and responsibility.

Investment success pivots crucially on understanding of the affect on risk perception, appetite and thus response selection that results in separating benefits accountability from project accountability!

8.1.5.1.3 Solution

A workable solution for PRINCE2® is to adopt the 4 phased investment model above that includes benefits harvesting stages and engages a sponsorship role with accountability from equity injection to equity extraction.

We must be clear that when the sponsor delegates care of the project to a "project exec" whose role matches a project's temporary nature then guidance for the long-lived role is also required in order to set-out the sponsor's accountabilities. [Remember the Sponsor's Glossary entry p313: "PRINCE2® does not define a role for the sponsor"]

8.1.5.1.3.1   Senior user(s) ARE RESPONSIBLE

So finally the statement at [4.3.4.3 on page 26] that demonstrates sloppy use of responsible and accountable may actually 'say it right'.

> ➢ "The Senior User(s) is <u>responsible</u> for the set of benefits within their respective areas" [(sic) p26]

8.1.5.1.3.2   Reasonable and Right

It is entirely reasonable to make the senior user *responsible* for use of the products and even *responsible* for benefits. The exec is the in-project escalation

route for needs outside of the senior user(s) authority and the sponsor the rest of the time.

The implications of which are that each of the senior user(s) take direction from the sponsor and escalates contradictory constraints to the sponsor while applying their energy, resources, care, skill and will to generating a return from a new-business-as-usual operating mode.

To be explicit: sponsor and senior user(s) roles are much wider than the project duration. The official manual has a blinkered view: description of project exec, project manager and senior supplier(s) duties are only included where they overlap the expenditure phase of investment.

8.1.5.1.3.3   Reality

In reality the senior user(s) with a business-as-usual remit is *accountable* for specifying and using the products. There is no one with a better perspective over what the 'future-state-business-as-usual' will need. To then ensure benefits the senior user(s) will need wider remit than just product specification and usage.

8.1.5.1.3.4   Capable Result

The official manual says the project manager is responsible (sic) for "the project producing a result capable of achieving the benefits".

For the project manager and senior supplier(s) the reality is that they are *responsible* for producing what was asked for.

The sponsor, project manager, project exec, senior supplier and their project assurance must all be vigorous in questioning if what is requested is what is needed, but ultimately the project manager and senior supplier must produce what was asked for and cannot create what is not asked for.

8.1.5.1.3.5   Project Manager Accountability

The project manager has day-to-day authority and is thus accountable for the delegation of **A26-**Work Packages to the project team and the team's responsibility is to faithfully follow the senior user(s)' specifications.

➢ The project manager is accountable for the project team meeting the specification.
➢ The senior user(s) is (are) accountable for providing a specification that describes a result "capable of achieving the benefits".
➢ The sponsor is accountable for returning benefits that out-weigh the investment through the responsibilities they bestow on the project manager and senior user(s).]

8.1.5.2 How it Should be Seen

A business runs in a market place, under the guidance of a chief executive and the board of executive and non-executive directors who look after participant's
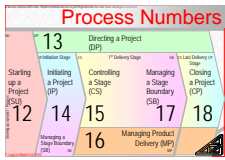
equity. The directors have a fiduciary duty which the executive function of the business carries out by directing day-to-day control of Business-as-usual.

8.1.5.2.1.1   Change to The Status Quo

When 'the business participants' wish to change business-as-usual they become sponsors of change to achieve some 'future-state-business-as-usual'. The equity owner's board allocate some of the business' equity to the creation of the new or future-state business-as-usual and expect some 'dividend (service)' to result.

8.1.5.2.1.2   Investment Management

The change runs in the enterprise under the guidance of a project sponsor (singular) and, initially a project board.

The project board is the change-phase's 'executive' (the project exec, the project manager and senior suppliers and senior users) plus a non-executive presence which is the project assurance role holders.

The sponsor and senior user(s) have an enduring and delegated fiduciary duty of care over the equity they are investing, while the project exec, project manager, senior supplier(s) and non-executive role holders have a temporary duty that should last until the future-state is the new 'as-usual'.

9   Building Baselines and Controls

The Initiation Stage starts when the project board **[13.4.1** Authorise initiation] based on the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, **A2-**Outline-Business Case, **A21-**Project Product Description, Project Approach, … } and the Initiation Stage Plan.

9.1.1.1.1.1   Two Processes In This Stage

The Initiation stage comprises activity from two PRINCE2® processes:

➢ Initiating a Project (IP) to produce the **A20-**Project Initiation Document which is considered by the project board in order to **[13.4.2** Authorise the project] (or not) and

➢ Managing a Stage Boundary (SB) to produce the **A9-**End Stage Report and the next stage's **A16-**Stage Plan for consideration by the project board to **[13.4.3** Authorise a Stage or Exception Plan] (or not).

Initiation sets up:

➢ Risk management,
➢ Configuration management,
➢ Quality management and
➢ Communications
➢ as well as establishing the project's controls and
➢ carrying out project planning.

'Sets-up' means establishes procedures and assigns rights and duties to project management team members.

9.1.1.1.1.2   Initiation Requires A Lot Of Description.

With all those major disciplines to describe set-up has a lot of content. When we get to the end if initiation we have finished the 'Controlled Start' and we are a long way past 50% of the weight of words.

9.1.1.2 Recap *– The Journey So Far: Team and Task*

A mandate arrived.

9.1.1.2.1.1   Team and Experience

The mandate triggered appointment of project exec and project manager. They drafted-in stakeholders to pool experience. Motivation and buy-in were built by the techniques used for scoping the project. Some stakeholders became project management team members.

9.1.1.2.1.2   *Project Goal*

The project goal was recorded in the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, … Project Approach }.

9.1.1.2.1.3   *Outline **A2-**Business Case, Uncertainties and Allowances*

The basis for considering pursuit of an opportunity or avoidance of a threat was built within the outline **A2-**Business Case.

Current project records contain as much as we know so far. Politics, uncertainty and business or market-place volatility are still being assessed for the impact they may have and thus sizing of allowances for inclusion in schedules and budgets.

A proposal (the **A19-**Project Brief and Initiation Stage Plan) were drafted to describe the justification for (NOT TO JUSTIFY) investing in developing the **A20-**Project Initiation Document [or Full Investment Definition]. The project board and CoPM approved commencing the Initiation stage.

9.1.2   *Basic Thrust Of The Initiation Stage*

What comes next is the building of three things: the project control strategies, the **A16-**Project Plan and a more complete and robust **A2-**Business Case.

How to build these three is the subject of the guidance in the IP process. What also follows is the transition from 'first stage' to the first benefits enabling stage. Stage transition involves summarising the stage ending and planning in detail for the stage coming. How to prepare for the transition is described by a sub-set of (SB)'s activities. Results of preparation are documented in the **A16-**Stage Plan, the **A9-**End Stage Report and if necessary by update to any of the **A20-**Project Initiation Document's component parts.

9.1.2.1.1.1   *Either A Lot To Do Or A Superficial Revisit of Control Strategy*

For many organisations much of Initiating a Project (IP)'s guidance is performed once during embedding. A superficial project specific revisit is then needed to tailor what is variable for each project. The only significant Initiation Stage task will then be the creation of the project specific **A16-**Project Plan and **A16-**Stage Plan.

Where the control regimen has to create mind-sets, role definitions, meeting agendas, record templates and repositories from first principles there is a lot to cover.

This chapter assumes we start with a blank canvas: it presents principles, then procedures with techniques and tools.

9.1.2.1.2   Define The Commitment

Before the Initiations Stage is complete all parties must be sure of their own business case for involvement.

All commercial agreements, all control and technical activity that will create products should be known, costed and scheduled. How outputs will be verified, accepted and handed-over and how product short-comings will be detected, accepted or excepted and reworked before handover should also be clear to all stakeholders.

9.1.2.1.2.1   If Scope Is The Planning Variable

Alternatively the cost and schedule constraints should be known and the senior user(s) should be ready to specify the desired results in evolving priority order upto the point budget and schedule are exhausted.

Where there are unknowns or uncertainties then the control strategies, escalation routes and contingencies should have been thought through and agreed.

After all that preparation we trust to luck and reactive agility. (Luck is defined as the collision of opportunity and preparation).

IP-04 F:2 The Activities Within Initiating a Project (IP) Process

PBS = Product Breakdown Structure, PFD = Product Flow Diagram. PD – A17-Product Description, CIR – A5-Configuration Item Record

PBS = Prepare the Risk Management Strategy
See XREF for details

SU

13.4.1

Authorize initiation

Authority to initiate a project

A19 Project Brief
A14 Lesson Log
A7   Daily Log

Starting up a project - Process

13.4.2

Authorize the project

Request to deliver a project

SB CS

SB CS

1st Delivery Stage

A20-Project Initiation Document

Stage boundary approaching

17.4.1-4 (SB)

14.4.8 Assemble the Project Initiation Document
1. Create the PID CI from component CIs

A19-Project Brief { Pj Definition, Pj Approach }
A24-RMS, A22-QMS, A6-CMS, A4-CmMS
  Pj Controls
  P2 Tailoring
  .
  .

A20-PID { A16-Project Plan,PMT Struct, Role Desc}(P-PM, (A)-ESuSS, R-PA) }

A5-Configuration Item Records (P-PS, A-PM, R-PS)

A20-PID { Create A2-Business Case (Detailed) }

MP

Create A1-Benefits Review Plan

SB

A20-PID { Create A2-Business Case (Detailed) }

14.4.1 Prepare the Risk Management Strategy
1. Define Who/ How/ When of Risk Mgmt to satisfaction of PB & PA
2. **Create A25-Risk Register**

A24-Risk Management Strategy (in A20-PID)
P-PM, (A)-ESuSS, R-PA

A25-Risk Register
P-PS, A-PM, R-PA

A19-Project Brief
A14-Lesson Log

14.4.4 Prepare the Communication Management Strategy
1. Perform stakeholder analysis
2. Merge strategy's comms needs
3. Define Who/ How/ When of Comms Mgmt to satisfaction of PB & PA
4. Upd8 A12-IR+A25-RR+A7DL

Upd8 A12-IR+A25-RR
A7-Daily Log

14.4.6 Create the Project Plan
1. Create **PBS*/ PD/ PFD/ CIRs** (specialist and management products) ID the means to transfer specialist products to BAU, Plan SLAs
2. Confirm required resources
3.
4. Upd8 A12-IR+A25-RR+A7DL

A20-PID { A16-Project Plan }

14.4.7 Refine the Business Case
1. Do **Investment analysis** with Time & Costs from Project Plan
   Assess uncertainties, benefits & their tolerances
2.
3. Determine who/ when/how/ and current baseline of each expected benefit – capture in the **A1-Benefits Review Plan**

14.4.2 Prepare the Configuration Management Strategy
1. Define Who/ How/ When of Config Mgmt (Inc. Issue & Change to satisfaction of PB & PA
2. Define Priority & Severity scales
3. Create & populate Issue Reg (from Daily Log)
4. **Create initial set of CIRs**
5. Upd8 A12-IR+A25-RR+A7DL

PMT Structure& Role Descr'tns Configuration Item Record
P-PS, A-PM, R-PA
  . A5

A24-Config Management Strategy (in A20-PID)P-PM, (A)-ESuSS, R-PA
A12-Issue Register P-PS, A-PM, R-PA

14.4.3 Prepare the Quality Management Strategy
1. Use CQE & AC to Define Who/ How/ When of Quality Mgmt to satisfaction of PB & PA
2. **Create Quality Register**
3. Upd8 A12-IR+A25-RR+A7DL

A20-PID {A22-Quality Management Strategy }
P-PM, (A)-ESuSS, R-PA

A23-Quality Register
P-PS, A-PM, R-PA

A4-Communications Management Strategy (in A20-PID) P-PM, (A)-ESuSS, R-PA

14.4.5 Set up the project controls
1. Define stage boundaries
2. Confirm strategies integrate as a set and controls match project significance & difficulties
3. Allocate tolerances and decision making authorities (& note in role descr), amend assignments as required for best use
4. Upd8 A12-IR+A25-RR+A7DL

A20-PID {A4-CmMS, Project Controls }

A19-Project Brief { A21-Project Product Description, Pj Approach }

A12-Issue Register

A25-Risk Register

A14-Lesson Log
A20-PID (A22-QMS, A6-CtgMS, A24-RMS }

A20-PID=[Pj Controls, Role Desc & PMT Structure] (P-PM A=ESuSS, R-PA)

A19-Project Brief { Outline A2-Business Case }

A19-Pj Brief { A21-Project Product Description }

A25-Risk Register
A12-Issue Register

A19-Project Brief

A14-Lesson Log
A20-PID (A22-QMS, A6-CtgMS, A24-RMS }
  update

DoubleHeaded   Create

SB-04 F:2   The Activities Within the SB process

Stage SB CSCP

Last Specialist Stage

MP

63

13.4.3 Authorise a Stage or Exception Plan

Request to approve [next stage/ exception] plan

A9   End Stage Report {
A15-Lesson Report,
Follow-On-Action-Recommendations }

17.4.4 Report Stage End
1. Seek project board approval to continue vs. Pj Plan, A2-Business Case and risks
2. Provide comments on current stage under and over achievements: Benefits/ Team/ R+I/ Products produced, Quality Reviewed & Handed over to all noted in the A4-CmMS
3. Suggest FOARs
4. Create a A15-Lesson Report if useful

A20-PID { A2-Business Case }

A20-PID {A4-Communications Management Strategy }
A18-Product Status Account
A14-Lesson Log

17.4.2 Update the Project Plan
1. Apply progress from last stage, refinements from new stage-plan, changes to end-point, impacts of Risk, Issue & Changes, P2 tailoring needs, Strategy, Control or team changes

A12-Issue Register
A25-Risk Register

A20-PID {A16-Project Plan }

A1   Benefits Review Plan

A12-Issue Register
A25-Risk Register

17.4.3 Update the Business Case
1. Reassess organisational risk appetite & capacity, current aggregate project risk and tolerances
2. Revise the A1-Benefits Review Plan & add any realised benefits or affect of RFCs and changes to business context, realistic targets et.al.

1st Delivery Stage

(next) A-16-Stage Plan { A17-Product Description }

A23-Quality Register

A20   PID

A10-Exception Plan { A17-Product Description}

(current) A16-Stage Plan

A23   Quality Register

17.4.1 Plan the next stage
1. Update any changes to CQE/ AC/ Strategies/ Controls/ Roles
2. Create A16-Stage Plan of task & resource schedule to create products in stage's scope (from A16-Pj Plan)
3. Create PBS/ A17-PD/ A5-CIR
4. Add risks, issues and quality records

A12-Issue Register
A25-Risk Register

Configuration Item Records

17.4.5 Produce an Exception Plan
1. Note exception processing vs. issue records
2. Update PID as useful vs. {CQE/ AC, Approach, Strategies, Controls, Role holders }
3. Consider A10-Exception Report and Create the exception plan to cover products in scope of exception stage & create A5-CIR/ A17-PD/ A23-QR as required – perhaps update PBS/ PFD tool
4. Update A12-IR+A25-RR as required

CS

1st Specialist Stage

Initiation Stage

IP

A20   PID
A14   Lesson Log

Stage boundary approaching

15.4.4 Review stage status

A5   Configuration Item Records

A10-Exception Report

SU

Starting up a project - Process

Exception Plan request

13.4.4 Give ad hoc direction

13.4.3 Authorise a Stage or Exception Plan

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DoubleHeaded

update

9.1.2.1.2.2   13 Activities

PRINCE2® guidance is split into eight activities in IP and five in SB:

➤ four IP activities that adopt or adapt standard organisational policies and strategies.

The first three (risk, configuration management and quality) feed into the fourth to establish communications.

If strategies (procedures and duties) are not already described in the organisation's Quality Management System (QMS) the project will have to create them (or adapt them from this text?).

➤ two IP activities and one SB activity to create **A16-**Project Plan, project controls and **A16-**Stage Plan

Plans include schedules but also specification of reporting and tolerances. Stage plans refine project controls with stage specific controls like stage tolerances and stage specific reporting frequency,

➤ one activity in IP and one in SB to consolidate into the **A2-**Business Case {…, investment appraisal } the costs of meeting project board's quality aspirations and risk appetite.

Project and Stage planning translate the product specifications, their quality criteria and the project board's threshold for accepting or reacting to risk into actions and thus into required resources and thus cost and schedule and thus outward cash-flow (and thus if you wish 'Planned Value (PV)' also know as 'Budgeted Cost of Work Scheduled (BCWS)').

A demand for high grade results and a demand for responses to every threat or opportunity tend to be expensive: The balance of safety and expense IS the expression of "risk (and quality) appetite (expectation)".

➤ Finally one admin activity in SB to report Initiation Stage performance and one in IP to bundle all project management products produced so far together and present them to the project board for approval (or perhaps to vet and submit to CoPM's portfolio managers for approval).

It isn't 12 (sic) separate elements in reality – Remember ingredients and soup.

The activity count above is 12 of the 13 in IP and SB. SB provides a means to restart and recover the stage if we deviate from the Initiation Stage Plan far enough to be in exception. We will cover the discussion of that eventuality at **X on Page Y**.

9.1.2.1.2.3   The Control Regimen

In total by the end of the Initiation Stage the project management team has considered and chosen how it will:

1. Manage technical aka specialist product realisation
    via product-development life-cycles, the quality regimen and
    configuration management regimen,

2. Manage uncertainty of investment direction (strategic risk) and project execution (tactical risk)
    via planning, monitoring progress and handling variances (discovered change), discretionary changes and managing uncertainties,
3. Manage communications (reporting and escalating concerns).
4. 0.

9.1.2.1.2.4   The Purpose and Focus Of IP …

The Initiation stage creates as robust as is possible a definition of the project control regimen and the first benefits enabling stage's **A16-**Stage Plan.

The Initiation stage's work packages have some required sequencing due to dependency and are executed…

➤ With a focus on the project's success criteria as set-out in the **A19-**Project Brief { Project definition { <u>Project objectives, Desired outcome, … }</u>, … **A21-** <u>Project Product Description, Project Approach, …</u> }

➤ According to the "initiation stage plan" created in Starting up a Project (SU) and

➤ under the controls proposed in Starting up a Project (SU) and agreed by the project board when they **[13.4.1** Authorise Initiation]

By controls we mean the agreed tolerance limits in project management team member's role descriptions, the status monitoring and variance analysis procedures and the reporting procedures in force when under or over tolerances.

9.1.2.1.3   Board involvement

SOOP-85.   Project success results from agile decision making which results from commitment which results from understanding. The probability of success is enhanced if the project board is involved in creating the control strategies. The level of control required is a cost benefit trade-off that expresses the managements 'tone' or 'culture' of trust and confidence. What is 'adequate' *is* the expression of this project's participant's joint appetite for risk and quality.

9.1.2.1.3.1   Obstacles To And Importance Of Involvement

If created from scratch complete involvement may be too much of a commitment at too low a level of detail for project board members. If the project uses 'standard solutions' provided by the Centre Of Excellence then pre-made decisions may preclude board involvement.

It is 'expensive' but sensible to discuss the control strategies early and seek agreement to each strategy 'as we go' because:

➤ The more control specified the more project board time consumed operating the controls and the higher the project management's overhead cost,

Project board's typically want lots of control until they realise it all has to be paid for: if in no other way than with their time. Those controls they don't participate in are not yielding real control but are adding real overheads.

➢ the project's justification is based on the size and timing of costs vs size and timing of benefits,

➢ the costs and timings (timings are needed to calculate discounted cash-flow and thus financial appraisals) are based on the project plan,

➢ the project plan is based on the work to create the products resulting in part from the burden of the controls.

- (work * rates = cost) and the available resource
- (work / resource = duration).

If work includes a lot of redundant controls the project's benefits, agility and likelihood of success decrease.

9.1.2.1.3.2   Balance The Control To The Benefit

It is a fact that some (much?) project delay is attributable to management bottlenecks in the decision making architecture: too many purposeless or marginal meetings to be able to properly prepare and participate meaningfully when really needed.

9.1.2.1.3.3   Decision Making Meetings

PRINCE2® advocates management by exception to clear purposeless meetings out of diaries. If a PRINCE2® project manager wants to meet the board it is because a decision is required. The project board should turn-up informed and without delay.

9.1.2.1.3.4   Time To Market

Onerous control strategies result in high management time requirements, higher costs and lower ROI while under-specified strategies lead to weak control, the threat of no benefits but also the possibility of greater ROI.

Developing (adopting and adapting) the project control strategies requires constant expression of the cost the board (exec) is prepared to pay for greater certainty from more expensive and probably slower controls. Slow threatens time to market and reduces the net present value of future incomes – See **X on Page Y**.

9.1.2.2 Risk Strategy

SOOP-86.   Of all the strategies in which to secure project board involvement the most important is Risk Management: definition of assessment scales and thresholds that match risk appetite is impossible without project stakeholder engagement.

If you have only one shot, fire it here.

Meaningful project insight must allow expression of personal and group risk perception. Must translate perceptions to funded responses within "Plan-A and B". Early in the Initiation Stage the project board (the sponsor's) attitude to or appetite for risk (uncertainty) is the guiding factor for planning and project approval. It is faster and less effort to have the board involved now than at the end of stage have to redo the stage's work.

Indeed if you have not read and influenced the risk culture during Starting up a Project (SU) you have already compromised what is possible from risk management.

9.1.2.2.1.1   *If The Exec isn't Accountable For Benefits*

SOOP-87.   When the exec's focus on accountability is for a 'safe project' and safety is split from the accountability for return on investment then simple psychology invariably means the exec's authority is wielded with a risk averse focus.

One-eye is always then on a future potential need to demonstrate "I did my bit OK". The exec's self-preservation-interest over-takes the project and stifles the potential for ROI – Realistically you must keep cost, risk and benefit accountability in one head.

With no pull towards benefits there is no balance against the desire to divert resources into protection from everything: there never can be enough resources to remove all threats.

9.1.3   The Controlled Start – Initiation Stage in Detail

Initiation starts with the four strategies. They determine the control tasks that need to be combined with technical specialist product realisation tasks. After the strategies the **A16-**Project Plan and project controls are assembled.

9.1.3.1.1   Strategy Pre-amble

Much of the strategy consideration is identical across all four strategies. Establishing the strategies requires the definition of {.

➢ Who is responsible for which strategy. Ensure they know it and agree it (IE it is in their heads).

   If useful document it in their role description, but document is no substitute for understanding and committed agreement.

➢ What the strategy's scope and objectives are,

➢ The procedures to be followed:

   • the timings and triggers for the steps,

   • the decisions in and between steps,

   • what records are kept, how record keeping is conducted and crucially which decisions making steps records are <u>input</u> to.

> *SOOP-88.   If a project record is not used for a decision then question if it is really required. Note some records are used day-to-day while some are only required when a problem is discovered and needs diagnosis and some are only use after-the-fact to audit and learn lessons.*

- who has what responsibility or role in the steps,
  (and ensure they too know and agree. If useful record in a role description)

➢ The tools and techniques to be used in the steps of the procedure
➢ The reporting regimen required

}.

9.1.3.1.1.1   Strategy Content

Content unique to each strategy is discussed below under each activity's description. Mainly content is description of concepts, procedures, tools (not software tools) and techniques, triggers and reporting, leaving you to just make local adaptations and assign responsibilities in your projects.

9.1.3.1.1.2   Common Needs

In all cases the aim when initiating a project is to define the procedures that set-out how responsibilities will be fulfilled, by who and on what event or periodic trigger.

Most projects should NOT need to invent anything technical for the strategies. They will instead adopt, adapt and assign the business' standards. Project management team members must know the basics. Some training may be needed to give them concepts, access to tools and to explain procedures.

I can provide training. Contact me via p2@logicalmodel.net

9.1.3.1.1.3   Build Understanding During Project Initiation

Having a document is of no value until it is read with understanding and motivation to act: nothing happens in a project without people.

Personally I seek to ensure stakeholders know the control strategies and their duties as owner or participant as part of the work in or around the time of the scoping workshops of SU. Generally I find strategy adoption starts in SU and stretches across SU and the Initiation Stage.

9.1.3.1.1.4   First Risk

We will now deal with each strategy. First risk which has some feed into the configuration management and quality strategies. Last communications that consolidates the preceding three's needs for information flow.

9.1.4   [14.4.1 Prepare the Risk Management Strategy]

Official guidance as provided in [chapter 8] and **[14.4.1** Prepare the Risk Management Strategy**]** and **[15.4.6** Capture and examine issue and risks] sets out how PRINCE2® expects risk to be managed.

PRINCE2® guidance is (mostly) sound but too simplistic for the real world. There are two gross errors and some niggles that we will address below. The gross ones cover definition of contingency and handling of unused tolerance.

9.1.4.1.1.1   24.Difficult Topic

Risk is a subtle, complex and ultimately subjective topic. Its management in projects owes more to psychology than arithmetic.

Generally project risk management is a topic where industrial strength guidance is missing. Project risk is better called 'uncertainty'. All estimates are uncertain, all plans are uncertain, all **A2-**Business Cases are uncertain: risk, estimating and planning are closely linked.

Both this section and the estimating section should be re-considered in the light of each other's content.

9.1.4.1.1.2   General Problem

Descriptions of risk management in projects are generally weak. One crucial concept to address now is managing risk means making decisions. Making decisions is a hierarchical arrangement in most organisations with tactical/technical authorities at the bottom of the organisation and strategic, directional, bang-for-the-buck decisions at the top.

A meaningful **A24-**Risk Management Strategy must link to the corporate governance framework of cascaded authorities and escalation routes.
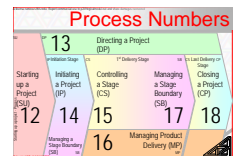
9.1.4.1.2   A PRINCE2® Specific Problem

PRINCE2® guidance appears to pigeon hole risk management as an activity within specific places in the process model. However risk is pervasive through every aspect of a project. This section is long because the real-world doesn't yield to over-simplification.

9.1.4.1.2.1   Good Risk Management Is NonTrivial

To build good handling of uncertainty into projects we need to extract the concepts for study at a level of complexity that exists in reality.

It is non-trivial. Rather than 666 words this is 20,000 plus or minus a bit. It took more than one writing (and is far from perfect). It will probably take more than one reading to absorb sufficiently to apply it.

9.1.4.1.2.2   Start with Culture

Starting risk management in the Initiation Stage with **[14.4.1** Prepare the Risk Management Strategy**]** IS TOO LATE. By this point we should have established the team and the project's goals: both must be framed by and tailored to the organisation's risk culture.

The organisation's risk culture pre-existed the project mandate and gave birth to it.

Very shallow guidance in Controlling a Stage (CS)'s activity **[15.4.6** Capture and examine issues and risks**]** is as much advice as the official manual provides for what must be considered in every project activity. The official manual says Controlling a Stage (CS) can be used in the Initiation Stage too but risk is such an important (and difficult) topic that it must be constantly thought about and the guidance provided must be firmly stood on strong foundations and clearly expressed to the project team. For example what is a "risk culture"?

9.1.4.1.2.3   Embedded Culture

Good, even adequate, risk management needs the culture and activities of risk awareness embedded in every project consideration. Paramount is that the risk culture is a sound influence during the formative activities of Starting up a Project (SU) and the Initiation Stage.

SU's and IP's activities must be performed with the full set of risk steps firmly in mind. Simplistically for now the steps are:

➢ Identify threat and opportunity causes and consequences
➢ Analyse probabilities, impacts, significance and urgency
➢ Suggest responses,
➢ Select, resource, schedule and take responses

9.1.4.1.2.4   Plan A and Plan B

The last step could be re-written as "integrate responses into current and future plans". In every day parlance "Plan-A" and "Plan-B".

"Plan-A" is the baseline of technical work and threat prevention or opportunity enhancement. "Plan B" is widely known to be "What we will do if something off-Plan-A arises"

9.1.4.1.2.5   Office Of Government Commerce: Management of Risk - OGC's MoR®

OGC publish PRINCE2®. They have a growing stable of other frameworks. Sadly a strategy of close integration is making it harder and harder to use one set of guidance without having to know all the other sets. In my opinion all the OGC's guidance is overly simplistic, repetitious and in places debatable.

As of 2009 PRINCE2®'s treatment of risk is hampered by being fitted into the OGC's stable of guidance. The Management of Risk (MoR®) volume lacks some basic insights, lacks clear expression of concept and lacks real commercial applicability: PRINCE2® suffered from 'alignment' in the 2009 rewrite.

9.1.4.1.3　Upside and Down-side

As is now very hackneyed the opening lines of chapters on risk discussions point out that risk is a topic. It encompasses threat (downside or negative outcome) and opportunity (upside or improvement of outcome).

9.1.4.1.3.1　24.Threat and opportunity

Writers of guidance such as PRINCE2® and MoR (and other volumes) there fore expanded their definitions to say that risk as a topic embraces "uncertainty of outcome whether positive or negative'. These sources of guidance haven't yet managed to work that observation through into the full range of concepts and vocabulary or its full implications for managing risk well: we must.

9.1.4.1.3.2　Other Examples: Residual Risk

An example is the common expansion of "Residual Risk".

[8.3.5.3 page 84 and page 31 of the MoR® manual] that says "Risk responses do not necessarily remove the inherent risk in its entirety, leaving residual risk. If the inherent risk was significant and the risk response was only partially successful".

Pure threat: a contradiction of the definition of risk [see MoR®'s own definition in paragraph 1.2 or PRINCE2®'s given below from 8.2.1] as positive as well as negative and is but one illustration of the failure to present the topic with sound conceptual insight.

9.1.4.1.3.3　Risk in Other Chapters

Another example is that the observation of risk's dual (±) nature has not yet made it beyond the risk chapter itself and into the body of other discussions that touch treatment of risk.

IE read the official manual and while the risk chapter says risk is both threat and opportunity and the risk response table now gives labels for responses to threat and opportunity the other chapters of the manual still use "risk" in a context where it means threat and implies 'bad impact on the cost, schedule or benefits of the project'.

9.1.4.1.3.4　Simple Risks

Another example of shallow insight is that most discussions treat risks as single cause, single outcome, wholly positive or wholly negative with known probability, timing and impact. This view is mostly unrealistic. Project risks tend to have multiple causes and multiple consequences with unquantifiable probabilities.

Textbook risks match the spots on dice: what is described in MoR® and PRINCE2® is not even half of what we need for dealing with uncertainty in projects.
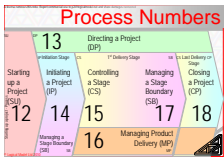
9.1.4.1.3.5   *What We Need*

Project management is an immature discipline suffering from incomplete foundations. When the whole manual embraces "risk can be positive or negative", has multiple causes and consequences and its management is 90% psychology then we are addressing reality and have a chance to manage delivering of our projects

A24-Risk Management Strategy, A25-Ris... Risk Budget: SU/

RK-12 P:2   The recommended composition of a Risk Management Strategy, and in which process(es) it is developed, are responsible for this

CoPM	12.4.1 Appoint the Executive and the Project Manager COPM define risk capacity & appetite 1.		
Project Board	13.4.1 Authorize initiation 1. Board consider T&O to & from authorising the Initiation Stage	13.4.2 Authorize the project 1. Board approve the A24-RMS as sufficient to control risks 2. Board assess draft A16-P] Plan to review threat and opportunities (T&O) and responses are acceptable: plan is approved and baselined under change control	13.4.3 Authorize a Stage or Exception Plan 1. Board assess draft A16-Stage Plan to confirm risk exposure is tolerable and T&O responses are acceptable: plan is approved and baselined

13.4.4 Give ad hoc direction
1. Board defer act... on exceptions contingent on r...

Project manager	12.4.2 Capture previous lessons 1. PM Captures lessons relevant to risk management in A14-Lesson Log	14.4.1 Prepare the Risk Management Strategy (A24-RMS) 1. PM defines RMS' goals, roles, procedures, reporting (Eg a Probability Impact Grid and Risk Retirement Curve**), tools, techniques, timing and tolerance based on CoP standards noted in A19-PjBrf and lessons in A14-LL 2. PM (team) define probability, impact & proximity scales, Categories, Early warning indicators 3. PM (team) define risk tolerance thresholds for escalation between management levels 4. PM (Exec) define risk tolerances 5. PM suggests risk budgets and how they should be controlled [We don't know how much to allow at this point] 6. PS create the A25-Risk Register and populate with T&O Identified so far (IE in A7-Daily Log) 7. PM seeks board approval or defer to 13.4.2	14.4.2 Prepare the Configuration Management Strategy (A6-CMS) 1. PM responds to risks that affect CMS
	12.4.3 Design and appoint the project management team 1. PM logs threats & opportunities (T&O) to the A7-Daily Log in advance of creating A24-Risk Management Strategy and A25-Risk Register 2. PM may appoint PS for familiarity with risk management tools and techniques (EG Monte Carlo Analysis and estimating methods)		14.4.3 Prepare the Quality Management Strategy (A22-QMS) 1. PM responds to risks that affect A22-QMS
			14.4.4 Prepare the Communication Management Strategy (A4-CmMS) 1. PM responds to risks that affect A4-CmMS 2. PM add A24-RMS needs to project communications
	12.4.4 Prepare the outline Business Case 1. PM captures any risks to A7-DL 2. Exec considers T&O and includes key in (outline) A2-Business Case		14.4.6 Create the Project Plan (A16-PjPlan) 1. PM responds to risks that affect planning processes 2. PM builds provision to manage risk into the project plan (resources i.e. costs and timescales) [p2 mis-defines contingency] 3. PM ensures A16-PjPlan includes responses to T&O in the A25-RR
	12.4.5 Select the project approach and assemble the Project Brief 1. PM logs any T&O to A7-DL 2. [Risk drives consideration of PJ Approach]	14.4.5 Set up the project controls 1. PM considers Risk to suggest: number and placement of stage boundaries, strength, formality, timings and who is assigned to which project controls	14.4.7 Refine the Business Case (A2-BC) 1. PM expresses aggregate (and significant individual) T&O affects on A2-BC 2. PM (Exec) justify cost & risk based on A2-BC's benefits 3. PM assess project's sensitivity to factors in its context (EG drivers of cost, time, benefit, confidence)
	12.4.6 Plan the initiation stage 1. PM considers T&O to Initiation stage plan & makes provision 2. PM updates risk status in A7-DL		14.4.8 Assemble the Project Initiation Documentation (A20-PID) 1. PM includes A24-RMS in A20-PID (A20-PID acts as baseline for all Assessment of Risks)

Team Manager

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* PRINCE2™ uses "Event, Cause, Effect". To my mind Event IS Cause. CCC is more meaningful – see XREF
** See XREF

ALL 40 activities include "PM logs new risks to the A25-Risk Register"
Most management products such as A25-Risk Register are given in full on first use and abbreviated subsequently eg A25-RR, those that are not can be looked-up in the Reference list
Other abbreviations within the diagram (EG T&O) are expanded on first use in the diagram

9.1.4.1.4   Start immediately

The official manual says the **A24**-Risk Management Strategy is created in Initiation Stage. This is too late to start communicating about risk but may be an acceptable point at which to check it is correctly documented – if documentation is considered useful.

[14.4.1 Prepare the Risk Management Strategy**]** is the work to create the empty **A25-**Risk Register and create the **A24-**Risk Management Strategy.

PRINCE2® says that when the risk register is created it should be populated with all known risks that so far have been recorded in the project manager's **A7-**Daily Log.

9.1.4.1.4.1   Setup Risk As Soon As Your Appointed To A Project

Assuming your reading this before embarking on some project's SU activity I strongly suggest you expand your daily risk management regimen from considerations like stopping at red traffic lights on your drive to work to include the new potential project immediately you know of the project mandate.

SOOP-89.   Development of the project's goals MUST explore and develop the sponsors and stakeholder's attitude to risk, must define the risk assessment scales, must establish who has passion for what aspects of the project's uncertainties at the earliest possible opportunity and every subsequent opportunity. This is part of appreciating the 'risk culture'.

DO NOT conduct SU to develop the **A19-**Project Brief { Project definition { <u>Project objectives, Desired outcome, …</u> }, **A2-**<u>Outline-Business Case</u>, **A21-**<u>Project Product Description, Project Approach,</u> … } while the project management **[12.4.4** Prepare the outline Business Case**]** and **[12.4.5** Select the project approach ~~and assemble the Project Brief~~**]** on the expectation that managing risk does not start until the Initiation Stage.

9.1.4.1.4.2   The Risk Strategy Must Be In Every Conversation

Initial registration of risks in the **A7-**Daily Log is fine: but not knowing how to record them properly, not knowing or developing the assessment scales while developing stakeholder relationships and project goals' is a gross error.

A24-Risk Management Strategy, A25-Risk Register, Risk Budget: CS/ MP/ SB/ DP-Duplicated

Rk-12 P:2   The recommended composition of a Risk Management Strategy, and in which process(es) it is developed, reviewed and updated, and which roles are responsible for this

Starting up a Project (SU) 12

58

CoPM

13.4.1 Authorize initiation
Board consider T&O to & from authorising the Initiation Stage

13.4.2 Authorize the project
1. Board approve the A24-RMS as sufficient to control risks
2. Board assess draft A16-PJ Plan to review threat and opportunities (T&O) and responses are acceptable: plan is approved and baselined under change control

13.4.3 Authorize a Stage or Exception Plan
1. Board assess draft A16-Stage Plan to confirm risk exposure is tolerable and T&O responses are acceptable: plan is approved and baselined

13.4.4 Give ad hoc direction
1. Board defer action on exceptions contingent on risks

13.4.5 Authorize project closure
1. Board compare current A2-Business Case and Risks to original baseline

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Project Board

Project manager

15.4.6 Capture and examine issues and risks
1. Anyone at anytime: raise a risk
2. PM (risk author?) record T or O's Condition, Cause & Consequence (CCC)* on A25-RR in accord with A24-RMS
3. PM consults and follows through-out A24-RMS & A4-CmMS to report risk status to stakeholders
4. PM (team) use scales from A24-|RMS to assess CCC for Probability, Impact and Proximity (PIP) vs. all plans, A2-BC and Risk Tolerance
5. PM (team) identify possible responses, log to A25-RR and assess vs. tolerances
6. PM may escalate a Tolerance threat via 15.4.7 otherwise (as-well?)
7. PM (team) select responses in tolerance and add to A16-StgPlan

15.4.7 Escalate issues & risks
1. PM when triggered by a risk or aggregation of risks that create a deviation: snap-shot full project status
2. PM (team) assess deviation's impact on baseline and impact of each possible response
3. PM records assessment & recommendation in an A10-Exception Report & sends to the board with a request for direction

15.4.8 Take corrective action
1. Board or 15.4.4 trigger action
2. PM collects information on "deviation" (concern) from Records, Reports, Logs & Registers (RRL&R), selects or devises responses and triggers via 15.4.1 and updates RRL&R EG A5-CIR

15.4.5 Report highlights
1. PM includes T&O summary: perhaps via a Probability Impact Grid and Risk Retirement Curve**

15.4.4 Review stage status
1. PM responds if a risk action advisable
2. PM (team) assess risk impacts on all project aspects: especially plans, A2-BC, A1-BRP
3. PM escalates risks that create a Tolerance Threat
4. PM maintains A25-RR

15.4.1 Authorize a Work Package (A26-WkPkg)
1. PM assign an A26-WkPkg to respond to a risk
2. PM/ TM consider T&O to/ from A24-WkPkg
3. PM/ TM agree process and tolerances for raising/ responding to/ escalating risk

17.4.1 Plan the next stage
1. PM checks risk action owners for current T&O status and assesses T&O affecting next stage
2. PM ensures all external dependencies have a A25-Risk Register entry
3. PM includes risk responses a26-WkPkg into A16-Stage Plan for all selected T&O responses

17.4.2 Update the Project Plan
1. PM includes risk responses into A16-Project Plan

17.4.3 Update the Business Case (A2-BC)
1. PM checks current CoPM & Board risk appetite, capacity and tolerances
2. PM updates A2-BC to reflect key & aggregate T&O
3. PM inspects A25-RR responds as required

17.4.4 Report Stage End
1. PM assesses and reports (in A9-End Stage Report) on T&O activity in the stage ending & aggregate status

17.4.5 Produce an Exception Plan
1. PM updates A25-RR as needed

Team Manager

16.4.1 Accept a Work Package (A26-WkPkg)
1. TM advises PM of risk status and logs T or O to the A25-RR
2. TM (team) considers risk related to and within A26-WkPkg tolerances as per 15.4.6 steps 1-7 for the A16-Team Plan

16.4.2 Execute a Work Package
1. TM monitors & responds to risk related actions
2. TM notifies PM of new or changed risk (directly and formally via A3-Checkpoint Reports)

16.4.3 Deliver a Work Package
1. [TM PM Retire unused Risk budget]

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* PRINCE2™ uses "Event, Cause, Effect." To my mind Event IS Cause. CCC is more meaningful – see XREF
** See XREF

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ALL 40 activities include "PM logs new risks to the A25-Risk Register"
Most management products such as A25-Risk Register are given in full on first use and abbreviated subsequently eg A25-RR, those that are not can be looked-up in the Reference list
Other abbreviations within the diagram (EG T&O) are expanded on first use in the diagram

9.1.4.1.5   The Risk Management Principles

Risk is a topic we don't' do well because we don't start from solid concepts and a full vocabulary. Even with concepts and vocabulary risk is a difficult topic.

9.1.4.1.5.1   A Risk Is…

PRINCE2®'s exam definition of risk (copied from MoR®) is "*An uncertain event or set of events that, should it occur, will have an effect on the achievement of objectives. A risk is measured by a combination of the probability of a perceived threat or opportunity occurring, and the magnitude of its impact on objectives*" [Glossary page 311]. This is reasonable but misses several key factors and "measured by Probability% and Impact (P% x I)" needs serious challenge (but later).

My alternative non PRINCE2® definition of risk:

*SOOP-90.   Risk is "*a future condition or state with the possible cause(s) of that state and the consequence(s) that would affect the world in ways one or more of us cares about*".*

9.1.4.1.5.2   24.Concepts: Risk Can Only Be Relative To Some Baseline

Key concepts within the second definition are:

➢ "the future condition or state"
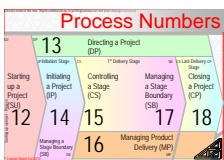
Risk is relative to a change from the status quo as it exists today or from the future-state-business-as-usual we hope our project will create.

Risk has to be versus a baseline because: nothing to lose - no threat, if you already have 'everything' you have nothing to gain – you have no opportunity (but lots of threat!).

Projects experience risk (or are risk) because we seek a goal we may not attain.

➢ The "causes (plural)" are episodes of actions and current state that create the future state or condition and

➢ the "affects (also plural) that the new state or condition has on our world" and

➢ our personal 'care' or 'utility' for the change's affects.

➢ Plural affects so plural 'impact owners' and plural responses may mean plural response owners:

SOOP-91.   Risks (individually) DO NOT HAVE AN OWNER, they have many owners reporting to the project manager and sponsor, while RISK (singular) does have one owner – the sponsor.

This is properly discussed below: "*9.1.4.1.9* Ultimate owner" *Page 9.1.4:- 206 -*.

9.1.4.1.5.3   Pursuit Of A Project is Risk

SOOP-92.   Project management and risk management may be two labels for the same discipline. At the least management of a project is an exercise in applied risk management.

If a project is defined as something approximating to:

SOOP-93.   A Project might be "the coordinated actions of an organisation seeking to change the current state of the world to a future-state-business-as-usual in a way that has utility for the (most powerful) stakeholders"

Where the coordinated actions are the episode leading to benefits then the two are more or less the same.

9.1.4.1.5.4   24.Estimating is Risk

Risk management, estimating and planning are founded on the premise of predicting the future based on as much of the past as we can understand.

They are wholly future oriented assessments of uncertainty. They share concepts such as changing confidence across a range of values and tools such as graphs to show cumulative or absolute confidence at some value. All are avoided or poorly applied in projects while good (at least better) application is relatively easy.

9.1.4.1.6   Sponsor and Exec (Again)

Note "risk is versus a baseline".

Consider when the sponsor, the exec and senior user are three people.

The sponsor owns the project's benefits, the exec owns project performance versus success criteria that mature at delivery of products and the senior user(s) owns specification of the future-state-business-as-usual.

The exec is appointed due to experience and seniority in the business and thus has lots of personal kudos to lose, yet no potential for gain from use of equity. No visceral interest in the upside, lots of downside– conclusion?

9.1.4.1.7   Contracts Apportion Risk and Reward

We cannot discuss project risk further without some thought of contracts.

*SOOP-94.   Discussion of change, investment, benefits and **A2**-Business Cases must include uncertainty and its allocation across agreements via contracts if it is to be manageable. IE Contract assigns roles that take specified actions under known and pre-authorised conditions.*

Sources of project guidance, PRINCE2® among them tend to label uncertainty "risk": a word loaded with verbal 'baggage', while projects conducted 'internally' to organisations tend to ignore the contractual nature of a customer supplier context. Ignoring it doesn't stop it being a fact with implications. Ignoring it just stops us managing the implications well.

SOOP-95.   Every discussion of risk is a discussion of possible and intended actions. Intended actions are "a plan" and plans stand or fall on their estimates. Estimates are uncertain predictions. There is a close relationship, if not just one topic in 'benefits hoped for', plans, estimates and risk.

9.1.4.1.7.1   Contracts ARE The Starting Point

Contracts are the means by which apportionment of risk is shared between parties although <u>ultimately all risk is carried or paid for by the customer in one form or another</u>. They make the return on investment or suffer the loss.

The tactical risk, or risk arising from how the project's outputs are delivered may be shared between 0% to 100% with the supplier depending on the contract terms. EG the supplier finds a cheaper supply of components, or needs less staff hours to complete the job. Either they increases their profits by the full amount, reduce price by the full amount or share the gain. Maybe a fixed price job costs more than expected and profit is wiped out, in which case a risk premium was charged.

Whatever the percentage split and recovery mechanism the contract price paid by the customer MUST have covered the suppliers liability plus a premium for taking the risk, at least in the long term if not also the short term if the supplier is to survive. <u>Ultimately the customer always pays</u> (whether the project is 'in-house' or out-sourced).

9.1.4.1.7.2   Contract Defined

A contract is an agreement between parties who are competent to understand the intention to be bound to a promise that they may accept or decline, and that returns benefits to each party in exchange for performing (or not) of some obligation.

A contract is formed when the parties agree and dissolved when all parties have met their obligations to the other parties. EG you say "I'll pay you £1 to sing a song" and I smile and nod - we are in contract. Signatures are not needed to form contract but help with proof during dispute.

I sing, I have discharged my obligation the contract persists as you have not fulfilled your obligation. You pay, you have discharged your obligation. The contract is ended. If you had made the offer in any language other than English then my 'nod' would not establish contract as I am no longer a competent party as typically for an English speaker I have no foreign tongues.

9.1.4.1.7.3   Contracts With Suppliers

'Suppliers' come is two broad categories.

➢ Those who charge through accounts payable and thus use invoices submitted under a contract dissolved by meeting acceptance criteria and receiving payment.

> ➢ Those who are remunerated through the payroll, possibly via a time sheet and definitely under a contract but one that is often forgotten.

Any level of delegation may be explicitly and legally a contract between different companies or might be under an employee's contract of employment. Programme, project, stage and phase, work-package, activity and task are all expressions of two or more parties forging a more or less obviously but ultimately legally bound contract.

9.1.4.1.7.4   13.Contract

A delegated task represents a contract between giver and receiver. At manager to employee level it is "do this and you earn today's pay-check". Thus each **A26-**Work Package forges a contract between project manager and team member/ manager.

9.1.4.1.7.5   Stage is a Contract Between Project board and Project manager

A stage is a contract between the project board who are obliged to supply resources and political will on the one hand and project manager who is obliged to drive product creation in line with the project plan and contingencies.

A contract's "Ts & Cs" or terms and conditions literally means the actions to be taken contingent on the triggers arising, so is a **A16-**Stage Plan or **A16-**Project Plan.

9.1.4.1.7.6   Project contracts

Most 'contracts' in projects are agreements without the legal dimension (other than as a contract of employment). It would be better for reliable project delivery if project boards realised "I'll provide these resources and you deliver some result" means when half way through the project board say "I'm taking half the time from the best of the resources to work elsewhere" the contract is broken and failure to deliver to it resulted from their actions.

News papers would lose circulation if the stopped reporting final cost versus initial scope.

9.1.4.1.8 Problems with Employment

There is a problem with risk perception when we introduce consideration of employment. Often those working in a project have a contract for employment with one or other of the legal entities engaged in the project. The essence of employment is insurance. In exchange for the application of the employee's skilled attention over a time-frame the employer pays a wage and carries the impacts, positive or negative of the employee's work.

9.1.4.1.8.1   A Wage for (relative) Security

As in all insurance equations (contracted risk arrangements) a small certainty (the wage) is traded against a larger less probable value (corporate profit and

loss). When the employee's efforts don't generate return to the shareholder they still get their wage by eroding the shareholder's equity, and when the employee's efforts generate a surplus it goes to the shareholder as the equity participant's reward for risk taking. That the shareholder underwrites the employees wage and deserves reward for it is frequently forgotten, particularly in the public sector.

9.1.4.1.8.2   *Project Manager: Customer or Supplier Side*

Whether the project manager is a staff member of the customer or supplier will affect how they perceive risks and respond to them.

9.1.4.1.9   Ultimate owner

Contracts settle risk ownership in business in general. In projects, and PRINCE2® in particular the concept of risk ownership needs examination to set straight common expression of the approach to risk ownership.

9.1.4.1.9.1   *Reality: The Investor Owns The Risks*

PRINCE2® used to clearly define that the Executive "owns all risks" while the project manager administers the risk management processes. Actually the sponsor owns all risk. If exec and sponsor are one and the same then operation of risk management works best.

Now the official manual says the exec is "accountable (sic) for all aspects of [just?] risk management and, in particular, [just?] to ensure a project Risk Management Strategy exists" [Table 8.3] and the senior user(s) must "Ensure that risks to the users are identified, assessed and controlled (such as the impact on benefits, operational use and maintenance)" [Table 8.3] and under the user assurance role [C.7.1].

9.1.4.1.9.2   *Solid Basis of Ultimate Risk Ownership*

When setting policy and strategy the foundations need to be a solid reference to build upon. Failing to make ultimate ownership clear means 2009 guidance is weakened.

SOOP-96.   The solid start point for ultimate ownership of risk is: who ever puts up the capital (share holder's and tax payers money, participants blood, sweat and tears) and may lose it or gain from it: then they 'Own the Risks'.

If someone else as officer of the company takes a fiduciary duty of care then by proxy they own (part of) the risk. If the psychology of risk management is to operate effectively then they must enjoy the benefits and feel the pains in some fashion settled by contract (perhaps "of employment").

Risk in a PRINCE2® project has two owners dependant on how contracts are expressed: the sponsor (or exec) who owns 'value for money' from the strategic intent and the project manager (actually probably the senior supplier(s)) who own the tactical or 'how' dimension of the project.

9.1.4.1.9.3   Operation of Risk Needs Functioning Governance

Where ever the impact of personal loss or gain falls is where effort will be directed in risk management. If there is no actual (or perceivable) involvement in the post-project risk (±) by whoever is in loco-parentis risk management won't work properly.

If the risk impact falls on someone who is distant from the impact's management then operation of both sides of the risk equation will only perform correctly if governance is in place.

Governance must provide some mechanism to transfer, share or propagate consequence (±). PRINCE2® is just a control framework. IE says who delegates and reports what, how and when to who so the governance has to be added from outside PRINCE2® (or PRINCE2® needs to be beefed up with a disciplinary component.)

9.1.4.2   Some Context to Plans, Estimates and Uncertainty

First let us share a scenario that later I can use to illustrate some application of risk management, planning and estimating. Understanding of how to respond to risk will provide the basis for developing the **A24-**Risk Management Strategy.

9.1.4.2.1   The Journey To Work Example

Visualise someone's planned car journey to work each day. Imagine the list of tasks { Get in car, Pull-away from Kerb, Drive to T junction, …lots more… Park, Get out of car }.

9.1.4.2.1.1   Core Work

There is some time required to drive which given the distance is constant every day is directly proportional to how hard the driver presses the accelerator (gas pedal). This core work is the stuff we know we know.

There will be some variation on 'how hard it is safe to press' that is decided on a situational basis on the journey moment by moment depending on the setting of the traffic lights, the placement of other cars on the road and the weather (it is snowing in Edinburgh as I write this☺).

Unless this is the first day at a new location there will not be uncertainty about the destination, normal or alternate routes.

9.1.4.2.1.2   Random Variation

The situational factors in your projects will parallel traffic-lights and other road-users. General fluctuations in performance are not individually itemised in the list of project actions and thus task durations or resource use: expect in rare situations it would be overly expensive to do so.

Even for the un-itemised we need the means to budget and manage these variations. The factors giving rise to variations that are not worth itemising are

the causes of natural or random variations, unassigned causes. PRINCE2® uses the concept and label 'tolerance' to accommodate unassigned causes of natural variation in estimated quantities and constraints.

Many other disciplines use the Greek letter sigma σ to express variance (***More detail in X on page Y***). These are known unknowns that we don't care to itemise but do budget for.

There are other factors we also need to manage so we need more discussion here for a full starting picture.

9.1.4.2.1.3   Assignable Causes: Risks

The list of tasks might also include {Change wheel (if we get a flat), Divert via High Street (if someone else has an accident along intended route) et. al. }.

These are responses to <u>uncertain future states with assignable cause</u>, describable consequences and some probability under 100% and over 0%: otherwise labelled "risks". They are known unknowns <u>we do itemise</u> and <u>may</u> budget for them.

Whether snow or having to refuel are natural variations or assignable cause are questions of perspective. Snow here in January is a source of natural variation in journey time absorbed in tolerances that are set on a project level situational basis. (each day in January arise prepared to leave earlier for work). In June snow would be an 'assignable' or itemise-able cause handled as 'risk'. Having to refuel next month is a natural variation until the day before the warning light comes up: then its an assigned cause and a known known.

9.1.4.2.1.4   Core Plus Tolerance Plus Assigned Variations

In this drive to work example some delays are assignable to discrete causes with some frequency such as road-works or the occasional need to fill up with fuel. Other assignable causes are better described as having a possibility of occurrence, EG an accident or flat tyre.

9.1.4.2.1.5   No Upside

Notice in this example there is no opportunity side of the car suddenly developing the ability to do the journey quicker than the distance divided by the speed limit. There is only the threat of taking longer as traffic levels increase and as uncertain events occur. This is typical of many project contexts.

I can only speed up this journey past some optimal value by changing how I deliver the required result. I may be able to swap to a train (or helicopter!) to realise a shorter time than is achievable by driving or change the job definition to remote tele-working or altering office hours to be 04:00 to 23:00!

9.1.4.2.1.6   Unknown Unknowns

So far a sensible **A16-**Project Plan contains resourced itemised knowns, un-itemised knowns, and known unknowns.

There are also the things we don't know we don't know, and I cannot illustrate these for you except historically; the captain of the Titanic did not know when he set-out that he was unaware of the unusual currents carrying ice flows, or of the under-specification steel used to rivet the hull.

9.1.4.2.2 Perception

Crucial to management of risk is the observation that risk perception and thus what is an 'acceptable' level of risk or response is a personal choice relative to one's current state or baseline and the specific threat or opportunity.

What I find acceptable, attractive or intolerable is different to your thresholds. My (your) perceptions will change over time: that might be inconsistent but it is the reality of human nature. Nothing happens in projects without people.

9.1.4.2.2.1 Threat or Opportunity

Whether a risk-consequence is a threat or opportunity also needs consideration. It is less than straight forward. It depends on the observer's perspective versus their baseline.

Consider the drive to work. Imagine a flat tyre has a 1/250 probability (and our worker works 5 days a week 50 weeks of the year). Perhaps on a flat-tyre day it is a 45 minutes journey and on a no-flat-tyre day it is a 20min journey.

Perhaps an appropriate budget is 45 minutes every day with 249 days a year the opportunity to arrive 25 minutes early? Or maybe the budget should be 20mins every day with the threat of one day a year being 25 minutes late.

Your appetite may depend on the boss' strictness about being late. If you present the 09:00 news to 5 million people every day you may take the opportunity rather than the threat every day.

Nothing in the 1/250 description stops you having several year's trouble free travel or two punctures in one day.

9.1.4.2.2.2 Subjective Views

If you ask colleagues how likely you are to get a puncture on the way to work their responses will be proportional to how recently they experienced a puncture. The probability is not variable but the answers will be.

Everyone sees the same risk's likelihood, attractions and repulsions differently. Even if we saw the factors identically we would have different levels of inertia to overcome before we took action. We will identify different responses and even if we identified identical responses we would have different preferences for the actions to enhance or suppress the risk.

9.1.4.2.2.3 50% (or 80%) Is A Common Tipping Point

In general any threat with a probability over 50% could (should?) be built into the baseline as an opportunity for a saving with a probability of (1 minus the threat

probability). All risks have to be included into the baseline in some manner. Again non-trivial, more psychology than arithmetic and covered below.

Treating 51%-plus threat as opportunity would be good advice if: 1) we could assess probability and 2) people were symmetrical in their perception and treatment of threat and opportunity. A general problem with risk management is that we can't and they aren't.

As a general problem project risk rarely (appears to) follow assessable numeric "1/250" type arithmetic. All we can say is probability of a puncture on any one day is a) low and b) assessed subjectively.

9.1.4.2.2.4   *Framing*

Subjective assessment depends upon how an uncertainty is expressed. The expression of loss or gain affects how people view it and how they will behave. When faced with expression of a loss we will often take an irrational risk to try to prevent the loss (a 'rational' decision is defined by some as one whose EMV is greater or equal to the 'stake' at risk. EMV or Expected Monetary Value is explained below. As a quick interim example if faced with the toss of a coin a 'rational risk' would double your stake or better).

Furniture advertisers know you are more susceptible to loss. That is why they advertise the 'loss of a great discount if you don't buy this weekend' rather than the much weaker force: the prospect of gaining a comfy sofa.

9.1.4.2.2.5   *Framing Example*

➢ Scenario 1 Imagine that you have decided to see a play where admission is £20 per ticket. As you enter the theatre you discover that you have lost a £20 note. Would you still pay the £20 for a ticket to the play? (Assume you have enough cash left to do so).

In a test group response to this question was: Yes [98%] No [2%]

➢ Scenario 2 Imagine that you have decided to see a play and have bought a ticket for £20. As you enter the theatre you discover that you have lost your ticket. You cannot remember the seat number, so you cannot prove to the management that you bought a ticket. Would you spend £20 on a new ticket? (Assume you have enough cash to do so).

The response to this question was Yes [78%] No [22%].

Both scenarios have the same financial impact but different emotional ones.

The interested reader might look for "RJ Knighton The Psychology of Risk and its Role in Military Decision-Making" or better yet Bernstein's fabulous book "Against The Gods" ISBN-10 0-471-29563-0 from which Knighton has borrowed lots or Nassim Nicholas Taleb's "Fooled by Randomness" ISBN-13 978-0-141-03148-4

9.1.4.2.2.6   *Expressing Appetite*

Most importantly our ability to express "level" of risk is close to non-existent. People in groups are even harder to assess their profile of tolerance to threats and opportunities: everyone has different interests in the 'same' risk and different propensity to react.

The threshold for action or inaction is called our "risk appetite", aka (also known as) "risk tolerance" aka "risk threshold" aka "risk perception". It is a very subtle, complex, actually fickle dimension of human decision making.

Risk management guidance commonly says "consider risk appetite". Both PRINCE2® and MoR® say so. Risk management guidance rarely provides ANY insight into how to define it or techniques to gauge it or tools to manage it in the work-place (***see X on page Y***).

9.1.4.2.2.7   *Appetite Example*

First 'theory', second 'reality'.

Imagine that you are the exec and I am your project manager to renovate a derelict house. I bring to you the following scenario:

"The walls show signs of cracking that may be caused by ongoing or old subsidence. If we renovate without underpinning and the subsidence is ongoing you will have a 100,000€ remedial bill and will have to move out for 6 weeks. There is only a 1 in 20 chance that the subsidence is ongoing. I have found a survey company and they will conduct investigations for 5,000€. If they find problems we will be able to remedy them pre-renovation for a cost of 20,000€. What do you want to do?".

Your choices and possible outcomes are:

➢ No survey and the subsidence is ongoing - Cost 100,000€ of which 75,000€ was with hindsight avoidable. Your worst case but with only a 5% probability.
➢ No survey and subsidence is old - Cost zero, the best case with a 95% probability.
➢ Survey and subsidence is old - Cost 5,000€ which would now be revealed to have been an "unnecessary" cost. If you commission the survey the 5,000€ has a 100% probability of being spent and a 95% probability of having been "wasted" (of course it isn't "unnecessary waste" it was the cost of "peace of mind")
➢ Survey and subsidence is on-going – Aggregate cost 25,000€ and a saving of 75,000€ over the worst case.

I recommend "take the risk", which should really be expressed as "accept there is a threat present and take no pro-active action". You decide to commission the survey because it is only easy to "take a risk" when the impact doesn't affect you personally.

[Once again: don't split authority over establishing project controls from accountability for delivering benefits – psychology prevents it from working.]

9.1.4.2.2.8   *Projects Are Not Like That*

Now consider the whole scenario again but this time "the walls show signs of cracking. I've no idea the probability that it is ongoing or the cost of pre-emptive works but the survey is 5,000€. How is the budget holding up at the moment? Do you want to incur what might prove unnecessary expenditure?"

This is more illustrative of a project. Projects deal with uncertainty. Roulette and maybe poker have calculable odds.

9.1.4.2.2.9   *Cards, Queens and Socks*

To calculate probability the formula is (outcomes of interest / Possible outcomes). This equation only works where the outcome set is closed and known.

For example chance of drawing a Queen from a pack is (4 Queens / 52 Cards – assuming what I grew-up with as a 'standard' pack). Probability of getting socks as a Christmas present this year? The SUM(for all presents received of (Socks / All Possible Presents))! Incalculable.

Chance of a Queen or a Spade (4 Queens / 52 plus 13 Spades / 52 minus 1 Queen of Spades / 52) = 4/52 + 13/52 – 1/52 = 16/52 = 4/13. Chance of a draw being neither a Queen nor a Spade(52/52 minus 16/52) = 36/52 = 9/13. Chance of not getting Socks or a tie for Christmas – almost 0% but this assessment isn't arithmetic. If it is socks they will be bright yellow or bright red! It still isn't about arithmetic.

9.1.4.3 *Text Books versus Real-World*

Text book threat (opportunity) normally illustrates risks as:

➢ a defined cost (benefit)
➢ from a single outcome
➢ with a defined probability
➢ of a single instantaneous trigger.

Even when there is a set of possible outcomes defined the text-book tendency is to treat them as mutually exclusive and all either positive or all negative, IE only one of them will happen and which ever one it is will hurt or please us.

As a start point this is fine; as a theory it allows development of ideas like Decision Trees and Probability times Impact equals Factored Exposure or Expected Monetary Value (EMV).

If impact is in a numerical expression (eg days delay or $ spent) then some "Expected Value" can be calculated. Yes, 'in theory'.

As we will see in scheduling and estimating it is even useful in practice but only after the hypothesis accounts for the complexities of reality.
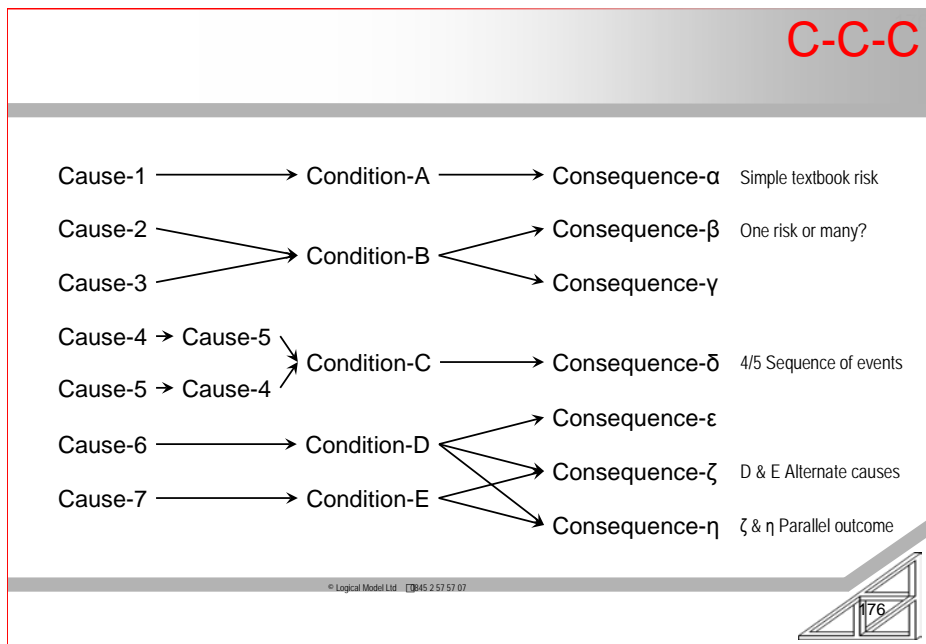
9.1.4.3.1.1   Many Outcomes

SOOP-97.   Project reality is an individual future state has multiple consequences and often multiple triggering causes.

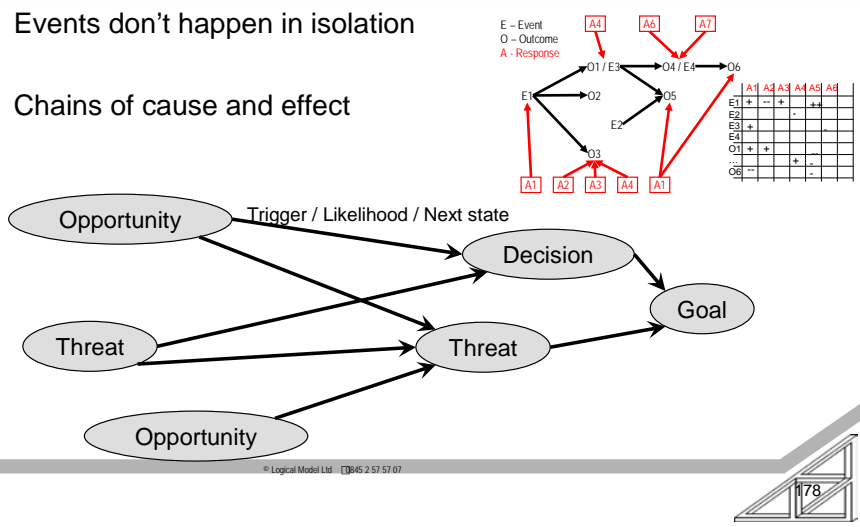*In full what we need in the definitions of uncertainty are the observations that:*

➢ *many triggers may each cause a new state, some in combination, some in series and some as alternatives,*
➢ *the new state has many outcomes*
➢ *some, one or none of which are positive and*
➢ *concurrently some, one or none of which are negative*
➢ *and possibly only in my eyes, perhaps only in your eyes or even in our eyes,*
➢ *and every outcome is potentially a new trigger.*

Risks exist in cascading networks of cause and effect.

Section: 2　　　　　　　　　　Page: 9.1.4:214 of 541

Process Numbers
13 Directing a Project (DP)
Starting up a Project (SU) 12
Initiating a Project (IP) 14
Controlling a Stage (CS) 15
Managing a Stage Boundary (SB) 17
Closing a Project (CP) 18
Managing a Stage Boundary 16
Managing Product Delivery (MP)

T&O Are Not Discreet

- Events don't happen in isolation

- Chains of cause and effect

Trigger / Likelihood / Next state

E – Event
O – Outcome
A - Response

Opportunity → Decision
Threat → Threat → Goal
Opportunity →

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178

Threat, Opportunity & Response Interaction

E – Event (Cause)
O – Outcome (Consequence)
R - Response

R4　R6　R7

O1 / E3 → O4 / E4 → O6

E1 → O2
　　O5
E2
O3
R1　R2　R3　R4　R1

	A1	A2	A3	A4	A5	A6
E1	+	--	+		++	
E2				-		
E3	+					-
E4						
O1	+	+			--	
…				+	-	
O6	--				-	
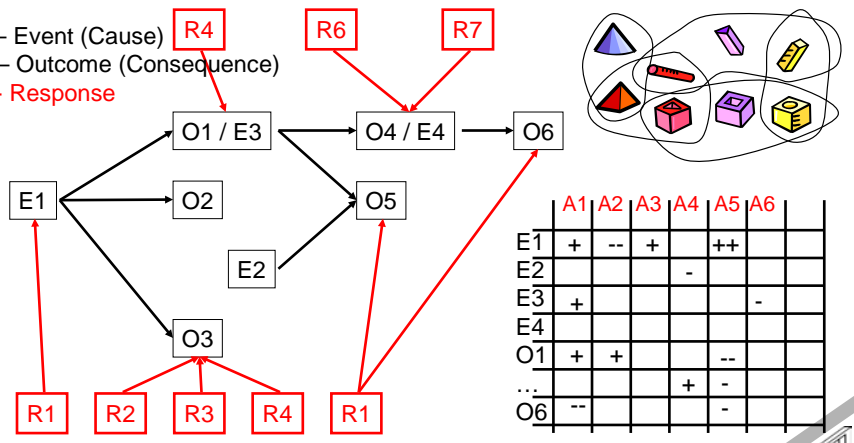
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177

9.1.4.4 Risk Lifecycle And Vocabulary to Describe Key Points

Traditional thinking and the official manual provide a number of terms. There are overlaps, gaps and contradictions that we need to be clear on.

9.1.4.4.1 Exposure and Seriousness

When we first encounter a risk it has three dimensions that need to be considered:

1. the timescales related to causes and consequences,
2. the probabilities of causes and
3. the impacts of consequences.
4. 0.

9.1.4.4.1.1 Exposure

<u>Exposure</u> is a compound value relating to how strong a stimulus for action the risk is. Generally an expression of 'seriousness' perhaps compounded with urgency.

Seriousness (±) may itself be a compounding of probability and impact. A serious opportunity is one with high impact. Is it more serious as its probability increases or as its probability decreases? or is probability irrelevant? Our 'exposure' changes as any or all of impact, probability and proximity change. Perception of exposure may change because of changes in our view, our context or the elements of he risk itself.

9.1.4.4.1.2 Seriousness

Seriousness equates to motivating force that drives us to action and away from acceptance. For example: I consider an 'average' National Lottery ticket to be unattractive because of the odds more or less irrespective of the payback and so 'accept' the opportunity without action and thus without possibility of a win. As the Euro-Millions prize fund nears £100m so 'seriousness' driven by impact reopens the consideration of taking action even though odds are working to reduce exposure.

9.1.4.4.1.3 Weak-Force

SOOP-98.   Generally opportunity is a weak force of attraction while threat is a strong force for repulsion. IE Pound for pound threat is more 'serious' than opportunity.

Consider the sponsor, exec, senior user(s) accountabilities again!

9.1.4.4.1.4 'Inherent' Risk

After we have identified a risk and before we take action it has some combination of proximities, probabilities and impacts. An initial or untreated exposure. PRINCE2®'s term for this is 'inherent' risk. Mine is untreated.

If the risk's seriousness is calculated as probability times impact then we determine a 'factored value' or 'excepted value'.

9.1.4.4.2   Expected Monetary Value (EMV)

PRINCE2® mentions Expected Monetary Value, but not in any manner that allows for meaningful understanding and thus application. We will explore nearly the same topic in Scheduling (*see X on page Y*) and Estimating (*see X on Page Y*) when we will cover the 'how to use probability in project planning'.

SOOP-99.   *EMV is an assessment of the contribution each risk makes to a project's aggregate risk exposure. EMV can only be calculated where reliable numerical probability and impact scores are available. It is then only of use if the project has a statically significant number of risks.*

The principle holds in money or any other unit.

9.1.4.4.2.1   Journey To Work

Recall the journey to work example. Each day the budget is a choice between 20 minutes or 45 minutes. EMV would suggest that we spend:

((5 days * 50 weeks * 20 minutes * each-way) + 25mins on puncture day = 1025 mins per year

Using EMV each day's journey should be budgeted at 40 minutes and 6 seconds and then every day we will be fine. Clearly not.

However if our journey was a £1 each way bus-ride every day authorised by a bus-pass. Then if one day a year we forget our bus-pass and we have to pay cash then setting aside (5days * 50weeks * £2) + £2 on lost pass-day = £502 at the beginning of the year of which the £2 is kept in our pocket everyday until needed will work.

SOOP-100.   *Never quote a risk's factored value – it is misleading and utterly useless in isolation for anything practical. Only ever quote the EMV of a large pool of risks, and then only to those who understand probability density functions.*

9.1.4.4.3   Mitigate and Militate

Mitigate is a term that is much misused. In English mitigation means 'to lessen'. Thus in risk management a mitigation is any action that lessens a risk. Undesirable for opportunities.

The concept we need is 'to militate' or "have effect on". The word we might use is 'treat', so long as we hear 'treat' as appropriate in both positive and negative contexts.

We aim to militate or treat our risks by mitigating threats and exacerbating or perhaps better 'enhancing' opportunities.

Mitigation thus improves the probability, impact or proximity of a threat while enhance improves the same factors for an opportunity.

9.1.4.4.3.1   Threat and Opportunity Terms

Better vocabulary will express up and down side and express the ± outcomes we face before and <u>after</u> treatment. A better pair of terms are thus Pre-treatment and post-treatment, both of which can be qualified with cause, event, probability or consequence, outcome, impact or time-scale.

9.1.4.4.3.2   Change or Result

Post-treatment the aggregate threat or opportunity <u>faced</u> is calculated as the original exposure ± changes from and <u>of responses</u>.

I suggest that 'Post-treatment' be reserved to mean the adjusted total exposure while 'treatment' be used to describe the change in exposure.

Illustrate in SIDEBOX.

Imagine: I have a €500k opportunity. I think is could be made to be worth €1m after €80k of advertising. Original upside 500k, 'post treatment' upside with current vocabulary inexpressible, but €920k using our newly defined term. €920 is the original 500k plus new 500k minus the 80k cost of enhancement. The net change due to treatment is €420k.

Imagine: I have a $5m threat that I assess as $1m after $2m of treatment. Original threat $5m. Post treatment impact is either $2m or $3m calculated as the $1m left that could still impact me and the $2m impact I have had by applying the treatment.

Change due to treatment might be $2m calculated as the original $5m - $3m current worst-case exposure.

We might also want to include probability in these expressions to assess 'significance'. If we take action the 80k and $2m have a 100% probability while the other figures must be less than certain if they are risks.

9.1.4.4.3.3   Secondary

Secondary risk is the risk introduced by the actions taken to address any risk. If considered properly it is a satisfactory term. Do not think of it as "new threat created by responses to threats".

9.1.4.4.4   Vocabulary of Risk Responses

PRINCE2® defines response types of Avoid, Reduce, Fallback, Transfer, Accept, Share, Exploit, Enhance, Reject, none of which are explained with crystal clarity due perhaps to a lack of separation of the conceptual foundations.

When needing to describe responses I advise using a sentence. If using response labels write definitions out and include in the **A24**-Risk Management Strategy. I

recommend against relying on single words many of which are defined in different publications to have different boundaries.

I'm unsure why the labels like 'reduce' are bandied about except in exams where "buy an umbrella" has to be categorised as "active contingency". In real usage we just describe. EG "If we mail-shot the customer base that might improve re-order levels".

Below is some vocabulary for concepts that may help in, and are from real world use. It is fine if you disagree with any as given, just record your view in your **A24-Risk Management Strategy** and recognise that your project participants will probably wonder about some of your definitions: Always use a sentence.

[What is below seeks to find all the 'conceptual' chunks. It is not necessarily how the official manual defines the terms. See Table 8.2 for exam definitions)]:

Response Vocabulary
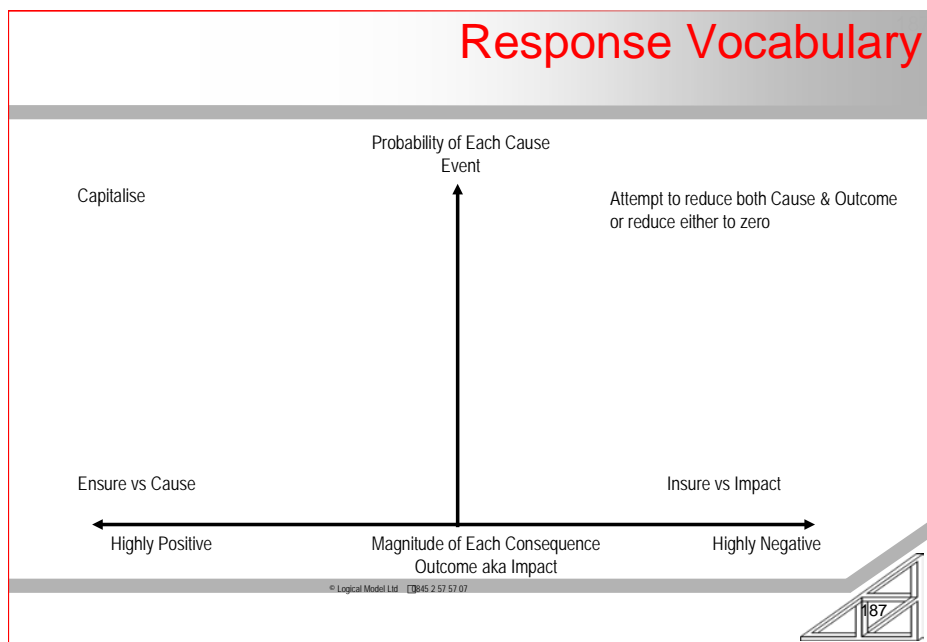
> Every risk response is a <u>militation</u>
> Every threat <u>response</u> is a <u>mitigation</u>
> Every opportunity response an enhancement.

'Risk response' is more reliable wording as it is clear and has less synonym, homonym, antonym baggage.

> Mitigate, reduce, increase or enhance change probability **or** impact and thus are imprecise.

If trying to be explicit one needs to say "Do X to reduce probability" or "Do X to increase impact". While 'reduce (enhance, increase)' isn't precise,

sometimes precision isn't needed, as in "How could we enhance the opportunity?".

➢ Prevent reduces probability to zero (P% = 0)

➢ <u>Eliminate</u> either prevents (P% = 0) <u>or</u> reduces impact to zero (I = 0 in all axis) whether threat or opportunity. You have to say "eliminate all impact" or "reduce impact to zero" if you want to avoid the ambiguity of just saying eliminate.

Generally we want to prevent or eliminate threat and if we do prevent or eliminate an opportunity it is by mistake.

➢ <u>Avoid is an attempt to prevent or get as close to zero as possible</u>. The opportunity side might be pursue or encourage (P% and I approach 100%), but use a sentence.

➢ Ensure increases probability to one **and** impact to be detectable. Whether threat or opportunity.

Note prevent only has to get P%=0 while ensure has to get P%=1 AND Impact greater than zero.

Generally we seek to ensure only with opportunity (there are self destructive people and saboteurs in our organisations).

➢ <u>Contingency is a consequence response</u> **applied** after or "contingent upon" a pre-identified, known unknown cause/ event. It may be prepared before the event.

EG A fire warden is trained and equipped before the event, England's cricketers practice catching cricket balls in case they have an opportunity of one flying their way and umbrellas in Rome at least are cheaper if purchased before it starts to rain.

➢ Tolerance is 'contingency' without specific assigned cause. Like the journey to work time allowed for traffic lights.

➢ Reserve is an allowance for resourcing responses <u>to what were unknown unknowns</u> and are newly discovered to now be known knowns.
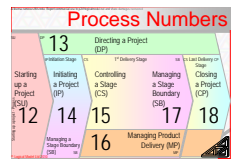
SOOP-101.   Arguably reserve should only be held by the next higher level of management who may call it tolerance.

Reserves are the result of the following dialogue:

- "Have you thought of everything, can you guarantee the cost and date?"
- "The one thing I can guarantee is we have not thought of EVERYTHING, cost and date have an 80% probability of achievement"
- "OK then I'll hold a bit in reserve. Tell me when you need it"

For those wincing at the idea of this exchange: we will cover the benefits that accrue from transparency, the need for an audit trail and the access mechanisms later.

Arguably since reserves are set-aside for unknown unknown there is no basis upon which to size them. Barings Bank had a reserves pool that stood it in good stead for a couple of hundred years, but was not ultimately the equal to

Nick Leeson, while other banks have had similar events (I believe but could be wrong that Credit Lyonnais was one whose reserves were adequate).

➢ Transfer involves a third party in the risk.

The third party may be involved on the cause or consequence side. <u>Transfer</u> is generally used for the impact side of threat and '<u>share</u>' for both sides of opportunity.

For example <u>hiring a craftsperson (consultant)</u> to provide skill and expertise generally reduces the likelihood of threats and promotes likelihood of opportunity. They get a payment for work that increases your benefits and thus share in your return on investment in return for improving its prospects of realisation.

Suitable <u>contract terms may transfer</u> the impact of the outcome to a third party. EG your craftsperson may give a warranty to make good any shortfall; without extra cost.

A typical contract transfer is via insurance: a small and certain payment by you versus a larger and uncertain payment to you.

Project wise transfer of the task and thus the cause side often reduces the project manager's ability to exercise control without reducing a threat's impact.

9.1.4.4.4.1 *Legal Transfer of Risk*

In today's "everything is someone's liability, I'll sue!" Many people wrongly believe the law of contract and tort transfers all their threats to someone else. For example a "The management accept no responsibility" sign doesn't actually eliminate the obligation to discharge a duty of care.

Contracts and duties of trust are complex things: if you have doubts about phrases like "compound with their creditors" or even "offer, consideration and acceptance" then you should always take competent advice.

9.1.4.5 *A Risk Description Starts With*

Risk identification starts with a jumble of fears, triggers and desires. Identification should end with:
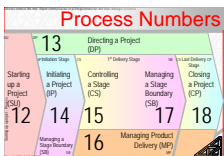
➢ Clear statement of causes and consequences
➢ The untreated probability of every cause
➢ The untreated consequences of every outcome – being every dimension of impact from each consequence

When discussing risks the scales identified for tolerances are all relevant to risk impacts.

9.1.4.5.1.1 *Well Worded Risk*

The secret to good risk management is that step two (!) is well worded risk statements . All the steps are given in order below☺

9.1.4.5.1.2   Format of a Risk Description

A well worded risk is of the form "There is a risk that CONDITION will be caused by CAUSE OR CAUSE OR CAUSE AND CAUSE… resulting in CONSEQUENCE OR CONSEQUENCE OR/ AND CONSEQUENCE…"

"There is a Risk That…" may be abbreviated to "TIART" allowing a simpler form of "TIART EVENT triggers OUTCOME". In a singular event with singular outcome it may be meaningful to say "TIATT…" or TIAOT…" for threat and opportunity.

9.1.4.5.1.3   Good Wording Again

Good wording is so important I'll expand the guidance:

➢ Starts "There is a risk that" TIART
➢ Then defines the future state created or in contract terms the "condition"
➢ Then lists individual alternate and compound sequences of causes aka events that trigger the future state.

  It is the episodes leading to events that we will try to guarantee or eliminate for the threats and opportunities facing us.

➢ Then list the consequences

  These are the results that we will seek to find responses to that amplify, enhance, suppress or damped the state's impact on our objectives or the status-quo.

  In contracts when a condition arises a "term" or response applies to deal with the consequences.

This is where we want to end the identification step, but it isn't where we can start it.

After identification comes analysis of probability of causes and impact of consequences. Without good wording this is impossible. We want to end the analysis step with relevant responses.

Each SINGLE cause is a candidate for response**s** PLURAL and each SINGLE consequence is a candidate for response**s** PLURAL so wordings must reflect clear thinking about all causes and all consequences.

9.1.4.5.1.4   After Analysis

We want to move on after analysis to selected responses that are integrated into the project's baselines for scope of work, time-phased resource usage (costs) and delivery schedule.

Selection will depend on:

➢ The change in probability of every cause from each possible response.
➢ The change in impact of every consequence in the light of each possible response.
➢ The post response probability of each cause versus ALL responses, not just specifically for this threat or opportunity but all the risks we face.
➢ The post response impact of every outcome in the light of ALL responses.

9.1.4.5.1.5   Analysis And Selection Practicalities

Next is the realisation that comparing everything to everything quickly becomes un-manageable with more than a few risks. To be practical we must impose some form of segregation and grouping. Some strategy for risk management that compartmentalises risks into silos and tiers that can be allocated across the management teams. Otherwise there is a black-hole in the middle of risk management from the combinatorial explosion. ***See* X on Page Y**.

9.1.4.5.1.6   PRINCE2® Wording

For the exam you will need to know that PRINCE2® uses the triplet: "Cause, Event, Effect". They give an example [8.3.5.1] which I've reproduced and then re-written it using my suggestion of approach.

The official manual's suggestion: "Because it has been raining heavily (risk cause), there is a threat that the river flowing through the farmer's field might overflow (risk event), which would severely damage the farmer's crop (risk effect)"

Mine: There is a risk of flooding caused by heavy rain and the river's course and depth resulting in lost crops and reduced income.

Or - Condition: Flooding, Cause: Heavy rain and river and silt, Consequence: Crops destroyed thus income lost - note this risk requires two triggers in combination, while the same impact could also result from the alternate trigger 'fire'.

Or "There is a threat of crop-loss (consequence) from flooding (cause) or fire (cause) or disease (cause) or…

9.1.4.5.2   Real-World Uncertainty

Real world risk normally has a more or less well defined set of impacts for each of a number of possibly concurrent positive and negative outcomes arising from any and every future state.

Unless we have 20/20 foresight the outcome**s** we envisage are not the full set of possibilities or even the full set of what will occur for each state, let alone for all the states that can arise concurrently.

9.1.4.5.2.1   Variations In Triggers

There may exist many possible triggers of each state. Some triggers may have been identified but rarely all. Each trigger has a different speed of occurrence and probability of occurring. Some triggers are sufficient individually to create a new state while others must happen in combination.

The aggregate probability of the 'future state' often isn't truly calculable (or even useful to calculate) beyond assessment of high medium or low.

9.1.4.5.2.2   Appetite and Impact

The impacts of the future state might be capable of numerical expression but significance (aka appetite aka seriousness) will be a personal assessment by every stakeholder. Impacts that are expressed against the same scale might be aggregated (if X occurs it will cost Y and save Z) but must be kept separate for most of the risk management cycle even if aggregating them is useful for reporting.

Aggregation often isn't possible: consider some threat: If A occurs it will cost B, delay us by C and kill someone.

Risk in projects is still more complex.

9.1.4.5.3   Scales

The chief risk assessment aids are probability and impact scales. These help assessment of what we mean by "high probability" or "high impact" when considering positive or negative affects.

People are generally poor at consistent assessments. What does a 37% chance of rain mean versus a 42% chance. More meaningful is 'sunny' versus 'heavy cloud'.

The major difficulty is when we have to compare say a schedule risk to a health and safety risk.

SOOP-102.   Good risk assessment scales are descriptive, in emotional, visceral language. Numeric scales do have a place but are more limited in applicability, less usefulness and often more expensive to use.

9.1.4.5.3.1   Establishing Risk Scales is Part of Defining The Goal & Constraints

Establishing risk scales should be done as part of the workshop for defining the **A21-**Project Product Description and is as good a way as any of assessing the mythical Risk Appetite.

Ordinal Scales

- Use statements that describe an ordinal or incremental scale; e.g.:
  - 10
  - 9 Government falls
  - 8 Make global headlines
  - …
  - 2 Causes minor inconvenience
- Non-linear: 6 to 7 is not proportional to 7 to 8

Project Objective	Very Low .05	Low .1	Moderate .2	High .4	Very High .8
Cost	Cost Increase < team tolerance	Below PM Tolerance	Below Project Tolerance	Requires re-funding request	Board level decision
Schedule	< Team tolerance	Within buffers	Renegotiate resourcing	Any impact on benefits case	Overall Project Schedule Slips >120%
Scope	With agreed tolerances	Outside tolerance only when taken in aggregate	Renegotiation of baseline with-in cost/ time/ quality	Impact of benefits case > 3%	Benefits impact removes project from "best use of resources list"
Quality	Quality impact barely noticeable	Only demanding applications are affected	Quality impact requires client approval	Quality impact unacceptable to client	Project end item is effectively unusable

9.1.4.5.3.2   Defining Risk Scales

A high schedule impact may be an opportunity to be 6 weeks early or a threat of 1 day late. A high negative cost impact may be £1m project overspend while a low impact opportunity may be an extra £1m revenue, a high safety impact may be an injury taking 1 day away from work to recover from.

How can a risk of injury be compared to a risk of schedule delay? Morally it can't, but a week's delay is less than a month's and a bruise is less than a broken bone. In each case we can define scales that will aid risk assessments.

We need lots of scales! One for probability, one for urgency and one for each axis of impact (recall the list of tolerance scales).

Matching "high" across a "high impact cost threat" or a high impact health and safety threat or high impact schedule opportunity is easier with scales and perhaps impossible without them.

9.1.4.5.3.3   Start with H/M/L

The starting point is a simplistic high or medium or low scale applied to probability, impact and urgency. For every relevant scale stick to descriptions that are ranked to express stakeholder views of the thresholds between the three-points of High, Medium and Low. If you can't bear this advice then no more than a five point scale VH, H, M, L, VL.

A good argument runs that the scale should be four points (no Medium) so that no risk can be border-line. When we get to 'procedure' below we will assess

every risk on these three point scales before committing greater targeted numerical assessment effort where justified and possible.

9.1.4.5.3.4   Management Levels

It may be useful to define a scale against which the others are calibrated of:

➢ Requires CoPM decision making
➢ Can be decided by the exec
➢ Can be decided by the project manager
➢ Can be decided by team member/ manager

Within each level there may then be high, medium and low. Again use descriptive text to highlight when a decision moves from level to level. Some will be easy by comparison to benchmarks like stage tolerance and the impact scale determination guidance below.

9.1.4.5.3.5   Not 1/ 2/ 3

DO NOT use 1, 2, 3, do use H/ M/ L.

A "1 x 3" and a "3 x 1" both get translated into a "3", but a "HL" is clearly different from a "LH". Later we will see that clarity in response characteristics. With a 1, 2, 3, 4, 5 probability and impact scale the misunderstanding gets worse.

9.1.4.5.3.6   Typical 10-Point, Three Bucket Scale

SOOP-103.   If you don't express scales as emotional sentences then despite best efforts it is typically in risk workshops that people will try to answer the "How should we rate this" question by calling out ranges on a ten point scale. They will rank things as "about a 6 or 7" or "that's at least an 8". It will take a while for them to 'calibrate themselves'.

When they have calibrated their 'feelings' it will be typical that "less than three" will be low, "less than 7" medium and "above 6" high with three shades of high!

The shared emotional charge of the session that equated some level of delay to some level of cost impacts will be lost and reinvented inconsistently in future workshops. Defining the scales is always best.

Matrix of Threat Assessment Scales

- Qualitative & quantitative approaches combined
  Opportunity scale and Authority scale omited

Health & Saftey	Environment	Reputation	Financial Loss	Qualitative	< 1 in 10,000 Extremely Unlikely	< 1 in 1,000 Very Unlikely	<1 in 100 Unlikely	<1 in 10 Possible	> 1 in 10 Likely
Multiple Deaths	Long term wide-spread damage	National Outrage	> 100m	Catastrophic	Crisis - Medium	Crisis - High	Crisis - High	Crisis - High	Crisis - High
Death or Injurys	Localised long term	Local Outrage	>10m	Crisis	Crisis - Low	Crisis - Medium	Crisis - High	Crisis - High	Crisis - High
Injury	Wide-spread short term	Regulatory Censure	>1m	Severe	Low	Moderate	High	Very High	Unacceptable
Time off work	Short term localised	Local Media & Customer impact	>100k	Moderate	Low	Low	Moderate	High	Very High
First aid	Easy Clean-up	Complaints	>10k	Low	Very Low	Low	Low	Moderate	High

182

9.1.4.5.3.7   'Calculating' Scales

Whether we choose to use scales with greater granularity than high, medium and low or not we do need to know how to calibrate even these levels for meaning in each stage's context – note: stage instead of or as well as project.

9.1.4.5.3.8   Probability Scale

If we draw cards from the poker deck the probability can be calculated. In projects we rarely get such probabilities. As I said above even if we do humans are not good at differentiating a 42% versus 43% or even 42% versus 62% probability.

The scale I start with (and resist stakeholder attempts to amend) is:

➢ 0.001% to 19.9%   Very Low: I've never heard of that happening
➢ 20% to 39.9%   Low: I've heard/ read/ can imagine that
➢ 40% to 59.9%   Medium: It happened to me or someone else I know once upon a time, it is as likely as not to happen to us
➢ 60% to 79.9%   High: It happened to me (or someone else) under these circumstances that we also have
➢ 80% to 99.9%   Very High: It is going to happen unless…

Forget the numbers unless your project can calculate them from an objective basis. Just use the text.

The official manual uses <10%, <30%, <50%, <70%, >71-90% which is fine till we get to 90%!

9.1.4.5.4   Impact Scales

Impact scales are harder to define. Accepted wisdom is to use a geometric scale. The PRINCE2® (APMBok and PMBOK®) manual use 0.05, 0.1, 0.2, 0.4, 0.8 but what do these numbers mean!?

9.1.4.5.4.1   Developing An Impact Scale

Imagine I'm renovating your derelict house with a Deadline of "move in before Christmas in 20 weeks" and "available funds are £100,000". During SU we agree we don't know enough to set scales but agree the principle. If we are to have "room for manoeuvre" we need schedule and funds available. We agree three weeks should be allowed for contingency.

Planning shown a scope of work that fits 17 weeks and takes £88k. Negotiation of scope agreed that traditional central heating is quicker and more affordable than solar powered under-floor heating so that was de-scoped (MoSCoW scope tolerance) to create a viable 'business case' of 17 weeks.

Otherwise solar under floor heating equals 20 weeks and a project that only works if all our good-luck happens and no bad luck.

9.1.4.5.4.2   Calculating Impact Scale Values

Our impact scale start points are thus we have 20 – 17 = 3 weeks slack time in the critical path (perhaps 3wks * 7days * 3shifts = 63 shifts of 8 hours each) or more likely 15 standard working days contingency. We have £100k - £88k = £12,000 financial contingency (IE Committed Budget At Completion – Estimate At Completion). We have "Solar heating" in scope contingency to add, and no currently agreed scope contingency to remove.

NOTE: Contingency ONLY works when there is some uncommitted time and money to deal with threats! Many projects 'fill all available time' and thus there is no capacity for threat management.

Note too that opportunity just results in earlier or cheaper delivery so probably adds in the "C – Could" or reinstates "S – Should" MoSCoW items.

9.1.4.5.4.3   Schedule Scale

For your renovation my proposed schedule scale starts with the 15 days (or 63 shifts) that are unallocated. The scale is thus any risk with a schedule impact on the critical path be defined as :

- ➢ Very Low = 0.05 * 15   if under 0.75 days (6 working hours)
- ➢ Low   = 0.1 * 15   = under1.5 days delay or acceleration
- ➢ Medium = 0.2 * 15   = under 3 days
- ➢ High   = 0.4 * 15   = under 6 days
- ➢ Very High = 0.8 * 15   = under 9 days
- ➢ Stellar if over 9 days

At **[13.4.2** Authorise the project] you and I re-discuss this (as we have the **A16-** Project Plan at this stage) and agree that High-Schedule risk be redefined to be delays of 4 days and Very High delays is everything over 4 days because that makes you feel safer and you are the sponsor, exec and senior user.

Thresholds off the critical path for schedule impacts start after they come onto the critical path. They are specific to each task's float. (*See X on Y*). Their resource or financial impact will be subject to separate review.

You also specify that all critical path risks (±) over medium and non-critical path over Very-High 9even if within float) are to be escalated immediately. I don't see the point in escalating any accelerations or non-critical path delays but don't argue.

9.1.4.5.4.4   Cost Scale

My proposed financial impact scale is then defined as any risk with a saving or cost escalation of under £600 (0.05 * £12k) is defined as 'Very Low', Very High is under £4.8k (0.8 * £12k) and Stellar if over £4.8k.

> *SOOP-104.   Risk scales position uncertain events against how much unallocated cost and unallocated time they will consume (and all the other dimensions of unallocated care that exists) to assess significance.*

For you project the risk scale may be calculated versus the project and stage tolerances, although we must discuss estimating to get the full picture on how to set tolerances correctly.

9.1.4.5.4.5   Added On Contingency

The scale above worked backwards from an affordability target. This is common. The other way to work is define the baseline and add-on the contingencies. For this we need to cover breakdown structures, estimating and scheduling. *See X on Y*.

9.1.4.5.4.6   Urgency Scale: Proximity

How long it takes for the future state to come into existence and how long it takes to respond to it are also key concepts. PRINCE2® recognises this and calls it "proximity".

Note, however that there are three timeframes and four considerations of proximity that apply across EVERY trigger and EVERY impact and EVERY candidate response to either trigger or impact.

PRINCE2® lumps these all together and labels the whole bucket-full proximity - too simplistic for real risk management:

➢ The time from "now" till the state transition occurs:

   IE the time available for responses affecting probability as applied to each possible trigger.

This is also the time during which reactive contingencies are speculative, which affects stakeholder willingness to invest in timely responses.

➢ The time from now to impact of the affects:

IE the time to proactively prepare and deploy contingency measures that increase or decrease impact.

➢ The time from transition to impact of the affects:

IE the time available to apply purely reactive contingent measures that increase or decrease impact.

At least for these we now know the response will be required as the "will it, won't it?" aspect of probability is now "it is beyond doubt" Either P% = 1 or P% = 0. Emotionally this is the "if only we had…" time.

Uncertainty (T & O) Timescales
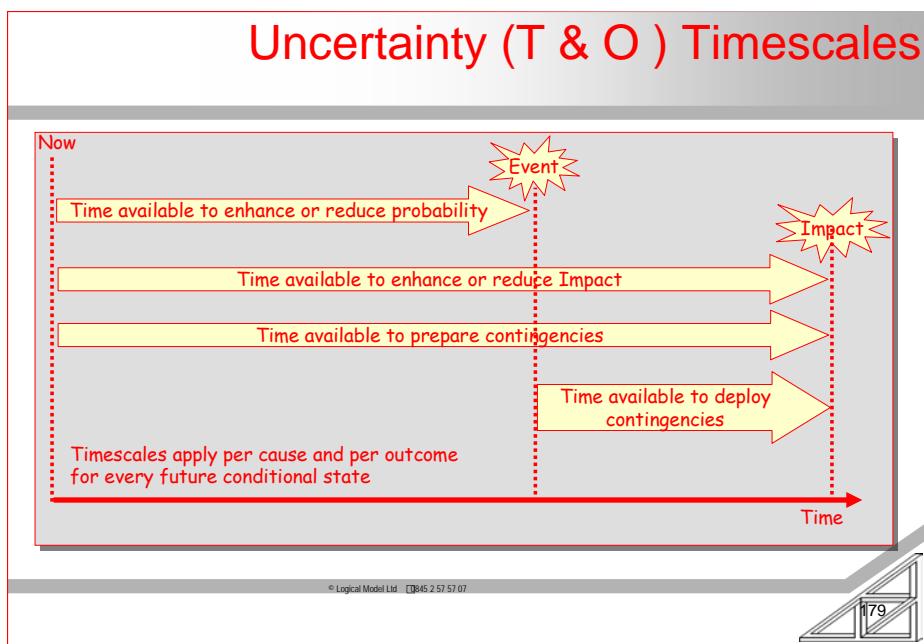
Note too that not all state transitions are rapid and obvious state changes. Some of the most difficult to manage risks sit behind state transitions that are gradual and thus do not present an obvious "trigger-point". "Boiling the Frog" being one example made famous (at least to me) by Charles Handy's "Age of Unreason" ISBN-13 978-0566086045.

Apparently a frog placed in cold water that is then slowly heated will never be triggered to jump out. Equally a senior user(s) who never quiet decides the acceptance criteria…

9.1.4.5.5 Strategic and Tactical

Another distinction to be applied to risks that arise in a project is one we saw in the context of the business case:

➢ Those that relate to the goal, the intent, the "what". We might call this strategic or outcome risk.
➢ Those that relate to the approach, the "how". We might call these tactical or technical risks.

Strategic risks have "an owner" (singular?) who is the project's sponsor while tactical risks have "an owner" who is determined by the contract's expression of liability for non performance.

9.1.4.5.6 A25-Risk Register Product Description

PRINCE2® suggests a format for the risk register that is a good start point.

To cope with the real-world complexity of risk manifestations some extensions may help. Here is a suggestion of the contents that may be useful in reality (but not in the exam).

Note later I shall recommend a Register of Concerns that covers risks and issues.

The **A25-**Risk Register might record for each risk {.

➢ The risk's own state transitions with dates

(EG Identified, Analysed, Responded to [provision included into the baseline as explained soon**]**, New responses applied, Risk now Passed/ Risk impact now in effect (Triggered)/ Risk now Closed [baseline actions taken] et. al.)

➢ A description of the future state (condition) that possess a threat and/ or opportunity against the **A2-**Business Case and a unique identifier to allow reference to the state when needed
➢ A description of the cause**s** (and identifier for each cause) that may create the future-state
  - Including suggestions of indicators that the cause is approaching,
  - expected timescale to onset of the state through this cause (if relative to some frame of reference then state the baseline!),
  - the cause's untreated (inherent) probabilities and treated probabilities assessed against High/M/Low on some scale**s** or a numerical value if really meaningful) and
  - the action**s** that could be taken to increase or reduce their probability.

For each reaction to each cause:
  - the timescales for, and
  - impact of taking them,
  - who could take them and
  - whether the action has been selected for inclusion in the project's plans.
  - If considered then who by, when and what disposition resulted and why (what was their appetite?).

- If selected then the response's work-package identifier in the plan - eg Stage or Team plan.

➢ A description and identifier for <u>each consequence</u> that the state will bring (ie impact)

- Assessment of the untreated consequence at least as H/M/L and quantified if possible against each dimension of project baseline such as benefit, cost, schedule and the scales suggested for tolerance.

  It may be necessary to record scores separate for each significant stakeholder. Eg the senior supplier(s) loves the cost overrun and the finance director hates it.

- Suggestion of the responses possible for each impact.

  For each response

  - the timescales for, and
  - impact of taking them,
  - who could take the response and
  - whether the response was considered - in which case who by, when and what disposition and why (what was their appetite?)
  - if the response has been selected and is included in the project's plans then the response's work-package identifier

  (Note multiple actions could have been fully carried out and others could be in use currently).

➢ Admin detail such as who raised it and when.

}.

This risk register format is significantly more sophisticated and real-world than PRINCE2®'s. Unfortunately risk is a complex topic and not until it is treated properly will we manage it well. Extensions to the above include provision for capture of expected monetary value, Monte-Carlo simulation, critical chain and more.

9.1.4.5.6.1   *Register of Concerns*

Later we will discuss that the **A25-**Risk Register and **A12-**Issue Register should be a single Register of Concerns. The official manual suggests it for small projects, and I would suggest it for all projects. I'd make the split by product (in the Product Breakdown Structure (PBS)) and perhaps by phase rather than probability (IE a risk with probability of either 0% or 100% may be an Issue – we have to define issue late *See X on Y*)

We should also note that responses to concerns (problems, request, issues or risks) are not managed from the register but from the **A16-**Stage Plan.

9.1.4.5.6.2   **A24-***Risk Management Strategy Product Description*

The strategy is created by considering and recording everything we have covered so far and is still to be discussed in this section. It might contain: {

- ➢ Document pre-amble as suggested in "*Strategy Pre-amble*" *Page 9.1.3:- 193 -*
- ➢ Cross ref to corporate standards, procedures, reporting regimen, roles for risk management, techniques and tools plus notes of local extensions and exceptions.

  XREF which also cover next risk specific headings.
- ➢ Guidance on the identification of risks.
- ➢ Definition of scales to judge probability, impact and proximity.
  - Guidance on the use of the scales.
- ➢ Description and definition of categories for risk causes, risk consequences, risk responses and risk warning signs.

  I recommend ONLY defining response categories, as discussed in risk process step three below.
- ➢ Guidance on the project's approach to defining and managing a risk budget.

9.1.4.6 25.Risk Management Process

Based on the concepts we can now consider the process.

9.1.4.6.1.1   *PRINCE2®'s View of The Process*

PRINCE2® says the steps are [8.3.5]: Identify context, Identify Risks, Assess, Evaluate, Plan, Implement, Communicate. You may need the simplistic view as it will be the subject of exam questions. It comprises four broadly sequential but iterative steps plus a continual need to communicate.

1. Identify (during which the context and pool of risks are described to provide common understanding),
2. assess (estimate and evaluate to rank all risks and the overall exposure),
3. and then control which is a grouping of:- {
   1. assign risks to owners,
   2. plan responses and,
   3. implement responses and in parallel the 4th element }.
   4. 0.
4. the continuous element of communicate
5. 0.

9.1.4.7 25.Detailed Risk Management Process

A broader, mostly PRINCE2® sympathetic discussion of the risk management process comprises the following steps:

Process Numbers

13	Directing a Project (DP)			
Initiation Stage	1st Delivery Stage			1st Last Delivery or Stage
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
Managing a Stage Boundary (SB)		16	Managing Product Delivery (MP)	

Section: 2   Page: 9.1.4:233 of 541

9.1.4.7.1   Step Zero: Establish A Risk Aware Culture

Awareness of what risk is and how we will deal with it on this project is a critical success factor.

PRINCE2® says it is a sub-part of the Identify step called "Identify Context" and suggests it is established [too late] in the Initiation Stage following guidance from **[14.4.1** Prepare the Risk Management Strategy**]**.

9.1.4.7.1.1   Awareness Starts Pre-Mandate

Awareness starts when the project mandate is being created to describe an opportunity that a potential project is to enable or describe a threat to be countered (EG capture market share before the competition). Awareness continues after project closure into business as usual or operation of the business in the post enabling state (benefits delivery phase).

To succeed with "Identify Context" or establishing a risk-aware culture DON'T take a project view, take an 'Embedding' view. Risk awareness has a timeframe equal to the equity participant's 'having skin in the game'. IE sponsor and senior user(s) timeframe.

For reality establish risk awareness and attitude when embedding PRINCE2®. For the exam answer start awareness with "identify context" and 'end' it with the passing of Follow-On-Action-Recommendations (FOAR) in the **A8**-End Project Report.

Awareness means the participants know what we've covered so far and talk about risk in a practical manner that will build cost effective responses into plans. Awareness equates to understanding that threat is never eliminated, that some opportunities have to be passed by. Awareness means 'can participate in the process effectively'.

9.1.4.7.1.2   Context = Objective

Context for strategic risk in any individual project is an understanding of the project's objectives, for tactical risk it starts with an understanding of the Project Approach but can only be progressed as project planning is being completed.

Project risk is relative to the project's baseline. Intended achievements or the "What" is one view of baseline. "How" is the other.

Awareness/ "identify context" encompasses creating the **A24-**Risk Management Strategy (RMS) or adoption and tailoring of an existing standard one.

9.1.4.7.1.3   A24-*Risk Management Strategy Create Early and Review Regularly*

PRINCE2® says the strategy is put together during **[14.4.1** Prepare the Risk Management Strategy**]** in the Initiation Stage and should be reviewed with possible amendment at subsequent stage boundaries.

I suggest that project specific awareness is needed when selecting and appointing the project management team, defining **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, Project Approach, … }.

These are all Starting up a Project (SU) activities. 2009 guidance should be tailored (old hands will recognise this tailoring as reversion to 2005 guidance) to establish the risk management immediately on project conception. Risk culture is best established during embedding, if that boat was missed then start it during Starting up a Project (SU). Daily reappraisal at each **[15.4.4** Review stage status] is also appropriate!

9.1.4.7.1.4   Risk Awareness in People's Actions Not Documents

PRINCE2® says the risk context or awareness culture is recorded in the **A24-**Risk Management Strategy (RMS) or the RMS refers to other documents such as the **A19-**Project Brief.

SOOP-105.   If risk awareness isn't in people thoughts and deeds having it in a document is scant use – reinforce the culture when appointing the team and in the workshop that defines the project's goal and approach. The RMS must integrate to operational risk procedures or programme risk procedures. It must match how the organisation handles corporate governance. It must reflect authorities and escalation routes.

9.1.4.7.1.5   Set Out The Process and Scales

The RMS should define processes such as "how to raise a risk (covered in *[15.4.6 Capture and examine issue and risks] see page X*)", roles and responsibilities and assessment aids such as checklists and scales.

9.1.4.7.1.6   Define Roles

➢ Risk responsibilities are sensibly defined as:

- First: Risk management, like quality control isn't someone's job, it is everyone's
- 'Overall ownership' of all risk lies with the sponsor (who may be the executive)
- Operation of the Risk Management Processes lies with the project manager
- Maintenance of the risk register lies with project support staff (or the project manager in their absence)
- Review of risk rests with everyone, and project assurance should check too
- Focus on strategic ("What") oriented risk is the sponsors, exec's and senior user(s)' and they must explicitly understand the split.

  For example the sponsor's focus might be from the "when done we will be the supplier of choice in our industry" perspective and the senior user(s) "pricing policy that means finished goods are cheapest and logistics that mean shipped within 4 hours of order"

- Focus on tactical ("How") related risk is with the senior supplier(s)

  To continue the theme the senior user(s) have specified an order-handling system with a phone capability to handle 100 calls per hour and the supplier is building the call-centre and wonders about staff parking or whether 100 is peak or sustained rate.

- Total (cost of) risk impacts (via funding risk management and risk responses) rests with the sponsor (exec)
- Care of individual responses is as resourced in the **A16-**Stage Plan (whether scheduled or not – *see X on Y*).

➢ Awareness needs to be linked to reliable memory, which in project terms is the **A25-**Risk Register. PRINCE2® would defer creation of strategy and thus scales until the Initiation Stage with identified risks recorded in the project manager's note-book (**A7-**Daily Log) prior to then. I've already recommended starting the **A24-**Risk Management Strategy and **A25-**Risk Register ASAP and I recommend the expanded content defined above.

9.1.4.7.2   Step One: (performed repeatedly) Search For Risks

Identify Risks: The goal of risk identification is to craft well worded risk descriptions, but that is not the start point.

There are two start-points. The organised planning session 'search for risks' and any individual's Eureka moment.

9.1.4.7.2.1   Great Risk Management Starts with Well Worded Risks

Recall earlier I wrote to the effect that <u>good wording is the single biggest aid to competent risk management</u>. Without clear expression of triggering events and resultant outcomes the planning and implementation of effective responses is impossible.

The second biggest aid is to start with volume. In the planning search the aim is always to find 1000's not 10's.

9.1.4.7.2.2   Golden Rule of Identification

SOOP-106.   The GOLDEN RULE in risk identification is "do not try to assess (yet)". Any conversation about "That doesn't matter…" or "that's important…" should be immediately chocked off – focus on volume. Analysis is important, will come later but cannot be effective without a pile of risks to assess – create the pile!

9.1.4.7.2.3   Identification from the Sub-Conscious

SOOP-107.   All risk identification comes from the sub-conscious mind, good wording from the conscious mind.

9.1.4.7.2.4   ANY Wording Is OK To Start With

By definition brainstorming omits evaluation and criticism in favour of creativity and volume. IE <u>people do not create good risk statements during identification and nor should they be expected to</u>.

Normally what is generated (by Eureka moment or by search session) starts with worries and concerns. Imagined causes (episodes and events) are listed without follow through to impacts. Envisaged impacts are suggested without consideration of cause. A second identification step is normally required, as explained next to forge well worded risk.
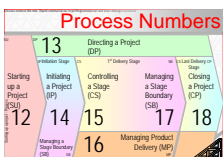
9.1.4.7.2.5   When

The Eureka moment will happen when-ever. Allow anyone to record their concern with out any quality filter. But also don't allow the concern to progress after capture until it is well defined.

SOOP-108.   Golden Rule: Don't put good risk definition before capture. When there is a 'price' to be paid IE some bureaucracy in the entry process people won't raise risks.

The search for risks should be done on every event like change of stakeholder, change of stage, allocation of work-package, team meeting, arrival of a Monday, Wednesday or Friday or the days in between when one of the other triggers has not happened recently.

Identification sessions should be repeated regularly. Risk impact is a wholly future concept and the future keeps on coming, while identification is wholly historical (from experience).

9.1.4.7.2.6   All Identification of Risk Is From The Imagination

The only means to identify risks is from people's <u>imagination</u>. Application of their <u>historic experience</u> as recorded in the subconscious to the world ahead of us.

What associations anyone's sub-conscious throws up isn't predictable! Imagine Ice-Cream and castles.

Now was your imagination a scene on a beach as a 5 year old or with your own 5 year old or are you recalling a summer visit to a medieval ruin or a visit to the cinema and a swash-buckling film? Risk identification can be partly steered. Don't steer it with checklists and categories prematurely. Once set on a course people think 'in the box'.
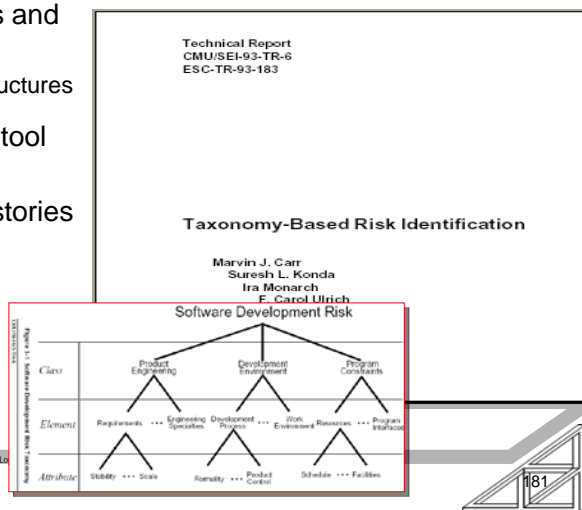
9.1.4.7.3   Use Thought Showers (or Whatever Name is 'PC')

For search sessions it is typical that imagination is fired-up via free-thinking group sessions. Interviews are a second tool to use as well or instead.

9.1.4.7.3.1   Opportunity First

Do opportunity first. If you do threats first you won't get any opportunities. Sometimes two separate sessions are useful. For people who cannot think in positive terms allow any contribution and record it in positive words. Eg "We may

be late" becomes "We may be early". (Note: these are not well formed risk descriptions yet but that is Ok – read on.)

9.1.4.7.3.2   Approaches to Brainstorming

The rules of brainstorming are:

➢ No evaluation or criticism or comment during idea generation other than clarification
➢ Contribution from all
➢ Record everything, delete nothing

Brainstorming depends on a facilitator to keep it moving so generation does not become debate. It can also breaks down when people are of varying seniority through "follow or impress the boss", varying willingness to allow others a chance to get a word in, when people are shy or contribute too quickly for a scribe to keep-up or the scribe doesn't write what was actually contributed.

9.1.4.7.3.3   Brainstorming Techniques

Several techniques that may help are:

➢ Round one ask everyone to individually and silently generate 10 entries, perhaps written out on yellow-sticky-notes. Then ask them to read them out and pool them.
➢ Round two ask everyone to suggest a single new entry in turn, perhaps recorded on yellow-stickies, and repeat round-robin 10 times over.

These techniques seek first to NOT allow influence, EG everyone cannot now "agree with the boss" nor can they now avoid making suggestions, nor shout others down and then second round is designed to generate synergies.

9.1.4.7.3.4   Checklists Etc AFTER the Unprompted Thinking

Use Checklists AFTER imagination dries up. Otherwise you'll be blinkered by what the prompt-lists include.

➢ Then start with the Product Breakdown Structure (PBS)

   Consider each output's outcomes (because projects are the enabling phase of the real reason for the project.) The results are likely to be strategic risk but shouldn't be constrained or expected to be in any one pigeon-hole.

   Use of the PBS is explained later ***See X on Y***.

➢ Then each output's development life-cycle to trigger tactical risk thinking.
➢ Then use the Organisation Breakdown Structure (Organisation Chart) and consider each stakeholder's interests, skills, commitments and motivations (including those external to the project management team or organisation).
➢ Then all standards and acceptance criteria that apply to products or processes
➢ Then all materials used
➢ All tools employed
➢ All assumptions and dependencies

> ➢ All elements of the context: political, economic, social, technical, legal and environmental

If you still need inspiration:

> ➢ review previous project's risk lists,
> ➢ consult records of previous lessons learned,
> ➢ checklist, prompt-lists and taxonomies IE hierarchical breakdowns (Risk Event/ Outcome Breakdown Structures).

The internet has plenty if you search for Risk taxonomy. The Texas State Office of Risk Management is a good source (www.sorm.state.tx) – their RMTSA 'manual' in four volumes is freely available.

9.1.4.7.3.5   Workshop Agenda

The risk <u>identification</u> by 'search-session workshop' should be run to an agenda in several parts.

1. Brainstorm and accept whatever you get
2. After the brainstorming: the risk fragments or worries and wonders are sifted and combined into expression of well worded "condition, cause & consequence statements".
3. Refer to the check-lists and categories to confirm nothing further is suggested by them
4. De-duplicate the well worded risks
5. 0.

Steps 2 and 4 may overlap and iterate, steps 1 and 2 MUST NOT or you will lose the precious volume element.

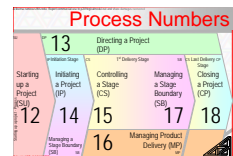### 9.1.4.7.3.6   DO NOT Categorise

My strong advice is NOT to categorise the risks (at this time). Generally it is a pointless waste of precious time as debate rages about which category a risk belongs in.

Categorises should ONLY be used (at this time) as another checklist to spur thinking to identify further risks. If you cannot bear not to categorise then put the risk in every category anyone suggests and do not debate about a single somehow "best" category.

SOOP-109.   Risk Categories should be applied not to causes and consequences but to responses. Categorising responses is a useful way to group actions for assignment of response responsibilities and budget.

9.1.4.7.3.7   Risk Register Entries

After search sessions the identified triplets of "condition, cause, consequence" are entered onto the Risk Register, while for Eureka moments encourage entry as soon as any part is raised. Then expanded to be well worded.

I've no particular rule about how many risks there are in a conditional state. Is "Heavy rain and poor drainage causes crop loss and financial loss" one risk? "Rain" IS a threatening episode and so is "Poor drainage". "Crop loss" IS a threat outcome and so is "financial loss" these are definitely four things: Four entries or one entry with four sub-points? (see also ***PIM below)***

I leave it to you to decide if you enter the state on the register once with multiple causes and consequences or to enter it for every cause and for every consequence.

9.1.4.7.3.8   One Entry is Enough to Starts With

What I do have a guideline for is to ensure the register will allow for recording all possible responses. Thus once is enough now but the entry may get duplicated later.

What is undeniable is that each cause and consequence needs consideration: While the rain cannot be stopped the river may be dredged or the banks built-up, the crops may be insured or selling the whole farm may make it SEP (Somebody Else's Problem).

9.1.4.7.3.9   Add Early 'Warnings'

In the 'form good wording' step it may be possible to identify the indicators that would help monitoring of the causes of approaching opportunity or threat.

EG Dark clouds gathering, Crops still in the fields, Ditches silting-up - in this case the register entry may usefully be duplicated to support discrete warning signs specific to some subset of triggers.
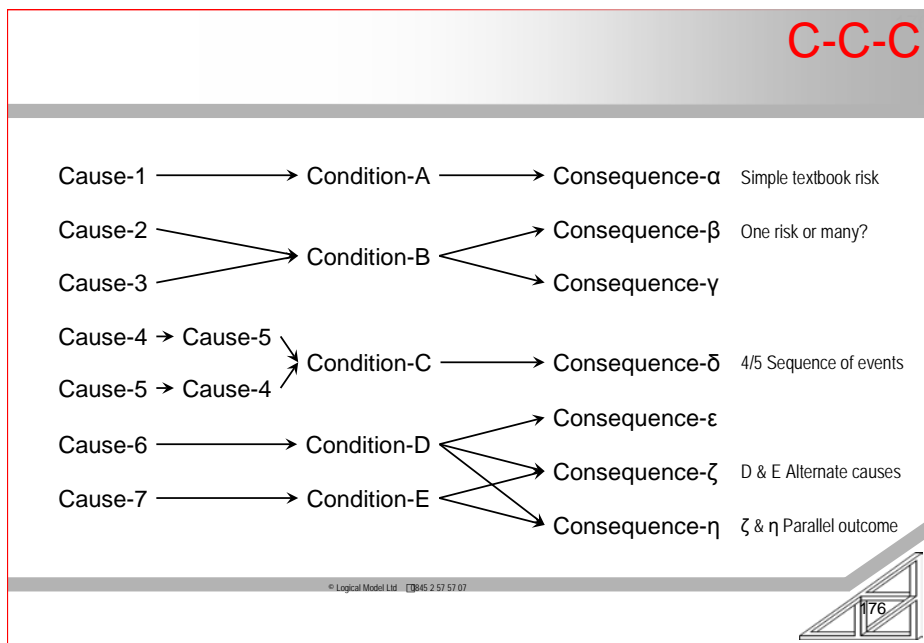
Add them if they are obvious. Do not be distracted if considering triggers adversely affects generating volume.

9.1.4.7.3.10   Repeating The Gold and Silver Rules

DO NOT allow assessment during identification. It chokes off the identification and unidentified threats are still painful when the strike out of the blue while unidentified opportunities rarely happen.

Not quiet a golden rule, perhaps a silver rule: don't waste time putting risks in categories or adding triggers. Use the category list LAST to check "have we considered this category?" and add triggers if they suggest themselves freely.

Allow any half-baked cause or consequence during free-thinking and then assemble well worded Condition, Causes. Consequences triplets

C-C-C

Cause-1 ——→ Condition-A ——→ Consequence-α   Simple textbook risk

Cause-2 ＼
            → Condition-B ＜ → Consequence-β   One risk or many?
Cause-3 ／   ＼→ Consequence-γ

Cause-4 → Cause-5 ＼
                    → Condition-C ——→ Consequence-δ   4/5 Sequence of events
Cause-5 → Cause-4 ／

                              → Consequence-ε
Cause-6 ——→ Condition-D ＜
                              → Consequence-ζ   D & E Alternate causes
Cause-7 ——→ Condition-E ＜
                              → Consequence-η   ζ & η Parallel outcome

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176

9.1.4.7.4   Step Two: Assess the Risks

Assess the probability, impact and proximity using the scales defined in the Risk Management Strategy. This is an exercise in estimating.

9.1.4.7.4.1   Do Not Develop Responses Yet

SOOP-110.   The GOLDEN RULE for search sessions in the risk assessment process is "do not develop responses in this step". It is OK to return to identification if needed.

Seriousness of threat and desirability of opportunity are a compound assessment of probability and impact while urgency is an assessment of proximity versus response development or implementation timescales. In all cases the values are estimates.

9.1.4.7.4.2   Risk Scales

Risk must be assessed for proximity of each cause and consequence, probability of each causal chain and impact of each consequence in each dimension of cost, time, quality, health, safety, reputation et. al.

Every risk should be

➢ Fully assessed qualitatively using just our emotional statements for impact.
➢ Assessed 'emotionally' for probability unless a percentage or frequency is objectively determinable.

> Urgency may be assessed emotionally but is best left until we know responses and urgency can be calculated as:

(Time available minus Time Required)

9.1.4.7.4.3   Record Assessments As Ranges

Record the value(s) insisted on by those most inclined to argue, with their reason and move on. IE Record the range of extreme values and BE SWIFT. Do not strive for (false) consensus and definitely do not average.

Debate will come later when we seek to prioritise. Also later will be quantitative assessments for those risks that justify it.

If scales were not mapped to statements then expect that asking for H/ M/ L will be a losing battle and accept the "about a 6", then group as 1-3, 4-6, 7-9 and 10!

9.1.4.7.5   Step Three: Prioritise

However you get here we then need to map the threats and opportunities into "Yes, No, ~~Maybe~~" for action.

9.1.4.7.5.1   PIM or PIG Probability Impact Matrix

Risks may be usefully prioritised graphically by representation on a Probability/ Impact Matrix (PIM or PIG - 'Grid' instead of 'Matrix'). Risks can be compared to tolerance lines drawn on the PIM, although placement of a threshold line by a group of people is rarely straight-forward!

9.1.4.7.5.2   Thresholds

Two lines are generally needed: Threats we cannot live with and opportunities we cannot live without. It is often easier to plot the risks first then draw the thresholds. After responses have been considered the risks and probably the thresholds will shift position.

Using the 1-20-40-60-80-99 probability scale and a 0.5-1-2-4-8 scale and colour coding the 'EMV' gives the following lines of 'equal risk': perhaps an iso-hazard and candidate positions for the placement of thresholds. Thresholds should follow the general shape of the colour-contouring.

Add Picture PIM Colour Gradient

9.1.4.7.5.3   Placing Risks on The PIM

Generally the placement on the impact scale of any uncertainty is the most extreme of the impacts associated with the state, or each CCC triplet is treated as a separate risk.
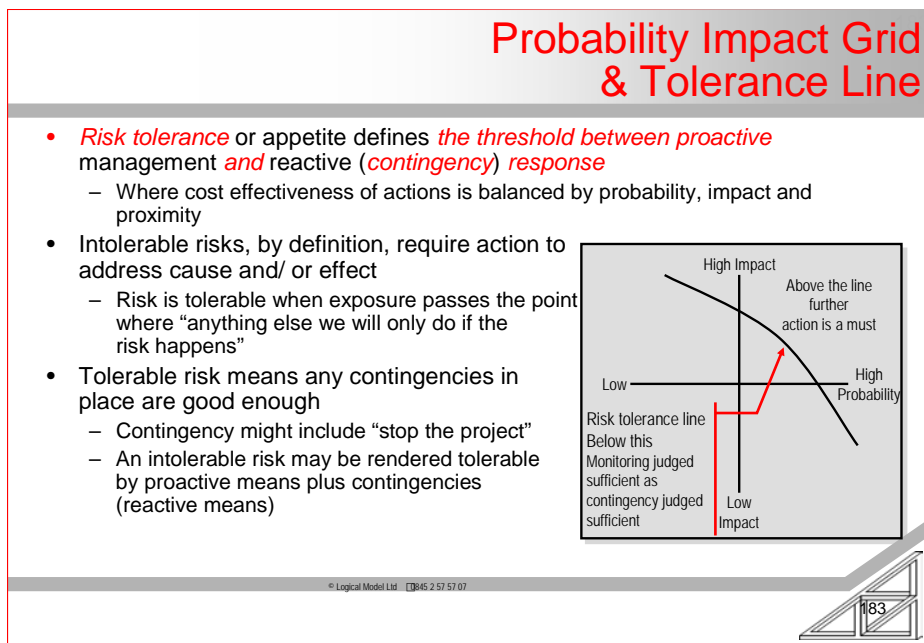
Plotting states reduces the number of items to deal with while plotting CCC triplets gives most control. When we get to responses we will discuss response categories that may help segment risks but ALL risks responses and the 'real' project work will have to come out of the same time-period, resources and

budget: "Its hard to find time to drain the swamp when your up to your arse with alligators". Seeing the 'whole profile' in one go is useful.

9.1.4.7.5.4   Splodges, Not Dots

A risk can be represented on the PIM as an area rather than a dot to show the range of probability and impact values that were proposed during assessment. Knowing that we agree on some event but not the size of its impact is in itself useful.

Probability Impact Grid & Tolerance Line

- *Risk tolerance* or appetite defines *the threshold between proactive* management *and* reactive (*contingency*) *response*
  - Where cost effectiveness of actions is balanced by probability, impact and proximity
- Intolerable risks, by definition, require action to address cause and/ or effect
  - Risk is tolerable when exposure passes the point where "anything else we will only do if the risk happens"
- Tolerable risk means any contingencies in place are good enough
  - Contingency might include "stop the project"
  - An intolerable risk may be rendered tolerable by proactive means plus contingencies (reactive means)

High Impact

Above the line
further
action is a must

Low ———————— High Probability

Risk tolerance line
Below this
Monitoring judged
sufficient as
contingency judged
sufficient

Low Impact

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183

9.1.4.7.5.5   Yes, No and ~~Maybe.~~ Just Yes and No.

All risks, once identified should be crudely sifted whether plotted on a PIM or not:

➢ Probability - High/ Medium/ Low (HML),
➢ Impact on each scale such as Reputation or Cost –HML

Impact may also be sifted as: 'Rests with the sponsor', 'Rests with project board' etc wit the HML ranking within authority strata.

➢ Proximity – of each cause and of each consequence: Proximity as an event-date (and time) is best. Otherwise 'do-now' and 'schedule for later' are good enough.

Based on this crude assessment use a two step process to first lump into three buckets:

➢ Category 1: "definitely respond to"

The opportunities that peak one or more group member's interest and the threats that scare the group (or an individual). These are the top threats and opportunities. The live 'outside' our tolerance thresholds. We will be proactive in their management.

➢ Category 2: "definitely only if time, money and will are left over".

These are the bottom of the list. We will be reactive in their management and.

➢ Third the "not so sure one way or the other.

For now these may be left undecided or we can apply a second step:

- Of this third category divide them into "probably respond" and "probably not": and then lump into category 1 or 2.

If left for now then the step to divide them and call them "1" or "2" must happen before we finish response development and selection.

Psychological research shows humans are good at two way choices and extremely poor at any other assessment (it is suggested that the physical two hemisphere structure is the root of the strength and the cause of the limitation). Thus the "Yes, No ~~Maybe~~" approach reduces decision making to a two step "yes" and "no" to capitalise on people's strength.

9.1.4.7.5.6   Raw Score

The assessment of probability, impact and proximity is recorded to the risk register as the pre-treatment or raw assessment. PRINCE2® calls this the "Inherent Risk" [Glossary pg 306].

Threat Response Types

- Event / Probability
  - Reduction (to 0 = Prevention)
  - Reduction to "oh well that is enough" = Acceptance
  - Transference
    - Is it ever really transfer?
- Outcome / Impact
  - Reduction (to 0 = Prevention)
  - Reduction to "oh well that is enough" = Acceptance
  - Transference
    - Real transfer (eg Insurance)
- Contingency

H Impact

Insure   Prevent

L
Prob.   H

Contingent

Accept   L

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186
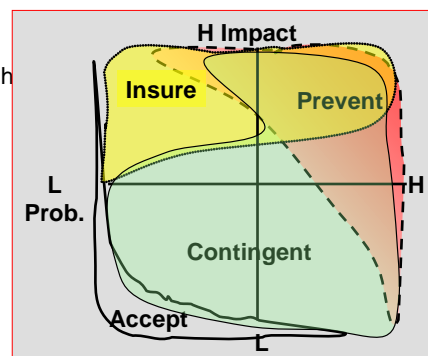
9.1.4.7.6   Step Four: Identify Possible Responses

For category 1 risks: IE those risks above the intolerable threat line or below the deep-regret-if-we-miss-this-opportunity line are the risks that we must consider the cost-benefit of responding to.

Response can be to any and all causes, and consequences and the proximity of all causes and consequences.

In the PRINCE2® project timeline we may be making response development considerations within **[15.4.6** Capture and examine issues and risks**]** or while planning within SU, the Initiation Stage, Managing a Stage Boundary (SB) or while focussed on technical work in Managing Product Delivery (MP).

9.1.4.7.6.1   Golden Rule in Response Development

SOOP-111.   The GOLDEN RULE for identify risk responses is "do not select responses (yet)". It is ok to return to assess or even identify if that is useful.

9.1.4.7.6.2   Reactive and Pro-Active

Responses can be pro-active and reactive: both have a place. For example with reactive responses we know at time of use that the expense is required.

Proactive responses may affect cause or consequence while re-active responses affect only consequences. If my fear is that by holding a picnic somewhere in the UK during April it will be ruined due to rain then re-location of the event to the Sahara in July reduces the probability through pro-active means.

Buying an umbrella is also pro-active. It imposes a pre-event preparation cost to create a reactive or fall-back mechanism. Fall-backs may have a cost of preparation and usage. The umbrella's usage cost may be that it requires one hand to hold aloft.

9.1.4.7.6.3   [Poor Guidance Again

Note: the 2009 official manual has started using 'fallback' because the MoR® manual uses the term. This is sad as 'fall-back' is pure threat vocabulary again. There is no "spring-forward" for opportunity in its thinking!

I do not see how the guidance offered can be called 'best-practice' when it is flawed.

Responses to the impact side of risk are better called 'contingencies' for the neutrality of the term that allows consideration of post-event response to opportunity.

Worse PRINCE2® now say contingency shouldn't be used! Partly it is semantics and partly wrong. See *9.1.4.8.2 "Official Manual's Errors" Page 9.1.4:- 260 -.*

]

9.1.4.7.6.4   Responses Change Probability or Impact or Proximity

For each "definitely respond" risk ask "how could we change the probability or impact or proximity?" The aim is to find a host of potential actions that make a cost-beneficial change to probability, or impact or proximity for every cause and condition of the state.

If there is skill, will, time, morale and energy left over after the "definitely respond" are all done then start on the "probably responds" until all are considered or you run out of oomph.

Everything is now in the "Yes", "No" categories. By default nothing is left as "maybe".

9.1.4.7.6.5   Brainstorm Responses

Just as when we perform the risk identification step so the source of ideas for response identification is the participants' historical experience stored in their sub-consciousness.

A risk identified in a Eureka moment often comes accompanied by a response too, but not always and rarely all the possible responses.

All the previous tools and techniques of identification should be reused in response identification.

Identification of risk responses must consider responses that bear on probability separately to responses that bear on impact. During selection of responses we may take both dimensions into account at once but not during identification.

9.1.4.7.6.6   Risk Responses Consider the PBS & WBS

Consideration of responses also asks: is the risk most directly associated with PBS, Outcome, Strategy or is it most directly linked to skills, WBS, process, project conduct? Where in the PESTLE spectrum does it sit?

9.1.4.7.6.7   Response For the Four Corners of The PIM

Risks, whether threat or opportunity whose Probability and Impact are High-Low deserve different consideration to those with a profile that is Low-High.

Profiles of Low-low or High-High also need specific consideration. These four assessments will overlap to a degree. All medium-medium became "probably respond (high)" or "probably not (low)" during assessment or will do before we finish this step!

➢ If threat probability and impact are low then monitor but do nothing active until probability becomes 0 or 1. For opportunity it is obviously do nothing more active than monitoring if both are high until certainty arrives.
➢ If threat probability and impact are both high seek ways to reduce probability and impacts: note that may require multiple impact responses.
➢ Where probability is unsatisfactory consider responses to the event until certainty emerges.

> Where <u>impacts are unsatisfactory</u> consider taking <u>pro-active</u> <u>and</u> preparing <u>reactive</u> measures aimed at the consequences.

### 9.1.4.7.6.8   *What Is/ Is Not Cost Effective*

For low probability threats and high probability opportunities the questions of cost effective response may be "we could not make much change to probability and what we can make is not cost efficient so all we should look at are impact and proximity responses".

Likewise for low impact threats or high impact opportunities the answer is probably "not much change to impact that would be cost-effective! So look at changing probability (and proximity) instead."

Better Picture
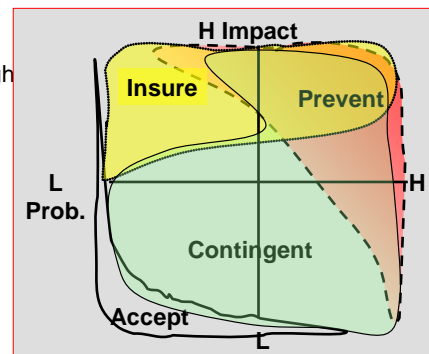
9.1.4.7.6.9   *Adequate Contingency*

For threats "no further action" often means "no more pro-active action". Prepared reactive impact responses (contingencies, "Plans-B & C") are standing ready (resourced and budgeted but unscheduled). The impact response is sufficient to mitigate the impact to below an acceptable level –EG I've purchased the umbrella – let it rain if it wants!

For an opportunity sufficient reactive militating actions are in place to be applied reactively.
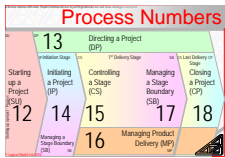
For some risks we take no pro-active action "We will cross that bridge if we come to it" [which relates to an old risk expression from the beginning of the industrial revolution but now no longer in use "cross an iron bridge and take your life in your hands"]

9.1.4.7.6.10   *Record Potential Responses in the Risk Register*

SOOP-112.   All possible risk responses that are identified are recorded to the risk register with their actions, costs and timescales and the affect that they would have on the risk's probability, impact and proximity. Selected responses, whether to enhance, or avoid or contingent must be copied (transferred) to the resourced schedule for risk <u>management</u>.
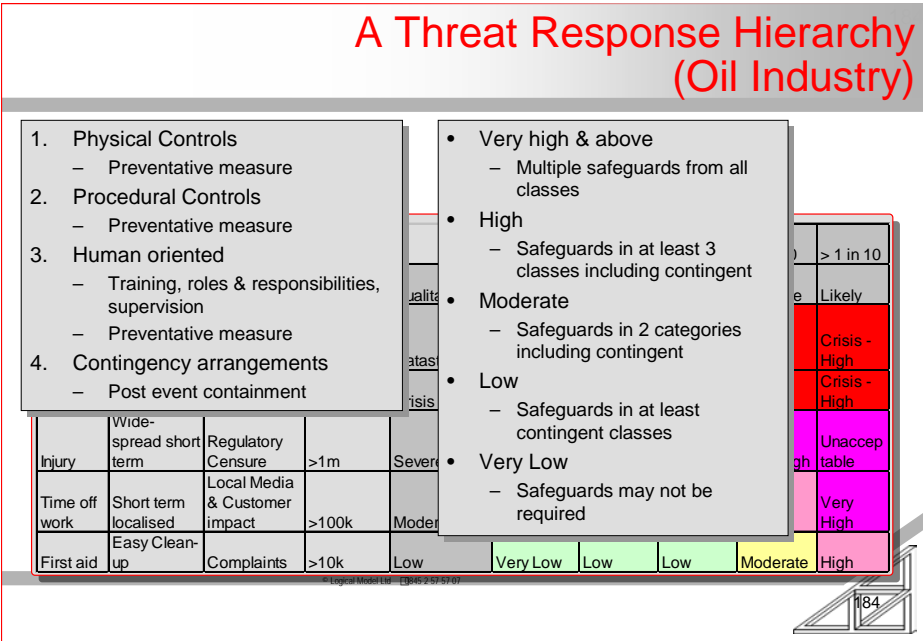
9.1.4.7.7   *Recap*

So far: a mandate arrived and team where appointed to start to consider "is this the best outcome to focus resources on (strategic uncertainty) and will these actions work to achieve it (tactical uncertainty)?

They recorded lots of "we could be late" and "the chief engineer may resign" risk fragments. Fragments are assembled and well described risks are recorded.

Risk thinking progresses to the next step: suggest responses and eventually the team have constructed **A25**-Risk Register entries that include possible responses for inclusion in fully resourced and costed schedules.

9.1.4.7.7.1   Forward View

Where we need to end up is with agreed risk responses to realise and encapsulate project advantages and eliminate or at least overcome potential set-backs.

9.1.4.7.8   Step Five: Select Responses

9.1.4.7.8.1   Selection of Responses Is An Authority Question

There is not enough time or energy to apply all responses to all risks so a selection mechanism is required. Response selection is identical to the project selection mechanism.

Response selection (which opportunities to pursue and how, which threats to address and how) constructs a series of "What-If" business cases and selects the actions that present the most attractive business case in the eyes of the decision maker – ultimately the sponsor or their delegated exec or delegated change authority, project assurance and project manager.

9.1.4.7.8.2   Response Selection Rests With The Portfolio Selection Group

If project selection belongs to the portfolio function of the enterprise then risk response selection with a project **A2-**Business Case tolerance threat belongs to them too.

The project board must respond when risks have stage level significance although the official manual suggests project risk sits with the project board. I would say only if it doesn't change the portfolio position of the project.

Authorisation of **A26-**Work Package risk responses may rests with the project manager and whoever the project manager wishes to involve.

9.1.4.7.8.3   Suggestion and Selection

SOOP-113.   Note that typically one layer of the organisation develops the risk responses and asks their superior layer to decide the balance of probability, active cost and benefit, reactive costs and benefit and inactive costs and benefits.

When we 'know how they will choose' then we have their 'risk appetite' defined: I suggest that is essentially never.

9.1.4.7.8.4   Assessment

For each C/C/C triplet we need at least three assessments (quantitative or just H/M/L) for comparison and then selection of responses:

➢ the untreated state,
➢ the response's own impact,
➢ the post treatment states possible.

Note: selected actions to change probability or prepare contingencies have a 100% probability of an impact - their own cost and time. Unused contingencies have a preparation cost but no execution cost (recall cost = all forms of 'effort').

9.1.4.7.8.5   Risk Response Consideration

SOOP-114.   *When considering the selection of responses to threat and opportunity the important insights is to benefit-cost-analyse all responses, whether response to cause or consequence, for the affect they have on all other risk's causes and consequences and the **A2**-Business Case as a whole.*

IE consider the effect of a response to say Risk-001's cause on the causes and consequences of Risks 002, 003 etc.
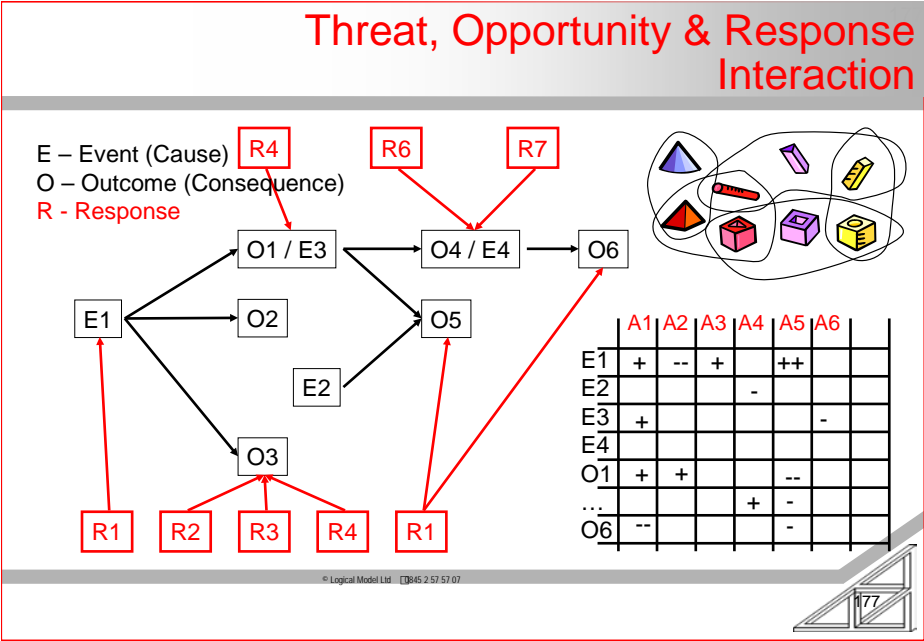
Not A1 but R1

9.1.4.7.8.6   Useful

Earlier I commented that the complexity of trying to deal with every cause and consequence when paired with every response becomes overwhelming: An "unmanageable black-hole in the midst of practical risk management".

Being able to identify; "this response affects (±) all these threat and opportunity fragments" is fantastically useful but only practical when the risk pool is small (under say 15 entries) and prohibitive when the pool is large (say 20 entries), yet the risk pool across even a modest project is typically in the hundreds.

9.1.4.7.8.7   Response Grouping

Response types give a way to segregate "All" into a number of sub-sets to make a comparison grid usable. Categories are useful when they are for response types. IE This risk is militated by a response of this type and this response affects all these risks.

Grouping by response type gives a means to segregate risks.

9.1.4.7.8.8   Segregation: Response Types and Authorities

The next or even first segmentation may be "whose authority is needed to decide the balance between pre-treatment seriousness and post-treatment seriousness?" or "what technical skills are needed?"

Response type and authority are often the first two segmentations. Then finer categorisation is done by each discipline's managing and delivering staff. Don't be surprised when a risk overlaps two segments EG Solution proposal is technical with a technical authorisation but also a financial authorisation is needed.

By the time finer criteria are applied pools of 15-20 risks are practical, but rarely perfectly isolated.

SOOP-115.   It is useful to group risks by the responses that would affect them. IE categorise the risks as changed for better or worse by the same response or response type. A wonderful response to risk one that makes risks 2 to 20 worse needs to be seen for its aggregate affect on the **A2-**Business Case.

SOOP-116.   A risk that sits in a group that cannot be reduced below 100 items also needs to be seen for what it is: complex.

9.1.4.7.8.9   Recalculate the **A2-**Business Case

For each response reassess the position of affected risks on the PIM in order to get a full view of the response's affect on the **A20-**Project Initiation Document { Objectives, **A2-**Business Case and **A16-**Project Plan } specifically.

If some combination of responses would cost effectively carry the risk over the threat or opportunity threshold line then responses to the cause should be added to "Plan–A" and responses to consequences added to "Plan-A" for preparation and "Plan-B" for execution. The risk is now in "monitoring but no further response required until certainty arrives" territory.

Either its probability has been/ will be changed sufficiently by execution of Plan-A or its potential impact has been/ will be changed by Plan-A or impact has been / will be militated by Plan-B or all the above.

The **A2-**Business Case's investment appraisal takes its costs data from the **A16-**Project Plan's time-phased resource consumption for the outward cash-flows.

9.1.4.7.8.10   Undertake Quantitative Analysis for the Outliers (only)

For intolerable threats and unmiss-able opportunities where the selection of responses is not obvious the impact (and less likely, but if possible the probability) may be worth the effort to be quantified.

Quantitative assessment means estimating. Quantitative assessment is generally expensive and lacks precision so shouldn't be embarked on prematurely or too broadly and is only worthwhile if conducted within proximity with response time to spare.

9.1.4.7.8.11   Schedule Risk

To be protection against threat of delay or contribute to early delivery only schedule risks that are related to the critical path of the **A26-**Work Package, **A16-**Stage Plan or **A16-**Project Plan are significant.

The critical path will change due to many factors including risks and the effect of responses. A threat of a schedule slip that is less than a task's float may be immaterial. (For discussion of Critical Path and Float See **X on Page Y**)

To protect the critical path it only makes sense to place schedule contingency (normally a buffer, but a project's schedule risks could all be opportunity driven acceleration!) between the best case delivery date and the promised delivery date. As threats mature the buffer will reduce in size while realisable opportunities will increase schedule buffer size or bring delivery-date closer to today. The major issue for most organisations is that acceleration is so alien to them they don't have the resource allocation mechanisms to cope with 'positive' slippage of dates.

PICTURE: Risk In The BaseLine

9.1.4.7.8.12   Cost and Other Impact Scales

In contrast to schedule only being significant for critical path and resource assignments all threats to cost overrun and all opportunity for savings will affect the project's financial 'bottom-line' directly.

Other impacts may be cumulative like cost or only significant in some contexts – like schedule. In matrix structured organisations running skills intensive projects the timing of tasks is often material without direct critical path impact due to resource bottlenecks.

9.1.4.7.9   Step Six: Add to the Baseline

*SOOP-117.   Good management of selected risk responses is simple (but seems rarer than it should be): take those responses that the team select to action and put them into **A26**-Work Packages in the **A16**-Stage Plan. Then manage the project as normal to the stage plan!*

Contingent actions "Plan B" do need a little more consideration than "Plan A".

9.1.4.7.9.1   Good Management Of The Identified Risks Is Rare and Simple

Having identified responses to threats and opportunities that we definitely want to take they are added to the **A16-**Project Plan and **A16-**Stage Plan.

In the 2005 guidance PRINCE2® was clearer, if not crystal clear about this simple "what next". 2009 [8.3.5.4 et seq] just doesn't say explicitly what to do. In fact there is so much risk management writing and education out there in general I find it surprising I don't see the explanation of the simple meaningful steps to MANAGE risk after its identification and analysis elsewhere.

9.1.4.7.9.2   Authorised, Allocated, Scheduled and Distributed Baseline

Add Graphic

When resources are assigned to a project for consumption by **A26-**Work Packages those resources are just 'authorised'. They are yet to be allocated, scheduled, distributed or spent.

Then funds are 'allocated' to a specific piece of work. At some point that work is scheduled and then later the work is started and then finished.

When the work is scheduled its authorised and allocated funds are now scheduled too.

When the work is started the authorised, allocated, scheduled funds are distributed aka 'committed' and then when the work is complete the funds have been partly spent or wholly spent or overspent.

9.1.4.7.9.3   "Plan-A"

For responses that are selected and aimed at changing probability of a risk or are preparation of contingent responses then the decision has been made in risk management to add them to the authorised, allocated baseline of project work. These risk response **A26-**Work Package elements are included in scheduled resources and budgets.
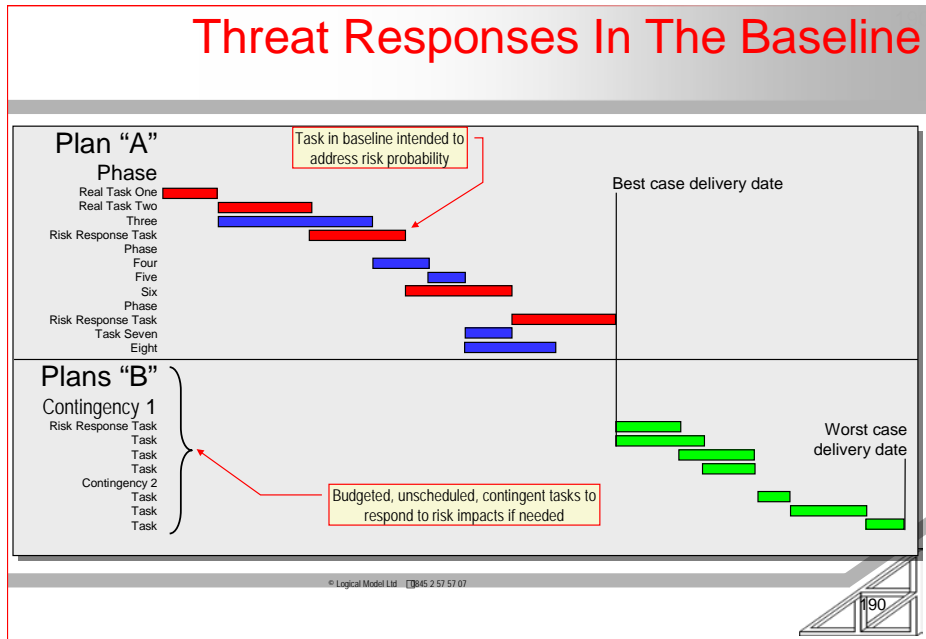
IE they are in the scheduled, authorised, allocated baseline and will be distributed as a natural part of "Plan A".

When the threat reduction or opportunity enhancement actions start then the risk response budget (skill, will, time, money etc) is distributed according to the **A16-**Stage Plan's normal schedule, results of the work is reported as normal via **A3-**Checkpoint Reports and managed as part of **[15.4.4** Review stage status].

9.1.4.7.9.4   Selected Contingent Risk Responses

For responses selected that are contingent upon the event their resource needs are also authorised and allocated by the risk response selection process although their execution will not be scheduled unless the linked event occurs.

Process Numbers

	13 Directing a Project (DP)		
Starting up a Project (SU) 12	Initiating a Project (IP) 14	Controlling a Stage (CS) 15	Managing a Stage Boundary (SB) 17	Closing a Project (CP) 18
	Managing a Stage Boundary (SB) 16	Managing Product Delivery (MP)	

Threat Responses In The Baseline

Plan "A" Phase — Real Task One, Real Task Two, Three, Risk Response Task, Phase Four, Five, Six, Phase, Risk Response Task, Task Seven, Eight

Task in baseline intended to address risk probability

Best case delivery date

Plans "B" Contingency 1 — Risk Response Task, Task, Task, Task, Contingency 2, Task, Task, Task

Budgeted, unscheduled, contingent tasks to respond to risk impacts if needed

Worst case delivery date

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190

### 9.1.4.7.9.5   Allocated to a **A26-**Work Package (or Stage)

When the resources are linked to a specific as yet unscheduled **A26-**Work Packages in "Plan-B" as a contingent risk response then the resources are just allocated. Expenditure on reactive risk responses is contingent upon the uncertain event occurring.

The resources allocated to **A26-**Work Packages in 'Plan-B' are pre-authorised by the most recent **[15.4.1** Authorise a Work Package] or **[13.4.3** Authorise a Stage or Exception Plan] for expenditure but only IF the triggering event occurs.

If the risk never happens the **A26-**Work Package is never triggered. Then the resources must be returned to the authority allocating it.

9.1.4.7.9.6   Include Responses In The Base-Line

Risks causes that do occur and have linked contingencies result in their responses being scheduled 'now' and subsequent project **A26-**Work Packages are re-scheduled.
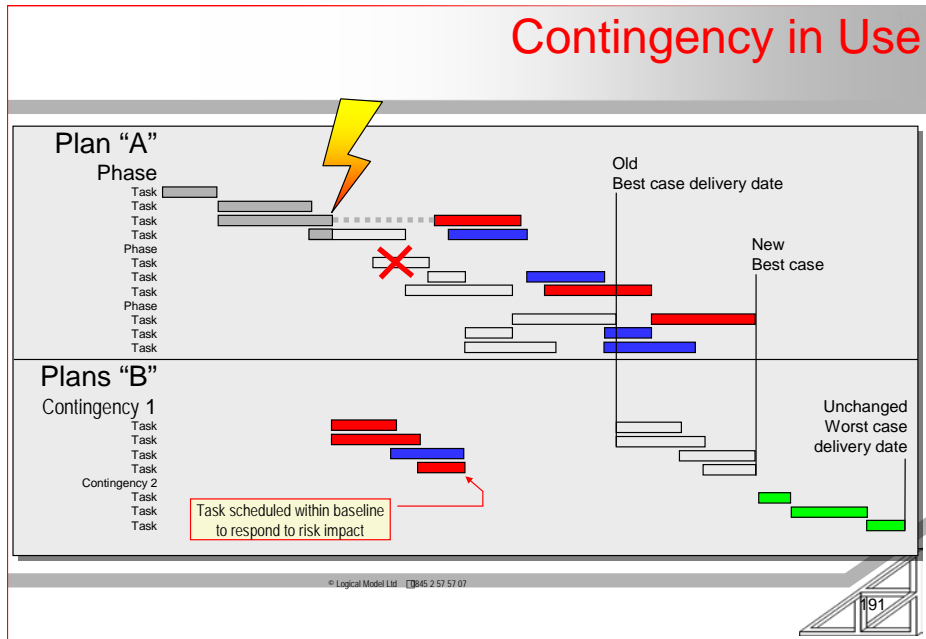
Plan 'B' may be triggered for **[15.4.8** Taking corrective action] whether we are in the Initiation Stage or an Enabling (Delivery) Stage [or a benefits realisation stage].

Responsibility for all work-packages is assigned to members of the project team by the planning activities within processes Starting up a Project (SU), Initiating a Project (IP), Managing Product Delivery (MP) and Managing a Stage Boundary (SB) and placed into the plan's baseline.

Those work-packages that are aimed at changing the consequence's impact are included in "Plan-B" for their deployment. Their preparation before their need is 100% certain is scheduled within "Plan-A".
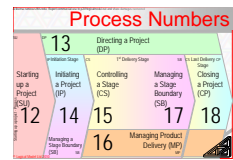
9.1.4.7.9.7   Plan 'B' is Budgeted but not Scheduled

The key factor for a "Plan-B" is we don't know its execution dates until the events it is contingent upon become inevitable.

Contingencies are applied after the event but are authorised before it. They are not committed within 'plan B'". These work-packages will not be scheduled until and unless the state change occurs.

9.1.4.7.9.8   Maintenance Of The **A25-**Risk Register

Risk response actions selected and included in Plan-A or Plan-B should be marked as risk-responses in the risk register and their **A26-**Work Package.

My strong advice is DO NOT seek to manage risk responses from the **A25-**Risk Register and product development from the **A16-**Stage Plan. It is hard enough to be in control without managing from multiple "to-do" lists. Don't do it!

*SOOP-118.   Manage activity (whatever its deliverable) from the **A16-**Plan (Project) (Stage) (Team).*

As responses are selected create, resource and schedule the relevant **A26-**Work Packages (or elements of) in the **A16-**Stage Plan and **A16-**Project Plan. Replicating the risk actionee information from the stage plan to the risk register is an administrative duplication. Do it if it adds value but not out of bureaucratic rote.

9.1.4.7.10 Step Six: Take Action

Simple that : take action. Monitor and track the **A26-**Work Package's resource use back into the **A16-**Stage Plan.

*SOOP-119.   A risk-response **A26-**Work Package's <u>deliverable</u> is an altered risk profile. Key to <u>Risk Management</u> is monitor the **A26-**Work Package's <u>RESULTS</u> back into the **A25-**Risk Register to chart the risk's improving position: sweetening opportunity and receding threat. On the basis of the new, current status re-perform the prioritisation and response selection steps. Stop actions that have achieved the desired alterations, initiate alternate action where the response isn't working satisfactorily.*

The PIM is an excellent tool for showing a risks position over time. As its splodge narrows to a dot shows increasing precision in its assessment and its relation to our threshold lines and probability and impact axis shows the nature of appropriate next steps, if any.

9.1.4.7.11 Step Seven. Reassess The Probability, Impact, Proximity And Possible Responses Of Known Concerns.
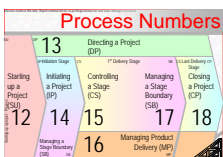
Periodically ask the questions: "are there any new risks?" While for every open risk ask "is this risk currently of interest?" For new risks return to step two above. If there are no new risks step one is a good place to routinely revisit.

9.1.4.7.11.1   Re-calculate Each Risk's Profile

Which ever stage the project is in regularly reconsider the risks on the **A25-**Risk Register versus the board's risk appetite <u>as it stands today</u> and as guided by **[15.4.4** Reviewing stage status**]** and in stage planning when the project management team **[17.4.1** Plan the next stage**]**.

"Yesterday's" acceptable threat is often today's intolerable emergency without the threat itself changing other than as perceived by stakeholders.

The possible outcomes of consideration are:

9.1.4.7.11.2   Cause has Happened, Consequence In Progress

When the cause has happened the consequence may be inevitably on its way or have arrived (we will deal with it being past below).

In this case we deploy any Plan-Bs to harvest windfalls or soften negative impacts. Use of Plan-Bs should be based on 'today's re-consideration' of what defines them as cost-beneficial.

Now is also the time to (re-) consider any or all other potential responses. Threat wise this is 'the cold light of day' and attitudes to cost of action may have been changed by the realisation that something is now inevitable (±).

Note: It is NOT wrong to treat appropriate risks with a "cross that bridge if we come to it" attitude although in this case it is wise to be aware of the time-frame from event to impact and the time-frame of desirable responses.

The entry on the register can now be closed as a risk, not deleted. It is no longer a risk. It may now be an 'issue' (±) or a non-event. Any Plan-B response should now be within the scheduled Plan-A baseline. If useful an entry can be made on the **A12-**Issue Register [although later I shall explain a suggestion to tailor the **A12-**Issue Register and **A25-**Risk Register to be one register]

9.1.4.7.11.3   State Has Arrived: Consequences Dissipated

If the risk event-horizon is now in the past without continuing impact of interest: release all (remaining?) contingent resources.

Release means transfer the budget back to the sponsor. Reduce the size of factored EMV pools by the factored value of the resources that were harvesting or protecting or repairing. Release other contingencies perhaps by positively slipping (left shifting) all future task and resource dates.

Standing down the Plan-Bs is also called 'Risk-retirement' although this is arguably a threat centric label.
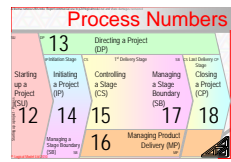
Archive the Plan-Bs for future re-use and lessons learned. If not already done then close the **A25-**Risk Register entry.

9.1.4.7.11.4   State Still In the Future: Consequences Over A Threshold

If the risk is open (Event horizon still in the future) and consequences are strong enough to motivate responses. Define and action any of the response types discussed so far.

If responses are being taken and the risk's profile is not improving, IE if threats are not receding and opportunities not sweetening then consider if responses are sufficient or need enhancing or replacing in **[15.4.8** Taking corrective actions**]** or **[15.4.7** Escalate issues & risks**]**.

Alternate possible actions should have been recorded in the risk register during the identify responses step. New candidate responses can be identified and considered at any time and should be recorded.

9.1.4.7.11.5   The State Is Still In The Future And Consequences Are Under a Threshold

➢ If the risk is still a potential event and adequate responses have been taken (plan-A) or are ready (Plan-B). Monitor and stand ready to schedule Plan-B.

9.1.4.7.12 Step Eight: Risk closure.

There are three circumstances that lead to "closure" at least as far as the project is concerned and we have seen two above: the event happens or it becomes impossible or irrelevant.

If the risk is open when Closing a Project (CP) at the end of the last stage then in PRINCE2® speak the risk is *transferred* to the benefits management team who come after the project.

Transfer is via a Follow-on-Action-Recommendation (FoAR) in the **A8**-End Project Report. The FoAR is provided so that the benefits harvesters are not left unaware of a potential threat or opportunity.

The **A25**-Risk Register should be updated to reflect status of the risk and provide input to future risk checklists and lessons learned.

9.1.4.7.13 Step Nine: Close the Risk Register.

When Closing a Project (CP) using guidance on how to **[18.4.5** Recommend project closure**]** the project manager closes the **A25**-Risk Register and asks the project board when they **[13.4.5** Authorize project closure**]** to pass the **A25**-Risk Register to BAU staff, project office functions and other project folk starting new projects and looking for Lessons observed or inspiration for identification of causes and consequences.

9.1.4.7.14 25.Risk Reporting

When creating budgets and schedules that include risk provision it is necessary to show the affect of threat and opportunity in cash-flow and schedule formats. PRINCE2® and other general project management guidance such as the PMBOK® Guide and APM's Pathways and even the specialist 'best-practice' of MoR® falls short of best-practice guidance on suitable reporting formats and control mechanisms.

9.1.4.7.14.1   Showing Risk In Reports

The status of uncertainties within the project is recorded in many management products such as the project mandate, the **A19**-Project Brief and its components such as the project approach, the **A1**-Benefits Review Plan, the **A2**-Business Case, the **A20**-Project Initiation Document, the **A9**-End Stage Reports and **A8**-End Project Report.

Routinely the team member/ manager includes an overview of risk as seen by their team in the **A3**-Checkpoint Report produced regularly while they **[16.4.2** Execute a Work Package**].** The **A3**-Checkpoint Reports are consolidated for and

considered by the project manager in **[15.4.2** Review Work Package status**]** and **[15.4.4 Review stage status]**. The project manager routinely includes the uncertainty situation when they **[15.4.5** Report highlights]** via periodic **A11-**Highlight Reports.

9.1.4.7.14.2   Threat Contingency Retirement Curve

Reporting of risk budgets starts at **A26-**Work Package level and aggregates via stage and project level.

To report the risk status start with work in the scheduled Plan-A baseline plus Plan-B. In total 100% of the risk provision. By the end of the stage/ work-package or project the 100% is reported as either spent on risks that matured or un-spent and thus "retired". Note that the "100%" allowed at the start may have been exceeded. When we discuss estimating we will consider the appropriate size of allocations to the baseline including provision for uncertainty.

Retiring Contingency
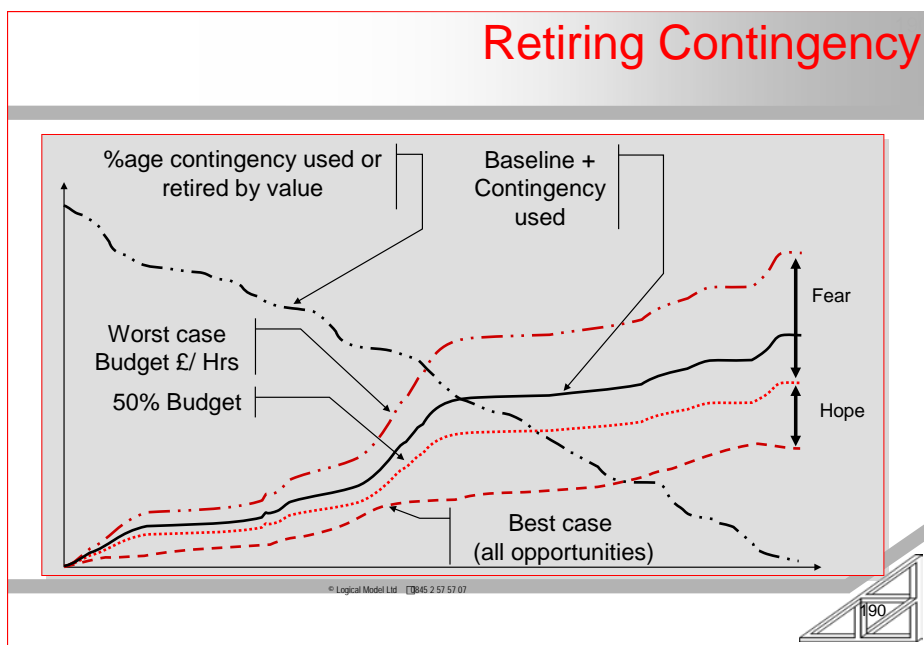
Say more?

9.1.4.8 Risk Recap & Concerns

9.1.4.8.1.1   What We Have Covered

The key elements of the preparation of the **A24-**Risk Management Strategy are:

➢ Establish the culture and define the scales while creating the **A21-**Project Product Description.

➢ Record every risk fragments such as "we may be late" or "the chief designer may quit". For every fragment assemble well defined triplets: "TIART we may be late and may be able to get a better designer because the chief engineer quits, or breaks their leg or is stolen by project omega resulting in us being able to hire someone we want to work on the project!"

➢ For every cause and consequence assess the possible responses and the timings off all. Build selected responses into Plan-A and Plan-B. Execute the project as usual to Plan-A until Plan-B is needed.

➢ Change any response that isn't cost effective

➢ Report status, hand unused contingency back to the sponsor.

9.1.4.8.2   Official Manual's Errors

The official manual contains a startling and unsupportable glossary entry for contingency [p 304] and even worse assertion about tolerance on [p 140].

9.1.4.8.2.1   Contingency From The Glossary

Quote [p306] "Contingency: Something that is held in reserve typically to handle time and cost variances, or risks. PRINCE2 does not advocate the use of contingency because estimating variances are managed by setting tolerances, and risks are managed through appropriate risk responses (including the fallback response that is contingent on the risk occurring)" (sic)

Thus BY DEFINITION the fallback is a CONTINGENCY.

As an alternative definition [not to be used in the exam]

SOOP-120.   *"a contingency is specifically allocated to a pre-defined uncertain state. It is a pre-authorised, auditable provision for a known unknown" Contingency comprises those resource elements (skill, will, time etc) set aside for known unknowns whether impacts are positive or negative. It isn't just an unjustified and un auditable 'bit of extra'.*

Perhaps what they wanted to say was "don't include un-auditable provisions" which would be good advice.

So in fact the official manual explicitly advocates contingency but re-names it "fallback" thus exposing its threat only thinking. It gets worse though when we see the total contradictory stance on tolerance.

9.1.4.8.2.2   Tolerances in *[13.4.3 Authorise a Stage or Exception Plan]*

"[The project board] Set tolerances for the plan being approved (for the final stage, the Project Board should consider whether any residual tolerances from the previous stages could be assigned to the plan or whether they are better held back in reserve)."

SOOP-121.   *The size of all contingencies whether called tolerance or fall-back or something else must be auditably based on some estimating basis. Thus if a*

contingency/ tolerance is not used in the context of the event or estimate that it was linked to then its future expenditure on something else is unauthorised.

Unused tolerance/ contingency doesn't belong to the project manager or the project board – it belongs to the equity holders and must be given back to who-ever allocated it or reallocated via change control.

9.1.4.8.2.3   Slush and Fudge

The suggestion at 13.4.3 contradicts the 'swipe' at contingency given in its definition in the glossary, contradicts good practice, is ignorant and outrageous.

The inclusion of 'slush' and fudge factors in project quantities is a major factor undermining project management's ability to deliver as promised. We will discuss why and consider the appropriate size for tolerances and other contingencies in estimating. *See X on Y*

9.1.4.8.2.4   Wow! Oh So Wrong In So many Ways!

Finally it is sad that the thinking is misleading on so many levels that they cannot even begin to address the issue that every project needs provision for unknown unknowns.

If definitions and thinking are so off-the-mark then guidance on 'reserves' – allowances held at project board or CoPM to cover "force majure" is going to be non-existent. We covered reserves above at *9.1.4.4.4 "Vocabulary of Risk Responses" Page 9.1.4:- 217 -*.

9.1.5 [14.4.2 Prepare the Configuration Management Strategy]

In parallel with the creation of the risk and quality strategies the project management team **[14.4.2** Prepare the Configuration Management Strategy**].** The **A6-**Configuration Management Strategy defines how the project's products whether management products or specialist products will be shepherded through their life-span as covered by the project and beyond.

To give perspective this chunk is a third of the size of risk, just as important, but not so project board intensive and not as taxing.

A6-Configuration Management Strategy, A12-Issue Register, Change Authority & Change Budget, A10-Exception Report SU/ SB/ CP/ DP5

CH-08 P:2   In which process(es) issues are captured and managed, and which roles are responsible

CoPM

12.4.1 Appoint the Executive and the Project Manager

Project Board

13.4.5 Authorize project closure
1. Board seek confirmation that product handed-overs during the stage just closing and the project as a whole followed the A6-CfMS – specially for Ops & Maint

Project manager

1. PM creates A7-Daily Log for issue capture in SU & through-out the project records 'informal issues' and reminders on formal issues

12.4.2 Capture
1. previous lessons
   PM Captures relevant lessons

12.4.6 Plan the initiation stage
1. PM considers how Initiation Stage will control management products prior to establishing configuration management

17.4.1 Plan the next stage
1. PM reviews the A12-IR for issues affecting the next A16-StgPlan
2. PM updates A12-IR with new issues and changes

17.4.2 Update the Project Plan
1. PM updates A12-IR with new issues and changes

17.4.3 Update the Business Case
1. PM reflects issues in A2-BC update
2. PM updates A12-IR with new issues and changes

17.4.4 Report Stage End
1. PM assesses the A12-IR for issues marked for assessment at stage end [17.4.1 p196 bp9]
2. PM summarises issue status in A9-ESRpt including Off-specs: product or features missing & Concessions

17.4.5 Produce an Exception Plan
1. PM updates A12-IR (& A13-Issue Report) with board request for an Exception Plan
2. PM updates A12-IR with new issues & changes

18.4.2 Prepare premature closure
1. PM updates A12-IR (& A13-Issue Report) with board request for an Exception Plan

18.4.3 Hand over Products
1. PM checks product handovers into Operations (Ops) & Maintenance (Maint.) as per A6-CfMS
2. PM ensure suitable Ops & Maint. environment and service level agreements in place [should be SU/SS]
3. PM transfers responsibility for products to Ops & Maint. And secures acceptances [should be SU/SS/ Exec]
4. PM prepares Follow-On-Action-Recommendations base on open Issues & concessions
5. PS updates CIRs [should be handed over to Maint!]

18.4.4 Evaluate the Project
1. PM compiles a review of useful measures EG statistics on project issue management
2. PM summarises issue status in A8-EPJRpt including Off-specs: product or features missing & off-spec.

18.4.5 Recommend project closure
1. PM archives project records according to A6-CfMS
2. PM confirms all issues are closed or included in FOAR, then closes the A12-IR

Team Manager

49

18

Last Delivery or Stage
Closing a Project (CP)

A6-Configuration Management Strategy, A12-Issue Register, Change Authority & Change Budget, A10-Exception Report IP/ DP2 & DP3

CH-08 P:2   In which process(es) issues are captured and managed, and which roles are responsible

CoPM

Project Board

13.4.2 Authorize the project
1. Board approve the A6-CfMS as adequate
2. Board agree CA's authority limits

13.4.3 Authorize a Stage or Exception Plan
1. Board seek confirmation that product handed-overs during the stage just closing followed the A6-CfMS

Project manager

14.4.2 Prepare the Configuration Management Strategy (A6-CfMS)
1. PM/ PS perform Configuration Management Planning. IE they define procedures & roles, timings, records (EG A5-Configuration Item Record) & reporting (EG A18-Product Status Account) content & format, responsibility/ authority to decide actions for maintaining baselines (Configuration Management (CM)) and assessing impacts to baselines (Issue & Change Control (iCC)) In alignment with CoPM standards in the A6-Configuration Management Strategy (A6-CfMS)
2. PM/ PS consider if all Registers, Records and Logs are within one integrated repository/file/ database [excel spreadsheetl]
3. Exec sets priority & severity scales* (p97)
4. Exec decides if they wish to delegate some discretion to a Change Authority (C8-CA), and if so the level of individual and aggregate impact under the CA's control. CA may address Requests for Change (RFC) and Off-Specifications (OS). Often Project assurance form a change board with stage level authority and the PM acts as CA for A26-WkPkg
5. PM/ PS select Configuration Management tools to be used
6. PS establishes the A5-Configuration Item Records and creates initial set of A5-CIRs (for the A21-Project Product Description and management products such as A2-Business Casel)
7. Exec decides if a change budget (Money [and time]) should be allocated to fund Impact Analysis of Request For Change (RFCs) & implementation of RFCs and if so how much any CA has discretion over (EG per change & per stage in aggregate)
8. PM integrates change procedure's release of change budget with contract and procurement procedures
9. PS create the A12-Issue Register & populates from existing issues in A7-DL 'needing formal treatment'
10. PM seeks board approval or defers to 13.4.2 with the A20-PID

Plan Delivery Stage

14.4.3 Prepare the Quality Management Strategy A22-QMS
1. PM considers issues affecting the A22-QMS, PS logs new issues to A12-IR

14.4.4 Prepare the Communication Management Strategy (A4-CmMS)
1. PM establishes the information & communication needs for CM including issue management
2. PM considers issues affecting the A22-CmMS, PS logs new issues to A12-IR

14.4.5 Set up the project controls
1. PM establishes controls appropriate to A6-CfMS
2. PM considers issues affecting controls, PS logs new issues to A12-IR

14.4.6 Create the Project Plan
1. PM includes a26-WkPkgs in A16-PjPlan appropriate for scheduling and budgeting CM activity
2. PM considers issues affecting planning, PS logs new issues to A12-IR

14.4.7 Refine the Business Case
1. PM considers & includes issues affecting the A2-BC

14.4.8 Assemble the Project Initiation Documentation
1. PM includes A6-CfMS Into the A20-PID
   (A20-PID acts as baseline for all Impact Assessment of Issues)

Team Manager

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50

A6-Configuration Management Strategy, A12-Issue Register, Change Authority & Change Budget, A10-Exception Report DP2 &3/ CS & MP/ DP4

CH-08 P:2   In which process(es) issues are captured and managed, and which roles are responsible

CoPM

Project Board

13.4.2 Authorize the project
1. Board approve the A6-CfMS as adequate
2. Board agree CA's authority limits

13.4.3 Authorize a Stage or Exception Plan
1. Board seek confirmation that product handed-overs during the stage just closing followed the A6-CfMS

13.4.4 Give ad hoc direction
1. CoPM/ ESuSS Raise an Issue
2. Board may ask for an Issue or Exception Report to clarify PM's request for guidance or A11-Highlight Report
3. Board respond to A13-Issue Report as necessary by seeking input from CoPM, asking for an Exception Plan (via 17.4.5), a corrective action (via 15.4.8), amending tolerances (update A16-StagePlan). Grant a concession to or demand remedy of an Off-Spec. Defer, Approve (as corrective action/tolerance change). Reject or ask for an Exception Plan for an RFC

Project manager

15.4.6 Capture and examine issues and risks
1. PM follows issue handling & reporting procedure as defined in A6-CfMS & A4-CmMS to report issue status to stakeholders
2. Anyone at anytime: raise a new issue (concern) about anything
3. PM (Issue author?) record concern on A12-IR in accord with A6CfMS [official manual say may be to A7-Daily Log if PM resolves directly]
4. PM categorises as: Problem, Concern, Request for Change (RFC) or Off-Spec (OS) – Transfer concerns discovered to be risks to A15-RR
5. PM (team) use scales from A6-CfMS to assess Priority (of RFC & OS) & Severity (Impact) on all plans, A2-BC and Tolerances
6. PM creates an Issue Report [Simon says A12-IR & A4-CmMS should be defined as sufficient']
7. PM (team) identify possible responses, log to A12-IR and assess vs. tolerances
8. PM may escalate a Tolerance threat via 15.4.7 otherwise (as-well?)
9. PM (team) select responses in tolerance and add to A16-StgPlan
10. PS cross reference Issue to affected products' A5-CIRs

15.4.7 Escalate issues & risks
1. PM when triggered by a Tolerance threat or breach: snap-shot full project status
2. PM (team) assess deviation's impact on baseline and impact of each possible response
3. PM records assessment & recommendation in an A10-Exception Report & sends to the board [13.4.4] with request for direction
4. PM updates A12-Issue Register/ A13-Issue Report for decision

15.4.5 Report highlights
1. PM assess & report on contents of A12-Issue Register & corrective actions in period

15.4.8 Take corrective action
1. Board or 15.4.4 or TM trigger action
2. PM collects information on "deviation" (concern) from Records, Reports, Logs & Registers (RRL&R), selects or devises responses and triggers via 15.4.1 and updates RRL&R EG A5-CIR
3. PM changes A17-PD for Off-Specs granted a concession

15.4.4 Review stage status
1. PM checks A12-IR & acts on all affects on A2-BC & all plans
2. PM raises any new issues

15.4.1 Authorize a Work Package
1. PM/ TM agree process & people for any product handovers as per A6-CfMS [possibly amended]
2. PM/TM Agree process for TM to raise A26-WkPkg issues
3. PM considers issues affecting the A26-WkPkg, PM logs new issues to A12-IR

15.4.2 Review Work Package status
1. PM raises any new issues

Team Manager

16.4.1 Accept a Work Package
1. TM confirms procedure to handle issues

16.4.2 Execute a Work Package
1. TM includes notes on issues in A3-Checkpoint Report

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9.1.5.1.1.1 *Configuration Management is Crucial*

> *SOOP-122.   Project Configuration Management (CM) is record keeping. It applies to ALL products: physical and intellectual, project management or specialist.*

Configuration management is important because: 1) it is the project's *stock-control* - ensuring we don't lose what the project creates and 2) When combined with quality control configuration management is the heart of the project manager's ability to track progress.

Configuration management is the cross-over between product based planning, quality, progress tracking and responding to concerns such as variance against plan.

➢ Product based ~~planning~~ scoping defines the products to be created, their development life-cycles and their specification in acceptance terms.

   The Product Breakdown Structure (PBS) identifies what needs to be controlled. Some controlled items are made-up of other controlled items. All go through their own development life-cycle and the results from quality reviews demonstrate (or not) the evolving maturity of the project's products.

➢ Quality control that confirms products are conformant to specification

   Quality planning during product based ~~planning~~ scoping defines the tests that prove acceptance criteria have been demonstrated, quality control conducts quality reviews that confirm demonstration (or not).

   Configuration management records the facts for aggregation and reporting and stores the products proved to be maturing. You CANNOT do any meaningful progress reporting without a solid CM capability.

➢ Progress tracking

   Tracking aggregates, reports and consolidates achievement confirmed by configuration management and quality control into the baseline to expose variances versus plan. Tracking is 100% about assessing a product's journey towards 'met all acceptance criteria'.

   That journey is its 'evolving maturity'. Progress tracking does not measure hours spent. Cost is irrelevant to progress monitoring until achievement can be proved.

➢ Analysis of impacts when assessing variance from baseline

   Variances may be historic IE have happened (often reported via **A3-**Checkpoint Reports) or future desired change noted via Requests For Change (RFCs)).

9.1.5.1.1.2 **A5-***Configuration Item Record Product Description*

The **A5-**Configuration Item Records (CIRs) are the heart of CM. The definition contains some forward references. If you unfamiliar with CM then reread this definition after covering the principles and steps.

The **A5-**Configuration Item Record could be defined as {.

➢ CI's unique Identifier

Often considerations like CI reuse and through life support affect how the identifier is constructed.

A simplistic ID is project-code, Product-id (from the relevant **A17-**Product Description) CI-code (eg its name or an abbreviation), version number (which often has a form #.#.#.# to support sophisticated schemes for branched, parallel development streams. Version-numbers of the #.#.#.# format also supports variants or parallel valid live versions of an item: eg this text as a first edition of these materials in English and Chinese).

➢ The steps in the product's lifecycle and for each step {

- Who or what skills build it & verify it
- Which product and process standards apply to product and development processes – a reference to standards in the quality management system
- Who receives it (or for documents receive copies) when completing this step, and how it is delivered

Recording the product's lifecycle, the standards applicable to each step and the participants involved across the life-cycle is best done by reference to other documents when possible IE the product's Product Description.

The life-cycle that overlaps the project will be embodied in the **A26-**Work Packages and **A16-**Stage Plan and **A16-**Project Plan. The **A5-**Configuration Item Record's should match the configuration item's life-cycle not just the project phase of the investment.

}

➢ The evolving history of which step was development in and when

IE Status changes with: who moved it (forward – test passed or backward – test failed) on what evidence.

➢ Which CIs is this CI made-up from (hopefully by reference to the Product Breakdown Structure (PBS), but now another complexity - a CI such as a "release" is a collection of CIs at some maturity level eg a "beta release" for client testing (explained below).

➢ Storage location: physical or logical.

➢ Cross reference to other project records that relate to this CI and the nature of the link. Linked items will be other **A5-**Configuration Item Records, project issues (especially Requests for Change and Off-Specifications) and risks.

}.

A5-Configuration Item Record, A18-Product Status Account

The activities & roles involved in maintaining A5-Configuration Item Record and A18-Product Status Accounts

CoPM

12.4.1 Appoint the Executive and the Project Manager
COPM
1.

Project Board

Project manager

12.4.2 Capture previous lessons
PM Captures relevant lessons
1.

12.4.4 Prepare the outline Business Case
PM/ Exec/ SU define A21-Project Product Description: Specialist Products are **outputs** that deliver the **measurable benefits** that justify the project
1.
2. PM/ PA note need for A5-CIRs for products in A21-PjPdD's "composition & derivation"

12.4.6 Plan the initiation stage
PM/ PS note need for A5-CIR for management products
1.

14.4.2 Configuration Management Strategy
PM/ PS define process, selection criteria and formats of A18-Product Status Account (PSA) that snapshots A5-Configuration Item Records. A18-PSA may select by Date/ Team/ Stage & status EG Not started, Work-In-Progress (WIP) late & WIP on schedule, Ready for review, Baselined, Released etc
1.
2. PM/ PS define A5-Configuration Item Record attributes for required A18-PSA selections
3. PS create initial A5-CIR for management products [and A21-Project Product Description and all known component parts (may be notes in A7-Daily Log for a small project)

14.4.6 Create the Project Plan
PS create/ update A5-CIR (& A17-PD) for all products in project Product Breakdown Structure (PBS)
1.

Plan Delivery Stage

15.4.6 Capture and examine issues and risks
PM uses A18-PSA to analyse product status (derived from A5-CIR)
1.

15.4.5 Report highlights
PM uses a18-PSA for details of products to include in A11-Highlight Report
1.

15.4.4 Review stage status
PM requests a A18-PSA from PS to snap-shot A5-Configuration Item Records and assess variance to A16-StgPlan
1.
2. PM requests A18-PSA for any releases to check all OK
3. PM requests PS perform a Configuration Audit to check all A5-CIRs match reality (or change reality☺)

15.4.1 Authorize a Work Package
PS update A5-CIR (& A17-PD) for any products in A26-WkPkg PBS as useful EG set status = "WIP"
1.

15.4.2 Review Work Package status
PS check A5-CIR & reality agree - update A5-CIR as useful
1.

15.4.8 Take corrective action
PM collect data on deviations form A5-CIR (& A12, A15, A13, A10, A7 & Board)
1.
2. PS update affected A5-CIR

15.4.3 Receive completed Work Packages
PS confirm all A5-CIR in release are approved by the authority in A17-PD
1.

17.4.1 Plan the next stage
PM [(sic)?] create/ update A5-CIR (& A17-PD) for all products in stage PBS (inc A16-PjPlan changes)
1.

17.4.4 Report Stage End (A8-SER)
PM request A18-PSA for details to include in A8-SER
1.

17.4.5 Produce an Exception Plan
PS (sic) create/ update A5-CIR (& A17-PD) for all products in exception's scope (Scope determined in 15.4.6 by A18-PSA)
1.

18.4.1 Prepare planned closure
PM uses PSA to check all A5-CIR approved by authority in their A17-PD or have a concession
1.

18.4.2 Prepare premature closure
PM uses PSA to see which A5-CIR approved by authority in their A17-PD, have a concession, are WIP or Not started
1.
2. PM plans work to salvage & pass-on or make safe A5-CIRs as required

18.4.3 Hand over Products
PS update A5-CIR for products transferred to operations [& should transfer the actual CI records tool]
1.

Team Manager

16.4.2 Execute a Work Package
TM & PS update A5-CIR status (eg WIP/ Ready for Review/ Released)
1.

16.4.3 Deliver a Work Package
[TM & PS check status OK in A5-CIR for all CIs to close the A26-WkPkg]
1.

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9.1.5.1.2   Define CM for a business not a project

I'd like to say "no organisation that has ever ended a project (successfully or otherwise) could lack an existing CM strategy". There must already have been a CM capability created during the embedding of PRINCE2® or the first project must have created one. But I'm sure I'd be wrong to say it: so I'll say "an organisation should only ever write a CM strategy once for any business unit".

Previous guidance usefully gave the term 'product life-span' to make the distinction over project life-cycle explicit.

CM covers a **product's** entire life-span so you should define the CM strategy for a business and then enforce its use by projects delivering into that business-as-usual area.

9.1.5.1.2.1   Existing CM or New CM

The fact that projects are temporary 'clashes' with the fact that CM is permanent. Some project products endure beyond the project (some such as progress reports may not persist). PRINCE2®'s description of configuration management covers the supplier side view of CM.

Where CM pre-exists the project the **A6-**Configuration Management Strategy must make clear how the CM records for the project's products will be transferred into business-as-usual operations and support. Where CM capabilities do not pre-exist the project then the **A6-**Configuration Management Strategy must explain the set-up and end-of-product-development hand-off of the configuration management arrangements to maintenance staff alongside the handover of products to operational users.

Note: Timing of the handover of the first and last product may not be at the same time IE a period of transition may exist.

9.1.5.1.2.2   27.PRINCE2® includes Configuration Management in "Change"

As of 2009 PRINCE2® says Change Management includes Configuration Management. Most (all?) authorities describe it the other way around. Unfortunately this isn't the end of PRINCE2®'s difficulties with change control.

I guess some well intentioned process modelling followed from the insight that changes may be any of:

➢ anticipated or discovered,
➢ discretionary or unavoidable and
➢ customer or supplier led.

The combinations make this a difficult corner of project management to get right and PRINCE2® 2009 guidance has several debatable suggestions. Handling configuration management well is a big enough challenge that in this section we need to focus on it alone. We will focus on creating a good approach to Change Management later (***SEE X on page Y***).

9.1.5.2 Principles

We have a few foundations to explore. They are simple when compared to risk's: 1) What is "a configuration"? 2) What is a Configuration Item? 3) What is Configuration Management? Or "How does a project *manage* a configuration?

9.1.5.2.1 A Configuration

SOOP-123.   A configuration is a collection of "relevant stuff". A project's configuration is everything the project creates, acquires or amends*. The whole Product Breakdown Structure (PBS) of specialist and management products that together totally resolve the project's objective within constraints. The configuration includes all specialist results, all controls and all management products.*

In a project to build a New Head-Office the specialist products will encompass the front-door key, the architect's drawings, every light-switch the electrician installs and everything in between.

On the project management side management products are everything from **A1-**Benefits Review Plan through to all the **A26-**Work Packages required, plus all locally defined project management products.

9.1.5.2.1.1 Tracking the Configuration

Configuration management tracks ALL pre-requisite project inputs and all outputs whether specialist or project management, digital or physical through their lifespan.

It provides safe storage for the project's developing, preliminary and finished products. Where products exist in multiple revisions, whether revision is a response to flaws found in quality review or changes of mind by stakeholders configuration management provides version control.

Version control is the mechanism that stores and tracks what exists because of authorisations granted (or not) in Change management.

9.1.5.2.1.2 CM Starts Immediately

Configuration management starts as soon as the project has assets to protect. The archiving of the project mandate and the recording of the exec and project manager's role descriptions are probably the first management assets to safeguard.

9.1.5.2.1.3 Storage Areas.

Configuration management must acquire access to (or create) storage areas if the project's products and sub products are to be stored safely. At the latest storage areas are created when the **A6-**Configuration Management Strategy is created as part of work to **[14.4.2** Prepare the Configuration Management Strategy**]**.

9.1.5.2.1.4   Record Keeping

As soon as management or specialist products are identified their future existence is logged in the collection or 'database' of **A5**-Configuration Item Records. **A5**-Configuration Item Records are updated whenever work starts on a product, the product is ready for review or work on a product is completed.

9.1.5.2.1.5   Reporting

As soon **A5**-Configuration Item Records exist it is possible to report against them with **A18**-Product Status Accounts (content details of all the above soon).

9.1.5.2.1.6   Physical Storage

PRINCE2®'s view of configuration management leans towards a software and document centric approach [eg 9.3.2] "distribution of copies (sic) of all (sic) configuration items".

The real world demands that we must extend our thinking to recognise **all** the project's products both logical and physical both intermediary and final, both temporary and permanent (eg a **A3**-Checkpoint Report is digital (but may have a paper representation), is intermediate (used in the project, not delivered at the end) and temporary (of no interest when old-news – ignoring audits).

The returned astronaut is physical, final and permanent. The man was an input to the project, the trained astronaut an intermediate product and the returned hero the final output.

9.1.5.2.1.7   Simple CM

Simple CM storage schemes can easily be created for physical items by labelling shelves/ storage areas and for documents, designs and plans by naming conventions applied to directories on computers. When combined with a simple cross-reference to track what is stored where we have competent configuration management.

It is common and useful to implement a simple configuration management system in the project management team and an 'industrial solution' in the specialist teams.

9.1.5.2.1.8   CM Tools

As the number of CIs grows, the verification steps in their life-cycle grows and project participants or geographical locations grow then CM quickly becomes too onerous to do by hand.

Then a CM tool is a must-have. At this point the CM tool's pre-conceptions dictate what is possible - (a good free toolset is comprised of tortoise and subversion available at http://subversion.tigris.org otherwise search out the configuration management yellow pages and 'snuffy bear UCM' – I know it doesn't sound promising! A commercial tool I have been impressed by is Intasoft's AllChange).

9.1.5.2.1.9   Delegate Tool Based CM

As soon as project CM requires a software tool then CM is at least as tricky a topic as risk but not so relevant to the project manager's dialogue with senior management so you should delegate the responsibly to an expert (even if you are a cm expert!)

9.1.5.2.2   Products and CIs

9.1.5.2.2.1   Everything is a CI: CIs Are Composed Of CIs

In configuration management every product (project input and delivered result) and every component part of a product is a <u>configuration item (CI)</u> with its own **A5**-Configuration Item Record.

The simple description is worth repeating: a CI is anything and everything the project creates, acquires or amends.

9.1.5.2.2.2   Products, CIs & CM

THE foundation stone of good project management is to always start with the project's end results.

For the supplier it is delivery of what ever result gets the bill paid, for the business it is delivery of what ever enables recouping the investment and for the project manager and project board it is what ever is needed to maintain project control such that key stakeholders continue to be happy.

9.1.5.2.2.3   Product Breakdown Structure (PBS)

In every PRINCE2® project the end results are defined in the Product Breakdown Structure started when the 'composition' section of the **A21**-Project Product Description 'document' is derived from interviews or workshops in **[12.4.4 Prepare the outline Business Case]** and continued through **[14.4.6** Create the Project Plan**]** and **[17.4.1** Plan the next stage**]**.

As soon as a product is identified then its **A17**-Product Description should be extracted from the organisation's quality management system, or if new to us created from scratch. Also a **A5**-Configuration Item Record (CIR) must be created with its status history set to "work-not-started". The status will be advanced as the product moves through the development phases of its lifespan. The **A17**-Product Description will identify the **A5**-Configuration Item Record's component parts (this product's own sub-PBS), its development life-cycle and acceptance criteria at each life-span step included in the project's scope.

9.1.5.2.2.4   The Defined Set of CIs Evolves as The Project Progresses

PRINCE2® says the **A21**-Project Product Description is defined in **[12.4.4** Prepare the outline Business Case**]**: it is a nice luxury when it is.

It is also the assumption of a 'Waterfall' based development life-cycle mind-set. Even in a waterfall world it is normally that the end point starts being defined at

the beginning but evolves through the project with consideration of each Request For Change and stage boundary. The **A21-**Project Product Description is often subject to evolving detail through the requirements phases of technical work, settles down in the design phase and is more stable during development.

Of course this presumes the customer knows what they want at project start, even if only by being shown examples and the team knows how to build it. Where the approach is more agile in mindset and it is intended to evolve the solution during a succession of sprints then the Product Backlog is the PBS/ set of CIs, The CI set is open to continual change and is under control.

9.1.5.2.2.5   Configuration Item Explained

The configuration item(CI) concept is simple but it can be confusing until you realise there are CIs of different types and most CIs are assemblages of other CIs.

Assemblage is either as collections EG all the PRINCE2® management products are a collection. or as integrations the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, **A2-**Outline-Business Case, **A21-**Project Product Description, Project Approach, … } for example. .

9.1.5.2.2.6   CIs Have names

An easy start point is to say a CI is anything with a name: thus I am currently typing on a laptop (it is a CI). It was the result of a small project some time ago "Buy a new laptop on the way through the airport". Alongside the laptop CI and over time I have also acquired an external screen-CI, a printer-CI and external hard-drive for back-ups-CI.

In total these are the component parts of my current business-as-usual Desk-Top IT configuration item and exist outside of a project but were all delivered by small change initiatives (projects).

I can model my office set-up as.

➢ Desk Top IT-CI = { Laptop, External Screen, Printer, External Hard Drive } I can also say
- External Screen = { Display, Power Cable, Video Cable }.
- External Hard Disk = { Disk enclosure, USB cable }.
- Laptop = { System unit, Power-supply, Battery }.
- Power supply = { Mains cable (power-cord), Transformer }

All the above CIs are items that I need to be able to manipulate to make the top level CI function as I want. If any break or are lost I will have them repaired or replace them.

Laptop BOM
or Manufacturers PBS
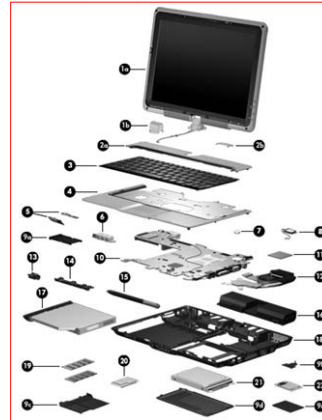
9.1.5.2.2.7   Not All CIs Are Subject to Project Configuration Management

I can see that my laptop's systems unit has many component parts. I can name them but I will not acquire, amend or create them individually so while I know that the manufacturer or repair technician will see each as a separate CI. To me they are all part of one configuration item. Everything with a name is a CI, but not all CIs are of interest for configuration management from my perspective.

For my CM needs the laptop's system unit is an indivisible item, but to a repair technician:

➢ Laptop System-Unit = { Case, 18 screws, motherboard, keyboard, screen, hard-disk, DVD drive, memory modules, touch-pad-mouse…}

- Keyboard = {"A key" "B key", …"Esc"} etc.
  - A Key = {Plastic button, spring, electrical contact…}
  - B Key = {Plastic button, spring, electrical contact…}

You may know this as a Bill-of-Materials or BOM structure.

9.1.5.2.2.8   A PRINCE2® Management Product Example

PRINCE2® provides a set of products that are CIs and some are contained in others. Some change their container over time

The **A19-**Project Brief CI contains the **A2-**Business Case CI and the **A21-**Project Product Description CI. Later the **A20-**Project Initiation Document contains the **A2-**Business Case.

9.1.5.2.2.9   Objective to Products

If our **A19-**Project Brief's { Project definition { Desired Outcome } } included "to have sent a man to the moon and returned him safely…" then our top level PBS of CIs might be either of the following equivalent representations.
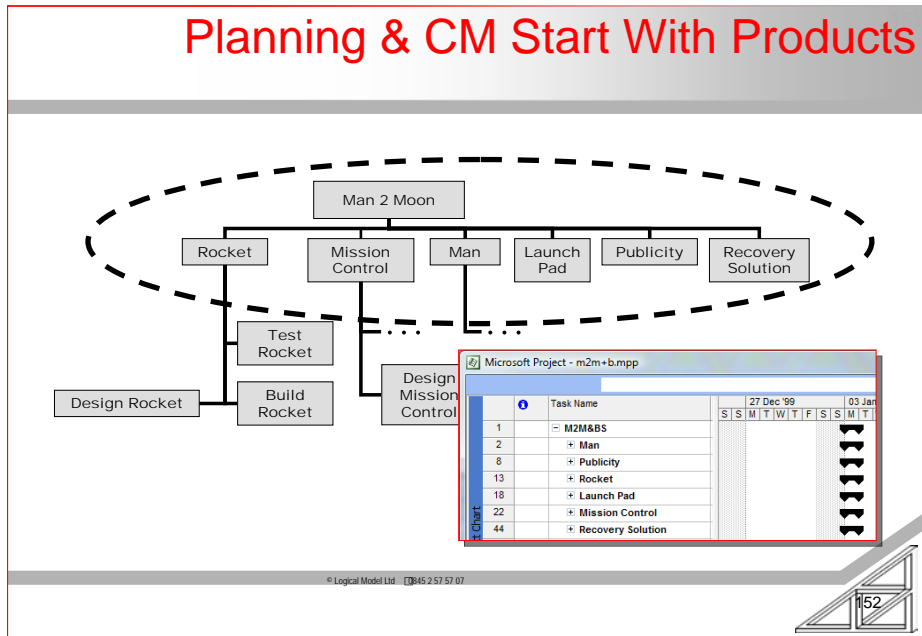
9.1.5.2.3   Managing A Configuration…

Managing a configuration means performing a collection of processes whose aim is to receive, store and distribute the project's products as development progresses.

9.1.5.2.3.1   Processes in A CM Strategy

The major processes of a configuration management system are:

1. Configuration Planning – while first in a project context I'll cover it after we have covered the next four steps describing what would be in the plan.
2. Configuration Identification
3. Configuration Control
4. Product Status Accounting
5. Verification and Audit
6. 0.

9.1.5.2.4   CM Process–2: CI Identification

The second process is the one that identifies and names what will be created, acquired or amended. IE labels things.

Naming starts out very simply: Eg 'Laptop Repair Manual'. As I'll discuss below we need to be able to give names to items that undergo a series of revisions (eg Draft manual), items that are simple collections of other items (the laptop's cables) and items that are integrated collections of other items (the laptop itself) and items that are the simplest indivisible items of the project (a keyboard key).

9.1.5.2.4.1   Revisions

Some things exist in different versions over time. Versions arise for at least two reasons. Changes in state and adaptive/ corrective/ perfective amendments: eg each chapter of this book progressed through the states: "outlined", "drafted", "copy-edited", and you are reading the "published" version. During copy-editing the first version was full of seppling and grammatics terror ☺. By the time the copy-edited version was complete the editors had removed the spelling errors and re-sequenced a few words or paragraphs.
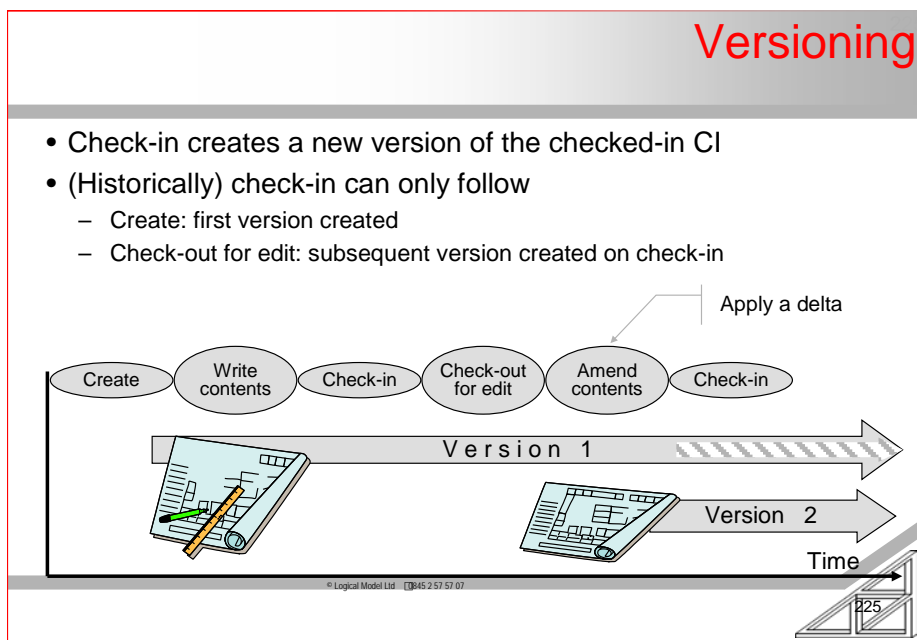
9.1.5.2.4.2   Variants

Some CIs exist in more than one form at a time. Parallel valid versions of a CI are called variants. Imagine the example of the Lap-top repair manual. Imagine it was approved for issue at version 5 and at that point the contents were translated from Japanese to 12 other languages. We now have 13 variants (in software variants are common to allow the same program to run on different hardware and operating system combinations).

Process Numbers

Permanent Variant

- Permanent variant reflects difference in real world
- Supports real-world differences in hardware or natural languages, or customer needs

<Operating C++ 1.1>
_System
_Interface

< UNIX C++ 1.2>

< MacOS C++ 1.1.2.1>

< WinTel C++ 1.1.4.1>

Time

© Logical Model Ltd   0845 2 57 57 07

229
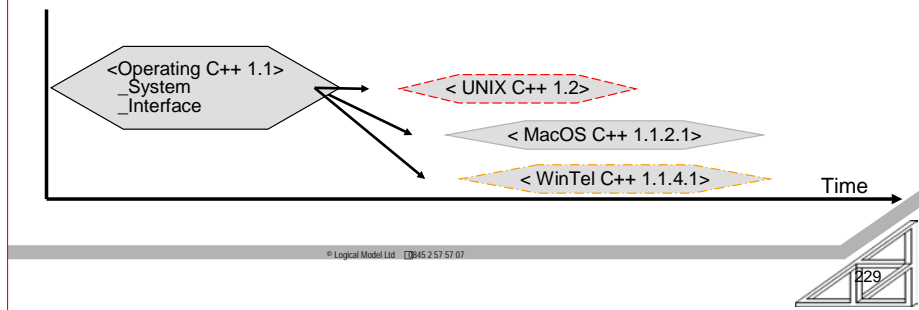
9.1.5.2.4.3   Collection and Integration of CIs

Recall our earlier bowl of soup. At the start of preparation the tomatoes, salt and water are all CIs. Each has acceptance criteria, for example the tomatoes are to be ripe and 500g are required. When combined the soup is a CI that has integrated the component CIs. In this case integration is unreversible. The soup has its own acceptance criteria; it is hot, that will need to be tested so has its own **A17**-Product Description. When four bowls of soup are served they are a collection of CIs. They have no integration.

9.1.5.2.4.4   Lowest level CI and CI as Collection of CIs

Some CIs are collections of CIs and some are not, but they all have a life-span that includes a development life-cycle.

Recall the laptop example earlier:

For me the laptop's system unit is an indivisible item. It is a lowest level CI and its life-span in my eyes is { Research, Purchase, Configure, Use, Replace }

To the repair technician the system unit is a top-level CI with a life-cycle of { Diagnose, Disassemble, Repair, Reassemble, Despatch }

Earlier I said the laptop CI is seen by the repair technician as:

➢ Laptop System-Unit = { Case, 18 screws, motherboard, keyboard, screen, hard-disk, DVD drive, memory modules, touch-pad…}

- Keyboard = {"A key" "B key", …"Esc"} etc.

- A Key = {Plastic button, spring, electrical contact…}
- B Key = {Plastic button, spring, electrical contact…}

By the time we reach "spring" it has no possible decomposition only a life-span which might run { Specify, Design, Manufacture, Despatch, Install, Bounce, Bounce…}.

Only the "install" step overlaps the technicians activities (at Repair) and only the "bounce" step overlaps with my activities (at Use).

9.1.5.2.4.5   Aside

Life in general and projects in particular are collections of episodes. One useful view of a project plan is that it is an attempt to forecast some episodes that will result in some desired outcome, some future-state-business-as-usual without undesired characteristics.

Those who start consideration of projects from a Complex Adaptive Systems (agile) perspective might use the word "system" instead of "episode". Both perspectives are important but beyond PRINCE2®'s simple and deterministic view.

9.1.5.2.5   CI Version as Collection of Versioned CIs

Each *child* or component part of every output of the project is a configuration item (CIs) and has a version history. When components are integrated they create a parent CI. The assemblage or collection that is the parent is a CI and so also has a version number.

Eg the Laptop Repair Manual is a CI made-up of chapters of text, each of which is a CI, and contains diagrams each of which is a CI (all of which passed through several versions, at least some of which were as a result of quality reviews conducted as part of quality control verifying the product versus its acceptance criteria).

9.1.5.2.5.1   Versions of Integrated CIs Must Match

The text and picture CIs must integrate with each other. For example if the text refers to something added to the third revision of a diagram then it will be important that the repair manual as published contains { 'Latest text' + Diagram Vn3 or higher }.

The chapter has no substance itself, it is the addition of text-CIs and diagram-CIs all of which are the chapters direct 'children'.

The repair manual's content is the integrated collection of chapters plus the covers, binding, index and contents sections.

Some CIs are just collections with no integration, eg the books on the repair work-shop's book shelf.

Each collection of CIs that are integrated into a product received by any project stakeholder is a configuration item. Each CI identified will be 'managed' by

recording the evolving status in a **A5**-Configuration Item Record as the CI passes through its life-span as proved by the results of quality reviews.

### 9.1.5.2.5.2   Reversible Integration

The laptop is an integrated CI because, for example it doesn't work without a battery. It is an example of a CI that can be un-integrated while the soup cannot.

9.1.5.2.5.3   The New Broom CI Conundrum

Imagine we go to the hardware store and buy a broom handle and broom head. These are two CIs at version 1.

On return home I assemble the broom to arrive at the CI Broom version 1. This is my project's output and achieves the outcome that generates the benefit "swept floors". Some time later my teenage son breaks the handle. After a trip to the hardware store for a new handle (version two) I return home and assemble broom version 2 comprised of { Handle Vn:2 + Head Vn:1 }.

Some time later my wife complains the broom no longer sweeps well. I go to the store and buy a replacement broom head (version two). I return home and assemble broom Vn:3 = { Handle Vn:2 + Head Vn:2}. In Configuration management terms it is the original CI now at version 3. In physical terms it isn't the original wood and bristle (a true story). In existential philosophy it is a broom but is it "the broom I've had for years"? In benefits terms we probably don't care.
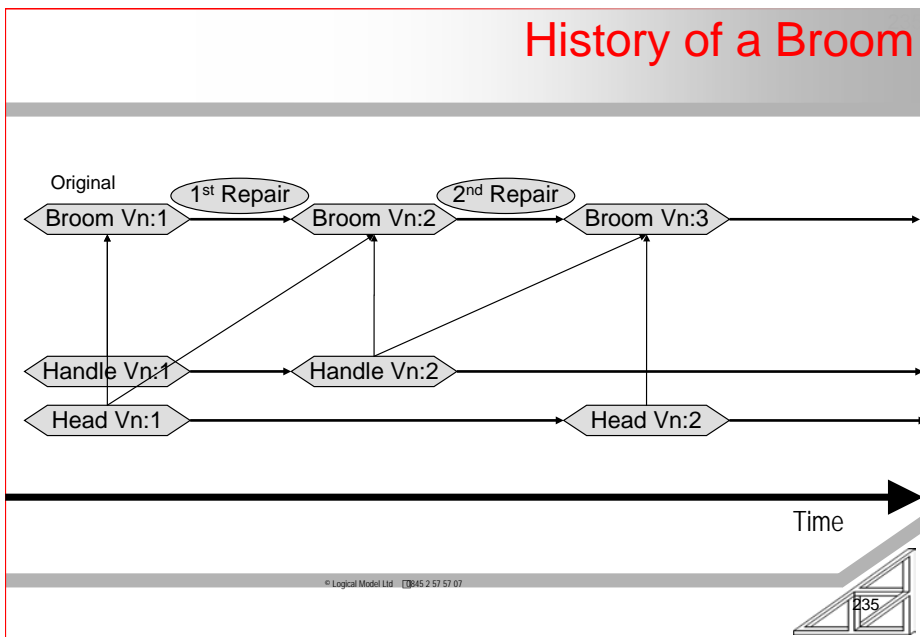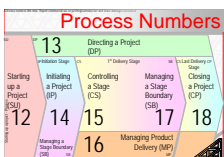
9.1.5.2.5.4   Activities with CI Identification element

CI identification is mainly done during planning activities when Product Breakdown Structures (PBS) are created.

[Recall "12.4" refers to activities within Starting up a Project (SU). 14.4 covers Initiating a Project (IP), 17.4 Managing a Stage Boundary (SB) and 16.4 Managing Product Delivery (MP)]

➢ **[12.4.4** Prepare the outline Business Case**]** when the **A21**-Project Product Description is created, understood and agreed.

   CIs identified here will be deliverable to the customer IE the result of specialist technical activity during the Enabling Stages. They will be the highest level integrated items and collections Eg for the man to the moon project the CIs include Rocket + Publicity Campaign

➢ **[12.4.6** Plan the initiation stage**]** when the creation of the PRINCE2® management products that make-up Initiation Stage controls will happen.

   CIs identified here will mainly be those defined in the PRINCE2® manual's appendix A as amended, extended or excepted during organisational embedding and project tailoring. Some will be members of collections like all the **A5-**Configuration Item Records and some integrated like **A2-**Business Case and **A16-**Project Plan which are linked by being user and provider of cash-flow information in the **A20-**Project Initiation Document.

➢ **[14.4.6** Create the Project Plan**]** when the CIs known to comprise the **A21-**Project Product Description and project control regimen will be decomposed to the level required by the project management team to feel in adequate control of the project's schedule, resource usage and quality. But see the next entry.

➢ **[17.4.1** Plan the next stage**]** when CIs in the scope of the upcoming stage (sprint) will be decomposed.

   The level of decomposition must be to the level the project manager and team member/ manager consider gives a day-to-day view of progress for control.

   The decomposition may be to the lowest possible level such as 'spring'. Decomposition MUST reach to at least the level at which the senior user(s) are no longer concerned to specify acceptance criteria.

   CIs to be created, amended or acquired within a stage may be identified during stage planning or may be identified in later project manager negotiations with team member/ manager's to **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package].

➢ **[16.4.1** Accept a Work Package**]** when CIs in the scope of the upcoming **A26-**Work Package will be decomposed into component parts if that wasn't done during stage planning.

   The project manager may or may not be involved at this level of detail.

> Some CI identification may occur in preparing the PRINCE2® control systems to **[14.4.1** Prepare the Risk Management Strategy**]**, **[14.4.2** Prepare the Configuration Management Strategy**]**, **[14.4.3** Prepare the Quality Management Strategy**]**, **[14.4.4** Prepare the Communications Management Strategy**]**, **[14.4.5** Set up the project controls] and when refreshing controls to **[17.4.1** Plan the next stage**]** or **[17.4.3** Produce an Exception Plan**]**.

9.1.5.2.6 A5-Configuration Item Records Are Unique to a CI

During the planning activities that lead to CI identification the CI's **A17-**Product Description is created (or retrieved from the Quality Management System (QMS)). Every CI has its own **A5-**Configuration Item Record to describe its 'personal' status but shares its **A17-**Product Description with every other CI of the same product type. For example each keyboard key may share a single product description.

9.1.5.2.6.1   Level of Detail

For the manufacturing process each key has its own **A5-**Configuration Item Record to record its life-cycle status. Tailoring may decide that is more detail than adds value, but is the default should control needs demand it. Also, if helpful it would be possible to give each key a separate and unique product description as each key has a different character on its face. Again tailoring may decide the level of control isn't adding value.

By the time the laptop reaches me the only **A5-**Configuration Item Records of relevance are for the system unit, the battery, the power cord and transformer.

9.1.5.2.7 Pivotal Role of the A17-Product Description

The next few paragraphs could as happily be in the quality strategy description or product based ~~planning~~ scoping description as the configuration management discussion as they all overlap. These overlaps are where sound project management's strength accrue from synergy (or lack of foundational insight is exposed when logical contradictions occur).

Recall that "product" means what ever the project produces thus **A3-**Checkpoint Reports, nuclear reactors and culture changes are all products.

9.1.5.2.7.1   The Product Life-Span

A product description describes all aspects of the life-cycle within the project of all CIs based on it. Better yet from the sponsor's perspective the **A17-**Product Description descries all aspects og the lifespan of the product within the investment.

The most important elements of the product description are that it spells out the **acceptance criteria required to pass between life-cycle phases**. As each task in a **A26-**Work Package is performed **competently** then the CI moves through the phases in its life-cycle. Quality reviews confirm competent execution and record

the facts in the **A23-**Quality Register. The **A5-**Configuration Item Record is updated to record current status.

Performing each development life-cycle task and verify it was competently done may be two actions with a pause while the CI is *at rest* in the CM repository between steps.

9.1.5.2.7.2   Detection of Scope Creep

Quality reviews are the subject of later topics, but NOTE:

SOOP-124.   The step-by-step review of intermediary acceptance criteria are the foundations for explaining the glib statement of "quality is built in not bolted on".

The quality review questions of "What is missing, wrong or extra?" are the foundation for preventing scope creep, and of progress tracking. EG with Earned Value Management.

9.1.5.2.7.3   A17-Product Description Development

Every product of the project, management or technical, and every sub-product could (should) have a product description to define its function and form, its verification (ie quality attributes), where the teams will find the information and resources from which to make it or source it or its components from and how the components are integrated. Product descriptions for minor component parts may be overkill.

In total the product description is the information to allow creation of **A26-**Work Packages that clearly define the activities to acquire or produce, verify and approve the product. The product description must also provide sufficient background to define the skills (or individuals) required to execute the full set of development life-cycle activities.

9.1.5.2.7.4   A17-Product Description Through Life View

For a correct 'investment view' covering through life total cost of ownership criteria the **A17-**Product Description could usefully define maintenance and operational aspects of its life-span.

9.1.5.2.7.5   People, Teams and Successful Projects

Creation or at least project specific review and adaptation (tailoring) of the product descriptions as a team activity is an important step in fostering both understanding and motivation.

The first team is a customer inclusive business needs analysis activity with "what" focus. The second team are the technical solution design and manufacture people.

9.1.5.2.7.6   Cascading Levels of 'Customer' and Team

When we get to breakdown structures we will see how "what → how is what → how…" cascades. EG What = Man to moon -→ How = Rocket; What = Rocket → How = Design & Build Engines and many other bits; What = Build Engines → How = Bolt 438a to 438b; What = Bolt stuff together → How = Tighten bolt 438a with a torque of 10nm.

9.1.5.2.7.7   Skill and Will Early Warning Sign

The ease or difficulty of securing attendance at meetings and contribution to meetings and definitive, given from experience answers is a big indicator of how easy or politically or technically challenging the project will be.

Level of challenge informs in turn the strength of sponsorship required, the size of tolerances and change budgets required and the realism of constraints imposed.

9.1.5.2.7.8   A17-Product Description Product Description

Each **A17-**Product Description might contain {.

➢ A product identifier : either a 'code', name or both.

The product id will be used in combination with other identifiers to build a CI Record's identifier for each instance of the product. The official manual suggests the Id includes { Project name, Product name and a Version number for this product description }.

If reuse of product descriptions is of interest (it should be) I would not base any **A17-**Product Description's ID on "Project": a better element would be 'functional attribute' not project).

➢ Context of the product's usage to help assess quality attributes such as reliability, maintainability, speed, strength, responsiveness, power, training needs, physical environment etc

If products of equal function and differing grade are to be created then this context stuff doesn't belong here, instead include in the Quality Management System (QMS)'s library of product and process standards.

➢ CIs this CI is composed of (the Product Breakdown Structure (PBS) below this product EG for the CI 'Channel Tunnel' the 'is composed of' could be { Twin-Bore Tunnel, 2 Sets of track, 2 Trains, 2 terminals }

➢ Source - where does it or the elements of its composition come-from: { Terminals Built by XYZ Co, Logo designed in-house by Bill in the Art-department… }. Again may not belong in the **A17-**Product Description.

➢ [Some extra emphasis over the official manual's that will be **truly vital** when we reach discussion of estimating and tracking budget and schedule.

For each of the remaining items in the product description consider {

- The CI's development lifecycle with reference to product standards and life-span development and ownership standards or method statement within the customer and supplier's Quality Management System (QMS)

- All factors that populate the estimates to include in the **A26-**Work Packages involved in the product's life-span

  The effort, materials, infrastructure, resources required per method statement/ standard operating procedure step and the skills required to perform them,

- The earned value type to be used to claim progress versus baseline and each maturity test that demonstrates value earned. EV Types are explained in *See X on Y*

These factors are most important for estimating during planning and tracking progress during execution.

]

  }]

➢ Format - some products may need "presentational" specification EG "Corporate Web-pages shall use only house-colours, font-type "Arial" and logo at top right corner

➢ Resources and tools needed in each step of the creation or acquisition of the product <u>and</u> skill base required to <u>verify</u> each step.

  A generic 'resource type' and skill level (often indicated by staff-grade or job title) may be all that can be specified pre-scheduling. Scheduling must supply a specific name (in the stage or team plan – don't duplicate it here).

  Skill means 'knows and can use fluently the development procedures and standards required to apply quality control and achieve acceptance criteria'. When the **A26-**Work Package is scheduled the skill required and the skill available will be factored into the duration (and other needs) allocated.

➢ Quality Criteria.

  Specify or cross-reference a specification of the acceptance criteria for transition between each phase in the product's life-span IE The scales against which the evolving product is judged. EG "Power cables as specified in BS-7970:2005".

➢ Quality Tolerances applied to quality criteria target values.

  Quality criteria plus and minus tolerances define Acceptance Criteria. Some plus or minus allowances may vary across phase-changes.

➢ Quality Testing Method or test type used to confirm we are within tolerance on each test

➢ The skills (and resources) required to conduct the quality method, possible described by qualifications or job titles of the testers at each phase-change,

➢ Quality Responsibilities describing who does what part of everything discussed - possible generic or departmental prior to stage/ team planning.

}.

9.1.5.2.7.9   Don't Duplicate the **A16-**Stage Plan

Project planning defines the skills needed for tasks in a product's lifespan while stage planning or team planning specifies people by name and sets dates against their activities.

The **A17-**Product Description captures the generic what and how and how good determined during **[14.4.6** Create the Project Plan]. After **[17.4.1** Plan the next stage] the **A16-**Stage Plan contains the specific assignments.

[An entry in the **A5-**Configuration Item Record or the **A17-**Product Description that indicates the **A26-**Work Packages created to progress the product's life-span is useful in reality but not in the exam. If the **A17-**Product Description is a standard item for the organisation that has been done before then the associated **A26-**Work Packages can also be templates to tailor. Down this path lies many virtues such as improved estimating capabilities, staff mobility, continuous improvement et. al.]

9.1.5.2.8   Baselines: Resting CIs

When CIs are "at rest", generally awaiting review or awaiting integration to higher level CIs then configuration management safely stores the CI or at least should know where the CI is stored safely. A safely stored CI is one that is not available for amendment. It is a reference point or <u>base-line</u>. Some baselines will be proved OK to be called <u>releases</u>.

A baseline might then be defined as "*a CI that has been created and is not undergoing change*"**]**. Some people will specify that to be a *baseline* the CI must have been through a sign-off process. IE be agreed between two or more parties with transfer of accountability. Others will say that if the baseline is transferred between parties then it is a release.

9.1.5.2.8.1   Baseline and Release

PRINCE2® adopts definitions of baseline and release that are common in any configuration manager's vocabulary. *"A baseline is a reference level against which an entity is monitored and controlled. In configuration management terms, it is a snapshot of a release, product and any component products, frozen at a point of time for a particular purpose … If the product that has been baselined is to be changed, a new version is created to accommodate the change."*

To rephrase it: a baseline is a collection of one or more Configuration Items, that are named as a group and given a version number - probably because we <u>believe</u> work on the CIs in this group is complete (Like "broom version 1", 2 or 3).

The contents of a baseline might be functionally linked, eg our moon-shot Rocket's engine is the integration of contained CIs linked by inter-operation. A baseline may be CIs linked by time eg all CIs in the current management stage or sprint.

In a CM context we might define baseline as "a CI at rest" or "a CI considered to be ready for verification". In a project management context baseline often adds "agreed" to the definition although strictly baseline is a reference point and typically its agreement is after its verification.

SIDE BOX: PRINCE2® has two glossary entries "*Baseline: Reference levels against which an entity is monitored and controlled.*" and "*Baseline management product: A type of management product that defines aspects of the project and, once approved, is subject to change control"* [EG the PID].

9.1.5.2.8.2   Baselines are Frozen

PRINCE2® say once a CI is ready for review it may not be changed again (unless reworked after review) and once passed review it may not be changed without project board approval. This is the core of a valid idea but may be a little draconian as we'll discuss.

9.1.5.2.8.3   Release as Distributable Baseline

A release is a baseline we deem fit to pass-on to someone else. IE we 'release it' to the next stage in its life-span.

In PRINCE2® terms a release is "*a complete and consistent set of products that are managed, tested and deployed as a single entity to be handed over to the user(s).*" which is a good definition.

[My definition of a release would add "*a baseline that has been accepted by a competent authority (possibly all authorities)*" Thus not just the users. A release may be from designer to frabrication. The users may be several steps away yet.

Also note: acceptance may not have to equal 'matches acceptance criteria' or even be based on any verification. This matches political realities of accepting outputs that are less than perfect or insisting on criteria that were not in the original agreement.]

Generally to be a release a baseline must have passed all the tests of its acceptance criteria that the relevant **A17-**Product Description set-out or a waiver must have been granted against all *off-specifications* found (or demanded).

9.1.5.2.8.4   Release Equals 'Posit: OK'

Being a release doesn't guarantee but is intended to signify that a CI has met all its acceptance criteria. It does definitely signify that the CI has moved on to be the basis of further development or use.

Imagine the lap-top Repair Manual at version 4 (a baseline) that might have been reviewed and found to lack an appendix. Imagine the Lap-top is not yet being manufactured so omission is not currently material. So Vn:4 is *released,* or passed to repair staff who then commence ordering spares and test equipment (version 4 is a baseline and a release with known issues). The appendix is created, verified and included into the repair manual creating version 5 (the latest

baseline) in time for product launch. Version 4 and all other versions will exist in the configuration management archive for evermore.

9.1.5.2.8.5   Interim Baselines

Typically a CI is first protected from update or 'frozen' when ready for review. In disciplines that involve design or authoring activity the CI's based on intellectual content might have interim 'baselines' 'checked-in' or a snap-shot taken after every few hours of work. For example a typical Microsoft® Windows® PC creates a 'save-point' when new software is installed to allow for reversion to an old state.

9.1.5.2.8.6   Revised Baseline

Back to the Laptop manual: at product launch the repair staff receive manual version 5 and work from it (now a release). Later still repair staff raise queries which prove version 5 had undetected errors when released. Rework generates baseline version 6 which is quality reviewed and fails verification and so is never a release. Corrections are applied and version 7 is released.

Recall that version 5 had 13 language variants. There is now a configuration management choice between retranslating Version 7 or applying the version 5 to version 7 changes to each variant.

9.1.5.2.9   CM Process–3: Configuration Control

In PRINCE2® terms "Configuration Control" covers the sub-processes of configuration management that:

 ➢ safely store CIs,
 ➢ track progress through reviews, and
 ➢ issue CIs when they are needed.

Control encompasses

 ➢ firstly admission into the Configuration Management storage area (or Library or Database or Warehouse).

   Admission may require proof that a CI is sufficiently mature. Either the CI is waiting for verification or maturity is proved by passing verifications

 ➢ secondly issuing of CIs to recipients when appropriate.

For digital CIs and document CIs control often includes re-issue to copy-holders of latest versions after revisions, obviously "copies" isn't quiet the same for physical CIs like Rocket Motor!

9.1.5.2.9.1   Moving CIs

CIs move when authorised. Into storage when ready for review and out of storage when:

 ➢ the subject of rework from a failed review,
 ➢ the subject of the next **A26-**Work Package to progress the CI's development life-cycle or

> the subject of a hand-over in the CI's life-span outside the project's development life-cycle.

In the hand-over case the **A5**-Configuration Item Record should accompany the CI itself.

Physical CIs literally 'move' while intellectual, digital and paper CIs are 'copied forward'.

9.1.5.2.9.2   PCA and FCA

Some configuration management authorities [not PRINCE2®] call the verifications applied to a CI that confirm (or not) the status for movement of CIs under configuration control "Physical Configuration Audit (PCA)" and "Function Configuration Audit (FCA)".

> PCA is "Did we receive/ install all the bits we are supposed to" or the "ikea test".
> FCA is "Do they all work as they are supposed to".

PRINCE2® addresses PCA and FCA via the Quality Review technique.

The reader interested in FCA & PCA specifically is referred to paragraphs 3.48 and 3.70 of mil-std-973 or more generally to mil-hdbk-61A, IEEE 1042 or ISO 10007. 973 is now superseded but its guidance is still, …still, ermm still something: good isn't quiet the right word.

9.1.5.2.10 CM Process–4: Status Accounting

Product Status Accounting is the PRINCE2® name for reporting any sub-set of the information in the collection of **A5**-Configuration Item Records [other CM authorities use the term "configuration status accounting"].

A18-Product Status Accounts are used for two main purposes:

> To aid impact analysis during change control.

To support Impact Analysis each CI must include details of related CIs. The 'Is composed of' relationships are easily accommodated via the hierarchy of the Product Breakdown Structure (PBS). "Is related to" can be for an endless number of reasons and must be recorded by the technical specialist (or user representatives) who know or can define the relationships of interest.

In intellectual disciplines "re-use" is a driver and requires overlaying or substituting a functional hierarchy in the CI's id as noted in the product description earlier.

> Progress monitoring.

To support progress monitoring the production of **A18**-Product Status Accounts should allow for selection of **A5**-Configuration Item Records based on criteria such as "Work not started", "Work In progress", "Products Ready for Review", "CIs Assigned to Team X", "Assigned to Team X and not yet Accepted" or "In-scope of Stage S" or "Status As at Date", or any other useful slice and dice.

9.1.5.2.10.1   *A18-Product Status Account Product Description*

A18-Product Status Accounts might contain: {

➢ The selection parameters used to extract relevant **A5**-Configuration Item Record, Eg All un-started CIRs for team X plus all dependant CIs as at date

➢ For each CIR in scope any subset of the product's details {

- Product's Type and Name
- The version history covering all possible Life-cycle stages,
- Dates of transitions between states with planned and if appropriate actual dates.
- Stakeholders in each transition and their role at each transition such as Producer, Verified by, Worked on by, Owner of business-as-usual aspects and Owner of operational and maintenance aspects.
- Those who are using (holding the item or a copy), If copied the location of any master.
- Linked items and the interface/ linkage
- Other related records: Either CIRs, Risk, Issues etc

    The linked concers (risks and issues is particularly important and a favourite exam question. If I want to know what RFCs affected a product then its CIR's cross-reference section is the smart place to start for a fast answer.

}

}

9.1.5.2.11 CM Process–5: Verification and Audit

Verification and auditing is checking that the **A5**-Configuration Item Records match the actual state of products in reality.

In effect it checks to confirm that configuration management procedures are being followed and that records are accurately maintained. Reality and records can diverge by ignoring good process, by making bad use of good process, by faithful use of bad process or from actions outside of process. Verification and Audit seeks to detect all of these to ensure the **A5**-Configuration Item Records are a fair reflection of project status.

9.1.5.2.12 CM Process–1: Configuration Management Planning

The first step of Configuration Management is the planning step to define the procedures that set-out how responsibilities will be fulfilled, by who and on what event or periodic triggers.

A PRINCE2® project management team **[14.4.2** Prepare the Configuration Management Strategy**]** to states how 'this' project will implement configuration management. The documented record of the conclusions is the **A6**-Configuration Management Strategy and updated role-descriptions.

Most projects should adopt, adapt and assign the business' standard configuration management procedures. Every project must ensure the project management team members know the procedures. Provide orientation training if needed!

SOOP-125.   Remember: having a document is of no value till it is read, understood and followed. Nothing happens in a project without people knowing the content of documents.

9.1.5.2.12.1   A6-*Configuration Management Strategy Product Description*

PRINCE2® provides a suggested **A6-**Configuration Management Strategy document template.

It might contain: {

➢ Document pre-amble as suggested in *"Strategy Pre-amble" page 9.1.3:- 193 -*
➢ Cross ref to corporate standards, procedures, reporting regimen, rights and duties, and roles for use of configuration management techniques and tools plus notes of local extensions and exceptions.

  • Includes procedures, their triggers, timings, resources, dependencies, record formats and reporting regimen and all roles involved.

    The reporting regimen should state for all information flows: the producer, their data sources and the analysis applied, communications triggers, contents, timing (and repetition), format, medium and crucially all recipients with their analysis duties and their required response actions arising.

    These items will migrate to the **A4-**Communications Management Strategy when we **[14.4.4** Prepare the Communications Management Strategy].

Instead of a cross-reference we might need to write a description of this project's specific solution and specific role-holders

➢ Locations for storage of project products (documents and physical items) through their life-cycles
➢ Assignment of personnel to roles, including assurance review and formal audit of the procedure's effectiveness

Where personnel are outside the project management team the project manager or exec must ensure CoPM and the assignee accept the obligations, rights and privileges.

➢ Change Control and Issue Management

The **A6-**Configuration Management Strategy is the parent to the procedures for change control [So even the 2009 official manual really acknowledges that CM is the discipline and change a topic within it].

Change management has the same needs as the rest of CM for procedures, roles etc. We will address these later. ***See X on page Y.***

> ➢ Details of Change Authority and Change Budget. Possibly a place-holder until project and stage planning are complete

}

9.1.5.2.12.2   Timing

In reality configuration management, which includes change control is set-up before there are products to protect and before there are baselines and changes to baselines to be managed.

9.1.6 Change Control

Change control is a subject with some difficulties. It isn't just PRINCE2® but most commonly described guidance that struggles to describe a flawless and comprehensive procedure. I won't manage flawless either but I will try to be comprehensive.

The problems arise because issues and risks and the other considerations that are handled under the general label of 'concern' are similar but each has differences that are material to the path by which they are treated.

SOOP-126.   The key considerations in handling a concern are: how much authority is needed to approve the responses and is some form of impact inevitable or just a possibility? Also material is in whose eyes will the impact be seen to be good or bad

Typically risk is seen as good and bad, while 'issue' is only seen as bad. Typically issues are seen as requiring escalation while risks are not. In-fact 'concerns' all need to be assessed for probability, nature of the impact on each stakeholder's business case, level of escalation to find an empowered change authority.

9.1.6.1.1   Complexity of Concerns

Unified handling of concerns is hard because of the complexity from combination of attributes a concern might have and thus the considerations that apply to decision making by who and when.

Concerns have at least the following dimensions:

➢ Is it a risk? Are the concern's causes certain to occur or not? There may be only one cause or there may be many.
➢ Is it good or bad? For each stakeholder are the concern's consequences desirable or not? There may be many consequences or just one and each stakeholder may have more than one perspective on each consequence. Particularly whose business case is modified and in what manner?
➢ Is responding to the concern mandatory or discretionary? Almost always mandatory responses arise from obligations under contract law and criminal law.

Before suppliers reach the extremes of contract law they often treat response to concerns as non-discretionary in the interest of retaining the customer.

> ➢ Do agreements between the parties make response the customer's or supplier's responsibility and who feels the pains and gains from the change.
> ➢ Does the concern's current handle have the skill or not to propose options related to the concern?
> ➢ Does the concern's current handler have the authority to decide between options available?
> ➢ Is it significant or not (IE is it tolerable or not)
> ➢ Is action urgent or not

In a binary world there are 256 states. In projects where binary or black and white distinctions are less common we have various shades of grey.

Treatable or Not, Certain or Not, Good or Bad, Mandatory or Discretionary
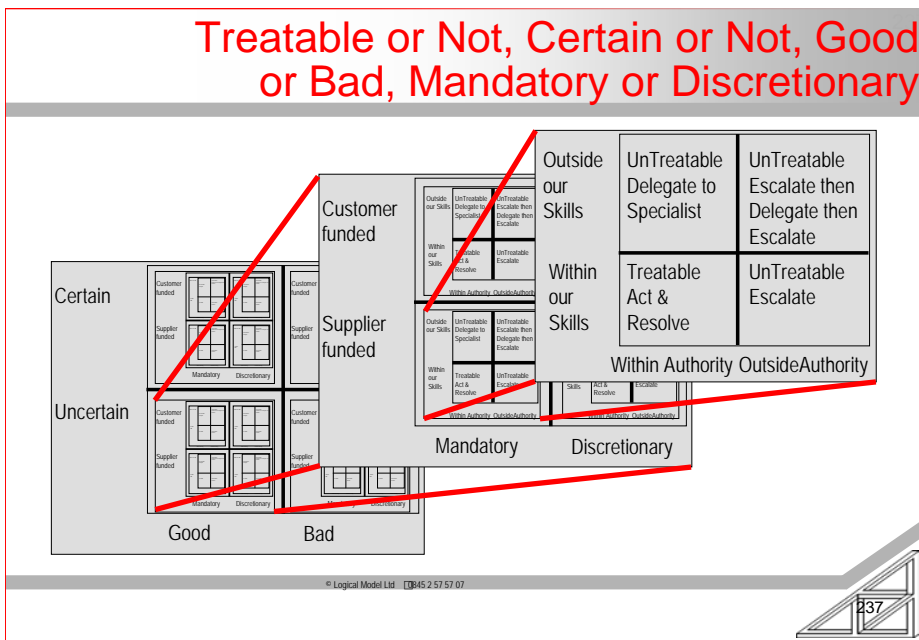
9.1.6.1.2 Record Everything

Those of us who attempt to run change control systems know that control of change is a difficult topic. Good ~~record keeping~~ communications creates advantage: the simple rule is best.

*SOOP-127.   **ALL** concerns must be logged to the publicly visible register. Those that are trivial will be dealt with easily.*

9.1.6.1.2.1   Make Access to Raising Concerns Really Really Really Easy

If there is any cost (will, skill, effort) or consequence (EG shooting the messenger or "Great idea, you can fix that then") then people won't engage in the management of concerns, and that is a serious concern.

SOOP-128.   Never attach a cost to raising concerns. Never provide disincentives, never make raising concerns difficult (EG by saying "Don't bring

me problems I want solutions" or "you cant log that it is incomplete or not well worded").

Make logging concerns 'free' or better always 'pay' people for then with thanks and recognition. If there is any sort of cost people will avoid the process but the concern will still exist as a lost opportunity or a ticking time-bomb.

Without a single, cheap to use inventory we are exposed to the worst of dangers: that back-door routes to the introduction or avoidance of change spring-up. Being recorded does not make an inviolate commitment to further action: that is assessment based, but not being recorded guarantees uncontrolled mis-handling.

Succeeding in encouraging people to use risk and change control procedures is hard and crucial - DO NOT disincentivise them by making good-practice harder than poor practices.

9.1.6.1.2.2   *Advantages of A Single Inventory*

Integration of handling concerns is a worthy aim and the starting point is in the design of the record-keeping.

With a single public inventory we should detect when the same concern gets raised multiple times avoiding consuming fresh effort every time. On second or subsequent times we may recognise something as important due to frequency. Perhaps synergies and contradictions are found. We may detect combinations of 'tolerable' concerns that combine to be true issues.

It is cheap and actually better to maintain an audit trail of everything raised. IE Don't follow the 2009 official manual's advice and only record 'trivial' items in the **A7-**Daily Log where visibility is low, miss-assessments may not be spotted and the process doesn't scale to projects with more than a few people.

Record all concerns centrally: questions and concerns outside variance analysis will fade quickly without high cost. It is the **actions** arising that might be recorded to the **A7-**Daily Log for handing directly by the project manager rather than create a **A26-**Work Package for delegation to a team member/ manager or an **A10-**Exception Report for consideration by the project board.
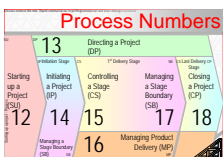
9.1.6.1.3 Consistency: One Inventory

Ironically at the same time that the official manual suggests an 'informal' escape route to reduce bureaucracy and cost it suggests the use of an unhelpful plethora of registers and reports for risks, issues and exceptions.

PRINCE2® 2009 suggests:

➢ **A12-**Issue Register
➢ **A13-**Issue Report
➢ **A25-**Risk Register
➢ **A10-**Exception Report

In addition the scales for issues overlap those for risk.

➢ Risk scales for probability and impact
➢ Issue scales for priority and severity

When embedding and tailoring I suggest consolidating the registers into a Register of Concerns for actual implementation. The Register of Concerns may then be logically split by team, technology, geography, sub-contractor or management layer by use of reporting tools with good search, segregation and capabilities to link, slice and dice extracts.

Implementation might perhaps be a single central register but may be physically split and then re-aggregated for reporting.

9.1.6.1.4 Official Product Description

For the exam the registers are:

9.1.6.1.4.1   A12-Issue Register Product Description (Exam only)

A12-Issue Register {.

➢ Issue identifier
➢ Issue type - Request for change, Off-specification, Problem/concern
➢ Date raised, Raised by
➢ Issue Report author
➢ Issue description statement of cause and impact
➢ Priority & Severity
➢ Status
➢ Closure date

}

9.1.6.1.4.2   A13-Issue Report Product Description (Exam Only)

The suggested report content would appear to record details not on the official manual's suggestion of the register: IE 'decision, approved by etc', unless these are held in 'status'.

A13-Issue Report {

➢ Issue identifier
➢ Issue type - Request for change, Off-specification, Problem/concern
➢ Date raised, Raised by
➢ Issue Report author
➢ Issue description statement of cause and impact
➢ Impact analysis, Recommendation
➢ Priority, Severity
➢ Decision, Approved by, Decision date, Closure date

}

9.1.6.1.4.3   A25-Risk Register Product Description (Exam only)

A25-Risk Register {.

➢ Risk identifier
➢ Risk author, Date registered, Risk category
➢ Risk description: cause, event, effect
➢ Probability, impact, Expected value, Proximity
➢ Risk response categories-avoid, reduce, fallback, transfer, accept, share - enhance, exploit, reject, share
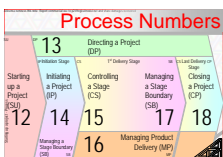➢ Risk response
➢ Risk status, Risk owner, Risk actionee.

}.

9.1.6.1.4.4   Tailored Register Of Concern Product Description

For reality the log of Questions, Risks, Problems, Issues, Dependencies and Exceptions aka the Register of Concerns might contain the following structure and will be completed incrementally as we follow the steps of handling Risks, Requests For Change, Off Specifications, and Project Issues. Related reports will be some extract from the record(s).

Some integration with the **A25-**Risk Register described earlier will be needed: See 9.1.4.5.6 **A25-Risk** Register Product Description page: 9.1.4:- 230 -

Recording of a concern might capture {

➢ The admin info such as the concern's ID number
➢ A free-form description of the condition that has or may arise, perhaps with coded classification for reporting and aggregating
➢ Concern's history of status and dates for each update to an entry including creation and closure
  • Who made the update to the register, when, why, what was the update
  • Its type if clear (Risk, Request for change, off-specification, question… perhaps with a history and dates – eg risks become issues when probability = 0 or 100% and vice-versa when context change removes certainty)
  • Concern's status eg Raised and awaiting Impact Analysis, Awaiting a Decision, Awaiting Implementation of a Response, Actions are in stage plan, Actions changed, Closed, …)
  • Current primary point(s) of contact for any aspects such as resolution, perhaps with a current , previous and original
  • Reference to **A26-**Work Packages used to respond
➢ As long a list of the causes of the condition as needed to cover reality with an assessment of probability and proximity of each if the condition has not yet occurred, assessed at least in H/M/L terms as defined in the **A24-**Risk Management Strategy (use one set of scales for all governance needs over decision making whether it is risk or RFC or any other trigger)

➢ As long a list of impacts from the condition as needed for reality with lead-time to the impact from either the cause (trigger date) or raised-date or both, size of the impacts either quantified or at least as H/M/L versus project degrees of freedom eg cost, schedule, health, reputation, benefits etc and any impact growth that may occur

➢ As long a list of responses as can be imagined to {

- address the causes (only if an issue with variable timing or for risks) and the impact of the responses them-self with assessment of the response's affects on causes.
- address the impacts, including the response's own impacts in any of the axis of project freedom.
- An evaluation of the circumstances under which the responses will be taken – IE The triggers for it being in the budgeted, resources and scheduled work of the stage plan "plan A" or in the budgeted, resourced, <u>unscheduled</u> thus contingent "plan B" and the trigger to enact "plan B".
- Whether the response is currently included in the stage plan "plan A" or "plan B".

    }

}.

9.1.6.1.4.5   Initial Entries In The **A12-**Issue Register

Officially at the time that the **A6-**Configuration Management Strategy is defined Project Support will create the **A12-**Issue Register.

If any issues exist at this stage the project manager should copy them from their **A7-**Daily Log to the ~~**A12-**Issue Register~~ Register Of Concerns.

9.1.6.1.5   Assessment Scales

Assessing concerns is assisted when guided by descriptive scales. Defining the scales is intended to give some objectivity and consistency to assessment.

9.1.6.1.5.1   Scales: Exam and Reality

For the exam two scales are needed: severity and priority and are defined for concerns during the creation of the **A6-**Configuration Management Strategy.

In reality comparison of 'seriousness' is required across all the different dimensions of interest to the enterprise's governance structure such as Cost, Schedule, Quality, Scope, Reputation and Health and Safety so that (say) a concern with a Health and Safety focus can be prioritised alongside seriousness of (say) a schedule concern.

We need parallel calibrated scales in all the dimensions that describe tolerances, concerns whether risk or not and in fact also estimating.

The official manual suggests that a severity scale [5.3.2.4] & [9.3.1.1] and priority scale [9.3.1.1] should be created from scratch. [I suggest only created during

embedding then retrieved from the project support office and amended during project tailoring.] The exam answer is "agreed [9.3.1.1] between the project manager and project board" during the Initiation Stage.

I suggest the work to create the **A24-**Risk Management Strategy tailors (or creates) one integrated set of all the relevant scales of impacts. I definitely don't want duplicate scales or repeated scale-setting activities. Combine the two scale defining activities. The exec's (sponsor's) view of scales is the only important view.

9.1.6.1.5.2   Link to Legal Accountability & Governance

The organisation structure must map the impact scales into decision making authority that match how the organisation delegates corporate governance over decision making authorities.

Authority must link to the legal obligations of the 'officers of the company' exercising their fiduciary duties under criminal, contract, trust and tort law.

9.1.6.1.5.3   Reassess Scales as Time Moves On

Scales should be reconsidered and perhaps redefined as time and resources are depleted. A three week impact discovered at the start of a 30 week project has 27 weeks to be fixed, while one discovered at week 20 has perhaps 7 weeks in which to be fixed or absorbed. Likewise loss of a key person in week one versus the last week may be of varying degrees of seriousness.

9.1.6.1.6 Priority Scales

Priority may be different in different axis of {cost, time, scope, quality, benefits}. Prioritisation seeks to say "of limited resources this is the one that is first or most deserving".

9.1.6.1.6.1   Priority – Time

A priority assessment should where possible be expressed first in elapsed time to respond and second in actual schedule (EG " by end of the week" "end of stage"). A unit-less scale is helpful before concerns are quantified and might sensible be just four entries:

1. Interrupts current activity for immediate response

   This is for the important and urgent (IE when scheduled the resulting **A26-**Work Packages have minimal float)

2. Incorporate into schedule

   For the important but not (yet?) urgent

3. Challenge the assessment and move to one of the other categories

   For the unimportant and urgent

4. Record their arrival and otherwise mark as "only if too much time on someone's hands"

For the unimportant and un-urgent

5.   0.

9.1.6.1.6.2   Priority Scale: Cost or Scope

For concerns that are Requests For Change, IE amendments to scope the prioritisation is easy when change budget remains. The amended **A2**-Business Case is assessed and the change's costs are matched to the unused change budget (time, resources etc) in hand. Only when the change budget is all allocated or someone wishes to hold some change budget in reserve does prioritisation (rationing) become a source of debate.

Rationing may:

1.   Diverts funds and schedule from the "S or C" MoSCoW activities *(See X on Y)*
2.   Secure a fresh grant of time and money and skill from the sponsor or portfolio management board
3.   Decide the RFC (discretionary concern) doesn't get addressed.
4.   0.

For removal of scope or funds or duration – IE when the project is asked to economise, perhaps to make way for a new piece of scope or a drop in share price then:

1.   Drop whatever the sponsor says is least important to them after consideration of the politics of other stakeholder's reactions and cooperation
2.   Probably the MoSCoW "C"s first, then the "S"s

9.1.6.1.7   Assessing Severity

Severity equates to how much the concern affects the benefits and is subjective to the stakeholder(s) affected; severity is a poor label as both up-side and down-side need to be considered.

If the concern is judged to have some severity it must have affected the benefits (Return minus Cost). Either it affected the costs (will, skill etc) of the project or the return on investment (satisfaction, revenue, market share etc) in size or timings in some stakeholder's eyes.

A concern may just rearrange intentions. There is an impact but it may be in terms such as when resources are assigned rather than increase or decrease NPV.

Severity has two other angles:

9.1.6.2 Change Authority

9.1.6.2.1.1   Contract

Recall: to be a baseline involving more than one party requires agreement between the authorised representatives of the parties.

IE the agreement between all powerful enough parties to the total set of all the project's acceptance criteria. In other words: "what I give and what I get for it".

9.1.6.2.1.2   Who Pays? And Who Decides

Commonly during the project's initiation, and definitely if project elements are performed under contract, then who has authority to agree variations to agreements (baselines/ contracts) will be defined.

Each financial interest present will typically appoint its own authorities. One authority commonly covers the legal and commercial aspects and another is the technical authority.

On the customer side a benefits authority should be defined but is less common. [The sponsor really should be a "defined role" [pg 313] and a four stage view of the total investment should be maintained with an enduring responsibility on the ~~executive~~ sponsor.

IE: concept, definition, implementation, benefits-harvesting].

9.1.6.2.1.3   Change Authority

By default the authority to sanction customer side changes rests, during the project, with the Executive on the project board.

During the initiation stage the project board may appoint a delegated body to exercise that authority in whole or in part (eg changes upto some limits).

9.1.6.2.1.4   Escalating Levels of Authority

The person or group appointed by the project board is called the 'Change Authority'.

The authority to sanction change often rests in tiers starting with the project manager, then the change authority aka change control board (CCB), then the project board and then sponsor or portfolio management board having superior authorities.

Somewhere in the scale sits, un-considered by PRINCE2® the technical design authorities' limits. From the reporting-lines perspective "escalation" of a technical decision is commonly "down" the organisational hierarchy from the project manger.

9.1.6.2.1.5   Technical to Authorisation

Many concerns analysed as technical issues and escalated 'down' find potential solution which then need to be re-analysed as an 'authorisation limits' concern. The escalation is then 'up' to a place where the decision makers have benefits and resource allocation authority.

Recall an issue is lack of knowledge OR authority while a problem is within knowledge AND authority.

9.1.6.2.1.6   Split Authority

When technical issues are delegated downwards and solutions with **A2**-Business Case impact are identified then we don't have authority AND knowledge in the same head. Often this equates to delay.

"Sitting around the same table" may resolve the issue but it is often hard to secure senior management time to first be properly briefed and second attend the decision making meeting. Where culture is dysfunctional then where a decision can be avoided then often so to can liability to later blame.

Resolution of issues that are split across parties with the technical knowledge and the authority requires shared decision making that is NOT a tea and biscuits meeting.

If delivery dates (or budgets, benefits etc) do matter then reactive decision making is the place where senior management SHOULD clear their diaries of routine, decision-free Tea and Biscuit meetings. PRINCE2® only requires project board involvement at events of significance, but projects DO depend on timely senior management input if they are to progress.

9.1.6.2.1.7   Project Assurance As Change Authority

The delegation of authority (sic) is normally in recognition that project board members do not have the required availability (and perhaps expertise) to be as involved in the change process as is desired.

The project board may wish to use a delegated representative to administer their change authority. Delegation is typically of some subset of the project board member's full authority. Often the representative with correct knowledge, skills and involvement is the project board member's project assurance people.

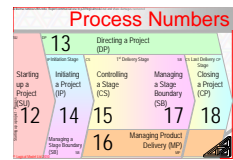### 9.1.6.2.1.8   Senior Supplier(s) Change Authority

The change authority on the supplier side is normally each senior supplier or their representative separately. Senior suppliers rarely have authority to amend the commits of other senior suppliers. If one supplier can change another's commitment then the relationship is one of prime-contractor (senior supplier) and sub-contractor ('junior supplier'), hopefully within a framework recognisable to a court.

9.1.6.2.2   Change Assessment Budget

SOOP-129.   It is neither possible nor sensible to declare a limit to concerns that can be raised – It just goes underground and out-of-control.

An appropriate response to 'over active' change is to ask the exec and the senior user(s) how much project staff-time they are prepared to divert from "progress" to impact analysis each period.

Then perform an initial "cost of analysis" assessment on each received concern. Give the senior user(s) and exec (or change authority) the

responsibility to prioritise between concerns against this budget before impact analysis is authorised. In a scrum project this is basically the product backlog owner selecting stories for development sprint-kickoff meeting

9.1.6.2.2.1 Perishable Assessment Budget

Note this budget should be defined as perishable, at least during a stage/ sprint: they can't 'save-up' a few weeks analysis budget to splurge weeks later (unless resource allocations are entirely within the project board's and project manager's control).

9.1.6.2.3 Change Procedure Turn-Around Speed

SOOP-130.   The management of concerns procedure must be implemented to be <u>as fast as required by the most urgent concern</u>, and relaxed for less urgent concerns. NOT built for the norm and side-stepped for the urgent: in this case the project becomes literally out-of-control at the time it is handling an unusual situation and a second (fifth?) disruption at the same time is much more likely to be terminal.

The swiftest change control uses immediate face-to-face discussion or phones or maybe email, text or Sametime®/ MSN/ ICQ between the exec (sponsor), one subject matter expert and the project manager. Conclusions are logged directly to the Register of Concerns and commissioning of **A26-**Work Packages with direct, authorised by the exec updates to resource allocations, cash-flows, and budgets. Everything else is slower.

SOOP-131.   Two subject matter experts who don't agree is safer, but slower.

9.1.6.2.4 Change Authority Time and Budget

The need for, strength of and even the size of the budget (committed, unassigned resources: skills, time, money) for implementation of changes can often be judged early on in the project. Assessment is based on several simple factors related to clarity of goal, will and ability to achieve them.

9.1.6.2.4.1 Change Control Budget as a Function of 'What' Goal

➢ From the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, … } perspective judge:
- the number of project stakeholder interests,
- the alignment of their views of project end-point and
- their relative power
- the good humour they display during project meetings

The most change results when power is even between many stakeholders with strongly held disparate views. The volume of change and difficulty arriving at true consensus (actions outside meetings match words inside meetings) will be highest when the social aspects of team building – yes even for the senior user community – have not had sufficient focus to bring people

to the point where they are prepared to voice their wants and needs openly and debate trade-offs maturely.

SOOP-132.   Difficulty of resolution of project interests is inversely proportional to the number of participants and their good humour.

9.1.6.2.4.2   Change Control Budget as a Function of 'How' Goal

➢ On the ability front judge:

- how mature is the market place being entered or
- how mature is the technology being used
- how much experience do the teams have of the technology and crucially
- how much experience do the teams have of working together
- the good humour they display during project meetings

Finally how many cultures are involved in the project ('Finance', 'Engineering' and 'European' are three examples of 'cultures'!).

SOOP-133.   Perhaps rather than Net Present Value and the implied dominance of financial assessment we should talk of Net Present Utility?

9.1.6.2.5   Baseline Maintenance Procedure

Handling concerns follows procedures to detect, assess and respond to variance between reality and baseline whether actual or potential, mandatory or discretionary, within or out-with authority.

Recall that a 'baseline' is the result of planning activities that identify options, that a baseline's contents are the interlinked expressions of time, cost, work and outputs that two or more parties agreed to. Maintenance may need to span legally significant agreement IE a contract.

"To handle variance" means: we seek to place the assessment of concerns, planning of possible responses and decision making about which responses will cost-effectively address the concerns (questions, risks, problems and issues) in to the hands of those with appropriate knowledge **and** authority.

Initial planning conducted as a social activity between significant stakeholders makes control of change during project execution much easier. When people complain that change control is problem topic they normally created the problem by weak stakeholder engagement and insufficiently people-centred approach to planning.

Decision making may be performed at a different management level in the authority spectrum to that at which the assessment and response planning (identification of options) is conducted.

9.1.6.2.5.1   Change Control

Change control is typically regarded as the assessment and selective approval of just <u>discretionary</u> variations to the set of project outputs. Changes are normally

thought of as requested by customers and are either changes to what is included in project scope or are changes to the acceptance criteria applied to what is within scope.

More properly change control is the process of assess the results from "what –if" planning as triggered by <u>any actual or potential variation</u> in project context: either customer or supplier led, either discretionary "wouldn't it be nice if" or mandatory "oh shit…", and whether certain or uncertain.

Thus loss of a key staff member is as much a trigger for change control as the customer asking "can you make it bigger and deliver it earlier?" All of these are sources of concern

9.1.6.2.5.2   The Project's Baseline

Change control is a component of configuration management. CM is the discipline that oversees the creation of baselines and then tracks their delivery and or redefinition.

'Change' is just one process in the management of baselines along side initial definition, verification of content and function and delivery or 'release'. Baselines are a prerequisite for change control. The 'change' is 'with respect to the currently agreed status-quo'.

Recall also that 'to be at risk' IE to have concerns whose occurrence or outcomes are uncertain has to be relative to a baseline, whether the baseline is the current business-as-usual or current project plan and thus the hoped for future-state-business-as-usual.

The project baseline after the project board **[13.4.2** Authorise the project] and **[13.4.3** Authorise a Stage ~~or Exception~~ Plan] starts with the top level CI in the Product Breakdown Structure (PBS) and its decomposition into the aggregate set of management and specialist product required to satisfy each stakeholder:

3. All management products = { project plans, strategies, controls, roles, responsibilities and resource assignments }, in short the **A20-**Project Initiation Document PLUS
4. the aggregate of all specialist products, and the records of their acceptance criteria, technical specifications and designs, development test-rigs, maintenance regimens, jigs and tool-sets, staff training or any other element needed for through life ownership and operation.

In total everything defined in any of the **A5-**Configuration Item Records, **A23-**Quality Register entries, **A17-**Product Description and **A26-**Work Package of the Product Breakdown Structure (PBS).

5. 0.

9.1.6.2.6 Integrated Change, Risk and Issue Handling Process Overview

PRINCE2® defines a cycle for analysis of issues and changes: Capture, Examine, Propose, Decide, and Implement [pg 95].

➢ First anyone within or out-with the project can flag-up a concern. The project management team **[15.4.6** Capture and examine issues and risks].

The first consideration in capture is to understand the concern and then make a preliminary assessment of severity and priority. Seriousness and urgency should be judged against scales defined when creating the **A6-**Configuration Management Strategy.

As suggested earlier I recommend that you record all concerns in the Register of Concerns.

9.1.6.2.6.1 15.Responding to An Exception

When a concern is raised its affect on each stakeholder's **A2-**Business Case is assessed and compared to tolerances.

The sponsor's **A2-**Business Case is formally assessed by the project management team; all other stakeholders will perform their own assessment.

If it is suspected or shown that a tolerance **is** or **will be** exceeded then an exception **has** occurred.

Any stage or project level exception that occurs, no matter how minor requires the project manager to notify the project board or their delegated Change Authority of the exception. The **A10-**Exception Report is to considered by the project board as part of their role to **[13.4.4** Give ad hoc direction**]** to the project manager

9.1.6.2.6.2 The Official Manual's Approach

The official manual suggests that if the concern is considered trivial it is logged to the **A7-**Daily Log and is treated 'informally' – disadvantages to this approach were discussed earlier. *See X on Y*. The official manual also suggests that after 'non-trivial concerns are entered onto the **A12-**Issue Register the project management team create an **A13-**Issue Report as the team examine the concern, perform an Impact Analysis and propose responses.

Where tolerances are not threatened nor exceeded the project management team **[15.4.8** Take corrective action] to implement a response by amending or deleting existing **A26-**Work Packages or creating new ones.

➢ Where tolerances demand it the project management team's proposed response is subject to **[15.4.7** Escalate issues and risks] by preparing and submitting an **A10-**Exception Report for the project board or their delegated Change Authority to **[13.4.4** Give ad hoc direction] on that decides the team's next action on the concern.

The project board or change authority's decision on which action the project management team should take is either:

➤ To immediately **[17.4.5** Produce an Exception Plan]

In this case we create a fully resourced replacement schedules and risk profile at project and or stage level. The amended value of the project's results, amended costs and timescales of development and ownership should also result in revision of the **A2-**Business Case. **[17.4.5** Produce an Exception Plan] causes the performance of the activities of Managing Stage Boundaries(SB).

➤ Or immediately **[18.4.2** Prepare premature closure] to bring the project to an orderly end

➤ Or continue more or less 'as is'.

Perhaps the project board can address the exception, maybe by taking actions the project management team could not such as influencing stakeholders or simply changing stage tolerances.

Note the risk process is very similar and integrated handling is explicit in the activity names **[15.4.6** Capture and examine issues and risks] and **[15.4.7** Escalate issues and risks]. The insight that handling of both risk and issue is very similar in both cases is unfortunately partial, leading to a partially appropriate solution.

9.1.6.2.6.3   *Variation To The Official Manual*

[The steps above are appropriate to most contexts but can be improved.

First the **A12-**Issue Register and **A13-**Issue Report should simply be merged. The action is then to "complete an entry of the Register of Concerns and circulate appropriately". Secondly every concern should be captured to the Register of Concerns although the rigour with which the entry is completed should match its significance.]

9.1.6.2.7   *15.An Exception Doesn't Have To Be A Drama*

If the concern is minor then the correction may also be minor.

For example since all Requests for Change (RFC) are handled as project issues and implementation could take the project or current stage out of tolerance then an **A10-**Exception Report is raised, the stage (or project) is in exception and the project board or change authority will consider the request while the project proceeds to current plans.

It is quiet possible the Change Authority allocates a portion of the change budget to the RFC and the project continues, now operating within a baseline of stage tolerances revised by the internal reallocation between change budget and authorised, distributed budget. IE with no externally visible change to project level baselines: Despite its name the 'exception' process may be performed without great drama.
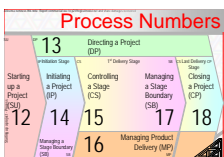
9.1.6.2.7.1   *Responding To PRINCE2®'s Issue types*

The types of concern the official manual describes are:

➢ Request For Change:

An RFC is a discretionary desire to be off-the-current-baseline in the future. The desired variance can be in any of the six aspects of project performance. { Cost, Time, Quality, Scope, Risk, Benefits }. EG "If we cut costs by 10% what scope could we still manage?"

An RFC is proposed by one 'contract' party to the other(s) to assess how in aggregate terms the currently agreed baseline could be changed.

Each RFC states a desire (or mandatory cause) to change at least one dimension of the existing faster-better-cheaper baseline. The RFC triggers planning to calculate alternate balanced sets of { cost, time, quality, scope risk, benefits } for new potential baselines.

After determination of options and analysis of their benefits and costs the proposer decides if the total set of new terms would be more or less attractive and so whether to stick with the status quo or agree to the new baseline.

> *SOOP-134.   Typically for the senior supplier(s) when responding to RFCs the 'open market' competitive considerations of winning business are different: now. RFCs may be the chance to increase margin and remedy contracts 'sold as a loss leader or to unachievable deadlines'– this applies in-house as well as for 'bought-in-under-contract' arrangements.*

Suppliers may raise RFCs to propose alternate technical solutions ('how'). If the contract is expressed in Statement of Outcome (SOO or 'what') terms rather than Statement of Work (SOW) terms then in these cases the customer may not be aware of the supplier's internal RFC and change control. If the change affects elements such as intermediate milestones used as payment triggers then the change may be visible to the customer even though the change's contents isn't material.

➢ Off-specification:

An off-specification is a situation where a variance to baseline <u>was</u> triggered in the (recent?) past by one contract party who has liability to the other(s) to remedy.

The variance has now become evident, or is now inevitable; Off-specifications are typically variances in the output products versus their Acceptance Criteria (AC) but can be in any axis of the project such as "we have over-spent on CIs produced to date so…".

The purpose of raising an off-specification is often to seek a 'Concession' that the off-specification can be overlooked without remedy. One party's obligation is simply changed. An off-specification that is rejected demands rework to 'make-good' the variance.
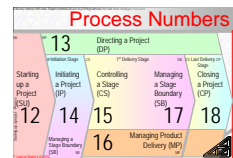
> Question or observations:

As previously noted: anything anyone wants to ask, raised at any time and responded to situationally.

> [A Risk: as discussed throughout the text so far – an uncertain future state together with its potential causes and potential consequences and the options for responding to the uncertainty.]

9.1.6.2.7.2   First: Drain On 'Real' Progress

Impact analysis is a drain on the team's time: perhaps a big drain.

Re-planning needs the technical team to reconsider aspects of 'How' or the customer (senior user(s)) AND technical team to reconsider 'What' AND 'How'. The technical team will have been busy doing "the real work of product development" so "real work" may need to be laid aside to do impact analysis.

Laying aside of current "real work" should be done carefully enough to be easy to restart again (and hopefully soon). Thus Impact Analysis can be a double cost: effort is diverted away from achieving outputs, laying aside before a pause and restart after a pause both add an overhead.

Equally assessment of concerns such as requests for change are important as it is expensive to proceed in a direction that is no-longer desirable, especially if there is also a cost of reversing previous actions. The outputs of impact analysis are updated 'shared consciousnesses' and an approved new baseline or re-approved old baseline.

Changing the baseline demands time, care and consideration from the Change Authority which must involve some input from (drain time from the diaries of) senior users' and senior suppliers' if only to support their representatives in the change authority.

9.1.6.2.7.3   Second: Drain on the Team's Motivation

A good project manager recognises that during planning the result to be achieved is the creation of a shared vision of what and how. The project manager should also understand that the best what and how results from challenge and counter-challenge: subject matter experts who can disagree with each other with humour to explore a problem space.

To challenge the opinions of others requires mechanisms of social interaction that in total forge (define) teams. A well developed team has embraced a goal and is not easily diverted to new goals. Change consumes morale as well as money.

The interested reader should look for the works of Bruce Tuckman and particularly the description of a team at the 'performing' level.

9.1.6.2.7.4   *Impact Analysis May Be Expensive*

If access to the Register Of Concerns is working well and if the project has weak technologies or active politics then the rate of arrival of concerns may exceed the team's ability to analyse them all well and have time to do work that contributes towards the project's completion.

The early warning signs of over –active change control were visible in Starting up a Project (SU) and Initiating a Project (IP) when sessions to identify stakeholders, and agree project end points and control structure overheads were held. (Still remember "humour"?) At that time it was appropriate to create commensurate change budgets and allowances for control activities.

If the early warnings were not previously recognised or heeded then the next stage boundary is the time to try to address the realities in the baseline. Perhaps project board and senior technical staff need a day (or three!?) a week allocated to addressing churn from concerns? If the project manager also has subject matter expertise duties then the balance of time allocated must accommodate 'managing' the project.

SOOP-135.   A project manager who works as technical expert on the critical path is a recipe for disaster: the first concern that needs managing creates a schedule impact.

SOOP-136.   Golden rule of Issue management: Create <u>one</u> very <u>easy to enter</u> process whose first step is capture in a publicly visible place and then instigate wide, wide distribution for impact commentary.

9.1.7 [14.4.3 Prepare the Quality Management Strategy]

Quality management is a hugely important topic but 4,000 words is enough to cover it! It is an easy and central discipline.

Quality is one of the many things PRINCE2® does really well. Quality's roots spread through every other facet of any project's control regimen.

9.1.7.1.1.1   *Re-Use Existing Quality Policy*

The project manager writes or commissions the writing of, or most likely adopts, adapts and assign responsibilities from the enterprise's 'normal' **A22**-Quality Management <u>Strategy</u>.

The **A22**-Quality Management Strategy defines project specific product and process standards, procedures and techniques, roles and responsibilities for quality activities based upon the customer's quality expectation (or in-fact everyone's expectations).

9.1.7.1.1.2   *A22-Quality Management Strategy Product Description*

The quality management strategy's contents may be {.

➢ Document admin (as noted in See X on page Y): ownership (who to advise of the need for changes to the **A22-**Quality Management Strategy), version control information etc

➢ Scope and objective of the strategy

➢ Description of 'how this project will carry out quality planning, quality control and quality assurance, who by, and when'.

Specification may be by reference to organisational standards with an auditable note of substitutions, extensions and omissions.

➢ 'How' includes tools and techniques to be used (eg Statistical sampling versus exhaustive testing, Pareto analysis and Check-Lists, Inspection versus walkthrough. It may also encompass testing equipment, rigs, jigs and test beds).

➢ 'How' procedures to be followed and the records to be kept and the triggers for their creation or update.

PRINCE2® defines the **A23-**Quality Register. The **A23-**Quality Register is an index to the primary records created during quality control.

Other PRINCE2® elements that report on quality will be the **A3-**Checkpoint Report, **A11-**Highlight Report, **A8-**End Project Report and **A9-**End Stage Report.

➢ 'Who' specifies which PRINCE2® role holders will perform the tests and reviews and audits, maintain the records and create or receive the reports.

There must always be a quality route to the project board or (and!) CoPM that is independent of all those being assessed.

Who and when are generic descriptions not substitutes for the schedule in the **A16-**Stage Plan!

➢ 'When' relates to the triggers of any quality activity and the time to complete the triggered action so that decisions and actions are timely.

➢ Procedures for or reference to relevant Quality Management Systems of either the customer(s) or supplier(s) as derived from the CQE of the parties involved.

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9.1.7.1.2   *Parts of Quality*

Quality as a discipline is often said to comprise three parts (four if you do the APM's 'APMP' exam rather than the APMG's PRINCE2® practitioner exam - not that the real world changes, just the answer that earns marks in an exam – sadly ☹).

➢ Quality planning

➢ Quality control and

> Quality assurance (which includes the forth one of Continuous Process Improvement).

How an organisation approaches these is described in a Quality Management System (QMS).

9.1.7.1.2.1   The Quality Management System (QMS)

How an organisation operates in general is defined by policy, procedures, roles descriptions and authority limits. The collection of policy, procedure, role and authority limits is normally called a management system.

Thus how quality is achieved is defined in the Quality Management (sub-)System (QMS) of the overall management system.

9.1.7.1.2.2   Policy, Procedures and Processes

[Note:

SOOP-137.   Policy is the statement of values or aims that guides the creation of new procedures for contexts where procedures are absent or challenged.

Procedure is the written description of how some process is operated. IE procedure defines:

> Steps, decisions and sequence
> Duties and authorities to make decisions

Processes are the interaction of elements or agents within a system that transform inputs to outputs. A process can have sequence within its elements but exists without being defined by someone EG sugar dissolves in hot tea. Procedures are implemented to cause the human part of processes to happen in a consistent fashion.]

9.1.7.1.2.3   Customer and Suppliers' QMS'

It is likely that the 'customer' and all suppliers involved have existing Quality Management Systems (QMS). Project specific tailoring of the project's **A22-**Quality Management Strategy will define how the various QMS are integrated and used.

Tailoring of the **A22-**Quality Management Strategy is based on:

> the products to be created,
> the project's acceptance criteria as derived from stakeholder's quality expectations,
> existing customer or supplier quality management systems,
> local standards relevant to the project's products, constraints and practices,
> the configuration management tool employed in BAU.

9.1.7.1.3 Quality Definitions For the Real World

Quality has many definitions and that illustrates the source of some people's problems. That many definitions exist all of which have some merit but that none

can replace the others reveals when concept hasn't come from penetrating insight.

The required insight is that quality depends on your perspective. For our purposes we need two perspectives and thus two definitions – the senior user's and the senior supplier's:

➢ For the senior user the definition is "fitness for purpose" (FFP).

> *SOOP-138.* *The customers view of quality is "what ever is delivered should do what I want whether that is what I said or not". Fitness for purpose (FFP) is customer friendly, investment centric, post project oriented and results based, hence PRINCE2®'s strength from being 'product' centric.*

> *The customer's desire is to be excited and delighted by what they receive. Customer satisfaction is rarely created by meeting project constraints of 'to time and cost and scope' but is always dented by missing time or cost or quality or scope or any other expectation.*

➢ For the senior supplier the definition of quality is "conforms to the specification (C2S)".

> *SOOP-139.* *The supplier view of quality is "Conformance to the Specification (C2S): we built what was asked for (we can not read minds. Even if we could we are probably constrained by a contract – but at least that could be amended if the disconnect is spotted). We can only create what you say you want".*

> *'Built what was asked for' discharges the supplier's obligation under the contract (legal or morale). The supplier's desire is to be paid and to be gone [or to string the job out as long as there is money available, but that is another topic].*

9.1.7.1.3.1   Third Perspective

A third perspective and thus definition is the professional quality engineer's. In this case quality may be defined as 'lack of variation' aka 'repeatability'. Here lie run-charts, variance and an overlap with risk and estimation's use of variance and measures of σ (sigma). We'll leave this aside for now.

9.1.7.1.3.2   FFP, C2S, What, How

SOOP-140. *The FFP and C2S definitions are foundation stones upon which much (everything?) else in good project management stands. FFP is the reflection of scope's "What" and Product Breakdown Structure (PBS) in the quality mirror, while C2S is the quality mirror's reflection of scope's "How" and Work Breakdown Structure (WBS).*

9.1.7.1.3.3   Fine Workmanship

Since the word 'quality' means either FFP or C2S dependant on the observer's point of view there is no room left for the every-day use of quality that signifies
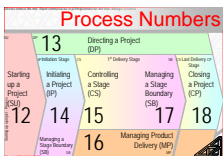
luxury, five-star, "the Rolls-Royce of…" or acme of perfection. This concept, when we need to refer to it is 'grade': "a category assigned to products or services having the same functional use but differing technical characteristics" PMBOK® Guide 4th Ed Pg 190.

9.1.7.1.3.4   For the Exam

PRINCE2®'s definition [6.2.1] is "*the totality of features and inherent or assigned characteristics of a product, person, process, service and/or system that bear on its ability to show that it meets expectations or satisfies stated needs, requirements or specification. In PRINCE2, a product can also be a person, process, service and/or system, so the focus of quality is on a product's ability to meet its requirements*".

A little broad, all things to all people (thus nothing real to anyone) and surprisingly ultimately explicitly supplier side "focus … on … requirements". I suggest setting it aside in favour of explicit and separate FFP and C2S.

9.1.7.1.3.5   28.3.Exec's Challenge

The exec and project manager have several challenges:

1. to ensure the specification extracted from the senior user(s) staff is what they actually need – IE the 'right product'
2. That the specification is properly understood by the senior supplier(s)' specialists and
3. that the right products are then well made

4. and post project that they are then used to create outcomes leading to benefits
5. 0.

9.1.7.1.4 28.3.Quality Planning (QP):

Part one of quality is quality planning. Quality planning is simple:

➢ For the <u>senior user quality planning is selecting the standards</u> (templates, processes, metrics, targets and measuring methods) <u>that apply to the products</u> we will deliver. They define the products' levels of capability.

➢ <u>For the supplier quality planning selects the processes standards</u> we will use to deliver products that meet those predefined levels of capability IE the acceptance criteria.

➢ Selection of standards is entirely based on the products to be created and drives the required technical activities for creating them.

➢ Creating the control structures such as the **A22-**Quality Management Strategy and **A23-**Quality Register and assigning quality responsibilities is also all part of Quality planning.

SOOP-141.   Quality planning, as in "select standards" is crucial for estimating. To be meaningful an estimate must include definition of how the work will be carried out to match the capability to be delivered. Process standards are central to estimating. Estimates are crucial to being able to track progress and control future project conduct.

SOOP-142.   Estimates are not numbers.

9.1.7.1.4.1   Quality Planning Is Done At Several Different Times As The Project Management Team…

➢ **[12.4.4** Prepare the outline Business Case**]**

When the goal of the project is defined and included in the **A19-**Project Brief and the **A21-**Project Product Description is defined. IE Product standards and grade are defined.
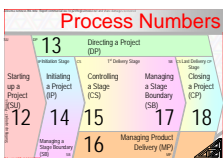
➢ **[14.4.3** Prepare the Quality Management Strategy**]**, where the project management team consider the source of standards to use and the roles in managing quality.

Generally the supplier's Quality Management System should contain development standards including those to elicit the customer's view of product attributes.

Attributes are factors such as speed, fuel efficiency, response time, flavour, comfort, ease-of-use, floor area, fluffiness, mean-time-between-failures and mean-time-to-repair or expected operational service hours and any other factor the customer has an opinion of.

The interested reader should search for the work of Tom Gilb on attributes.

➢ **[14.4.6** Create the Project Plan**]** where the project's products are successively decomposed in the Product Breakdown Structure (PBS).

Decomposition reveals in more detail the product and process standards needed. Existing **A17**-Product Descriptions are referenced or new ones created.

A record of the tests to be scheduled is added to the **A23**-Quality Register. Later records will be updated with test results.

➢ **[17.4.1** Plan the next stage**]** and **[16.4.1** Accept a Work Package] where the most detailed level of planning and therefore product decomposition and so also **A17**-Product Descriptions are defined and **A23**-Quality Register entries made for intended tests.

9.1.7.1.5   28.3.Quality Control (QC):

SOOP-143.   Quality control is the use during product realisation of the standards selected in quality planning by the technical and management team members.

9.1.7.1.5.1   No Such Role as Quality control

SOOP-144.   No one should have a job title of 'project quality control'. If they have then quality hasn't been understood!

There may be people with a role to independently verify the results produced by the project management team and the project's specialist technical staff. These people in PRINCE2® speak are project assurance. Project assurance's involvement does not mean that quality is 'done' by anyone other than the product's producer.

SOOP-145.   Quality control is done by the person doing the job such as brick-laying, writing software or running a risk identification workshop. Quality control is only present in the project if it is in every action they take. IE the people assigned the responsibility for producing (acquiring) some project product whether A3-Checkpoint Report or Astronaut's Gloves.

9.1.7.1.5.2   Know = Skill

SOOP-146.   If the team do not, prior to the project, know with 'unconscious competence' the contents of standards and method statements then progress is very likely to be slow and rework high.

Knowing the contents of standards to the level that the technicians can apply them with full appreciation at the beginning of the consequence on steps at the end is 'skill' or dexterity or gracefulness.

The ratio of progress between skilled (unconsciously competent) and unskilled (consciously competent) is in the order of 10:1 or 100:1 (unconsciously incompetent).

Exercise: Card-Sorting

9.1.7.1.5.3   Incompetent is NOT (necessarily) Pejorative

'Unskilled' is inevitable where projects are attempting something new, ground-breaking, seeking innovative goals (such as when introducing PRINCE2® to a new environment). Unskilled (lacking experience and thus "incompetent" in a literal rather than pejorative sense) is a fact of project life.

Incompetence can be reduced by training, coaching and mentoring, experimentation and prototyping or compensated via consultancy, outsourcing, or contingencies, change and rework budgets: every way around it has cost (money, morale and months) that must be visibly included in a realistic project's baselines.

9.1.7.1.5.4   Approvals

Quality control is done as products are created. They are then approved and accepted.

All of the non-Directing a Project (DP) PRINCE2® activities encompass quality control of management products created. The DP activities encompass the acceptance (or not) of most management products. Acceptance of some is between project manager and team member/ manager.

Specialist products will undergo quality control mainly while specialists **[16.4.2** Execute a Work Package**].** Approvals and acceptance of technical products happens as part of the routine **[16.4.3** Deliver a Work Package**]** and then finally while the project management team **[18.4.3** Hand over Products**]** at project closure.

Note: product handover normally happens in **[16.4.3** Deliver a Work Package] and **[18.4.3** Hand over Products] is the checking that handover has happened satisfactorily and record-keeping is complete.

9.1.7.1.6   Quality Mechanics

The mechanics of quality are really simple: the customer says what they want via specification of the acceptance criteria aka the final tests that prove it.

The subject matter experts select how to achieve the acceptance criteria with interim, 'along the way tests' to ensure we stay on target. All the tests map on-to the Quality Management System (QMS)'s standards via the **A17-**Product Description's steps that describe the evolving maturity of the product being supplied.
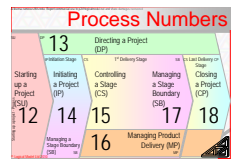
Every test identified is recorded in the **A23-**Quality Register during planning. Tests are then carried out and the results stored. Project support update the **A23-**Quality Register to summarise the result. Configuration management capture the progress made in the **A5-**Configuration Item Records. Tested products are released to who-ever is next in their life-cycle.

CQE (6.3.1.1), AC (6.3.1.2), A22-Quality MS (6.3.1.4), A23-Quality Register (6.3.1.6)
Product Descriptions (6.3.1.5), A22-Quality MS (6.3.1.4)

How the customer's quality expectations are derived, in which process(es), and which roles are responsible for this
In which process(es) Product Descriptions are developed and reviewed and which roles are responsible for this
The recommended composition of a Quality Management Strategy, in which process(es) it is developed and reviewed and which roles are responsible for this

QU-09 P:2
QU-11 P:2
QU-12 P:2

CoPM
- Project mandate, prepared by CoPM states CQE

Project Board

13.4.1 Authorize initiation
1. Board review A21 and confirm CQE & AC
2. A19, A21, COE & AC placed under change control

13.4.2 Authorize the project
1. Board confirm A22-Quality Management Strategy will achieve COE (benefits) & baseline
2. Board approve A17-Product Descriptions for project plan scope

13.4.3 Authorize a Stage or Exception Plan
1. Board approve A17-Product Descriptions for stage plan scope

12.4.3 Design and appoint the project management team
1. Consider training needs (eg quality methods)

12.4.4 Prepare the outline Business Case
1. SU provides/ PM captures COE & AC, Criteria/ Tolerance/ Quality Methods/ Test Skills or responsibility in A21-Project Product Description

12.4.5 Select the project approach and assemble the Project Brief
1. PM Includes CQE & AC (in A21)
2. Assemble A21 into A19-Project Brief

14.4.3 Prepare the Quality Management Strategy
1. PM confirms COE & AC clear enough in A21-PjPdD, Creates A22-Quality Management Strategy
2. PS create A23-Quality Register
3. PM seeks board OK now or l8r

14.4.4 Communication Management Strategy (A22-QMS)
1. PM includes A22-QMS needs in A4-Communications Management Strategy

14.4.5 Set up the project controls
1. PM inc. A22-QMS needs in controls

14.4.6 Create the Project Plan
1. PM/ SU Update COE/ AC if change or refinement required since 12.4.4
2. PM (team) create A16-Pj Plan based on A21-PjPdD/ AC/ COE/ A22-QMS
3. PM creates A17 for products in Pj scope

14.4.8 Assemble the Project Initiation Documentation
1. PM Assembles A21-PID including A22-QMS

Plan Delivery Stage

15.4.7 Escalate issues & risks
1. PM consults A23-QR for input to update A13-Issue Report and A10-Exception Report Apdx-A Dervl)

15.4.6 Capture and examine issues and risks
1. PM consults A23-QR for input to A13-Issue Report

15.4.5 Report highlights
1. PM confirms quality work in period from A23-QR in A11-Highlight Reports

15.4.4 Review stage status
1. PM seeks Q-Issues shown by A23-QR entries
2. PM confirms products accepted by those names in their A17-PD "Responsibilities"
3. PM detects stage end as A23-QR entries all complete

15.4.1 Authorize a Work Package
1. PM consults A22-QMS to create A26-Work Package
2. PM includes A17-Product Descriptions in A26-WkPkg
3. PS/TM may update A23-QR quality reviews planned

15.4.2 Review Work Package status
1. PM assesses status of Q-reviews by consulting A23-QR

15.4.3 Receive completed Work Packages
1. PM confirms A26-WkPk complete by consulting A23-QR and "Quality Responsibilities" of each included product's A17-PD

17.4.1 Plan the next stage
1. PM reviews A20-PID and changes to COE/ AC
2. PM/TM/ SU Define AC for each A17-Product Description per CI in the stage PBS
3. PM creates stage plan based on A22-QMS, A2-PjPdD
4. PS add quality reviews to A23-Quality Register

17.4.2 Update the Project Plan
1. PM checks for change to A21-PjPdD

17.4.4 Report Stage End
1. PM confirms "all done ok" by checking A23-QR & Approval Records
2. PM reports on quality in period (from A23-QR) details of Quality records & Approval Records or Off-Spec & Concession in A9-End Stage Report

17.4.5 Produce an Exception Plan
1. PM asks are COE & AC changed
2. PM creates ExPlan based on A22-QMs for any new A17-PD in PBS
3. PS amend quality reviews in A23-Quality Register for new products and/or tests

18.4.1 Prepare planned closure
1. PM asks if all products in A18-PSA match AC in A17-PD or covered by a concession
2. PM Confirm AC met and A21-Project Product Description delivered

18.4.2 Prepare premature closure
1. PM Assesses via A18-PSA products with Approval Records/ Concessions

18.4.3 Hand over Products
1. PM asks if all products in A18-PSA Approved by those named in A17-PD
2. PM checks Acceptance records or Concessions from all parties eg Ops+Maint
3. PM may list FOAR for concessions

18.4.4 Evaluate the Project
1. PM Reviews usefulness of A22-QMS
2. PM Closes A23-Quality Register
3. Include statistical insight from quality records in A15-Lesson Report
4. PM includes in A8-EPjR details of Quality, Approval & Acceptance Records or Off-Spec & Concession

Team Manager

16.4.1 Accept a Work Package
1. TM/ PM/ PS ensure 'best' quality reviews in A23-QR

16.4.2 Execute a Work Package
1. TM develops products following quality method for in-process development to criteria in A17-PD & record quality records
2. TM/ SU conduct quality reviews/ appraisal & "assemble quality records" –to show products meet specification (if a quality review action will exceed tolerances then raise and Issue)
3. TM/PS update A23-QR* with results: Failures are replanned
4. TM obtains & issues Approval Records from authority named in A17-PD
5. TM confirms quality work in period in A3-Checkpoint Report

16.4.3 Deliver a Work Package
1. TM checks approval records in A26-WkPkg scope

AC-Acceptance Criteria
References of type A99 expanded in index under "A"
Table 16.2 says (P)-PS but 15.2 omits the required P-PS

9.1.7.1.7   Quality Review

Quality review encompasses the checking actions the confirmation that quality control has been effective.

Confirmations use the testing procedures that have been agreed to demonstrate achievement of some result against some defined scale: IE demonstrate achievement of the pre-defined standard as described in the product's **A17-**Product Description.

Quality review of physical attributes such as speed, weight, even failure rates may be capable of objective assessment. All aesthetics and much intellectual planning, design and realisation activity is assessed through multiple-subjective 'expert' opinions. Generally if the opinions are not contradictory the review assumes results are satisfactory (this doesn't actually make it objective, and safest is when there is argument. No argument can be 'right' or political factors are in play).

PRINCE2® provides a procedural description of quality review that is mostly document centric. PRINCE2® calls this the 'Quality Review Technique'. We will cover it when considering how to **[16.4.2** Execute a Work Package] *See X on Y*.

9.1.7.1.7.1   Evolving Maturity

Each successful test is a trigger point at which we recognise a product's growth in 'maturity' and record the progress proved by the test in the product's **A5-**Configuration Item Record.

During stage planning all the tests that will verify progress are extracted from the **A17-**Product Description and Quality Management System (QMS) and recorded against entries on the **A23-**Quality Register. Intended tests are then scheduled and resourced in the **A16-**Stage Plan.

9.1.7.1.7.2   Tracking Tests = Measuring Real Progress

As tests are performed so progress (or not) is recorded (tracked). Meaningful tracking makes a record of 'real' progress achieved. Tracking progress is NOT the commonly envisaged recording of hours booked: that says nothing about real achievement, only about expense incurred.

Judging project progress can only be done with domain specific, trade specific tests applied that verify correct application of process to inputs. The review thus verifies that outputs conform to input plus process specification. Whether they are fit for purpose must be validated by the customer and their project assurance as part of the approvals and hand-over step.

Having good **A17-**Product Descriptions whose contents are complete is a huge advantage, a necessity in fact.
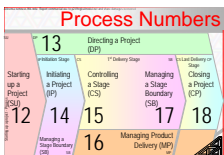
9.1.7.1.8   28.3.The Quality Register

At the same time that the **A22**-Quality Management Strategy is created the **A23**-Quality Register is initiated, empty, by project support (and the official manual says checked by the project manager and project assurance although there seems little point to check what is currently empty).

During the planning of each Enabling Stage records of "tests to be performed" are made by project support. As the project management team **[17.4.1** Plan the next stage**]** or when ever the stage's intended quality activities are amended the **A23**-Quality Register will be populated with a record of all quality activities to be scheduled in the approaching plan's scope (mainly stage and team level plans). Now a check by project manager and project assurance is valid.

During execution of each stage the **A23**-Quality Register's purpose is to provide a pointer to and summary of the detailed test results. The audit trail of test results is maintained by project support.

While the official manual says records of test results are made by project support and reviewed by the team member/ manager. It may be more expedient to have records completed by team member/ manager as they **[16.4.2** Execute a Work Package**]** following a procedure agreed when the project manager **[15.4.1** Authorise a Work Package] and team member/ manager **[16.4.1** Accept a Work Package].

9.1.7.1.8.1   A23-Quality Register Product Description

When a test is run it should generate test results. The **A23**-Quality Register is generally an index to the primary records of tests and summarises the conclusions drawn. It may be desirable and possible to include the actual test results within the **A23**-Quality Register entries but is not required.

Each **A23**-Quality Register record could be made-up of {.

➢ An ID for this entry on the quality register.

  The Work-package ID and time-stamp normally works as multiple times can be recorded for tests that are rerun. (note a test may be rerun several times). The ID provides a reference for linked records.

➢ List of linked records and the linkage

  EG "Previous execution of same, but failed test(s) of this CI/ these CIs" "Other tests CIs must clear to be proved mature enough to move on".

➢ IDs for the CIs under review (specialist and management), perhaps with names and descriptions for convenience even if this would mean quality records are no longer in third normal form.

➢ Reference to the details of the **A26**-Work Package(s) in the team or **A16**-Stage plan that define the review.

  The **A26**-Work Package or stage plan might instead refer to the quality register's entry or the two may duplicate each other, or you may not feel you

need to document these details in either place although somehow memory of who is to do what will be needed between planning and executing the tasks {

- Who will be/ was involved in what capacity
- Schedule dates for baseline, currently intended and actual test dates
- Dates of sign-off or other approvals and acceptance steps, perhaps with locations or other details,
- Resources assigned to the roles of a review eg Chair, Admin Support, CI's presenter/ producer, the reviewers or those assigned to other test methods - EG Auditor and auditees
- The test methods that define how the CIs are being tested eg: stressed beyond failure threshold, simulation, model-office, field test, read-through, walk-through (hopefully a link to the **A17-**Product Description) }

➢ A reference/ pointer to the quality review's actual record storage perhaps with a summary after the test has been executed. The summary may encompass diagnosis of problems and a link to the work-package included in stage or team plans to effect the correction. Note some corrections will be within tolerances and some will result in escalations due to creation of an out of tolerance state. The summary will typically include {

- Pass/ Provisional Pass - IE had or will have a corrective action **A26-**Work Package (and cross-reference) but further review not needed
- Fail - rework and retest is/ was needed (and linked **A23-**Quality Register entry) }

}.

9.1.7.1.8.2   *Quality Reporting*

Reports generated from a number of **A23-**Quality Register records may give a history of test status for a team, or an aggregate CI such as a release, or a product CI. For example reporting against a product CI may comprise { Test dates and evolving status (EG due/ failed/ rescheduled/ passed) and the persons recording the results. For each rescheduled test the test's summary and CI's current status }.

9.1.7.1.9   28.3.Project Assurance

Project assurance has a helping role to perform through out quality's activities: to constantly seek evidence that, and suggest ways to ensure that the intention of the supplier and the desire of the customer are aligned and will continue to be aligned.

9.1.7.1.9.1   Project Assurance Requires Domain Knowledge

SOOP-147.   To be competent at project assurance requires being either skilled in the underlying discipline or being able to 'play the dumb-laddie' IE question even the 'obvious', and preferably both.

The official manual adds to every step of every process and to every product an instruction that equates to "and project assurance should check/ help/ advise/ be consulted…". I've said it once and you should apply it at every step – umpteen applications again.

9.1.7.1.9.2   Project Assurance Vs Quality Assurance

Quality assurance is not a PRINCE2® role. The PRINCE2® term Project assurance is quiet different from QA. They are not the same idea re-named.

Both are external to the person doing Quality control.

9.1.7.1.9.3   Project Assurance

Project assurance embodies the project board's duty to confirm that the project is progressing to the expectations of the constituents they represent (after expectations are subject to agreement and expression as acceptance criteria).

Project assurance's role is to confirm the right people are involved with the right resources and are producing the right product right (sic).

Project assurance are a roving quality control function. They should say "let us discuss the standard before you start" and perhaps "I suggest you add or subtract…" and "do you have all the skills, tools and support you need?" Project assurance bring subject matter expertise to bear by participating in quality control and quality review activities. Project assurance is a project internal function concerned to ensure the products align to their project board member's perspective.

Typically project assurance demands more time, attention to detail and subject matter expertise than the project board can or wish to invest. Project assurance is commonly delegated to one or more people.

9.1.7.1.9.4   28.3.Quality Assurance (QA):

Quality assurance on the other hand is a component of quality management and a role.

QA the role have no intrinsic interest in a standard's content, nor necessarily any subject matter expertise. Instead quality assurance asks "are you using the standards?", "Are they useful?", "If not what are you doing about it?"

QA is an independent function that is concerned to maintain the Quality Management System's use and relevance. QA audits or inspects the records created during Quality control and Quality review. Quality assurance audit seeks to:

1. Confirm compliance with the QMS

2. That following the QMS generates the required results (IE is useful)

   IE contributing to a result that meets its product standards. Is effective, and perhaps, but definitely third

3. are efficient.

4. 0.

Where the answer to 1) or 2) is "no" then QA must trigger corrective actions. IE require the technicians re-write weak and write missing standards.

Note: While QA staff are often expert in writing procedures unless they are also expert in the technical discipline being audited they will not know the trade-specific processes that the procedure must describe. Technical experts define process and may write procedures. Quality experts can only write procedures when they have their own or someone else's domain expertise to inform what the content must be.

9.1.8 [14.4.4 Prepare the Communications Management Strategy]

SOOP-148.   It is often said that communications are the most significant factor in project success. That is wrong. The most important factor is decision making. Good decision making is only possible with communications. Thus communication is vital but is not of itself of any use at all.

As previously noted under discussion of **[12.4.4** Prepare the outline Business Case] some tailoring is sensible here to strengthen the important element of stakeholder management.

9.1.8.1.1 [14.4.4 Prepare the Communications Management Strategy]

For exam purposes PRINCE2® suggests that when the **A24-**Risk Management Strategy, the **A6-**Configuration Management Strategy and **A22-**Quality Management Strategy are prepared or nearing completion then the project management team **[14.4.4** Prepare the Communication Management Strategy] and project assurance review it.

This sequence is suggested so that the **A4-**Communications Management Strategy contains relevant communication needs from the other strategies, particularly distribution of reports and gathering of status data.

9.1.8.1.1.1   Guiding References

In addition to the preceding three strategies and their record keeping and reporting obligations the **A4-**Communications Management Strategy is prepared by consulting all relevant corporate communications standards or other guidance, the **A19-**Project Brief, **A14-**Lesson Log, **A12-**Issue Register and **A25-**Risk Register.

9.1.8.1.1.2   Two-Way Flow

The **A4-**Communications Management Strategy seeks to establish the information flows required by all stakeholders in both directions. Crucially the project's stakeholders must recognise their duty to inform the project manager as much as their right to expect information from the project manager.

9.1.8.1.1.3   Stakeholder Analysis: Start It Early, Repeat it Often

PRINCE2® also suggests **[14.4.4** Prepare the Communications Management Strategy] should include a Stakeholder Analysis.

As I suggested when discussing **[12.4.4** Prepare the outline Business Case] the definition of the project's 'desired outcome' in the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, **A2-**Outline-Business Case, **A21-**Project Product Description, Project Approach, … } must involve significant stakeholders.

In my opinion the consideration of stakeholder analysis after the definition of the Desired Outcome and **A21-**Project Product Description and the three key project strategies is far too late.

While stakeholder analysis will never be finalised the bulk of the work to identify protagonists and decide the strategy to handle them reduces as the other strategies near readiness.

9.1.8.1.1.4   Finish Now But Don't Start it Now!

Writing up the **A4-**Communications Management Strategy could happily happen now. The communication needs for management of risk, quality and configuration management follow in part from who holds what post and provides (receives) what information when.

You can (safely?) finish the **A4-**Communications Management Strategy 'now' but you should have started it much earlier - IMHO.

9.1.8.1.1.5   Stakeholders and the PRINCE2® exam

Guidance on how to perform a stakeholder analysis is mostly missing in the official manual; instead the reader is referred to OGC's work on programmes. A mistake I think. For the exam the suggestion is to define:

➢ Stakeholder type
➢ Desired relationship or communications outcome and
➢ Key messages
➢ Strategies for communication and
➢ Methods to confirm successful communications

The 'flavour' of this seems to me to be outward. Crucial is to consider the inward flow. What do stakeholders have to communicate to the project manager exec and project board for the project to deliver to its success criteria and the investment to meet its return on investment targets? What is the content of success criteria that the powerful can buy-in to?

Establishing the outward flow of a **A4-**Communications Management Strategy will require understanding of the stakeholder wants, needs, resources and attitude. The most convenient way to gather much but not all the information on which to base communication plans is by simply asking them what they want (and what they can assist with).

A local project support office may be able to provide templates or a local programme or portfolio management office may mandate the communications regimen.

9.1.8.1.1.6   *A4-Communications Management Strategy Product Description*

The **A4-**Communications Management Strategy covers the common elements defined above, but repeated here for convenience {.

➢ Who is responsible for maintaining the strategy, any required preamble, detail such as version numbers and publication dates for configuration management.

➢ [In addition to the official manual's suggestions ensure each communication notes:

• The action the recipient is required to take on receipt

• The number of repetitions and channels used to ensure important messages are not just received but absorbed

]

Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) 12 | Initiating a Project (IP) 14 | Controlling a Stage (CS) 15 | Managing a Stage Boundary (SB) 17 | Closing a Project (CP) 18

Managing a Stage Boundary (SB) 16 | Managing Product Delivery (MP)

Section: 2   Page: 9.1.8:323 of 541

> References to corporate standards for communications and note of additions and deletions with auditable justifications. The strategy may need to written from scratch or may be 90% 'off the shelf'.

It should cover any and all of:

- 'Branding' such as colours, logos, formats. Significant projects with large impacts need their own clearly identifiable branding in addition to any company branding.
- Standards such as images or writing standards, translations, speed of distribution
- Communication methods and tools and techniques
- Roles and procedures for who does what parts of the communications work
- When or because of what trigger
- What records are consulted and created and how records are looked after (by reference to the configuration management strategy).

> Who all the parties to project communication are and their information needs. This section must include the project manager as a receiver and other roles such as exec as suppliers!

- All timings
- Triggers and flow
- The communications media (how), and crucially…
- Repetition (how often)
- Expected actions arising from communications and
- Formats for feedback, acknowledgement or follow-up that is required or beneficial.

}

The **A4-**Communications Management Strategy must include details of how the project board communicate with CoPM.

10 Initiation Stage Part II

The work of the Initiation Stage that is most likely to require project specific thinking is to **[14.4.5** Set up the project controls], **[14.4.6** Create the Project Plan], and then **[14.4.7** Refine the Business Case].

These three must be tuned to the unique needs of this project.

The **A16-**Project Plan and controls benefit from being developed more or less as an integrated activity. Equally the **A2-**Business Case's investment appraisal is half based on cost and timescales from the **A16-**Project Plan and so can't end at least until planning of resource usage versus timescale is more or less finished. The other half of the investment appraisal's basis is the assessment of the benefits that flow from the project's change to business-as-usual.

All the results of the Initiation Stage are consolidated for presentation to the project board to **[13.4.2** Authorise the project] (or not).

To **[14.4.6** Create the Project Plan] requires mastering two vital, chunky topics: Product Based Planning and estimating as well as a host of other planning elements including scheduling and resource allocation.

10.1.1 [14.4.5 Set up the project controls]

SOOP-149.   'Control' is a process. Controls compare current status versus planned intention and re-use planning to develop appropriate adjustments to future intended activity. The process keeps the project focussed on the target where-ever it is today. The movement of the target and the performance variance against current-plan are the inputs to decision making.

To have control thus means we have to plan continually and we have to track actual status continually and we have to make decisions about what to do from 'here' onwards.

'Planning' means shared consciousness, rather than a bar-chart printed in colour. The latter is no substitute for the former but in tandem will act as a good summary, good map and later as a good audit trail.

10.1.1.1.1 Effective Controls

SOOP-150.   Controls must cause mostly correct decisions within a timeframe that is adequate to take action. Controls must match the project's context of significance (scale), risk (uncertainty), complexity (traceability of cause and effect), politics (decision making), management tone and stakeholder power. <u>Controls are the mechanisms for,</u> frequency of, content of, parties involved in <u>and results from project communications</u>.

Controls may also be efficient, but that is a bonus and questing for it before effectiveness is achieved is often a project crippling mistake.

Definition of the controls is iterative with almost all other Initiation Stage activity.

10.1.1.1.1.1 *Exercising Control*

Exercise of control is about revising and authorising and following plans. Plan does not require 'document' or everything predicted (pre-specified) in detail. A valid plan includes the degree to which we agree 'to respond situationally'. We may agree that degree to be 100%.

SOOP-151.   The minimum needed for project control is shared consciousness about the purpose of the journey and agreement on how to steer.

10.1.1.1.2 Controls Must Link to Authority Over Investment

[Improved project management performance avoids one generic and in a PRINCE2® context one PRINCE2® specific symptom of 'supplier side thinking'

1. Time-wise the stewardship of the initiative should not be thought of as ending at delivery of benefit enabling outputs and
2. Amazingly PRINCE2® explicitly omits definition of the sponsor's role and omits guidance on how linkage of stewardship upward to sponsor and corporate portfolio governance.
3. 0.

]

10.1.1.1.3 Hierarchy and Timeframes in The Control Interfaces

SOOP-152.   The mechanics for controls operate across timeframe boundaries and across delegated authority limit boundaries. Authority and timeframe boundaries span the investment's existence and so include the sub-unit of 'project' that is contained in 'investment'. Control that is limited to just the project and isolated from wider consideration of rationing of capital is unconnected to reality and invites failure.

Successful controls are based on delegating responsibility for **results** from resources assigned within defined freedoms aka defined constraints aka defined tolerances.

10.1.1.1.3.1 *Business Timeframes*

In businesses terms the 'delegated results' might be expressed as those of three timeframes:

➢ Investment qualification (definition and investment selection),
➢ Benefits enabling and
➢ Benefits harvesting.

We might express these elements as having a time dimension that must extend before and after any project and a seniority that must extend above any project.

10.1.1.1.3.2   Project Timeframe and Assignments

Delegation of responsibility in projects may be expressed as the hierarchy of assignments that are a 'Russian-doll' of timeframes:

➢ delegated **A26-**Work Packages,
➢ delegated Stages and
➢ delegated Projects.

Investment qualification and project start-up overlap in time and authority. Close-out of **A26-**Work Package, stage and project all have potential for overlap with the start of benefits harvesting. At the least the project close and benefits start-up must overlap.

Clarity of the cross-over into and out of the project establishes the authority and timeframe views of control boundaries.

10.1.1.1.3.3   Unique and Overlapped Seniority and Timeframe

Successful realisation of benefits depends on clear description of the boundaries between people's roles and duties for control across the full investment life-cycle versus those for just delivery of project outputs. Both project and investment perspectives must be understood for their interface, for what is overlapping and for what is unique to each.

PICTURE

The flow of investment thinking through the timeframes should be:

➢ Pre-project where motivation to invest is assessed by equity holders
➢ Project where benefits enabling is performed by the project management team and the on-going desirability of the **A2-**Business Case is reviewed by the investor
➢ Post-project where benefits harvesting is performed by business-as-usual staff

The state-change to 'new-business-as-usual' may be in the scope of the project or the post-project activity, depending on the project manager's terms of reference. In all cases transition must be in the sponsor's scope. The roles of the sponsor and senior user(s) carry on after the project through the embedding of the new-state of business-as-usual. Benefits harvesting may stay with the sponsor or revert to the investor.

10.1.1.1.3.4   Chain-of-Command Across the Investment

Hierarchically authority boundaries end (or start) with the technicians during the project and end with business-as-usual staff during benefits harvesting. Boundaries of investment control start and end with the equity owners what ever part of the investment timeframe we are in.

10.1.1.1.3.5   Chain of Command

Hierarchically whoever puts up the money and the point of accountability for benefits may be one person. They may instead be the first two links in the chain of command. The single point of project accountabilition within the business (aka sponsor) and the project exec may be further roles of the one or two persons anchoring the chain or may extend the chain of command to four people.

10.1.1.1.3.6   Project and Benefits Harvesting Timeframes

During the project the chain of command descends from the roles of investor, the business' executive, and project sponsor through the PRINCE2® 'project executive', the other project board members, the project manager, the team managers and their team members. After the project then below the business' point of accountability for benefits must be senior user(s) roles and business-as-usual staff.

The boundary between each level of the chain of command require the means to:

➤ delegate authority limits and goals,
➤ cascade business context aka external status downwards,
➤ report project status upwards,
➤ escalate concerns, particularly where limits and goals conflict,
➤ enact corrective, perfective or adaptive changes to goals, limits and duties.

Within each layer on receipt of goals and limits is planning, then execution of tasks to create outputs and then delivery of results.

Concurrently is escalation of concerns. During planning these are likely to centre on contradictions between goals and limits. During execution escalations are likely to centre on variances between status and plan (positive and negative). Hopefully no escalations are required during delivery. If they are it was delegation, planning and execution that failed and cannot now be relived only reworked at what was once an avoidable cost.

Project controls must match limits and duties and segregation of duties as described in the enterprise's framework for corporate governance.

10.1.1.1.4 Controls Are In the Role Descriptions

In large part when the project management team **[14.4.5** Set up the project controls]** they are in fact updating the role descriptions created in Starting up a Project (SU). Project specific duties are updated and will be approved by the project board when considering the **A20**-Project Initiation Document as part of deliberations to **[13.4.2** Authorise the project]** (or not).

To **[14.4.5** Set up the project controls]** requires that the role-descriptions state involvement in planning, tracking, comparison of actual to intent and resultant re-planning and decision making.

10.1.1.1.4.1 What's In 'The Controls'?

Controls define triggers and timings. Controls include routine reporting of status plus the exception based escalation paths for concerns. Defining controls includes:

➢ deciding which achievements or events (eg governance led budget cycles, end of significant technical phases) should mark candidates for defining the stage boundaries,

➢ the mechanisms for planning, base-lining plans and amending plans,

➢ mechanisms for assigning responsibility (establishing a 'contract' for delivery of some result with some resources for some reward)

➢ stating report contents, authors, recipients and the actions triggered,

➢ reporting frequencies,

➢ providing role-holders with guidance on making decisions based on the information-sets defined by the management products **A1-**Benefits Review Plan through to **A26-**Work Packages,

➢ providing templates and checklists together with guidance on how to complete or use them,

➢ agendas for the Directing a Project (DP) sessions and or team checkpoints,

➢ agendas for workshops (EG Project goal and Risk identification sessions)

➢ job descriptions that link to corporate accountabilities and authorities over decisions such as allocation of resources

➢ matching people, competencies and project demands.

10.1.1.1.4.2 Event Driven and Time Driven Controls

All but two of the control mechanisms described by PRINCE2® are triggered by an event such as '**A26-**Work Package finished', spotting an opportunity or arrival of an 'OSINTOT' (Oh Shit! I Never Thought Of That).

Event based triggers include; exceptions, stage boundaries, allocation of new **A26-**Work Packages, anything and everything internal or external deserving consideration as triggered by circumstances.

The two routine controls are the per-shift or per day or per week or even hourly **A3-**Checkpoint Reports resulting from team checkpoint meetings and the perhaps weekly **A11-**Highlight Reports. **A3-**Checkpoint Reports and **A11-**Highlight Reports happen on some scheduled basis dictated by the latency of (delay in) decisions and responses and the attitude of those asking for the reports when they delegating the project, stage or **A26-**Work Package's 'contract for results'.

Report doesn't demand 'document' but does demand communication and may benefit from being recorded.

10.1.1.1.4.3 Expected Events

Within 'Event-driven' is a further distinction:

➢ those events that were expected like normal completion of **A26-**Work Packages or stages and

> those unanticipated events, resulting from performance that is better or worse than planned.

SOOP-153.   Responding to 'better than expected' is what delivers future-state-business-as-usual faster, better and cheaper than current project norms achieve.

10.1.1.1.4.4   Reporting Procedures

Reporting follows procedures recorded in the **A4-**Communications Management Strategy. It is probable that reporting procedures differ while within tolerances versus when responding to being outside of tolerances.

10.1.1.1.4.5   Management by Exception

PRINCE2® controls provide for taking action to respond to 'concerns' about:

> 'on-plan' or 'off-plan' situations,
> situations within or out-with tolerances,
> actual or potential situations,
> positive or negative situations.

'Concerns' outside of tolerance are explicitly handled using 'Management By Exception' (MBE). MBE is the notification by those with a concern that a decision is required from someone with authority and knowledge. 'Escalation' recognises there are limits preventing those with the concern from making the decision. (Concern was defined earlier *See X on Y*)

Handling of issues (reporting when actually or potentially outside tolerances) is as defined in the **A6-**Configuration Management Strategy but not yet described in these writings. I will describe issue handling when we understand exception free execution to baseline. *See X on Y*

ADD THE 64 States of Nature?

The follow-on sessions to daily scrum's are an implementation of management by exception as is **[15.4.7** Escalate issue and risks] → **[13.4.4** Give ad hoc direction] →**[17.4.5** Produce an Exception Plan] → **[13.4.3** Authorise a ~~Stage or~~ Exception Plan].

10.1.1.1.5 Iteratively Refined

Controls in Enabling Stages are based on the **A16-**Project Plan and the four strategies derived from the specific challenges this project's stakeholders perceive the **A19-**Project Brief { Project definition { Project objectives, Desired outcome, … }, **A2-**Outline-Business Case, **A21-**Project Product Description, Project Approach, … } and project context to represent.

Add note to a19-PD – adequate to define controls

The selected controls must balance all the powerful stakeholder's will to bear the costs of controls with their appetite for risk and desire for 'grade'. Grade is 'fineness of materials and workmanship' often implied by 'quality' in everyday

terms; our definition of quality must remain the duality of 'conformance to specification' and 'fitness for purpose').

'Cost' often means senior people's time. IE their ability to respond to controls in an informed and timely manner. When they don't respond they become a bottleneck that increases the time-to-benefits and erodes Net Present Values.

10.1.1.2 Goal and Constraints, Plan and Contradictions

The common phrases "the devil is in the detail" highlights that any correctly delegated objective may still contain contradictory constraints. Hierarchical management structures thus need an escalation mechanism.

If there is no escalation of contradictory constraints after analysis of a delegated assignments then either those delegated to don't know what they have to do or those delegating opened with too relaxed a combination of 'faster, better, cheaper' constraints. As we will see in execution giving too much time (money etc) to a task encourages it to be delivered late (over budget etc) not early and under! *See X on Y*

SOOP-154.   *Generally in delegating some result I want the escalation of options back that confirm no wastage: IE "if you really want this scope in this schedule then I need these resources… or if scope and resource are fixed then…"*

SOOP-155.   *The operation of the controls demands two communication flows:*

1. *The handing down of targets and constraints which must always be accompanied by resources and some degree of authority*
2. *The reporting up of status and contradictory constraints (one source of 'issues').*
3. 0.

Delegation establishes contract aka obligation. The controls define the mechanism to:

➢ hand-out work,
➢ receive status updates including issues,
➢ make adjustments including abnormal termination and
➢ confirm normal termination of contracted obligation.

10.1.1.2.1.1   Project Outputs Define The Work And Control Required

The decomposition of the project's desired outcome defines the project's outputs.

When the outputs are considered during that part of product based planning that includes Quality Planning (IE when selecting applicable standards) then the development steps and methods that move products through their life-span are chosen and should influence the controls established.

Each output's development life-cycle defines the phases in its development. Some of those product life-cycle phase boundaries will suggest where to place

stage boundaries, technical review points and suggest the sensible selection of reporting, monitoring, adjustment control points.

10.1.1.2.1.2   THE Most Important (Project) Control

Stage boundaries are the points in time when the project board should reconsider the project's desirability and viability within the organisation's portfolio of resource demands.

Technical review points and reporting points allow the project manager to reconsider the stage's status now and make adjustment based on forecasts of progress into the future.

Graphic of PBP & Stages

10.1.1.3 Contract Hierarchy

Working from the shortest and most contained delegation of results 'outward' there are two 'lowest-level' contracts subject to control: those with product developers who create project outputs and those with the business-as-usual staff to use the new outputs created by the project. I will discuss the business-as-usual element at product handover. ***See X on Y.***

10.1.1.3.1 A26-Work Package Contract

Control of **A26-**Work Packages is between project manager and team member/ manager. There are 3 activity pairs in CS and MP to manage the interface and five management products.

➢ At project manager to team manager level the hand-out of work is the **A26-**Work Package, reporting is the **A3-**Checkpoint Report, the **A23-**Quality Register and **A5-**Configuration Item Record

➢ Escalation may use the **A13-**Issue Report or the **A3-**Checkpoint Report.

➢ Creation of 'contract' and agreement of controls occurs between **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package].

➢ Reporting of **A26-**Work Package status is via **[16.4.2 Execute a Work Package]** creating **A3-**Checkpoint Reports and **[15.4.2 Review Work Package status]** 'reading' it and consolidating status into the **A16-**Stage Plan.

➢ Discharge of obligations is via **[15.4.3 Receive completed Work Packages]** and **[16.4.3 Deliver a Work Package]**.

Delivery of the products of the **A26-**Work Package may be to configuration management within the project or to business-as-usual staff out-with the project.

➢ Contract amendments typically start in **[15.4.8 Take corrective action]** and involve **[15.4.1 Authorise a Work Package]** and **[16.4.1 Accept a Work Package]** to make an agreed amendment.

Where the **A26-**Work Package is passed to another legal entity then contract is literally an agreement that would be understood by courts of law. One party is a "sub-contractor".

Where work is delegated 'in-house' then contract is part of the enduring contract of employment.

10.1.1.3.2 Stage Contract

Control over 'stage contracts' is between project board and project manager. Most of the official manual is about this control interface. To list all the relevant activities would include 32 of the 40 activities in the process model, and is pretty-much this whole book.

Stages are a serial succession of sub-contracts under the overall 'project contract for provision of benefits enabling outputs'.

By definition (IE a stage is defined as: a period of time and other constraints): each stage contract is for the delivery of project outputs in some timescale and at some cost. The stage's defined set of outputs includes all the controls, EG reports and decisions required by the board to feel 'safe' in enabling benefits.

The stage's scope of work, assigned resources, costs and timescales thus include not only the products that end-up in business-as-usual but also the management products required to control the project.

10.1.1.3.2.1   Initiation Stage Also Progresses Investment Contract

The primary output of the first stage described by the official manual is the 'contract' for the project: the **A20-**Project Initiation Document.

The **A20-**Project Initiation Document must be agreed between the project board including the project exec and whoever is the next link up the chain of command.

[Links in the chain of command above exec encompass sponsor up to ultimate investor(s). Each needs a 'contract. Ultimate agreement will be the organisation's form of incorporation with its owners (shareholders).]

10.1.1.3.2.2   Intermediate and Final Outputs

Outputs of every stage except the last may be intermediary results. Intermediary results are input to subsequent development stages. Equally outputs of any and every stage may be some of the 'final outputs' that are passed out of the project to business-as-usual.

'Final outputs' are passed to business-as-usual for use in generation of benefits that recompense the investment. Outputs of the last project stage MUST include any and all remaining benefit enabling final outputs. Completion of all outputs triggers project end and dissolves the project level contract between exec and sponsor.

10.1.1.3.2.3   Creating and Maintaining The Stage Contracts

➢ At project board to project manger level the unit of allocation is the stage. Reporting is via **A11-**Highlight Reports and escalation via the **A13-**Issue Report.

> Agreement and approvals of stage 'contract' occur in **[13.4.1** Authorise initiation], **[13.4.3** Authorise a Stage ~~or Exception~~ Plan] (ESA) and **[13.4.3** Authorise ~~a Stage or~~ Exception Plan] (EXA).

Preparing of stage contracts is via SU's **[12.4.6** Plan the initiation stage] and SB's **[17.4.1** Plan the next stage].

[This is the official guidance but I suggest you use **[17.4.1** Plan the next stage]'s guidance to create the Initiation Stage 'contract' as well].

The Managing a Stage Boundary (SB) activity at the end of the Initiation Stage and end of each benefits enabling stage develops the next stage contract and maintains the project level contract. SB refreshes the project contract stage by stage to ensure currency.

[Note as given in the official manual description of SB at the end of the Initiation Stage is 'awkward'. Guidance for the refreshing of the 'project contract' that is normally needed at stage end is redundant. A 'refresh' is unnecessary as the project level contract is at this time just being finalised.]

> During enabling stages reporting on and querying of the 'stage contract' occurs upwards when the project board receive **A11-**Highlight Reports and **A13-**Issue Reports. Receipt of either is a request to the project board to **[13.4.4** Give ad hoc direction] they feel is needed.

Starting up a Project (SU) and the Initiation Stage may report and escalate in the same manner as enabling stages but since 'in theory' the mechanism is defined and agreed in the Initiation Stage a temporary reporting and escalation means may be used.

The **A11-**Highlight Report and **A13-**Issue Report may raise concerns about the stage, the project or the overall investment.

> Stage contract queries occur downward when ever the project board consider they wish to **[13.4.4** Give ad hoc direction].

During Starting up a Project (SU) and the Initiation Stage the 'stage contract' is most likely varied by simple, direct discussion between project manager and exec.

> Amendment or replacement to 'stage contract' occurs when the project board **[13.4.3** Authorise a ~~Stage or~~ Exception Plan].

> Discharge of 'contract for outputs that enable benefits' occurs when the project board accept an **A9-**End Stage Report in the preliminaries of closing one stage to start the next and when they accept the project's **A8-**End Project Report at **[13.4.5** Authorise project closure].

The intellectual acceptance of and possibly physical hand-over of products most likely occurred in **[16.4.3** Deliver a Work Package].

10.1.1.3.3 Project Contract

For correct portfolio management the chain-of-command that includes CoPM should allocate projects from a strategic business plan that encompasses the

portfolio of all projects, programmes and business-as-usual demands on equity and other resources.

10.1.1.3.3.1   Project Contract

Commitment between exec and the exec's reporting line, if any, starts in PRINCE2® terms with **[12.4.1** Appoint the Executive ~~and the Project Manager~~].

The official manual and most other sources of project guidance say little about the relationships, but it is the most important interface.

➢ The 'unit of allocation' for work delegated by the sponsor to the exec is 'the project', and that delegated to the sponsor is the 'investment' perhaps as part of an annualised business strategy.

  The project is a contract for deliverables or benefits enabling outputs produced under control and within constraints such as allocated resources. The 'investment' is a contract for capital growth or a value stream from the use of capital in a future-state-business-as-usual.

➢ A contract for outputs is <u>proposed</u> in the Project Mandate which must mirror a proposed contract for benefits in the 'investment contract'.

  Investor and sponsor must agree in outline a "declaration of interest and intention" which should be established around the time of **[13.4.1** Authorise initiation].

  [13.4.1 Authorise initiation] agrees a 'stage contract' whose output is a potential 'project contract' (the **A20**-Project Initiation Document) for the creation of the benefits enabling outputs.

➢ The sponsor and investor's intention must be made into a firm commitment around the time of **[13.4.2** Authorise the project]. The 'project contract' between CoPM and project board is sealed by **[13.4.2** Authorise the project] and commits CoPM (sponsor) to provide resources in exchange for the outputs that should generate returns.

> SOOP-156.   *The sponsor's contract is dissolved when benefits are delivered, not when the outputs arrive in business-as-usual. The project board's, project manager's and senior supplier(s) obligations may be dissolved when the outputs are delivered to business-as-usual but a better terminal condition is when the outputs are operating in a new 'business-as-usual' mode.* The senior user(s)' obligations end at the same time as those of sponsor or those of the project board.

➢ 'Project contract' and investment contract are amendable at any time by mutual consent between exec and sponsor and sponsor and investor. PRINCE2® provides no structure.

  I can help with this element of governance: p2@logicalmodel.net

10.1.1.3.3.2   Initiation's Controls

Controls for the Initiation Stage are formulated as the project management team **[12.4.6** Plan the initiation stage].

10.1.1.3.3.3   Project board Involvement

If the project board are not involved in all aspects of Starting up a Project (SU) and the Initiation Stage then what ever other controls are specified the project is likely to be suffer from multiple views of the objective, unclear decision making structures and decisions that are slow to be made and easily become unmade.

10.1.1.3.3.4   Controls ARE Role Duties and Rights

As the control strategies are finalised they are embodied in the role descriptions and plans and <u>implemented</u> as work progresses through the Control → Plan → Delegate (project, stage or **A26-**Work Package) → Monitor → Repeat the whole cycle until complete. [official manual fig 1.1].

Wheels in Wheel Image

10.1.1.3.4 Allocate Control Duties

<u>Implementation</u> of controls means:

➢ Role-holder's actions aka duties, their triggers and timings are agreed with project management team members,
➢ decision making authorities are agreed,
➢ tolerances are allocated,
➢ escalation mechanisms are agreed and
➢ procedures for delegation of work, monitoring of results and responding appropriately to status and forecasts are agreed,

and people do what was agreed.

10.1.1.3.4.1   Control Duties Take Time & Resources

It is crucial that each management level confirms that they themselves and the role holders they delegate to have the resources, support, time, skill and willingness required to provide control.

SOOP-157.   Project assurance have an obligation to judge whether allowance has been made in project member's schedules for the technical activity AND its control overhead.

The allocation of duties aims to create a realistic mix of responsibilities and resources. As we near the end of the Initiation Stage the allocation of duties may be moved between project management team members, team members may be released from planned duties and new team members recruited in order to create a realistic work-load (will, skill and time) for when technical work starts.

10.1.1.3.5 Standards And Lessons

Controls should be adopted and adapted from corporate standards and from lessons observed from experience. In many organisations a 'starter-pack' of required controls will be available from a project support office or the project

management <u>sub-section</u> of the organisation's Quality Management System (QMS).

10.1.1.3.5.1   *Adjust As You Go*

Controls should be amended as the project progresses based on continual re-appraisal of effectiveness. Controls may be amended at any time. The most obvious time is when an exceptional end-of-stage occurs.

Controls must be reconsidered at normal stage start and allocation of **A26-**Work Package. Consideration is based on the phases of work the stage or **A26-**Work Package includes which is, in turn based on the tasks required to progress product's through their development steps.

With the consent of those involved at each management level the tolerances within controls may be adjusted at any time during a **A26-**Work Package, stage, project or investment.

10.1.1.3.5.2   *Delegate Controls As Is Useful*

Project assurance has a duty to oversee and support the creation and operation of controls. Operation of some controls may be delegated by the project management team to project support roles.

10.1.1.3.6 Rules of Thumb on Imposing Controls

As a rule of thumb when negotiating the delegation of some unit of work the delegator should establish the reporting regimen at the level suggested by the delegate.

This allows the delegate to express their confidence and support needs (don't forget who is 'accountable' for what-ever is agreed in this dialogue is the delegator).

If during execution of the delegated project, stage or **A26-**Work Package the delegate's confidence and competence can be clearly shown to exceed that needed for the control level chosen then the control regimen can be relaxed. If troubles arise the control regimen can be tightened with specific examples of why extra control is required!

These rules of thumb apply to junior technical staff but also heads of departments, sub-contractors or customers with project duties and even the exec and sponsor when tasked to act for the project.

10.1.1.3.6.1   *Four Levels*

There are four general levels of control. They are based on the journey from unconscious incompetence to unconscious competence. The level agreed between two individuals (or groups) is always relative to the combination of task and both individuals involved.

> "I will show you how I want 'it' done. Then I will constantly watch-over your execution."

Appropriate for beginners and/ or those lacking in confidence.

> "This is what I want, suggest to me how you'll do it and how closely I should watch, before I say OK (or not)."

Appropriate for those gaining skills and moving into the consciously competent level.

> "This is what I want, are you OK with that? What if any reporting and support do you need?"

Appropriate for those with developed skills.

> "This is what I want, call me if you need me."

Appropriate for those ready to move on beyond this level in which case the dialogue might be "I will show you how to delegate this…"

The interested reader should invest the 30 minutes it takes to read Ken Blanchard's "Leadership and the One Minute Manager" ISBN-13: 978-0007103416

10.1.1.3.7 Commerce, Contracts and Politics

Not all, or perhaps even not the majority of control constraints are based on 'rational' results from planning by specialists and technicians.

Other 'rational' factors influence controls. For example stage boundaries may be set based on internal budget cycles. The influence of commercial needs such as cash-flows often affect contract negotiations and thus dictate the placement of payment milestones which dictate technical activity through back-casting from targets.

SOOP-158. Sales and winning business come mostly before planning determines calculated deadlines and resource allocations. The reality upon which deadlines are set is different in the market-place to the technician's workshop. Neither is right or wrong. The Project manager's job is to establish the 'can't be changed' at each end of the spectrum and reflect the contradictions to those authorised to make decisions. 'Downward' for technical, tactical trade-offs and 'upwards' for strategic, often financial rationing trade-offs.

SOOP-159. Commercial pressures are to win business, IE make commitments before the facts are fully known. Committing on partial knowledge is the commercial risk the equity holders take. Where negotiable interim payments ease cash-flows. Customers always want to see evidence against which to make part-payments. In this reality are payment-milestones created and delivery dates decided: engineers are quiet correct when they observe dates were not calculated from their rationality. They are wrong when they complain about the dates – it illustrates their limited perspective. What was rational was provision to fund the pay-roll!

The determination of constraints isn't limited to commercial contracts between separate customer and supplier. Equivalent considerations operate in-house where 'business functions' base dictated delivery dates on a view of their market-place's cycles and trends.

10.1.1.3.8 Control of Change

Controls also includes the means to recognise changes and escalate changes outside tolerances – Issues. It will be no surprise to you to read that I'll cover it later! The impatient may skip to ***See X on Y***

10.1.2[14.4.6 Create the Project Plan] – Planning

Planning is a 'big deal' for projects. The mechanics, steps, tools and techniques are simple. Their application to create a reliable prediction of the future is similar to riding a bicycle: easy when you know how.

10.1.2.1.1.1   Social Activity

Eisenhower said "in preparing for battle I have always found plans to be utterly useless, but planning to be indispensible". Von Moltke said "No campaign plan survives first contact with the enemy" IE the plan itself is the record of a transient agreement. The identification of options available as events unfold is what is of real value.

SOOP-160.   Planning is the process of sharing understanding of a trigger to act or a goal to achieve amongst those who combine the drive resources and skills to make it happen. Planning must be a social activity because projects are people intensive and change based: these two don't mix well so require special attention to promote the chances of success.

Collaborative endeavours succeed when people are able to communicate disbelief, fears and doubts. Properly handled the debate leads to aspirations, ideas, and contributions then to commitment.

The results of competent planning are first a team, second some options, third a currently selected option-set and most importantly the context by which to make coordinated, situational changes as circumstances demand during project execution.

SOOP-161.   For successful project delivery the current option-set embodied in the current plan must be regarded as disposable as soon as circumstances suggest a better selection of options.

10.1.2.1.1.2   Planning Process

Planning as a process can be described from two perspective 1) how to conduct the people side, 2) the tools and techniques to use.

We covered some of this previously. For the people side the recipe works best when they are gathered to one physical place for at least some sessions. A process might be:

1. Identify those with power and influence
2. Interview them to discover needs, wants and constraints, advise them of required contributions.

   Here I am seeking to establish the expectations of stakeholders with interest in one or more of: the return on investment (sponsor), the products created (users), creation of the products (suppliers) and use of the project management process for control (project board and project manager's line-management).

3. Circulate the aggregate needs, wants, constraints and contributions to expose contradictions.
4. Hold a 'what' focussed workshop, primarily with those interested in the investment and the products to be delivered that resolves omissions and contradictory wants, needs and constraints.

   Attendees define a mutually agreed project goal and decompose it into outputs that create the future-state-business-as-usual. Goal and outputs must be defined in acceptance criteria terms.

   Difficulties in this step, such as missing workshop attendees, missing acceptance criteria, missing agreement, missing contributions show project manager and exec (and sponsor) how difficult the politics will be.

   The tools used are firstly a wall, secondly the sticky-note, thirdly the Product Breakdown Structure (PBS) and fourth its extension to a Product Oriented Work Breakdown Structure (PRINCE2® would use a Product Flow Diagram (PFD) here – I wouldn't), then fifth the precedence diagram. The technique used is good workshop conduct.

   For reasons of practicality and comprehension the workshop's level of granularity should target a representation of scope with not more than 7±2 products which resolve the goal. Each may also have 7±2 sub-products and 7±2 development steps. The overall products and development steps should target circa 35-50 interdependent **A26-**Work Packages in the precedence diagram. Delegation of each of which could be the commission of a project in its own right and restart the planning process at step 1.

   A couple of hundred interdependent elements of work is acceptable when all participants have the familiarity to grasp them but you should still aim to 'chunk' scope in 35-50 item chunks.

5. Repeat the above for a 'how' focus primarily with those interested in creation of the products. For each product of the Product Breakdown Structure (PBS) ensure the phases that carry the product through its life-span that overlap the project (or better yet investment) are defined as **A26-**Work Packages and mapped in the precedence (dependency) model.

6. A hierarchy of 'how' sessions may be needed. First between technical leads to create the best possible understanding of interfaces and then within disciplines to determine the details behind the interfaces. Interfaces includes technical integration of products and integration of project controls such as change control.

7. Translate the precedence models to resourced schedules at **A16**-Project Plan, **A16**-Stage Plan and **A16**-Team Plan levels and escalate all contradictions between acceptance criteria and constraints by restarting from step 3

8. Finalise resourcing commitments, 'sign' the contracts, calculate the earned value baseline and…

9. Commence work, track progress, replan as needed

10. Close project

11. Harvest benefits

12. 0.

The later steps benefit from some expansion!

10.1.2.2 Creating Plans: Tools and Techniques

PRINCE2®'s core principle might be 'always work to a plan'. In every delegated result creating plans is important.

For many people 'plan' is a synonym for schedule: mostly that is an ok short-hand. Occasionally it helps to think wider, EG to be explicit that plan includes all goals and roles, strategies and controls. Plan is best considered as 'contract' an agreement between competent parties that passes consideration (value) both ways.

[14.4.6 Create the Project Plan] determines who will do what, with what resources, when, to create which outputs, in what order.

SOOP-162.   A plan is a shared consciousness that predicts: what outputs are to be produced and what resource will be consumed by what activities to deliver the outputs.

SOOP-163.   A baseline plan is an agreed plan. An agreed plan is a contract that transfers control authority over resources, within limits in exchange for the deliver of a future-state-business-as-usual.

A realistic plan has to make provision for

➢ Outputs destined for the future-state-business-as-usual and outputs used to control the production of the future-state-business-as-usual outputs.

➢ Work we know we have to do and thus resources known to be needed to produce benefit-enabling outputs as well as project management and control outputs – known knowns. These amounts include estimating uncertainty aka 'tolerance'.

➢ Work we know we <u>might</u> have to do. IE Contingent tasks and resources that are for response to identified uncertainties – known unknowns or risks,

> ➤ work we cannot yet describe but suspect that current considerations have not thought of everything. IE Reserve resources for as yet indescribable tasks that respond to the unforeseeable. This includes potential changes and all unknown unknowns.

10.1.2.2.1.1   Planning Started With the Project Mandate

Investment consideration probably and project planning definitely started with the creation of the project mandate.

For the appointed project management team project planning starts in Starting up a Project (SU). Quiet how much planning is in Starting up a Project (SU) and how much in the Initiation Stage is a project specific variable that will depend on many factors, some of which are as much whim and serendipity (like matching availability in diaries) as reason or discipline.

Hopefully when the project management team and significant stakeholders **[12.4.4** Prepare the outline Business Case] they also defined the **A19-**Project Brief { Project definition { <u>Project objectives, Desired outcome</u>, … }, **A2-**Outline-Business Case, **A21-**<u>Project Product Description</u>, <u>Project Approach</u>, … }

During those sessions to create the **A19-**Project Brief and **A21-**Project Product Description I use the tools available to me such as white boards and techniques such as decomposition so have also recorded constraints, created the project level Product Breakdown Structure (PBS) and the matched **A17-**Product Descriptions at the same time.

10.1.2.3 ~~Product~~ (Output) Based ~~Planning~~ Scoping.

In projects that are other than tiny and apolitical there are two or more planning groups.

The first social group is led by the senior user(s) or the exec and say "**what** is wanted" plus one or more other social groups, led by the senior supplier(s) that say "**how** to create it". In both cases the project manager facilitates planning.

In tiny apolitical projects everyone might attend a single planning session of a few hours. Alternatively planning may take many segregated sessions over months (years?).

Guidelines For Construction Of A PBS

1. Start with Goal and the customer/ users
   – *Decompose the goal in-to (major) deliverables (external, persistent products)*
   – Brainstorm *all the products* that must be produced to keep all the stakeholders happy
     • *Probably done during the goal setting meeting*
     • Involvement key to creating ownership, belief and motivation
   – Identifies the skills needed to conduct further planning

PBS → Project

Deliverable 1   Deliverable 2   Deliverable 3

Staff

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118

10.1.2.3.1.1   31.PBP is a Solid Foundations

Solid planning must start by defining the required results or the trigger for action.

Either way some future state must be describable. The best tools to use are first isochron®'s Recognition Events® and then ~~the product~~ outcome based ~~planning~~ scoping method and the Product Breakdown Structure (PBS) tool produced by using the 'decomposition' technique. (See www.isochron.co.uk)

Decomposition repeatedly asks the question "What are the component parts of this result?" Also stated as "what configuration items is this CI composed of?"

~~Product~~ Outcome based ~~planning~~ scoping is THE BEST start available for understanding how complete and stable or incomplete or shaky are the foundations of subsequent planning steps.

10.1.2.3.1.2   When to Decompose

The decomposition technique is used in activities

➤ **[12.4.4** Prepare the outline Business Case],
➤ **[14.4.6** Create the Project Plan**]**,
➤ **[17.4.1** Plan the next stage**]** and
➤ **[16.4.1** Accepting a Work Package**]** if a team plan is required.
➤ Plus anywhere else it is useful, such as defining non-functional acceptance criteria or risk categories or…

Decomposition first creates the Product Breakdown Structure (PBS) and then the project's task lists [Work Breakdown Structure (WBS) in my reality but in PRINCE2® exam terms a Product Flow Diagram (PFD)].

10.1.2.4 Product based planning

Product based planning is an unintuitive name for what is covered.

First ANYTHING the project creates, acquires or amends is called a 'product' including, for example a culture change: 'Product' is any future-state-change to business-as-usual not just physical artefacts.

Second product based planning focuses on product scoping and perhaps task scoping but omits consideration of everything else required to complete a **A16-**Plan (Project) (Stage) (Team). PBP is a very very long way short of covering 'planning' even if that term is limited to only including 'scheduling'!

10.1.2.4.1.1   Strength

Product based planning's greatest strength is that it enables extraction in acceptance criteria terms of a vision of what senior user(s) want including when they are unsure what they want. As a technique it helps define what is known with clarity and it exposes the gaps in what the senior user(s) (product owner in scrum terms) have not thought through to clear conclusion.

10.1.2.4.1.2   Four steps of PBP

There are four steps for exam answers on product based planning [7.3.3]:

1. Define the **A21-**Project Product Description for the **A16-**Project Plan only,
2. Create the Product Breakdown Structure (PBS) at each level of plan from project, stage and **A26-**Work Package,
3. Write relevant **A17-**Product Descriptions in parallel with step 2,
4. Create the resultant Product Flow Diagram (PFD).
5. 0.

Reality needs step 0: define the desired outcome in the **A19-**Project Brief.

In reality I will replace step 4 with a Work breakdown structure (WBS) and Activity on the Node precedence diagram (more details in a moment). Also the investment level needs a ~~Product~~ (Outcome) Breakdown Structure (PBS) with concrete, objective acceptance criteria: IE isochron®'s Dimension Four® elements of Value Drivers and Value Flash-points®.

10.1.2.4.2 Little Guidance

The current official manual provides very little description of how to use product based planning and has less than even outline suggestions of how to translate the product scope to activity planning, estimating and resourced schedules. I have described the full planning steps below.

10.1.2.4.2.1   Planning Isn't In PRINCE2®'s Scope

Discovering that PRINCE2® includes almost nothing about planning is often a big surprise for those who open the official manual expecting to learn how to 'do projects'.

Planning skills, tools and techniques are not included because PRINCE2®'s scope is to add control on-top of an assumed competence in project planning. Unfortunately it is sold as a complete solution and even now believes its own sales pitch [see 1st bullet of paragraph 1.1 of the official manual].

10.1.2.4.2.2   *PBP Is Not Hard, But Nor Is It Easy: Its like Riding a Bicycle*

Once upon a time the exams were obsessive about the syntax and vocabulary of PBP. IE you could fail to be a 'registered member' of the PRINCE2® *project manager's club* because you put an arrow head on a line in one of the two diagram types or didn't use an arrow head in the other type or you used a verb to name one of the boxes.

PBP was a favourite question type of the question setters. The 2009 official manual dropped some of the vocabulary and withdrew almost all technique guidance from the manual. A wrong examining approach has lead to a wrong manual rewrite motivated to make the subject easy by magic.
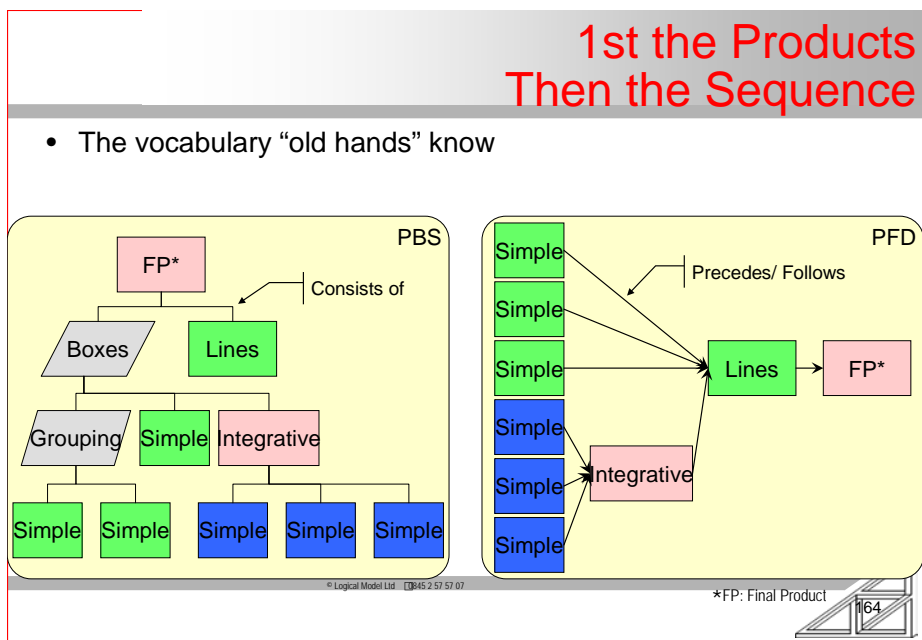
At least previously the official manual gave some guidance as opposed to almost none now. While it isn't examined as it was the syllabus does say [PL-11 "apply PBP technique to a given project scenario"].

10.1.2.4.2.3   Product based planning Is a Powerful Technique

Independently of any exam PBP is absolutely the BEST way to start scoping, the old vocabulary conveys meaningful concepts about the real world and learning the technique needs support.

Product based planning cannot be learned without guidance. To draw a PBS and PFD requires we know the syntax and have practiced the technique. It isn't easy but nor is it that hard. It just takes some explanation and practice.

PBS Rules

- Ensure wording is a product not an activity or event
  - E.G. *Wall – Product*, Build Wall – Task, Wall Built – Event
- If in doubt use "Products of…"
  - E.G. "Design" is ambiguous whereas "Products of Design" is not

1. True "consists of"
2. Alternate layout
3. Integration of a grouping
4. External in ellipsis
5. Grouping of a grouping
6. 3 levels somewhere for maximum marks — not any more!

1. No 1-2-1 decompositions
2. No arrow heads
3. No fan-in
4. No duplicate names

Anything that creates share understanding is OK in the real world
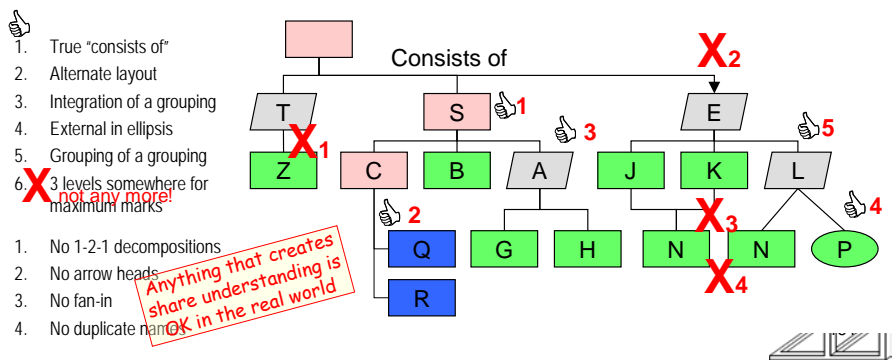
10.1.2.4.2.4   EG PBS Culture Change

As an illustration of product based planning imagine a culture change project. It may start with an aspiration expressed as "Improved customer focus". Decomposition helps answer "What does that mean!?"

Discussion with the senior user(s) may define one deliverable as "Staff who are responsive to the customer" and another might be "Staff seek opportunity to help each other deliver customer service". Still too vague to estimate and schedule project activity that will deliver the result.

Further thought and discussion reveals an example of "responsive" is "Telephone Manner". Decomposition now helps us define that the opening of all phone calls are to follow a uniform script (later a change request might broaden this to all eMail and face-to-face communications start in defined form too).

10.1.2.4.2.5   Product Breakdown Structure (PBS) is 'WHAT' not 'HOW'

Creation of the PBS focuses on what. For Example a what might be: "all calls are to be opened the same way". Later solution design suggests the 'HOW' options may be: "we could train all the staff to memorise a script" or "we could put a sticker with the script on every phone". These will lead to tasks that can be estimated and scheduled such as "Write a draft phone script", "Approve script", "Arrange printing of phone stickers".

10.1.2.4.2.6   EG PBS Bicycle

An easier illustration to grasp might be to imagine a bicycle building project. Without more specification this objective is just as vague as the culture change project. Is the project to enable mass production of children's bicycles or a one-off for an Olympic athlete?

The **A21**-Project Product Description or top level CI is in either case: "a bicycle". The top level CI is composed of the following lower level CIs { Frame, Wheels, Handle-bars, Seat, Peddles and Gears}.

As soon as a CI is identified its **A17**-Product Description should be retrieved from the Quality Management System (QMS) or written from scratch and its **A5**-Configuration Item Record created with status "work not yet started".

(Note: the Project Management Institutes' "practice guide for work breakdown structures" uses a bicycle example. The guide is a reasonable publication but not without misconception – it bans verbs from the WBS and that is daft decree that causes arguments amongst zealots rather than practical advice.)
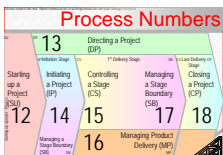
10.1.2.4.2.7   Acceptance Criteria in the Breakdown Structure

In the examples above there may be an acceptance target that phones are answered within 3 rings or an "expectation" that the bicycle seat is "comfortable" or the frame has a low drag profile. These details will be recorded in the **A17**-Product Description probably by cross-referencing an appropriate standard in the senior supplier(s), senior user(s), an industry association's Quality Management System (QMS) or some legislation's specification. Initial decomposition continues as far as is 'interesting' for the customer or team.

SOOP-164.   When scoping the project with the first social group decomposition of the trigger or goal of any contract continues for as long as the customer wishes to attach acceptance criteria to the project's results. For the team member/ managers (second social group) the initial decomposition ends when they no longer need to ask questions to clarify material choices about customer preferences. Strategic risks should also be captured at this time.

10.1.2.4.2.8   Decomposition Has to Stop At Atomic CI

As well as the point at which the customer loses interest in decomposition of finished deliverables there are also limits imposed by the laws of nature. For example imagine the "Build a Bicycle" project has a sub-sub-product "Seat-

Spring". No further product decomposition is possible as it is a solid item made as a single piece of metal.

The customer's interest may have stopped at "comfortable seat" and the technician's ability to decompose must stop at "spring". "Comfortable" may need quantitative specification later or may be sufficient for the two party's desire for contractual rigour. The old manual had a good quote: more or less "everything can be made measurable, but it isn't always worth while to do so."

*SOOP-165.   For the team <u>product</u> based decomposition stops at the point at which something no longer has decomposition. It is atomic: at 'this' level it has only a life-cycle. Atomicity may be due to the laws of nature or a chosen perspective EG something is acquired as a complete CI. For the project manager each **A26**-Work Package should result in product(s) that are NOT decomposed in the **A16**-Project Plan but ARE decomposed in the **A16**-Team Plan. Whether they are decomposed in the **A16**-Stage Plan is a tone, style, level of control decision.*

10.1.2.4.2.9   After "Contains" Decomposition is "Made by" Decomposition

SOOP-166.   When decomposition reaches the 'atomic' level then further analysis will have to shift from identifying component parts ('Contains' no longer works). Now we must look at life-span of phases in the (sub-) product's life-span and the acceptance criteria between each life-cycle phase in the life-span.

(Acceptance criteria at handovers between life-cycle stages is crucial in so many ways that will be explained as we go, including tracking progress with or without earned value management and control over scope creep ***See X on Y***).

In our bicycle example the life-span of the spring will include the step "integrate spring into Seat-Frame" and will have an earlier "purchase" or "forge" phase depending on whether the project makes the spring or acquires it as a finished item.

*SOOP-167.   A product's life-cycle steps will be the task in the Work Breakdown Structure (WBS) and must link to standard method statements in the Quality Management System (QMS). The linkages Goal→Product→Life-Cycle-Step (Method Statement) are fundamental to both estimating (**A2**-Business Case construction) and progress tracking (Ongoing review of **A2**-Business Case).*

10.1.2.4.2.10 PBS & WBS Capture Acceptance Criteria And Link to Quality And Progress

The spring may have the acceptance criteria of 'cheap' if the project is for a child's bicycle or "under 7g" if for an Olympic athlete's bicycle.

The initial results of the decomposition process are the team's resolution of uncertainty and disagreements as documented in the Product Breakdown Structure, **A17**-Product Descriptions and **A5**-Configuration Item Records and

subsequently the **A26**-Work Packages for acquisition (make or buy), integration, testing and handover.

The criteria that define 'acceptable' and the tests that confirm acceptance are all recorded as **A23**-Quality Register entries. First as intended verifications and then later as test are executed the test's results.

10.1.2.5 How To Do PBP

Product based planning is simple: for physical items simply create a Bill-of-Materials by asking "What is that made-up of that I can buy or build?"

For non-physical items and quality attributes such as 'reliability' exactly the same question applies.

10.1.2.5.1.1   Example: Cup Of Tea

Consider the simple goal to serve a cup of tea in a tea-shop (business-as-usual for the shop keeper and a project for the tea-drinker).

In discussion with the customer I explore assumptions and expectation. The initial sub-products are agreed to be tea, with milk and sugar. Our assumptions add, unspoken the cup, the saucer and tea-spoon. Explicitly the customer declines any accompaniment such as cakes.

I create a product breakdown structure (PBS) to model the sub-products of the desired end result.
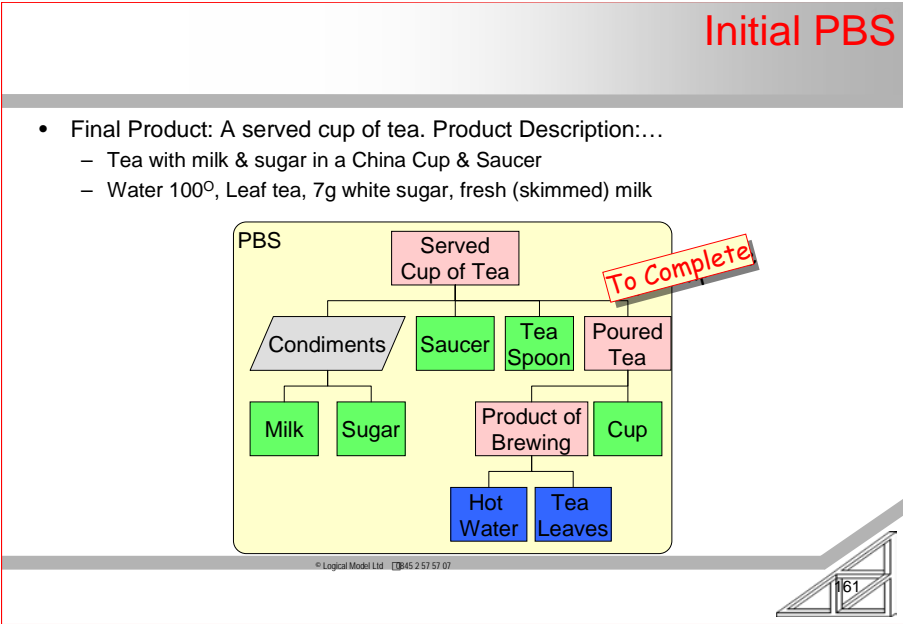
10.1.2.5.1.2 *Expertise to Plan*

As an expert tea-brewer I know the local standards and method statements and can apply them with skill. Knowing the standards and methods I can envisage the steps: boil some water and add to the tea-leaves in a warmed tea-pot, put milk in a jug and sugar in a pot. Put the milk jug, sugar pot, tea strainer, cup and saucer on a tray and present the tray to the customer.

10.1.2.5.1.3 *Revealed Scope*

There are several sub-products (eg tea-strainer and warmed-pot) that I have not yet modelled. Later I will discover that I didn't plan to put the brewing tea on the tray and that I need a delay between "add water" and "pour tea". I also need to consider the resources I am dependant upon such as the means to boil the water.

However while I may note these factors they are mostly beyond the current project's scope definition. We (well you) need the means to determine how to decide the boundaries of scope.

10.1.2.5.1.4 *Are Dependencies In 'Scope'?*

Current need is to define boundaries to what must be delivered to extract payment from the customer. Currently a drinkable cup of tea: thus I need boiling water.

I'm unsure if I should include the resources I'm dependant upon, after all if I include the electric kettle do I need to include the cow for the milk, power station and coal-mine that provide the electricity, the chair the customer sits on?

Answers soon.

10.1.2.5.1.5 *Clarifying Expectations: **A17-***Product Description*

For each item in the PBS I consider the **A17-**Product Description. Use of the planning tool-set has also helped me realise that there are several places where the customer's expectations may not match my assumptions.

The realisation allows me to check and seek to agree explicit acceptance criteria: further discussion with the customer reveals the customer wants Earl-Grey tea, doesn't want it with lemon, and does expect the milk to be put in the cup first.

I update the PBS with the product oriented observations and note the sequencing specification for later.

Process Numbers

Extended PBS

- Final Product: A served cup of tea. Product Description:…
  - Tea with milk & sugar in a China Cup & Saucer
  - Water 100°, **Earl Grey** leaf tea, 7g white sugar, fresh (skimmed) milk

PBS

Consists of

Served Cup of Tea

To Complete

Tea-Strainer | Condiments | Saucer | Tea Spoon | Poured Tea | Tray

Milk | Sugar | Product of Brewing | Cup

Warmed Pot | Cold Pot | Hot Water | Tea Leaves

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162
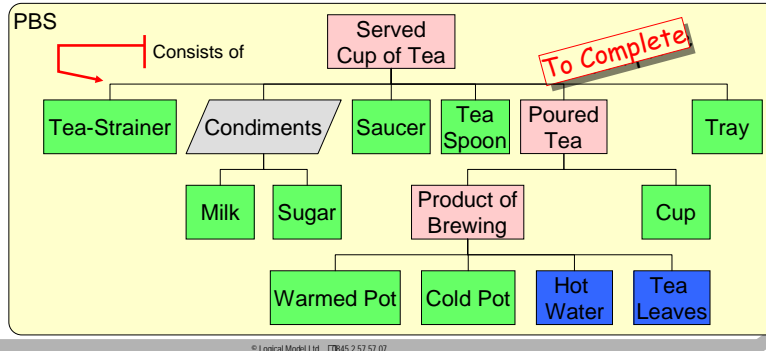
10.1.2.5.1.6   Expectations

The customer's quality expectations include that the tea will be severed before it has cooled down "appreciably". The cup, saucer and tea-pot are to be matching bone-china. The whole delivery is expected within a matter of minutes from now as the customer "doesn't want to be kept waiting and is looking forward to their tea".

I complete the PBS, add product descriptions where they will help and create records in the quality register and configuration management system to allow me to track progress and maintain control over the products as they are created.

I note that "appreciably" and "kept waiting" are undefined terms that may cause contract dispute later: I could seek to define them now if I think it material.

10.1.2.5.1.7   The PBS must include everything in scope

The scope includes the outputs to the project's direct customer who in this case is funding the project for a non-financial benefit. Scope also includes outputs for controlling the project such as report back to my boss of the bill owed.
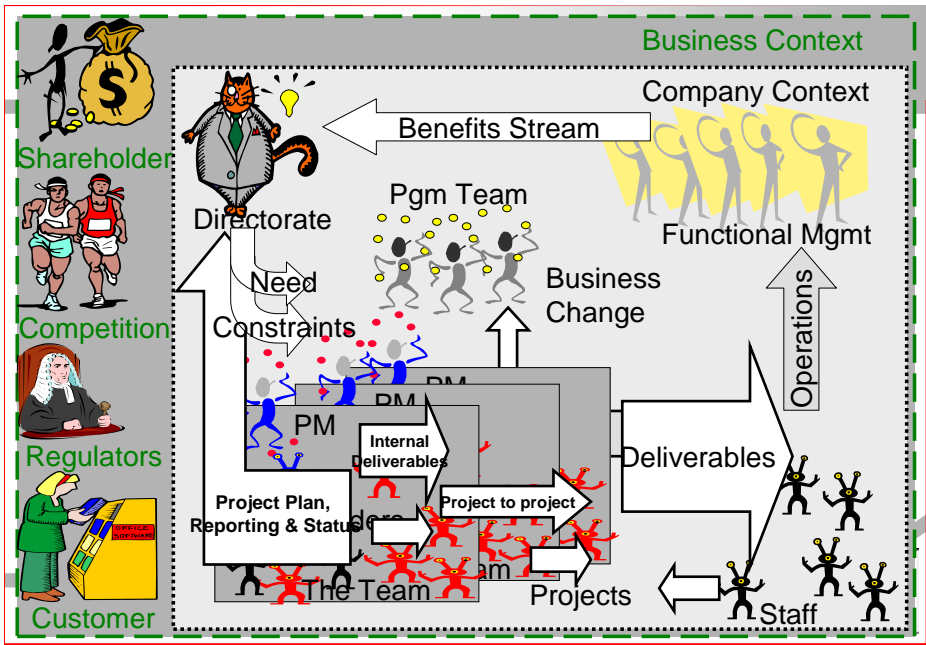
10.1.2.5.1.8   The PFD

The PFD arranges the products in the sequence that they will be developed (or used). In a PFD the lines between products show the sequencing of the products in the product's and project's life-cycle.

PFD Rules

- PFD shows the flow of products (arrows represent the activities in the project)

1. Change of name between diagrams
2. Missing arrow head
3. No tailing gives in PFD
4. Protoshot in PBS
5. PBS product missing from PFD

Anything that creates share understanding is OK in the real world

1. Integrative after constituent parts
2. Final product at RHS (or bottom)
3. Simple & Integrative products transferred with same names
4. External in ellipsis

The official manual illustrates but doesn't provide much of an explanation of how to use a Product Flow Diagram (PFD).

Unlike previous versions of the manual (well actually the exam) the official manual is no longer strict about syntax elements such as arrow heads. A Product Breakdown Structure (PBS) and Product Flow Diagram (PFD) can be presented in any locally defined format. The old syntax had merit but missing an arrow-head didn't mark out an incompetent project manager. Tails and dogs.

10.1.2.5.1.9   A Product Flow Diagram (PFD)

Our Cup of Tea project might start as:

Initial PFD

- Final Product: A served cup of tea. Product Description:…
  - Tea with milk & sugar in a China Cup & Saucer
  - Water 100°, Earl Grey leaf tea, 7g white sugar, fresh (skimmed) milk
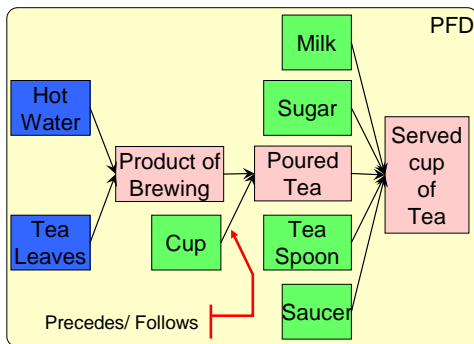
However this does not honour the customer's explicit request for milk to be poured before the tea.

10.1.2.5.1.10 Bad Approach and Weak Tool

I do not follow this approach. I prefer to define scope of work separately from dependency. I take two smaller simpler planning steps each using more powerful tools, rather than one harder task with a weaker tool.

10.1.2.5.1.11 Product Flow Diagram (PFD) = AOA

A PFD is more or less an activity on arrow (AOA) network. AOA diagrams have fallen into disuse outside the PRINCE2® official manual as Activity on the Node (AON) precedence syntax has gained prevalence.

AON is easier to use, more powerful and supported by software. As Dennis Lock says in the introduction to the 2003 8th edition of his seminal work: Project Management "…the last computer program known to me that could process these networks has recently been changed to precedence-only capability."

[Note AOA networks were called Arrow Diagrams the official manual is categorically wrong on p70. For a correct description see PMBoK Guide 3rd Edition 6.2.2.2 (PMBoK Guide 4th edition has deleted reference to AOA diagrams as irrelevant to modern practice)].

I will cover the exam needs then revert to reality.

10.1.2.5.1.12 Capturing Dependency

Whether using Product Breakdown Structure (PBS) and Product Flow Diagram (PFD) or Product Breakdown Structure (PBS) and Product oriented Work-Breakdown Structure it is important that dependencies internal to the project or from outside the project are all captured during planning for scheduling and resourcing purposes.

10.1.2.5.2 A Further Example: Taken From An Old Exam Question

In the days of essay style exams – when I was an examiner – this exam question illustrated quiet nicely a fair approximation of the situation in reality. The client supplies a written brief from which quiet a lot of scoping is possible.

<div style="border:1px solid red">

Worked Example PBP

A local council has realized belatedly that their current Social Services Information Systems (SSIS) will not cope with new legislation. They have one year to be compliant or may *then* face fines. A **new system** is proposed. <u>It will</u> also automatically **collate data** that currently requires 3 staff to do manually.

Up to now the different departments have held their own **records** on small computers, offering basic facilities. Duplications and omissions are a big problem. This has led to many costly mistakes in payments. These records <u>will have to be</u> **corrected** by Social Workers *before* **transfer**ring to the new system *after* it is **installed**. The old and **new programs** use the same **database software**, so no major <u>conversion work will be</u> needed.

A **contract** <u>will be</u> placed with an external supplier for **hardware** and **software** to replace all the current small computers with one powerful machine, which offers many extra facilities plus operating economies. The supplier is already part way through the **design of a system**, based on specifications agreed with two other councils. The **purchase order** <u>will be</u> **signed** *as soon as* the Project Initiation Document is approved. The supplier also uses PRINCE2.

Five computer operators and **seven other SSIS** staff <u>will need training in</u> the new hardware and software. There will *then* be further significant work by SSIS staff to **prepare the new system** for operational use.

The supplier, in the tender, has offered to make **small adjustments** at no cost at certain points in the new software to fit in with **local practices**. From the supplier's point of view these *will have to be* carefully monitored in order to stay within a very tight timescale and budget if the supplier is to make a profit. The Council must **specify these changes** *within* three months of the contract being signed. **Two hundred Social Services** staff *will need to be trained* to use the new software

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Note the answer below is illustrative not exhaustive. There are other products in the scenario (eg transferred records) omitted in the interest of legible diagrams over completeness

178

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10.1.2.5.2.1   Three Steps

With thanks to Ian Roberston (RIP) also once a PRINCE2® examiner, for this great insight into how to approach extracting scope from written client briefs.

1. List the products that stakeholders expect to see delivered
2. Define the decomposition (and aggregation) of them to component parts and sub-components
3. Determine the sequencing or inter-linkages and interfaces
4. Draw-out in the 'official' layouts
5. 0.

Process Numbers

	13	Directing a Project (DP)	
	Initiation Stage	1st Delivery Stage	1st Last Delivery or Stage
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
Managing a Stage Boundary (SB)		16	Managing Product Delivery (MP)	

Section: 2   Page: 10.1.2:355 of 541

Social Services Scenario

Three   *One*   *Two*

1. Hardware
2. Corrected Records
3. Trained Social Staff
4. Application Software
5. Database Software
6. Purchase Order
7. ~~Design Changes~~
8. ~~Installed System~~
9. 5 Trained Operators
10. 200 Trained Council Staff
11. Contract
12. Legislative Order (Ext)
13. Tender
14. etc

Installed System
Purchased Products
Training Products
Purchasing Products
New SSIS

See next slide for a discussion of which scenario words suggest products
This worked example omits several definite products in order to reduce complexity of the illustration

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179

Submitted PBS Result

New SSIS

Legislative Order   Installed System   Training Products   Purchasing Products

Purchased Products

Hardware | Database Software | Corrected Record | Application Software | Design Changes | 5 Trained Operators | 200 Trained Council Staff | 7 Trained SISSI Staff | Purchase Order | Contract | Tender

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Based on the starting point given on slide 55, You may be interested to expand it to include all the products identified on slide 56 as relevant

180

Submitted PFD Result

Based on the starting point given on slide 288, In an exam context the PFD will have to be expanded to include all the products you have added to slide 289

Product based planning's last step, the Product Flow Diagram (PFD) puts the products in the sequence used and identifies external dependencies. A valid and useful step. The lines represent activities in product transformation or use, again a useful and valid step. All really the bridge to activity based planning.

Outside of the official manual and the exam the same result can be achieved with alternate (better?) tools.

10.1.2.6 Activity Based Scoping & Scheduling = ABP

After ~~product~~ outcome based ~~planning~~ scoping comes scoping the project in activity terms. After that is defining scheduling options in a precedence diagram. After determination of dependencies the need to conduct further steps of planning as a social activity diminishes.

10.1.2.6.1.1   Official Manual Treatment of Activity Planning is Shallow

Once ~~product~~ outcome based ~~planning~~ scoping is complete the official manual glosses over the rest of the steps in schedule development. A foundation exam question explicitly asks "What isn't a key technique of PRINCE2®?" Answer: Activity based planning!

*SOOP-168.   Well defined activity scope is a key technique for the project manager for two reasons: 1) its definition builds the team and with a well formed team will build the products, 2) **the only bits of a project that can be managed are the people carrying out activities!**

The only reason to carry out activity is to create products that are within the project's scope. The only reason to create products is to satisfy the investor's needs.

In short it is not possible to meet the official manual's aims of "focus on products" and "roles" and "the business case" without translation of product scope to work scope to resource assignment to cost and schedule to business case investment appraisal. The fact the PRINCE2® regards activity planning as outside its scope contradicts its own opening paragraph. Better guidance than the weak thinking in the official manual leads to better projects.

10.1.2.6.2 Work Breakdown Structure (WBS) in Activity Based Planning

My recommended 'next step' after the Product Breakdown Structure (PBS) is to construct a Product oriented Work Breakdown Structure by extending the Products of the PBS with their life-cycle steps.

Extending the PBS aids identify which steps of some (sub-) product's lifecycle are with-in or out-with the project's scope (as explained next).

[Exam-fans note: Using a WBS is an 'alternate approach' in the PRINCE2® official manual [7.3.4.1], and not PRINCE2®'s main suggestion. It is pretty close to (but extends) the PMI's guidance from A Guide to the Project Management Body of Knowledge (PMBOK® Guide) and close to the better guidance in the Association For Project Management's APM BoK.

The interested reader might like to find my white paper on Breakdown Structures on the American Society For The Advancement Of Project Management's website www.asapm.org or eMail me for a copy p2@LogicalModel.Net.]

10.1.2.6.2.1   PBS → PoWBS

Extending the PBS into a Product oriented Work Breakdown Structure (PoWBS) is done by the specialist technical team members describing the life-span of each product. For this they need skills and experience in 'this' product's development, and the method statements in the Quality Management System (QMS) and **A17-** Product Descriptions.

A product's life-span phases that are relevant to the project [really the investment] should be captured to be scheduled and allocated to stages as planning progresses.

Guidelines For Construction Of A Product oriented WBS

2. Identify the tasks
   – May be a separate session – needs people with technical skills
   – Brainstorm the tasks required to produce deliverables
     • Involvement key to creating ownership, belief and motivation
   – Group the tasks - often requires moving from deliverable based view to responsibility (OBS) or lifecycle phase based view
   – Resolve placement of common tasks such as documentation, QA & reporting based on which BS view being taken

PBS → Project

Deliverable 1 | Deliverable 2 | Deliverable 3

A   H   D   I   L   E   B   F   K   G   J   C

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120

10.1.2.6.2.2   A26-*Work Packages in the PoWBS*

For the life-cycle steps (task or group of tasks) in a product's lifespan we will create **A26**-Work Packages that allow clear delegation of the work. Work is delegated in the dialogue between project manager and team member/ manager at **[15.4.1** Authorize a Work Package] and **[16.4.1** Accept a Work Package**]**.

A26-Work Packages at any management level must deliver a clearly agreeable result. EG "Send a man to the moon and return him safely by the end of this decade" is a **A26**-Work Package. So is "Sew-up glove for astronaut's space-suit".

10.1.2.6.2.3   *Extending the PBS with Work*

The aim when creating the Work Breakdown Structure (WBS) is to ensure that all tasks for all products of the project are identified before calculating schedule, resource needs and budgets. Where this isn't possible then appreciation of the gaps will help establish realistic if less precise budgets and schedules and control over allocations.

10.1.2.6.2.4   *The Cow Isn't In Scope*

For the 'Cup of Tea' example this is where we discover that the coal-mine and cow are not relevant to the scope of this project.

When I consider the life-span of the milk as relevant to the project it runs something like { Remove bottle from fridge, Fill jug, Place on customer's table }
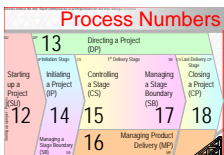
The cow and power-station are external dependencies whose absence will cause failure but they are not within the project's scope as there is no action we are expected to take related to them. If there was no milk in the fridge then "buy milk" would be added to the life-span that overlaps the project as included in the WBS – possible as a change request if not currently in the baseline. We had the equivalent discussion with newsreaders and tire-change budgets during risk discussions.

If the customer had chosen a table at which there were no chairs then "place-chair" would be in the project's scope of work so 'chair' would have been added to the Product Breakdown Structure (PBS). One could argue it was always needed in the Product Breakdown Structure (PBS) but without any related tasks. I'd argue that is grounds to leave items such as the chair out until its inclusion is positively required. After all everyone on the project is wearing shoes but we don't add them to the PBS.

10.1.2.6.2.5   *Risk and Washing Up Are In Scope*

Further: when considering the life-cycle of the Cup Of Tea project's products I have to question if washing-up after the tea is drunk is within project scope. A quick clarification with the boss follows. "Boss? As the washer-up is on holiday today how does the used crockery get back in the cupboard?". If the boss' response is "Would you please do it?", I now know some extra project steps I might otherwise have omitted. On a normal day my scope may have ended with "return used crockery to beside the kitchen sink".

Risk management will identify actions to respond to those risk's considered worthwhile to pursue or avoid. The tasks required must also be in the WBS so that they are included in the budgeting and scheduling activities coming next.

FIND SLIDE WITH KEY

10.1.2.6.2.6   Breakdown Structures Define Scope

The Product Breakdown Structure (PBS) and Product oriented Work Breakdown Structure are powerful tools for the definition of 'what' and 'how' scope. So far scope has been fully, quickly and cheaply defined.

The next steps are to:

➢ Estimate the materials and effort required by each task,

➢ estimate resource availability and productivity,

➢ calculate task durations and costs.

➢ Determine task dependencies and from these and the durations

➢ calculate the scheduling options available.

10.1.2.6.2.7   How Big is a Breakdown Structure?

Some rough rules of thumb:

➢ Each decomposition of an item in the breakdown should be around 7 ± 2 elements.

To be outside this range requires good reason. To be bigger requires lots of domain experience. The rule-of-thumb is based on George Miller's 1956 paper in Princeton University's Psychology Review "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information".

➢ Each decomposed collection is a minimum of two items and exactly 100% of the level above.

> ➤ The decomposition stops when all parties are clear on the complete definition of the product (PBS) and/ or tasks (WBS). Thus Olympic Road-Racing Bicycle may be sufficient or may need decomposition down to the specification of the material to be used in the brake-blocks (which may be rubber or ceramic!)

> ➤ The breakdown extends down two to four levels from the total scope of an assignment unless a solid argument exists to go further. At two to four levels if PBS or PoWBS are still not at atomic items (as seen from this management level's perspective) then it is probable that another management layer is needed. IE further detail is delegated.

> Working upwards the layers may be: technician (either a task-list or **A26**-Work Package), technical team leader (**A26**-Work Packages or **A16**-Team Plan), project manager (**A16**-Stage Plan), Investment manager/ Sponsor/ Project Board Exec (**A16**-Project Plan), Portfolio manager (Integrated Business Strategy Plan). Equity manager/ main board (Company Vision, Mission and Values).

> Thus to send a man to the moon and back safely the breakdown covers, at top level amongst several other things Ground-Control as a PBS item and Build-Ground-Control as its expansion in the PoWBS. Build-Ground-Control is delegated as a 'task'. The recipient decomposes this (among many other things) to include PBS-{ Canteen { Cooker { Gas Supply } } } and WBS-{ { { Connect Cooker-number-6 to Gas-Supply-Feed-6…} } } }

> ➤ The breakdown structure should be more or less even in the level of decomposition across the scope (product or task view). No leg is deeper or shallower than the others by more than a level or two without sound reasoning.

> When this guideline is stretched then either the delegator is dabbling (interfering) in an area that reflects their old technical heritage, or the delegator (and team) is ignorant of the contents of this area or sound reasoning supports as fact that this project's team know this area demands closer (or lesser) scrutiny for safe project delivery.

All these guidelines can be stretched when you know the consequences.

If an assignment is decomposed into 7 major products, each of which is 7 sub-products with 7 development tasks then a 'sensible' project plan is delegating circa 350 work-packages (7 * 7 * 7).

Each **A26**-Work Package may be of a size such as "Forge bicycle seat spring" and is thus a simple task-list in the head of a technical subject matter expert. Or each **A26**-Work Package may be "Design Mission Control", "Build Mission Control" and thus in its own right be a sizable commission that will contain their own 350 work-packages such as "Design Canteen" with its own delegation such as "Unwrap Cooker-Number-6", "Attach Gas-Supply-Feed-6".

For preliminary or overview team based planning sessions I would target 35-50 elements of interest rather than 350 by 'chunking', especially if the problem space is new to participants. Give everyone the same view of this **A26**-Work

Section: 2   Page: 10.1.2:362 of 541

Process Numbers
13 Directing a Project (DP)
Starting up a Project (SU) 12
Initiating a Project (IP) 14
Controlling a Stage (CS) 15
Managing a Stage Boundary (SB) 17
Closing a Project (CP) 18
Managing a Stage Boundary (SB) 16
Managing Product Delivery (MP)

Package's or **A16-**Stage Plan's of **A16-**Project Plan's outcome to take back to their own work-area to add the detail.

Ultimately at the eventual bottom technician's task level no task should run over a staff-week without an objectively assessable end result unless good argument can be made for accurate assessment of earned value. Sound grasp of how to estimate will provide the necessary insight.

See X on Y: Estimating and See X on Y: Reporting Regimen for what is 'good argument'.

10.1.2.6.3 PoWBS to RAM

(optionally) While the Product Oriented Work breakdown structure (WBS) is a very useful, powerful tool for firstly defining scope in senior user terms (the PBS dimension) and then in senior supplier terms (the WBS dimension) it is not naturally organised for scheduling purposes.

For scheduling a 'phased' view is better, however it is often possible to create the phased view directly during creation of the precedence diagram.

10.1.2.6.3.1   Experience Allows Short-Cuts

SOOP-169.   To start planning with a phased or product development life-cycle view is possible when the customer is clear on what they want and the team knows how to deliver it. IE starting with a phased view is possible when everyone is highly experienced. In this case it is quicker and cheaper. It is not however likely to succeed when either customer or supplier is unsure of elements of 'what' and 'how'. Many project stresses are rooted in an inappropriate start point during planning: cut corners when you know the consequences not otherwise.

PBS to PoWBS to Phased WBS
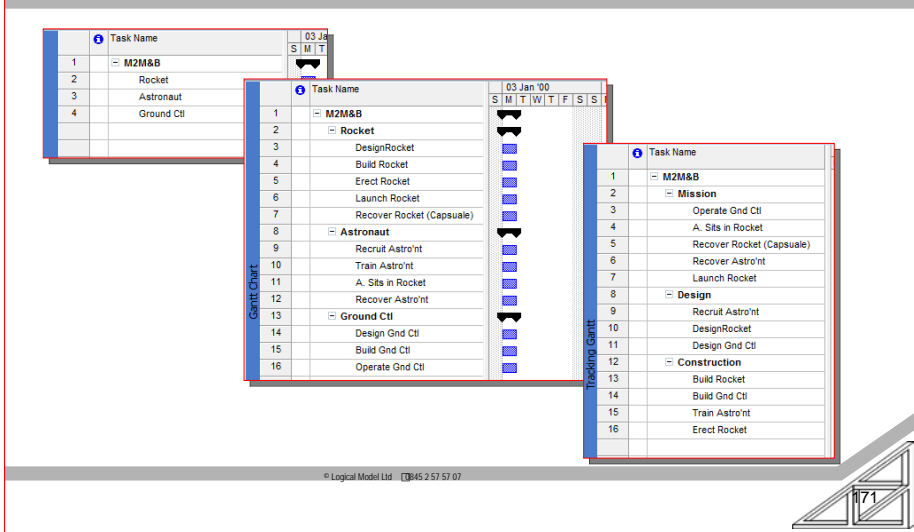
10.1.2.6.3.2   *Breakdown Structure Orientation*

For the 'serve tea project' some obvious phasing that could suggest stage boundaries, from the supplier perspective is: Ordering phase, Preparation phase, Serving phase, Waiting phase, Settlement phase, Clearing up phase.

From the customer perspective it is: Ordering phase, Waiting phase, Benefits harvesting phase, Settlement phase.

I may chose to redraw the Product oriented WBS as a Phase oriented WBS ready for precedence diagramming of dependencies like the order must be taken <u>before</u> making the tea.

10.1.2.6.3.3   *Regroup In Theory?*

It might be useful to re-group the steps into a Phase-oriented Work-Breakdown Structure prior to developing the schedule.

The project's phasing shows how much simultaneous work is ongoing at any one time. The amount of parallel work dictates the strength of the control and reporting regime needed to be in control.

Only 'might be' because each task falls to a technical specialism and when building the precedence diagram the trades can lay-out there work pretty fluently and describe their dependencies on each other.

Once the dependencies are modelled the overall phasing is obvious, and stages will also suggest themselves as obvious investment reappraisal points.

If restructuring of the product oriented WBS to be phase or skill oriented is done it is an almost entirely mechanical step needing very little thought. Restructuring the WBS to be skill or trade oriented first will make the dependency modelling step marginally easier, but dependency modelling will definitely deliver a phased view.

10.1.2.6.3.4   The RAM or RACI

A good way to restructure the WBS's tasks is using a Responsibility Assignment Matrix (RAM). The RAM may also be called a RACI-Chart (or RASCI) as for each task it shows the people responsible for (doing) the work, the person accountable for the results, those who are consulted (provide inputs) and those who receive the outputs (are informed by the task) and perhaps those who sign-off results.
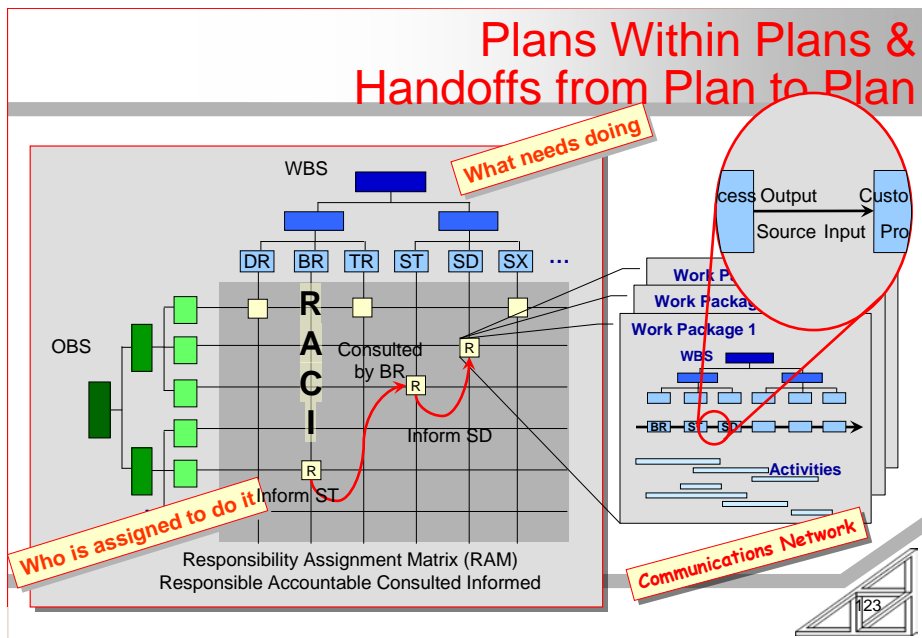
Fine SLIDE With Key

Insert BS when work-package = new project

10.1.2.6.3.5   Task Dependencies Are Handovers

RACI charts are close relatives to Six Sigma's SIPOC tool (Supplier, Input, Process, Output, Customer). When OBS/ WBS and RACI or SIPOC are used together they map onto the precedence diagram as a good cross-check.

In all cases we are mapping the inputs to a process to the outputs of the previous development step. Process owners should agree the required grade and the 'size' of what is handed over. Agreeing the process standards that generate outputs of

the right quality/ grade for the next step means outputs (subsequent inputs) are appropriate to the needs of the next step.

Agreeing both 'size' or volume and grade of what is handed over is good project planning and control and sadly often missing. Its symptoms include ~~scope~~-creep. The roots of the solution to address project-creep and poor project performance in general lie in the scope-verification activities of dependency management and in good estimating practices. ***See X on Y for estimating and x on y for scope verification***.

10.1.2.6.3.6   Other & Concurrent Breakdown Structures

Decomposition is a powerful tool. Anywhere a hierarchical relationship exists decomposition is useful. Thus organisation structures for reporting lines, contractor and contract obligations and Finance's Chart or Code-of-Accounts can all be decomposed to represent exactly the same project scope from alternate simultaneously valid perspectives.

Breakdown structures can be used for Risk Event (REBS) and Risk Outcome (ROBS) checklists and for hierarchies of test activities.
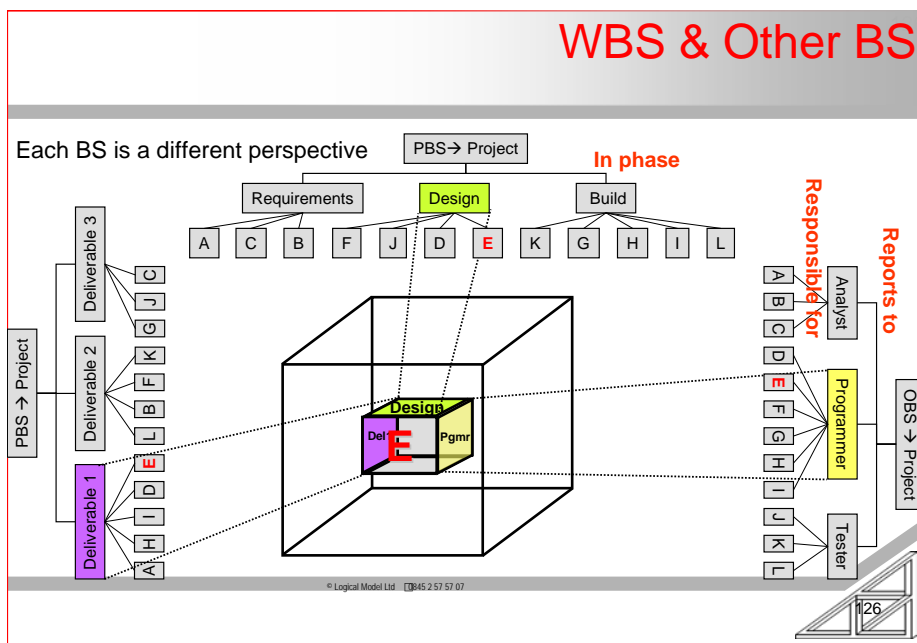
10.1.2.6.3.7   PBS as Confirmation of Tests Required

The PBS's hierarchical levels and the previous diagrammatic syntax show where integration tests, performance (system) and operational demonstration (user acceptance tests) need to be applied.

10.1.2.6.4 Critical Path Analysis and Dependency Networks

As the tasks become known so their interdependencies are assessed. The tool used is the Precedence or network diagram.

Network diagrams express the dependencies between tasks and determination of sequences of tasks or paths through the network. Inclusion in the network of each task's elapsed durations enables determination of the scheduling options available.

Selection between options to accommodate discretionary constraints such as resource availability results in dated task schedules. At least one path will be the longest path aka the critical path: the path(s) on which any delay will affect delivery dates. There may be more than one path of critical length.

10.1.2.6.4.1   AON Networks

SOOP-170.   The tool of choice for creating a view of scheduling options is the Activity on the Node or AON network diagram. The technique of choice is a social session using sticky-notes and a wall. It is the people aspect that dictates that a good target size for a WBS / AON network is 35-50 items.

Group dependency planning (first with 'customers', second within technical team leads and third within teams) engenders involvement and hence buy-in. The other results of the session are shared appreciation of who depends on who, the options available and currently selected which will facilitate agility during execution when things are not to plan or the plan is not the best current option.

When tasks are shown in dependency sequence together with their durations then precedence modelling yields the 'critical path' and 'float' (aka 'slack'). Float or 'acceptable delay' is the planner's true interest. It is an extra 'resource' to use during scheduling.
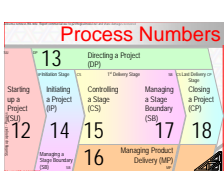
Activity on the Node Network Syntax

- Activities recorded in boxes with durations, dependencies, resulting start and finish dates and total float
- Conventional layout records scheduling options data
  - Earliest possible means "when honouring constraints"
  - Latest possible means "and still achieving the critical path"
  - Acceptable delay means "difference between Earliest and Latest"

Early Start Time	Duration	Early Finish Time
Task Name (WBS Id)		
Late Start Time	Total Float	Late Finish Time

Start Monday AM	3 Elapsed Days	Finish Wednesday PM
Build Wall		
Start Wednesday AM	2 Elapsed Days	Finish Friday PM

11

ppt

The description that follows starts by ignoring some real-world needs such as the accommodation of uncertainty of task durations. When principles are established we can add the dimensions required for reality.

10.1.2.6.4.2   Constraint First, Options Second

Dependencies represent constraints. Constraints are introduced by words such as "must" and "cannot" for mandatory constraints. EG "can't make tea without boiling water". Constraints may also be discretionary choices like "milk in the cup first". Dependency modelling starts with mandatory constraints. Discretion is added later.

Precedence Diagram Method

- Network diagram shows *dependency* & independence
  - What can or can't be done concurrently
  - 1st pass *ignores discretionary dependency* such as resource limits or customary work practices
- Dependencies are logical relationships
  - **Cannot** start until (depends upon) predecessor finishes (or starts) …. *Task 2 **cannot** start until task 1 has finished*
  - **May** start after *Task 2 **may** start (any time) after 1 has finished*
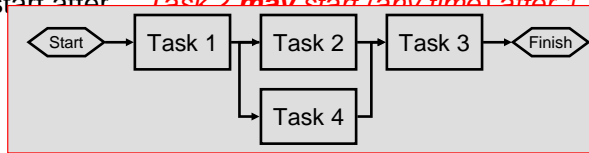
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130

Sloping Arrows and repositioned text

10.1.2.6.4.3   Best Case Schedule

Ignoring discretion when sequencing the steps with-in the development life-cycle of each (sub-sub-) product means we build the "cannot be bettered" absolute or limiting case solution as a starting point for scheduling.

We will thus start scheduling, (the application of discretionary constraints and preferences) from the basis of the maximum 'what can be done in parallel'.

When combined with task durations the result is a first-cut critical path calculation. The most common discretionary constraint that serialises otherwise parallel tasks is access to skilled people. Serialisation may also be added later to reduce the complexity of many simultaneous work-packages.

Equally 'safe' finish/ start dependencies may, later be replaced with riskier ones such as allowing overlap of tasks to introduce speed-ups, but not yet.

10.1.2.6.4.4   Visibility of Senior Management Accountability

Schedule development is the point at which dichotomies such as "its urgent" and "no you can't have more people" will become clear and senior management's pivotal role in projects may be exposed as part of the weakness in project delivery: embedding must provide education on this specific point.

10.1.2.6.5 Scheduling Is Iterative

Note that durations determine schedule. Expected schedule defines which resources will be available on the dates required. That in turn determines

durations! The translation of dependency network to schedule is iterative because the catch-22 relationship that effort divided by available resources determines the dates which determines the resources available.

10.1.2.6.5.1 Duration = Effort / Work-Rate

For a full discussion of estimating see x on y

Correct determination of schedules results from starting estimation with assessment of resources needed to complete tasks (effort, skills, tools and supplies). Second divide effort and other resource needs by resource availability on specific dates and their rate of productivity to determine task durations.

SOOP-171.   Never estimate duration. Only ever calculate them. Durations depend on effort divided by resource availability and productivity.

In the first iteration of scheduling suggest effort required and resources available based on crude and generic assessments of the organisation's capacity. For the second iteration of schedules the duration (and cost) calculations should be much closer to the specifics of the resources actually available on specific dates and thus durations and costs can be refined. The process of arriving at a final schedule may need re-calculation or refinement in several dimensions of people, equipment across this initiative and other portfolio initiatives active at the same time.

10.1.2.6.5.2 Cheap Estimates for Everything. Expensive Estimates Only Where It Counts

Note too that creating good estimates is expensive. First estimate crudely or at least cheaply. It is not until after the first or perhaps second iteration of scheduling that we will know where it is worthwhile to apply the effort required for more precise methods: at least from a schedule perspective. *See x on Y*

10.1.2.6.6 All the Tasks In The WBS

The project's precedence model must including all the tasks from the WBS:

➢ Tasks to create products (technical or management)
➢ All verification steps from the **A17-**Product Description and **A23-**Quality Register / Quality Management System.
➢ All the risk responses that are selected for application, whether directed at risk event or risk result.
➢ All the steps to integrate sub-products into products and verify their integration and so on up to the final project outcome as described in the **A21-**Project Product Description with its verifications (plus steps for project control, reporting and risk response).

The tool works for 'Build-Ground-Control: 88 weeks elapsed' as well as 'Install-Gas-Supply-6: 88 minutes elapsed, Connect-To-Cooker-6: 8 minutes elapsed'.

10.1.2.6.7 Build the Network Backwards

Common sense dictates that where possible we build the dependency network backward from the future-state by considering the product oriented work breakdown structure 'turned on its side'.

In western cultures whose writing is based on left-to-right writing then 'Final-Test' is at the far right of the precedence diagram, Integration a little before that. Concept and design is far left and fabrication/ acquisition in the middle. In eastern cultures the thinking and lay-out mode may be reversed (only 'may' because technical work is often conducted in English).

PICTURE of a PoWBS rotated clockwise so product is at the right and sub-products have "integrate" attached to them

10.1.2.6.8 Critical Path Described

Simple CPA PICTURE

A critical path is any sequence of tasks whose durations and interdependencies constrain the project's earliest possible delivery date. These tasks' aggregate duration forms the longest duration sequences of interdependent tasks - all other sequences are of shorter duration. These tasks are the sequences in which any delay will delay project (stage, work-package) completion.

There are three critical path definitions:

1. The longest sequence(s) of connected tasks

2. The project's minimum duration
3. The path(s) with zero (later minimal) float aka slack
4. 0.

Float is discussed in a few pages time.

10.1.2.6.8.1   Forward and Backward Pass

The critical path is calculated using a "forward pass" and a "backward pass". Ability to perform these two calculations by hand, if only crudely is very useful for running planning workshops.

The subsequent planning steps that apply resources to the schedule need the critical path to be recalculated repeatedly. At that point software support as provided by any project planning tool is useful.

SOOP-172.   Software is no substitute for a white-board and marker pen to generate a shared consciousness and commitment. Software is optional, people are not.

10.1.2.6.9 Calculating Critical Path

Dependencies determine critical path calculation. There are four basic 'flexible dependencies' plus two modifiers: "plus a delay" (aka 'lag') and "minus an overlap" (aka 'lead').

There are other modifiers to discuss when we get to setting schedules rather than identifying schedule options.

Process Numbers

Calculating Dependencies

Pour Tea → Add Milk	**Finish-i permits start-j Normal Relationship**	
Gather Spec'tn → Create Design +2wks	**Start-i permits Start-j Commonly an optimisation of a more detailed underlying set of F-S relationships**	
Welding → Fire Watch	**Finish-i permits Finish-j Rare. Usually end of monitoring activity**	
Ops Support → Project Fix-on-fail	**Start-i permits Finish-j Rare. Usually handover on acceptance** **There is no timeline in a network diagram**	

Start   Finish
Early
Late

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140

Since time only runs in one direction and all tasks take time each task has a start and finish point. Each relationship runs between two tasks. Thus two tasks and two ends gives four possible dependencies.

Complex dependencies create un-resolvable networks, plus people are not expert in the thinking of "cannot but may" and software tools behave differently with complex combinations of the rarer dependency types.

Golden rule: keep dependencies simple.

➢ Finishing one task enables the starting of the next task (FS)

This is the 'normal' case and accounts for perhaps 95% of relationships in most projects.

Notice the relationship does not say the dependant task must start, only that its start is enabled or no longer constrained.

➢ Starting one task enables the start of another (SS)

Perhaps 4.5% of tasks (obviously this is a made-up percentage but might reasonably be considered realistic) have SS dependencies.

Most of these will be replacements for FS where we judge that a schedule speed-up is desirable versus the risk by overlapping phases or work. In these cases a lower-level of detail in the WBS would have been possible but was not judged to add value over cost.

Eg Plaster-walls is followed by paint walls, except we recognise that wall one will be dry enough to paint before wall four is plastered so reschedule the plastering and painting to be SS plus two days delay.

Legitimate SS dependencies are mostly monitoring tasks: EG "Start fire-watch when welding activity starts".

➢ Finishing one task enables the finish of another (FF)

Perhaps 0.49% of tasks are FF. Mostly they represent the end of monitoring tasks. EG Finish collecting Time-Sheets when the job is pronounced "Done".

➢ Starting one task enables the finish of another (SF)

Having contrived percentages above to add-up to 99.9% there is 0.1% left!. Normally at least one SF dependency occurs per project. When the sponsor or operational support people declare that they will accept the deliverables to start benefits and by so doing they release the project of fix-on-fail duties. Now the project's obligation is ended by virtue of the start of 'full' business-as-usual, particularly operational support.

SF dependency can be argued to be the norm in projects pursuing a 'just-in-time' (JIT) approach. I would argue against it, and schedule FS with an ALAP (As Late As Possible) scheduling approach. FS with ALAP correctly reflects the fact that a task's finish enables a tasks start and ALAP correctly reflect that everything is to be done last-minute. SF in a JIT approach does create a 'right-shifted' schedule but the real-world relationship IS NOT that starting something enables something else's completion. SF is also unintuitive IE prejudices comprehension and that is the last thing I want from planning!

Setting up networks of tasks with complex combinations of SF, SS and FF dependencies and defined durations shows that different software tools make different assumptions at the margins.

10.1.2.6.9.1   Hammock tasks

A task with a SS and FF dependency and a duration derived from the difference in finish and start date is called a 'Hammock Task' as it 'hangs like a hammock between its anchor points'. Its duration is the variable. Hammock tasks are common for monitoring tasks whose start and finish are tied to some other network of task's initiation and termination.

Setting up hammock tasks in tools like Microsoft project shows the limitations of software written with-out full understanding of scheduling. (The way to create hammock tasks in MS-Project is to 'paste-link' the dependant task's dates from the tasks the dependency rests upon.)

10.1.2.6.10   Simple Critical Path Calculation

The critical path is found by determining the earliest possible and latest acceptable task start and end dates. Latest acceptable is based either on the earliest possible completion date or an externally imposed constraint.

10.1.2.6.10.1 Reading Dependencies

A choice has to be made as to whether to read the tasks in a dependency network as "starts after and finishes on" or "starts on and finished before".

The former choice of words is the better in my humble opinion (IMHO) as the result calculated for the critical path does not then need correction while in the latter case the "before" needs one unit subtracted.

It might be clearer in a minute…

10.1.2.6.10.2 Forward Pass FS Dependencies Only

The first step in critical path determination is the forward pass. In the forward pass relationships are examined to determine where the arrow-heads arrive at a task. IE start with the dependant (aka the successor) task. If the relationship is 'finish of A enables B' then B's start is set to match A's finish. B's finish is then determined as its start plus its duration.

Whenever there is a choice of two or more relationships the highest resulting start/ finish pair must be taken if all dependencies are to be honoured simultaneously.

Referring to the diagram. **MANAGE PAGINATION**

Tasks A and D start AFTER the initial milestone. Milestone durations are zero thus A and D start AFTER zero (they start ON day one but we will ignore that for now) There <u>earliest possible start</u> is AFTER 0. Being 3 and 7 days long respectively their <u>earliest possible finishes</u> are ON days 3 and 7.
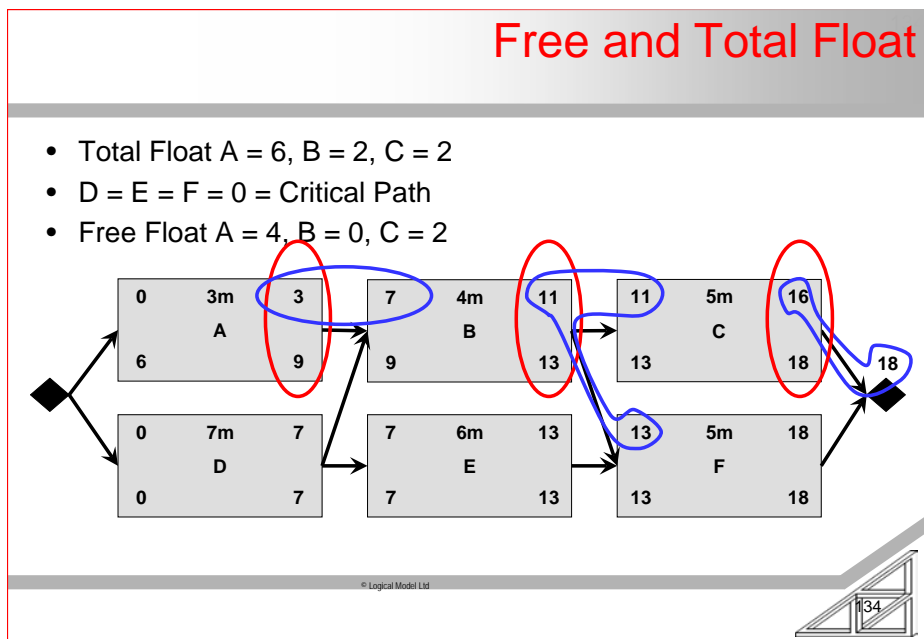
REPLACE WITH FWD PASS Slide & ReTitle & change units

Task B CANNOT start until AFTER day 7 – the minimum time required for all predecessors to finish. E and B must finish before F can start so F cannot start

until AFTER 13. The assignment in total cannot finish until both C and F are complete so concludes AFTER 18 days or day 19 is the first post-project day.

10.1.2.6.10.3 Backward Pass FS Dependencies Only

In the backward pass dates are determined from the successor to the predecessor. Whenever there is a choice of dates the lowest value is taken.

Both C and F MUST be complete ON or BEFORE day 18 or the project is delayed, so their latest permissible finish without critical impact is ON day 18 and their latest permissible start is 18 minus their duration.

Tasks B's latest permissible finish must accommodate C and F but since these are both 13 there is no choice of dates. B's latest permissible start is 13 – 4 = 9 while E's is 13 – 6 = 7. Thus task D must end ON (or before) day 7 at the latest or it will delay task E.

10.1.2.6.11   Forward Pass (Almost the Full Logic)

The forward pass considers the arrowheads in the dependency relationships. Where multiple dependencies exist the forward pass always takes the highest values. Now we have moved beyond the simple case the relevant dependencies (arrowheads) may be on task start or finish.

If a task has multiple dependencies the calculation is done for all dependencies. If a task has both start and finish dependencies then it will be necessary to use each dependency to calculate start/ finish pairs and then select the highest value pair.

What ever the relationship is (FS, SS, FF, SF) determines which values are to be used in the calculations. Where the relationships is F**S** or S**S** then the **task's start date** is set to its predecessors finish or start date respectively and its duration is added to the set start date to determine the task's finish date.

If the dependency is S**F** or F**F** then the **task's finish date** is set to the predecessor's start or finish date respectively and the duration is subtracted from the task's finish date to determine the possible start date.

10.1.2.6.11.1 Backward Pass

For the backwards pass logic works in the opposite direction to the dependency arrow-heads. The start of calculations sets all predecessor tasks to the finish milestone to have a 'late finish' equal to the length of the critical path or externally imposed constraint. Late starts are calculated as finish minus duration. All other tasks honour their network logic as set-out in the table below.

10.1.2.6.11.2 Forward and backward pass Rules

Relatio n-ship type	Forward Pass Sets the Successors	Date calculated with the	Backward Pass Sets the Predecess	Date calculated with the duration

	early dates	duration	ors Late dates.	
Finish Start	Successor Early Start set from Predecessor Early Finish	Successor Early Finish set from Successor Early Start + Duration	Predecessor Late Finish set from Successor Late Start.	Predecessor Late Start set from Predecessor Late Finish - Duration.
Start-Start	Successor Early Start Set from Predecessor Early Start.	Successor Early Finish set from Successor Early Start + Duration	Predecessor Late Start set from Successor Late Start.	Predecessor Late Finish set from Predecessor Late Start + Duration.
Finish-Finish	Successor Early Finish set from Predecessor Early Finish.	Successor Early Start set from. Successor Early Finish - Duration	Predecessor Late Finish set from Successor Late Finish.	Predecessor Late Start set from Predecessor Late Finish - Duration.
Start-Finish	Successor Early Finish set from Predecessor Early Start	Successor Early Start set from Successor Early Finish - Duration	Predecessor Late Start set from Successor Late Finish	Predecessor Late Finish set from Predecessor Late Start + Duration.

10.1.2.6.11.3 The Rules Brake-Down

To the best of my knowledge there is no definition of how to handle contradictory dependencies such as a task with SS and FF dependencies and a duration.

As a guideline if your network logic steps beyond my 95%, 4.5%, FF&SS for monitoring tasks only guidance above then 1) Redraw complex relationships in simpler fashion to follow the advice – it is normally possible, or 2) Have a very clear reason for wanting to break the guidelines, AND 3) add descriptive text to all **A26-**Work Packages, their predecessors and successors, preferably 4) ask an independent project assurance person to interpret the project management team's logic and see if they come up with the same understanding AND 5) see 1) again.

10.1.2.6.11.4 CP = Best Case

The Critical Path in its initial form is an entirely theoretical expression of the 'best-case' scheduling option before consideration of discretionary constraints such as scheduling tasks 'As late as Possible', pinning tasks to specific dates (EG National Holidays), acknowledging limited resource availability – EG only one Dry-Dock available in March and no work performed in France in August.

The theoretical critical path is the correct starting point for building real-world schedule as it is the 'limiting', 'cannot be better-than', 'ideal-world' case. Every decision from here on is application of management discretion to prioritise between competing portfolio demands for resource IE the addition of political impacts into the plan.

10.1.2.6.12   Critical Path and Float

There are two types of float: Total and Free.

➢ Total float aka 'Total slack' is the delay permissible in non-critical tasks before they also become critical.

Total Float is delay permissible without impact on the critical path.

Total float is shared by all the tasks in the path

➢ Free Float aka 'free-slack' is delay permissible without impact on <u>any</u> other task.

10.1.2.6.12.1 Total Float's Calculation

PAGINATION

Total float is calculated as the difference between late and early dates on each task (use the start or finish dates, it makes no difference except on a hammock task where results are indefinable).

Where early and late-dates are the same this means the task has no delay possible between the earliest date achievable date and the latest acceptable without causing delay to the project end date. IE all task delay translates 1-for-1 to project (stage, **A26-**Work Package delay).

Calculating Float
(Aka Slack)

- *Float is flexibility*
  - Network shows date options
  - Gantt shows date selections
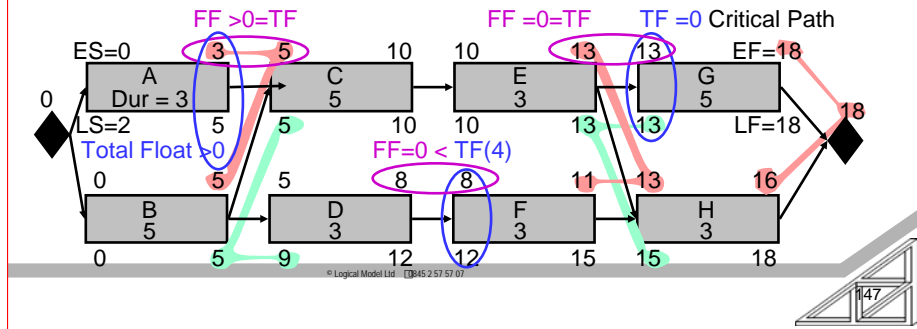
10.1.2.6.12.2 Free Float's Calculation

Free float is the minimum value returned by comparing all of a task's dependencies with all of its successors. For example a task with two FS dependencies to two successors: take the minimum of Earliest finish with all of its successor's Earliest Starts.

Picture task with multiple sucessors by different dependencies

Generally free float is zero (to be non-zero the successor task(s) must have more than one dependency or be scheduled other than 'As-Soon-as-Possible (ASAP)). Free Float can never exceed Total Float.

Free float is significant when rescheduling a succession of tasks resourced by staff from different areas of the organisation. When there is no free float then delay or acceleration of one task affects dependant tasks and thus other department's staffing demands.

10.1.2.6.12.3 Zero and Negative Float

The third definition of a critical path is the set of tasks with no float. Note there may be multiple parallel critical paths, and 'no float' will be changed to 'not much' (with a definition of "much"!) when we cover other schedule considerations like estimating later.

Finally 'Negative Float' defines the speed-up required to meet imposed deadlines.

Process Numbers

13 Directing a Project (DP)

12 Starting up a Project (SU)
14 Initiating a Project (IP)
15 Controlling a Stage (CS)
17 Managing a Stage Boundary (SB)
18 Closing a Project (CP)
16 Managing Product Delivery (MP)

Section: 2   Page: 10.1.2:379 of 541

Displaying Float

Free Float

Total Float

ID	Task Name	Duration	Start	Finish	Free Slack
1	p	50 days	01	19	0 days
2	ms	0 days	01	01	0 days
3	a	7 days	01	07	0 days
4	b	9 days	08	16	0 days
5	c	14 days	17	30	0 days
6	d	6 days	31	05	3 days
7	e	4 days	01	04	0 days
8	f	6 days	05	10	10 days
9	g	10 days	21	30	0 days
10	h	5 days	31	04	4 days
11	i	11 days	09	19	0 days
12	j	8 days	01	08	10 days
13	k	12 days	19	30	0 days
14	l	9 days	31	08	0 days
15	ms	0 days	19	19	0 days

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148

Change to show a variety and include NWk

10.1.2.6.13   Coping with Constraints

If I have to achieve a specific end time then a backward pass from the constraint will show the minimum set of tasks to be accelerated and the minimum acceleration required to achieve the required target.

Adding The Imposed Constraints

- When dates are imposed the network helps right to left planning
  - Conduct a forward pass
  - Set the end or mid-term milestones dates
  - Plan back from dates using a backward pass
  - Remove negative float by using project speed-up options

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First perform a normal forward pass. Then calculate the backward pass using the imposed delivery date. Only where tasks have negative float values do they need accelerating.

SOOP-173.   A backward pass critical path calculation is useful to priorities speed-up operations. Commonly project manager's of urgent or slipping projects attempt to speed every task and waste resource speeding tasks with float.

10.1.2.6.13.1 Rules of Thumb For Schedule Optimisation

SOOP-174.   When optimising schedules there are several rules of thumb.

1. *Don't - optimising one thing makes something, often everything else less flexible. Projects survive when they are flexible.*
2. *Look for the biggest, earliest, most resource intensive task and reduce its duration by the minimum amount possible.*
3. *Recalculate the critical path (it may have moved due to the previous step) and consider if the project (stage, work-package) is quick-enough yet. If not return to the previous step.*
4. 0.

   As the optimisation continues multiple paths of the same duration may emerge. In this case add to the guidance at step 2) "tasks common to as many zero float paths as possible".

10.1.2.6.13.2 Schedule Optimisation

To optimise a schedule consideration can be given to reducing resources on non-critical tasks to 'steal' them and redeploy on resource sensitive critical path tasks. If a task has float then reducing its resource allocation and perhaps making it take longer may not affect the project's schedule or costs. The resource freed-up may be reassign-able to critical path tasks to speed up delivery. Of course there are many unspoken assumptions in this suggestion, like skills are relevant.

10.1.2.6.13.3 Network Shape

The degree of serialisation or parallelism in a network suggests how hard to manage it will be from either a schedule or concurrency perspective.

The network exposes many factors relevant to making scheduling choices. The early and late dates are only best and worst case if the project is time bound and has complete freedom of resourcing. If we are not time-bound the schedule is not the priority. If resourcing is the most constraining factor the float is less relevant.

The network shows which tasks could run in parallel, where applying more resources to tasks would speed the project up and equally where removing resource only affects the amount of float remaining.
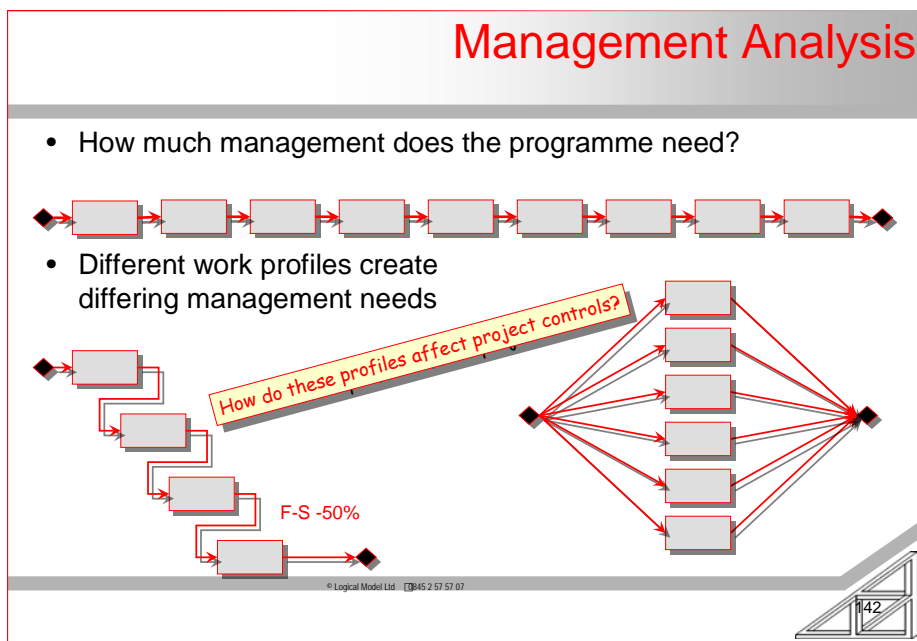
Long 'strings of tasks' are difficult to deliver to schedule while multiple parallel tasks require much simultaneous management presence perhaps implying a team of several people to occupy exec, project manager and team manager roles.

We will need to return to the network when considering the probability of achieving the dates calculated and the fact that durations are uncertain.

10.1.2.7 Network to Gantt Translation

A network diagram shows us the range of dates between which a task MAY start and MAY end. As long as start and end are anywhere between early and late dates schedule is not affected. The Gantt chart requires that we make a choice. Flexibility is beginning to be lost.

10.1.2.7.1.1   The Time For Software To Manipulate Scheduling

When we depart from the network diagram for the Gantt chart it is a trivial, mechanistic process to transcribe the network's options to an initial Gantt selection of schedule.

This is the time to consider moving from social planning with walls, white-boards and workshops to software driven methods. Translation of network to Gantt is trivial with or without the aid of software. However subsequent steps will demands frequent re-drawing of schedule choices to seek the best use of available resources.

However drawn the Gantt chart should be displayed with visibility of float. Float is a scheduling resource. Display of float is not the default in at least one leading software tool.

It will also be trivial if using software support of schedule development to determine cash-flows, cumulative costs and thus Planned Cost (PC) aka Planned Value (PV) aka Budget Cost of Work Scheduled (BCWS).

10.1.2.7.1.2   A2-Business Case Inputs

When we finish the next few steps we will have the information needed to update the cost side of the **A2**-Business Case's investment appraisal.

From this point in the planning process the investment appraisal's costs can be considered to be more robust and auditable than they have been so far.

Network Diagram To Schedule Gantt

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164
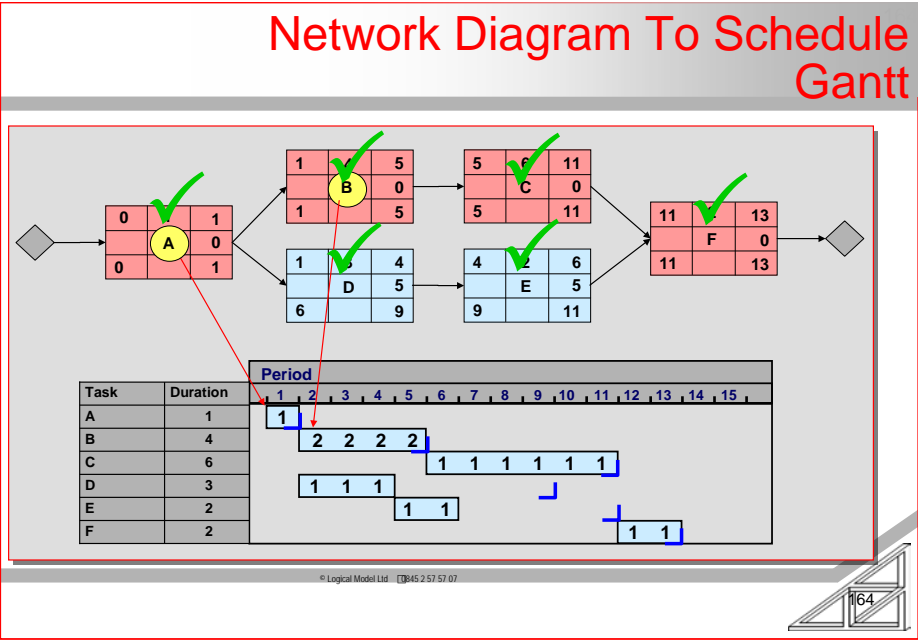
Replace With MSP

10.1.2.7.1.3   Resource Histogram

The Gantt chart shows work arranged against calendar. Knowing the work, its resource consumption and schedule allows for a time-scaled histogram of resource consumption by type to be plotted

10.1.2.8 Schedule Selection: Resource Smooth & Level

Once a Gantt chart that matches the theoretical critical path is achieved then resource constraints and task float should be examined.

10.1.2.8.1.1 Four Resourcing Targets

For any schedule there are normally four resourcing targets:

1. do not exceed the maximum level of available resource
2. ensure the rate at which staff enter and leave the project is manageable without peaks and troughs,
3. keep every resource that is adding cost busy adding value and
4. do not allow temporary release of a resource that is going to be hard to get back.
5. 0.

The last item (or two) in the list represents the actions of people in an organisation with immature project capabilities. With portfolio management maturity comes greater insight and greater capability. We will explore this in a couple of pages time.

10.1.2.8.1.2 Float As Scheduling Resource

Where resource constraints dictate then tasks will have to be rescheduled. Tasks that have float can be moved without affecting the project's deliver date.
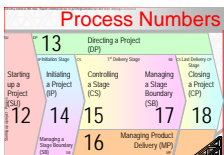
Task moved that don't have free float will affect the resource allocation dates of all subsequent tasks even if they don't affect project (stage or **A26-**Work Package) delivery date. A check will be required that the rescheduled tasks do not cause resourcing consequences across the project or portfolio that make rescheduling undesirable or impossible. If rescheduled with-in free float then while there are no project impacts to resourcing dates or completion date there may still be portfolio implications.

Tasks may also be rescheduled by speeding them up or slowing them down. Tasks may be slowed down by liberating resource and thus reducing (IE trading) float. Freed resources may be assigned somewhere a speed-up is desirable to reduce the critical path or alleviate negative float.

10.1.2.8.1.3   Use Float

Where it is possible to manipulate scheduling within float in order to match the reality of available resources then this is the first choice. If constraints dictate that float is insufficient the delivery date will move beyond the 'ideal-world' of the critical path.

10.1.2.8.1.4   'Resource Constrained' Defined

Project constraints are often related to resource availability. A project is described as "resource constrained" when it must deliver later than the critical path would allow due to lack of available resources.

10.1.2.8.1.5   Crashing and Fast-Tracking Defined

If the delivery date is the irresistible constraint then resources will have to be added. The Project Management Institute defines this as 'Crashing the critical path': the cost effective application of extra funding.

Alternatively if delivery date is the imperative and resources are not applied then dependencies can be amended in some manner. The Project Management Institute defines this as 'Fast-Tracking'. Fast tracking normally adds the threat of an even worse delay if the parallelising of otherwise dependant tasks proves later to have been unwise.

Many organisations understanding of contingency handling omits how to set dates and budgets to handle uncertainty and thus all contingency expression ends up in scope management. ***See X on Y MoSCoW and Contingencies.***

10.1.2.8.2 Smoothing and Levelling

Rescheduling tasks to reduce peak demand below the assigned resource levels for each skill type needed or to raise usage upto assigned levels for efficiency may be called "levelling".

Resource Levelling

Task	Duration	Period
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A	1	1
B	4	2 2 2 2
C	6	1 1 1 1 1 1
D	3	1 1 1
E	2	1 1
F	2	1 1

Maximum of two resources available for this project

Resource Usage/ Period

3	D	D	D	E										
2	B	B	B	B	E									
1	A	B	B	B	B	C	C	C	C	C	C	F	F	
Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

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166

10.1.2.8.2.1 *Smoothing*

Rescheduling tasks and thus resources demands so that the rate at which the project's size - normally assessed in headcount terms - grows or shrinks is manageable may be called smoothing.

Too many new-joiners typically eliminate project progress as they seek to discover what is going on from those already in the project and seek to change working practices to the way they are familiar with.

The interested reader should find Fred Brook's Jnr's The Mythical Man Month – and read the section that discusses why adding people to a late project makes it later.

Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) 12 | Initiating a Project (IP) 14 | Controlling a Stage (CS) 15 | Managing a Stage Boundary (SB) 17 | Closing a Project (CP) 18

Managing a Stage Boundary (SB) 16 | Managing Product Delivery (MP)

Section: 2   Page: 10.1.2:387 of 541

Resource Over-allocation
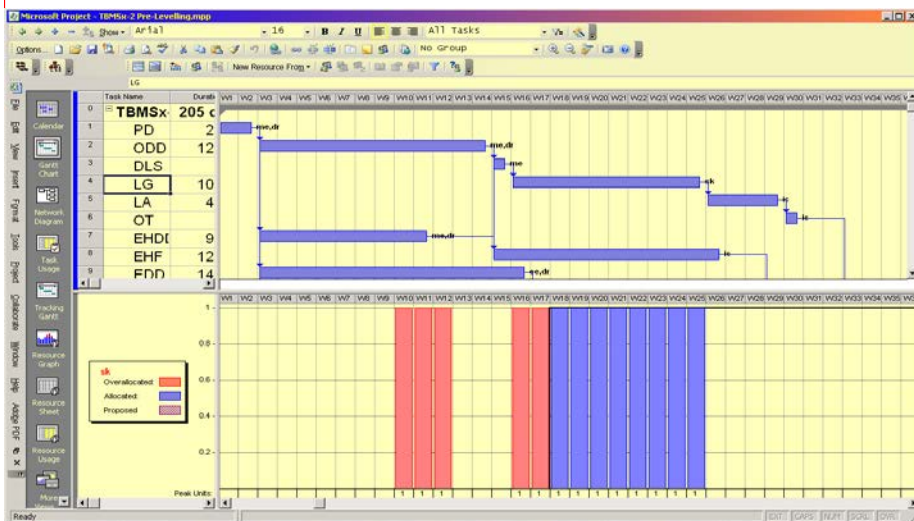
10.1.2.8.2.2   Portfolio Resourcing

When project managers can express the float in tasks to functional resource owners, and resource owners are incentivised on servicing projects instead of utilisation rates then projects will be able to release temporarily unneeded resources back to the pool without fear of permanent loss.

Equally resource owners will have greater clarity of what work demands 'the best people and right now' and what work has flexibility for example as a training opportunity or can be scheduled around more urgent work.

SOOP-175.   Resourcing projects is a responsibility best carried out at portfolio level, if only for those rare resources that are the bottleneck in the organisation's change initiatives.

Bandwidth Analysis

- Assess demand & supply for key resources
  - >60 to 80% generally a problem

	Jan	Feb	Mar	Apr	May…
Res-1 Available	30	20	40	40	40
Demand	20	20	20	20	20
Res-2 Available	10	10	10	10	10
Demand	6	8	10	12	10
Res-3 Available	2	3	3	3	4
Demand	0	1	1	1	3
…	88	86	84	78	78

Resource Units

Time

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167

10.1.2.8.3 Cash-Flows, and Cumulative Costs

When the smoothing and levelling activities are complete an agreeable resource profile and schedule have been arrived at. The balance of scope, resources, tasks, risks, assumptions and all other factors are (should be) in balance and so can be base-lined; cash-flow can be calculated using the time-scaled resource usage plus any customer pre-payments and the expected payment milestones.

We can also calculate the Budget at Completion (BAC). If required the cumulative cost curve aka the "Budgeted Costs of Work Scheduled (BCWS)" aka the Planned Value (PV) aka Planned Cost (PC) can now be calculated.

SOOP-176. *The sooner you mange projects in terms of money the faster you get promoted*

10.1.2.8.3.1 Cost Calculations

To calculate project costs several factors have to be included into the project plan's contents.

➢ All tasks must record the effort assigned to them
➢ All tasks must record the resources consumed by them
➢ All tasks must record the capital equipment used to deliver them
➢ All the above has to be priced for usage rates, whether one-off, per-use, per-hour or other means
➢ All apportioned costs (overhead rates) must be included in the above or be accounted by explicit algorithm (including explicitly set-aside as ignored)

> The point at which costs are recognised must be defined for all costs: At project, stage, or task start or end or pro-rated throughout.

WBS + Resources & Dependencies = Schedule & Cumulative Cost & BAC

Finally we know what it will all cost, over what timescale: what the negative cash-flow looks like. The positive cash-flow must also be modelled so the Business Case can contain meaningful DCFs and NPVs
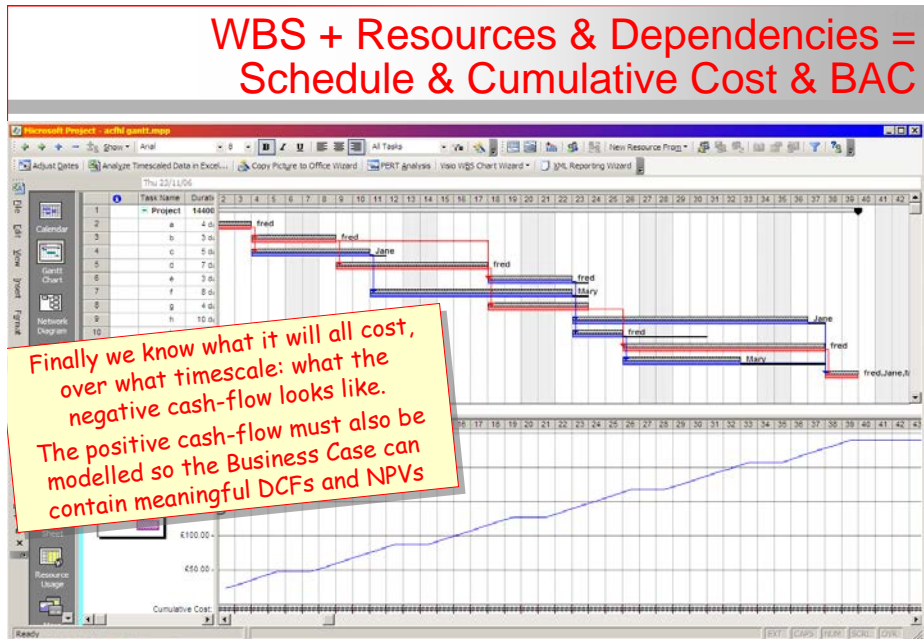
Cost Profile

- Determine for each activity whether costs are
    - Partly or completely front loaded
    - Partly or completely back loaded
    - Accrued pro rata over the activity duration

Front Loaded

Back Loaded

Pro Rata

10.1.2.9 Recap:

The mandate arrived and Starting up a Project (SU) created a team who through the project manager's efforts to define scope arrived at the end of Starting up a Project (SU) with understanding of the objective.

In SU and/ or the Initiation Stage the team developed a description of the outputs to be created and the tasks needed to create the outputs under the control of the strategies. The tasks have been scheduled based on dependencies, effort and available resources.

Now we know the project's cumulative costs more precisely than we did prior to planning and can thus refine the **A2**-Business Case.

10.1.2.10   Consolidation Of Work To Date

The rest of the Initiation Stage, indeed everything to come all the way to project closure is now much simpler than the journey so far! (with the small exception of estimating!!)

Two broad work-streams are required to close the Initiation Stage. Each arrives at a separate decision. The superior decision is **[13.4.2** Authorise the project] and the dependant decision is **[13.4.3** Authorise a Stage or Exception Plan].

Both decisions are likely to be made as one by the project board. The first should be made by the sponsor and the second by the exec.

10.1.2.10.1.1 Integrate the Initiation Stage's Outputs

One work-stream brings the project's **A2-**Business Case IE its statements of viability to a state worthy of an initial base lining by the project board when they **[13.4.2** Authorize the project].

We use the cost and timescale information from the **A16-**Project Plan to **[14.4.7** Refine the Business Case] and also create the post-project **A1-**Benefits Review Plan at this time.

10.1.2.10.1.2 Plan the Next Stage

In the other work-stream the project management team **[14.4.8** Assemble the Project Initiation Document]. The project's whole set of context information, strategies, controls and roles are consolidated for presentation to the decision making authorities. If the required approvals are granted the project will move from the Initiation Stage into the first benefits enabling stage.

This work-stream's key actions include

> the planning of the first benefits enabling stage. The **A16-**Stage Plan must be created at a level of detail appropriate for day to day control (if necessary with updates to the **A20-**Project Initiation Document) and
> the summarising of the current stage the first **A9-**End Stage Report.

10.1.2.10.1.3 The Processes in The Initiation Stage

Preparation for the approaching product development stage is accomplished by the project management team performing the activities of the Managing a Stage Boundary (SB) process. IE the Initiation Stage starts with the Initiating a Project (IP) process and ends with the Managing a Stage Boundary (SB) process. The Initiation Stage's execution MAY have been controlled as discussed in the Controlling a Stage (CS) process. ***See X on Y***

10.1.3 Estimating

This is perhaps the most important chapter of this manual. Projects fail when they are unable to make reliable estimates or use them once made.

Estimating is a poorly understood discipline and often a badly executed one. While perfection is impossible truly huge improvements in capability are easily achieved.

SOOP-177.   Estimates are created during planning, but their most important use is during execution to support reliable tracking of achievement and thus continuous appraisal of future actions that will deliver the project (and the biggest return on investment).

10.1.3.1.1.1 Predicting The Future

Projects are an inherently "future oriented" undertaking. Thus all assessments of cost and benefits and other project elements are predictions.

If 'Pre-' 'diction' then 'spoken before the event' and so uncertain. Estimating and risk are the same topic from different perspectives.

*SOOP-178.   Uncertainty in an estimating context might alternatively be expressed as varying confidence based on the observation that confidence of project delivery grows as budget and schedule allowed increases while that growth probably erodes the **A2**-Business Case.*

10.1.3.1.1.2   The Link To Risk Management

As with risk there is much insight that can be brought to bear on improving estimating – in-fact it is much the same insight. Every estimate has several elements:

➢ the core, certain and unavoidable product development and project management work,

➢ natural variation in the work (which PRINCE2® wisely covers with the concept of tolerances),

➢ allowance for discrete, describable concerns that may arise and then may increase or decrease the actual results achieved and is generally called "risk".

Schedule uncertainty is only relevant where it is greater than work package float (slack) while uncertainty in cost estimates always affects the final results (consideration of both is explained below).

Compounding confidences EG tolerances and contingencies (such as adding all the cost uncertainties for individual work packages) requires an understanding of probabilities IE statistical analysis.

10.1.3.1.1.3   Two Approaches

Estimates can start with scope and assess the resources, schedule and budget for delivery of the scope or start with constraints and assess what fits within the limits. Where it makes a difference I will start with a scope driven approach and add the constraint driven approach second.

10.1.3.1.1.4   Perspectives To Understand in Estimating

To improve estimating capabilities requires understanding of:

➢ The purpose of estimates
➢ What a good estimate contains
➢ The principles that underpin reliable estimates

  • Accuracy and accurate
  • Precision and precise
  • Confidence and probability

➢ The roles involved in an estimate
➢ The life-cycle of estimates through

  • Planning (scoping, budgeting and scheduling)
  • Tracking status during execution

> ➤ Estimating practices
> - methods,
> - approaches and
> - techniques
>
> ➤ The psychology surrounding all aspects of estimates. No amount of arithmetic is a substitute for or insight into the psychology in operation.

To estimate "well" the practices, concepts and principles need to be understood and applied simultaneously. All will be covered in this section. One or two will take a second or more readings.

10.1.3.1.2 Purpose of Estimates

SOOP-179.   Estimates are only needed as inputs that inform decision making.

SOOP-180.   All estimating decisions are about one of only two needs:

1. *rationing limited resources (deciding 'affordability')*

   (What is perceived as unlimited doesn't enter human perception as needing to be estimated or even perception of being estimable)

2. *coordination, integration and interfacing of parallel, separate things/ states/ conditions/ activities.*

3. 0.

10.1.3.1.3 An Estimate Is…

SOOP-181.   An estimate is a presentation or package of elements <u>that is used to (re-) generate</u> an assessment of some future quantity or quality. Each estimate contains and combines evolving <u>historical observations and as much relevant data as is currently available</u>.

Estimates are applied where measurement would be used if we had the thing/ state/ condition/ activity to measure and the means to measure it. Where either 'thing' or 'means' is missing then either estimating or guessing is required.

10.1.3.1.3.1   Guessing versus Estimating

The only two start points are either to guess or to estimate.

A guess is an assessment without any basis that is presented as a **value**. In contrast to a guess an estimate CONTAINS and is presented as a basis of determination.

There is nothing wrong with a guess that is declared as such. It is by definition 'the (only) basis' we have when doing something novel. When asked for an estimate "I don't know but I can guess…" is therefore acceptable because it is an expression of the basis if perhaps less desirable as a reliable response than we might have hoped for!

SOOP-182.   Both an estimate and a guess can be wrong but with an estimate when I discover the value is wrong I can tell why, if only partially and correct the basis to generate a better value.

10.1.3.1.3.2   Worst crime

The worst of all estimating crimes is to allow someone to be misled. There are two causes:

1. The inevitable consequence of doing something novel being translated into a undetected guess

   If I am led to believe a value is reliable when in-fact we have no idea of its correctness then I am misled. This situation normally arises when a guessed value masquerades as an estimated value. It should never be allowed and must never be tolerated a second time.

   Acceptance of guesses is the recipient's error and easily corrected. Guesses are detectable simply by examining them and discovering they do not have an estimate's required contents. "I don't know I can only guess" is an honest, useful but under-used answer.

   By definition an estimate whose every element is guessed is still an estimate: transparent, capable of challenge and refinement.

2. Dishonesty and opacity

   This case is most often caused by the technician's fear of being exposed as having made an error when combined with a blame culture and management's ignorance of how to estimate correctly. It is often a result of the organisation's culture that demands a single-point (ie precise rather than correct) "won't exceed" value quickly, then arbitrarily changes it and is sufficiently large and confused that while blame is sloshed around liberally everyone has a valid 'not my fault because…' excuse.

3. 0.

10.1.3.1.3.3   Common Need Is A 'Not To Exceed' Figure

SOOP-183.   In most requests for an estimate the requestor is asking for a "won't be exceeded" value. Here be many dragons.

To be sure of a truly 100% guaranteed "Won't exceed" value will require consideration of every possible 'could go wrong'. Our real or pragmatic aim when estimating is to ask for "what value is a won't be exceed value at what level of confidence?"

Common confidence targets are:

➢ 50% - as likely as not,
➢ 80% or typically OK and
➢ 95% "as close to a guarantee as I'm willing to give, there is always an exception somewhere!"
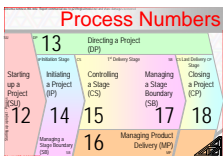
The percentages are typical target values but figurative IE not mathematically rigorous.

Assessing estimates expressed as a confidence level requires using a range of values. Preferably so many values as to be statistically significant. Minimally three values. Typically in a project all we get is three values.

10.1.3.1.4 Estimating Principles: The Role Of Psychology

Developing a corporate ability to create and use estimates is more about understanding and addressing people's psychology than it is about arithmetic.

10.1.3.1.4.1   Opaque Estimating Scenario – Part 1: Creation

Consider the following common conversation in a project scenario in which the protagonists operates in a "give me a not to exceed value". In this conversation the unspoken thoughts are in braces:

➢ Boss: "Simon, how long do you need to write this section?"
➢ Simon: "{if I estimate too low I'll be in trouble, I think 2 hours is enough, I'll add some protection, say 2 hours, but boss knows I'll add extra so will take some off} Boss I think 8 hours are needed".

Now at this point boss may say "ok" or "{padding the estimate are you?} you've got four". If either of these happens I think:

➢ Simon "{well at least I've more than I need}" otherwise I'd now argue "Boss I need more because…".

10.1.3.1.4.2   Part -2: the Scenarios for Using the Estimate

I have several possible actions and outcome:

➢ I start work immediately, everything runs smoothly, I finish in less than four (or 8) hours, say in 90 minutes, book my time accurately to the work-package's project control record and tell the boss.

Unless my boss' understanding of estimating is mature I have probably now 'set expectations' for any similar work such that unless everything runs smoothly every future time I'll be in trouble for being late. So also possible and more likely but not yet probable is...

➢ I start work immediately, everything runs smoothly, I finish in less than four hours and I DON'T tell the boss. I use the spare time elsewhere and book all the hours to this work package.

Now I have corrupted the value of historic data for comparative estimates and convinced the boss they were correct to halve all my estimates. We have not covered all the possibilities yet. Much more likely is that...

➢ I consider that four (or 8) hours is more than I needed and I have another task I miss-estimated and so needs extra time, or something interesting I want to spend a couple of hours on or I have another task I want to make just perfect

Section: 2   Page: 10.1.3:396 of 541

Process Numbers
13 Directing a Project (DP)
Starting up a Project (SU) 12 | Initiating a Project (IP) 14 | Controlling a Stage (CS) 15 | Managing a Stage Boundary (SB) 17 | Closing a Project (CP) 18
Managing a Stage Boundary (SB) 16 | Managing Product Delivery (MP)

(this is the source of scope creep!) so I divert what I now assess as 'spare' time to some other task.

Then when I work on 'writing this section' everything does not go smoothly. With three hours remaining in the budget I find four hours are actually needed. Having been given four I now 'use' and must record one more than was allocated (or cross subsidise from somewhere else). Thus corrupting the comparative estimating for this and the other task and convincing the boss that estimating is a useless activity.

10.1.3.1.5 Part Of The Solution

There are several parts to the creation to reliable estimates:

➢ Educate the producer and the receiver in the principles of accuracy, precisions and thus ranges.
➢ Create transparency.
➢ Never estimate duration or cost. Only ever derive them from estimates that start with the <u>work</u> to be performed in trade terms.

Then assemble the auditable package of information that generates values each time it is re-assessed, and re-assess during execution.

10.1.3.1.6 Estimating Principles: Accurate Versus Precise

In common daily usage accuracy and precision may be synonyms. Both are ideas we often talk about the "degree of". We use the terms interchangeably when some differentiation is helpful.

The starting point for good estimating is to differentiate:

➢ 'Accurate' is binary "yes" or "no": something is fact/ truth/ 'hit the target'/ correct/ free from errors or it is not.

   If it is not accurate it is inaccurate, missed the target, wrong, false.

   As targets get smaller so remaining accurate becomes harder.
➢ 'Accuracy' is by degree: nearness to fact/ degree of truth.

   After I hit the target then how close to the bulls-eye I achieved may be of interest. If I missed the target then "by how much" is of interest.

   Accuracy may be taken as the distance from the average (mean or μ) of a set of values to the 'bull's-eye' value. (Mean might also be mode (most probable) and median (middle value)).

Process Numbers

13	Directing a Project (DP)			
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
	Managing a Stage Boundary (SB) 16	Managing Product Delivery (MP)		

Section: 2   Page: 10.1.3:397 of 541

Accuracy & Precision

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44

> 'Precision' is also 'by degree': amount of variation/ level of uncertainty contained/ upper and lower limit/ range/ the spread within my shots/ the degree of variation included within my estimate/ difference between highest and lowest value.
> 'Precise' is binary "yes" or "no": without variation, no range.

A precise value or 'absolute precision' is achieved when the two values that describe a range are coincident: the range's width is zero.

10.1.3.1.6.1   A Common Estimating Error

To make predictions about future factors such that we can have confidence of correctness makes the use of a range unavoidable.

SOOP-184.   Use of a range allows us to trade precision against confidence of correctness. Typical project estimates are highly precise and wrong IE inaccurate. A useful project estimate is first correct, IE accurate, and then as precise as needed (and no more). To create a correct estimate from sparse information generally forces a reduction in precision.

The intention when estimating is to make assessments that are correct and of a cost effective level of precision for the decisions to be based upon them. Frequently an estimate's recipient doesn't need great precision, doesn't want great cost of estimation and any degree of accuracy that hits the target not necessarily the bull's-eye is adequate.

10.1.3.1.6.2   Roles in an Estimate

There are always two roles (even if only one person) in production of every estimate:

1. The <u>producer</u> of the estimate who must have domain/ trade specific information, probably through direct experience but perhaps codified in an estimating model.

    SOOP-185.   The <u>producer's duty is to be 100% reliable</u> IE accurate and to provide the estimate as quickly and as cheaply as required. The variable is thus degree of precision achievable.

2. The <u>recipient</u> of the estimate who is ultimately the investor and normally their representatives the sponsor and the project manager engaged in benefit to cost assessment for rationing resource allocations or for coordinating the scheduling of assignments.
3. 0.

    SOOP-186.   The recipient's concern is to decide if the estimate's precision is 'good enough' for their decision making needs at their level of willingness to tolerate uncertainty.

If an estimate lacks the precision the recipient needs then they have to give the producer more resources to create estimates with narrower ranges that are still accurate or the recipient must decide to take a risk.

To improve precision the recipient may have to find new estimators with more experience - EG consultants or create experience - EG prototyping. Either way removing uncertainty consumes resources (money, time, skill, will etc).

SOOP-187.   Understanding the trade-off between experience, background information, time to estimate and precision while remaining accurate is a mark of estimating maturity.

10.1.3.1.6.3   Two Aspects of 'Good Enough'

An estimate is 'good enough' when reliable as the determinant of a decision.

SOOP-188.   An estimate is 'good enough' when 'precise enough' and 'reliable'

1. *'Precise enough' means the range between minimum and maximum <u>matches the decision maker's tolerance of uncertainty</u>.*
2. *Reliable means where the eventual actual value falls between the estimate's minimum and maximum value <u>or</u> the estimate's recipient is indifferent to results associated with errors.*

    Reliability is first accurate but second allows for 'tolerably inaccurate' in the eyes of the decision maker.
3. *0.*

IE 'Good enough' = the degree of precision is acceptable and the eventual actual value reveals the estimate to have had a degree of accuracy that does not create an issue.

10.1.3.1.6.4   Boiled Rice

For example: I wish to feed my family. Our next meal includes boiled rice. Exactly how many people will be present is unknown and what their appetite will be is also unknown. I choose to "err on the generous side". As long as the quantity of rice cooked is sufficient for a portion of rice for everyone, without leaving more unwanted cooked rice than I am prepared to tolerate then the estimate of what to cook was 'good-enough'.

10.1.3.1.6.5   Satisfactory Balance

Often 'good enough' is assessed across a number of balancing factors. For example if the rice accompanies chicken curry then more or less curry may compensate for more or less rice. For cost of waste reasons I probably select 'more rice' to compensate for 'less chicken'. Equally I may consider left-over chicken curry freezes better than rice and thus have a 'contingent response' of excess is frozen for use another day.

In a project schedule overrun against float may be something we are prepared to tolerate. The overrun may still affect costs in a way we cannot tolerate.

10.1.3.1.6.6   In Balance With The Benefits

More or less scope must balance more or less skilled resources. Both must balance more or less time-scale and more or less cost. The possible options probably affect more or less benefits received sooner or later.

Seeking a level of confidence that has an 80% probability of success is only a little riskier than seeking a 95% confidence level but typically much cheaper.

These questions of balance are all investor level trade-off decisions.

For example 'safer' (more certain) probably results in later. Sooner versus later will change the **A2**-Business Case's Net Present Value. Thus the balancing options must manifest themselves to be resolved during **A2**-Business Case development and maintenance or for debate at project approval and re-approvals.

The **A2**-Business Case is in part derived from the **A16**-Project Plan and **A16**-Stage Plans that will be created and maintained during the project and are an assembly of interconnected, hopefully balanced resource estimates from which all cost and schedule values derive.

10.1.3.1.6.7   Estimate Product Description

SOOP-189.   An estimate contains {

➢ *The basis of assessment*

  The basis has to be an analogy, IE comparisons with previous experiences. The basis may be codified into formulae that are driven by parameters.

➢ *One or more scales in 'trade terms' – the inputs*

➢ *One or more scales in project terms – outputs of effort and or cost and or duration and or scope and or probability and or any other quantity of interest,*

> *Two or more places on each of the scales with an indication of how confidence varies over the range. How close together the two places are is the measure of the estimate's degree of precision.*

At a minimum an estimate must contain an assessment of the highest and lowest possible scale values and the reasons or circumstances that apply to realise the highest and lowest values.

By preference an estimate contains:

- *a statistically significant number of values between highest and lowest*
- *a transparent audit trail of the causes of variation that support…*
- *…an expression of variation in confidence across the range.*

Normally an estimate has only three values:

- *the position on the scale(s) whose individual probability is highest, the 'most probable' aka 'most likely' aka 'most frequently occurring' result,*
- *the highest possible value with an auditable explanation of the cause of variation between most probable and the largest (but improbable) value.*
- *the lowest(also improbable) value and the audit trail to explain variation from the most likely.*

Three values give a basis to express both our confidence across the range and the reliability of the confidence calculations – as described below.

> *Assumptions*

Material facts whose contents are currently unknown. Assumptions are owned by everyone who has ever had sight of them. Assumptions are replaced by facts as soon as anyone who has had sight of them is able to bring knowledge to bear.

}

10.1.3.1.7 Estimating Principles: Start With The Trade's Currency

All estimates must start with assessments expressed in the currency of the task. The indivisible and un-derivable domain/ trade quantities rooted in the specifications provided by the senior user(s).

For example the amount of rice needed for dinner is derived from the number of diners, their appetite and the amount of other foods served. Number of diners is probably a fixed fact that is set by scoping work conducted with the senior user(s). Of course in some cases there may be factors that dictate that number of diners is the outcome of estimating.

In the example of authoring this section the currency might perhaps be 'concepts to be communicated' and that may be translated to 'number of words' or 'number of diagrams' or 'headings' or 'pages' which are then divided by a productivity factor to derive duration.

Driving Values (Estimating's Inputs): Technical Scope

- Every estimate has some input that drives required (estimated) quantity
  - e.g. "How long to build 1 mile of wall?"
- Typical for technical scope to be the driving factor
  - Typical for resource consumption and duration to be output
  - Constraints may be the driving value
    - Starting point in order to estimate Technical Scope
    - "How much wall can be built by 1 bricklayer in 1 week?"

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222

10.1.3.1.7.1   Transparency

An opaque 'Won't exceed' figure causes the embedding of contingencies in estimates, that as we've partly seen drives undesirable behaviours. An element of improving estimating is to create transparency of the uncertainty inherent in the estimator's assessment.

Ensure the estimators start suggesting domain values in the form "could not be less than…because", "most probably because…,", "could not be more than because" **for which they are entirely prepared to provide a guarantee**.

Ensure inclusion of the full reasoning for the gap between 'most probable' and 'could not be less'/ 'could not be more'.

Where the gaps are large return to the PBS / WBS and decompose another level and estimate each element. When decomposed in the WBS the extreme 'not more than' figures often equate to previously unobservable contingency (as we will see shortly).

10.1.3.1.7.2   Inexperienced People Must Deliver Wide Ranges

People without any experience cannot provide the "not more/ less…because". The inexperienced do not have sufficient data points so cannot give an audit trail or make based assessments of the variation in confidence level across their assessments.

They can still guess and that will be all you have in some circumstances. All is not lost but the ranges required for confidence will be wider. It is the investor's

decision whether to continue with uncertainty, seek greater expertise that can provide greater certainty or abandon the initiative.

10.1.3.1.7.3   Start Point

Narrowing the range in reliable estimates requires using trades-people, technicians, those with experience in the field of interest so they can express the formulas, factors, comparisons, the inclusions, exclusions and assumptions that characterise all the possible data points within the range of possible values.

10.1.3.1.8 Ranges Create Problems

Use of a range creates several problems that we will have to resolve before we are done:

1. In organisations where estimating principles are immature what is spoken as an estimated range is remembered as a 100% commitment to deliver for the most advantageous value.

   Resolving this one is cultural, competence based and probably last, after all the other discussion. For now the key is 'Estimates are not numbers, they are packages of factors, formulas and assumption that generate values whenever examined'

2. People building schedules want task start dates assigned to relatively fixed times, IE a single value not a range. Budgets need to appear as a value in financial projections.

   Somehow budget and schedule (scope, health and safety and all other quantities) must also include allowances for the range of possible outcomes that reflect the probability of achievement. IE we need to be able to make considerations in ranges. It may be that we have to compromise with reality to make date commitments with single values: In this case reality's side of the compromise is later project delivery.

   This too is a concern based in competence and culture.

3. The minimum specification to describe a range is two values: upper limit and lower limit.

   With only two values all that can be described is that confidence of achievement at one end of the range is low while at the other end of the range it is high. How confidence changes over the range is not assessable with just two values. To express how confidence changes over a range is best achieved with thousands of historically observed data-points from all our previous experience.

4. 0.

10.1.3.1.8.1   Confidence Over A Range

Projects are full of tasks that we have not done many times before, perhaps even ever done before. Typically we do not have thousands or millions of empirically

collected data-points to refer to that will define 'change in confidence versus change in won't exceed value'.

A range of just two points allows us to suggest that confidence changes uniformly over the range. A little further thought shows we can start to predict how confidence changes in reality.

10.1.3.1.8.2   *Slow Build-Up and Slow Finish To Confidence*

Imagine I am shopping for the rice to cook to feed the family. On the shelf in-front of me is the smallest bag for £2. It might be about ½ of what I think is needed. I thus know that I have zero confidence of providing sufficient rice for £1 and only a very little that £2 provides enough. If I buy two £2 bags that might be enough, especially if I also ensure we have lots of chicken and have a desert available.

On the shelf is also a £6 bag which looks like it would feed a small army. If I buy it I will be highly confident of not running out of rice. Also on the shelf is a £20 sack that would undoubtedly feed a large army. Whether I buy one or six of these doesn't increase my confidence of feeding the family today. With the £6 bag I have already achieved 99% confidence (the missing 1% is my cooker might break, I'm inattentive and the rice burns etc).
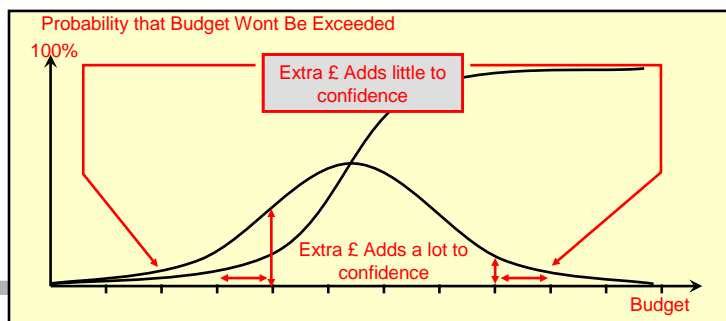
Move Extra Confidence onto the S and add Rice Costs

10.1.3.1.8.3   Extremes and Probabilities

Our observations are that confidence grows slowly until we arrive at 'the right ball-park' for our estimate and then doesn't increase much after 'the right ball-park' even if we exceed the value that covers our worst case.

The outlying values are possible but they are of lower absolute probability compared to some 'right ball-park' value. To achieve an unlikely result many things have to go right or many things must go wrong simultaneously. To achieve a value 'in the ball-park' more-or-less everything goes a bit better-or-worse than expected.

10.1.3.1.8.4   'S' Curves and 'Bell' Curves

The curve that expresses cumulative growth in confidence as budget (schedule, skill, will etc) increases is 'S' shaped. The curve that describes the absolute confidence at any value is 'bell' shaped. IE I have a very low confidence that the £20 bag will all be needed and a huge confidence that it will be at least sufficient or 'not exceeded'.

The 'bell' shaped curve is often referred to as a 'normal' or 'Gaussian' distribution curve. It describes a smooth and definable change in confidence across the range. The range is symmetrical about the mean (average).

The mean and the mode (most probable) and median (middle value) are all coincident. This coincident point gives a third value within the range between the lowest and highest values which is conveniently describable as the 'most likely' or 'most-probable'.

You may get a better feel by drawing a graph of the absolute and cumulative probability of the values 2-12 achievable when rolling two dice. Then imagine you have two tasks in a critical path with possible durations between 1 and 6 hours each. Then imagine hundreds of tasks with budgets and durations between their own individual minimums and maximums.

Confidence

• How confident are you the budget/ schedule will be enough ?

Redraw for 5 dice?
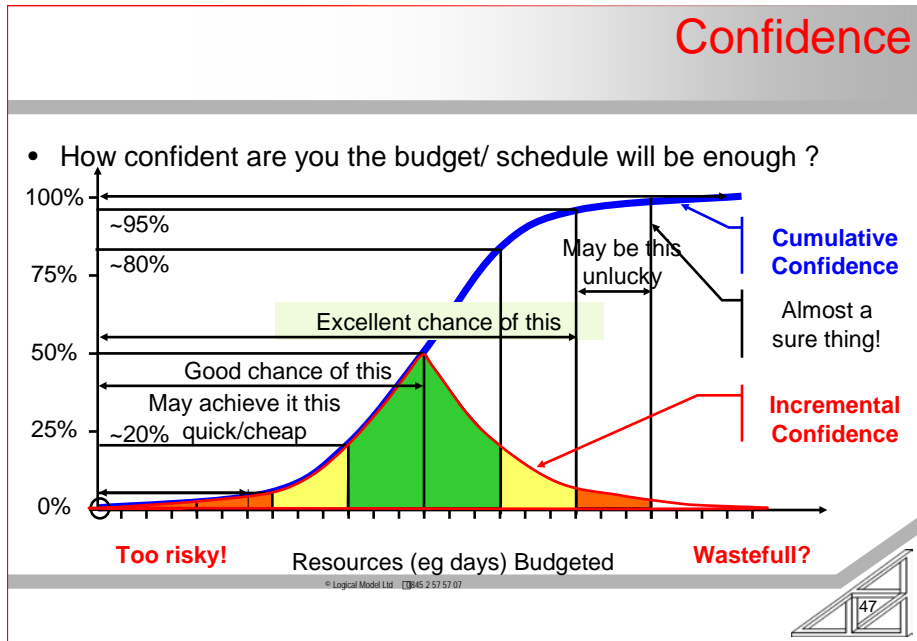
10.1.3.1.8.5   As Likely As Not and Not To Exceed

In a normal distribution the minimum, most likely and maximum values are evenly spaced and the most likely, middle and average values are coincident. This coincident point marks the 50% cumulative confidence level while the 'worst-case', or 'pessimistic' marks the cumulative virtually certainty 'not to exceed' value. Only 'virtually certain' as we should never say never!

10.1.3.1.8.6   Projects Aren't Like That!

In most project realities there is a limit to how early or cheap we can do something but no limit to how late or over budget we might end-up.

'Best', 'expected' and 'worst' cases tend not to be evenly spaced across the range which means that 'most probable', middle and average are now also different values. Confidence still changes in a definable way but with a skew.

The 50% confidence level is no longer at the 'most-likely' value. The skew has moved it. The skew is characterised by where the individually most-probable value (the mode) is in relation to the middle of the range (the median) and average (mean).

10.1.3.1.8.7   PERT Formula

To cope with the affect of the skew we approximate the value that should give us a cumulative confidence level of 50%. I could take the average of every task but a

moments thought reveals that the minimum and maximum values are both of lower absolute probability of occurrence than the most likely.

The planners of the Polaris submarine project proposed a procedure for creation of probabilistic schedules In total their Programme Evaluation and Review Technique (PERT) is a scheduling technique based on Activity on Arrow networks for probabilistic critical path analysis. While AOA networks have been universally replaced by Activity on the Node networks outside PRINCE2®'s use of the Product Flow Diagram (PFD) the PERT formulae endure. The formula recognises the bell or 'S' curves properties when skewed. The formula remain in common (?) use.

10.1.3.1.8.8   Two Formula

PERT has two formula:

➢ one calculates an 'expected' value. It shifts the budgeted or 'expected' value towards the skew in the distribution to approximate the effect of the skew on the determination of the value whose cumulative probability is the 50%.
➢ The second formula approximates the standard-deviation of the distribution.

10.1.3.1.8.9   Weighted Average

The first formula uses a weighting applied to the most-likely value while averaging it with the minimum and maximum possible values.

The weighting accounts for the fact that the most-likely is more probable than the extremes while the result in total accounts for the skew in the distribution.

Instead of adding the three values and dividing by three the most-probable is used more than once. The formula found empirically to be reasonably reliable is: (Minimum plus maximum plus (four times most likely)) all divided by six). Like rolling dice whose sides are number { 1, 2, 2, 2, 2, 6).

In a schedule calculation the result might be called the 'Time-expected' and is the value that is 'as-likely-to-be-exceeded-as-not'. In this calculation the most likely has a more significant influence on the budgetary amount than the relatively improbably extremes and allows which ever side of the distribution is most skewed to affect the 'expected' amount.

$$50\% \text{ or } T_e = \frac{Optimistic + (Most\ Likely * 4\ ) +\ Pessamistic}{4}$$

10.1.3.1.8.10   50% case

The resulting 'expected' amount approximates the 50% cumulative confidence level: the 'as likely to be exceeded as not' value.

The customer or boss is unlikely to be happy with an estimate that is as likely to be exceeded as not. The second PERT formula divides the range into 6 to approximate the degree of variance to be expected in final results.

$$\sigma = \frac{Maximum - Minimum}{6}$$
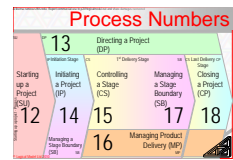
10.1.3.1.8.11 Cumulative Probabilities

In a normal distribution created from millions of data points not only do we know the mid-point has a cumulative probability of 50% we also know the absolute and cumulative probability of every other value in the range. At the mid-point plus one standard deviation (SD or σ) the cumulative probability is 84.13%, and plus two σ the cumulative probability is 97.72%: but only in a perfectly distributed world, only where the estimates are perfectly reliable and only with a statically significant pool of data. Not anything that is at all likely to be the case in a typical project.

Firstly the distributions applying to tasks in a project are typically skewed, second estimates are uncertain things compiled by fallible humans and third the pool of tasks is more likely to be in the tens or hundreds than the tens of thousands or millions.

PICTURE
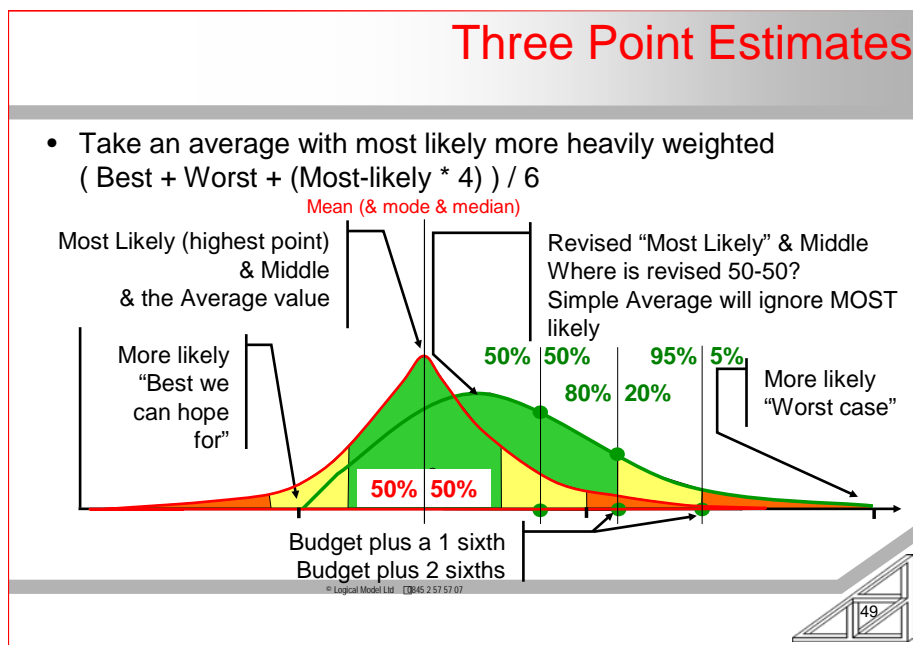
Since the project's data-pool is not populated with millions of results 84.13% isn't a reliable number for us. However the mid-point plus a sixth might reasonably be taken (with some coming caveats) to be 80% and mid-point plus a third might reasonably be taken to have a cumulative confidence of 95%.

10.1.3.1.8.12 Good Conversation (Where it Matters)

Now we have some basis for transparent conversations about estimates. Unfortunately raising the estimating maturity level is not easy and gathering the data for an informed conversation is expensive and so to be avoided where not cost-effective.

10.1.3.1.9 Start with Accurate and Cheap IE Imprecise

The 'premium estimate' is one that is accurate, is high in precision and contains enough data-points to draw a confidence curve. High precision, accurate and rich in data is a combination that is often slow and expensive to achieve.

In contrast accurate and imprecise is a safe, cheap start point that can be improved if cost-beneficial (EG on the critical path once it is known). We may even be able to absorb a few inaccurate estimates without detrimental affect (EG in float).

But note: as the number of estimates that are inaccurate grows and degree of inaccuracy grows so the value of planning and the reliability of decision making decrease.

SOOP-190.   Different estimating practices have different costs and yield results of varying quality: assessment of all project quantities should start with cheap crude (accurate low precision) estimates. Accurate high precision (expensive) estimating should be reserved for those project quantities where decision makers are willing to pay for them (again it is a sponsor's choice). EG the factors affecting task durations where uncertainty exceeds float.

It is not until scope, schedule and budget are taking shape that we can judge where increased precision is worth the cost and effort of determination.

It is the project board's appetite for uncertainty (risk) that dictates the degree of precision required.

10.1.3.1.9.1   Precision Varies With Knowledge (IE Project Phase)

As more becomes known so ranges can narrow while remaining accurate. As we complete requirements and then design so knowledge grows and precision increases or the distance into the future at which we can maintain some precision increases IE we can have confidence in estimates further into the future.

PICTURE of two distribution curves

10.1.3.1.9.2   Timeframes

There are several time-frames that are relevant to any quantity's involvement in a project. They drive perhaps three levels of precision:

➢ During planning

1. The time from Project Mandate to when requirements are known. Estimates typically need the widest ranges here.

This is probably while the project management team develop the project level Product Breakdown Structure (PBS) and related **A17-**Product Descriptions.

The timeframe probably matches Starting up a Project (SU) and the Initiation Stage and may carry through the beginning of benefits enabling stages aimed at proof of concept or requirements gathering.

Note: this doesn't really gel with PRINCE2®'s idea that the **A2-**Business Case is sound-enough to fully commit at the end of the Initiation Stage but does fit well with the notion that each stage end should reappraise the project's desirability and viability as a whole.

10.1.3.1.9.3   Price is not Cost

Note too: Cost is not price. The quoted price is the result of emotion and politics. Winning business (even in-house) is about hooking the fish, thus quoting a "winning price" in isolation of the information required for calculating cost is entirely likely and perhaps even 'correct' but not in any 'engineering' sense.
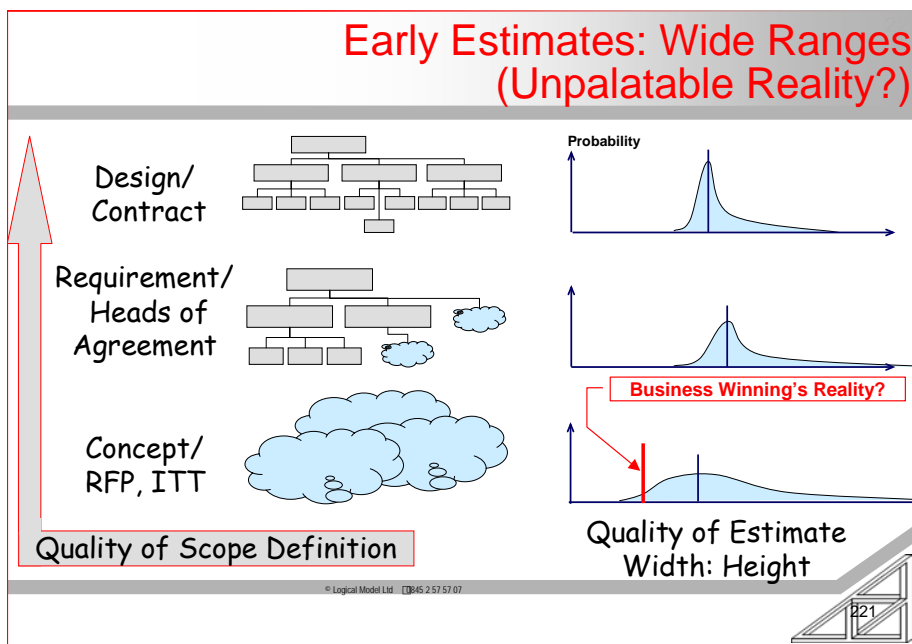
Add S Curves

2. The time from requirements to when the solution design is known. Estimates may narrow a lot once the design is known: this doesn't mean the 50% value decreases, it probably increases, but he outliers converge on the 50% value as uncertainties are addressed.

The design timeframe probably matches the Initiation Stage and perhaps early specialist stages. It should be the time when **A26-**Work Packages are being defined.

A26-Work Packages must link to standard method statements drawn from supplier and customer Quality Management Systems (QMS) if estimates are to have ANY MEANING. Scope must include all specialist and management products in the **A17-**Product Descriptions.

> *SOOP-191.   The more that scope links to documented estimating histories from previous similar work the cheaper and more reliable the estimates will be. Good estimating has a return on investment in its own right.*

Some degree of 'solution design' might repeat at the start of every stage – depending on product development approaches such as exploratory agile approaches or architecture first approaches or lean or concurrent engineering et.al. approaches.

➢ During execution

3. The time during stage execution during which actual values start to be available.

   During execution the actual values that make-up the estimate's component parts should be verified and possibly corrected and the relationships, analogies and parametric formulas amended to improve the precision (and perhaps accuracy!) of estimates that are still in the future.

   Earned value's Cost and Schedule Performance Indexes can be regarded as systematic, parametric adjustments factors *(See X on Y).*

4. The time after which we have no estimated values left for this investment. If we carried out the record keeping correctly then we have some 'lessons observed' for future projects to apply. IE future investments will start with a rich set of estimating data.
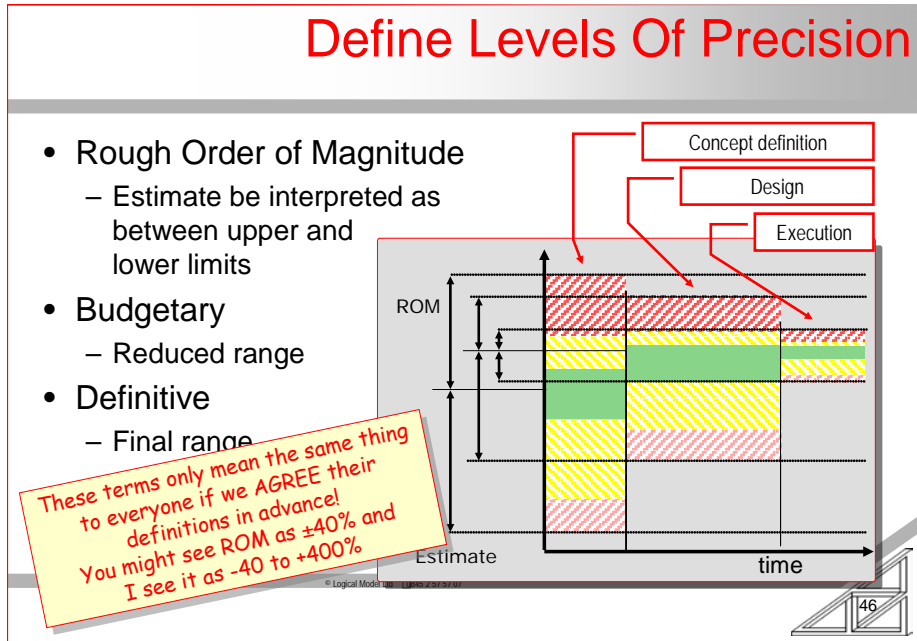
1. 0.

10.1.3.1.9.4   *Expressing Precision With Labels*

Estimates produced early in the investment that lack information and thus precision might be labelled as "Rough Order of Magnitude" or ROM.

The degree of precision in an estimate may be communicated explicitly by how it is labelled but only if the label is defined. Thus ROM may be agreed to express a range around a bull's-eye figure of minus 40% to plus 400%. or 'halve-and-double' or ± 10%. Perhaps 'Definitive' is defined in some context as ±5% of the bull's-eye figure: but labels are only meaningful if pre-agreed.

The ranges implied by labels should be calibrated for an industry, company, division. For example ROM in house-building and software development are very different ranges.

Picture; Confidence versus Cost or Duration

Define Levels Of Precision

- Rough Order of Magnitude
  - Estimate be interpreted as between upper and lower limits
- Budgetary
  - Reduced range
- Definitive
  - Final range

These terms only mean the same thing to everyone if we AGREE their definitions in advance! You might see ROM as ±40% and I see it as -40 to +400%

10.1.3.2 Who Estimates?

Debate ebbs and flows about whether those who estimate should be those who do the work. When though through then where the argument is well made and dubious becomes visible.

There are two elements to the debate. First is the psychology of "my estimate I'll meet it" or "your estimate, nothing to do with me". In this regard it is always better to use the person doing the job to estimate it. But only if they know **BOTH** how to estimate and how to do the job!

Teaching people to estimate is hard. Telling them how to do it is easy but getting them past the false precision and inaccurate stage, the opaque stage and the estimate elapsed time and final cost stages requires constant repetition of the messages in this section and support in using the techniques described.

10.1.3.2.1.1 Not My Estimate - Estimate not number

Sadly the attitude of "your estimate is nothing to do with me" arose from and has credence because of a lack of insight to spot the reason: an estimate of duration (and cost) is utterly dependant on:

1. The result required
2. The method used to do the job

   These two factors define the work involved and the equipment required.

3. The skill level of the people assigned that determines their productivity in the context of the method and equipment to be applied.
4. 0.

These factors determine cost and duration.

10.1.3.2.1.2 Estimate Includes Method Statement

SOOP-192.   A cost or duration in isolation of the work's method statement and worker's skill level is totally meaningless.

Trouble starts with the mindset that "some number is the estimate". Resolution includes understanding that "an estimate is a package of assumptions, comparisons, methods and driving values that each time it is examined yields a range of values matched to confidence levels".

Provided the estimator and the executor of the work both envisage (agree) the same method to achieve the result then "your estimate, my commitment" is safe and reliable (we have a little more to discuss to determine 'reliable').

10.1.3.2.2 A Ditch Digging Example

Imagine I ask for an estimate to dig a ditch, you envisage a mechanical digger while I envisage a shovel. Unless the method employed to do the work is the one envisaged in the estimate the calculated cost and duration will have no relationship to what will actually happen.

Estimates Must Link to QMS Method Statements

- An 'estimate' in isolation of 'how the work will be done' is meaningless

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45

10.1.3.2.2.1 Ditch Example: The Work

Now "excavate 30 metres length by 1m breadth and 1m depth" is starting down the right path. The estimate is starting its description in trade-terms as driven by the customer's required result.

Discussion during creation of PBS and WBS will suggest many scope of result and scope of work questions like "do we need to include soil disposal, will the excavation need shoring-up, how hard is the material we are digging through, is it of uniform consistency?, is the bottom of the cut square or "U" shaped?"

The senior user(s)' definition of the specification in acceptance terms drives much of the content of the estimating package's (initial) contents. Initial contents are captured in the **A17**-Product Descriptions while creating the project level Product Breakdown Structure (PBS) and acceptance criteria.

10.1.3.2.2.2 Ditch Example: Derived Amounts

The estimating package's secondary contents will then be derived amounts such as the amount of timber required for shoring up the ditch, and calculated values such as two disposal truck round-trips to shift the $30m^3$ of soil if using a truck of $16m^3$ capacity or 20 staff if the job is constrained to a day elapsed.

For creation of a corporate ability to estimate The Quality Management System's library of defined method statements is a crucial (first) component. A repository of previous results is then the second step and component.

'Embedding' of good planning capabilities addresses these need.

10.1.3.2.2.3 Translate to Resources: Schedule, Staff, Supplies, Systems

Only ever derive cost and timescales by translating work aka effort to cost and duration by explicit and auditable formulas. Any formula should fit the generic format

➢ Duration = Work Effort / (Availability * Productivity) and
➢ Cost = Resource Rate * Duration + Materials Volumes * Materials Rates.

All rates should be indexed and linked to calendars, interest rates, commodity prices or other adjustment factors.

SOOP-193.   Always calculate cost and duration from work and resources. Calculate work from the result required. Quantities estimated should be restricted to the dimensions of the result required by the sponsor as defined by the senior user(s). From these resources and tasks IE work (effort) involved are derived.

SOOP-194.   Where duration and cost are estimated as the raw quantities then audit trail, transparency, much of the ability to manage and all of the ability to track and forecast during execution of technical work is lost. A huge price to pay for no gain.

The productivity figure may be contentious when applied to people. Productivity also changes with development of skill and with group dynamics.

Estimating From Technical Scope

- Activity cost = Staff cost + Materials + Overheads
  For each staff resource (duration x hourly rate) +
  For each material resource (volume x unit cost) +
  Apportioned costs (overheads) +
  Other Direct Costs

- Step1: Estimate results required in customer terms: e.g. 1 mile of wall
  - Step 2: Identify effort (intellectual tasks) or material resources (physical deliverables) in trade-terms: e.g. Lay each of 1 million bricks
  - Step 3: Translate to cost & duration by combining with staff & machinery productivity, availability and tariffs

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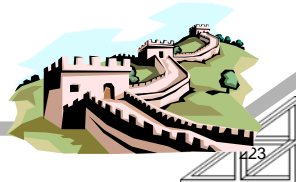
10.1.3.2.2.4   Estimate Effort, Calculate Values, Delay Rounding

Another example: To install the lighting to a new warehouse the design calls for 100 cables in a range of lengths upto 100m each with an electrical termination at each end of the cable, each cable is to be secured by cable-ties to the racking at 1m intervals.

We now know there are 200 terminations. Our electrician know that a cable takes 15 to 25 minutes to drag into place for the range of lengths we have in the warehouse environment. Inspection of the design drawings reveals aggregate cable length is 10,000m thus 10,000 cable-ties to be installed, each tie takes 10 seconds to apply and each cable termination averages 5 minutes.

10.1.3.2.2.5   Delay Rounding DON'T Quote False Precision

Thus $((200 * 5) + ((10,000 * 10) / 60) + (100 * 25) = 4,166.6667$ minutes or $4,166/60=69.4333$ hrs or $69.4/7$ working hours a day = 10 full time electricians if I want the job done in a day. Equally cost can be calculated by pricing the materials and the electrician's time.

Of course each of our estimates such as 5 minutes for a termination should be a range. For example the subject matter expert may tell me "working at floor level often means a termination can be done in 4 minutes while over shoulder height makes the job 6 minutes. Dropping a tool when working at the light fitting end of the cable, and having to retrieve it makes the termination 8 minutes".

10.1.3.2.2.6   Point 66 minutes

Never quote a value such as 4,166.667 minutes! BUT in the estimating spreadsheet allow the value: rounding errors should only be introduced in the final value: thus 9.91 full time electricians is the only rounded value when presented as 10.

At this point we need to start again as now we know there are 10 electrician staff days we will need to make allowance for tea-breaks and other overheads.

10.1.3.2.3 Estimates Are Packages To Be Regularly Re-Evaluated

If the estimate is seen to be the whole package of result, steps, tools and resources put together during scoping that are then divided by availability and productivity during scheduling then any *estimate* will gave rise to durations and costs that are 'safe' by being re-tuned to the context in which they are used as we progress through **A26-**Work Package execution.

Now political change or progress during execution will be reflected in project plans.

10.1.3.2.3.1   Political Adjustments

if senior management change the **A26-**Work Package's (stage's/ project's) contract terms the consequences will be clear in terms that will allow them to confirm change and consequences are acceptable/ desirable.

10.1.3.2.3.2   Performance Adjustment

During execution we may find work does not progress to estimates. For the warehouse example elements such as 15 to 25 minutes per cable or 10 seconds per cable tie missed health and safety requirements at this site. The WBS for cables running through the roof void shows erecting ladders was included but the use of fall protection was omitted. The cable times are only 5 seconds when working below 1.8m from the ground but above that are 40 seconds each due again to fall-protection and 30% are above 1.8m.

Correcting the estimate generates new numbers in manner that creates audit trail and supports future estimating.

10.1.3.2.3.3   Group Coordination

Groups attempting tasks that require cooperation are 10 to 100 times SLOWER the first time or few times they approach some task even when they are all motivated and interacting in good faith and good spirits.

As a general rule (I think defined by Gerald (Jerry) Weinberg author of the excellent "The Psychology of Computer Programming") is that in general trebling the number of people only doubles the rate of delivery, and then only when suitable team and communication structures are used.

10.1.3.3 Establishing the Values With Methods, Approaches And Techniques

The construction of the package of information that is an estimate should combine as many methods, approaches and techniques as are cost effective for the precision required.

There is only one method of estimating – application of experience. Expertise can perhaps be applied in two ways: with or without a formula.

There are two approaches based on the project's breakdown structures: top down and bottom-up and two which might be synonyms reflecting scope driven versus constraint driven planning: apportionment and aggregation.

Techniques might encompass three-point estimating and 3-Pt's extensions to the PERT formula or to the full-blown statistical approach of Monte Carlo Analysis. Techniques also includes the Delphi technique.

10.1.3.3.1 Estimating Methods: Analogous and Parametric

All estimates are comparative with another time. They are all analogous. Sometimes the comparison uses a formula to embody the analogy. Values that result are thus driven by the parameters input to the formulae. This form of estimating is called parametric estimating. Where a formulae isn't observable then 'method' is typically called 'analogous'.

Rarely is any value produced by a pure analogous approach or a pure parametric approach.

EG consider the fragment of dialogue: "How much is a house around here?", "How many bedrooms do you want?"

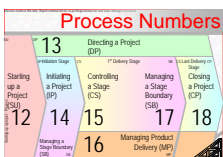#### 10.1.3.3.1.1   Analogous: Expertise Without A Formula

Analogous estimates are formula-less assessments. Values and their drivers are retrieved from whatever estimating history we have. Typically the initial source is the sub-conscious mind (asking a colleagues opinion or a trawl of the internet might be second!)

Similarities and differences between the previous time and today are considered. The more tenuous the similarities the closer we move towards "guess" and the wider the ranges needs to be to address being correct.

10.1.3.3.1.2   Analogous or Comparative

An analogous estimate by contrast to a guess is an assessment based on describable factors from previous experience.

EG Next time I go to my village shop it will take about 15 minutes if I walk and three minutes if I drive. It will take nearer 20 minutes to walk via the post box and 10 minutes to drive via the post-box due to the one-way system. If it is after a fresh snow fall it might take 30 minutes to drive but still only 15 minutes to walk and on a wet and windy day I won't walk so if I can't drive I won't go!

Your walk to you village shop is something I can only guess at. However I might say "Since your reading this I might assume you live in the 'developed world' and thus have access to some form of transport so the walk might be between 1 minute and 20 minutes as under that probably means you live in the shop and over that you would cycle/ drive/ take a bus". This 'guess' is now an auditable estimate while remaining a set of guesses.

10.1.3.3.1.3   Pros, Cons, Responses

Analogous estimates are typically quick and cheap to create and suited to initial estimates where data is scant. Analogous estimates are well suited to apportioning constraints to products: "if all we have is 3 months then…"

To be reliable often means that ranges need to be wide (accurate demands imprecise). Analogous estimates from the subconscious, rather than an auditable estimating history are typically affected by invisible bias added by the estimator. Bias typically introduces inaccuracy.

The best response is to combine analogous estimating with the Delphi and 3-Pt techniques. Analogous is so often used in a Top-Down approach applied to the Product Breakdown Structure (PBS) that some authorities confuse the two.

Don't forget that consideration must be broader than just the outputs to business-as-usual. Allowance must be made for appropriate values to cover the time and cost of project management, contingencies and reserves.

SOOP-195.   By definition reserves (response to unknown unknowns) cannot be assessed other than by guess or analogy while a project's total contingencies (responses to known unknowns) should only be assessed parametrically using the cumulative confidence 'S' curve.
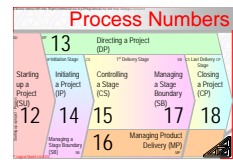
10.1.3.3.1.4   Parametric: A Formulae (With or Without Expertise)

A parametric estimate, by contrast to a guess is an assessment based on describable factors identified from previous experience such that the factors have been distilled to expose the relationship between the factors.

Expertise is required to construct the formulae but not necessarily to reuse it. Parametric estimates are sometimes called 'Cost Estimating Relationships' (CER) even when not returning a cost value.

If you ask me "how long would it take to drive between two places 10 miles apart in my home town outside the rush-hour I would suggest an average speed of 20 miles per hour means 30 minutes". 10 miles is the parameter supplied, 20 mph an analogous assessment of traffic speeds, 30 minutes the parametric result of combining 10 miles with 20 miles per hour and since I didn't mention provision for a puncture you should understand explicitly that it isn't within the scope I've used for calculation.

Note: the estimate IS NOT 30 minutes. The estimate is "10 miles at 20 mph in Edinburgh not during rush hour without any other factors considered". If you

then said "oh but the journey is at 2am on a Sunday morning" or "through snow" or "during the Edinburgh Festival" my estimate would be shown to lack factors that will change the estimating context and thus the quantity budgeted in the schedule and costs, but not the distance travelled.

10.1.3.3.1.5   Pros Cons and Responses

Parametric estimating models aka tools take time, effort and expertise to construct but are the easiest to tune over time. Evidence exists to show that they are more reliable than their creators (See Mark Paulk's "Rational Estimating of Software" or similar title on the Software Engineering Institutes web site www.sei.smu.edu). Commercial tools exist in almost all disciplines but are typically home-grown spreadsheets.

The use of formulas often means that parametric models are not available until later in the project (although many commercial tools have generic parameter settings to yield early approximations). Typically the parameters needed are the inputs to **A26-**Work Packages and thus parametric approaches are often used in a bottom-up approach applied once the Work Breakdown Structure (WBS) has been created.

By the time a reliable view of formulae inputs are available parametric models are capable of accuracy at the highest levels of precision. During execution parametric models make forecasting easier, more responsive and perhaps more reliable.

Parametric methods are the appropriate means to assess project contingencies.

10.1.3.3.2 Approaches

There are two or four approaches depending on whether you consider working backwards from constraint versus forward from scope the same or different from "down" from products versus "up" from **A26-**Work Packages.
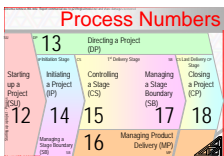
10.1.3.3.2.1   Top Down

A top down approach assesses the Product Breakdown Structure (PBS)'s contents starting with the highest level first and then at successive levels downwards.

Each element may be estimated with any method but analogous is common. Apportionment is also common. "If we have a £1m then we could split that as 30% for…yes that all fits, now if £300k is for… that would be £100k for each of …" or "If we have an in-the-field-mass of 1 tonne then 300kg for…"

Top-down might justifiably by equated to working backwards from a constraint as in a scenario such as "you must finish by… now what could we deliver by then?"

Top-down requires a view of the end-point as its start-point. It is the first approach we can use and often lacks precision if an accurate set of values is to be achieved. Don't forget to allow for management, contingencies and reserves.

10.1.3.3.2.2   Apportionment and Contingency

Typically in a constraint driven estimating mode all contingency is restricted to scope. This is a repeat of the earlier MoSCoW discussions.

If a dialogue runs "what can you deliver by end-of-year?" then either estimation starts with a reduced schedule (budget), EG target delivery 4-weeks before end of year to provide time (and cost) contingency. If delivery is committed at end of year (and full budget) then the only flexible element left is scope.

In these cases it is best if scope is explicitly 'estimated' and divided into:

➢ Must; once 'project contract' for resources is struck these elements are virtually certain of delivery
➢ Should: these elements are in the baseline tolerances for removal if flexibility is required
➢ Could: these elements are outside the baseline as tolerances to add if flexibility allows
➢ These items are explicitly excluded.

10.1.3.3.2.3   Bottom-Up

The bottom-up approach estimates each bottom-most 'leaf' of the current breakdown structure first and then aggregates the individual values upwards.

Typically a bottom-up approach is applied to the Work Breakdown Structure (WBS) but can be applied to any breakdown structure. Typically quantities are assessed using parametric methods applied to the **A26**-Work Packages.

Each breakdown structure leg is aggregated upwards. Depending on how the breakdown is structured this results in intermediary values for products or phases or teams or capital and revenue or any other desired split.

Obviously breakdown structure used should include work for product development, quality, risks (contingencies), reserves, tolerances and project control.
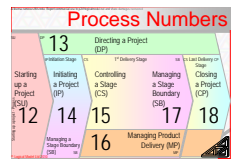
10.1.3.3.3 Reliability, Confidence and Contingencies

Within each of the dimensions of the project that require estimating such as cost and duration there is uncertainty.

Between calculating individual amounts and scheduling and budgeting the whole project we have to make provision for some appropriate amount to be within each management level's allocated budget and schedule (and all other factors). We also need to make some allowance within each management level's tolerances, also some allowance within their contingencies and for some management levels an allowance within their reserves.

When compounding uncertainties we are back to the 'S' and 'bell' curves.

The same considerations as illustrated next for schedule hold (with some variations) which ever element we discuss.

10.1.3.3.3.1   Actual Values Will be Over and Under

However we generate the values for each task's duration we arrive at a target with some breadth between optimistic and pessimistic result. During project execution after the task has been executed we will have some actual resource consumption that will be either less than the bull's-eye figure, precisely on the bull's-eye figure or more than the bull's-eye value. Perhaps under or over will be by a small amount or more rarely by a large amount.

All cost variances (±) have some affect on the investment's final results. The significance of schedule variances must be considered based on the organisation's ability to reschedule resource demands and affect on the critical path.

The first challenge is during planning when an aggregate figure needs to be chosen to place in the budget or schedule (etc). The second is in execution when task start and end dates need to be under constant reactive adjustment.

Matrix structured fiefdoms with resource-pool owners who are incentivised on utilisation rates are bad-news for project manager's charged with project delivery into future-state-business-as-usual.

10.1.3.3.3.2   Assessing Reliability

Size of tolerances must match the size of un-assignable variation in task duration (cost). What is assignable or not is normally a factor of skill and experience.

Tolerance is the uncertainty we chose to live with. To be reliable an estimate has to have sufficient <u>accuracy</u> (I hit the target or the miss doesn't concern me – EG duration within float) to be acceptable.

10.1.3.3.3.3   A Reliability Indicator

The 'reliability' of an estimate can be indicated by the ratio of the width of the range IE the amount of σ aka SD aka 'contingency' to the value we expect to achieve.

For example if the most likely is assessed as 100 hours of effort and the best and worst are 99 and 103 hours IE a range of 4 hours and a PERT SD of 0.67 then the ratio of SD as a % of the Expected Time (σ to E_T) is 0.67 : 100.3 which we might call 0.67%. This we might characterise as a high level of reliability.

If the expected is 3 hours and the best and worst are 2 and 6 hours the range is still 4 hours PERT SD is still 0.67 but the ratio of SD to expected of is now 0.67 : 3 or 1:5 or 20%. This we might characterise as too high a level of un-assignable variation to feel that we should place any reliance on the PERT values.

10.1.3.3.3.4   Limits Beyond Which NOT To Push PERT Confidences: A Rule of Thumb

As the ratio between the SD and E_T varies so the reliance placed on the results should compensate:

> ➢ If SD : Expected is more than 20% then the ratio is extreme. Return to the WBS and PBS
> ➢ If SD : Expected is under 20% and above 10% then the ratio is suspect
>   - Expected + 1SD ≅ 70% confidence
>   - Expected + 2SD ≅ 80% confidence
> ➢ If SD : Expected is under 10%
>   - Expected + 1SD ≅ 80% confidence
>   - Expected + 2SD ≅ 95% confidence

If the ratio is extreme or is in the suspect range for sensitive parts of the project then decompose the work in the WBS further and or decompose the results in the PBS and build WBS elements for their life-cycle, or buy some relevant expertise.

Extreme ratios are particularly likely in constraint based estimating where the question is "how much result fits in this time-frame?" Decomposition of values that are 'too wide' often exposes the inclusion of allowances related to handling risks in the work. They can't be ignored but should be extracted for separate handling.

10.1.3.3.3.5   Don't Include Risk In Estimates (Yet)

Imagine I estimate a journey which when durations are calculated turns out to be best case 76 minutes, most likely 80 minutes and worst case 139 minutes
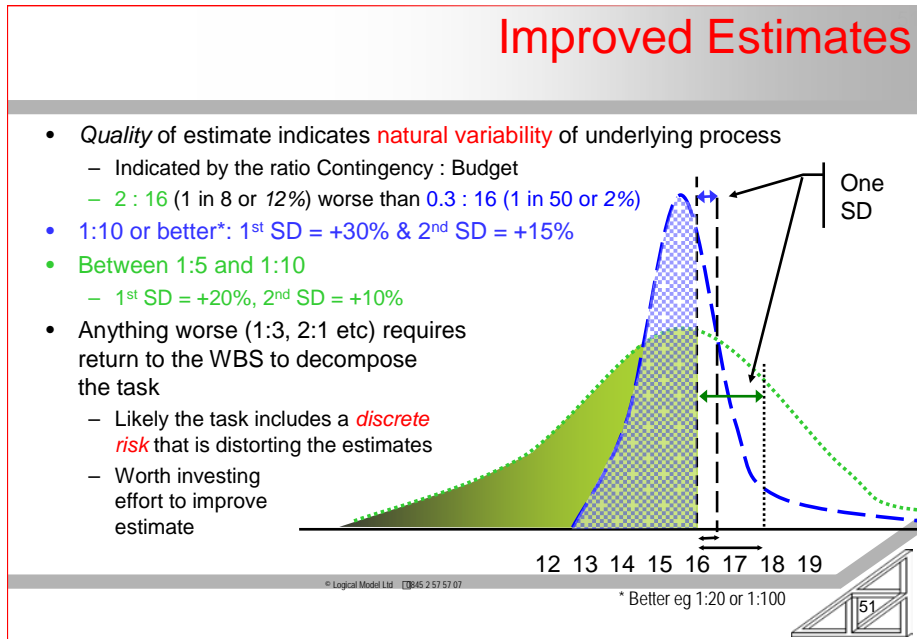
$$\sigma = \frac{139 - 76}{6} = 10.5$$

$$ET = \frac{76 + (4 * 80) + 139}{6} = \frac{535}{6} = 89$$

$$Reliability = 10 : 89 \cong 11\%$$

Further decomposition of the WBS shows a 59 minute task "wait for next train" that has probability of being needed over 0 but under 100% – it is a risk embedded in the estimates where it should (perhaps) be addressed by "leave for station 5 minutes earlier" resulting in a 3-Pt estimate of 81, 85, 85 and values of E_t = 84, σ = 0,67 and reliability = 0.8% for a definite cost of 5 minutes extra journey time.

Improved Estimates

- *Quality* of estimate indicates natural variability of underlying process
  - Indicated by the ratio Contingency : Budget
  - 2 : 16 (1 in 8 or *12%*) worse than 0.3 : 16 (1 in 50 or *2%*)
- 1:10 or better*: 1st SD = +30% & 2nd SD = +15%
- Between 1:5 and 1:10
  - 1st SD = +20%, 2nd SD = +10%
- Anything worse (1:3, 2:1 etc) requires return to the WBS to decompose the task
  - Likely the task includes a *discrete risk* that is distorting the estimates
  - Worth investing effort to improve estimate

One SD

12 13 14 15 16 17 18 19

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* Better eg 1:20 or 1:100

51

10.1.3.4 Recap: How To Use What We Have Covered So Far

How the 'write this section' conversation above should have run needs no braces as the whole estimating process should be transparent:

➢ Boss: "Simon, how long do you need to write this section?"

➢ Simon: "Well Boss, I have four major concepts to convey and six minor ideas plus opening and closing words.

If everything goes wonderfully I can imagine I will cover the whole topic is 2 pages, circa 850 words. I can produce about 10 proofed words per minute (wpm) so I might do it in an hour and a half.

Several similar sections of four concepts plus minor points and open and close took 2000 words and for those the extra complexity of more words to explain the subject matter meant I actually averaged more like 7 wpm than 10, so 2000/7 = 300mins = 5 hrs hours.

I have some similar topics that took over 4000 words and 12 hours because x, y and z happened"

➢ Boss: "OK Simon, I'll put the PERT average of your values (1.5hrs plus 4 x 5hrs plus 12hrs all divided by 6 = 33.5/6 = 5.58 hours plus (12-1.5)/6 = 1.75 hrs = 7.5 hours (rounded) in the stage plan and assign you your expected of 5 hours in the **A26**-Work Package.

Perhaps at the 1hr mark we can check if concepts count and words per concept are inline with expectations. If you need more (or outlook using less) then I'll adjust the allocation and the schedule of the following tasks".

➤ Simon: "OK Boss, and you can make the 12 less likely as it happens most often to deal with your revisions to…!"

10.1.3.4.1.1   Results of the Mature Conversation

Now when I do the work in 70 minutes I know I have not created a problem for every future, similar assignment having to be 'lucky'. I also know if I take 8 hrs that will also be understood as part of variations (both of which will benefit from investigation to understand).

In this scenario I can accurately record time taken and context that applied. Since I no longer need to hide time diverted to struggling tasks I improve future estimating basis and metrics rather than corrupt them. Since when things go well I don't also need to 'keep busy' to fill unneeded time we also reduce team generated scope creep.

A potential incentive also arises. Where work is delivered under the allowed for values the boss might (occasionally) ask "if you finish early why don't you take an afternoon off?"

A mature organisations sees this as serving stakeholder needs. Projects succeed when their aims and conduct matches all stakeholder wants.

10.1.3.4.2 Too Much Safety

We should now have a confidence level of 80% (or 95% or 50%) for achievement of every task.

80% confidence for every task is, in aggregate far too much safety built into the baseline.

10.1.3.4.3 80% and 80%

Imagine the boss asks me for estimates for two tasks to run one after another. The now wiser conversation runs as follows:

➤ Boss: "Simon, How long do you need to write sections one and two?"
  Cutting out the x,000 words divided by stuff…

➤ Simon: "Well boss, they are both slightly smaller and less variable than this section and...so best-case 8 hours each, as-likely-as-not 10 hours each and worst case 19 hours each because… and based on...".
  We do our PERT calculations $((8 + 19 + (4 * 10)) / 6 = 11.2$ which we chose to round as 11 for the budgetary allowance and $((19 - 8)/6 = 1.8$ for the σ. The ratio $SD:E_T$ is 1.8:11 which is a 16%

➤ Simon: "50% confidence at 11 hours or 70% confidence at 13 and 80% at 15 hours".

10.1.3.4.3.1   Double Counting

Boss selects the 80% confidence level.

➤ Boss: "I'll assign these two work-packages to you with 15 hours each".

At which point a further factor enters the conversation.

If the two tasks are both now protected to an 80% confidence level there is only a 1/5 chance of each going wrong. IE a 1/25 or 4% chance of both exceeding the contingency time allowed at the 80% level (there is a 64 % neither exceed allowance, and a 32% chance one does and one doesn't exceed allowance).

By adding a confidence amount to every task I have to overrun every task to use all the safety built into the plan.

Expressing Confidence

- Adding contingency
  - Task 1 B = 1, ML = 3, W = 8   E = 3.5   SD = (8-1)/6 = 7/6 = 1.17
  - Task 2 B = 2, ML = 5, W = 6   E = 4.6   SD = (6-2)/6 = 4/6   = 0.67
  - Task 3 B = 3, ML = 5, W = 11   E = 5.67   SD = (11-3)/6 = 8/6 = 1.33

  Sum of E = 13.8   Sum of SD = 3.17 – Is this appropriate!?

  t1   t2   t3

- What is the chance of needing 3.17 ie SD1 plus SD2 plus SD3 ?
  - 20% * 20% * 20% = 0.2 * 0.2 * 0.2 = 0.008 or .8% or 1 / 125
- There is as much chance as SD1 minus SD2 minus SD3 !

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52

10.1.3.4.3.2   Removing Double Counting

Within any group of tasks whose schedule or cost estimates are grouped some will run under estimate while some will run over and thus compensate for each other. Only in comparatively rare cases will all worst cases (or all best cases) occur.

To calculate the confidence level for a group of tasks - in this case our sequence of two tasks – requires that we asses the possibility that both tasks are quick, or both are slow or one slow and one quick.

The appropriate calculation is to square each SD, then add them and take the square root of the result $\sqrt{(sd1^2 + sd2^2)}$. In this case

$$\sqrt[2]{2^2 + 2^2} = \sqrt[2]{(4 + 4)} = \sqrt{8} \cong 3$$

10.1.3.4.4 Practicalities Of PERT in the Network

Imagine a project whose precedence network is as given below and for which every task has 3-Pt estimates.

The forward and backward pass has been fully calculated using each task's ,most likely date. Tools such as Microsoft® Project support both 3-Pt estimating and critical path calculation.

However the forward pass has also been been calculated for tasks A C and F at which point it is evident that even in a simple network the complexities that arise are beyond manual calculations. The early finish dates of task F are however building a range against which an 'S' curve could be drawn.
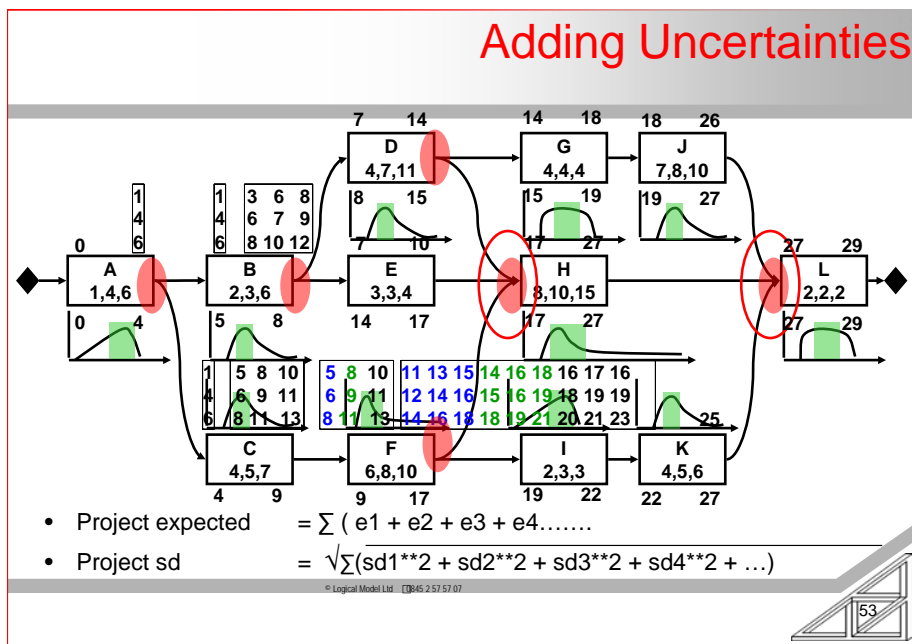
Two options are available. The first is to employ Monte-Carlo analysis software that is capable of the appropriate calculations such as @Risk from www.palisade.com or approximate the results, for example in a spreadsheet.

10.1.3.4.4.1   Monte Carlo

Monte Carlo analysis software allows assignment of a distribution to each task in the project's dependency network. Probabilistic scheduling is then performed thousands of times based on individual task probabilities. A distribution curve is built-up of probable critical path composition, duration and cost.
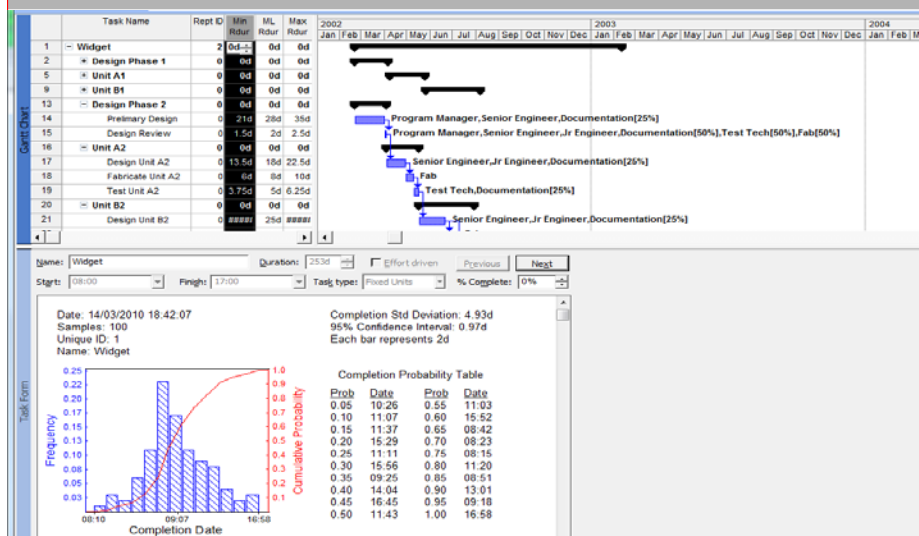
Monte Carlo analysis is daunting for many people, indeed the whole estimating conversation so far is daunting.

10.1.3.4.4.2   After Crude Estimates Focus Where It Matters

A work-able solution is to create crude single-point estimates "I think it will take this long BECAUSE….{rest of estimating package}". Then calculate cost and critical path. For the critical path and most significant costs it may then be worth applying more expertise and time to re-estimating for more precision.

10.1.3.4.4.3   Another Worthwhile Approach

In the network given above of 12 tasks A through L all tasks have been given three point estimates. In reality this isn't generally harder that creating good single point estimates. Indeed it can often be quicker! In the diagram above the the critical path has been simply calculated based on the most-likely values.

In the table below the PERT analysis has been perform and for each task that is a critical path tasks its PERT –SD has been included in the calculation of a buffer quantity. It is not hard to link Microsoft® Project and Excel to do the estimating in Excel and use calculated values in MS-Project. The interested reader should find my article "Powerful Magic with Gantt-Charts, Microsoft Project and Excel" Project Manager Today.
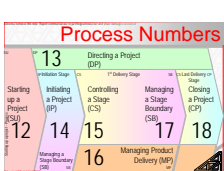
Showing Schedule Contingency

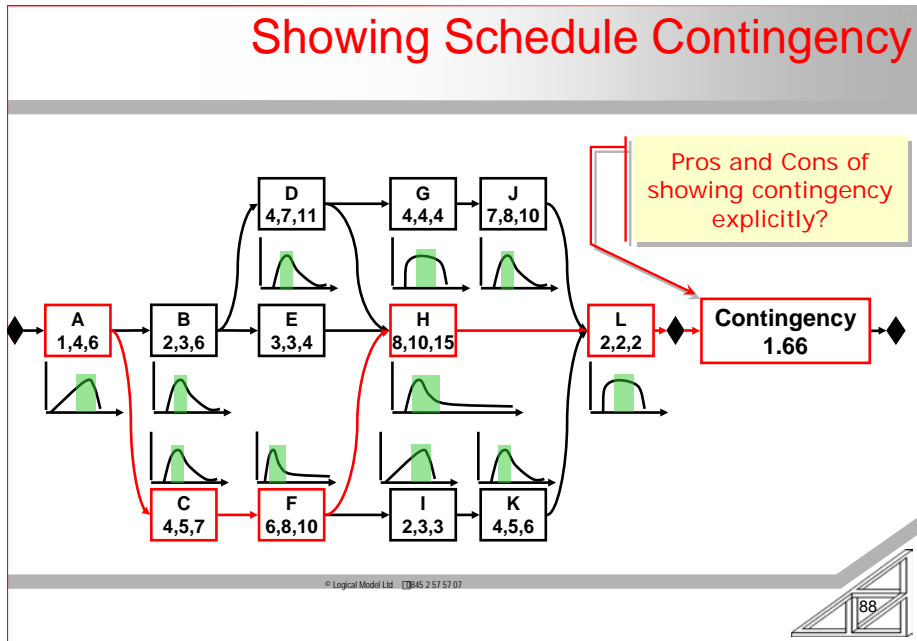| Task	Best	ML	Worst	50/50	SD	CP	Float	SD*SD	Schedule Protection
A	1.00	4.00	6.00	3.83	0.83	1.00		0.69	0.69
B	2.00	3.00	6.00	3.33	0.67		1.00	0.44	
C	4.00	5.00	7.00	5.17	0.50	1.00		0.25	0.25
D	4.00	7.00	11.00	7.17	1.17		1.00	1.36	
E	3.00	3.00	4.00	3.17	0.17		7.00	0.03	
F	6.00	8.00	10.00	8.00	0.67	1.00		0.44	0.44
G	4.00	4.00	4.00	4.00			1.00		
H	8.00	10.00	15.00	10.50	1.17	1.00		1.36	1.36
I	2.00	3.00	3.00	2.83	0.17		2.00	0.03	
J	7.00	8.00	10.00	8.17	0.50		1.00	0.25	
K	4.00	5.00	6.00	5.00	0.33		2.00	0.11	
L	2.00	2.00	2.00	2.00	0.00	1.00		0.00	0.00
		Total	50/50	63.17			Cum	SD	√2.74

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54

The analysis places tasks A C F H and L on the critical path with a combined SD of 1.66units of time to bring critical path probability up from 50% to 80%. Plus task D should now be considered 'critical' on the 'not much float compared to uncertainty' basis.

Find Better Slide

Showing Schedule Contingency

Pros and Cons of showing contingency explicitly?

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88

10.1.3.4.5 Delphi Technique

Estimates improve when they are defensible after challenge. Estimators improve when exposed to different people points of view and project team members have no way to assess estimates created outside of their domain of expertise. The Delphi technique is based upon the principle of "ask an group of experts and contrast their differences".

For estimating at least the Delphi technique uses the expertise of a group to develop a view of the reliability of estimates. At a minimum it triples estimating costs so should probably be limited to where it matters that estimates are well considered.
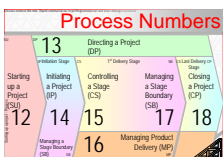
EG the cheaply assessed but now understood to be significant quantities such as access to rare skills, the critical path in schedule constrained projects or the assessment of poorly understood work.

10.1.3.4.5.1   Delphi Process

The process is to share background information with several people (perhaps a minimum of three, but definitely an absolute minimum of two) and ask each to estimate independently. Recall an estimate is the relevant parameters, assumptions, comparisons, formulas and ranges of starting points rooted in the specifications from the senior user(s).

The estimates generated are collated and shared back with the estimators for reflection on the factors included or excluded by others, assumptions and range

values suggested. Each estimator is invited to modify or reassert the elements of their estimate.

Some definitions of Delphi suggest everything should be anonymised. I've not found it necessary or particularly practical to hide whose idea was whose. Certainly for the first round I ask that people avoid discussion until they have formed theit own independently arrived at opinions.

10.1.3.4.5.2   Delphi ESTIMATES independently

It is always best to ask several people to estimate key elements independently. If for no other reason that as project manager I cannot judge some if not most of the estimates that will create schedule and budget. As someone once said "it is useful to know when the experts disagree".

Another good reason to use Delphi is that it very quickly makes a huge difference to the team's ability to estimate. They get the accuracy versus precision message much quicker when competing good-naturedly with their peers. Also this makes 'challenge' acceptable and accepted, debated, rebutted or accommodated. Challenge is vital to good planning.

10.1.3.4.5.3   Share and Reassess

Having asked my team members to estimate then each estimator is supplied with all the other estimates and encouraged to revise their estimates: the budget numbers generated by some audit trail of basis will therefore change automatically. The result is a transparent, auditable basis for assessing the raw work plus translation to cost and duration by calculation in the context of the factors agreed to be reasonable assumptions.

10.1.3.4.5.4   Consensus or Polarisation

As estimators assess whether they are content that they included or excluded the right considerations they converge on consensus or polarise around different views. Often consensus or polarisation takes only a couple of rounds.

Circulation can be done by eMail so Delphi works asynchronously and independent of geography!
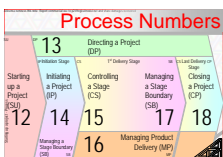
Polarisation occurs when the final value is sensitive to a factor that we do not know the nature of and thus make different assumptions about. In most situations estimating is not possible without assumptions.

10.1.3.4.5.5   A Recap of Avoiding Too Much Estimating Cost

Good estimates are expensive to create. Multiple experts are required to consider many factors and debate understanding and then combine the agreed values in what is an inherently complex process.

My recommended approach is to do it properly from the beginning. If you cannot bear that then understand the risk involved and then generate single numbers

(shallow, thin un-auditable estimates) for all cost and schedule factors. Calculate the project's critical path and major contributors to cost.

For all resource critical and schedule critical or near critical and all cost critical (and maybe also quality critical or scope critical or benefits critical or reputation critical or health critical or safety critical or environmentally critical or politically critical et.al. critical) elements of the project redo the estimates using a Delphi based three point approach. If that isn't enough then add Monte Carlo analysis as another step.

10.1.3.4.6 Delivering Versus Estimates

The next element of project control is that reality won't run to plan.

Creating estimates is a crucial part of steering progress to the target during execution. Estimating well ensured we know what to monitor during execution.

For example in the warehouse example estimating identified that monitoring must measure cables installed, terminations made and cable ties used. Later we discovered that what work is above and below 1.8m is a material factor in judging progress.

In the 'write this section' it is concepts conveyed combined with some metric of those concepts requiring few words and those with many complex relationships between the concepts.

Delivering what is achievable during execution is a reality achieved by truly understanding current project status. IE What has been achieved and what is currently wanted. Both can vary from agreed baseline.

SOOP-196.   Filling in timesheets without solid understanding of what marks ACHIEVEMENT in terms used to define the estimates is UTTERLY USELESS for determining project status. It might just help finance plot outward cash-flow as seen via the payroll but nothing more.

The internal contents of estimates is vital if we are to properly, reliably track progress achieved and reflect the implications of current expectations and variances between intention and current status in the current content of the plan.

Tracking changing expectations into the current plan is the mechanism to control 'scope creep'. Control of creep maintains a balanced set of expectations against which we deliver.

10.1.3.4.6.1   Improving Capability

Estimating capability improves with good records of pervious estimates. Estimates ARE NOT durations and costs so neither are the estimating histories. For example this section's historical records are that it is at this point almost 13,000 words, 490 paragraphs, is 93 headings and 21 SOOPs and circa 25 discrete ideas or concepts.

Recording previous actual results must capture the context of the actual result such as the method statement, the skills of those delivering the result and the variability to be expected in the result.

SOOP-197.   The records within an estimating history must match the content of estimates. IE the values recorded are only meaningful in the context of assumptions and observed factors affecting the result.

To be useful an estimating history must show results in a way that makes variability observable over the previous times we have done something similar and captured the results.

10.1.3.4.6.2   That Golden Rule Again

To restate the golden rule: ~~NEVER~~ rarely do we directly estimate cost or duration. Only calculate it based on the methods statements and (estimated) input parameters. If you omit the underlying drivers the problems will bite in execution when there is no reliable means to track progress.

See X on Y

10.1.4[14.4.7 Refine the Business Case]

During the project we incur acquisition costs to create the outputs. As the outputs are used we incur operational costs, create outcomes and gain benefits. The official manual omits considerations of most of these facts and all that follows.

10.1.4.1.1.1   Business Case Must Be Benefits and Costs

The official manual does observe that costs of acquisition are determined by calculation of resource usage from the **A16-**Project Plan. A few pointers are provided to topics beyond PRINCE2®'s scope and no guidance at all is given in the official manual on the calculation of cost of ownership.

No guidance is given in the official manual on how to determine or calculate benefits. All that the project is expected to do under PRINCE2® is suggest when someone indeterminate will check if benefits have arrived.

The official manual would have us record the schedule of checks in the **A1-**Benefits Review Plan.

The meaningful techniques are in isochron®'s Dimension Four® method which provides techniques for the determination of Value Flashpoints® and linkage to the organisation's value drivers.

10.1.4.2 Change is Harder Than Products

I am amazed (dismayed) by the PRINCE2® proposition that creating the outputs needs so much control and procedure yet change to future-state-business-as-usual will occur and benefits will arise without focussed management action outside of the day-to-day regimen of business-as-usual management.

PRINCE2® collides with the 'project is temporary' supplier perspective again and again. The temporary bit is the supplier side and is paid for at delivery – benefit achieved in supplier minds. Not project sponsor terms.

The on-going, customer bit needs nurture. Management of change is much more challenging than product development – countless millions of projects prove that: Scottish parliaments and IT projects everywhere proven even product development isn't easy!

10.1.4.2.1.1   *A2-Business Case Needs Benefits and Costs*

If we apply the right thinking then the size and timing of costs **and benefits** will determine the project's cash-flow and other financial measures: the financial analysis is recorded in the **A2-**Business Case. Probably most usefully as a discounted cash-flow, and best (but unlikely) if from the time of the project mandate to retirement of the delivered outputs IE throughout the time that the value-stream flows.

Portfolio consideration should also include:

➢ the 'value' of the project's returns over costs,
➢ in today's terms at some defined ut-off point (IE the Net Present Value (NPV) at some future date or a Discounted Cash-Flow (DCF) into the future.)
➢ comparison with all other business-as-usual portfolio uses of capital and all other investment opportunities.

Note: commonly projects are not chosen on their financials but the choice made is justified post-fact on selection of appropriate numbers.

10.1.4.2.1.2   *NPV and DCF*

Companies are financed by equity and debt. Equity is shareholder's money invested in companies for growth in capital or for return of an income (dividends). Debt is money lent for a return (interest). The dividend level and interest rate are the 'cost of capital'.

If as a company I hold a pound today (present value) in a world where interest rates are 10% I will need to provide investors and lenders with £1.10 or better next year (future value). A future value is calculated by multiplying a present value by the interest rate for every time period over which the investment is held. Equally a present value is calculated by dividing (discounting) a future value by the affect of interest to arrive at a present value.

Thus if a project costs £90,100 today and delivers a £100,000 return next year then unless the interest rate is below 10% it won't support the return required by investors.

The Net Present Value of an investment is the sum of all future receipts discounted for interest rates to determine a present value minus the sum of all future payments also discounted for interest to a present value. A Discounted cash-flow is a series of net values each of which has been discounted to present values.

10.1.4.2.1.3   Internal Rate Of Return (IRR)

Comparison across the portfolio of other initiatives may benefit by 'normalisation' of dissimilar cash-flow patterns. This is achieved by calculating an interest rate for each project at which its NPV is zero. The value (the IRR) shows which project is returning the most financial benefit on the money committed.

10.1.4.3 Benefits Realisation

Definitely after the 'project phase' of the investment is over and perhaps also during the project action must be taken to confirm the extent to which benefits are being generated [and <u>actions must be taken that will maximise benefits</u>.]

10.1.4.3.1.1   Navel Gazing

The official manual says "…look for unexpected side-effects. Time and effort must be set aside to explain why these where not foreseen" [p. 235-6]. That might, just be useful if we can learn from the experience but looks like blame-storming to me and I'd rather we took action to maximise benefits expected and unexpected and minimise disadvantages, expected or not.

Much more important and beyond PRINCE2®'s guidance is that measurement must trigger action by the sponsor. Senior user(s) and business-as-usual staff to maximise benefit not just question if benefits are being created.

Unexpected side-effect occur because the world is too complex to predict. If it wasn't everyone of us would make a fortune on the horses and stock-exchange (or, ermm maybe stock – exchanges and betting on horse races wouldn't exist ☺!).

10.1.4.3.2 A1-Benefits Review Plan's Life-Span

The official manual says that when created the **A1-**Benefits Review Plan "is considered by the exec". It is maintained through the project and post project it is executed under CoPM's patronage: perhaps via a Centre of Excellence/ Project Support Office or the portfolio management group.

At the very least I suggest also lodging a copy with the Finance Director, Internal Audit and Corporate Governance functions who have a duty to ask if promises of returns to shareholders and tax payers are on-track during the project and being realised after it. In reality active benefits management is what is required. ***See X on Y***

10.1.4.3.2.1   **A1-**Benefits Review Plan Product Description

The **A1-**Benefits Review Plan might contain {

➢ Context and description of the benefits to be measured
➢ Who, how, when and with what resources achievement of expected benefits will be measured
➢ How the performance of the project's outputs will be "reviewed" (sic)

[I recommend you amend "reviewed" during embedding to be 'monitored and adjusted to maximise benefits']

➢ For each benefit claimed in the **A2-**Business Case [and identified subsequently at any time]

- Who is accountable for the expected benefits
- Benefit specific measurement 'who, how, when and with what resources'
- Benefits baseline against which improvement is calculated

   [Also missing from official guidance is a future history of target benefit level versus time-line: benefits streams often take time to ramp-up and have a tail-off period too]

- [(Place holder for) benefit specific adjustments to maximise benefits]

➢ }

10.1.4.3.2.2   Business Case and Investment Appraisal

In the context of the Initiation Stage the project management team **[14.4.7** Refine the Business Case] by extending it with details generated during the Initiation Stage:

1. What ever description of expected benefit and tolerances that exists is refined as far as possible for investment appraisal (an initial finalisation!)
2. Details of time-scaled costs are taken from the **A16-**Project Plan to update (or provide!) discounted cash-flow information to the cost side of the investment appraisal.

   The benefits expected as described in the **A1-**Benefits Review Plan are also expressed as a discounted (positive) cash-flow in the **A2-**Business Case.

   See Financial Appraisals X on Y

3. A summary of the risks and uncertainties being carried in the plan is created from the **A25-**Risk Register. The **A16-**Project Plan's costs and timescale will reflect responses that have been sanctioned and all pre-approved contingencies. A summary of exposures that are uncovered or handled by reserves should also be given in the refined **A2-**Business Case.

   Calculation and use of Reserves and Contingencies are discussed at ***See X on Page Y***.

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Any entries in the **A14-**Lesson Log or any corporate standards (perhaps noted in the **A19-**Project Brief) that apply to content, format and the approvals process must also be accounted for in what will be the first version of the full **A2-**Business Case.

10.1.4.4 Closing the Initiation Stage

At the end of the Initiation stage the project management team handle Managing a Stage Boundary (SB) by actions to:

➢ **[14.4.8** Assemble the Project Initiation Document] and they also

> **[17.4.1** Plan the next stage] to create the next stage's **A16**-Stage Plan and they
> **[17.4.4** Report Stage End] in an **A9**-End Stage Report.

The project management team may also

> **[17.4.2** Update the Project Plan] and
> **[17.4.3** Update the Business Case]

10.1.4.4.1.1   Un-Needed Managing a Stage Boundary (SB)Activity

In the context of the Initiation stage, unless the stage has suffered an exception it is unlikely that there is any need to **[17.4.2** Update the Project Plan**]** or **[17.4.3** Update the Business Case**].** In Initiation the **A16**-Project Plan and **A2**-Business Case are probably being finalised in parallel with **[17.4.1** Plan the next stage**]**.

Later, when we get to the end of each 'Enabling' stage (including the last one that doesn't use Managing a Stage Boundary (SB) processes but does do the same steps☹) the **A16**-Project Plan and **A2**-Business Case will need to be updated to record status from the stage that is ending.

10.1.5 [14.4.8 Assemble the Project Initiation Document]

To **[14.4.8** Assemble the Project Initiation Documentation**]** simply requires gathering or cross-referencing of all relevant information on project context, strategies, plans, controls and roles.

As a configuration item the **A20**-Project Initiation Document (PID) is a collection of CIs whose contents influence each other. It is an integration of lower level CIs (it exists at a high level within the total product hierarchy of the project's management Product Breakdown Structure (PBS).

10.1.5.1.1.1   A (Dynamic) Baseline For Reference

The **A20**-Project Initiation Document is the terms of reference for all project board level decisions as the project proceeds.

All of its component parts will be subject to scrutiny and possibly update and thus exist as a series of versions. At a minimum the **A20**-Project Initiation Document will be considered for update at all future stage ends.

10.1.5.1.1.2   More Navel Gazing

At project end there may be merit (the official manual says there is) in comparing the final version of the **A20**-Project Initiation Document with the version approved after base-lining as the release used to **[13.4.2** Authorize the project**]**.

I think this is a bit like worrying if my broom is actually "the one I've had for years" or not. Monthly or even daily reviews of lessons observed is worth the time, comparing ancient predictions with current reality might also be useful but I'm unconvinced.

10.1.5.1.1.3   Rarely One Document

The official manual tells us that the assemblage (which may be a single paper document but is more likely to be a collection of references) is checked by project assurance and submitted to the project board to **[13.4.2** Authorize the project].

The approved PID may be circulated to the wider organisation (if the **A4**-Communications Management Strategy, good sense, the sponsor or the exec requires it) and should be given to future project staff when they join the project as a briefing pack to explain the context of their role.

10.1.5.1.1.4   Investment Contract

[The **A20**-Project Initiation Document and **A1**-Benefits ~~Review~~ [Realisation] Plan should be regarded as the frame of reference and benchmark for the return on investment expected by the investor and entrusted to the sponsor.

Ratification of the PID should form 'contract' between provider of funds and steward for their expenditure, recoup and return of benefit (which does not have to be financial benefit).]

10.1.5.2 Managing a Stage Boundary (SB)

The end of the Initiation Stage is the end of the project's first stage, although it isn't the first time we have needed to plan a stage – we also needed to do that at the end of Starting up a Project (SU).

If you follow my advice then what comes next in these writings will be something you will already have done most of at the end of Starting up a Project (SU).

10.1.5.2.1 [17.4.1 Plan the next stage]

To **[17.4.1** Plan the next stage**]** the project management team decompose to task level those parts of the project's Product Breakdown Structure (PBS), for technical and project management products that overlap the comming stage's scope.

IE Exactly the same planning tasks as described above for **[14.4.6** Create the Project Plan] but for a sub-set of scope and down to the day-to-day task level.

10.1.5.2.1.1   Generically For Each New Stage

The planning team's input to stage planning is the **A20**-Project Initiation Document { Project definition { Project objectives and desired outcomes, …}, Project Approach, … Role Descriptions, … 4 Strategies, … **A16**-Project Plan (for the project level Product Breakdown Structure (PBS), Project controls, … } and the **A12**-Issue Register, **A25**-Risk Register and **A14**-Lesson Log.

As well as creating the **A16**-Stage Plan the project management team also create (or update):

> **A5-**Configuration Item Records for all products whose life-cycle first overlaps the project within the coming stage's scope

  Some CIs will have a CIR as they started their project involvement in earlier stages and undergo further development in this stage and

> **A23-**Quality Register entries for all intended quality control activity within the coming stage's scope: specialist and management products.

Of course creating a stage plan and associated records assumes that:

1. The project isn't so small that the project plan and the stage plan are one and the same,
2. The project board's desire for control isn't so detailed that the project plan and the stage plan are one and the same, and
3. We didn't decide while planning the project to just plan the first stage at the same time by considering the day-to-day details during work to **[14.4.6** Create the Project Plan**]**.

   (Re-)Planning at project and stage level at the same time is generally sensible and practical.
4. 0.

10.1.5.2.1.2   One or two Planning Sessions?

It is also quiet reasonable that planning the first stage is a separate planning session from that which created the **A16-**Project Plan.

A16-Project Plans are product ('What'/ Strategy) focussed while **A16-**Stage Plans are task ('How'/ Tactics) focussed and thus require overlapping but mostly different participants.

Often in reality planning at project level with the project board and the senior user(s) takes an hour or three as part of the creation of the **A19-**Project Brief and its included items { Project definition { Project objectives, Desired outcome, … }, … **A21-**Project Product Description, … } and its expansion into a Product Breakdown Structure (PBS) in order to start **[14.4.6** Create the Project Plan].

Equally often in reality **[17.4.1** Plan the next stage] with the technical teams takes a day or three's effort to plan the **A16-**Team Plans which are aggregated into the **A16-**Stage Plan. Often planning is spread over several sessions. When possible a short-sharp-burst is better and 'off-site' is best!

A16-Stage Plans should not extend into the future further than can be reliably expressed given:

> The clarity of objectives
> The stability of objectives
> The organisation's ability to assign and honour the commitment to resourcing
> The technician's ability to predictive the tasks, tests and rework required.

SOOP-198.   The Rolling-Wave-planning principle plans at two levels within the project:

For the 'product oriented, whole of Project Plan' the constant factor is its scope 'up to the future-state-business-as-usual'. The variable factor is level of detail.

For the task oriented 'up to-next-investment-checkpoint' Stage Plans the guiding and constant principle is "at the level of control needed for day to day control". The variable is how far into the future our clear vision extends. Higher technical skills, more and cooperative senior management involvement, clarity of end-point all determine how far that is. (The Stage plan may be an aggregate or team plans.)

10.1.5.2.1.3   Source of Tasks in Every Stage

Tasks to include in the **A16-**Stage Plan are identified in at least five places:

1. The project level Product Breakdown Structure (PBS) and so each product's **A17-**Product Descriptions' description of the product's life-cycle steps and thus

2. Applicable standards in the Quality Management System (QMS) that describe product standards and process standards/ method statement that are used to make or buy the product.

   The link to method statements and standards is crucial to ability to estimate. An estimate IS a description of how the work will be performed, and IS NOT a number (although estimates contain and generate numbers) *See X on Y*.

3. The **A25-**Risk Register's record of threat and opportunity responses options that have been selected for action and

4. The **A12-**Issue Register's issue response options that are selected and

5. The needs defined in project roles and controls for communications and management of all the control strategies.

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[Note:

➢ Even though listing them separately I still advocate that **A25-**Risk Register and **A12-**Issue Register are aggregated into a Register-of-Concerns. *See X on Y*

➢ I still advocate that the **A20-**Project Initiation Document is an evolving Investment Definition that spans the whole investment cycle from current-state-business-as-usual through development of outputs, future-state-business-as-usual to new-current-state-business-as-usual and benefits realisation. IE it supplants the Project mandate, **A19-**Project Brief and **A20-**Project Initiation Document.]

10.1.5.2.1.4   Schedule Options and Selection

All the tasks necessary to deliver outputs, manage uncertainty and implement controls are set-out in dependency sequence (as discussed above *See X on Y*). For the team and stage levels the tasks must be defined at a level that supports day-to-day control.

10.1.5.2.1.5   Day to Day Control

Day-to-Day control means 'able to state achievement of the outputs destined for business-as-usual at a level that is traceable to schedules and budgets at a resolution of 24 hours.' Project managers of short and or vital projects might need this level of control. Team member/ managers are more likely than project managers to need day-to-day (24hr) control.

Day-to-day may be more precise than is needed in some circumstances, and is definitely less precise than needed in some circumstances. We will explore the level of control needed when discussing **[15.4.4** Review stage status] and **[15.4.8** Take corrective action].

10.1.5.2.1.6   Reality Check

As **A16-**Stage Plans are created it is common that a 'Faster, Better, Cheaper' reality check is required to establish some balance and resolve contradictions between constraints.

At the point when each **A16-**Stage Plan is created (especially the first one) the cost of aspirations for control, for scope or for scope within timescale often needs 'affordability' versus cost driven reconsideration.

10.1.5.2.1.7   Reconsideration

SOOP-199.   *Projects succeed when the organisation understands how to plan them. Planning first creates a shared consciousness of the goals and constraints, and second of the options for distilling customer quality expectations to acceptance criteria.*

During the Initiation Stage the project board should be constantly involved so that the plans created embody the options. A set of options is selected and the team can swap options during execution as unexpected or expected uncertain events unfold.

The project manager's job is to advise the project board of options and the exec's is to advise the portfolio management board of options. They may advise the shareholders.

10.1.5.2.1.8   Summarise Stage Performance

As the Initiation Stage draws to a close the project manager and team may find it useful to consider and report how the stage performed versus its plans. Actions to **[17.4.4** Report Stage End**]** result in the creation of the **A9-**End Stage Report and possibly a stage **A15-**Lesson Report.

In order for the project manager to **[17.4.4** Report Stage End] the project management team reviews the **A20-**Project Initiation Document, **A12-**Issue Register, **A25-**Risk Register, **A23-**Quality Register, **A14-**Lesson Log and **A16-**Stage Plan to describe:

1. the performance of the project during the stage just ending and
2. the project's ongoing prospects,

3. any recommended actions for those outside the project (Known as Follow-On-Action-Recommendations (FOAR) and

4. any Lessons Observed to date.

5. 0.

10.1.5.2.1.9   *A9-End Stage Report Product Description*

The **A9-**End Stage Report produced at the end of the Initiation Stage will probably be a subset of the ones created at the end of an enabling stage. Items marked ‡ are probably less relevant at Initiation Stage-end. The full content of **A9-**End Stage Reports includes comments on {.

➤ The project manager's view of the team's performance in the stage versus objectives and baseline. Performance should be extrapolated to forecast project [investment] outcomes.

Commentary must include evaluation/ confirmation of.

- ‡ Status of the benefits claimed in the **A2-**Business Case including those delivered, or due, or currently expected. For positive or negative deviations from the initial version of the **A20-**Project Initiation Document some commentary is appropriate.

- ‡ Any benefits that have been delivered and/ or were due to be delivered in the stage,

- Confirmation that the stage's products were produced as expected or that remedial (±) action is included within the project's future plans.

  Confirmation is achieved by reference to a stage oriented **A18-**Product Status Account of all the **A5-**Configuration Item Records for configuration items in the stage's scope. The **A5-**CIRs will give basic quality status, more complete details can be reported by reference to all the **A23-**Quality Register records relevant to the stage's outputs.

- Quality review activities MUST confirm all product hand-overs are fully quality reviewed versus specification (and thus acceptances obtained and concessions for off-specifications obtained).

  For initiation the products subject to quality review are probably exclusively management products.

  [PRINCE2®'s view is that handover reviews happen at the interface to BAU: correct but insufficient.

  When we discuss handovers in detail (as part of **[16.4.2** Execute a Work Package] and **[16.4.3** Deliver a Work Package]) I'll explain in more detail, but for now: review identifies all elements that are missing, are wrong or are extra to specification in order to control 'creep' (scope creep is only one flavour of creep).

  All hand-overs, whether from technical team to technical team or to business as usual and operational and maintenance staff must involve a quality review focussed on 'missing, wrong and extra' elements. Relevant

resultant concerns (insights, issues and risks) must be either remedied or conveyed to whoever receives the product.]

➢ The stage's responses to and handling of Risks and Issues, Lessons used or discovered

➢ PRINCE2® suggests [and I agree] using the **A4**-Communications Management Strategy to determine who to send the **A9**-End Stage Report to.

}.

I suggest that you also confirm the adequacy of communications strategy and stakeholder engagement and project manager and exec should address all short-comings.

The information presented to the project board should enable the decisions to proceed, or should trigger re-planning or should trigger premature project closure.

10.1.6 Sanction The Project and Next Stage

The equity holder's full chain of command must each agree their own duties are achievable and desirable for the organisation and themselves.

SOOP-200.   Two or perhaps three decisions are needed to move into benefits enabling:

➢ *will the portfolio management board authorise the investment as described by the **A20**-Project Initiation Document,*

➢ *will the exec confirm the contents of the **A20**-Project Initiation Document gives them confidence that they can deliver the outputs; IE the project board [13.4.2 Authorise the project] and*

➢ *will the project manager confirm the **A16**-Stage Plan gives them confidence that they can deliver the stage's results: IE the project board [13.4.3 Authorise a Stage or Exception Plan]*

10.1.6.1.1.1   Recap: The Journey So far

Having seen the arrival of the mandate trigger creation of team, outline business case, project approach and initiation stage plan the project board authorised initiation.

Initiation has determined as best as we can the actual work needed for product creation under a comfortable and affordable control regimen. The project management team stand ready to commence creation, acquisition and integration of the project's outputs to create the future-state-business-as-usual.

10.1.6.1.2 Stop A Bad Investment Early

Often at the end of the Initiation Stage project expenditure is a small proportion of what will be spent if the investment is authorised to proceed into specialist product creation activities.

SOOP-201.   After planning and before initiating change is a very good point at which to stop a marginal idea. IE an idea with merit but whose returns have a lower benefit to cost ratio, lower Internal Rate of Return, lower Net Present Value, lower strategic significance or lower gut passion than other claims on resources.
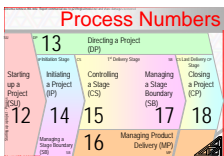
Assessment determines the soundness of the business case given the known uncertainties, the project plan, the strategies for control, the resource commitments, the project management team appointments and the project team's expectations, prejudices and appetites.

10.1.6.1.2.1   Proceed with the Project?

Not withstanding observations on where in the chain of command the decision making authority really rests: the 'project board' decide if they will sanction the project based on the information presented in the **A20**-Project Initiation Document and **A1**-Benefits Review Plan.

The decision making authority will probably ask project assurance to confirm that all plans, tolerances, strategies, controls and roles as tailored and applied are adequate, understood, resourced and agreed by significant parties (or not). Otherwise the decision making authority members must confirm it for their self.

(13.4.) DP2

SU   DP

Project authorisation notification

13.4.2 Authorize the project (DP2)
Performed in parallel with Authorising a Stage (or exception) Plan
Decide if the whole proposition is attractive enough to invest in the project
1.   Review/ Approve the PID (Review may be delegated to Project Assurance)
     Adequate & tailored Strategies, Controls, Budgets, Tolerances, Commitments in place for Project Board to pursue the benefits
2.   A1 Benefits Review Plan acceptable to CoPM
3.   Authorise the PM or close the project
4.   Tell the wider stakeholder community

•   Request to deliver a project
A14 Lessons Log
A20 Project Initiation Documentation
A1   Benefits Review Plan

Starting up a project - Process

Initiation Stage

A21 Approved Project Product Description
A1   Approved Benefits Review Plan

Delivery Stage   SB   CS   Premature closure   CP

SB   MP

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10.1.6.1.2.2   An Adequate *A20-Project Initiation Document*

If the **A20-**Project Initiation Document's description of the project's benefits, benefits review plans and project controls (such as stage boundaries) are reasonable then the project is authorised to proceed into activities to create the future-state-business-as-usual.

If the project board don't like what they see and hear then the project moves to premature closure. The project management team performing the activities of Closing a Project (CP). *See X on Y*.

From an exam perspective note 13.4.2 is called "Authorise the Project", but the project started in PRINCE2®'s eyes at **[13.4.1** Authorise Initiation**]**.

A Better name at 13.4.2 would be Authorise Creation of Future-State-Business-As-Usual and at 13.4.5 would be Commission Future-State-Business-As-Usual and a '13.4.6' should be something like 'Review and Tune Benefits Delivery'.

10.1.6.1.2.3   Project Contract

*SOOP-202.   If the approval authorities are minded to continue then when they **[13.4.2** Authorize the project**]** they seal a contract between them-selves and the chain of command below them down to the technical delivery staff for delivery of outputs in exchange for provision of resources and meaningful support.*

Approval also requires they inform the chain of command above them and the organisation at large, via a Project Authorisation Notification that the project manager has their delegated authority to proceed.

To enter delivery the project must have a viable stage plan so we must also request the Project Board to **[13.4.3** Authorize a Stage ~~or Exception~~ Plan**].** In theory if not often in practice agreeing to the proposed **A16-**Stage Plan is a separate decision.

10.1.6.1.3 Seek Authority To Proceed With The Stage

When the project board **[13.4.3** Authorise a Stage or Exception Plan**]** they or project assurance perform two assessments.

1. A review of the conduct of the stage just ending (in this context the Initiation Stage) by review of the **A9-**End Stage Report and discussions with the project manager.

   If the concluding stage has observed lessons worth passing on to others in the portfolio then the project board will forward these to relevant parties (EG an Enterprise Project Management Office).

2. An assessment of the suitability of the **A16-**Stage Plan for safe day-to-day control of the next stage (recall **A16-**Stage Plan is broader than just 'schedule' *See A16-Stage Plan Product Description Page Y*).

3. 0.

10.1.6.1.3.1   Authorisation Of Plans

When a <u>stage or exception plan</u> is authorised it is because the project board is convinced that the **A16-**Stage Plan they are looking at can be resourced, controlled and delivered.

<u>Stage authorisation</u> confirms the project board believe the **A16-**Stage Plan supports an achievable **A2-**Business Case in the context of:

➢ the **A25-**Risk Register, **A12-**Issue Register and **A23-**Quality Register
➢ the project performance to date as described in the accompanying **A9-**End Stage Report
➢ the current version of the **A20-**Project Initiation Document's Product Breakdown Structure (PBS), **A17-**Product Descriptions, controls and roles.
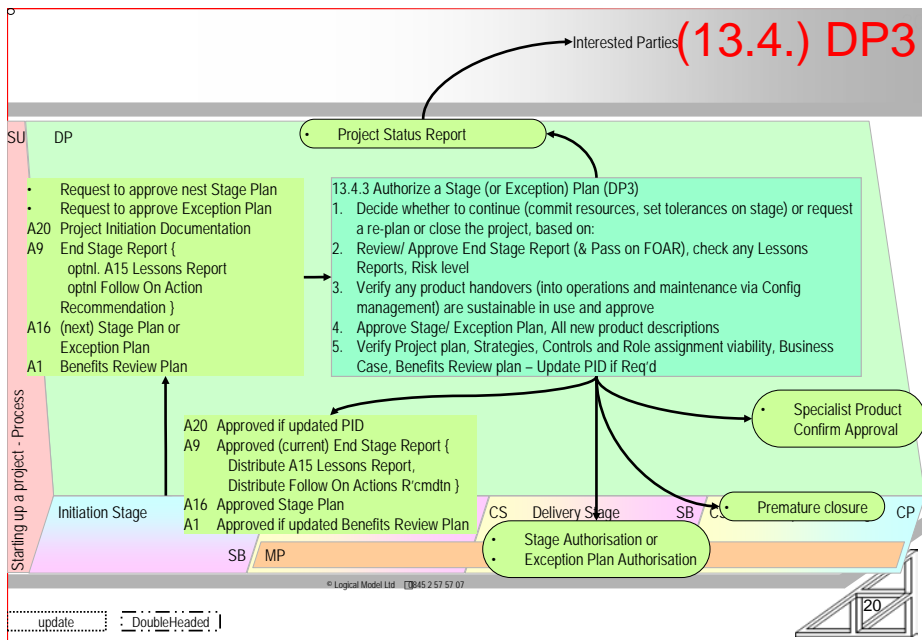
Particularly:

➢ The **A16-**Stage Plan includes provision for threat and opportunity,
➢ Tolerances agreed (or imposed) on the stage are matched to estimating precision and project board appetite for uncertainty,
➢ The escalation mechanism in place is through a chain of command that has the time, will and skill to respond as required,
➢ Frequency of **A11-**Highlight reports and the stage's end-point are matched to the project board's desires for supervision and their actual availability to supervise.

10.1.6.1.3.2   Stage Approval

At stage approval the project board delegates day-to-day control to the project manager and commits to supporting the project manager.

Otherwise the project board should ask that the stage plan is revised or direct that project focus changes directly to be the activities of Closing a Project.

Any aspect of proposed plans outside the project board's tolerances needs CoPM's approval and so on up the chain of command.

10.1.6.1.4 If There Are Products To Hand-Over

When moving from the Initiation Stage into the first delivery (Enabling) stage it is not expected that there are completed outputs that directly deliver benefits but there may be.

If there are (and when we get to closing a benefits enabling stage, especially the last one it is more likely that there will be) then we must ensure that configuration management, arrangements for ongoing product maintenance, provision for sustainable usage and benefits measurement [and harvesting] arrangements are all in place and realistic.

10.1.6.1.4.1   Follow-On-Action-Recommendations (FOAR)

Any configuration management arrangements, lessons observed, open issues or risks that are relevant to project outputs being handed-over should also be passed on by Follow-On-Action-Recommendations (FOAR).

A positive check should be made with recipients for understanding of actions required.

10.1.6.1.5 Initiation Exception

The Initiation stage may have fallen into exception. If so it will have been brought to a premature end pending remedial action and stage restart or project closure.

In a non-fatal exception case it is more likely that we need to **[17.4.2** Update the Project Plan**]** and therefore also **[17.4.3** Update the Business Case**]** due to the exception invalidating some of the **A16-**Project Plan or **A2-**Business Case contents. In this case the Exception plan and **A10-**Exception Report (as fully discussed *See X on Y*) will provide extra inputs to decisions.

10.1.6.1.5.1   **[13.4.3** *ESA and EXA: Authorise a Stage or Exception Plan]*

A16-Stage Plans are presented to the project board at an End Stage Assessment (ESA) while an Exception Plan is presented to the project board at an Exception Assessment (ExA).

Two names for the activity to **[13.4.3** Authorize a Stage or Exception Plan**]**.

An End Stage Assessment (ESA) considers whether to **[13.4.3** Authorise a Stage ~~or Exception~~ Plan] while an Exception Assessment (EXA) considers whether to **[13.4.3** Authorise an ~~Stage or~~ Exception Plan].

The ExA has slightly different broader inputs to consider as we will discuss later. *See X on Y.*

10.1.6.1.6 Baseline the Plan

Successful completion of the project board's review of the **A1-**Benefits Review Plan, **A14-**Lesson Log and **A20-**Project Initiation Document at **[13.4.2** Authorise the project] effectively base-lines the **A1-**Benefits Review Plan and **A20-**Project Initiation Document in configuration management.

Review of the **A9-**End Stage Report and **A16-**Stage Plan at **[13.4.3** Authorise a Stage or Exception Plan] marks agreement and thus the trigger to baseline them in configuration management. At subsequent uses of **[13.4.3** Authorise a Stage or Exception Plan] changed management products will be rebase lined.

10.1.6.1.6.1   To Time, To Cost and To Quality

SOOP-203.   By sealing the stage (and project) 'contract' between project manager and all higher level links in the chain of command we are declaring that the technical and project management tasks and agreed resource assignments match the costs and delivery dates for the outputs agreed to be in scope at the level of quality required and risk accepted (±). It is from this point only that "to time and cost and scope/ quality" has meaning and not before.

10.1.6.1.6.2   Broken baseline

If any of costs and cash-flows/ schedule, milestones or resource assignments/ scope or acceptance criteria/ uncertainties or reputational sensitivity or other material factors change later then the baseline is bent and possibly broken.

If the 'contract' is broken, the project is out of balance and an actual or future variance to plan exists that needs corrective action. When this happens the variance may be within all tolerances or will be outside some, possibly all tolerance and thus in exception upto some level in the chain of command.

Whether in exception or not at any level re-planning will be necessary.

Replanning within stage tolerances just requires the project manager (or team member/ manager) to **[15.4.8** Take corrective action], while outside stage tolerance requires the project manager to **[15.4.7** Escalate issue and risks] and possible **[17.4.5** Produce an Exception Plan].

The official manual doesn't mandate how the exec seeks CoPM approval when the exceptions exceed project tolerances, or how escalation continues up the chain of command but the steps are required for good project and corporate governance.

10.1.6.1.7 Execute

After approval to proceed then execution of the planned tasks that create the future-state-business-as-usual is carried out, hopeful according to agreements.

Monitoring of actual achievement and comparison to plan will detect variances. When ever a variance is discovered that requires action at any level of authority then re-planning repeats as much of the master planning list (from shareholder through products and tasks to baselined resource allocations) as is required.

Re-planning identifies corrective, perfective or adaptive responses to update the project's baseline. If the variance is in the 'what' or end-point then all the steps of planning need some level of revisit. If the variance is limited to the duration of a task with float then their may be no material impact.

11 The Controlled Middle

The controlled middle is comprised of "Benefits Enabling" or product delivery stages.

In a project the 'controlled middle' might be 90% of the effort, duration and expenditure, but it accounts for only 15% of the explanation here.

11.1.1.1.1.1   *Recap* of the Journey so far

The mandate arrived as a trigger. In it were the seeds of the outcome required, the outcome's justification and the outcome's stakeholders.

In Starting up a Project (SU) the project management team sought completeness of stakeholder analysis, details of the quality expectations of those stakeholders and their appetite for controls.

The project management created the **A19-**Project Brief and the elements it contains that define the project's outcome and outputs. The content that was assembled was enough for the project board to **[13.4.1** Authorise initiation].

In the Initiation Stage the project management team created the strategies, the controls and then **[14.4.6** Create the Project Plan**]** based on the strategies and controls. The **A16-**Project Plan provided the information to **[14.4.7** Refine the Business Case**]** costs and timescales. The project board decided to **[13.4.2** Authorise the project] and **[13.4.3** Authorise a Stage ~~or Exception~~ Plan].

11.1.1.1.1.2   *Stage Contents*

The benefits enabling stages are the time during which the technical specialists and the project management team do the day-to-day work that delivers the future-state-business-as-usual. Specific people will undertake specific **A26-**Work Packages to develop products that are conformant to their specification. They also assess and reporting project status. Progress versus baseline informs decision making that steer the project to closure. Hopefully closure is not before successful delivery of outputs.

11.1.1.1.1.3   *Triggers For Real Work*

Arrival at a benefits enabling stage occurs either because we've just finished the Initiation Stage or we've just finished a previous benefits enabling stage and we have not finished creating all products to a state that they are all ready for integration into the future-state-business-as-usual.

11.1.1.1.2 Overview of The Journey To End of Stage

When commissioning specialist work project control iterates around three concurrent cycles within Controlling a Stage (CS) after which the stage ends with either Managing a Stage Boundary (SB) or Closing a Project (CP).

The three cycles are:

1. A cycle for the delegation, tracking and acknowledgment on completion of each chunk of technical work. These controls are between project manager and team member/ manager. They are comprised of steps to:

   5. Agree the allocation of chunks of work with required resources, authorities and constraints.

      Delegation is to named individuals (who may lead groups) for completion within the agreed, balanced constraints (tolerances) such as time-scale and budget,

   6. Execute and quality control the work,
   7. Report upwards on the progress of work to the project manager and,
   8. Hand-over the results of work to who-ever is their correct recipient.
   9. Restart at 'i.' if there is more work for them in this stage.
   10. 0.

   When the 'chunks' of work run out then either Closing a Project (CP) is performed to prepare project closure or Managing a Stage Boundary (SB) is followed. SB prepares for closure of the current stage and the project's reappraisal pending project board authorisation of a new stage of specialist work.

2. The second cycle interacts with the first to handle the project manager's analysis of results from 1.ii.

   Steps 1.ii and 1.iii above assess and report work in progress which enables the project manager to analyse status. Progress is compared to the stage plan and used to forecast likely future performance. The project manager adjusts the project's execution and reports achievements and concerns upwards to the project board.

3. Cycle three investigates concerns and escalates discoveries of potential or actual variance that may be outside of tolerance or skills to a superior level of decision making.

4. 0.

11.1.1.2 Delivery Stages and Development Structure

A Project may have one or many benefits enabling (or 'delivery') stages.

It is expected each will be conducted through execution of many **A26**-Work Packages although in theory allocation of the project's technical work via a single work-package is possible.

A stage will equate to 'slices' of the product development phases. Phases may be organised according to a waterfall or iterative (agile) approach to the products' development.

How a stage's content is oriented will make some differences to the running of the project but the project manager should be indifferent to the technical approach chosen.

The terms 'iterative', 'agile' and 'waterfall' tend to imply software development to people but the principles apply to any development environment. The terms describe options, with different strengths and weaknesses for how technical work is organised.

PICTURE OF PHASING

11.1.1.2.1 Waterfall

In 'the waterfall world' 100% of the project's results are moved together through some percentage of their development life-cycle, EG by completing "Requirements".

At their heart all development life-cycles must follow the waterfall's structure: IE determine what, then how, then do the work, assemble and test the bits, place into usage. The waterfall 'proper' just organises scope to be 100% processed in each step before moving on to the next step.

The model is sometimes drawn to align requirements and system test, design and integration test (and goal with acceptance demonstration). In these cases the arrangement of the work might be called a "V" model.

The interested reader should search for the work of the original writer to describe the approach: Winston Royce.

11.1.1.2.1.1   Waterfall Advantages

The waterfall has the advantage of being capable of producing high integrity results (IE design is performed with a complete view of the requirements). All other things being equal then competent use of the waterfall will produce solutions with the lowest management overhead and cost.

Its phased structure also allows for good quality control and clear visibility of progress. For anything other than small undertakings each phase's results need to be captured to maintain memory and thus a waterfall approach tends to be heavy on documentation 'overheads'. This in turn may be an advantage for support of total ownership IE maintenance capabilities.

11.1.1.2.1.2   Waterfall Disadvantages

The waterfall's disadvantages are that to be useable then the customer must know what they want at outset and the team must know how to build it. Perhaps its biggest weakness is that the customer doesn't get any element of what they asked for until after a comparatively long time-lag. Delivery may be the moment at which suppliers hear "that's not what I meant".

In an environment where requirements or solutions are changing and documentation is prevalent then change is expensive, awkward and typically discouraged (an ethos that affects people's thinking with phrases like 'scope creep' over-used in other contexts).

Waterfall has the highest probability of delivering nothing: IE failure tends to be 'complete failure'.

11.1.1.2.2 Iterative

In 'the iterative world' writers such as Tom Gilb, Winston's son Walker Royce, Jennifer Stapleton and recently more 'noisily' Ken Schwab and others describe an approach based on the idea of applying 100% of the development lifecycle to some small percentage of the eventual solution and then repeating the whole life-cycle for the next sub-set of total scope.

Each sub-set of the final result is developed completely. It may then be delivered into the customer's hands. Iterative approaches support exploratory requirements development that is very useful where the customer starts out unsure of their requirements.

Exploratory requirements and design allow (demand) the customer's involvement in solution evolution. Evolutionary delivery can fail gracefully: IE the customer gets something before money and will run-out, success can be 'partial'☺!

11.1.1.2.2.1   Deliver Something Early

Iterative approaches deliver something early but all other things being equal iterative methods will deliver the final result later and are more management intensive, expertise intensive and process intensive and thus more expensive (which may be the opposite of most people's impression).

Use of more management and technical effort and later final delivery results from higher demands on capabilities such as re-design in the light of evolving needs, integration of new capability with previously delivered capability and thus handling of more demanding configuration management.

Short cycle times may mean memory is less reliant on documentation: great for development but possibly less good for total-ownership costs. Evolutionary or iterative approach's biggest advantage versus the waterfall is often that at least something is delivered for the money.

The second advantage is that iterative approaches allow the customer to modify requirements as they go; great in dynamic market places, but not suited to all product types (IE those needing integrity of design such as a nuclear reactor).

11.1.1.2.2.2   More Disruption But Less Absolute Risk

As well as an ultimately higher development cost the time-frame over which business-as-usual is in an unstable transition is also extended.

Greater cost but greater certainty of at least something being delivered for the cost suits most peoples risk appetite.

All other lifecycles, EG parallel developments after interface design, are a mix-n-match of the extremes of pure iterative or pure waterfall.

11.1.2 Cycle 1: Allocation, Execution And Reporting Of A26-Work Packages

Before progress reporting can be triggered some work must be in progress. Work is delegated by the project manager in accordance with the **A16-**Stage Plan.

Allocation of fresh work is triggered:

- ➢ Initially by the project board's authorisation of the **A16-**Stage Plan (or authorisation of an exception plan)
- ➢ by the status reached by some previously assigned **A26-**Work Package(s), normally but not necessarily completion or
- ➢ a need to amend assigned **A26-**Work Packages or
- ➢ emergence of a risk cause that triggers a pre-defined contingent **A26-**Work Package to respond to consequences or
- ➢ a concern that creates a new **A26-**Work Package (within tolerances!)

Eventually all the **A26-**Work Packages will be completed and the stage will end.

A26-Work Packages and activities within **A26-**Work Packages may build products, respond to risks and concerns or measure and report on status.

11.1.2.1.1 Real Work

Project management has nothing to say about the 'true' work of the project such as brick-laying, writing software, installing warehouse lighting or supplying staff with new uniforms. Project management only expresses how the interface to that work operates to maintain control.

11.1.2.1.1.1   Teams Do Not have To Use PRINCE2®

Those receiving the **A26-**Work Packages do not have to be using PRINCE2® but they do need to agree that their interface to the PRINCE2® project manager is:

- ➢ the **A26-**Work Package,
- ➢ the **A3-**Checkpoint Report and
- ➢ the **A23-**Quality Register.

Access to the **A12-**Issue Register and **A25-**Risk Register may be direct or by 'flagging-up' concerns either verbally or via **A3-**Checkpoint Reports. The interface must also consider configuration management needs.

11.1.2.1.1.2   Configuration Management Interface

An easy approach is when one set of **A5-**Configuration Item Records is maintained across all project participants.

Otherwise each team may maintain **A5-**Configuration Item Records relevant to their work. This approach is normal with sub-contractors who supply a 'finished-item' for integration to some higher level CI (result).

Process Numbers

13 Directing a Project (DP)		
12	14 Initiating a Project (IP)	15 Controlling a Stage (CS)	17 Closing a Project (CP)	18
	16	Managing Product Delivery (MP)	

Section: 2   Page: 11.1.2:453 of 541

The supplying team (sub-contractor) models their deliverable CI as having many component parts while the receiving team models the CI as indivisible but having a life-cycle EG {acquire, test, integrate, in-service, (replacement?), disposal}.

11.1.2.2 The CS & MP Interface
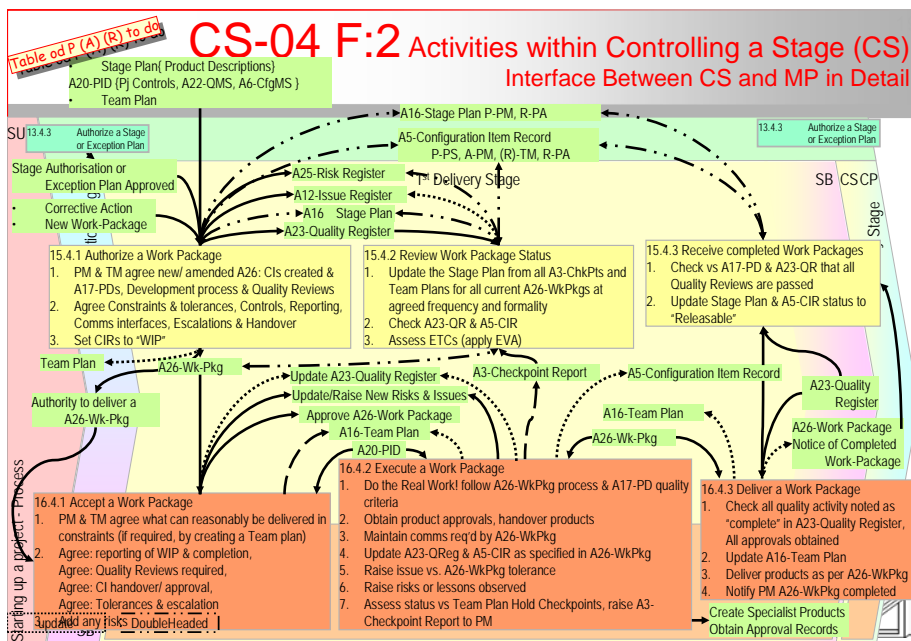
11.1.2.2.1.1 Overview: Cycle Number One

Managing the creation of CIs (project results) with-in Controlling a Stage (CS) involves three CS activities and all three Managing Product Delivery (MP) activities in matched pairs:

➢ The project manager will **[15.4.1** Authorise a Work Package] by negotiating with the team member/ manager to **[16.4.1** Accept a Work Package].

➢ The team member/ manager will **[16.4.2** Execute a Work Package] and report to the project manager who will **[15.4.2** Review Work Package status].

The team carry-out technical tasks using their skills, conduct quality control activities and periodically hold checkpoints (meetings at which they discuss status EG a daily scrum) and periodically raise **A3-**Checkpoint Reports.

Quality control activity is recorded by updates to fill-in the empty **A23-**Quality Register records created during team and stage planning.

The updates to the **A23-**Quality Register and raising of **A3-**Checkpoint Reports as work progresses allows the project manager to **[15.4.2** Review Work Package status]. Status feeds into cycle two in order to **[15.4.4** Review stage status].

> Eventually the team member/ manager will **[16.4.3** Deliver a Work Package**]** and the project manager will **[15.4.3** Receive completed Work Packages**]**.

11.1.2.3 Negotiating Acceptance Of Each A26-Work Package

Interaction between project manager who will **[15.4.1** Authorize a Work Package**]** and team member/ manager to **[16.4.1** Accept a Work Package**]** is the 'contractual' negotiation for a delegated chunk of work.

'Contract' is figurative if done 'in-house', and legally significant if the work is done under contract with another legal entity. In 'agreeing the contract' the project manager structures and delegates a chunk of work from the **A16-**Stage Plan.

Project assurance must oversee the assignment. They must confirm that the right people will be doing the right things in the right way at the right time with the right resources and skills: in this context project assurance comment upon the team's readiness for the technical activities of the **A26-**Work Package.

11.1.2.3.1.1   Balance of Work And Constraints

The work and matched constraints are considered by the team member/ manager, perhaps planned in further detail as part of their considerations and then committed to by them after negotiation of the balance of resources such as scope, skills, timescales and tolerances.

All risks must be assessed and agreement reached on whose responsibility it is to fund, respond to, and absorb the impact of threats or enjoy the opportunities. Tactical risks (related to 'how') may rest with the senior supplier(s) while strategic risks related to 'what' is to be delivered must ultimately rest with the investor.

11.1.2.3.1.2   A26-Work Package Resource Assignments

When creating estimates we grappled with several concerns that culminate in the plan containing an assignment to some one (group, subcontractor etc) to do some work in some time limit (resource limit, cost limit, quality limit etc). The assignment of time (etc) could be any of the minimum estimated, the expected estimate, the most pessimistic estimate, the 50%, 80% or 95% calculated values. But what is actually assigned (at least to start with) can only be one of these values. So which one?

11.1.2.3.1.3   Assigned A Value But Hold The 80% (Or 95%) Case

I suggest that the value first considered to be assigned to the person (group etc) doing the job is the minimum of the expected and the calculated 50% value. But not in any punitive or tricky sense, only in the sense of challenging target.

It is vital to visibly, openly assign in the **A26-**Work Package or hold in the **A16-**Stage Plan the difference between what is assigned and the chosen confidence level EG the 80% value.

The amount that accounts for the difference (EG the 30% that creates an 80% confidence level) is the task's estimating uncertainty: IE tolerance. Of course the tolerance could be equivalent to the 95% or the 99% (or 20%!) values depending on the criticality of not exceeding the appropriate tolerance.

Also note that confidence levels do not guarantee 'wont-be-exceeded'. Assessing progress will inform if tolerances are going to be under- or over-shot- and thus unused or require a 'top-up'. Also note that tolerances must have been adjusted for combining probabilities and if schedule contingencies then for float.

How to reflect the evolving status in Gantt charts and other models of the project is described while talking about tracking later *(See X on Y)*

11.1.2.3.1.4   The **A26-**Work Package May Be Largely Cross-References

Much of the description of the 'chunk of work ' or 'contract' in the **A26-**Work Package is likely to be cross-references. In part to the **A20-**Project Initiation Document for strategies and control procedures, the project's Product Breakdown Structure (PBS) and Quality Management System (QMS) **A17-**Product Descriptions for results to be delivered and associated quality criteria that apply, also the **A16-**Stage Plan for timescales and resource allocations.

11.1.2.3.2 Sub-Contractor Visibility

Shockingly the official manual suggests that commercial arrangements may make it inappropriate for the project manager to see the team member/ manager's plan. Sensitivities might veil things such as trade-secrets and profit margins but must never hide the baselines against which progress will be monitored.

SOOP-204.   Never agree a commercial contract where there is no transparency of supplier progress! If they have a legitimate argument for not sharing details of the schedule, task-measures and reimbursable costs then insist on the use of Earned Value for the reporting regimen and a penalty clause in the contract for dishonest (and just inaccurate) reporting.

11.1.2.3.2.1   **A26-**Work Packages Must Deliver A Result

Every **A26-**Work Package must deliver at least one identifiable result or its costs have no justification.

The result delivered must be necessary to realisation of the investment and recognition of the results must be as close as possible to objective and indisputable. Accepted delivery equals supplier obligation discharged.

The result may be physical or not, so 'culture change' or 'service improvement' or 'project status update' must be rendered assessable. (There are many sources of guidance on how to make things assessable: see for example topics such as hedonistic pricing, authors such as Tom Gilb's work on taxonomies for qualities such as 'reliable' for good parallels, measures of customer service such as 'Keeping Score' ISBN-10   0-8144-0327-1 or 'Delivering Quality Service' ISBN-10 0-02-935701-2 or HM Treasury's Green Book.)

11.1.2.3.2.2 *A26-Work Package Results May Not Be Final Products*

The product that results from each **A26-**Work Package may stay within the project. For example it might be a design schematic drawing to be received by an electrical engineer who will use it to install warehouse lighting circuits. Alternatively the product may be handed over to the customer. For example: the working lighting system. The design may also be a deliverable, in this case to maintenance staff.

11.1.2.3.2.3 *Understanding Needed*

In the Delegate/ Accept dialogue it is essential that the project manager and team member/ manager are clear on the responsibility placed on the specialists in terms of:

➢ product acceptance criteria (traceable back to senior user(s) expressed needs and wants and the sponsor's willingness to pay),
➢ how to gauge progress (IE how to use the estimates),
➢ how to escalate concerns, and
➢ that the project manager remains accountable for the delegated work.

   IE the project manager has the obligation to 'provide' resources and lend their weight to the resolution of the team's issues.

11.1.2.3.2.4 *A26-Work Package Product Description*

Allocation of work may be done verbally, in writing or any other means agreed by the parties. A commitment is always required although a contract recognised by a court may not always result.

Each **A26-**Work Package might contain or at least cross-reference: {

➢ Document control details
➢ A description of the result required

   Description of the state of the world after the **A26-**Work Package is complete covering all aspects required to discharge the obligations of the person authorised and the person authorising

➢ Details of the team manager or person [or legal entity] authorised by the agreement to the **A26-**Work Package
➢ [Details of the source of the authority granted]
➢ Confirmation that constraints and tolerances on resources and costs and scope and quality and schedule and health, safety and environmental concerns and all other factors of significance are realistically balanced
➢ Agreement on the frequency, timing and contents of the reporting and escalation regimen
➢ Agreement on the thresholds and procedures for issue and risk management activities that maintain balance between objectives and constraints
➢ A description of the actions to be taken to achieve the result.

   All parties need sufficient clarity of the end-point to discharge their responsibilities and to be able to participate in the reporting and control

regimen. Not all parties have to have clarity of how the result will be achieved. Dependant on contract type (EG based on Statement of Outcome or Statement of Work) then details cover none, some or all of:

- All techniques or procedures needed to carry-out the processes to make or buy and then prove the required result: probably a cross-reference to a Quality Management System (QMS)
- All tools and resources needed and who supplies each
- All product standards or process standards to be used

  For specialist products a custom **A17-**Product Description should have been created in **[12.4.4** Prepare the outline Business Case] or **[14.4.6** Create the Project Plan] or **[17.4.1** Plan the next stage] for each configuration item.

  For project management products the product (and process) descriptions should be as embedded and tailored from the product descriptions noted throughout this manual (EG the **A20-**Project Initiation Document or a combined **A12-**Issue Register and **A25-**Risk Register). Additional, local management products should have a product description based on the Appendix A template for product descriptions IE **A17-**Product Description.

- All constraints imposed of any sort

  If no constraint is imposed on some factor then it is literally out-side of controls and should be expected to be a variable whose value is determined consequentially during planning or execution of the **A26-**Work Package

- Cross-references to or extracts from **A16-**Stage Plan and **A20-**Project Initiation Document content such as the **A22-**Quality Management Strategy, all other relevant documents such as **A21-**Project Product Description and Product Breakdown Structure (PBS), all **A17-**Product Descriptions.
- Details of who (person, role or entity) is authorised to grant final approvals and how final approvals are sought and granted

➢ The procedures for configuration management during the project and at hand-over to the customer operations and maintenance of the product and possibly related specifications, designs, manuals, maintenance and testing paraphernalia.

- Arrangements for access to **A17-**Product Descriptions for interfacing products
- How and where physical and digital CIs are stored
- Who to advise at each maturity point (milestone or inch-pebble) in the development of the product's advancing status (These are in the **A26-**Work Package as specific to the project rather than the **A17-**Product Description which could be reused from the QMS across projects.)

[The next two entries are not from the official manual. They are my recommendations. I think they are the most important items for agreeing that the **A26-**Work Package is achievable within constraints and for tracking progress.

➢ If not covered in the **A17-**Product Descriptions relevant to the **A26-**Work Package's scope then:

- All estimates related to any aspect of the **A26-**Work Package's scope
- The means by which progress is recognised, EG the Earned-Value-Type to be used to claim progress versus baseline and each maturity test that demonstrates value earned. *See X on Y Earned Value*

]

➢ All compatibility criteria related to the product's acquisition, integration to higher level CIs and handover to business-as-usual.

IE all interface specifications and protocols relevant to development or acquisition, all criteria for testing and handover, all criteria to ensure compatibility in through life operations and maintenance

➢ All communications interfaces related to the **A26-**Work Package or a cross-reference to the **A4-**Communications Management Strategy.

Including: who provides what information to who, when, in what format during development or acquisition, testing and perhaps hand-over, operation and maintenance. Particularly:

- Frequency, timing and attendance at checkpoints and of **A3-**Checkpoint Reports sent to the project manager by the team member/ manager
- The means and thresholds for escalation of issues, threats and opportunities
- The means to Inform the project manager that obligations established by acceptance of the work-package have been met
- Any staff performance appraisal, or career development communications for activity assigned to individuals whose line-manager is not the project manager

}

11.1.2.3.2.5   *A26-Work Package As Checklist*

The **A26-**Work Package Product Description should be a checklist for most in-team assignments that confirms the relevant sub-sections of the **A20-**Project Initiation Document and Quality Management System (QMS) and estimating metrics are mutually understood.

11.1.2.3.2.6   *A26-Work Package Planning*

Creation of the **A26-**Work Package and **A23-**Quality Register entries may have happened in detail or in outline when the current **A16-**Stage Plan was created.

Detail may be added to (or subtracted from!) the **A26-**Work Package as part of the activity to **[16.4.1** Accept a Work Package]. Details may be written or verbal.

However and whenever derived the more complete and well confirmed between project manager and the team member/ manager when work is assigned the higher the probability of **A26-**Work Package success.

11.1.2.3.2.7   *A23-Quality Register Entries*

Team level planning will verify (or amend or create) the set of quality control records in the **A23-**Quality Register that define the quality reviews that must be successfully undertaken during the work-package. Quality reviews should link to estimating and progress tracking as discussed later. ***See X on Y***

11.1.2.3.3 Clarity of Delegated Obligation

Each **A26-**Work Package may cover work related to more than one product being created or transformed through one or more life-cycle steps.

SOOP-205.   The crucial factor in delegation of work is not size of work but that the criteria by which obligation is met are clearly agreed by both parties.

In the channel tunnel project boring the tunnel may have been a single work-package and in the Apollo moon-shot building the Saturn V rocket may have been a work-package.

In these cases the 'team-plan' as seen by the overall project manager is a very extensive 'programme-plan' in the hands of the "Bore Tunnel" or "Build Rocket" 'team' manager.

11.1.2.3.3.1   *Self-Similar: When Is The **A26-**Work Package A Project?*

The **A26-**Work Package could be a whole new PRINCE2® project to the receiver. The **A26-**Work Package should in this case be a perfect project mandate or even a perfectly formed **A20-**Project Initiation Document.

The 'new PRINCE2® project' thus passes through its own SU and Initiation Stage as part of discussions to **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package]. The sub-project's SU and Initiation Stage may only need to confirm the completeness of the received commission and so may be almost instantaneous.

Upon acceptance by the technical staff of the commission from the project manager then the technicians **[16.4.2** Execute a Work Package**]**.

11.1.2.3.3.2   *Well Defined **A26-**Work Package: Build Rocket – Big But Clear*

Imagine the further delegated **A26-**Work-Package 'Design Rocket' for the product 'Rocket' with perhaps a 3 year timeframe on delivery of the rocket. Build-Rocket could be a suitable work-package from 'Moon-shot' project manager to rocket-building-team manager and 'Design-Rocket' is a suitable **A26-**Work Package to the chief engineer.

The acceptance criteria can be very clearly stated "the design will be capable of being built within 36 months of today and when built will carry a man to the moon and back".

Any **A26-**Work Package's decomposition on receipt by a 'team manager' may be just a task list or may be sub-products and sub-projects below the delegating project manager's view of detail.

11.1.2.3.3.3   Start Design – A Small Unsatisfactory *A26-Work Package*

Now imagine the product "Engine Design" that is delegated in two work-packages named "Start Design" and "Design finalisation". These are probably unsuitable work-packages: one appears not to deliver a complete item while the other starts from a poorly defined point.

More suitable work-packages might be "Thrust Calculations", "Fuel-Mix-Experiments", "Combustion Chamber Design", "Fuel-Pump and Delivery Design", "Engine Design Element Integration".

If clarity of delivery is missing the **A26-**Work Package is wrongly defined and must (normally) be reworked.

11.1.2.3.3.4   Reality

The end criteria can be "When we run out of money" and is in some research and development and agile projects! The end criteria can be "to be decided" so long as all sides understand who carries the risk if a fixed cost and date are attached to an undefined scope.

11.1.2.3.3.5   It Is Best If 'Clearly Agreed' Also Means Clearly Defined

The **A26-**Work Package's specification should match the project manager's and team member/ manager's needs for rigor and completeness – verbal and vague could be OK (but isn't recommended!)

SOOP-206.   It is the team member/ manager's job to say how to meet some output's specification –IE generate the effort portion of estimates; the project manager's to collate what is known and unknown into budget and scheduling options with allowance for uncertainty and the exec's (sponsors) job to decide affordability, acceptance of uncertainties and whether politics overrides 'engineering and rational calculation'.

Each management level delegates objective and constraints, listens to reflection of costs and timescales and agrees to allow the lower-level to proceed or changes the project's context in some manner and requests re-planning. The cycle repeats until an acceptable balance is reached.

11.1.2.3.4 Responsiveness of Imposed Controls

Control needs do not relate to **A26-**Work Package size. The size of a work-package is what-ever the project manager and team member/ manager agree is appropriate.

*SOOP-207.   The crucial factor in establishing **A26**-Work Package controls should not be consideration in terms based on the duration of the task, but in impact of error and time to remedy terms.*

11.1.2.3.4.1   **A26-**Work Package Reporting Horizons

The key factor for setting reporting horizons is that status is understood soon-enough to take advantage of windfalls and address negative concerns.

For the work of an individual undertaking a task that does not have good precedence and interacts with other tasks one day or even one hour may be an appropriate maximum size.

11.1.2.3.4.2   A Week by Default

Sometimes work is known to require close monitoring and responses on stand-by. In other cases a rule of thumb as a start point might be that one staff week's effort is the upper limit for work assigned to a trades-person that will not be further delegated.

For work they are unfamiliar with (IE consciously competent or "I have to think about this") shorten the time between quality control activities and use frequent reporting. Each time reporting is performed the task should be re-quantified in the terms used to construct the estimate. A new cost and duration should be generated and that should be applied to Gantt chart, resource profiles and cash-flows. If significant the update should appear in revised **A2-**Business Case NPV calculations.

11.1.2.3.4.3   Crafts-People Need Less Controls

For work where the team member/ manager is very familiar with and thus will avoid mistakes and easily correct concerns then loosen control (IE a skilled crafts-person who is unconsciously competent).

Allowable **A26-**Work Package size and reporting intervals can increase and even be removed altogether for those with skill working in a blame-free environment. They will report any exception if needs be, and often report it early.

For work with physical and 'incremental' results such as brick-laying again 'loosen' control by increasing allowable **A26-**Work Package size and lengthening reporting periods where they can objectively assess what is achieved.

For intellectual tasks or those that don't deliver incrementally (IE the last element delivered is required before the first element is of any value) tighten controls. Also tighten controls when let-down by any team member/ manager's performance.

11.1.2.4 Technical Work and Its Oversight

What ever the business and technical scope of the project the project manager's concern is the monitoring of status and the reactive adaptive, perfective or corrective actions required to deliver the best results possible.

The project manager's perspective must be focussed on

➢ "how do we judge achievement?" a key tool is the use of Quality Reviews during **[16.4.2** Execute a Work Package] and

➢ "how do we describe progress achieved versus baseline?": a key tool is Earned Value Analysis during **[15.4.2** Review Work Package status].

Using earned value is a philosophy. 'Know what "done" means and when achieved': sadly most explanations start with (and worse also end with) arithmetic that overwhelms most people before they can embrace the behaviours required to extract the meaning and power of EVA.

11.1.2.4.1 [16.4.2 Execute a Work Package]

When authorised to start each **A26**-Work Package the team members work on creating the products, quality reviewing the products and reporting status.

The technical staff execute tasks as defined by their skills, the Quality Management System (QMS), the **A26**-Work Package (and **A17**-Product Description) and the tests in the **A23**-Quality Register that were previously agreed to determine achievement.

The control focus is on staying within tolerances and maintaining all communication interfaces defined in the **A26**-Work Package.

When all tests are completed satisfactorily (or waivers obtained) the products are handed-over either to project configuration management otherwise to business-as-usual. The team member/ manager **[16.4.3** Deliver a Work Package] back to the project manager to record progress achieved, and the relevant **A5**-Configuration Item Records are updated.

11.1.2.5 Status of Work In Progress

While the **A26**-Work Package is work-in-progress the team tracks progress and reports status to the project manager who will **[15.4.2** Review Work Package status].

11.1.2.5.1.1 Monitor And Transparency

SOOP-208.   Tracking progress is often poorly done; it doesn't have to be. Reliable tracking starts with good estimates (package not number), uses a number of techniques to ensure reliable assessment of status and depends totally on honesty and transparency.

Reliable status tracking results when leadership establishes a culture of tracking what has ACTUALLY happened and of diagnosing the reasons for variances. Any project that shoots the messenger or searches for blame over reason-for-variance guarantees results recorded from then on will match the baseline not the reality. Eventually the build-up of hidden tensions will cause an earthquake.

11.1.2.5.2 Tracking Progress

For the supervisor, team manager or project manager to be in any form of control during each reporting period a verifiable result from effort spent must be demonstrable against defined, preferably objective criteria.

The safest but crudest rule is 'If it ain't finished then no progress, only cost can be recognised'. IE recognition of value on objective and binary demonstration only.

In Earned Value terms this is the Zero-100% rule. Arguably this means of recognising achievement is always 'best' for the customer as it has no possibility of false progress reporting. It is an extreme at one end of the spectrum.

11.1.2.5.2.1 *Zero-100% Progress Recognition*

Where an assignment is planned to start and complete within a reporting period such as a week or a day (or a year!) then the use of "not finished, costs recognised but no progress credited" is safe, fair and reliable. Each period that delivers as planned will be able to report achievements to offset costs incurred. Periods that don't perform to plan will show a variance.

Where work is planned to span reporting periods then the 0-100 approach is undesirable. Progress reported at period close will be zero while costs will be as actually incurred – normally non-zero.

11.1.2.5.2.2 *Percent Complete*

Where it is possible from indisputable physical demonstration to assess status another option exists: a percent complete can be calculated. This is the opposite extreme to zero-100%.

SOOP-209. Tracking progress by 'percent complete' is only safe in physical and incremental tasks which includes brick-laying but eliminates all intellectual work such as 'design' and especially software.

Where work delivers an intellectual results or is of an 'only usable when the last item arrives' type then the only safe, if harsh assessment is 'Finished': milestone achieved.

11.1.2.5.2.3 *Percent Complete Is Calculated From The Original Estimate*

SOOP-210. Only ever calculate percent-complete from observation of results provably completed versus original allowances. NEVER accept an assessment of percent complete without an audit trail traceable to the contents of the estimates used to construct the baseline budget and schedule.

SOOP-211. It amazes me how many projects equate budget spent (EG in staff hours and materials consumed) to progress. PROGRESS is NOT linked to hours booked to a cost-code. Timesheets are utterly useless for gauging progress – although they normally translate fairly faithfully into cost incurred.

11.1.2.5.2.4   Quality Review Based Assessment

After '100% complete' and 'physically assessable percent complete' the only means left to assess evolving product maturity is by carrying out quality reviews. ***See X on Y for a full discussion of quality reviews.***

For development tasks that span reporting periods intermediary reviews (inch-pebbles) such as an outline design review and detailed design review may be defined and agreed to demonstrate that some percentage of the whole result has been achieved. A percent-complete value for each inch-pebble on the way to a milestone should be agreed when establishing the estimating package.

To gauge progress satisfactorily the reviews and inch-pebbles chosen must fairly reflect the cost and results of life-cycle steps that chart a product's evolving maturity towards delivery.

Also choice of review points must balance the review's own costs with what the project can afford and with the detail demanded by the project board for project control and thus safe delivery.

Note: passing the 'Outline-Design-Review' might equate to and rescue 'finished Start-Design, now start Design-Finalisation' that were rejected as good **A26-**Work Packages earlier.

11.1.2.5.2.5   Assessment Between Quality Reviews

The view of achievement along a product's development life-cycle through scheduled interim quality reviews as just discussed can be used to provide an audit trail that allows intermediate claims of valued earned: inch-pebbles achieved. There are perhaps two modes of use:

11.1.2.5.2.6   Allow or Dis-Allow Interim Claims

Broadly between inch-pebbles we may take a harsh view of claims or a percent-complete view:

➤ Inch-pebble/ Milestone-Based and no more

  The next safest rule after zero-100% is to allow credit to the value of the last review passed and no more. The supplier side of the project may feel this is unfair if work-in-progress has incurred cost that is not now visible in claimable achievement: particularly if progress is linked to an interim mile-stone based payment regime.

➤ Percent-Complete-With-inch-pebble/ Milestone Limits

  Next safest is to allow all claims of progress up-to BUT NOT EXCEEDING the value of the next quality review due.

  If work continues beyond a review point without having passed the review yet then achievement that can be claimed is capped at the value of the review due. Even that value is only claimable if an estimate-based audit trail exists to support the claim.

11.1.2.5.2.7   Cost Accrual

In all cases described so far independently of the achievement claimable the costs incurred should be recorded as and when any commitment is made (as amended by any local finance function's policies). In general as soon as it is known that 'we will have to pay at some point' even if payment is not due till later. EG next payroll run or 30 days after receipt of invoice.

Whether costs are recorded in money or resources (staff-hours and raw-materials) or both will depend on local reporting standards, but beware of unmatched variances if hours and money are used in different parts of the business whenever pay-rates, indexations or interest rates change.

11.1.2.5.2.8   Higher Level **A26-**Work Packages

Armed with suitable mechanisms to recognise progress really achieved then **A26-**Work Package sizes can now safely grow beyond the lowest level technical, indivisible trades-person's work to be as large as the parties wish.

A26-Work Package size is irrelevant provided that all bottom level effort in the **A26-**Work Package delivers a result verifiable by one of the assessment approaches given above and all upward reporting is honest.

11.1.2.5.2.9   Aggregation of Results

The ONLY place that the gathering of progress data can happen is 'at the coal face' with the technical resources performing the lowest level of work. All higher level progress assessment is an aggregation and synthesis of lower level results.

SOOP-212.   Corruption of honest data can happen at any level. Any and all corruption of status data at lower levels destroys the ability of higher levels to manage.

Most corruption of data is incentivised by inappropriate estimating behaviours and conducting blame-storms rather than sessions directed towards Learning-from-Experience.

11.1.2.5.2.10 Progress Data Migrates Upwards

Status is reported upwards via **A3-**Checkpoint Reports to **[15.4.2** Review Work Package status**]** in which project support or the project manager update the **A16-**Stage Plan to reflect their contents. The team plan, if separate from the **A16-**Stage Plan is updated first.

Either way the **A16-**Stage Plan must record what HAS happened and must be updated for what we intend to do next in the light of reality.

The evolving record of project status is used in the second cycle with-in Controlling a Stage (CS) which will **[15.4.4** Review stage status], **[15.4.5** Report highlights] and may **[15.4.8** Take corrective action]. Status may trigger **[15.4.1** Authorise a Work Package] or herald normal or abnormal stage or project closure.

11.1.2.5.3 In-Team Status Sharing

A ten minute daily chat (checkpoint meeting) between team members and their team manager or project manager may a good starting point for gathering status assessment and agreeing actions in the coming day.

11.1.2.5.3.1   Raising **A3-**Checkpoint Reports

A Checkpoint is a team meeting to discuss team internal status. IE a team or team member taking stock of their current status. Checkpoints are held at a frequency defined in the **A26-**Work Package or amended subsequently. Checkpoints give rise to **A3-**Checkpoint Reports.

The team manager may chat on a daily basis with the project manager to **[15.4.2** Review Work Package status]. Perhaps a weekly **A3-**Checkpoint Report email serves as a summary and an audit trail.

SOOP-213.   The project manager is expected to give support or take action on the contents of chats with any stakeholder: the written version of any report should serve as 'confirmation' and audit trail not trigger.

The principle of 'discuss and act, written is for the record' applies at every level of interface between management levels in any size project. 'Chats' are likewise significant with the team manager on behalf of their team members or exec on behalf of the project manager. Timeframes will vary based on topic and where in the project we are: daily may be too frequent once a stage is planned and before it is ready to deliver. At delivery daily is often too infrequent.

Concerns and bad news should be communicated immediately in 'face-to-face' discussion even if that is actually a phone-call or a Lotus Sametime/ ICQ instant message. Reports should be the confirmation and record not the means of first point escalation.
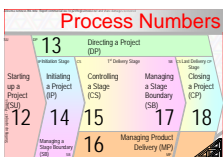
11.1.2.5.3.2   Routine Reporting

A3-Checkpoint Reports are unusual things in a PRINCE2® context: first they are one of only two time-driven rather than event driven elements (the other is the **A11-**Highlight Report), second they include discussion of technical activity rather than just product based achievement.

Current status should be discussed regularly in team checkpoints. If the team discover a risk, or a tolerance breach or a tolerance threat then they raise a risk or issue to the project manager who may **[15.4.8** Take corrective action] or **[15.4.7** Escalate issues and risks] to the project board.

11.1.2.5.3.3   Designing EVERY Progress Reporting Regimen

My recommendation is that when reviewing status in any hierarchical and ongoing reporting structure you should apply an 'overlapping reports' approach. Each report should state what is intended 'next-period'.

'Next period' illuminates the 'road-ahead'. In this manner it is possible for a hierarchical management structure to maintain control of the work planned and conducted by direct reports and levels below.

Whether looking at a **A3-**Checkpoint Report, **A11-**Highlight Report or some other level the recipient should have last periods and this period. Each report should explain what the status of last period's 'next period' is: either done, outstanding and not significant or outstanding and significant(and hopefully already known about!)

PICTURE

11.1.2.5.3.4   *A3-Checkpoint Report Product Description*

The checkpoint report might contain {.

➢ Document admin such as production date and period covered
➢ Follow-ups to previous action items, particularly where project manager assistance is needed
➢ This period

Products worked on/ Products completed/ Quality activity/ Lessons observed

- Stuff not done to plan (missing, wrong, extra) and not material (EG within float) and why it was done and planned remediation ('Return to Green Actions')
- Stuff not done to plan (missing, wrong, extra) that is material, why and remediation: this should be confirmation of chats not initial notification

➢ Next period intentions

Remediation activity, Products to be worked on, Products to be completed, Quality activity planned

➢ Work-package status summary. Including:

- tolerance situation
- issue and risk summary
- lessons observed to be shared.

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11.1.2.6 Assessing Status: Quality Reviews

A Quality Review should seek to find three things:

1. What is missing
2. what is wrong and
3. what is extra
4. 0.

The detection of 1) and 3) are via traceability. 3) is the detection of Scope-Creep.

The three questions of 'missing, wrong, extra' are crucial at every hand-over. If asked and answered at every in-project handover then projects will eliminate

creep and be in control of faster-better-cheaper trade-offs. Note 'Scope-Creep' is only one form creep.

11.1.2.6.1.1   Tracability

PICTURE - Tracability.

Missing wrong and extra are assessed by matching each **A26-**Work Package's outputs to its inputs, process specification and **estimates** as defined in relevant **A17-**Product Descriptions and linked to customer and supplier Quality Management Systems (QMS) and the project's **A22-**Quality Management Strategy.

The ultimate source of the review's inputs is the customer's needs as traced from the project mandate, **A19-**Project Brief and eventually the **A20-**Project Initiation Document { Project definition { Project objectives and desired outcomes, Project Approach,… }, … **A16-**Project Plan, … }.

The **A17**-Product Descriptions and **A26-**Work Packages will specify the product standards and development process standards that were identified as relevant during **[14.4.3** Prepare the Quality Management Strategy**]**, **[17.4.1** Plan the next stage**]** and **[16.4.1** Accept a Work Package**]**.

11.1.2.6.1.2   Eliminate Extra

The quality review's purpose at item 3) 'Extra' is the most important: it is critical for project achievement of success criteria.

At item 3) 'extra' the team's aims is to detect when a project product (EG a specification or design) has grown beyond the work-level used in estimating subsequent **A26-**Work Packages. EG a design group is expecting 500 pages of specification and has allocated 500 staff hours of effort to create manufacturing drawings. In review the specification is found to have grown to 1,000 pages by the addition of refinements and embellishments over what is called for in the **A21-**Project Product Description.
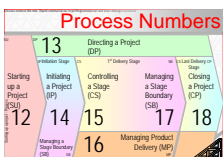
11.1.2.6.2 Scope creep

Competence at item three 'extra' is the detection and if desired then the elimination of scope creep.

11.1.2.6.2.1   Scope Creep is a Symptom of Good Team Building

*SOOP-214.   The majority of scope creep is caused by a well motivated specialist team. Great teams attempt to do the best job possible. As a result they expand their outputs and thus the amount of work required from all **A26-**Work Packages after them up-to delivery.*

SOOP-215.   The time and resources to create scope creep come from inappropriate estimating behaviours. Failure to detect scope-growth as it happens comes from not tracking progress via or back to the estimates.

Failure to detect scope-growth after it has happened is failure of quality review at hand-overs.

11.1.2.6.2.2   Un-Detected Creep

Development of scope creep occurs when the senior <u>user</u>(s) and senior user(s)'s project assurance fail to exercise their duties correctly (and arguably the senior <u>supplier</u>(s) and senior supplier(s)'s project assurance are also lax).

That they are to blame is of little interest: but WHY is important to understand so check: did they not know what to look for (growth in the driving values in the estimate's contents)? or did they not have the time to check?, the inclination? or the data?

SOOP-216.   The best in-project review team includes the recipients of the outputs who have self-interest that their inputs are of appropriate quality and match the start-point of their estimates.

*They should be explicitly tasked to compare the **A26**-Work Package under review's outputs (which are their inputs) with driving factors in their own estimates. Elimination of extras is pivotal to success: understanding of how to estimate (See X on Y) combined with the SIPOC (Supplier, Input, Process, Output, Customer) tool plus AON networks (See X on Y) and RACI charts (See X on Y) facilitate management of creep effectively.*

Equally ensuring adequate content of each CI on the way to the final CI or to be integrated into the final solution is pivotal to successful acceptance of the project's final outputs.

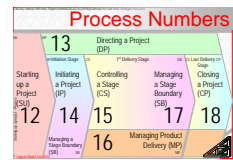### 11.1.2.6.2.3   Customer Led Change Should Be Easily Controlled

Aside from the political dimensions of customers wanting to see suppliers as "flexible, valuable partners" who can be bullied into something for free in the interest of "relationship" customer driven scope creep should be easily corrected by applying impact analysis to revise the faster-better-cheaper-etc baseline and thus maintain balance between constrained-controlled-consequential factors.

SOOP-217.   Creep caused by a failure to record, re-plan and re-price work arising from customer requests is either a failure of competent change control or the cost of politics.

If the customer can 'persuade' the project board (sales function) to include 'freebies' the project manager must still re-plan the project's schedule and resource profile to re-establish constrained-controlled-consequential balance and demand a fresh internal contract.

SOOP-218.   Politics may override rationality, price may be flexible but true cost of scope divided by resources must still be in the baselines.

SOOP-219.   Project managers assemble details of costs, even under conditions of uncertainty but price is determined by emotion, politics and psychological.

11.1.2.6.2.4   Trade the Extra

There are many possible responses to creep in scope: for the supplier the 'best' one might be to secure more money and time from the customer! For the customer the 'best' solution is probably to remove 550 (sic!) pages of embellishments before the next **A26**-Work Package starts.

Removal may also be expensive and both the initial inclusion and now the removal should be accounted against funding by the supplier.

Often elements of the extra can be 'sold' to the customer as a trade-off against Off-Specifications for concessions.

If creep is left in the project without re-balancing the base-line then the probability of failure is compounded at each phase boundary (sic – not necessarily stage boundary) and handover.

If the 'extra' is considered for retention then the rest of the project must be re-budgeted and rescheduled and thus the **A2**-Business Case investment appraisal and project justification reconsidered.

11.1.2.6.3 Two Levels of Quality Assessment

Checkpoints are dependant on assessment of status. Whatever status measurement techniques are applied 'in-project' assessment can perhaps be performed at two 'levels':

1. the trades-person who is competent applies skill and care to their work as they carry it out. The trades-person's actions might be called quality control "QC",
2. the independent assessment by third-parties such as project assurance and other experts who also review the results. The third party's participation might be called 'Quality Review': it is still QC.
3. 0.

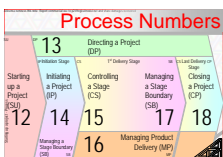*Quality review is described below See X on Y*

Both of these assessments might be described as 'in-process' and as 'verifications' that confirm <u>conformance to specification</u>: inputs plus process definition matches outputs and vice versa. Built-it-right.

A third form of assessment might be the senior user(s) confirming the products are <u>fit for purpose</u>. This might be described as 'post-process' and 'validation'. Built right thing.

A fourth form of assessment might be quality assurance assessing the audit trail from verifications and validations to confirm the levels of QC are in use and are useful.

11.1.2.6.4 Quality Control (QC)

As the technicians create, acquire, amend and integrate elements of the project's outputs they perform the verifications that the A-17 Product Description and

Quality Management Strategy state are required to achieve conformance to specification (and perhaps fitness for purpose).

The tests performed by the technicians and trades-people should directly prove achievement of the acceptance criteria captured during sessions with senior user(s).

11.1.2.6.4.1 Product Maturity

As each quality control is enacted its results are recorded in the **A23-**Quality Register. Tests passed advise the configuration librarian (who could be the person assigned the Project support role or the Project manager or Team manager) to revise the **A5-**Configuration Item Record for the verified progress that has been made.

'Verified progress' means auditable achievement in product terms: zero-100%, or estimate-auditable-percentage. Progress is consolidated to update the **A16-**Team Plan and **A16-**Project Plan and create the **A11-**Highlight Reports.

Projects using Earned Value Management (EVM) Earned Value Analysis (EVA) will base recognition of achievement via EV-types such as percent-complete with mile-stone limits on the evolving results from quality reviews. *EVM is explained shortly*.

11.1.2.6.5 When Not Yet Finished

Many quality reviews will confirm a product is progressing but is not yet finished.

11.1.2.6.5.1 On-Plan

If a checkpoint or quality review reveals all is 'on-track' but not yet finished and there are no intentions to change plans then the team member/ manager should carry-on as they are.

It may be that we are on-plan and a change is still desired and that may be within or out-with tolerances. *We will cover change of circumstances shortly*.

11.1.2.6.5.2 Off-Plan

Where performance variances exist the team member/ manager or the project manager must forecast if the **A26-**Work Package will finish ahead of, on or behind plan, and then whether within or out-with tolerances.

The results of reviews might also be made available to improve future estimating performance.

11.1.2.6.5.3 Systematic Variances

Where variances are systematic then the ratio of actual team performance versus expected cost and schedule recorded in the agreed base-line should be applied to every affected **A26-**Work Package (which might be in the **A16-**Stage Plan and other team's **A16-**Team Plans).

Systematic variances can be applied as a multiplier to future resource allocations, task schedules and cumulative cash and other resource flows in order to adjust them.

11.1.2.6.5.4   One-Off Variances

Where variations have been 'one-off', EG foreseen or unforeseen events (±) have occurred, then cost or schedule to date plus remaining work at baselined efficiency should be used to forecast current and future **A26-**Work Package cost and schedule at completion (by team member/ manager or project manager in the **A16-**Team Plan or **A16-**Stage Plan.)

11.1.2.6.6 When Products Are Finished

As products are confirmed finished by in-process quality assessments they will eventually be reviewed for approval by the authority defined in their **A26-**Work Package or **A17-**Product Descriptions.

11.1.2.6.6.1   Product Delivery

When the technical team consider technical work on the **A26-**Work-Package is over the team member/ manager:

➢ Check they have done everything they **still believe** they should have!
➢ That quality control actions are complete and recorded in the **A23-**Quality Register
➢ The **A16-**Team Plan/ **A16-**Stage Plan is up to date
➢ The **A5-**Configuration Item Record is updated to record a status of 'frozen' IE change prohibited at least to the version under review and then…
➢ Obtain product approval from whoever the **A26-**Work Package defined as the acceptance authority

   If Off-Specifications exist then either the team applies corrections, raises a Project-Issue or secures a Concession from the acceptance authority.

➢ The product is either handed-over to 'in-project configuration management' or other recipients in order to **[16.4.3** Deliver a Work Package] as directed by the **A6-**Configuration Management Strategy and the instructions in the **A26-**Work Package.

   At project end **[18.4.3** Hand over Products**]** will confirm that all acceptances have been secured and all deliveries have been completed.

11.1.2.6.7 Next A26-Work Package

As each **A26-**Work Package is completed (or reaches an appropriate trigger point) so the project manager allocates the next chunk of work to the relevant team(s). The cycle of receive, execute, hand-over work may be running concurrently in several technical teams.

Sooner or later the supply of work packages in the stage plan is exhausted. Either because we have reached end of project or a stage boundary.

11.1.2.7 Quality Review Procedure

Effectiveness of quality reviews is improved by defining and agreeing roles and steps by which they may be conducted. The thinking described in the official manual is document centric but can and must be applied to review of any project CI, whether management or specialist, document, physical item or even conceptual result.

11.1.2.7.1.1   Baselined and Frozen Under Change Control

Once products are ready for quality review they are marked in configuration management as 'frozen'. Frozen means that the CI's content is stable during the review period.

Digital CIs may undergo change in different versions but physical CIs will only be available for further development (or rework) once the review has assessed them.

In all cases once a product is ready for quality review the portion of project budget for the **A26-**Work Package that brought them thus far is now closed. Further work from the **A26-**Work Package's budget can only be undertaken on this life-cycle step if it is remedial activity following the quality review or if new work is authorised as a project issue (requiring project board / change authority permission).

Further steps in the product's life-cycle will be funded from future **A26-**Work Packages.

11.1.2.7.1.2   Multiple Subjective Assessment

Reviews of intellectual work typically use multiple expert opinions and contrast their degree of agreement or not. Multiple opinions is not objective but is often the best we have [and is described by the official manual as objective].

Better opinions are expressed when assessment criteria are pre-defined. Perhaps during estimating or defined during creation of QMS standards that were input to the estimating process.

Best opinions are arrived at after some degree of disagreement, thus challenge, debate and transparency in the assessment. Generally reviews are reliable if performed by skilled people who are willing to constructively debate their opinions.

Quality Reviews at key points in the developing maturity of intellectual products establish what level of achievement has been delivered (but watch-out for 'group-think': a group's ability to self-reinforce what is plainly daft when seen with fresh eyes).

11.1.2.7.2 General Conduct Of A Quality Review

General conduct is:

1. Produce the product to the specification of the **A17-**Product Description.
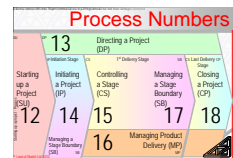
Technical products are created by specialists as they **[16.4.2** Execute a Work Package**]**.

The project management products are all created in the activities of the **7** processes such as **[14.4.7** Refine the Business Case**]**.

2. Share the product's **A17**-Product Description and access to the products with the reviewers to inspect or test and raise question and suggestions.

3. Gather comments, collate comments and decide the responses required to address comments

4. Meet to discuss responses to questions and agree actions

   Record actions agreed and actions to resolve disagreements

5. After the meeting implement all agreed actions and resolve disagreements about actions required

6. Confirm closure of the review actions or raise project issues for unresolved and incomplete actions.

7. 0.

11.1.2.7.3 Quality Review's Purpose

SOOP-220.   Quality (or Gate) reviews are frequently seen as "have we done everything we said we would?" <u>This is the wrong question</u>.

There are two correct questions for a review 1) "Is it safe to move on?" and 2) "Have we done what we would say today is required?"

11.1.2.7.4 The 10% Guide

SOOP-221.   Often if the answer to a Quality Review is 90% "yes" then moving on is justified. It is the answer to the next question that is important: "does the 10% that is missing/ wrong/ extra matter?" Often the answer is "yes but fixing, 9% of each is good enough, a third of the price of 10% and no reason to halt moving on".

Thus for every review aim for 100% and settle for 90% <u>plus action to resolve the next 9% as soon as is cost-effective</u>. The 9% MUST be in the re-balanced **A16**-Stage Plan that is followed from today onwards.
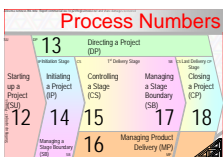
Then make appropriate record of the 1% but otherwise forget it. Of course this advise is NOT OK in an operating theatre or if building a nuclear reactor but is probably OK if building a canteen or scripting telephone greetings.

11.1.2.7.5 Who Takes Part & What Do They Do?

A quality review involves several roles that may be combined. The minimum review panel is two people: the chair and reviewer may be one person and the producer and administrator may be another.

➢ As many reviewers as is useful: a minimum is one!

Reviewers will read documents or trial and test the item by what ever tests the **A17**-Product Description's Quality Method section says is appropriate, at

a time and place that the **A16**-Team or Stage (or project) plan says they should. Their tests will determine if the product meets the Quality Criteria within Quality Tolerances as defined in the **A17**-Product Description.

It is generally useful to have subject matter experts and a non-subject matter expert to ask the questions others would not – a role known where I live as "playing the dumb laddie"

➢ A chair-person (who may be 'the' reviewer) and an administrator to arrange time and place, confirm preparations, facilitate process and record the results.

➢ The item's producer or a representative, who provides the product or access to the product and **A17**-Product Descriptions before the review, decides proposed responds to questions and comments also before the review, and actions any improvements or corrections agreed on as a result of the review.

- It may be the configuration librarian who provides copies of documents, digital CIs or access to physical CIs to reviewers.

11.1.2.7.5.1   Pre-Review

During project and stage definition the results to be achieved and thus product standards and acceptance criteria are defined (Quality planning). Then the development steps are defined and thus process standards are mandated or chosen.

During stage planning and or team planning the estimating process will have considered the effort and material usage and thus what 100% of done looks like. Perhaps at this point the team will define some intermediary assessment points for EV-Types.

Also in stage (or team) planning the quality review chair is chosen, reviewers are assigned and project assurance confirms the suitability of intended quality control activities.

11.1.2.7.5.2   Review 'Kick-off'

The chair should confirm that the product and reviewers are ready, willing and able to: firstly perform the preparation, then the reviewing, attend the review meeting and participate in the follow-up activities. Kick-off may or may not be via a meeting.

The producer/ presenter or configuration librarian distribute the product (digital/ paper CI) or provide access to it and relevant **A17**-Product Descriptions. Reviewers note their comments and return them to the chair or administrator for collation into a full list. The official manual describes and the examiners love to ask about handling spelling/grammatical errors: the reviewers "annotate the product copy" (sic) [knowing this for an exam is clearly what makes a 'practitioner' !]

The producer reviews comments and prepares answers, perhaps of the form:

➢ "Comment 6: yes, thanks."

> ➢ "Comment 7: no because…"
> ➢ "Comment 8: yes, and I propose…"

11.1.2.7.5.3   Review Is Not Solution Development Session

Reviews DO NOT design solutions. Instead they address each issue by proposing actions which are either agreed or marked for off-line follow-up.

Reviews must cover all comments raised and must not be diverted part-way through into solution design sessions. Once all comments have been covered a follow-on session might be allocated, but only after all comments have been raised.

The key principle is to cover all topics and agree those that can be agreed and identify those that cannot be readily resolved. For what is left the review's records should state who is a stakeholder and who will take the next action: often to arrange some follow-up solution search.

11.1.2.7.5.4   Review Conduct

The review meeting should be run by the chair. They should ensure all parties know each-other's role (and perhaps name! Also if relevant each participant's context, background, experience).

The product's creator / presenter might make opening remarks, as might reviewers on 'general' topics: IE those not tied to a specific feature of the product under review. Then each comment should be raised and its disposition agreed. The administrator/ scribe should note the agreed action and the person assigned (a date may also be agreed but not prematurely, EG the last action agreed might be more urgent than the first).

At review close it may be useful to repeat all next-steps proposed to ensure common understanding and agreement. The review should also agree, perhaps from the chair's single vote what status the product has reached:

> ➢ 100% complete – no further action in this life-cycle phase
> ➢ Rework and approval by specific reviewer(s) then move on without further review
> ➢ Rework and reconvene the quality review process
> ➢ Project issues should be raised for:
>   • Any comments raised that are stage level tolerance threats
>   • Any comments raised against products that were not the subject of the review

11.1.2.7.5.5   Post Review

The producer should action any comments, perhaps by holding post-review solution design sessions with reviewers.

Eventually the chair should confirm all review actions are closed and the product moves on or that review follow-ups will not be, (have not been) completed in a
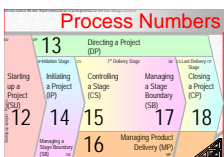
timely manner and raise a project issue. The administrator should ensure all records are appropriately dealt with.

11.1.2.7.5.6   Faults and Issues

Anything found that results in rework to the product is considered part of the original **A26**-Work Package and thus its budget unless:

➢ the rework would fall outside tolerances (team, stage or project).

Rework outside of tolerance triggers raising an exception at what ever level is required.

➢ the rework is not done within agreed constraints or

➢ rework is found that affects products outside the scope of the current quality review. These also trigger issues to be raised.

11.1.2.7.5.7   Corrective action

The **A26**-Work Package allocated to the team member/ manager either included or excluded time for rework which is either now needed or not. Recall news-readers and punctures. There are four possible states three of which need to apply **[15.4.8** Take corrective action**]** in some form:

➢ 'included and needed'

Apply corrections to the product with the allocated resources

➢ 'included not needed'

Reschedule future work and release the unneeded funds back to the sponsor

➢ 'excluded and now needed'

Draw-down against reserves or apply for fresh budget, reschedule all future tasks and correct the product

➢ 'excluded and not needed' – No action required

11.1.2.7.5.8   Positive Corrections

Equally every project manager and sponsors and all resource pool owners should know that some **A26-**Work Packages will be completed ahead of cost and schedule in which case **[15.4.8** Take corrective action] must consolidate the gains by accelerating all subsequent work-assignments and reducing estimated-cost-at-completion figures.

Ability to accelerate assignments and reclaim unneeded budget marks-out an organisation whose project management capabilities are mature.

11.1.2.7.5.9   Budgeting Corrective Actions

In general I suggest excluding allowance for rework from the **A26**-Work Package when allocating the work to the team member/ manager but hold the contingent allowance for the **A26**-Work Package's scheduling and resourcing as part of the overall stage allowances. If rework becomes unavoidable then reschedule and re-resource future **A26-**Work Packages to allow for rework.

The biggest problems with corrective actions of either flavour: positive or negative occur in matrix structured organisations where resource pool owners are incentivised by efficiency and utilisation. These incentives are counter to project needs of flexibility: flexibility values un-optimised capability for optimising delivery through flexibility and thus bigger benefits.

11.1.2.7.5.10 Off-Specifications And Concessions

It is possible that a review finds a product (configuration item) doesn't meet its criteria and in a way that the approval authority is prepared to overlook. In this case the 'Off-Specification' is covered by a 'Concession' and recorded in the quality records and **A5-**Configuration Item Record.

11.1.2.7.6 Review, Walk-Through and Inspection

The aims of a review can range over several levels. The labels 'Review', 'Walk-through' and 'inspection' may be used in your environment as equivalent to each other or can be differentiated to mean different process-steps and different aims.

11.1.2.7.6.1   Review, Pure and Simple

"Review" might simply describe a conversation between people with expertise to share that is aimed at finding faults whose removal improves the product.

The review may have a preparation step where reviewers read documents or exercise products and then a review meeting at which observations are shared. Observations may have been gathered, collated and considered by the producer prior to the review meeting.

At the review meeting discussion may simply move from comment to comment where each is discussed against a framework of the producer saying "Agreed and this is the response" or "Rejected and this is why". Anything beyond these responses is logged for follow-up outside the meeting between relevant parties.

11.1.2.7.6.2   Read-Through Or Walk-Through

Walk-Through has its roots in physically walking through an as built solution: EG an oil refinery. A read-through or colloquial 'walk'-through might describe a team-wide, methodical discussion of all the paragraphs of a document or elements of a product.

A Walkthrough generally proceeds as a review but with the gathering, collating and producer's consideration of comments being a mandated step. For every element of the CI under review the producer explains its relevance and then responds to suggestions and questions as for a simple review.

A walk-through's aim is still to find faults but also to ensure team-wide shared understanding and spread 'best-practices' amongst the team.

11.1.2.7.6.3   Inspection

Inspection in some environments (software particularly) implies a rigorously conducted process of making three-way comparisons between 1) work-package inputs, 2) standards, procedures and methods used to create the product under review and 3) work-package outputs.

NOTE I include the estimates for the **A26-**Work Package and its dependant **A26-**Work Packages but then my aim from an inspection is project control not software error detection. Also note I do not follow and have not described here 90% of the rigor true inspection demands: see the references below for full details.

In an inspection each member of the review team has specific checking responsibilities and all faults are classifies as 'weak or wrong process' or 'failure to follow process' (as well as 'missing/ wrong/ extra'). Inspection demands that metrics are maintained during ever stage to ensure that progress is matched to effectiveness. Review rates are monitored for speed to assess if faults are likely to have been missed (or too much cost is being incurred).

The aim of inspection is product and process improvement. "Inspection" as a defined procedure originated in IBM's software development processes, the interested reader should search for "Fagin Inspection" or Barbara Kitchenham's work on VME at ICL and at Keele University or read Tom Gilb & Dorothy Graham's book (ISBN-13: 978-0201631814).

11.1.2.8[15.4.2 Review Work Package status]

Assessing achievement can only be done in the terms of the trade(s) being employed in any **A26-**Work Package. For example the electrician must express work done in terms of meters of cable installed and number of connections made. In this case a percentage-complete CAN be CALCULATED. Otherwise a quality review of some degree is required.

As progress is actually and provably achieved and logged then the hours (materials etc) consumed should also be logged, turned into calculated costs and input to the question: "Are we where we expected to be?". This question should be answered in both budget and schedule terms even if 'budget' is consumed staff-days rather than money.

11.1.2.8.1.1   Good Side-Effects

By routinely comparing achievement (NOT TIME SPENT) to estimate at least three good things happen: team member's ability to estimate improves (just making it clear estimates will be reviewed versus actual results has a dramatic effect), early warning of problems is given and detection of opportunities to accelerate work streams is enabled. Tracking progress should be a feedback loop that modifies plans. Plans are 99% estimates and allocations, plans are 100% about coordination.

11.1.2.8.1.2   One Day At A Time

The monitoring of status and the amendment of plans is best done daily - even on a 10 year project. As Fred Brooks Jr said "a project gets to be a year late one day at a time" so correct it one day at a time. The daily monitoring and correction occurs at the level where there are no lower level delegations. IE it operates at the level where diagrams are drawn, ditches dug, customer agreements forms drafted, software coded, bolts tightened, chemicals mixed.

11.1.2.8.1.3   Progress data is derived

Recall: all progress reporting above the level of the trades person doing physical or mental product creation is an aggregation of lower level data. If any level corrupts or hides the true status the levels above can no longer manage. Key is to encourage swift and accurate reporting of data no matter how unpleasant it appears. Any incentivisation to report other than accurately destroys project control.

11.1.2.8.1.4   Progress Monitoring

'Real' progress data is gathered in person.

Even on global projects the reporting structures created must allow people to report personally and verbally. There may also be form-based, perhaps electronic reporting but this doesn't discover what talking to people discovers.

There are three key questions to ask when gathering progress date.

The first question is

➢ "how are you and your family?". Question one has to be sincere or don't bother! It is the most important of the three.

Projects are delivered by people and the first concern must be for the person. Ignoring the person is always, eventually, detrimental.

➢ Second is "What do you need me to do for you?"

> *SOOP-222.   "What can I do to help you achieve targets?" recognises that accountability cannot be delegated. It is the accountable person's duty and self-interest to enable success by those responsible for a task. Exec's and sponsors need to realise this too: telling them may require tact.*

➢ Third is "how much is left to go?" The answer should be an estimate as described earlier: **XREF** EST

The question is "to go" not "what is done". Asked as "what is to go" will evoke reappraisal of status.

Psychology dictates that a "what is done" is more likely to be answered by approximation of 'Original Budget - uniform rate of consumption for the elapsed time since allocation'. The result is sometimes called '90% complete syndrome'. It is parodied in "it takes 90% of the time to do the first 90% of

the work and then the same again to finish it". I've never researched the psychology, perhaps if you do you'd let me know?

11.1.2.8.1.5 Assessing Progress

SOOP-223.   *Progress monitoring should gather details of the steps, effort, resources and materials <u>still needed</u>, and amend any factor or formulae in the estimate in light of 'what we know and can see today'. Re-estimating will then recalculate the cost and duration remaining.*

There will be cases early on in using this approach where despite spending time and effort on a task it is getting bigger as shown by the estimates not smaller. At least you are well informed! – Politics may dictate a non-mathematical basis for reporting.

11.1.2.9 [16.4.3 Deliver a Work Package] to [15.4.3 Receive completed Work Packages]

For delivery of **A26-**Work Package results the official manual says "Delivering the products (sic!) to the project manager in accordance with any procedures specified in the work package [pg186]". If the **A26-**Work Package's results are physical then typically delivery is NOT actually to the project manager: after all the product could be the hull of an aircraft carrier and you hardly 'hand' one of those to a project manager!

More typically delivery of the **A26-**Work Package actually means notification to the project manager that the **A26-**Work Package is closed. Notification may be from the quality review chair, the configuration librarian or the team member/ manager.
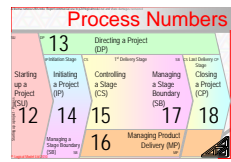
11.1.2.9.1.1   Contract Termination

Acknowledgement that a product matches its specification dissolves the supplier's commitment and probably triggers the customer's obligation to make payment.

11.1.2.9.1.2   Delivery Of CIs

Always in reality to **[16.4.3** Deliver a Work Package**]** requires transfer of responsibility for the results of the specialist's efforts to whoever the **A26-**Work Package says is the recipient: either the next specialist team in the development life-cycle or possibly the end user and business-as-usual maintenance community. Sometimes 'delivery' also includes physical transfer of the resultant product.

For **A26-**Work Package results that are intermediate transfer should definitely be via project configuration management. Later the products will be issued to the team member/ manager performing the next step in the products development life-cycle.

Finished CIs may be passed to project configuration management and are eventually handed-over into business-as-usual for use by the senior user(s) staff, perhaps in cooperation with operations and maintenance staff.

Digital CIs will always be returned to the configuration management storage area, physical CIs that have not yet left the project should also be stored in a controlled area.

11.1.2.9.1.3   Delivery Of Intellectual Items

For work whose outputs are non-physical (often digital): IE intellectual designing or planning or authoring tasks "delivery" normally means 'checked-in to the configuration management system as a release'. Again the project manager receives notification rather than the product itself.

For project outputs that are conceptual such as 'culture change' there may be many sub-products like the script for answering the phone but the top level outcome cannot be 'handed-over'. Judging its delivery is achieved by judging delivery of its decomposition.

11.1.2.9.2 [15.4.3 Receive completed Work Packages]

Before the project manager acknowledges **[15.4.3** Receive completed Work Packages**]** they confirm:

➢ The team member/ manager believes that required work is complete,
➢ **A23-**Quality Register records show all quality control activities are complete,
➢ the configuration librarian advises that the results are base-lined (thus frozen from change),
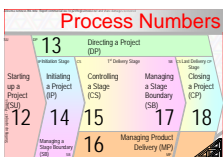➢ that the acceptance authority has approved the product (perhaps with concessions)

Once confirmed the project manager updates the **A16-**Stage Plan to show work complete and EV is 100% of PV (or if you prefer BCWP is 100% of BCWS).

11.1.2.9.3 Recap Of Cycle One

The project manager and team member/ manager agree the allocation of resources and constraints to the progressing of some output through some steps of its life-cycle.

The team member/ manager works on the acquisition, creation or progression of the outputs by applying their skills to ensure conformance to specification. Where progress is not objectively assessable in simple terms quality reviews are planned in and held to confirm the level of achievement to be reported upwards.

Eventually the **A26-**Work Package's work scope is complete, the approver of the products confirm approval and the products are returned to configuration management or handed into use by the future-state-business-as-usual.

Process Numbers

13 Directing a Project (DP)

12 Starting up a Project (SU)
14 Initiating a Project (IP)
15 Controlling a Stage (CS)
16 Managing a Stage Boundary (SB)
17 Managing a Stage Boundary (SB)
18 Closing a Project (CP)
16 Managing Product Delivery (MP)

Section: 2   Page: 11.1.3:483 of 541

11.1.3 Controlling a Stage (CS)'s Second Cycle

The second cycle operating in the enabling stages is the project manager's routine monitoring of cycle-one activity, the reporting of status within tolerances and the transition to cycle three for handling out of tolerance situations and other concerns.

Routine status monitoring triggers allocation of new work-packages via cycle one, triggers new and amended work-packages to cope with minor variations (by definition within tolerance) and reports status upwards to the project board.

CS-04 F:2 Activities within Controlling a Stage (CS)
Project manager's Day Job & Board interface in Detail
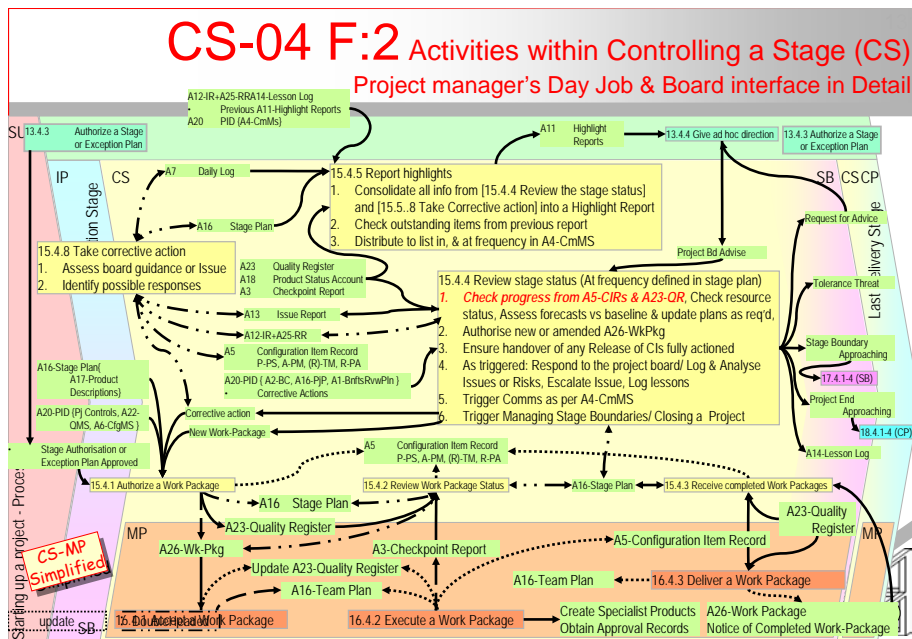
11.1.3.1.1.1 [15.4.4 Review stage status] IS the Project Manager's Day Job

Cycle two implements 'day-to-day management'. It is the confirmation of "no news is good news" and is the complementary-side of Management By Exception.

A planned project implements an operating mode of proceed without continual senior management intervention being required. Even when things go 'off-plan-A' in anticipated ways we can proceed in authorised ways because planning identified contingent responses which were pre-authorised.

### 11.1.3.1.2 Monitor Every Day (at A Minimum!)

In his book "The Mythical Man Month" Fred Brooks Junior asked "How does a project get to be a year late?" and he answered "One day at a time".

The moral of the story being that keeping a project on track requires very frequent (and normally quiet small) adjustments. The project manager should be adjusting any aspect of the project that looks to be drifting off target on a "frequent" basis without micro-managing.

11.1.3.1.2.1   How Often Is Frequent?

The trick is to know how often "frequent" enough is and how to avoid micro-managing?

For frequency the guideline is "inspect things often enough that the recovery actions have time to be applied". IE The time between discovery and disaster is long enough to prevent failure. Drive as fast as your headlight's penetrate the darkness and your breaks can bring you to a stop in current conditions.
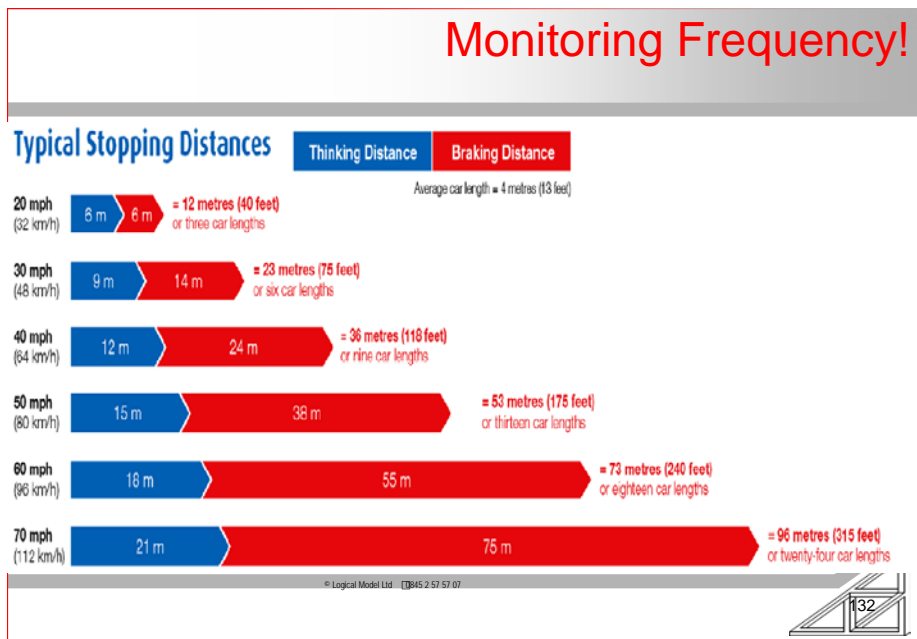
11.1.3.1.3 What Level Is Appropriate?: Two Guidelines

For determining a level that avoids micro-management the first guideline is monitor at the level proposed by the person responsible, as discussed at *See X on Y.*

Another rule of thumb that must operate simultaneously is to consider the detail needed to scope each management level's objectives so that they are in control.

The maximum depth of breakdown should be restricted to five levels:

➢ the top level of the PBS is the objective or goal delegated to me.

> ➢ The next level or two are the deliverables and acceptance criteria that discharge my obligation to the person who set the objective.
> ➢ The next level or two are the work elements of the development life-cycle phases and **A26-**Work Package that acquire or make the deliverables.

The minimum breakdown is three levels: Goal/ Deliverables (Products) / Development life-cycle phases (**A26-**Work Packages).

No management level should manage less than the three or more than the five level hierarchy. If the bottom level has not reached atomic tasks like "make tea", "build wall", "write web-page's text", "order staff uniforms" then delegation of an objective (EG "Build Rocket", "Serve Customer", "Rebrand The Business") with acceptance criteria is required to someone who does planning to create their own three to five level Goal/ Products and Acceptance Criteria (AC)/ **A26-**Work Packages.

Everyone above and below me should be following the same guidance. Thus the whole conceptual breakdown may be many levels deep. Guidelines should be stretched as circumstances dictate.

Picture: Triangle of Vision to Task

11.1.3.1.4 Collecting and Collating Status Data

The day-job is founded on status collection then collation, analysis then action.

The upward flow of status information starts from the technical teams as they **[16.4.2** Execute a Work Package] and raise **A3-**Checkpoint Reports based on observed percent-complete, updated estimates and quality reviews.
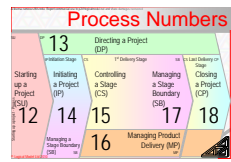
The percent complete aka BCWP aka EV and other status data and concerns are used by project support and the project manager to **[15.4.2** Review Work Package status] and update the **A16-**Stage Plan.

The **A23-**Quality Register, **A5-**Configuration Item Records, Register of Concerns and **A26-**Work Packages are also reviewed and may also be updated. Status from all concurrently active **A26-**Work Packages and any other sources feed into the project manager's routine **[15.4.4** Review stage status**].**

11.1.3.1.4.1   [15.4.4 Review stage status] Is The Project Manager's 'Day-Job'.

The project manager should be continuously considering all sources of project information to identify useful action: like a spider in the middle of a web feeling for vibrations Resultant actions are any and all of:

> ➢ **[15.4.1** Authorise a Work Package] for new work and
> ➢ **[15.4.5** Report highlights] and
> ➢ Conduct or instruct the execution of a configuration audit
> ➢ **[15.4.6** Capture and examine issue and risks]
> ➢ **[15.4.7** Escalate issues and risks]
> ➢ Identify a Stage Boundary Approaching so commission Managing a Stage Boundary (SB) or

> ➤ Identify Project End Approaching and so commission Closing a Project (CP).

11.1.3.1.5 Routine Monitoring

A mandatory means of monitoring status is to be out 'wandering' (perhaps virtually) amongst the team members. Wandering is also one of the best ways to gather real insights. MBWA (Management By Wandering About) improves the dialogue with stakeholders such as the project board and beyond. Always ask the three questions noted for **[15.4.2** Review Work Package status] IE: care for the people, remove blockers, and assess effort to-go.

11.1.3.1.5.1   Review the Project Records and Registers

To assess status insights from MBWA should be combined with evidence from inspection of the project's records and vice-versa.

Status review checks:

> ➤ All current **A3-**Checkpoint Reports from currently active teams,
> ➤ the **A5-**Configuration Item Records as reported in **A18-**Product Status Accounts,
> ➤ the project's registers (Quality, Risk and Issue)
> ➤ the updated **A16-**Stage Plan.

Examination of records and registers may identify an opportunity for perfective or corrective action. If action is indicated then status versus tolerances is re-assessed and cycle-three invoked if tolerances are threatened or breached. The current viability of the **A2-**Business Case is also routinely reassessed. Perhaps lessons observed are logged or possibly distributed via a new **A15-**Lesson Report.
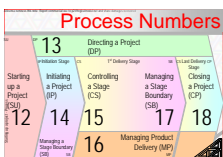
[The official manual also notes that any reviews from the **A1-**Benefits Review Plan are enacted. I would observe that the project manager must be executing ALL activity from the **A16-**Stage Plan: if during stage planning the **A1-**Benefits Review Plan calls for action then the **A16-**Stage Plan must schedule the task and record the allocation of the people.

SOOP-224.   Projects are hard to run from one schedule of resourced tasks and impossible to run from more than one. Actions required by project management team members whether 'Plan-A', 'Plan-B' risk responses, authorised changes or any other source of work must be in the current A16-Stage Plan baseline that balances effort required for scope desired, resources assigned, acceptable durations and acceptable costs.

 ]

11.1.3.1.5.2   Project Board Input

MBWA also helps stay in contact with stakeholders other than the team member/ managers. Any changes in the project's context, EG resource allocations should be communicated between project manager and project board as a dialogue where the project board **[13.4.5** Give ad hoc direction**]** to

help the project manager **[15.4.4** Review stage status**]**, possibly as a result of the project manager asking for advice.

Being out and about makes finding out more likely!

11.1.3.1.5.3   Refresh Technical Work

As a team or team member reaches appropriate points in some current **A26-**Work Package so other **A26-**Work Packages, perhaps for other teams should be allocated. Normally it is end of one **A26-**Work Package that triggers start of another or even several others but not always.

Some states will be the trigger to start the preparations for the next stage or for end of project. The preparations may be as expected or triggered prematurely by status.

11.1.3.2 Analysis

Collection probably covers gathering in **A3-**Checkpoint Reports and opening up logs and registers. Collation probably covers updating the **A16-**Stage Plan and registers with the intersection of status from concerns, changes and team actions.

Analysis covers re-performing as much of the planning activities as are required to ratify 'yesterdays' plan as relevant to today and replacing/ supplementing those parts that are no longer the best of our options.

Analysis includes:

➢ understanding where we are in relation to baseline.

The question is "does status require future action that is already in the current plan, require no action or require different actions to those in the current plan?"

➢ the options for any and all actions that are or could be useful
➢ whose authority is required to adopt each option.

In the 'whose authority?' question is the whole of the third cycle of handling concerns, although often at an intensity level that means no-drama.

In the un-dramatic cases the project manager should **[15.4.8** Take corrective action] to implement newly adopted options. In any more dramatic cases the project manager may be instructed by the project board to **[17.4.5** Produce an Exception Plan] (*as discussed in CS cycle-three*).

11.1.3.2.1 Analysis: Determining Variances and Efficiencies

Project health must be routinely reassessed for strategic and tactical status. Responsibility for progress analysis rests with the project manager.

To determine variances in that sub-set of the tactical status that comprise budget and schedule three elements of project status must be compared:

1. actual achievement,

2. achievement expected by now and
3. actual costs incurred for what has been achieved.
4. 0.

Finance might like another comparison: expenditure versus expected cash-flow. NOTE: this is not useful for assessing progress on the journey towards future-state-business-as-usual.

11.1.3.2.1.1   Variances and Performance Indicators

The difference between achievement and expectation is expressed as a 'variance'. The ratio of achievement to expectation is expressed as a performance index or efficiency factor.

Efficiency factors may be applied to remaining work to forecast "where will we be if progress continues as is?" Efficiency factors are an adjustment that should be applied to the estimates for the remaining baseline plan when variances to date have been and expected to continue to be systematic.

11.1.3.2.1.2   Single Unit Of Variance

Actual and expected progress can ALL be expressed in financial terms. IE money can be the unit used to express all dimensions of progress including schedule status.

Schedule is represented financially by quoting the budget that was assigned to the work achieved so far. A schedule variance is then calculated as the results actually achieved by now compared with the results intended by now at their baselined budget.

Imagine in some project work scheduled demands £10,000 of effort and materials of which specific elements accounting for £1,000 should be done by now. Further imagine we have achievements so far that were £2,000 'worth' of the original plan. Thus we are £1,000 ahead of schedule (sic).

Also imagine that we have paid £2,200 for achievements to date so while we are £1,000 ahead of schedule we are £200 over budget for it.

In the spirit of the comment above about finance probably wishing to link actual and projected cash-flow then this project is £1,200 ahead of cash-flow expected (but only £200 overspent versus value achieved).

11.1.3.2.1.3   Alternate Units

The 'currency' used can just as happily be staff-hours. Often calculating status in staff-hours (or days) is more accessible to the project manager and removes problems of financial systems with long time delays between costs committed, invoiced and settled and the reporting of each status back to the project manager in a timely fashion.

11.1.3.2.1.4   Variance Analysis: Hours

Imagine we baselined the outputs due by yesterday at 147 staff hours (21 days each of 7 staff hours), thus far we've spent 161hrs and have the task collated with **A3-**Checkpoint Report and quality reviews that show 7hrs work still to do before completion. So we are 7hrs behind schedule (we are supposed to be finished but have 7 hours work remaining).

Currently we are 21hrs overspent (we've <u>achieved</u> 140 and spent 161 to get it) and if work completes at the planned levels of efficiency from now on we will have spent 168 at completion.

11.1.3.2.1.5   Significance

Perhaps examination of the baselined critical path reveals that the task has 4 days float, the team members are assigned full time to the project and had no other assignment today – Variance might thus be insignificant.

Or imagine instead that the task has no float, financial stage tolerance is set so that a breach occurs at 15hrs of technician's time, the sponsor is very focussed on both schedule and budget, the resource owner has their skilled technician assigned to other non-project tasks for the rest of the week and charges real, invoiced money for the resource by the hour; variance is beyond tolerances in schedule and budget terms and thus demands escalation.

The analysis of variance starts with the calculation of status versus baseline and proceeds to the comparison against impacts to the future elements of the baseline and authorities to make changes.

11.1.3.2.1.6   Common Labels

The three elements of status determination introduced above have several common names depending on which 'authority' you subscribe to:

➢ When expressed as the financial allowance made in the plan then the <u>actual achievement as determined by quality reviews</u> (Inchpebbles) and direct observation is described as <u>the budgeted cost of the work performed</u> (BCWP) aka <u>the earned value</u> (EV)

Note: 'value' as used here isn't what we mean in day-to-day usage. Here its meaning is closer to percentage of baseline achieved but expressed in money. EG I have a task budgeted at $39 and I'm $13 through it means I've got two-thirds of the result still to complete.

Just having a third of the finished result might actually be of zero 'real-world value' until the last penny-worth is complete.

➢ Achievement expected by now is called the <u>budgeted cost of the work schedule</u> (BCWS) aka <u>planned value</u> (PV) aka <u>planned cost</u> (PC)

➢ Actual costs incurred for what has been achieved is the <u>actual cost of work performed</u> (ACWP) aka just <u>actual cost</u> (AC)

➢ The originally authorised scope and originally authorised budget were, if estimating was done well and without political influence matched to each

other, thus the total scope of work starts out as the <u>budget at completion</u> (BAC).

How scope, cost and time tolerances from estimating uncertainty and how contingencies for identified threats and opportunities are included in the labels above will need to be considered before we finish this topic. ***See X on Y***.

11.1.3.2.1.7   Two Variances

Determining budget and schedule status requires expression of two variances (whose values can be positive, zero or negative). Both variance calculations start with achievement. One then subtracts from it the expected progress and the other subtracts actual costs.

Any variances expresses how much ahead (positive variance) or behind (negative variance) the project's schedule and budget we are.

➢ Schedule Variance = Proven Achievement – Achievement Expected By Now
➢ Cost Variance = Proven Achievement – Actual Cost Paid For Results Achieved

Units other than original budget in money need some further explanatory notes before we are finished.

Restated as 'algebra':

➢ SV = BCWP – BCWS or if you prefer SV = EV – PV or SV = EV – PC
➢ CV = BCWP – ACWP or if you prefer CV = EV – AC

11.1.3.2.1.8   Variances And Estimates Example

We might have expected by now to have completed 'install warehouse lighting'. If we have then schedule variance is zero.

We may have expected to finish tomorrow and a quick count-up shows that we have 12 cables runs equalling 1,000m of cable and 24 terminations still to do (12cables x 25mins on average) + (24 terminations x 5mins) + ((1,000 ties x 10secs) / 60 secs) = 586 minutes or with a 7 hour day 1.4 electrician days work left (ignoring previous discussions about adjustments for fall-protection).

IE we have done 8.6 electrician days worth of the work. If we had expected to finish 10 days worth of work tomorrow with one electrician then maybe we should have done 9 days worth so far and thus we are 0.4 days behind schedule.

Our SV = 8.6 – 9 so SV = −0.4 days of electrician's effort.

11.1.3.2.1.9   Cost Variance

Imagine discussion with the financial controller shows while we expected to install the lighting in 10 electrician days and we are due to finish tomorrow labour costs for the work so far are up to date and total 8 days payment. IE we are +0.6 days under spent (Achievement is 8.6 Actual cost is 8).

CV = 8.6 – 8 so CV = +0.6 days of electrician's effort.

11.1.3.2.1.10 Variances as Percentages

It is often useful for determination of significance to express the variances as a percentage of achievement or expectation.

➢ SV% = SV / BCWS or if you prefer SV% = SV / PV
➢ CV% = CV / BCWP or if you prefer CV% = CV / EV

Don't forget to include the sign!

11.1.3.2.1.11 Two Efficiency Factors

To forecast the future it is useful to interpret our current status as an efficiency so-far and then to assess if variance to date is indicative of future performance.

The two efficiency factors start with achievement and divide it by the expected progress and actual costs incurred.

Ratios express how efficiently, versus baseline plan we are delivering.

➢ Schedule Efficiency = (Provable Achievement) / (Achievement Expected By Now)
➢ Cost Efficiency = (Provable Achievement) / (Actual Cost Paid For Results Achieved)

Ratios over 1 (100%) show faster/ cheaper progress than planned while ratios under 1 show slower/ more expensive than baseline. Positive variances and efficiency ratios above one always occur together.

The efficiency factors are typically called "Performance Indicators". It is normal to compute a Schedule Performance Indicator and Cost performance Indicator.

➢ SPI = BCWP / BCWS or if you prefer SPI = EV / PV or SPI = EV / PC
➢ CPI = BCWP / ACWP or if you prefer CPI = EV / AC

11.1.3.2.1.12 Efficiency Example

Having taken 9 days to do 8.6 days worth of work we are progressing more slowly than hoped IE SPI = 8.6 / 9 = 0.955 or 95.5%.

Equally having achieved 8.6 days work for the cost of only 8 our finances are better than baselined IE CPI = 8.6 / 8 = 1.08 or 108%

11.1.3.2.1.13 Trend Analysis

Work package achievement and the cost of progress should be subject to analysis to assess if variances are one-off or systematic.

Variances considered to be systematic might use the efficiency factors to re-compute the estimates from this point forward. IE to determine the estimate to complete from now (ETC).

11.1.3.2.1.14 Three ETC Values

There are several ways in which efficiency factors and project status may be combined depending on whether variances are thought to be systematic. The first step is to determine the remaining work.

Remaining work = (total work – what has been done)

In financial terms the budgeted cost of work remaining or BCWR is:

➢ (BCWR) = (BAC – BCWP) or if you prefer BCWR = (BAC – EV)

The second step is to extrapolate the work remaining at the efficiency factor of your choice (EG original baseline, currently achieved schedule efficiency, current cost efficiency or a compounding of both or some other factor).

The third step is to add actual to date to the Estimate TO complete (ETC) to arrive at the Estimate AT Completion (EAC).

➢ ETC = (originally estimated cost of the work remaining / cost efficiency)
This Estimate To Complete is the budget likely to still be needed. If added to actual costs incurred so far the result is the likely total cost or Estimate At Completion (EAC).

- ACWP + (BCWR / CPI) is sometimes called the Independent Estimate at Completion_CPI or $IEAC_{CPI}$ aka IEAC-1
- ACWP + (BCWR / (CPI x SPI)) = $IEAC_{composite}$ aka $IEAC_{CS}$ aka IEAC-2
- A comparison of (BAC – EAC) yields the Variance At Completion (VAC).

Also possible (and a favourite with IPMA-D exams) is:

➢ ETC = (originally estimated <u>duration</u> of the work remaining / schedule efficiency)
The ETC in duration terms if added to the duration so far might be called the Duration At Completion (DAC)

- Actual Duration of Work Performed (ADWP) + (Budgeted Duration of Work remaining (BDWR) / SPI) = DAC

and Original End-Date – DAC = Time Variance at Completion

PICTURE – SOME EV TERMINOLOGY

11.1.3.2.1.15 Tracking Gantt Charts

A Gantt chart is a visual representation of tasks versus calendar duration. The Gantt displays schedule. Schedule status is perhaps most easily observed from a Gantt that displays currently agreed base-line and achievement to date and expectation from now-on.

To be most useful for schedule based analysis of options for re-planning expectation from now the baseline should show tasks and float (and thus tasks without float!). The chart might also usefully display dependencies although strictly it is then a 'time-scaled network diagram' rather than a Gantt chart.

PICTURE

11.1.3.2.1.16 Milestone Slip Charts

A milestone slip-chart reports period by period the currently expected delivery date for future milestones. Each reporting period each milestone is plotted for the date at which it is currently expected to deliver. Milestones that are being approached at the expected rate will plot horizontally while those outlooking to be delivered early will trend down the report and those outlooking late delivery will trend up the report.

A key to explain interdependency or independence of milestones, reasons for changes in outlook and perhaps corrective 'return to green' actions may be useful.

PICTURE

11.1.3.2.1.17 Risk Retirement Curves

A Risk Retirement graph shows how the 100% of tolerances, contingencies and reserves available at **A26-**Work Package, stage or project start are allocated as time progresses to base-line work or returned to the sponsor.

PICTURE

11.1.3.3[15.4.5 Report highlights]: No Routine Meetings

The routine mechanism for keeping the project board informed is the **A11-**Highlight Report. IE a report, not a meeting. Meetings are called and held as soon as needed but not routinely.

11.1.3.3.1.1   No Routine Project Board Meetings

PRINCE2® explicitly deprecates the use of routine meetings of the project board. Too often routine meetings consume time, tea and biscuits very ineffectively while making senior management "too busy" to prepare for and attend real decision making meetings.

The only routine element in the project board/ project manager communications is the **A11-**Highlight Report. Ironically some people who complain PRINCE2® is bureaucratic are light on attendance at meetings to establish direction and then can't bring themselves to dispense with time-waster meetings to discuss the problems so created!

SOOP-225.   Time spent (by senior management) on planning is repaid in swift situational decision making later.

11.1.3.3.1.2   Weekly (?) Summary of Status and Actions Required

The **A11-**Highlight Report is a record sent by the project manager to the project board (and beyond if the **A4-**Communications Management Strategy requires it). It is produced at intervals agreed when a stage is approved or as modified at any time later. The interval may be weekly, fortnightly or even daily and may vary depending on where in the stage (or project) we are. In most projects monthly is too long a lag for successful interventions that will help.

11.1.3.3.1.3   Headlights and Rear-View Mirror

The **A11-**Highlight Report provides a rear-view-mirror and headlights to the project board.

It looks back to focus on all recent product level <u>achievements</u>, on quality control <u>results</u> and on recent <u>lessons</u> observed.

The **A11-**Highlight Report also summarises the current status of Requests for Change (typically aggregate impact of changes to date), and the project's risk summary and tolerance position.

11.1.3.3.1.4   Requests For Assistance

The **A11-**Highlight Report should not be the means by which the project manager communicates a need for help but it should be the means to put on record what has been asked for. IE the **A11-**Highlight Report is the formal record of the project manager seeking the project board's recognition of and action from their obligation as the party with accountability.

SOOP-226.   Formal reports should never be the first time any management level encounters bad-news. The formal report should only ever be a record of what was already communicated.

The project manager may elect to include any concern that is not yet an issue that they want project board assistance with (the long long promised discussion of issues (concerns) is coming soon *See X on Y*!)

11.1.3.3.1.5   A Golden Rule

Upwards communication may require some tact.

SOOP-227.   Never be so stupid as to say "Don't bring me problems, bring me solutions". Paraphrased that adds up to "hide problems until you've solved them"! Always a bad idea. The principle should be "NEVER delay raising a concern, I have access to more resources and possibly more experience than you".

The tone you set in the project should be "As soon as you spot or suspect a trigger for action that is outside your knowledge OR your experience OR authority to deal with, then tell me. If you can suggest a solution too then that is a bonus! If it is within your knowledge AND experience AND authority then get on with it (and feel free to ask if you want a second opinion or a confidence boost)".

11.1.3.3.1.6   Project Board Failures

The **A11-**Highlight Report is the 'official' channel to record factors compromising the project's success. For example the **A11-**Highlight Report is the place to record failures by project board members to meet their obligations.

The record is a formal and visible note that shows the other project board members, project assurance and sponsors that critical success factors are being

compromised and thus success criteria may not be met. This will need tact: the phrase that comes to mind is "a career threatening opportunity".

11.1.3.3.1.7   *A11-Highlight Report Is Results NOT Activity Focussed*

The 2009 official manual has added **A26-**Work Package reports, corrective action reports and purchasing data to the achievement and problem focus that the **A11-**Highlight Report previously maintained.

[The board shouldn't be interested in the details of activity nor of corrective actions within tolerance: keep the project board 'out of the weeds' until there is a problem that needs details to resolve.]

What should be reported is product oriented results – that is why planning with the project board focuses on the Product Breakdown Structure (PBS) and acceptance criteria. Product Flow Diagram (PFD) or Work Breakdown Structure (WBS) are not (so) relevant until we reach planning with the technical teams.

What must be included in an **A11-**Highlight Report is details of products completed as due, overdue, completed out of sequence and due shortly.]

11.1.3.3.1.8   *A11-Highlight Report Product Description*

The **A11-**Highlight Report might contain {.

➢ Document admin such as producer, production date and period covered
➢ Project status summary. Including:
  • Tolerance situation,
  • Volume and value of changes: Request For Changes (RFCs) by status,
  • (non-RFC) issue and risk summary.
  • Lessons observed to be shared.
➢ Areas where project board assistance has been requested or is needed: IE current stage tolerance issues
➢ This period: products completed/ behind plan with corrective responses where appropriate
➢ Next period: products due and corrective actions

[As noted above since 2009 the official manual suggests including work-packages: pending, in progress, completed this period, to be authorised, to be completed next period. For externally conducted **A26-**Work Packages then the 2009 official manual suggests including purchase order (contract) and invoice information. There are some merit in the suggestions but it is incongruous that we get all the way to **A11-**Highlight Report before mention of control of purchasing. Nothing in the official manual on requesting proposals, negotiation or contract administration is too little too late.]

}.

11.1.3.3.1.9   Project Board Focus = Assistance and Achievement

Keep the project board's focus on their duty to provide assistance and their interest in outputs that enable them to achieve outcomes that generate benefits.

*SOOP-228.   Reserve the details of activities to the **A3**-Checkpoint Reports and **A16**-Stage Plan. This reduces project board meddling when of the 30 ways to achieve something the project team has selected one that the project board member would not have and now feels compelled to issue a random and unhelpful instruction about.*

11.1.3.4[15.4.8 Take corrective action]

There are two questions to ask about all variances the project manager discovers:

1. Is the variance significant enough to care about
2. Is it systematic (will it re-occur)?
3. 0.

Variances my be found when gathering data to **[15.4.4** Review stage status**]** and **[15.4.5** Report highlights**]** or may be raised by a team member/ manager or notified by the project board at any time.

11.1.3.4.1.1   Significant

If there is a variance (±) then both the variance and action to exploit or remedy it must be compared to the stage and project level tolerances to assess significance.

Amendments can be made by the project manager to **[15.4.8** Take corrective action**]** within tolerances. In nautical terms 'tacking and trimming the sails rather than altering course'.
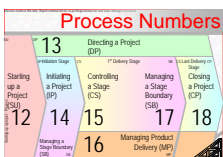
Any concern that is outside the project manager's stage tolerances rises to the project board. If it is also outside project tolerances it rises to sponsor or portfolio management authority or the equity holder's representatives.

The handling of concerns outside of the project manager's authority are the subject of the third cycle discussed below.

11.1.3.4.1.2   Diagnose, Decide options, Select and Action the Correction

To **[15.4.8** Take corrective action**]** requires assessing the cause and effect of the variance and taking appropriate actions.

Diagnosis starts with consulting the project management team, all project records and any other source of information. Typically reviewing a suitably selected **A18**-Product Status Account (report from the **A5**-Configuration Item Records) will help. The **A18**-Product Status Account's record of quality review status (over-due, held and failed, passed) will show products that are ahead or behind required maturity.

Then re-performing appropriate <u>activity</u> planning steps: it is possible but unlikely that a variance needing re-performance of the steps of <u>product</u> based ~~planning~~ scoping could be within stage tolerances.

If it is required or appropriate or helpful then create or update an **A12-**Issue Register or **A25-**Risk Register and **A14-**Lesson Log entry and update the **A16-**Stage Plan. Whether any of the previous updates are required will be situational.

What will be necessary is to:

➢ Rewrite an existing **A26-**Work Package and renegotiate it with the assigned team member/ manager or
➢ Create and allocate a new **A26-**Work Package or
➢ Amend and allocate (or delete) a future **A26-**Work Package.

11.1.3.4.1.3 Update Project Records

As a result of taking corrective actions update relevant project records. For example a corrective action might amend an ambiguous **A17-**Product Description. Corrections always change **A26-**Work Packages or their 'location' in the **A16-**Stage Plan's resourcing profile an or schedule. Changes to **A5-**Configuration Item Records, the **A23-**Quality Register, tolerances and plans are also common.

Changes to the **A20-**Project Initiation Document, the **A1-**Benefits Review Plan or **A2-**Business Case are probably beyond the project manager's remit within **[15.4.8** Take corrective action].

11.1.3.4.1.4 Systematic

Any variance that is systematic such as flaws in assumptions or estimating parameters has great potential to also take the stage or even project out of tolerance. At the very least systematic variances will need to be corrected throughout the rest of the **A16-**Stage Plan. Earned value performance indices may provide systematic adjustment factors for the estimating basis applied.

11.1.3.4.2 Approaching Stage End

As soon as the project board **[13.4.2** Authorise the project] and **[13.4.3** Authorise a Stage ~~or Exception~~ Plan] and the resources are on hand to follow the plan then the cycle of work-package agreement → technical execution → product approval → work-package agreement… runs.

Eventually the backlog of work-packages is exhausted or an exception occurs. At this point the project has either:

➢ Created all the outputs required and the next actions are aimed at Closing a Project (CP) or
➢ The project has consumed all the budget and time currently allocated. The next actions will be those of Managing a Stage Boundary (SB) followed by a revisit to **[13.4.3** Authorise a Stage ~~or Exception~~ Plan] or

> The project is far enough off baseline that next actions are aimed at Managing an Exceptional Stage Boundary (SB) and a revisit to **[13.4.3** Authorise a ~~Stage or~~ Exception Plan] aka an EXA (EXception Assessment).

11.1.4 Cycle Three: Handling Off-Baseline Situations

Cycle number three handles 'concerns'. A concern is always versus a baseline and has some potential affect on some stakeholder's interests.

11.1.4.1.1.1 Planning's Affect on Responding to Concerns

Planning, if done well, will have been an expensive investment. The detection of concerns threatens to re-incur the costs for what is often at best only a marginal benefit while at worst is a loss of all the previous effort to create a baseline. If planning was done well then identification of options to react to concerns will be easy, assessment of the affect on the **A2-**Business Case will be easy and so will selection between competing options to respond to the concern.
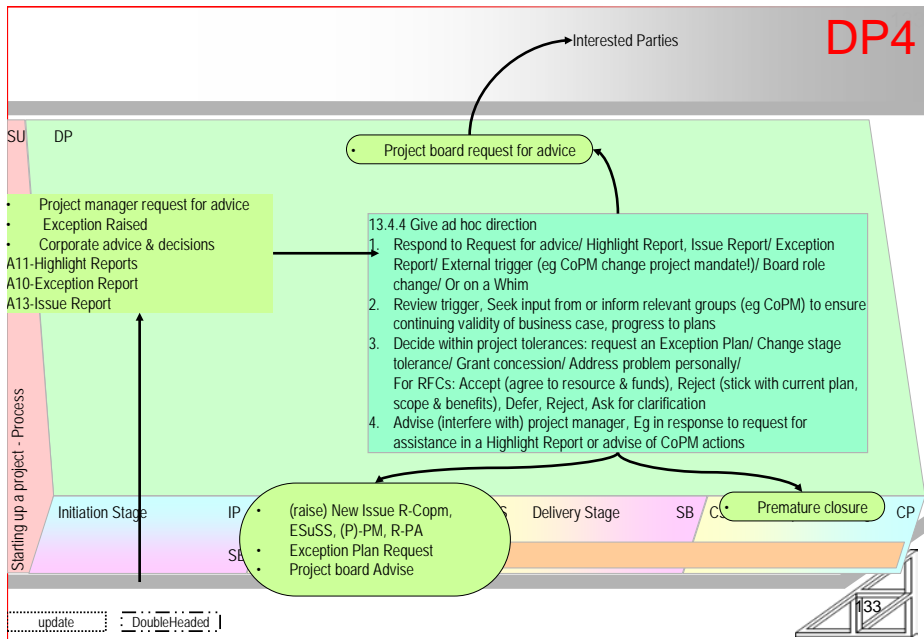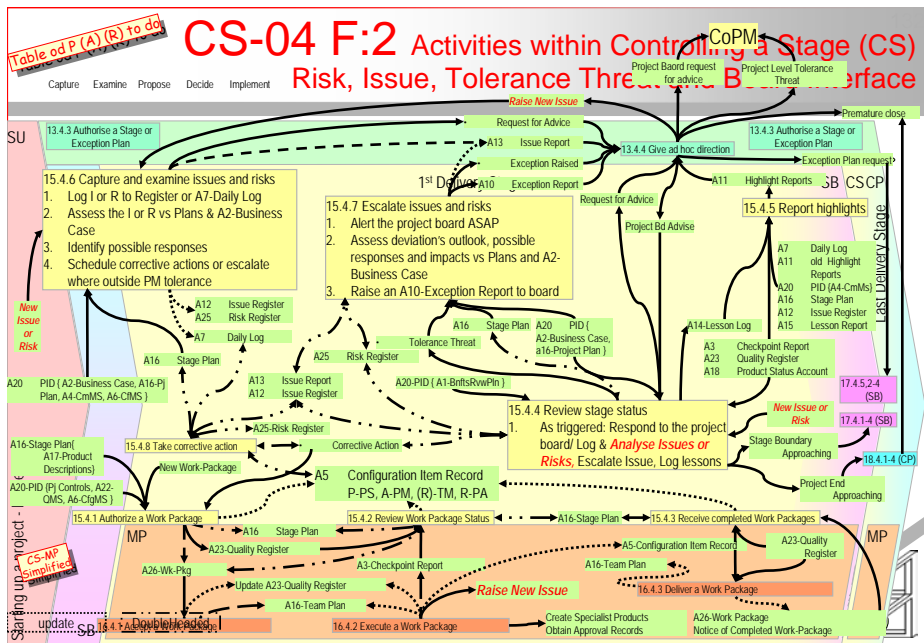
11.1.4.1.1.2 Sources of Concern

Concerns arise from:

> being actually off-baseline,
> having potential to be off-baseline (threat and opportunity) and
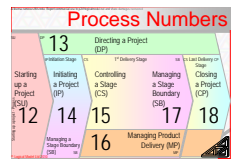> when we might desire to amend the baseline (Request For Change).

When the off-baseline aka variance is by more than stage or project tolerance permits the project manager follows the exception handling process of **[15.4.7** Escalate issue and risks] to the project board. Otherwise the project manager will directly **[15.4.8** Take corrective action].

For exception situations that breach project tolerances the project board <u>must</u> escalate the concern to the sponsor for a decision.

Initial assessment to determine the nature of the concern is conducted by **[15.4.6** Capture and examine issues and risks].

The process for handling concerns may be used during the Initiation Stage. Its 'normal' home is during the benefits enabling, specialist stages.

Process Numbers

13	Directing a Project (DP)		
Initiation Stage	1st Delivery Stage		Last Delivery of Stage
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
		16	Managing Product Delivery (MP)	

Section: 2   Page: 11.1.4:499 of 541

CS-04 F:2 Activities within Controlling a Stage (CS)
Risk, Issue, Tolerance Threat and Board Interface

CoPM
Project Board request for advice   Project Level Tolerance Threat

Table od P (A) (R) to do
Capture   Examine   Propose   Decide   Implement

Raise New Issue
Request for Advice
Issue Report
Exception Raised
Exception Report

Premature close

13.4.3 Authorise a Stage or Exception Plan

13.4.4 Give ad hoc direction

13.4.3 Authorise a Stage or Exception Plan

Exception Plan request

15.4.6 Capture and examine issues and risks
1. Log I or R to Register or A7-Daily Log
2. Assess the I or R vs Plans & A2-Business Case
3. Identify possible responses
4. Schedule corrective actions or escalate where outside PM tolerance

15.4.7 Escalate issues and risks
1. Alert the project board ASAP
2. Assess deviation's outlook, possible responses and impacts vs Plans and A2-Business Case
3. Raise an A10-Exception Report to board

15.4.5 Report highlights

Highlight Reports

15.4.4 Review stage status
1. As triggered: Respond to the project board/ Log & Analyse Issues or Risks, Escalate Issue, Log lessons

New Issue or Risk
Stage Boundary Approaching
Project End Approaching

15.4.8 Take corrective action

15.4.1 Authorize a Work Package

15.4.2 Review Work Package Status   15.4.3 Receive completed Work Packages

Configuration Item Record
P-PS, A-PM, (R)-TM, R-PA

16.4.3 Deliver a Work Package

16.4.2 Execute a Work Package

update   DoubleHeaded

11.1.4.2 Integrated Risk, Issue and Change Exception Handling Procedures

The official manual's procedure runs:

➢ **[15.4.6** Capture and examine issues and risks] to
- Create the **A12-**Issue Register entry and
- Create the **A13-**Issue Report

➢ If the concern's untreated impact or impact of treatment breaches tolerance **[15.4.7** Escalate issues and risks] by:
- Creating an **A10-**Exception Report for

➢ the project board to **[13.4.4** Give ad hoc direction] which is generally to either:

1. **[17.4.5** Produce an Exception Plan] which leads to an
- **[17.4.2** Update the Project Plan] in order to
- **[17.4.3** Update the Business Case] and
- **[17.4.4** Report Stage End].
2. Closing a Project (CP)
3. 0.

There are several opportunities to tailor the processes.

11.1.4.3 [15.4.6 Capture and examine issue and risks]

Identify and share the concern with stakeholders. Assess significance and determine the steps to treat the concern.

11.1.4.3.1 Capture: Not Record but Communicate

This step often reads "Capture the issue [9.3.3.1]" or "Identify the risk [8.3.5.1]" or "Register in the **A12-**Issue Register or the **A25-**Risk Register" but it is 'share the concern with relevant stakeholders' that is the actual purpose. In the bowels of a team 'capture' is probably a discussion between team member and team manager or perhaps project manager.

SOOP-229.   *Recording concerns is actually of little value on its own and not the true aim: it is underlined communicating that is of value.*

Ensure that all concerns are shared with all stakeholders when the concern is registered. 'Shared' must ensure that all stakeholders are actively informed of new and changed concerns. A positive "thanks not relevant" or "thanks, yes, relevant to us" should be demanded.

11.1.4.3.1.1   'Relevant' Stakeholders

PRINCE2® defines a minimum 'relevant' set of people [for an exam] as "the issue's author". Best practice uses the **A4-**Communications Management Strategy based on solid Stakeholder Analysis. It is in the management of concerns (ie off-baseline

situations) that good stakeholder analysis, initial planning and communications is a make or break capability.

11.1.4.3.1.2   Communicating Concerns

My suggestion is that every concern's summary is circulated to stakeholders (Project support should be allowed some discretion to decide who is relevant but the tendency should be to include rather than exclude people in the initial circulation).

Each stakeholder then has a duty to respond if the concern is relevant to them because they are impacted by it or can assist in handling it. Initial response needs be no more than a "yea" or "nae". On subsequent circulations the concern might reasonably be to only those who registered interest. Any interested party who thinks some stakeholder is missing from the circulation list has a duty to advise project support of the omission.

This regime does not guarantee good handling of concerns but can help. Note too that the project manager should only be actively part of a circulation that is a concern about the project's management but should be reviewing the whole Register Of Concerns for activity levels on open concerns.

11.1.4.3.1.3   Unclear Concerns

It is permissible at the capture step that the concern starts-off being poorly described. Focus should not progress until the concern is well described.

SOOP-230.   Insisting that concerns are well defined at the start will discourage people from raising them. Capture in any form, THEN bring-up to quality needed to develop potential responses.

SOOP-231.   For a concern to be 'Well described' means the acceptance criteria, success criteria, and success factor(s) of the investment that the concern affects are all described post-concern terms or in impact by the concern terms and perhaps both.

11.1.4.3.1.4   Clear Concerns

At the capture stage a clear concern starts by stating the cause and context, whether potential, inevitable or historic record. Sooner or later it must also express the consequences for the business cases of all significant stakeholders from inaction and all possible actions.

11.1.4.3.1.5   Labelling the Concern

It may be possible to categorise or label the concern at this point in time: not for labelling's sake – labels are short-hand or jargon for the type of analysis path we expect and the implied candidate responses types.

Apply a label if useful and easy. If argument over which label to use develops it shows there are weaknesses in the description and or the concern crosses

boundaries between types of concern. Knowing we have a variety of views is useful but continuing to argue over labels often uses time unproductively.

In this case define the options to address the concern and then (if still felt to be useful) reconsider labels after actions have been decided.
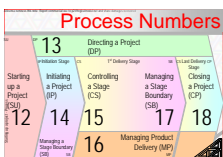
11.1.4.3.2 Treatment Path

As part of capture the project management team may consider each of several axis to decide the steps in the concern's treatment path.

The axis against which to assess a concern are:

1. Certain or Uncertain, Risk or not: is it a <u>fact</u> - probability 100% or 0% or is it a <u>possibility</u> - probability >0 and <1?
   - If it is a fact, has it happened or is it still to happen?
2. Past or Future for both causes and consequences: Has it happened already or is it still to happen, are both cause and consequence in the past, is only cause in the past or are both in the future?
3. Positive or Negative: are the variances associated with the concern good or bad?
   - The assessment may be different for different stakeholders or have multiple affects for even a single stakeholder
   - 'Associated variances' relate to
     - the untreated concern,
     - the affects of the treatments themselves and
     - the post-treatment nature of the concern
4. Mandatory or discretionary: EG The laws of physics, of nature and of governments normally dictate action about which the sponsor's only alternate choice is investment termination
   - For Requests from customers and for a supplier's technical options the possible responses are often discretionary. Decision is based on the aggregate of impacts and probabilities on the **A2-**Business Case of each party.
   - For the laws of governments the possible responses are often mandated. It may be relevant to distinguish: is it Criminal law, Contract law, Trust or Property law or Tort (making good to some one)?
5. Customer funded or Supplier funded: Who does the contract place the costs (will, skill, money, schedule, benefits enhanced or eroded…) on? Often who pays defines who is the decision making authority
6. Untreatable or Treatable at what level?

   For each of the possible dimensions of the risk what skill and authority level are required to define and select options?

==Is it within authority of the current person handling it or does it require relocation ('escalation') to financial, strategic or technical authorities for decision==

- ==At what level do the untreated (inherent) impacts match the authority and tolerance levels of the project's organisation structure?==
- ==At what level do the impacts of the possible treatments match the authority and tolerance levels?==

==Questions asked might be:==

- Is there something that can be done to affect its probability?
- Is there something that can be done to affect its impact?
- Is there something that can be done to affect its timeframe?
- For each element what skill levels are required to design solutions?
- For each of these what resources are required to execute each option?

7. ==Urgent or not==
8. 0.

11.1.4.3.2.1 Preliminary and Full Assessment

A preliminary assessment of the concern may be cost-beneficial, particularly to consider urgency. Judging urgency is often subjective and urgency results from either:

1. We (I) need 'pain relief right now' or
2. The time required to respond and for the response to be effective are close to equal.
3. If we delay action will the cost of action increase or the potential for benefit decrease?
4. 0.

A full **[15.4.6** ~~Capture and~~ examine issues and risks] is needed to perform a complete (but if not urgent then perhaps leisurely) Impact Assessment and thus fully determine urgency and severity.

11.1.4.3.2.2 Urgent Issues

For urgent (and on-going) concerns **[15.4.6** Capture and examine issues and risks] might be inter-leaved with **[15.4.7** Escalate issues and risks]. First action may be a verbal briefing for the exec as soon as a situation that will require authority or expertise outside the team is identified.

Subsequent discussions with the exec may agree the resources to be assigned to identifying and qualifying possible responses. The exec's advice may be especially relevant if planned progress will be interrupted by the analysis effort.

The project manager may suggest when more complete reports, but perhaps still intermediary reports, will be provided.

Raising the concern and its 'escalation' and examination may have started with the exec and been 'escalated' down to the project management team.

Assuming the concern relates to an "oh shit…" moment 'examine and escalate' may be immediate and evolve over time.

11.1.4.3.2.3   Non-Urgent Issues

If the concern is a Request For Change that does not demand urgent response the impact analysis as part of **[15.4.6** Capture and examine issues and risks] may be batched with other concerns (described below).

11.1.4.3.2.4   We Should Also Explicitly Check

In order to suggest solutions it will help to consider:

➢ Did the concern arise because the world changed away from the project management team's plan's aim and/ or approach?

- Will the move away from plans continue or reverse or is the context now stable?

➢ Did the concern arise because we failed to follow the plan correctly? EG the plan's content was not known, or was not understood or was not bought-into by the organisation?

- Re-planning activities need to address the root causes!

➢ Did the concern arise because the plan was wrong? IE what the plan described and reality do not/ did not match?

Was/ Is the miss-match a one-off or a systematic error in estimates, were material factors overlooked…

and

➢ Do we wish to revert to plan directly and as soon as possible?
➢ Do we wish to plot a course to rejoin the plan somewhere ahead?
➢ Do we wish to revise the plan to reflect current reality?
➢ Do we want a wholly or mostly new route forward to the existing end point?
➢ Do we want a route to a new or adjusted end point?

To decide the treatment path of the concern it must be assessed as urgent or not, treatable or not, certain or not, customer or supplier funded.

11.1.4.3.2.5   When The Concern is Treatable

Where some management level has a concern that is either:

➢ a <u>problem</u> (treatable actual or inevitable concern) or
➢ treatable risk

IE actual or potential impact and identifiable responses are all within their tolerance and knowledge then they act to resolve the concern:

➢ The project manager follows procedures to **[15.4.8** Take corrective action]**.**

➢ The team manager does the equivalent within **[16.4.2** Execute a Work Package**]**.

➢ The project board do the equivalent by **[13.4.4** Give ad hoc direction] to the project manager to **[15.4.8** Take corrective action**]** or maybe to **[17.4.3** Produce an Exception Plan**]** which they may trigger directly or by presenting the concern as an issue at **[15.4.6** Capture and examine issues and risks**]** and then allowing the Controlling a Stage (CS) logic to unfold.

11.1.4.4 Impact Analysis

By definition Impact Analysis considers the impact to something: iceberg wise the ultimate impact is on the **A2-**Business Case of each of the parties involved. Impact analysis compares the current outlook for the costs (will skill etc) and benefits of the project to all the options available.

Typically the 'acknowledged' Impact Analysis activity debates the sponsor's **A2-**Business Case. All other stakeholders will make their own assessment and act accordingly – Peoples actions are only 'politics' when you don't realise what drives each stakeholder's behaviours (and perhaps when you do it is 'only politics'!).

11.1.4.4.1.1   Current Baseline Versus Possible Baselines

Impact analysis seeks to answer basically the same question several times over: "what if we did nothing/ something/ something-else … what does the project baseline look-like now?" First as a result of the concern in its untreated state and then in response to each potential treatment.

Creating baselines is the purpose of planning: impact analysis is simply re-planning plus comparison of the current agreed (but perhaps inaccurate) baseline and the new candidate baselines. Impact analysis feeds into response selection to decide how much, if any of the old baseline endures and how much is replaced by a new baseline.

As the PMBoK® more or less says: "the project's current baseline is the originally agreed scope, cost and schedule, plus or minus agreed changes."

11.1.4.4.2 Impact Analysis Step 1: Re-Planning Procedure

An impact analysis starts with determination of where the concern at hand first affects the planning steps:

➢ Is it relevant to the project's end-point and a re-assessment of the future-state-business-as-usual – IE change to 'WHAT' the project's objectives are?

➢ the end-point's products and their acceptance criteria – "how the senior supplier's obligations are recognised as met" and "how the end point contributes to return on investment?",

➢ the constraints of time, cost, scope (quality), resources available?

➢ the methods employed to produce the products?

➢ The tasks to control production?
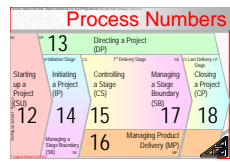
11.1.4.4.2.1   Repeat Planning From…

Where ever the concern engages with the planning steps then re-perform all planning steps from there onwards with the correct stakeholder group to identify options that are available to the project. EG the senior user's community must be in the stakeholder group if the concern affects the investment or the products and their acceptance criteria. The senior user(s) community is probably not required if the concern only affects the technicalities of solution development.

11.1.4.4.2.2   With the Right People

Remember that planning is a social activity. Which stakeholders should be involved in each concern's assessment is often partly self-selection and partly project manager's intervention either to engage or discourage.

Often when initial planning was well done impact analysis is easy due to the shared consciousness being carried-forward. Typically much of the current plan(s) are un affected and the impact analysis may simple be "remember we had another option at this point and could see no differentiation between them, well now we should…".

11.1.4.4.2.3   A Concern's 'Foot-Print': A18-Product Status Account

To determine just what is affected by any concern the focus is the products in the project's scope (management and specialist).

These were all defined when creating the Product Breakdown Structures (PBS) and **A17-**Product Descriptions. However neither PBSs nor **A17-**Product Descriptions tell us current status.

Status is recorded in the configuration management system's **A5-**Configuration Item Records. It is therefore often helpful to ask configuration management to provide **A18-**Product Status Accounts (extracts from the configuration management database of **A5-**Configuration Item Records) with selection parameters set appropriately to the concern in hand.

The **A18-**Product Status Account starts with the CIs directly affected and traces through linked products (EG interfacing products) and sub-products. The **A18-**Product Status Account should identify which results were considered finished, in progress or not started. Changes to project objectives may 'write-off' previously 'complete' work. Obviously 'un-started' CIs are cheaper to change!

The ID of any concern that affects a CI should be recorded in the CI's **A5-**Configuration Item Record to aid future reporting and impact assessment.

11.1.4.4.3 Batching

To reduce the proportion of fixed costs in handling each concern and so improve the cost-effectiveness of issue management procedures it is often sensible to 'batch-up' Impact Analysis and Implementation of changes (and other concerns).

The overhead and disruption of analysis, consideration and amending the baseline tends to be as great for one concern as ten or perhaps 100.

11.1.4.4.3.1   A10-Exception Report: Chicken or Egg?

Concerns that are untreatable by the project management team, whether certain or not must be escalated to the project board by preparation of an **A10-**Exception Report. The report requires "Implications for the Business Case have been considered and the impact on the overall Project Plan has been calculated [A.10.5]".

After the **A10-**Exception Report has been considered by the project board they may instruct the project manager to **[17.4.5** Produce an Exception Plan]. However the calculation of impact on the **A2-**Business Case and **A16-**Project Plan requires all the work of creating the exception plan!

Reality often means a cursory pass at preparation of an **A16-**Exception Plan is performed to feed into a draft revised **A2-**Business Case whose acceptance by the project board leads them may request the project management team to undertake a more rigorous pass at **[17.4.5** Produce an Exception Plan**], [17.4.2** Update the Project Plan] and **[17.4.3** Update the Business Case].

11.1.4.4.4 Final Impact

A concern's treated impact and thus true severity is the difference between outcome after 'this options' treatment and the baseline that will be replaced.

11.1.4.4.4.1   Know the Impact

Only when the concern's possible responses are know can the actual (final?) impact be known.

Imagine the following scenario:

Possible Future states	Costs	Return	Gross Impact.	Final Benefit
Unencumbered baseline	€6k	€21k	N / A.	€15k
Affected by an accepted issue with impact of -€6k	€6k	€15k	-€6k vs baseline	€9k
After response R-1 of cost €3k reduces the impact by €2k to -€4k	€6 + 3 = 9k	€17k	-€3 + -4 = -7k.	€8k

| After response R2 of cost €2k reduces the impact by €5k to -€1k | €6 + 2 = 8k | €20 k | -€2 + -1 = -3k. | €12k |
| After response R3 of cost €7k removes the impact | €6 + 7 = 13k | €21 k | -€7k. | €8k |

The difference between "Initial", aka "inherent" aka "do nothing" aka "unmitigated Impact" and each post-potential-response impact defines the concern's true aka final aka treated aka militated impacts and the solution's true 'value' (the change in project impact by taking this option).

On identification the concern has a -€6k untreated impact. After analysis and selection of response R2 the concern has a treated impact of €15 − €12 = -€3k which is made up of €2k of new costs and €1k of lost returns.

Unfortunately reality rarely provides reliable numbers and is full of qualitative assessments like "marketing would prefer…"

Only when none, one or some solutions are selected is the 'militated (final?) impact' of the concern on the project known. At this time it may be appropriate to re-assess priority. Exam wise changing priority apparently needs board level authority (your real-world mileage may vary YMMV).

11.1.4.4.4.2   Write-off and Remedy

If the concern's responses undo work already done, or discards or amends products already created then include tasks, their costs, resourcing and duration to reflect these write-offs and remedies.

11.1.4.4.4.3   Delete Costs and Benefits

Where re-planning deletes as yet un-completed (perhaps un-started) work and products then obviously subtract their unspent development costs and time and less commonly remembered you must also adjust benefits appropriately.

11.1.4.5[15.4.7 Escalate issues and risks]

11.1.4.5.1 Need For Escalation

Whether a concern needs escalating in its untreated state may be discernable with only a cursory pass at impact analysis. Whether its responses need escalating for selection will only be discernable after impact analysis.

[The official manual's suggestion that concerns should be judged on detection for formal or informal handling puts the cart before the horse if the choice of where to record and how to handle the concern is before the analysis.]

The idea should be "anyone can raise a concern at anytime. Later analysis may determine that it is only a problem and can be resolved by those analysing it or it is an issue for them and they must escalate the issue".

11.1.4.5.2 Escalating Issues and Untreatable Risks

Where the untreat**ed** actual or inevitable impact or the impact of potential treatments are outside any management level's tolerances then they have an untreatable concern (potentially good or bad) that requires escalation to those with authority and knowledge to decide. Likewise the concern is 'untreatable' if the project management team don't know how to respond.

Where the off-baseline is only potential (IE a Risk) but the responses are outside authority or knowledge then we have an untreatable risk:

SOOP-232.   Untreatable Risk: *"a future conditional state, (together with the potential causes and consequences that will have an affect on something that someone powerful enough to matter, cares about and) about which we cannot ourselves decide the actions to take".*

When a tolerance threat is detected:

➢ the team member/ manager raises the concern to the project manager.

The project manager receives the details verbally or via the **A12**-Issue Register, or perhaps an **A3**-Checkpoint Report.

➢ If necessary the project manager raises the concern to the project board.

Officially the project board receive the details in the **A10**-Exception Report, although hopefully the exec was pre-briefed.

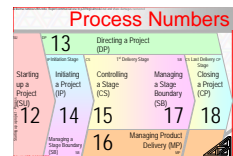➢ If necessary the exec raises the concern to the sponsor or portfolio management board.

It is always wise of the project manager to seek to give the project board prior warning of an exception report coming there way - reduce surprises to the minimum, prior warning is best done by an immediate face-to-face briefing.

11.1.4.5.2.1   **A10**-Exception Report

PRINCE2® states the contents for an **A25**-Risk Register and **A13**-Issue Report and an **A10**-Exception Report: implementation as separate items creates un-helpful duplication.

11.1.4.5.2.2   **A10**-Exception Report Product Description (Exam only)

A10-Exception Report {.

- ➢ Overview of the exception, cause and consequences for the project and more widely for sponsor and portfolio management board.
- ➢ Options available
- ➢ Recommendation and reason
- ➢ Lessons
  - Cross-Reference to the **A14**-Lesson Log

}.

I recommend that appropriate embedding will combines the source registers into a single Register Of Concerns. Further that embedding simple implement the an exception report as a simple extract of the relevant record(s) or a relevant subset of information from the register. The exception report may incorporate 'pretty-printing' such as colour graphs, tables of options and impacts to present background and options as clearly as possible.

11.1.4.5.2.3   Lessons in the Exception

The current official manual suggests recording lessons learned from an exception in the **A10**-Exception Report. This leads to fragmentation of which lessons are recorded where (or duplication – which is less of a concern).

Better is to decide during embedding to record all lessons directly to the **A14**-Lesson Log and if useful cross reference with-in the **A10**-Exception report.

11.1.4.5.2.4   Compiling the **A10**-Exception Report

The **A10**-Exception Report should summarise the impact analysis for the concern, covering the likely result if untreated and potential responses versus the **A20**-Project Initiation Document and its sub-products { **A2**-Business Case, **A16**-Project Plan and **A16**-Stage Plan – including the required resourcing, Risks } and any other elements of interest to stakeholders with an opinion and ability to exert influence.

11.1.4.5.2.5   Escalated Concerns Should Be Seen By The Portfolio Management Board

From the information supplied in the **A10**-Exception Report IE the extract from the Register Of Concerns the 'next higher level of management' considers the exception situation.

[**Recall**: project viability should include a portfolio level comparison with all other initiatives.] The project board compare the project's current status with their evolving remit from the sponsor or portfolio management board. Initially the project mandate but most likely now the **A20**-Project Initiation Document.

The project board **[13.4.4** Give ad hoc direction] to say if they:

- ➢ Want clarification of or extension of the **A10**-Exception Report
  - The project board need more information to make a decision - this is a loop back through the steps of analysis.

> ➢ Will make a decision later (They 'defer' the concern. A typical deferral would be until planning the next stage or planning a follow-on 'phase 2' project.
> ➢ Require the project management team to **[17.4.5** Produce an Exception Plan],
> ➢ Want the project management team to **[18.4.2** Prepare premature closure] or
> ➢ carry-on as is (for now) because the project board

- Have acted to resolve the exception, for example by applying their authority elsewhere in the organisation to free-up a log-jam)
- Grant a concession or
- Extend or varying stage scope or quality or cost or time or risk tolerances.

11.1.4.5.3 Propose & Decide

The official manual says "consider alternative responses". A better description may be: "Place the decision at the authorised management level and facilitate a selection between proposed responses (and escalate delays in decision making.)"

11.1.4.5.3.1 Escalation

So far everything may have happened within a management level and NOT need to be escalated in which case "Decide" and "Implement" remain at the same level as "Capture" and "Examine". For the project manager that means the guidance of **[15.4.6** Capture and examine issue and risks], **[15.4.4** Review stage status], and **[15.4.8** Take corrective action].

If the project manager does need to escalate to the project board then the following steps occur as guided by **[15.4.7** Escalate issues and risks] and **[13.4.4** Give ad hoc direction] and perhaps **[17.4.5** Produce an Exception Plan].

When the escalation is from team manager to project manager the mechanism may be verbal or via **A3**-Checkpoint Report or Register Of Concerns. When the escalation is from project manager to project board the escalation uses guidance from **[15.4.7** Escalate Issues and Risks]. When from project to CoPM PRINCE2® isn't explicit about the mechanism but the person responsible is the exec tp sponsor and sponsor to portfolio management board.

11.1.4.5.3.2 Make Recommendation

To move past "propose" to "decide" the decision must arrive in-front of those for whom the decision is within their authority levels.

For a concern of a technical nature with a large cost or schedule affect it is quiet likely that those with budget and schedule authority and those with technical authority are different people.

If the concern has had an impact analysis performed below the level of management who are currently considering authorising one of the options then it will be necessary to present several factors:

➢ the status quo,
➢ a description of the options available,
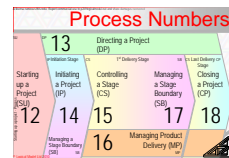
> a recommendation of the action to take and a reason for the recommendation.

SOOP-233.   Recommendations are in essence unauthorised decisions.

Therefore the "reason for the recommendation" should seek to describe why the 'lower' (often technical authorities) made the decision they did to frame the recommendation.

> The financially authorised then have to perform an act of faith and trust (or not).

It is quicker, safer and easier to make the decision if the decision maker participated in the social planning activities.

If the work of planning the overall investment was not important enough to need their involvement then why are they seeking to decide a detail now?

11.1.4.5.4 Decide (9.3.3.4)

The person or group with appropriate authority selects between the options and takes or delegates action.

Often on discovery of a concern that after analysis is found to be an issue and escalated (with options and or recommendations) for a decision then the chosen action is delegated back to the level where the concern was analysed.

11.1.4.5.4.1   Approve, Reject, Defer

When faced with the available options that respond to a concern, particularly a Request For Change, the common outcomes are either to.

> Approve one of the proposed solutions

IE replace the existing baseline within this management level's discretion with a proposed solution's baseline.

For a relatively minor concern at stage level the decision may be in [**15.4.8** Take corrective action]. The project manager revises the set of **A26-**Work Packages remaining in the stage. Some **A26-**Work Package(s) may be created and existing ones amended or deleted. Either way the **A26-**Work Packages are subject to scheduling based on available resources.

For more significant concerns the decision is in [**13.4.3** Authorise a ~~Stage or~~ Exception Plan] and the work-package delegated by the project board is a replacement stage.

At the project board's level the sponsor or portfolio management board are approving a new **A20-**Project Initiation Document (and thus contained objective, roles and appointments, control strategies, **A2-**Business Case and **A16-**Project Plan).

> Reject the proposed solution.

IE retain the existing baseline at this management level.

Rejection may ask for changes to proposed solutions.

> Defer

IE Reject for now. Defer maintains the current baseline in the short term with an intention to revisit the Approve/ Reject decision later. Defer may set a trigger or date for the re-assessment.

Often deferred concerns are batched in groups with similar characteristics. EG a set of RFCs for implementation by some skill set such as the electricians.

Batching may make implementation of a number of RFCs and concessions each of which is of marginal individual value worthwhile to undertake in aggregate.

If deferred to end of stage the deferred concerns may be incorporated in to the next stage's **A16-**Stage Plan by **[17.4.1** Plan the next stage**]**. If deferred to after the project then the concerns should be included in the Follow-on-Action-Recommendations section of the **A8-**End Project Report.

> Another outcome of the decide step may be to ask for clarification of any candidate solutions.

11.1.4.5.4.2　Informal Issues

To come full circle and relax the assertion that every concern must be logged to the Register Of Concerns: a concern raised in discussion and quickly seen to be an action not requiring creation or amendment of any **A26-**Work Package and within the authority and expertise of those discussing it may simply result in an action noted in the appropriate project management team member's **A7-**Daily Log and actioned directly from there.

We might now call this 'less formally' than other routes (it IS following defined form, so is 'formal'). Some thing raised in **A3-**Checkpoint Report or **A11-**Highlight Report may have a very simple cross-reference

11.1.4.5.5 Implement

For action to be taken that addresses a potential, actual or desired off-baseline (IE risk, issue or problem (±)) needs changes to the relevant level of plan.

For actions to be scheduled, resourced, taken and tracked the possible actions that were recorded in the Register Of Concerns during impact analysis and response development and then chosen for implementation must generate **A26-**Work Packages that are incorporated into the **A16-**Stage Plan.

As a result the whole **A16-**Stage Plan may be new and be reflected in a revised **A16-**Project Plan. The **A16-**Project Plan's amendments may be reflected in higher level investment and strategic plans held by the sponsor or some portfolio management board.

11.1.4.5.6 Register = Options

The Register Of Concerns (or the **A12-**Issue Register and **A25-**Risk Register if you prefer to maintain them separately) record possible actions.

The Register Of Concerns IS NOT the basis from which to manage active responses to concerns. The Registers are purely a record of possible actions whether previously or currently selected, or still only a potentially response.

11.1.4.5.6.1   Manage From the Plan ONLY

If **A26-**Work Packages are handed out from the registers it leads to the management of the project from multiple places, a fragmented baseline and consequential difficulties for tracking resource demands, cash-flows and earned value (progress).

Don't (try to) manage work assignments from the **A16-**Stage Plan and the registers!

11.1.4.5.6.2   Register is not Plan

The Register Of Concerns explains what affected the **A16-**Project Plan or **A16-**Stage Plan's evolution.

Even when 'action' is explicitly "no action" or simple questions are answered immediately with no affect on the **A16-**Stage Plan or **A16-**Team Plan the fact needs to be clearly marked in the register's audit trail.

The Register Of Concerns adds value rather than bureaucratic duplication of stuff recorded elsewhere. Its usefulness includes 'as audit-trail', CYA (cover your arse) and for Learning from Experience sessions.

12 A Stage Boundary

Stage end may be the prelude to another stage or to the post-project activities that will be handled by Closing a Project (CP).

Managing a Stage Boundary (SB) is the guidance followed when the preparations needed are for further specialist product development work. Description of Managing a Stage Boundary (SB) is a very short section as almost everything has been described in Starting up a Project (SU) and the Initiation Stage.

Preparations for the next stage and conclusion of the current stage should be carried out close to the end of the concluding stage.

12.1.1.1.1.1   Normal or Exceptional Stage End

We may arrive at stage end normally or prematurely. IE SB may start at:

➢ **[17.4.1** Plan the next stage]

To create the **A16-**Stage Plan for the upcoming stage and seek authorisation of the next stage's scope and schedule, timescales and tolerances

➢ **[17.4.5** Produce an Exception Plan]

Re-plan in order to replace what remains of the existing **A16-**Stage Plan and amend or perhaps replace the current **A16-**Project Plan.

In both cases the rest of the activities in SB reflect project status and future intentions into any out-dated component parts of the **A20-**Project Initiation Document.

Specifically the project management team must **[17.4.2** Update the Project Plan] and **[17.4.3** Update the Business Case] but any other element of the **A20-**Project Initiation Document such as strategies and controls that require change will also be refreshed.

The project manager will also **[17.4.4** Report Stage End] in the **A9-**End Stage Report to the project board to consider whether to **[13.4.3** Authorise a Stage or Exception Plan] (or not).

12.1.1.1.1.2   Activity In Reality

Hopefully a moments reflection shows you that **[17.4.1** Plan the next stage**]**, **[17.4.2** Update the Project Plan**]** and **[17.4.3** Update the Business Case**]** are three sets of discrete guidance in a manual: not three separate activities or meetings within the project.

Planning the details of the next stage is likely to be impossible without having the updated big-picture of the **A16-**Project Plan and without having taken a view on the best current **A2-**Business Case. Equally updated **A2-**Business Case and **A16-**Project Plan both rely on the new **A16-**Stage Plan for cost and schedule details.

12.1.1.1.2 *Approaching End of Stage*

The approach of a normal stage end is detected by the project manager in **[15.4.4** Review stage status]. Stage end may be signalled by any and all of:

- ➢ the impending completion of all tests and reviews that were added to the **A23**-Quality Register during stage and team planning,
- ➢ by the marking of all **A5**-Configuration Item Records within the stage's scope as having reached some maturity level and or
- ➢ by the tasks of the current **A16**-Stage Plan being tracked as completed.

    Note that Managing a Stage Boundary (SB) is always needed at least once in every project that survives to the end of the Initiation Stage. The stage after the Initiation Stage may be the last stage and thus end with Closing a Project (CP).

The approach of the stage's end may be identified by a growing or sudden realisation that the project's performance is or will be off baseline by more than tolerances allow. IE in exception! In this case handling a stage boundary starts with **[17.4.5** Produce an Exception Plan] as described later *See X on Y*.

12.1.1.1.2.1 *Managing a Stage Boundary (SB) is the Initiation Stage Again*

End of stage is basically a repeat of the Initiation Stage's work or at least a review of the outputs: we assess the <u>current view</u> of the adequacy of everything initiation created to manage the project and we prepare the **A16**-Stage Plan for the approaching next stage.

The project management team refresh, relax or extend controls and roles, strategies and schedules as current context and attitudes require: the context or tone of the organisation outside the project may have changed in a way that requires more, less or different controls in the project.

Process Numbers

13	Directing a Project (DP)		
Initiation Stage	1st Delivery Stage		1=Last Delivery or Stage
Starting up a Project (SU)	Initiating a Project (IP)	Controlling a Stage (CS)	Managing a Stage Boundary (SB)	Closing a Project (CP)
12	14	15	17	18
Managing a Stage Boundary (SB)			Managing Product Delivery (MP)
		16	

Section: 2   Page: 11.1.4:517 of 541

SB-04 F:2   The activities within the SB process

12.1.1.1.2.2   Stage Scope

The product scope of the up-coming stage should be discernable from the **A16-**Project Plan and the project Product Breakdown Structure (PBS) or product backlog in some contexts.

12.1.1.1.2.3   First Gather The Stakeholders

The first step in the activities to **[17.4.1** Plan the next stage**]** is to gather the appropriate stakeholders. 'Appropriate' means they have opinion that matters on what is in stage scope or are able to decompose the project Product Breakdown Structure (PBS) for this stage's scope.

If a stage boundary marks a major phase change then personnel may be leaving or joining the project. Eg Architects are reduced while brick-layers and later electricians arrive.

The stakeholders involved must be able to state clearly acceptance criteria for products and for the processes in the product's development lifecycles that overlap this stage.

12.1.1.1.2.4   Review the **A20-**Project Initiation Document

The assembled stakeholders tasks start by reconsidering the **A20**-Project Initiation Document to ensure that there is clarity and agreement on current quality expectations, acceptance criteria, strategies, controls, risk appetite and

role holders. Changes to technical activity may dictate changes to the standards, controls or for example reporting frequencies that are relevant.

12.1.1.1.2.5   Maintain The Contract

Where projects are run under contracts then any changes to customer quality expectations and project strategies and controls that affect contract terms must be fully understood and agreed to by all parties.

Stage boundaries are not an opportunity to increase (or decrease) project overheads or scope without also amending price and delivery date but it is always a danger. *Recall* the missing, wrong, extra tests implemented in the quality review procedure.

12.1.1.1.2.6   Create New Project Records

As the Product Breakdown Structure (PBS) is decomposed for the stage any newly required **A17-**Product Description and **A5-**Configuration Item Records should be created or existing ones updated.

When the relevant standards as applied to product acceptance criteria and to development processes are defined the **A16-**Stage Plan and **A23-**Quality Register entries should be created as previously described in the Initiation Stage's descriptions of product based planning and activity based planning, estimating, scheduling and base-lining. *See X on Y.*

12.1.1.1.2.7   Include Costs of Quality, Controls and Contingencies

Before stage planning is complete the budgeted, resourced and scheduled scope of work must also include addressing all control needs, the tasks behind all **A23-**Quality Register entries, and all responses to concerns that are open and whose responses have been authorised.

Planning the stage may identify new concerns that will need to be recorded, and analysed. Responses will need to be suggested, selected and embedded into plans whether pro-active or reactive (contingent).

Appropriate levels of **A26-**Work Package tolerances and stage tolerances must also have been calculated and included in the **A16-**Stage Plan together with the audit trail to explain their validity. *See X on Y*.

12.1.1.1.3 [17.4.2 Update the Project Plan]

The project management team must consolidate the previous stage's verified progress and the next stage's intended results to **[17.4.2** Update the Project Plan**]** with details of achievements, costs (to date and to completion), risks, role-holders and all other changes. The revised **A16-**Project Plan should show the currently expected schedule of deliveries into future-state-business-as-usual.

Updating the **A16-**Project Plan for the status stage that is closing will be a small task if **[15.4.4** Review stage status] or **[15.4.2** Review Work Package status] have been routinely tracking status into the **A16-**Project Plan. Whether updating the

A16-Project Plan is a small or large task it should be done before [17.4.1 Plan the next stage] (or [[17.4.5 Produce an Exception Plan]) so as to establish the next stage's starting point and then done again after or in parallel with creating of the A16-Stage Plan (or A16-Exception Plan) to capture current expectations of cost and timescale.

The revised A16-Project Plan should be used by the project board during the next stage as the baseline against which to monitor expectations when achievements are reported in A11-Highlight Reports and from project assurance's involvement in quality reviews.

12.1.1.1.4 [17.4.3 Update the Business Case]

The refined or revised costs and delivery timescales from [17.4.2 Update the Project Plan] are used to [17.4.3 Update the Business Case] and the A1-Benefits Review Plan.

When the project board [13.4.3 Authorise a Stage or Exception Plan] they must consider the current project context and current best A2-Business Case: as the world moves on both may be different from what was originally envisaged.

Size and timing of project costs and of benefits that arise from use of the project's outputs will affect the discounted cash-flow of the investment that the project is a part of. A revised investment appraisal should be created at each stage boundary.

12.1.1.1.4.1   Risk and the A2-Business Case

The A2-Business Case [really the whole current A20-Project Initiation Document aka Investment Appraisal] must reflect current uncertainties.

Risks may be strategic IE related to the return hoped for from the investment or tactical IE from the approach taken and the contingencies allowed for.
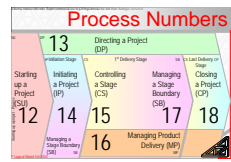
Both the level of uncertainty being carried and the willingness of the organisation to pursue opportunity or protect from threat may have changed during the last stage.

Unless the project is short and the context stable the best A2-Business Case today may drive a rather different A16-Project Plan and A16-Stage Plan than was required to achieve the very first A2-Business Case proposed.

SOOP-234.   Projects are successful when they deliver what the customer wants at the end (which is often not what the customer asked for at the beginning).

12.1.1.1.4.2   Benefits Achieved

It is possible that the stage ending delivered the start of some benefits streams. If so the benefits achieved should have been measured, recorded and the results used may cause updates to the A1-Benefits Review Plan (and A2-Business Case).

[Where actions can be suggested to maximise benefits these should be defined, perhaps as **A26**-Work Packages in the next stage or as tasks assigned via the sponsor to the senior user(s) staff.

12.1.1.1.4.3   *Scheduling Up-Coming Benefits Reviews*

If benefits reviews are within the project's scope then these should be included in the **A16**-Stage Plan so they are properly included in resource profiles, costs, progress reports and earned value baselines.

Further, the assignment, tracking and agreed closure of each assignment will be properly handled between **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package], **[16.4.2** Execute a Work Package] and **[15.4.2** Review Work Package status] and **[15.4.3** Receive completed Work Packages] and **[16.4.3** Deliver a Work Package].

The official manual describes benefits reviews in a separate plan – The **A1**-Benefits Review Plan. This is (only) acceptable if the benefits reviews are resourced, conducted and reported separately from the work the project manager is responsible for.

12.1.1.1.4.4   *Avoid Multiple Plans and Controls*

Don't run multiple work-streams using multiple plans and multiple control and reporting regimes: it increases complexity without benefit to the project.

The simplest and best solution is to embed project management into the organisation as investment management with a phase for investment qualification, as many stages as are required for the benefits enabling phases and as many stages as required for benefits harvesting phases. The sponsor oversees them all while the project manager may only be in-post for the initiation and enabling work, after which it is the user community that generates the benefits.
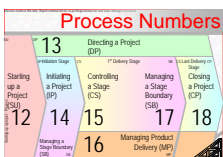
]

12.1.1.1.5 Summarise the Status Quo

As the contents of the **A20**-Project Initiation Document completes being updated and quality reviewed and the next stage's **A16**-Stage Plan is also known to be fit for purpose the project manager finalises the **A9**-End Stage Report to **[17.4.4** Report Stage End**]** to the project board.

The **A9**-End Stage Report provides the project management team with the project manager's view of the project's outlook and reports the objectively assessable achievements to date.

[The exec or sponsor should do the same for the portfolio management board.]

12.1.1.1.5.1   *A9*-End Stage Report

The **A9**-End Stage Report summarises progress to date and the project's outlook in sufficient detail for the project board to **[13.4.3** Authorise a Stage or Exception

Plan] (or not). Its contents should be ratified by all project assurance representatives prior to deliver to the project board.

The **A9**-End Stage Report may be delivered as a presentation in a meeting or conference call or sent as a report, EG in eMail or on paper. The **A9**-End Stage Report may be an extract from records held in a project management tool.
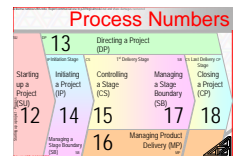
A18-Product Status Account and distribute via **A4**-Communications Management Strategy

12.1.1.1.5.2   *A9-End Stage Report Product Description*

At the end of the Initiation Stage the **A9**-End Stage Report may be a sub-set of the following, otherwise at end of benefits enabling stages it might contain {

➢ The project manager's <u>summary of actual performance</u> at project and stage levels versus strategies and plans, tolerances and controls in terms of schedule, budget, quality and scope, benefits, risk and issues. Details include:
  - Public recognition of people's helpful contributions
  - Unusual and or unforeseen situations that arose during the stage
  - Positive lessons to be learned from and repeated and mistakes to be avoided in future
  - Summary of current concerns (risks and issues (not problems) relevant to the future of the project)
  - [Resourcing planned and provided
  - Project board involvement expected and received]

➢ The project manager's <u>forecast for the future</u> conduct of the project and the stage versus strategies etc:
  - The **A2**-Business Case's current viability, including benefits achieved and still reasonably remaining. Commentary on changes from previous versions of the **A2**-Business Case should be included.
  - The project's current risk profile: threats and opportunities, especially where the **A2**-Business Case investment appraisal and expected benefits are uncertain

➢ Follow-On-Action-Recommendations (FOAR) for outstanding concerns (risk, issues, concessions, off-specifications) and actions required on handed-over products or any other reason: EG Lessons observed.

➢ Statistics and commentary on:
  - Quality reviews planned, held and the results achieved including off-specifications, issues raised, concessions granted, rework required
  - Product approvals planned, actually sought and achieved plus expected products not produced and those handed over to operations and maintenance or ready for hand-over.
  - History of Issue summarising the volume and aggregate impact of Requests for change, Off-specs and Concessions in the stage just closing

}

12.1.1.2 Handling Exceptions

We would have reached the end of the Managing a Stage Boundary (SB) discussions except that we could have started the Managing a Stage Boundary (SB) activities due to an exception situation.

In an exception the existing stage is terminated prematurely. The trigger may have been a tolerance threat, or it may have been an instruction from CoPM to propose alternative plans.

The existing **A16-**Stage Plan is wholly or partially replaced. The current **A16-**Project Plan may be updated or replaced (or may still be valid): replacing the **A16-**Project Plan generally means having to replace both project and stage plan.

12.1.1.2.1.1   *The Trail Leading To An Exceptional Stage Boundary*

The need to **[17.4.5** Produce an Exception Plan] is the response to a number of possible sequences.

In most exception cases the balance of costs and benefits that were sufficient to justify the project are no longer as presented when the project board agreed to **[13.4.2** Authorise the project].

Generally the sequence is:

➢ A concern is noted
➢ An entry is created in the Register Of Concerns (or if you prefer an **A12-**Issue Register entry is made and an **A13-**Issue Report created or an **A25-**Risk Register entry is made) to **[15.4.6** Capture and examine issue and risks]. The examination must reveal a tolerance threat or a situation the project manager wishes to seek advice on
➢ The Tolerance threat is therefore recognised and the project manager prepares the **A10-**Exception Report to **[15.4.7** Escalate issues and risks] to the project board
  • or the project board request an **A10-**Exception Report (for example as a result of the sponsor changing the project mandate, as a result of a concern or any other cause.)
➢ The project board **[13.4.4** Give ad hoc direction] as a result of which they requested an **A16-**Exception Plan
➢ The project manager gathers the project management team to **[17.4.5** Produce an Exception Plan]. The steps that follow are mostly as Managing a Stage Boundary (SB) has already been described.
  • The entry in the Register Of Concerns will probably now need to be updated to reflect current status.

12.1.1.2.1.2   *Handle exceptions*

Ordinarily when handling an exception the **A10-**Exception Report that provides an analysis of the concern faced will have been created as suggested at **[15.4.7** Escalate issue and risks**]**.

If the situation is caused by an instruction from the project board, the sponsor or the portfolio management board then the work to create the information in an **A10**-Exception Report may also have to be done now.

12.1.1.2.1.3   Assessing The Status Quo

What ever the trigger for the request from the project board to create an exception plan the current status quo must be determined so that the project management team can plan "from this point onwards". The **A16**-Exception Plan will be picking up from a partially performed stage.

Current status may be assessable from the **A16**-Stage Plan, if it has been properly created and tracked, plus the **A20**-Project Initiation Document {**A2**-Business Case and **A16**-Project Plan } particularly.

If the **A16**-Stage Plan was well defined and being tracked then one assumes the exception occurred through a risk or unforeseen concern, otherwise the **A16**-Stage Plan may not be a reliable way to determine the status quo. In this case a stage oriented **A18**-Product Status Account may be a more reliable way to define the status of the stage's "work in progress", "due-not-started" and "due-finished".

12.1.1.2.1.4   Review the **A20**-Project Initiation Document

The **A20**-Project Initiation Document will need to be reviewed just as for a normal stage end although perhaps with a more critical eye in the case of an exception. Projects do enter an exception state for entirely unpredictable, un-foreseeable and un-mitigate-able reasons - but only rarely. Even foreseeable concerns can be protected against via reserves.

Review and update of the **A20**-Project Initiation Document should cover:

➢ Customer quality expectations,
➢ Required outputs and project approach,
➢ The control regimen and the four strategies
   • { **A4**-Communications Management Strategy,
   • **A6**-Configuration Management Strategy,
   • **A22**-Quality Management Strategy and
   • **A24**-Risk Management Strategy },
➢ team composition and performance,
   • Roles definitions and
   • levels of responsibilities that define when some concern is an issue or a problem for them

All these need examination for adequacy and potential change. EG role holders may be more likely to change after an exception. Stage boundaries and reporting regimens and frequencies are more likely to be amended than at normal stage end.

12.1.1.2.1.5   Then Do the Rest of SB as Normal

The management of the stage boundary will then proceed more or less as normal to cover the guidance of **[17.4.2** Update the Project Plan**]** and **[17.4.3** Update the Business Case**]** and **[17.4.4** Report Stage End**]**. The revised **A20-**Project Initiation Document including revised controls, strategies, **A2-**Business Case, project management team etc and the new **A16-**Stage Plan and **A9-**End Stage Report will be assessed at an Exception Assessment that still follows the guidance of **[13.4.3** Authorise a Stage or Exception Plan**]**.

Now that is SB done.

12.1.1.2.2 Submission to the project board

However we arrive at **[13.4.3** Authorise a Stage or Exception Plan]: whether by normal or premature end of stage the project board must consider what is submitted.

Normal stage end results in an End Stage Assessment. Premature stage end results in an Exception Assessment. Both are aimed at the project board deciding if they will **[13.4.3** Authorise a Stage or Exception Plan**]**.
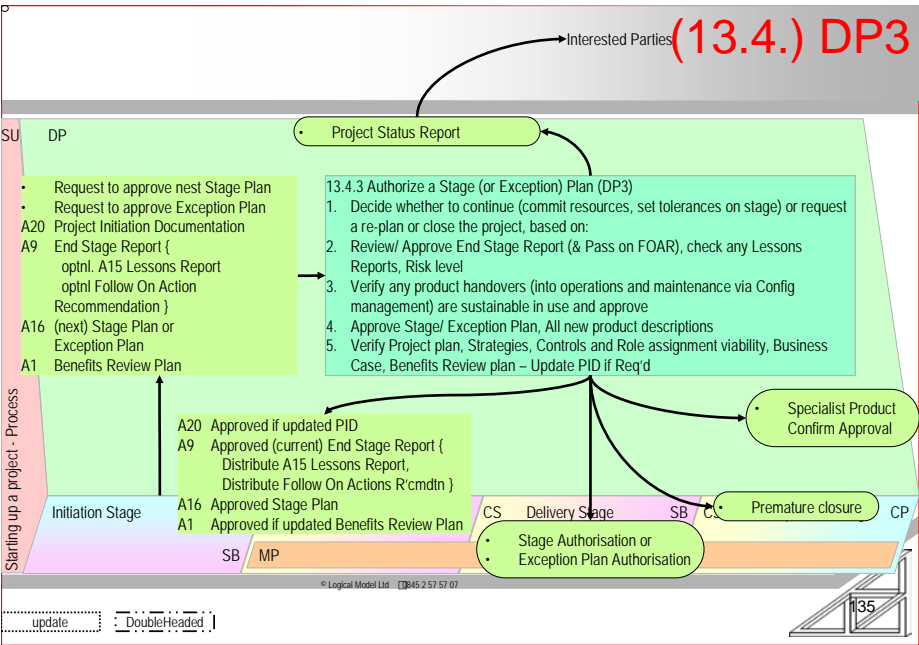
As in the Initiation Stage so during Managing a Stage Boundary (SB) the project board (and representatives) should have been deeply involved in creating the plans IE the project's models of how to realise the best possible return on investment. As a result the real decision should be made by the portfolio
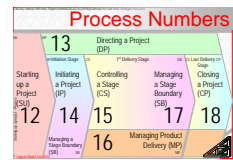
management board as the project board should not have an independent and unbiased opinion: they should be motivated, committed and bought-in to the project.

A biased assessment may compromise the shareholder's interest.

The project board should assess if the project will:

➢ now proceed to Controlling a Stage (CS) and restart the technical work by **[15.4.1** Authorise a Work Package] or
➢ proceed to a premature entry to Closing a Project (CP) or
➢ the project board may ask for Managing a Stage Boundary (SB) to be repeated with some amended combination of constraints and targets.

13 The Final Project Boundary

Once started a project will always have closedown activities.

At the end of the last benefits enabling stage the activities of the project management team **[18.4.1** Prepare planned closure**]** or **[18.4.2** Prepare premature closure**]**

The project management team:

➢ ensure acceptances and **[18.4.3** Hand over Products] that haven't yet been handed-over but can be then
➢ **[18.4.4** Evaluate the Project] achievements versus the project's success criteria recorded in the **A20-**Project Initiation Document
➢ and finally **[18.4.5** Recommend project closure] to the project board to **[13.4.5** Authorise project closure]

13.1.1.1.1.1   Dissolve the Contracts

Whether the entry point to Closing a Project (CP) is normal or premature the purpose is to dissolve the 'contract' created at **[13.4.2** Authorise a project**]** when the project board committed resources in return for a result.

Project closure must terminate all formal and informal contracts and financial arrangements should transition from project based to business-as-usual formats, EG annualised operational budgets and quarterly performance and revenue targets.

13.1.1.1.1.2   Orderly Project Transition to "What Next?"

At Closing a Project (CP) we have either succeeded in delivery or (partly?) failed. Either way the project must be disassembled in an orderly manner that supports release of resources, archiving of auditable records and the passing on of project results including the **A1-**Benefits Review Plan and open problems, open issues, open risk and lessons observed to the best people to capitalise upon them.
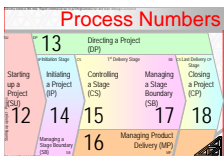
Normal closure activity is planned as part of planning the final stage.

[Premature closure has to be planned as a mini-exception plan !]

13.1.1.1.1.3   Assess Products Are Used and Supportable

Where creation of outputs was successful, if only partially then closure should:

➢ Confirm or secure user acceptance of products and
➢ Check that a support capabilities exists for the products in the future-state-business-as-usual,
➢ assess any benefits so far, and
➢ ensure reviews of future benefits are scheduled.

13.1.1.1.1.4   Active Benefits Management

[At this point we should be implementing some form of 'benefits <u>management</u> regimen (BMR)' not a schedule of reviews. 'Use' is another phase in the life of the products that should be managed through transition to full future-state-business-as-usual by an appropriate stage or stages.

The official manual's view is that project closure is required to "prevent a slow drift into use". I suggest that 'drift' is an emotive word that conveys little else.

A well defined transition of responsibilities and budget structuring is required, so are any required changes in resource assignments and perhaps changes to role definitions: it is common for business-as-usual staff to be seconded into projects and transition back into operational roles at product hand-over. In some contexts it is not uncommon for the project staff to become the support function.
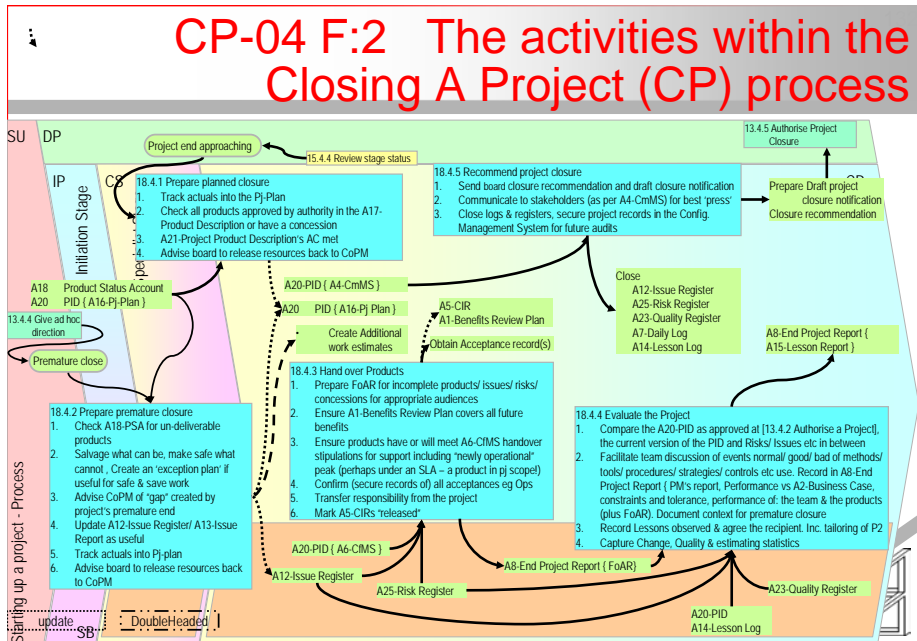
There are many ways to transition from project to future-state-business-as-usual that are more descriptive than 'drift':

➢ All in one go - also called 'big-bang'

Generally the highest risk, but also the strategy that focuses attention on resolving oversights and problems and avoids problems of phased approaches.

➢ Bit-of-scope-at-a-time – that might introduce subsets of the whole future-state-business-as-usual to the organisation over time

➢ Bit-of-the-business-at-a-time – that might introduce the future-state-business-as-usual to sub-sets of the organisation one after another

• This approach may trial the future-state-business-as-usual in one part of the business before wide-spread introduction

Phased approaches are often lower risk of catastrophe but stress the organisation to handle old and new business-as-usual simultaneously with dual costs. EG a slow move to a new head-quarters building means both are being heated, serviced and rented or sitting as capital on the balance sheet.

]

CP-04 F:2   The activities within the Closing A Project (CP) process

13.1.1.1.2 [18.4.1 Prepare planned closure]

When the project manager runs out of **A26-**Work Packages that create specialist outputs in the last benefits enabling stage then the project's natural end is approaching.
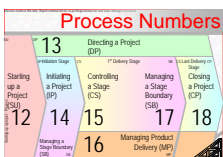
The project management team will execute the **A26-**Work Package that is **[18.4.1** Prepare planned closure**]**. In a normal closure context the enabling stages of the sponsor's investment end when the project board are satisfied that what is currently seen as the project's scope has been achieved.

SOOP-235.   *[Classically the call is for the project to close when it has achieved what was planned at the beginning: common sense and reality dictate projects should close when what is wanted at the end is completed. There may be contract issues to resolve if these two views diverge in ways that have not been subject to adequate change control.]*

13.1.1.1.2.1   Final Tracking of Plans

The project manager completes tracking of status versus baselines to confirm "all done". The official manual says "update project plan" but the correct target (of which the **A16-**Project Plan is a necessary step) is to update the **A2-**Business Case for costs incurred and current benefits potential.

Status is gathered by reference to the project management records such as current **A16-**Stage Plan, the **A23-**Quality Register and all **A5-**Configuration Item Records in the form of a project wide **A18-**Product Status Account and the **A16-**

Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) 12 | Initiating a Project (IP) 14 | Controlling a Stage (CS) 15 | Managing a Stage Boundary (SB) 17 | Closing a Project (CP) 18

Managing a Stage Boundary (SB) 16 | Managing Product Delivery (MP)

Section: 2   Page: 11.1.4:529 of 541

Project Plan's project product description and project Product Breakdown Structure (PBS).

In total we seek to:

➤ Ensure all products are produced, met their acceptance criteria and are approved by their acceptance authority (or they are covered by a concession from their acceptance authority).
➤ Record the total potential impact on benefits that are now accessible
➤ Recommend to CoPM that project resources be released.

13.1.1.1.3 [18.4.2 Prepare premature closure]

If the project is being closed due to abnormal termination **[18.4.2** Prepare premature closure] performs a grand Impact Analysis and salvage operation to rescue anything of value and make safe anything in an unfinished state.

In the context of abnormal closure the project board **[13.4.5** Authorise project closure] when they are convinced the project has nothing more to offer. We seek to exit the project as quickly and cost-effectively as possible but 'salvage and make safe' may take time and effort.

Release of project resource should be matched to 'making the best of a bad situation'. IE some resources may need to stay with the project during its closure, but in general resources will be being released in an unexpected manner (EG early or late, perhaps without expected roles being available).

13.1.1.1.3.1   Unplanned Closure

Normal project closure is planned into the last benefits enabling stage. By definition a premature project closure is not expected and therefore the activities to close the project down will not have been scheduled and resourced. They will at least be known in general activity and dependency terms (that is the subject of this section). Assessment of project specific tasks, scheduling and resourcing will have to be part of the exception handling activities that led to the project board directing premature closure.

13.1.1.1.3.2   Salvage and Make Safe

Assessing 'salvage and making safe' will need the same picture of status that planned closure needs. The same sources are reviewed and updated as for planned closure (IE primarily the **A16-**Project Plan and **A2-**Business Case) plus an entry in the Register Of Concerns and **A14-**Lesson Log may be under development through-out premature closure. The **A18-**Product Status Account may show CIs as "work-in-progress" or "not yet started".

Where a project is being executed under contract legal help will be needed to resolve situations where there are products paid for and not delivered or delivered and not paid for.

13.1.1.1.3.3   Corporate Investment Strategy

The sponsor or portfolio management board will have to reconsider investment and business strategy in the light of project termination.

Which ever entry to CP is used the focus then shifts to three parallel activities:

13.1.1.1.4 [18.4.3 Hand over Products]

Recipients may have received **[18.4.3** Hand over of products] directly from team member/ managers when **[16.4.3** Delivering a Work Package**]** and thus **[18.4.3** Hand over products**]** in Closing a Project (CP) may be just a paperwork verification step. Equally it may be the step at which the legal, intellectual and or physical transfer of items and ownership takes place.

13.1.1.1.4.1   Product Acceptance

Checking acceptance is aided by configuration management providing the final **A18-**Product Status Account for the purpose. Of particularly note should be the acceptance criteria of the product(s) described in the **A21-**Project Product Description.

The products that are top level CIs are often an integration of lower level products that may be individually approved during earlier instances of **[16.4.3** Deliver a Work Package].

The project manager may need to secure some auditable record of individual and aggregate acceptances. Acceptances may be needed separately from 'user authorities' for "it does what we need" and 'maintenance authorities' for "we can keep it working".

13.1.1.1.4.2   Product Hand-over

In **[18.4.1** Prepare planned closure] and **[18.4.3** Hand over Products] the focus is on acceptance, especially from operations and maintenance staff of the whole integrated set together with all configuration management and maintenance support needed to **[18.4.3** Hand over Products**]** into use and support.

Approved products are 'handed' to appropriate recipients on the approval of appropriate authorities and **A5-**Configuration Item Records are updated to show products are handed-over, IE Released.

For a premature closure their may be nothing handed over or a need to recover items not paid for.

13.1.1.1.4.3   Product Follow-On-Action-Recommendations (FOAR)

Any outstanding work, problems, issues (EG Deferred requests for change) and risks should be noted and passed on with the products to relevant recipients as product or departmental specific Follow-On-Action-Recommendations (FOAR).
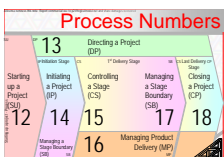
13.1.1.1.4.4   Transfer Includes Maintenance Elements

Where ever the products were actually handed over and legal title transferred: whether phased during the specialist stages or 'Big-Bang' at the end of the project's final stage a formal acceptance and transfer into BAU usage and maintenance under appropriate support arrangements is desirable.

Often the final handover includes design and maintenance documentation, production or maintenance tooling and configuration management records.

13.1.1.1.4.5   Support Agreements

As outputs are brought into use in the future-state-business-as-usual there is often a peak demand on support staff. Teething troubles need to be ironed out and unfamiliar procedures learnt.

Involvement of operations and maintenance staff during Starting up a Project (SU), **[14.4.6** Create the Project Plan] and **[17.4.1** Plan the next stage] should ensure that suitable arrangements for support have been considered. It is common for initial support to be provided by the project team or a subset of the team. It is also common for operations and maintenance staff to join the project at appropriate points to aid transition from old business-as-usual to future-state-business-as-usual.

13.1.1.1.4.6   Confirm Consideration of Benefits

Consideration of how the products are used to generate benefits and thus appropriate activities and benefits measurement regimes should be confirmed to be in place IE the **A1**-Benefits Review Plan is complete and in place.

The official manual's guidance is to plan for benefits review but "It is not a project activity to undertake benefits reviews post-project, only to plan for such benefits reviews to occur" [(sic) pg 208].

13.1.1.1.4.7   Early Future-State-Business-As-Usual is The Hardest Part of Benefits Delivery

In reality delivery of outputs generates concerns that were not all foreseeable (or were not foreseen) and thus the actions to realise the best return on investment are at least as fluid as the most uncertain parts of product development.

13.1.1.1.4.8   Benefits Realisation

The most important and difficult point in the investment cycle is the transition of a way-of-working from old to new. People resist it, technologies require tuning, unforeseen interactions and combinations require reactive support and discontinuities and disequilibrium is highly visible so political.

Early future-state-business-as-usual needs a control regimen as much if not more than product development. This is entirely the wrong time to release the project manager and exec.

13.1.1.1.4.9   Sponsor's BMR Duty

[PRINCE2®'s problems with governance and 'control' of the investment within the project's **A2**-Business Case start by not defining a role for the sponsor and continue at project closure by dissolving the project board's contract. We are left with a disconnect. Problems always manifest themselves at boundaries and hand-overs. The old-business-as-usual / new-business-as-usual is the hardest handover. To dissolve the project at this point is clearly a dereliction of duty, but is easily remedied.

The exec does not have to be the sponsor but the sponsor must have an enduring obligation to follow a benefits management regimen (BMR) from project mandate through to capability retirement.

Once outputs have 'settled' into a new business-as-usual state the sponsor's duties may be over in all but name. Any eventual retirement is typically within in the scope of the project that introduces new change.]

13.1.1.1.5 [18.4.4 Evaluate the Project]

I suggest it is widely acknowledged that people are not good at 'lessons learned'. Most organised 'Lessons Learned' sessions tend to be identification and perhaps recording of 'mistakes observed' even when introduced as "lets find what went well".

I also suggest that in large part 'lessons learned' doesn't work because it is an activity largely performed at project end: this is the wrong time and generates the wrong focus.

SOOP-236.   It is appropriate for the project management team to ask "how well are we matching our success criteria?" If we are to achieve some learning from our experience then the question should be asked in each team checkpoint, in each review of current status and in each planning session. Holding these discussions when closing a project is mostly a waste of time.

13.1.1.1.5.1   Original Intent and Final Results

The official manual suggests that **[18.4.4** Evaluate the Project] review the original **A20-**Project Initiation Document and the current version of the **A20-**Project Initiation Document.

This is judging the project by taking a look in the 'rear-view mirror' to see "how did we do versus original intent?" It also assesses how well we conducted change control: perhaps of some marginal value.

The better questions are:

➢ "did we capture intent and uncertainties related to it accurately?",
➢ "did we track evolving intent with controls that matched needs?"
➢ "did we have an appropriate balance of pre-planned and reactive controls?"
➢ "have we delivered value for money?"

13.1.1.1.5.2 Dynamic World

Projects are (mostly) driven by the market-place. The world-at-large is dynamic. A project that delivers what <u>was</u> asked for originally probably doesn't deliver what **is** wanted (needed) today. A customer's response to "What do you want?" may quiet legitimately be "I don't know". The project management team's job is to build a matched control environment.

That control environment should have different characteristics while moving from "don't know" to "that seems right" and into creation of outputs. Everything suggested in **[18.4.4** Evaluate the Project] should actually be performed in **[15.4.4** Review stage status].

13.1.1.1.5.3 Predictive and Reactive management

Hopefully we noted during Starting up a Project (SU) the project's context such as how stable the political or technical environment was and during social planning sessions how much good humour circulated. These two should have guided what sort of product development life-cycle was appropriate and how much change control (reactive management) would be needed.

The comparison of original context and intent plus change control is a useful comparison. It may provide some lessons to be recorded but is otherwise simply a reflection of the changes approved throughout the project's life-cycle. As they say "shit happens".

How the project performed is set-out in an **A8**-End Project Report and useful lessons observed may be recorded and sent to CoPM in the final **A15**-Lesson Report from the project. Any real learning occurred during the stages within **[15.4.4** Review stage status], **[15.4.1** Authorise a Work Package] and **[16.4.1** Accept a Work Package] and **[17.4.1** Plan the next stage] (and this could have been a longer list).

13.1.1.1.5.4 Lessons Observed

Lessons only become "learned" when they are applied elsewhere.

In this regard the official manual places some of the focus of 'Learning from Experience' in one of the right places: IE in Starting up a project (SU) and the planning of each stage.

13.1.1.1.5.5 Improved Estimating

The official manual suggests that **[18.4.4** Evaluate the Project] can help improve estimates for future projects. I suggest this isn't possible unless estimates are correctly used in this project during planning and execution. IE estimate raw trade-based quantities, derive cost and duration from critical path analysis and resource profiling then ensure accurate booking of actual results no matter how politically inconvenient. I also suggest "who cares about other projects? Lets get this one's future **A26**-Work Package's and stages right!".

If estimate creation, use and revision is well performed then analysis of project measures such as actual resource usage, costs and time-scales versus original estimates should be included in the lessons report.

If typical practices driving the psychological factors such as miss-booking of time recording codes is prevalent it undermines much of the value: when this is dealt with then passing estimates on to other stages and indeed other projects will create dramatic improvements in capability.

See Estimating.

13.1.1.1.5.6   Summarise the Registers

[18.4.5 Recommend project closure] will close the registers and archive them for any future audit. As part of the overall **[18.4.4** Evaluate the Project] the project management team should compile a finalised set of the whole project's statistics (Eg for Quality, Change, Risks [and Estimating]) and include it in the **A8**-End Project Report in a similar manner to those in the **A9**-End Stage Report

13.1.1.1.5.7   *A8-End Project Report Product Description*

The **A8**-End Project Report includes a view on how effective PRINCE2® tailoring was, the effectiveness of the four strategies and performance versus **A2**-Business Case (so far).
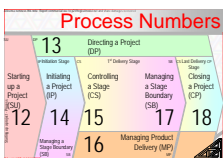
It might contain {

➢ Document control information
➢ The project manager's opinion of the project's performance in business target and process terms
  - Team performance
    - Particularly recognition for good performances from anyone involved in the project
    - [The project board's and project assurance's performance against commitments and the value of their contribution: again a politically sensitive assessment. The project manager is often unaware of realities operating at senior levels in the operational and sales spheres of the business that may look 'irrational' within a project context.

      Out with a mature organisation only the brave and foolish should include this one!]
  - Targets: The performance relative to the project's success criteria and the 20-Project Initiation Document.

    [The official manual says "the PID baselined when the project board **[13.4.2** Authorised the project], As already noted I'm unconvinced this is the right baseline, or at least the only one.]

- Evolution of the **A20-**Project Initiation Document { Project definition { Project objectives and desired outcomes, … }, … **A16-**Project Plan, … },
- the **A2-**Business Case and **A1-**Benefits Review Plan.
- The **A2-**Business Case's validity and realism: some political sensitivity may be needed here!
- Any benefits delivered so far and those currently expected (still outstanding and gross) contrasted with initial predictions – **A2-**Business Case validity and realism again perhaps

- Process

  The project dimensions IE strategies and controls, tolerances, exceptions, contingencies and change control

  In particular all 'note-worthy' events such as triggers for premature closure, performance beyond expectations, Stage level exceptions etc

➢ Summary of **A21-**Project Product Description outputs delivered

- For each product set any relevant Follow-On-Action-Recommendations (FOAR) should be included

➢ Compilation of records:

- Review of **A23-**Quality Register entries for retests, product approvals and Off-specifications with concessions for missing products, missing features or quality compromises
- Record of acceptances and hand-overs made to users and operations and maintenance
- Summary of open Requests for Change, Risk and Issues in the form of Follow-On-Action-Recommendations (FOAR) with suggestion of the recipient(s) of each

➢ **A15-**Lessons Report for the project in total, perhaps divided by contents specific to some groups within the stakeholder community.
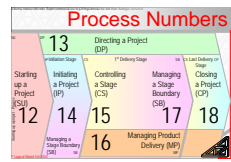
}

13.1.1.1.6 Follow-On-Action-Recommendations (FOAR)

Despite 30 references (sic) in the official manual the definition of Follow-On-Action-Recommendations (FOAR) was deleted from 2005 to 2009.

The "Follow-on-Action-Recommendations" should be included in the **A9-**End Stage Report and **A8-**End Project Report

The FOAR is used to pass details of unfinished work, ongoing issues, problems and risks or potential product modifications to the group charged with future support of the final product in its operational life. Often the recipients are the "phase-II" project team!

Separate Follow-On-Action-Recommendations (FOAR) may be created that are specific to different groups or departments.

13.1.1.1.6.1   Follow-On-Action-Recommendations (FOAR) Product Description

Based on the 2005 manual it might contain {

➢ Document control such as date and author
➢ An inventory of all open concerns (which should then be marked "transferred to Ops & Maint" in the project's records) that are:
   • unimplemented Requests for Change that may have merit
   • Off-Specifications (missing products and products that do match specification)
   • Currently open problems or issues
➢ An inventory of all threats and opportunities that may affect business-as-usual
➢ Project management team recommendations for:
   • All handover and training needs
   • Activities needed to take the product to the next stage of its life.
➢ All records that could usefully accompany the recommendations.

}

The Follow-On-Action-Recommendations (FOAR) will therefore pass to who ever comes next the results of analysis of options and record of responses that have been taken or have been identified but not applied.

13.1.1.1.7 [18.4.5 Recommend project closure]

[**18.4.5** Recommend project closure**]** is effectively a call to meeting for the project board to convene [**13.4.5** Authorise Project Closure**]** and pass on responsibility for the **A1-**Benefits Review Plan.

The project manager's last act is probably to send those identified in the **A4-**Communications Management Strategy any final project communications (EG the **A8-**End Project Report) and to send the project board the **A8-**End Project Report, a Closure recommendation and a draft project closure notification.
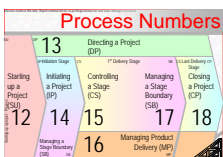
At this time all project registers and records are closed and archived according to the **A6-**Configuration Management Strategy. Records may be required in the future to support audits of project activity.

For the project board to authorise closure they must be satisfied that nothing necessary or cost-effectively useful for generating benefits is left un-done.

13.1.1.1.7.1   Bin the Rest

Of great merit is to bin everything that isnt' worth including in the **A8-**End Project Report (and Follow-On-Action-Recommendations (FOAR)) and isn't archived for audit purposes.

Projects generate lots of ephemeral material which obscures the useful. The project management team who are familiarity with the project's records are best

Process Numbers

13 Directing a Project (DP)

Starting up a Project (SU) 12 — Initiating a Project (IP) 14 — Controlling a Stage (CS) 15 — Managing a Stage Boundary (SB) — Closing a Project (CP) 17 18

Managing a Stage Boundary (SB) 16 — Managing Product Delivery (MP)

Section: 2   Page: 11.1.4:537 of 541

suited to sort the project records into an accessible archive. They should do so at the end of each stage, not just at the end of the last stage.

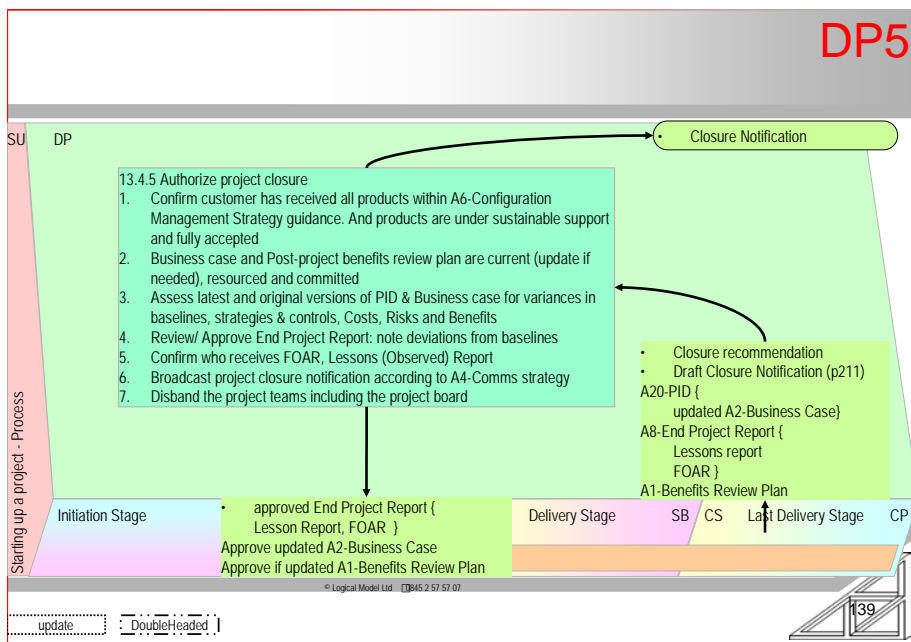### 13.1.1.2[13.4.5 Authorise project closure]

The project board will **[13.4.5** Authorise project closure**]** if they or their project assurance are provided with evidence that:

➢ The project has nothing more to contribute

➢ The project's products match the **A21**-Project Product Description and have been passed on to and accepted by their future users, operators and maintainers [and variances are understood, accepted and possibly covered future committed actions].

What is required to achieve handover should have been agreed in **[14.4.2** Prepare the Configuration Management Strategy**]**, documented in the **A6**-Configuration Management Strategy and incorporated in relevant **A26**-Work Packages during the stage planning of stages in which the deliverables are handed over.

In reality handover procedures may be defined 'up-front', 'as we go' or in the last stage boundary's review of the strategies.

➢ The **A1**-Benefits Review Plan and **A2**-Business Case are well define, resourced, and committed to by CoPM and responsibility (sic! [p145]) has been accepted by CoPM.

13.1.1.2.1.1   Navel Gazing

Within **[13.4.5** Authorize project closure**]** the project board are supposed to compare the original **A2**-Business Case approved at **[13.4.2** Authorize the project**]** with the current version and "the exec approves". 'Why' or how the exec approves a comparison of original intent and final agreements isn't expressed in the official manual or clear to me to suggest a cogent interpretation.

13.1.1.2.1.2   Broadcast "Project Over"

The project board should distribute all lessons observed in the form of sub-sets of the **A15**-Lesson Report to appropriate recipients. All Follow-on-Action-Recommendations and the project closure notification are also distributed by or on behalf of the project board as called for in the **A4**-Communications Management Strategy.

Finally the project board should ensure resources are released and dis-band themselves.

The end of days is communicated to all relevant parties as identified in the **A4**-Communications Management Strategy.

13.1.1.2.1.3   Other Issues in Closure

The official manual states that a project may become business-as-usual and in this case "focus on benefits will be lost" (sic, but my emphasis). I disagree.

Not only is there is no correlation between a project's product development teams becoming business-as-usual users, operations and maintenance and loss of benefits focus, but often the development team have the most buy-in to operational use. It is right that a focus on transition from incurring costs to generating benefits is essential to a return on investment.

Since the project board will also disband at this point (and as previously noted perhaps they should not) the sponsor should have an enduring responsibility that changes phase from investment to benefits harvesting at this point.

13.1.1.2.1.4   Benefits Review

The official manual says the **A1**-Benefits Review Plan should be updated to ensure that it reflects all post-project reviews required to audit the benefits realised and that finally the exec transfers the **A1**-Benefits Review Plan to CoPM to 'hold the senior user accountable (sic) for the benefits from the products assigned to them' (sic).

This is wrong. When Closing a Project (CP) is done and the project celebrations are over the sponsor, probably directly aided by the senior user(s) should be pursuing benefits realisation. The sponsor is accountable and the senior user(s) are responsible for product usage.

14 After the Project Is Over

PRINCE2® has nothing to say now, although the **A1-**Benefits Review Plan will be being followed – we hope.

14.1.1.1.1.1   [Celebration

The project board should, at project end (and possible at stage ends) host the celebrations that mark 'thank-you' to the development teams and welcome to the benefits realisation teams.

The psychological need for separation should not be overlooked. Whether team members transition from one role to another or leave the investment initiative care of the people is crucial:

➢ EG Users transition from specifying products, specifying acceptance criteria and participating in quality reviews to using outputs to generate benefits) or
➢ EG senior supplier(s), project manager, team member/ manager and project assurance leaving the project (or stage).

]

14.1.1.1.1.2   Close the Cost Accounts

After the project's specialist work is concluded it is common for the final costs to still be filtering through purchasing, materials and time recording systems.

Cost codes in accounting systems need to be held open long enough for final cost collection and closed soon enough to finalise project account of costs incurred and applied to the **A2-**Business Case for a definitive cost side of the discounted cash flow or net present value calculations

Cost codes left open mysteriously continue to gain postings – but this the estimating psychology we talk about earlier.
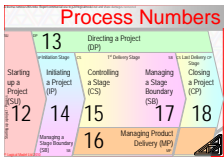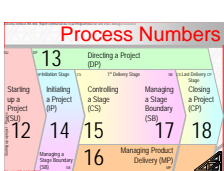
15 <u>Appendices</u>

15.1.1 Exam Syllabus

Add Exam Syllabus here

15.1.2 Official Manual's Structure

Add manual Structure here

16 Index

16.1