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Would you use PMBOK or PRINCE2 for Project Management?

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APPENDIX

TABLES & FIGURES

Abbreviation	Description / Web address
ANSI	American National Standards Institute
CCTA	Central Communications Telecommunications Agency
CSA	Child Support Agency
ERD	Entity Relationship Diagram
HMSO	Her Majesty's Stationary Office
HRM	Human Resource Management
HSE	Health, Safety & Environment
MOD	Ministry of Defence
NAO	National Audit Office (www.nao.org.uk)
OGC	Office of Government Commerce (www.ogc.gov.uk/)
OPMG	Opportunity and Project Management Guide, Shell UK Ltd
PID	Project Initiation Document (PRINCE2™ terminology)
PMBOK	Project Management Body of Knowledge PMBOK® (*often refereed to as The Guide*)
PMI	Project Management Institute (www.pmi.org)
PMO	Project Management Office (PMBOK® terminology)
PMPG	Project Management Process Groups
PRINCE2	**PR**ojects **IN C**ontrolled **E**nvironments, PRINCE2™ (www.ogc.gov.uk/methods_prince_2.asp)
PSO	Project Supply Office (PRINCE2™ terminology)
QA	Quality Assurance
QC	Quality Control
SMART	Specific, Measurable, Achievable, Realistic and Time-linked
The Guide	PMBOK®
The Standish Group	www.standishgroup.com Research Organisation, based in West Yarmouth, Massachusetts
WBS	Work Breakdown Structure

Table of Acronyms

1.0 ABSTRACT

This report compares the Project Management Book of Knowledge (PMBOK Guide) and the PRINCE2 methodology, and considers how they might best be used for successful project management. It also considers whether these documents provide the complete answer to managing projects successfully.

2.0 INTRODUCTION

There are two key public domain knowledge sources concentrating project management knowledge in the project management profession. In North America there is the Project Management Institute's PMBOK Guide ("The Guide") and in the UK there is the OGC PRINCE2.

Both have a number of similar features, including:

- Over 10 years of research and development
- Industry wide acceptance
- Independently authored books on their interpretation and use
- Certification of practitioners and education providers (Appendix A3)
  and;
- Global acceptance

PRINCE2 is a tried and tested project management methodology complete with well-defined processes and strong project control features. It is the *de facto* standard project management methodology in the UK and other European countries. The PMBOK Guide is a knowledge base that defines the key knowledge areas that a practicing project manager should know about.

CASE STUDY

Shell UK Ltd uses its own Opportunity and Project Management Guide, and perhaps as a result, PRINCE2 or PMBOK are rarely referenced within the Project Management function. With Shell UK Ltd openly admitting that many projects are not run as effectively as the organisation would like, there may an opportunity for individuals to improve their project management skills by making reference to PMBOK and PRINCE2 as ways of supplementing OPMG. This case study attempts to investigate whether one is better than the other for project management.

3.0 A COMPARISON OF PRINCE2 AND PMBOK

3.1 OVERVIEW

PMBOK "*is the sum of knowledge within the project management profession*" (PMI, 2004). It includes widely applied traditional, as well as emerging, innovative practices, including both published and unpublished material; the document is constantly evolving Figure 3.1.1 presents an overview.

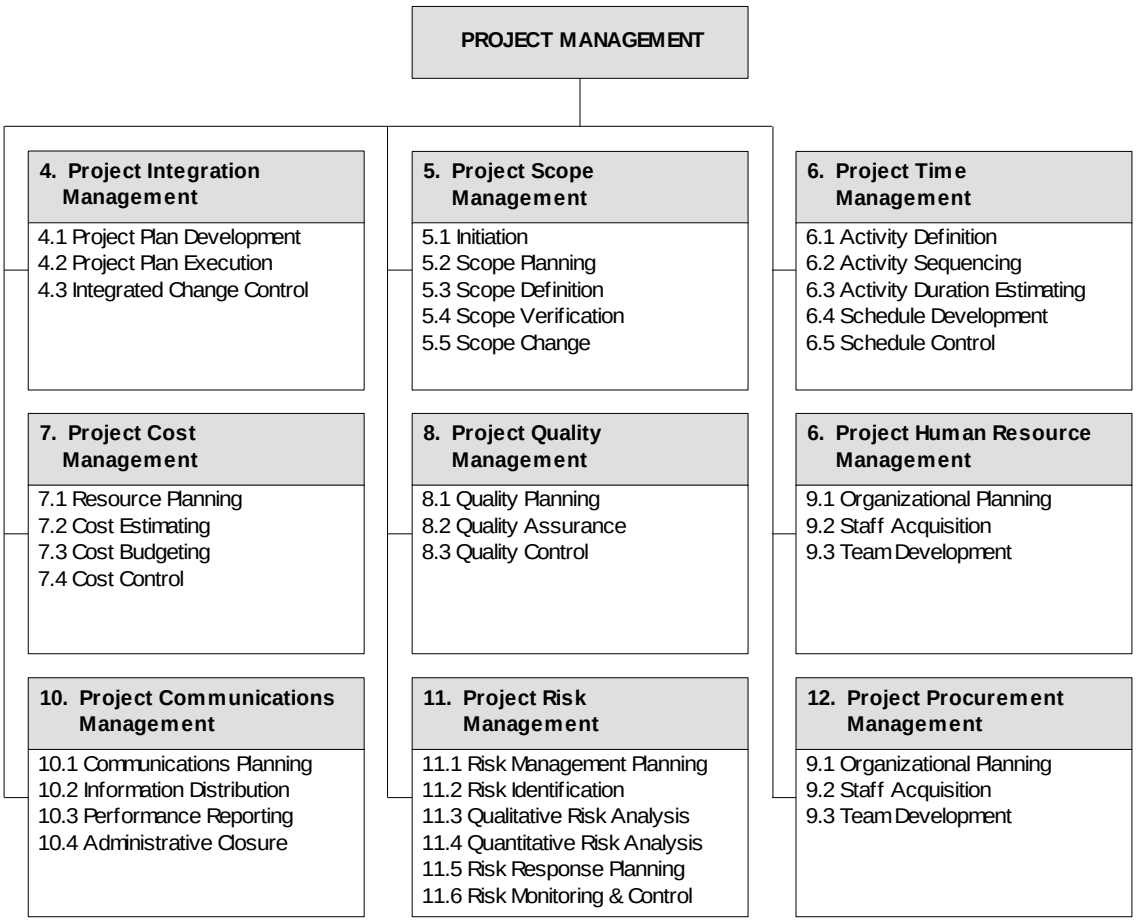

Figure 3.1.1 – PMBOK Overview of Project Management Knowledge Areas and Processes

PRINCE2 "*is recognised as a world-class international product, and is the standard method for project management*". It also benefits from being based on many years of good project management practice and "*provides an adaptable approach to suit all projects*". Figure 3.1.2 presents an overview of the links between the processes, components and techniques included in the PRINCE2 project management methodology document (OGC, 2005).

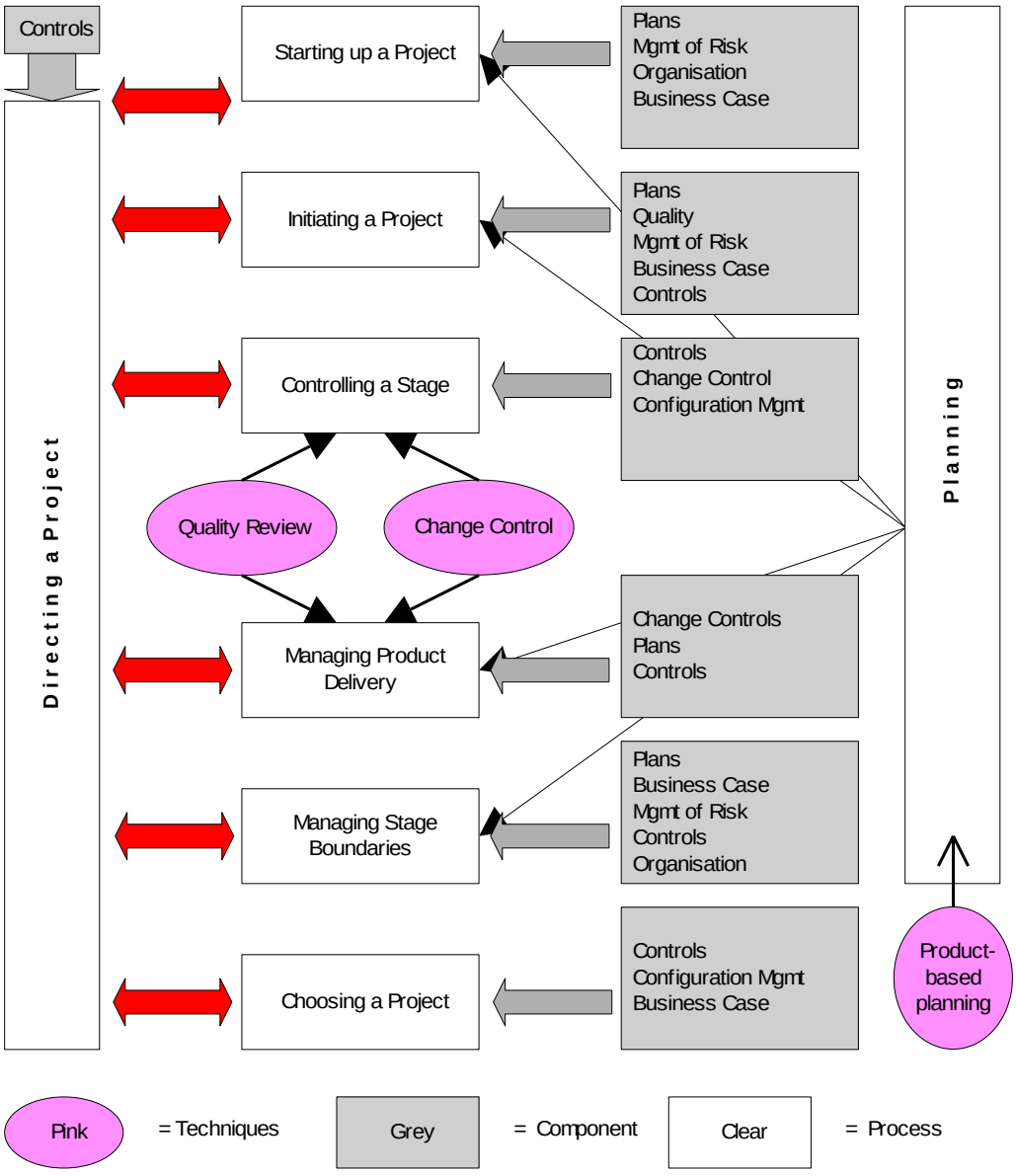

Figure 3.1.2 – Use of PRINCE2 components and techniques in the processes

Both sets of documentation require tailoring to suit the circumstance. For example, PMBOK is not intended to be prescriptive; it only lays out the process groups[1] and knowledge areas to guide the process groups to closure (Figure 3.2.1). PRINCE2 is a methodology, which must be scaled for a project size and needs.

3.2 PROJECT LIFE CYCLE, MAJOR PROCESSES AND SUBJECT AREAS

PMBOK has twelve subject areas describing function-based knowledge areas with narrative describing inputs, tools and techniques and outputs. The manual is divided into three main sections: the Project

[1] In PMBOK, the process groups are: Initiation, Planning, Execution, Monitoring and Control, and Closing

Management Framework, the Standard for Project Management of a Project, and the Project Management Knowledge Areas. The Appendices, Glossary and Index complete the package (Table 3.2.1).

TYPE	DESCRIPTION
Section I: The Project Management Framework	Provides a basic structure for understanding project management. Chapter 1 – Introduction Chapter 2 – Project Life Cycle and Organization
Section II: The Standard for Project Management of a Project	Specifies all the project management processes that are used by the project team to manage a project Chapter 3 – Project Management Processes for a Project
Section III: The Project Management Knowledge Areas	Organises 44 project management processes from the Chapter 3 Project Management Process Groups into nine Knowledge Management Areas (refer Figure 3.1.1)

Table 3.2.1 – The PMBOK Guide Structure

PRINCE is project life cycle based with six out of eight major processes running from "Starting up a project" to "Closing a project". The two remaining, "Planning" and "Directing a Project" are continuous processes supporting the other six. All these processes added together contain 45 sub-processes (Appendix A4), and feeding into the project management system are eight components (Table 3.2.3 & Figure 3.2.2). Definitions of the PRINCE2 Processes, Components and Techniques are given in Table 3.2.2.

TYPE	DESCRIPTION
Processes	Explain what has to be done to manage a project by bringing together and applying the principles
Components	Explains and describes the major elements of project management, such as organisation and control, quality management and management of risk, and they are incorporated into good Project Management practice
Techniques	Explain some techniques of Project Management specific to PRINCE2

Table 3.2.2 – PRINCE2 Processes, Components and Techniques

In PMBOK, the project life cycle defines the phases that connect the beginning of the project to the end, but they can be very general or very detailed.

Each of the processes in PRINCE2 comprises sub-processes, and inputs to the processes are a number of components, some of which are documents, some of which are additional processes. Each component is considered in detail showing how the particular subject affects project management and providing guidance when and how to address the issues.

PRINCE2 PROCESSES (SUB-PROCESSES)	PRINCE2 CONTINUOUS PROCESSES	PRINCE2 COMPONENTS
Starting up a project (SU1-SU6)	Directing a Project (DP1-DP5)	Business Case
Initiating a Project (IP1-IP6)	Planning (PL1-PL7)	Organisation
Controlling a Stage (CS1-CS9)		Plans
Managing Product Delivery (MP1-MP3)		Controls
Managing Stage Boundaries (SB1-SB6)		Management of Risk
Closing a Project (CP1-CP3)		Quality in a Project Environment
		Configuration Management
		Change Control

Table 3.2.3 – PRINCE2 Components and Processes

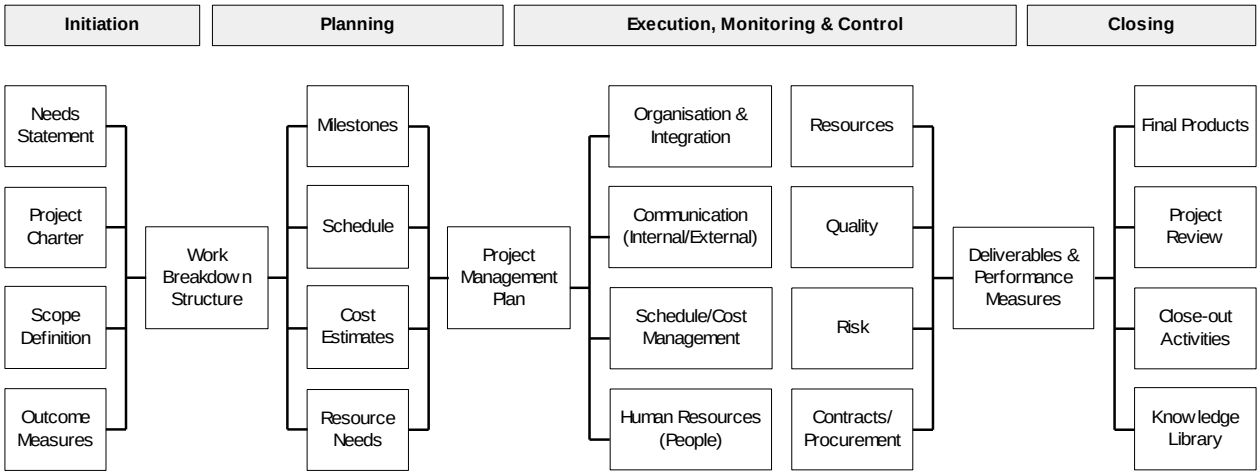

Figure 3.2.1 – PMBOK Project Management Processes and Knowledge Areas

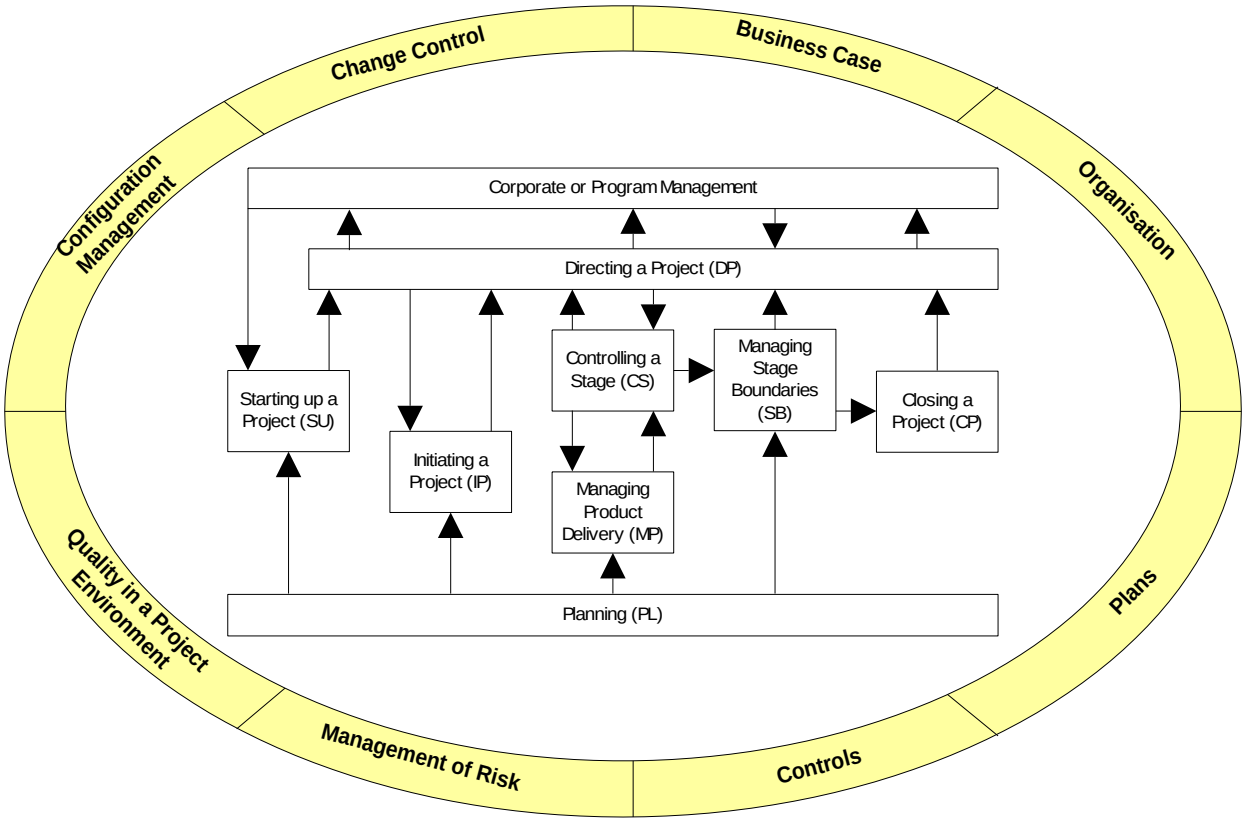

Figure 3.2.2 –The PRINCE2 Process Model

PRINCE2 considers that use of stages is mandatory, but the number of stages is flexible because different projects have different management requirements. It also differentiates between technical and

management stages. Management stages[2] are concerned with mobilising of resources and funding, while technical stages consider specialist skills.

3.3 PROJECT MANAGEMENT LEVELS, ROLES AND RESPONSIBILITIES

PRINCE2 does not cover all aspects of project management, arguing that certain aspects (such as leadership, people management skills, detailed coverage of project management tools and techniques) are documented elsewhere as existing and proven methods, so they are excluded. However, PRINCE2 recognises four levels of project management (Table 3.3.1 – PRINCE2 Management Levels), ensuring that the corporate interests are kept on the project agenda. The Project Manager is "*The person given the authority (and responsibility) to run the project the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the board.*" In this context the constraints are pre-agreed tolerances prescribing various ranges of acceptability of different aspects such as scope, quality, time and cost the Project Manager must manage. Any excursions beyond these tolerances must be brought to the attention of the project board. By contrast, PMBOK describes the project manager as "*An individual responsible for managing a project*."

ORGANISATIONAL LEVEL	DESCRIPTION
Corporate or Programme Management	Corporate level
Directing a Project	Project Board[3]
Managing a Project	Project Manager
Managing Product Delivery	Team level management (e.g. technology leader)

Table 3.3.1 – PRINCE2 Management Levels

In PRINCE2 the Project Board is chaired by the "Executive" having responsibility for the project. This person ensures that the project retains its business focus, has clear authority and that the work and the associated risks are actively managed. The Executive represents the Customer and is the owner of the Business Case. The Executive also has specific responsibilities given in Appendix B.2 (OGC, 2005). In PMBOK, it is clearer that the Project Manager is in charge, for instead of "Executive" or "Project Director", PMBOK uses the term "Sponsor" who is one of the project's stakeholders and defined as "*The person or group that provides the financial resources, in cash or kind, for the project*" (PMI, 2004 p26).

PRINCE2 does not define management jobs, but defines roles that may be apportioned according to project needs. While some roles such as Project Board, Project Manager, Team Manager and Sponsor or Executive might be common project roles, PRINCE2 facilitates it's methodology by introducing a number of other roles such as Project Support Office, which is a group set up to provide certain administrative services to the project manager, but the PSO may service a number of other projects in

[2] Directing a Project, Controlling a Stage, & Managing Product Delivery

[3] Chaired by the Executive who has ultimate responsibility for the project ensuring that the project maintains its business focus, that it has clear authority and that the work and all it entails is properly managed.

parallel (OCG 2005, Glossary). It is also common for project services such as planning, cost control, estimating to be provided by a central function rather than be project specific, but this often depends on the scale of the project and resource requirements. PMBOK describes the PMO, which is an organisational unit which centralises and coordinates projects in its domain, but which can also act in much the same way as the PSO, although PMBOK seems to suggest that it has more of a managerial and coordinating role rather than the functional role the PSO seems to offer.

PRINCE2 describes in detail the project management team roles its methodology adopts PMBOK is less specific, preferring to cover the organisational aspects of project management rather more holistically, preferring to describe different types of organisational structure and their influence on projects in Chapter 2. PMBOK does, however, dedicate a whole chapter to Human Resource Management (PMBOK 2004, Ch9). PRINCE2 argues that HRM is a topic well covered by 'existing and proven methods' and is therefore excluded.

3.4 AUTHORITY AND GENERAL PROJECT DOCUMENTATION

PRINCE2 documentation appears bureaucratic and slightly confusing, for example the description suggests that the Project Mandate feeds into the Business Case, but it also suggests that if the Project Mandate doesn't *contain* a Business Case, it should be created. Six key documents giving authority as a project progresses include the Project Mandate, the Project Plan, the Business Case, the Project Brief, the Project Initiation Document and the Project Issue (Appendix A6).

There is no equivalent for the Business Case or the Project Mandate in PMBOK; it assumes the case has already been made for proceeding with the project, but it does discuss developing the Project Charter which is a document formally authorising a project or project phase.

Many other documents or standard management "products" are required as a project progresses (Appendix A7). Many are standard, but PRINCE2 usefully provides listings of the required contents. Wideman (2002) suggests that there are some unique documents in particular which are worthy of special mention in the context of successful project management, and these include Acceptance Criteria, Configuration Item Record, Issue Log, Risk Log, and Lessons Learned Log (Appendix A8).

In PRINCE2, Starting a Project (SU) is intended to be of relatively short duration but ensures that the necessary organisation and framework is in place at the start of the project; it assumes that a provisional Business Case exists, but makes provision for preparing one during the SU process if necessary. This is where there is the slight confusion mentioned earlier, potentially leading to a conflict of interest. The output from the SU process is the Project Initiation Document, which can be a substantial but stable document. It contains a fuller version of the Business Case, although this is continually revisited and

updated. The PID is meant to define the direction and scope of the project, and forms the 'Contract' between the project management team and the corporate project management.

PMBOK suggests there are three major project documents: the Project Charter, the Project Scope Statement and the Project Management Plan (Table 3.4.1).

DOCUMENT TYPE	DESCRIPTION
Project Charter	Formally authorises the project
Project Scope Statement	States what work is to be accomplished and what deliverables must be produced
Project Management Plan	States how the work is to be performed

Table 3.4.1 – PMBOK Major Project Documents

The equivalent of the PID in PMBOK is the Project Charter, and this is developed in the Project Scope Management knowledge area. This document is defined as "*A document issued by the project initiator or sponsor that formally authorizes the existence of the project, and provides the project manager with the authority to apply organisational resources to project activities*" (PMI, 2004 Glossary p368).

3.5 PLANNING AND SCHEDULING

A product can be tangible, such as a piece of hardware, or intangible, such as a service-based product, for example a company re-organisation. In PRINCE2 planning is product-based, and scaleable. Planning is essential, regardless of the size or type of project as it is fundamental in determining project resource requirements, and PRINCE2 points out that the plan should be easily understood by all involved. This is a moot point; plans are often far too complicated to give everyone a common understanding of the work ahead.

The product-based planning technique described in PRINCE2 (OCG 2005, Ch15 & 22) comprises three basic steps: Establishing what products are needed for the plan, describing those products and their quality criteria, and determining the production sequence each of the products, including any dependencies. PRINCE2 describes these steps in detail and useful illustrative examples are given. Establishing what products are needed for the plan – the Product Breakdown Structure, can be quite detailed because every product necessary must be identified to ensure that the activities required to create them are included in a logical production sequence.

In PMBOK, planning is one of five Project Management Process Groups applied to each project phase. It defines and refines project objectives, and plans the course of action required to attain objectives and scope that the project seeks to address. The chapter on Project Integration Management discusses planning in the context of how the project would be executed, monitored and controlled in a consistent and logical manner. However, PMBOK only describes the processes, how they link together, and suggests what tools and techniques might be used. PMBOK also discusses many subsidiary plans such as scope management plan, quality management plan, communications management plan, risk response

plan, and many of these are covered elsewhere in the document. However, a potential weak point is that the discussion of planning in PMBOK is fragmented in that it also appears in each of the knowledge areas and requires integration across all of them.

In PRINCE2 activity duration estimating is covered in PL4, where it describes in detail two major steps in a typical estimating process: Identifying the resource *types* required, and estimating the effort required for each activity by resource type. PMBOK recognises that estimated resource requirements will have an effect on the duration of the scheduled activity, but only presents an overview of the tools and techniques available such as expert judgement, analogous estimating, parametric estimating, three point estimating and reserve analysis. PMBOK doesn't quite provide enough detail for using these tools and techniques.

In PRINCE2, estimates of time required for each activity are fed into schedule development (covered in detail in PL5), at the same time as the activities are put together and this is followed by an assessment of the risks inherent in the plan. Although PMBOK has the risk management plan as input, contrary to PRINCE2 (PL6), it does not discuss updating risks as a result of planning.

3.6 PROJECT COST MANAGEMENT

This aspect concerns the processes required to ensure that the project is completed within the approved budget; Project Cost Management and Schedule Control are closely related in that they both require an understanding of resource and duration requirements, and their linkages. PMBOK devotes Chapter 7 to Project Cost Management, and in most areas it covers the topic in more detail than PRINCE2. An exception is the handling tolerances, which PRINCE2 covers in much more detail in the Controls component, as well as in Managing Stage Boundaries (SB) and Directing a Project (DP3).

3.7 PROJECT CONTROL

According to PRINCE2, control is about decision-making, and its purpose is to produce the required products in accordance with defined quality criteria, carrying out the work in accordance with the resource, schedule and cost plans, maintaining viability against the Business Case. According to PRINCE2, the Business Case is meant to be updated at key points (OCG 2005, Glossary); there is a potential conflict of interest here in that there would be an opportunity for the Business Case to be updated to reflect the current reality, rather than the controlling the current to meet the Business Case justification.

In PRINCE2 authorised work packages are used to exercise control. Under work package control, individuals or teams are allocated work, and it includes controls in time, cost and quality. Reporting and handover requirements are also discussed, with the requirement that individuals or teams report back to

the project manager with checkpoint reports or at other event driven occasions, and update the quality log.

PRINCE2 provides a useful distinction between 'tolerance', 'contingency 'and 'change control' (Table 3.7). Controlling a Stage (CS) describes the Change Control process in detail.

TERM	DESCRIPTION
Tolerance	The permissible deviation above and below a plan's estimate of time and cost without escalating the deviation to the next level of management. There may also be tolerance levels for quality, scope, benefit and risk. Tolerance is applied at different project levels.
Contingency (budget & plan)	A plan including time and money which includes measures to be taken if a defined risk should occur. A contingency plan is prepared where other actions (risk prevention, reduction or transfer) are not practical alternatives.
Change control	A procedure to ensure that the processing of all Project Issues is controlled, including submission, analysis and decision making.

Table 3.7.1 – PRINCE2 Tolerance, Contingency and Change Control

In PMBOK, Project Control and Change Control are discussed in Project Integration Management (PMI 2004, Ch 4.5 & 4.6 in particular) and are referenced in many other chapters, although it doesn't go into the same level of detail as PRINCE2.

3.8 PROJECT RISK MANAGEMENT

Project risk management provides a systematic process of identifying, analysing and responding to project risk. The 'Management of Risk' component in PRINCE2 (OCG 2005, Ch 17) provides one approach to risk although it may work equally well with other risk management methods. PMBOK also covers risk Project Risk Management and appears to be more comfortable with the subject. In particular, it discusses risk budgeting, cost, schedule and scope targets in more detail, as well as briefly describing residual and secondary risks not covered in PRINCE2. Both documents offer the same types of risk action and mention the need for risk owners. PMBOK gives useful examples in risk management planning.

3.9 PROJECT QUALITY MANAGEMENT

A project quality management system should ensure that the project fulfils the requirements it was originated for, and the topic covers quality policy, objectives, responsibilities, quality assurance, quality control and quality improvement within the quality system. Both documents recognise customer expectations, prevention over inspection, management responsibility and continuous improvement. PRINCE2 considers Quality in a Project Environment and addresses it in a number of its processes. In PMBOK, project quality management is one of the Knowledge Areas. In Quality Planning, PRINCE2 requires that the customer's quality expectations are sought and recorded, whereas PMBOK doesn't seem to offer the same formality. Both cover QA, although with slightly different approaches – PRINCE2 appears to offer a quality file for all quality documents, whereas PMBOK uses QA for review of quality results and audits of other quality management activities. Both documents cover

quality of products and project management; PMBOK goes further in providing some useful illustrative examples such as Cause & Effect Diagrams, Control Charts and Pareto Diagrams.

3.10 PROJECT PROCUREMENT MANAGEMENT

This covered the processes to procure goods from outside the customer organisation. While this is considered in one of PMBOK Knowledge Areas, PRINCE 2 appears to regard this as a specialist activity rather than a project management function, and doesn't seem to discuss it to the same extent. However, PRINCE2 does look at Procurement Planning as part of Starting up a Project, and appears to provide fairly comprehensive coverage of Contract Administration and Contract Closeout (CP and DP5).

4.0 DIMENSIONS OF SUCCESS CRITERIA

4.1 OVERVIEW

The PMI (2004) defines a project as "*A temporary endeavour undertaken to provide a unique product or service or result*" and describes a project "*as a means of organizing activities that cannot be addressed within an organization's normal operational limits*".

PRINCE2 defines a project as: "*A management environment that is created for the purpose of delivering one or more business products according to a specified business case.*"

Different stakeholders will use different measures[4] and have different perspectives when determining the success of a project. Possible definitions of project success and failure are presented in Table 4.1.1. These may provide a useful context when considering why bother using PMBOK or PRINCE2, and if so, "which is best?"

In considering why anyone would want to use PRINCE2, PMBOK, or both, it seems appropriate to discuss briefly the reasons why projects fail, and try to understand whether PMBOK or PRINCE2 would address any of the root causes of project failure.

[4] Which should ideally be based on SMART criteria

POSSIBLE DEFINITIONS OF SUCCESS	POSSIBLE DEFINITIONS FOR PROJECT FAILURE
On time and budget	They are late and over budget
Is reliable and maintainable (i.e. easy and inexpensive to modify)	They fail to deliver the product they were designed to produce
Meet's its goals and specified requirements	Some don't produce any product at all
Satisfies the users	

Table 4.1.1 – Possible definitions of project success and failure

REASONS FOR PROJECT FAILURES

According to The Economist (2004), software developments have a poor record of success. It records that The Standish Group[5], estimated that 30% of all software projects are cancelled, nearly half come in over budget, 60% are considered failures by the organisations that initiated them, and nine out of ten come in late. In 2004, The Royal Academy of Engineering quoted that only around 16 per cent of IT projects can be considered truly successful (PublicTechnology.net, 2004). Richardson (2006) cites seven of the most common causes for software development project failures, including: Lack of awareness of a formal process, managing management - difficulties in obtaining stakeholder buy-in, lack of planning, poor communications, lack of design (limited or no design phase before building phase), inability to create a correct Entity Relationship Diagram[6], and scope creep.

Ambler (2006) argues that the software development projects often fail because the organization sets unrealistic goals for the "Iron Triangle[7]" (Appendix A8) of software development. The major of reasons for software failures could equally apply to other types of projects. In the UK, several high-profile projects were regarded as failures (Table 4.1.2).

PROJECT
Ariane 5 Flight 501 Failure (Prof Lions, 1996)
Beagle 2 (HOC, 2005)
CSA computer system (CS2) (McCue, 2004)
London Ambulance Service Dispatching system (Finkelstein, 1993, No Date)
Magistrates Court IT Project – Libra (Arnott, 2003)
New air traffic control centre at Swanwick (Millar, 2001)
National Insurance recording system (Millar, 2001)
NHS National Program for IT (NPfIT) (Wikipedia, 2007)
The Millennium Dome (NAO, 2000)

Table 4.1.2 – Examples of UK Government Project Failures

Perkins (2006) suggests that there is a common thread in project failures in that either the project manager lacks knowledge of a particular principle, or that the knowledge has not been applied properly. In this sense, PRINCE2 might be seen as more useful because it is a methodology and prescriptive – it

[5] The Standish Group is based in West Yarmouth, Massachusetts and is the Information Technology leader in project and value performance, and has conducted renowned research projects including The Chaos Report (1995)

[6] ERD - a graphical representation of the relationships between entities. Entity relationship diagrams are a useful medium to achieve a common understanding of data among users and application software developers

[7] The "Iron Triangle" of projects considers Schedule, Budget and Scope, and altering any one of these could affect Quality.

guides you step by step. However, Perkins (2006) also suggests that the first of the primary causes of project failure is that the project managers do not know what to do, and that this element is the easiest to correct. One solution is to provide more training, and this is where PMBOK might be more appropriate. Wilson (1998) attributes the 'Human Factor' as a major contributor to IT project failures as well as lack of resources, and cites other reasons as being the lack of and the inefficient use of a structured method and tools.

Clearly this section doesn't so justice to the topic of reasons why projects failure, but the point is that while PRINCE2 and PMBOK contribute to improving the technical side of project management, there are other factors which need to be taken into account for if a project is to be managed successfully.

5.0 SUMMARY

PRINCE2 and PMBOK take different approaches to the presentation of their material. PMBOK is comprehensive and largely descriptive - prescriptive on a high level. PRINCE2 seems to focus on the key risk areas only, and does not claim to be complete. It is highly prescriptive, especially on Process Structure, but adaptable to any size project. PMBOK contains core and facilitating processes, whereas in PRINCE2 all processes need to be considered. The PRINCE2 and PMBOK processes are largely comparable, but in both cases they need to be scaled to the needs of the project.

PRINCE2 is Business Case driven, and appears to be supplier based rather than directly under the control of the project owner. A potential weakness is that while PRINCE2 considers a variety of customer-supplier situations, the manual has been on the assumption that a single supplier would be involved throughout the process. The reality is that there may be a number of suppliers involved, thereby necessitating more complex communication and control procedures not covered in the manual. Remember that poor communication is cited as a common cause of project failure. Nevertheless, despite its limitations, PRINCE2 provides a stable, easy to follow methodology for running most types of projects, and gives clear objectives with the deliverables being clearly prescribed.

PMBOK appears to be written from the perspective that projects are only undertaken in order to achieve an organisation's strategic plan, and that projects are undertaken at all levels of the organisation. That is, although PMBOK is written from the project owner's perspective, it is customer requirements driven.

PMBOK considers sponsors and stakeholders, whereas in PRINCE2 there is clear project ownership and direction by senior project management.

6.0 CONCLUSION

So, would it be better to use PMBOK or PRINCE2 for project management. Project management involves the using both technical and inter-personal skills, many of which might be viewed as common sense, but "*the problem with common sense is that it isn't common*[8]". Project management processes can make the difference between success and failure of a project. There is no perfect project management method, but project managers need to know the underlying principles and be able to select the appropriate processes for a given project.

PRINCE2 is a single methodology whereas PMBOK is an inventory of project management ideas - it is not a manual for running projects. Therefore, one might argue that PMBOK is best used for teaching project management but it is not so effective when providing guidance for running a project. PRINCE2 is a single, unified, life cycle-based project management methodology in which it is difficult to detail each of the knowledge areas in the context of running a project without retaining focus.

There can be no direct comparison between PMBOK and PRINCE2 as they serve different purposes. PMBOK takes the best approach for teaching the subject content, but is not effective as guidance for running a project, whereas PRINCE2 provides the best approach for running a project. When running a project it is important not to underestimate other aspects such as people and communication skills, and understanding of group dynamics.

[8] Quotation attributed to Will Rogers (04 Nov 1879-15 Aug 1935) an American comedian, humorist, social commentator, vaudeville performer, and actor.

7.0 REFERENCES

Ambler, S. (2003). "*Something's Gotta Give*". http://www.ddj.com/dept/architect/184414962

Arnott, S (2003). "*Libra project goes £134m over budget*". Online article, 29 Jan 2003. http://www.vnunet.com/computing/news/2069714/libra-project-goes-134m-budget

Duncan, W.R. (2004). "*Defining and measuring project success*" Project Management Partners http://www.pmpartners.com/resources/defmeas_success.html

Finkelstein, A (1993). "*Report of the Inquiry into The London Ambulance Service*". Version 0.9 30 Nov 1995.

Finkelstein, A. & Dowell, J. (No date). "*A Comedy of Errors: the London Ambulance Service case study*", School of Informatics, City University, UK

HOC (2005). "*Science and Technology – Fourth Special Report*". Appendix 1. House of Commons, Science and technology Committee Publication, Printed 07 February 2005 http://www.publications.parliament.uk/pa/cm200405/cmselect/cmsctech/301/30104.htm

Lions, Prof J.L. (1996). "*ARIANE 5 Flight 501 Failure*". Report by the Inquiry Board. Paris, 19 July 1996

McCue, A (2004). "MPs slam "appalling waste of public money" on failed IT projects" http://management.silicon.com/government/0,39024852,39122507,00.htm

Millar, S. (2001). "*'£1bn wasted' on failed IT projects*" Guardian Newspapers

NAO (2000). "*The Millennium Dome*" Report by the Comptroller and Auditor General, HC936 Session 1999-2000

OGC (2005). "*Managing Successful Projects with PRINCE2*^{M}". HMSO

OGC (2007). "*PRINCE2*" http://www.ogc.gov.uk/methods_prince_2.asp

OPMG (2006). "*Opportunity and Project Management Guide*" Shell Exploration & Production. 2006 Edition

Perkins. T.K. (2006). "*Knowledge: The Core Problem of Project Failure*". Software Technology Support Center. June 2006.

PMI (2004). "*A Guide to Project Management Body of Knowledge. 3rd Edition. PMBOK® Guide*". Project Management Institute.

PublicTechnology.net (2004) "

The Economist (2004). "*Managing Complexity*". The Economist Newspapers 25 Nov 2004

Richardson, L. (2006). "*Seven Signs*" http://www.gantthead.com/article.cfm?ID=233799 6 Nov 2006

Wikipedia (2007). "National Program for IT" http://en.wikipedia.org/wiki/NPfIT

Wideman, Max R. (2002). "*Comparing PRINCE2 with PMBoK*". AEW Services, Vancouver, BC, Canada.

Wilson, S. (1998). "*Failed* IT *Projects (The Human Factor)*". University of Maryland Bowie State University. 16 May 1998.

A1 DESCRIPTION OF PRINCE2 & PMBOK

A1.1 PRINCE2

Ref: OGC, 2005. PRINCE was established in 1989 by a consortium of three companies[9] under contract to the CCTA (the Central Computer and Telecommunications Agency), since renamed the OGC (the Office of Government Commerce). The method was originally based on PROMPTII, a project management method created by Simpact Systems Ltd in 1975. PROMPT was adopted by CCTA in 1979 as the standard to be used for all Government information system projects. PRINCE was launched in 1989, superseding PROMPTII within Government projects. PRINCE2 is based on the experiences of an extensive number of projects, project managers and project teams. Although it is available in the public domain, copyright is retained by the Crown. PRINCE2 is a registered trademark of OGC.

PRINCE (PRojects IN Controlled Environments) is a structured method for effective project management. It is a de facto standard used extensively by the UK Government and is widely recognised and used in the private sector, both in the UK and internationally. PRINCE, the method, is in the public domain, offering non-proprietary best-practice guidance on project management. PRINCE is, however, a registered trademark of OGC.

A1.2 PMBOK GUIDE

The primary purpose of the PMBOK Guide is to recognise good practice in the project management, and to provide a general overview rather than an exhaustive description. According to Project Management Institute (PMI, 2004), "*The complete Project Management Body of Knowledge includes proven traditional practices that are widely applied, as well as innovative practices that are emerging in the profession, including published and unpublished material.*"

A2 PRINCE2 & PMBOK GUIDE LAYOUTS

This section includes a contents list for both PMBOK and PRINCE2.

A2.1 MANAGING SUCCESSFUL PROJECTS WITH PRINCE2

[9] Duhig Berry, WS Atkins & Penzer Allen; Parity Consulting is acknowledged for assisting the consortium in the design and development of the PRINCE2 model.

6 Directing a Project (DP)

7 Controlling a Stage (CS)

8 Managing Product Delivery (MP)

9 Managing Stage Boundaries (SB)

10 Closing a Project (CP)

11 Planning (PL)

12 Introduction to PRINCE2 components

13 Business Case

14 Organisation

15 Plans

16 Controls

17 Management of risk

18 Quality in a project environment

19 Configuration management

20 Change control

21 Introduction to techniques

22 Product-based planning

23 Change control technique

24 Quality review technique

Glossary

Appendix A: Product Description Outlines

Appendix B: Project management team roles

A2.2 PMBOK GUIDE

I The Project Management Framework

1 Introduction

2 Project Life Cycle & Organisation

II The Standard for Project Management of a Project

3 Project Management Processes for a Project

III The Project Management Knowledge Areas

Introduction

4 Project Integration Management

5 Project Scope Management

6 Project Time Management

7 Project Cost Management

8 Project Quality Management

9 Project Human Resource Management

10 Project Communications Management

11 Project Risk Management

12 Procurement Management

Appendices (A-F)

A – Third Edition Changes

B – Evolution of PMI's A Guide to the Project Management Body of Knowledge

C – Contributor's and Reviewers of *PMBOK® Guide* – Third Edition

D – Application Area Extensions

E – Additional Sources of Information on Project Management

F – Summary of Project Management Knowledge Areas

Glossary and Index

References

Glossary

Index

A3 CERTIFICATION

A3.1 PMI

Project Management Professional (PMP®)

Certified Associate in Project Management (CAPM®)

A3.2 PRINCE2

Foundation Examination

Practitioner Examination

Training courses organised by "Accredited Training Organisations (ATO)"

A4 A COMPARISON OF PRINCE2 PROCESS MODEL COMPONENTS WITH PMBOK[10]

CENTRAL PROCESS MODEL COMPONENTS[11]	PRINCE2	PMBOK
Business Case	The main control for a PRINCE2 project is a viable Business Case. PRINCE2 recognises that there must be a basic business requirement triggering the project. The Business Case states why the project is being done [4.7, 5.6].	No equivalent. Assumes case has already been made for proceeding with the project and talks about developing Project Charter [4.1], which is a document which formally authorises a project or project phase.
Organisation	PRINCE2 recognises the need for an organisation that has the ability and accountability to make corporate but project related decisions, as well as for key decision making and direction setting, day-to-day planning and control, and management of product delivery. It offers a four-layer project management structure [14.].	Discusses organizational influences and organizational structures [2.3]. PMBOK® also discusses Project Human Resource Management including, Human Resource Planning, Acquiring a Project Team, Developing a Project Team and Managing a Project Team.
Plans	PRINCE2 discusses what a plan is and what the elements are and is product based. It recognises that plans form the backbone of the management information system required for any project, and that they are kept in line with the Business Case at all times. PRINCE2 proposes three levels of plan – the Project Plan, the Stage Plan and the Team Plan, although the Team Plan is optional. PRINCE2 discusses advantages of breaking the plan down. PRINCE2 also proposes use of an Exception Plan [15.].	PMBOK® discusses Activity Definition, Activity Sequencing and Schedule Development; assumes reasons for planning are known. Includes illustrations of Gantt Charts and Precedence Diagramming Method. Resource estimating and its relationship to planning also discussed [6.].
Controls	PRINCE2 Discusses the control loop (Plan-Monitor-Control), the controls at different project management levels; how and when controls should be set up. PRINCE2 also discusses need for communication plan as well as permissible deviations to plan for scope, risk, benefit, quality as well as contingency, tolerance and change budget. Discusses need for change control as well as progress reporting [16.].	PMBOK® discusses tools & techniques for scope control [4.5, 4.6], as well as inputs and outputs, but doesn't discuss authorisation levels to the same degree as PRINCE2™. Discusses variance analysis but not tolerance *per se*. Discusses need for change requests as well as progress reports.
Management of Risk	Discusses Risk Management fairly comprehensively, including principles, tolerance, responsibilities and ownership. PRINCE2 also discusses the risk management cycle, risk analysis, risk management, budgeting for risk and risk profile. Maps the management of risk to the PRINCE2 processes [17.].	PMBOK® also appears to discuss Risk Management fairly comprehensively, including risk management planning, risk identification, qualitative and quantitative risk analysis [11.]. Risk response planning is also discussed as well as monitoring and control. Mentions that project risk management processes interact well with each other and with other Knowledge Areas but to the same detail as PRINCE2™.
Quality in a Project Environment	PRINCE2 discusses the need for a Quality Management System as well as a quality organisation structure. [18.]. Different aspects of Quality also addressed as part of Starting up a Project (SU), Initiating a Project (IP), Managing Stage Boundaries ((SB), Authorising Work Package and Assessing Progress (CS), and Planning (PL).	PMBOK discusses Project Quality Management, and describes processes for Quality Planning, Performing Quality Assurance, and Performing Quality Control [8.].
Configuration Management	Concerns asset or Product control, as in configuration of the product; gives management precise control over its assets. Discusses Baseline configuration and managing the configuration and a method for doing so, including change control. Discusses need for a central Project Support Office [19.].	Discusses Configuration Management in Integrated Change Control [4.6]; Configuration Identification, Status Accounting, Verification & Auditing.
Change Control	PRINCE2 discusses Change Control in some detail both independently and in the context of Configuration Management [20.].	PMBOK® Provides overview to Integrated Change Control [4.6] but not detailed to the same degree as PRINCE2™

Table A4.1 - A Comparison of PRINCE2 Process Components with PMBOK

[10] Items in square brackets [ ] refer to chapter number in relevant document

[11] Based on the PRINCE2 Methodology (OGC, 2005)

A5 A COMPARISON OF PROJECT LIFE CYCLE APPROACHES

STAGE / PHASE	PRINCE2	PMBOK
Product Life Span	Term used to define the total life of a product from the time of initial product idea until it is removed from service. Assumes that product could be affected by many projects throughout its life, such as feasibility study and development, enhancement or correction process [2.1, Glossary]	Refers to Product Life *Cycle*, described as collection of generally sequential, non-overlapping product phases whose name and number are determined by the manufacturing and control needs of the organization. Describes the *project* life cycle as contained within one or more *product life cycles* [Glossary].
Project Life Cycle	Distinguishes between Product Life Span and Project Life Cycle, where Project Life Cycle is part of the Product Life Span [2.2]. Project Life Cycle based; eight distinctive processes, of which two (Directing a Project & Planning a Project) are continuous. Describes three techniques, namely: Product Based Planning, Quality Review and Change Control [2.7].	Discusses Project Life Cycle [2.1]; what it defines, technical transfer and handoff. Describes three main phases – initial intermediate (which may include many sub-phases) and closing phases.
Project Phases or Stages	Describes stages of a project rather than phase, and differentiates between technical and management stages [16.6]. While stages are mandatory, the number isn't, depending on project requirements [16.3, 16.6].	Describes project phases as being part of a generally sequential process designed to ensure proper project control with a view to attaining desired product or service [2.1].

Table A5.1 - A Comparison of Project Life Cycle Approaches

STARTING UP A PROJECT (SU)	PRINCE2	PMBOK
Fundamental principles, context, process description	Identifies need for basic business requirement triggering the project [4.1]. Describes expectation that reason for project and expected outcome (i.e. Project Mandate) is fully transparent [4.2]. If not, provision is made for preparation of a Project Brief [4.7]. Describes a process for enabling a controlled start to a project [4.3].	No equivalent *per se*; refer initiating a project, although refers to project statement of work, or contract where applicable, provided by the project initiator or sponsor [4.1]. Describes formal authorisation of project and need for Project Charter, issued by the project initiator or sponsor external to the project organisation [4.1].
Appointing an Executive and a Project Manager (SU1)	Identifies need for Decision Maker [B.2] with appropriate financial and functional authority to support the project properly, and someone to undertake the planning. [4.4]. Defines Project Manager as "*The person given the authority (and responsibility) to run the project the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the board.*" [14.2].	Refers to Project Management Office [1.6], Project Stakeholders, Organization and Sponsor. Recognises complexities in terms of decision makers, but not prescriptive. Defines Project Manager as "*An individual responsible for managing a project.*" [2.2].
Designing a Project Management Team (SU2)	Describes need for a project team with the right expertise, authority and one which reflects the interest of all parties (e.g. user, supplier, etc) involved [4.5].	Describes complexities and influences of organisational structure on projects [2.3]. Not prescriptive.
Appointing a Project Management Team (SU3)	Describes need for everyone involved in the management of the project to understand, discuss and agree accountabilities and responsibilities [4.6].	Describes inputs, tools & techniques and outputs. Awareness of project team not always having control over team members selected for project [9.2].
Preparing a Project Brief (SU4)	Describes need to confirm that the project is still worth doing using various cross checks. [4.7].	Describes Project Charter and its preparation [4.1] including inputs such as project statement of work.
Defining Project Approach (SU5)	Describes how the project is to be executed. E.g. Purpose designed and built, modified off-the-shelf; which practices and guidelines to adopt [4.8].	Refers to five Project Management Process Groups [3.2].
Planning an Initiating Stage (SU6)	Describes how concentrated effort should be put into Initiation Stage, treating it as a mini-project [4.9].	Similar to PRINCE2™. Refers to Planning Process Group, Execution Process Group and Monitoring & Controlling Process Group [3.2].

Table A5.2 - Starting up a Project

INITIATING A PROJECT (IP)	PRINCE2	PMBOK
Fundamental principles, context, process description	Describes how projects should be finite with a defined start and end; all parties should be clear on the project objectives, and how these might be achieved. Well managed projects have increased chances of success [5.1]. Initiating a Project is concerned with laying down the foundations for a successful project. [5.2]. Concerned with drawing up a contract between the Project Board and Project Manager to ensure common understanding of various aspects and parameters of project execution. [5.3].	Refers to initial phase and Initiating Process Group [3.2], when Project Idea, Project Charter [3.2, 4.2], Project Management Team and Project Scope Statement are developed, reflecting business needs or requirements. Similar to PRINCE2™ [3.2]. Refers to Initiating Process Group, and development of Project Charter and Preliminary Project Scope [3.2]
Planning Quality (IP1)	This element is concerned with understanding and conforming to the customer's expectations and Acceptance Criteria, ensuring that there is a common understanding of requirements between the customer and the project team. Appears to concentrate on product rather than service [5.4].	Discusses Quality Planning [8.1]. Suggests need for this to be addressed at same time as development of Project Management Plan [4.3] and in parallel with other project planning processes. Not prescriptive; e.g. doesn't describe how planning quality interfaces with scheduling and cost budgeting (**check – SA**).
Planning a Project (IP2)	Describes need to understand timescale and resource requirements need to be understood, also accounting for quality requirements [5.5].	Discusses the processes for: Activity Sequencing, Resource Estimating, Duration Estimating and Schedule Development [3.2] in Project Time Management [6.].
Refining the Business Case and Risks (IP3)	This section suggests that constant reference should be made to why the project is being done, arguing that this could produce additional risks which need to be managed [5.6].	No equivalent for addressing Business Case. Uses Project Initiation Document. Project Risk Management includes processes for conducting risk management planning [11.].
Setting up Project Controls (IP4)	To ensure that decision making is executed in a timely manner, and be based on accurate information [5.7].	Monitoring and Control Project Work [4.5] is concerned with monitoring and controlling processes used to initiate, plan, execute and close a project, meeting performance objectives defined in project management plan [4.3].
Setting Up Project Files (IP5)	Concerned with tracking of information being produced about the project [5.8].	Project documentation or project files *per se* are not discussed in detail with exception of Contract documentation [12.5].
Assembling a Project Initiation Document (IP6)	Suggests that there needs to be a focal point for coordinating the Project Initiation Document; describes elements contributing to the PID [5.9]. PID used by Project Board for project authorisation or cancellation.	Equivalent is Project Charter, although this isn't used just for initial sanction or regret [3.2, 4.1].

Table A5.3 - Initiating a Project

DIRECTING A PROJECT (DP)	**PRINCE2**	**PMBOK**
Fundamental principles, context, process description	Concerned with authority and responsibilities; the split between the Project Executive and the Project Manager, and resource commitment [6.1]. Project Direction by Senior Management; not concerned with day-to-day activities of Project Manager [6.2]. Covers direction of the project throughout its life cycle. Concerned with proactive response from the Project Board to external environment [6.3].	Refers Project Management Process Groups [3.2]. Defines Project Manager as "An individual responsible for managing a project." [2.2]. "The Project Manager should be assigned preferably while the Project Charter is being developed." [4.2].
Authorising Initiation (DP1)	Concerned with ensuring no significant financial commitment before verifying it's sensible to do so [6.4].	Refers to Project Charter [3.2, 4.2].
Authorising a Project (DP2)	Offers checklist of items to consider before authorising significant expenditure and proceeding with the project. Suggests use of benchmark against which project could be judged [6.5].	Discusses developing Project Charter formally authorising project. [4.1]
Authorising a Stage or Exception Plan (DP3)	Describes how project should be broken down into manageable stages, each being approved by the Project Board [6.6].	Refers to Project Charter [3.2, 4.2] being used for obtaining authorisation for a project, or in a multi-phase project, a project phase [3.2].
Giving Ad-Hoc Direction (DP4)	Offers occasions when the Project Board may need to be consulted – for exchange of information or for guidance. Also offers reminder that external environment could change during the course of a project [6.7].	Discusses role of PMO [1.6] and its various possible functions. Ad-hoc direction not really discussed, although formality of project management team control is considered [5.1] under Project Scope Management Plan. Project Management Processes [3.1] recognises that there is more than one way to manage a project.
Confirming Project Closure (DP5)	Identifies need for formal handover of responsibility and ownership of project's products to the ultimate user [6.8].	Section on Close Project [4.7]; discusses administrative and contract closure procedures. Processes used to formally establish closure of any project phase is finished [3.2].

Table A5.4 - Directing a Project

CONTROLLING A STAGE (CS)	PRINCE2	PMBOK
Fundamental principles, context, process description	Concerned with how to achieve controlled production of agreed products [7.1] Management of day-to-day activities by Project Manager [7.2]. Offers list of objectives and a cycle of activities, to ensure day-to-day control [7.3].	Monitor and Control Project Work cover control of project (as opposed to stages) [4.5]. Project Scope Management considered [5.]. Discusses project management plan, progress reporting, corrective and preventative actions, among others. [4.5].
Authorising Work Packages (CS1)	Describes how Project Manager needs to consent to work being commenced and continued [7.4].	Project Scope Management [5.] considers processes required to ensure that the project includes all work required to successfully complete project.
Assessing Progress (CS2)	Describes need to understand historical events to ensure informed decision-making and control [7.5].	Discusses tools & techniques available for monitoring and control of project [4.5], as well as directing and managing project execution [4.4]. Also discusses Performance Reporting under Project Communications Management [10.3].
Capturing Project Issues (CS3)	Concerned with documenting various problems, queries & changes [7.6].	Discusses management of change [4.4], as well as change control [4.6]. Project scope management also considered [5.].
Examining Project Issues (CS4)	Concerned with assessing Project Issues for impact and actions required [7.7].	Discusses management of change [4.4], as well as change control [4.6]. Project scope management also considered [5.].
Reviewing Stage Status (CS5)	Recognises need for balance between planning ahead and reacting to events. Offers various steps and information needs [7.8].	Refer Monitoring and Controlling Process Group [3.2] which includes monitoring ongoing project activities and carrying out effective change control.
Reporting Highlights (CS6)	Recognises need for good reporting structure; includes progress reporting as well as other information for stakeholders [7.9].	Discusses Performance Reporting under Project Communications Management [10.] as well as other information for stakeholders.
Taking Corrective Action (CS7)	Recognises need for changes and adjustments to project to be made in a considered and rational way [7.10].	Discussed in the Monitor and Control Project Work process [4.5].
Escalating Project Issues (CS8)	Suggests that a stage should not go outside tolerances agreed with the Project Board; could act as advance warning system [7.11].	Discusses role of PMO [1.6] and its various possible functions. Makes reference to the Project Manager being responsible for managing stakeholders [10.4].
Receiving Completed Work Package (CS9)	Identifies need for formal confirmation that work allocated to individuals or teams has been completed [7.12].	Section on Close Project [4.7]; discusses administrative and contract closure procedures; the processes used to formally establish closure of any project phase is finished [3.2].

Table A5.5 – Controlling a stage

MANAGING PRODUCT DELIVERY (MP)	PRINCE2	PMBOK
Fundamental principles context, process description	Concerned with managing the interface between the Project Manager and a Team Manager or Third Party. Recognises need to avoid being over-bureaucratic [8.1]. Recognises that interfaces need to be controlled, but tempers desire to be over-bureaucratic [8.2]. Objectives are to agree the work, execute it and hand it back to Project Manager [8.3].	Describes Project Deliverables, including outputs comprising product or service of the project [4.4, 5.2]. Describes Direct and Manage Project Execution [4.4] as well as Managing Project Team [3.2, 9.4]. Project Management Plan [4.3] describes various outputs.
Accepting a Work Package (MP1)	Describes need for agreement with Project Manager on what is to be delivered, awareness of constraints, recognise interfaces and realism of intentions [8.4].	Describes Managing Project Team [3.2, 9.4], although this is more concerned with human resource management. Describes Activity Definition [6.1].
Executing a Work Package (MP2)	Recognises need to manage the product creation task, and need to track delegation of work [8.5].	Perhaps best described in Direct and Manage Project Execution [4.4]
Delivering a Work Package (MP3)	Makes reference to configuration management system being used for returning work package products; controlled handover of product [8.6].	Describes Project Deliverables, including outputs comprising product or service of the project [4.4, 5.2]. Describes Direct and Manage Project Execution [4.4] as well as Managing Project Team [3.2, 9.4].

Table A5.6 – Managing product delivery

MANAGING STAGE BOUNDARIES (SB)	PRINCE2	PMBOK
Fundamental principles, context, process description	Describes need to focus on business benefit, and that project focus satisfies this requirement [9.1]. Considers planning, together with review and update of Business Case, risk situation & overall Project Plan [9.2]. Objectives are ensuring necessary controls are in place for completing a stage and starting the next and formal approvals from Project Board between phases [9.3].	No equivalent for addressing business benefit *per se*, although mentions project phases in the context of 'multi-phase' projects [4.2]. Uses Project Initiation Document & Project Charter [3.2, 4.2]. Project Risk Management includes processes for conducting risk management planning [11.].
Planning a Stage (SB1)	Aim is to ensure day-to-day control; that each state has formal commitment from Project Board & Project Manager, and Project Board is fully aware of authorised approvals [9.4].	No equivalent *per se*; concentrates more on the project as a whole, through the Project Management Plan [4.3], Direct and Manage Project Execution [4.4].
Updating a Project Plan (SB2)	Project Plan used to measure progress throughout project; must be kept up-to-date; allows Project Board to revise expectations [9.5].	Refer Monitoring and Controlling Process Group [3.2] which includes monitoring ongoing project activities and carrying out effective change control as well as Direct and Manage Project Execution [4.4].
Updating a Project Business Case (SB3)	Recognises that as the external environment is constantly evolving; Business Case needs to reflect changes in nature & timing of project's products [9.6].	No equivalent for updating Project Business Case *per se*. Refers to Preliminary Project Scope Statement process which validates and refines the project scope for that phase [4.2].
Updating the Risk Log (SB4)	Describes that the risk log is a cyclical process on the basis that different risks have a different life spans and can ebb and flow at different stages of the project [9.7].	Detailed section on Project Risk Management [11.]. Describes Risk Identification [11.2] and Risk Register [11.5].
Reporting Stage End (SB5)	Describes need to report stage results to resource provides and approvers of the work; ensures visibility and transparency of the process [9.8].	No equivalent *per se*; concentrates more on the project as a whole, through the Project Management Plan [4.3]; Project Communications Management [10.] discusses Communications Planning, Information Distribution, Performance Reporting and Management of Stakeholders.
Producing an Exception Plan (SB6)	Concerns production of exception plan where project deviations are expected to exceed pre-agreed tolerances [9.9].	Quality Planning Tools and Techniques are discussed, as well as Quality Assurance [8.2] and Quality Control [8.3].

Table A5.7 – Managing Stage Boundaries

CLOSING A PROJECT (CP)	PRINCE2	PMBOK
Fundamental principles, context, process description	Identifies need for a finite start and end to a project, and explains why [10.1]. Identifies that a project may formally close - either because of successful execution, or because a no longer viable project is to be discontinued [10.2]. Ensures acceptance criteria have been met and compliance with handover requirements [10.3].	Section on Close Project [4.7]; discusses administrative and contract closure procedures. Processes used to formally establish closure of any project phase is finished [3.2].
Decommissioning a Project (CP1)	Describes need for orderly close, and that agreement between stakeholders arrives at satisfactory conclusion [10.4].	Discusses Closing Process Group of requirements [3.2]. Section on Close Project [4.7]; discusses administrative and contract closure procedures. Processes used to formally establish closure of any project phase is finished [3.2]. Stakeholder Manage is addressed in [10.].
Identifying Follow-on Actions (CP2)	Requires formal documentation of any unfinished business [10.5].	Not explicitly discussed [4.7].
Evaluating a Project (CP3)	Internal project evaluation, but could also be evaluated from external perspective. Intention is to document success or otherwise of the project, as well as lessons learned [10.6].	Discusses lessons learned process [10.2] and performance reporting [10.3].

Table A5.8 – Closing a Project

PLANNING A PROJECT (PL)	PRINCE2	PMBOK
Fundamental principles, context, process description	Describes how plans are constructed using PRINCE2™ philosophy; product-based [11.1]. Repeatable & iterative process; plays an important role in other sub-processes [11.2]. Product-based planning technique. What products; quality criteria, sequence dependencies [11.3].	Describes process as Project Time Management [6.] including Activity Definition [6.1], Sequencing [6.2], Resource Estimating [6.3], Duration Estimating [6.4], Schedule Development [6.5] and Schedule Control [6.6].
Designing a Plan (PL1)	Describes how a well worked plan is backbone of every successful project, and planning parameters [11.4].	Describes how planning effort is preceded by a planning effort by the project management team [4.3].
Defining and Analysing Products (PL2)	Describes how plan definition can enable various aspects of a product to be managed and controlled effectively [11.5].	Describes how a schedule management plan may be formal or informal, highly detailed or broadly framed, based on the needs of the project [6.].
Identifying Activities & Dependencies (PL3)	Describes need for networking and precedence diagrams [11.6].	Describes tools and techniques for schedule development [6.5.2]
Estimating (PL4)	Recognises need for estimating; it provides a detailed view on overall cost and time. Estimates might inevitably be expected to change as the project evolves [11.7].	Describes Activity Resource Estimating [6.3], Activity Duration Estimating [6.4] and Cost Estimating [7.1], which is part of Discusses Project Cost Management [7.]. Presents only overviews of the techniques and tools available.
Scheduling (PL5)	Discusses that plan only viable when activities are put together in a schedule defining when each activity would be carried out. Scheduling follows estimates of activity times. Planning risk assessment should be part of process [11.8].	Describes schedule development, inputs, various tools & techniques and outputs [6.5].
Analysing Risks (PL6)	Describes how risks should be considered as part of the planning process, before the plan is formally is formally produced [11.9].	Discusses 'What-if' scenario analysis [6.5]; also discusses Risk Identification, Qualitative and Quantitative risk analysis [11.]. Risk Register [11.1-5] and suggests that contingency plans can be developed [11.5].
Completing a Plan (PL7)	Describes how a completed plan should incorporate a supporting narrative explaining the plan and the associated risks, constraints, etc. [11.10].	Not explicit, but implied via project scope statement [5.2, 6.5].

Table A5.9 – Planning a Project

A6 PRINCE2 SIX KEY DOCUMENTS

DOCUMENT	STAGE	AUTHORITY / DESCRIPTION
Project Mandate	Triggers Starting up a Project (SU)	May come from anywhere, but acts as external trigger for the project [p37]. Should indicate the general type and size of project, its complexity and its political and business sensitivity [p29]. Used to create the Project Brief [A29, p379]. Feeds into the Business Case [A.2, p343].
Project Plan	Planning a Project (IP2). Modified during Updating a Plan (SB2)	A mandatory document that provides a statement of how and when a project's objectives are to be achieved, by showing the major products, activities and resources required on the project. Provides the Business Case with planned project costs and identifies the management stages and other major control points [A30, p381]. Should align with the Business Case [A2, p343].
Business Case	Check for provisional Business Case during Starting Up a Project (SU); refined in sub-process Refining the Business Case and Risks (IP3)	Documents the justification for undertaking a project based on the estimated cost of development and implementation against the risks and the anticipated business benefits and costs [A.2, p343]. Main control condition of PRINCE2™ project. "Why should this project be done?" [p6]. The Business Case is verified by the Project Board before a project begins and at every major decision point [p18]. Should align with the Project Plan [A2, p343]. An outline of the Business Case should be in the Project Mandate [p329].
Project Brief		Extended version of Project Mandate [Glossary, p335]. Includes high-level information on what needs to be done, why, and who will need to be involved in the process, how and when it will be done. Feeds into the Business Case [A.2, p343].
Project Initiation Document	Starting Up a Project (SU)	Extension and refinement of the Project Brief with the addition of the project management team details, the Project Plan and the Risk Log [p44]. Contains fuller version of Business Case [p329].
Project Issue	Any stage	A generic term for any matter to be brought to the attention of the project team, or possibly referred to the Project Board and requires a decision. Project issues include: Requests for Change, Off-Specifications, Questions and Statements of Concern [A28, p378].

Table A6.1– Six Key Documents in PRINCE2

A7 PRINCE2 PRODUCT DESCRIPTION OUTLINES

The PRINCE2 Appendix A contains Product Description Outlines, which are essentially documents the PRINCE2 process requires. 'Appendix A' headings are included in Table A7.1.

PRODUCT DESCRIPTION OUTLINE TITLE		
Acceptance Criteria [A.1]	Follow-on Action Recommendations [A.13]	Project Approach [A.25]
Business Case [A.2]	Highlight Report [A.14]	Project Brief [A.26]
Checkpoint Report [A.3]	Issue Log [A.15]	Project Initiation Document [A.27]
Communication Plan [A.4]	Lessons Learned Log [A.16]	Project Issue [A.28]
Configuration Item Record [A.5]	Lessons Learned Report [A.17]	Project Mandate [A.29]
Configuration Management Plan [A.6]	Off-Specification [A.18]	Project Plan [A.30]
Customer's quality expectations [A.7]	Post-Project Review Plan [A.19]	Project Quality Plan [A.31]
Daily Log [A.8]	Product Breakdown Structure [A.20]	Quality Log [A.32]
End Project Report [A.9]	Product Checklist [A.21]	Request for Change [A.33]
End Stage Report [A.10]	Product Description [A.22]	Risk Log [A.34]
Exception Plan[A.11]	Product Flow Diagram [A.23]	Stage Plan [A.35]
Exception Report [A.12]	Product Status Account [A.24]	Work Package [A.36]

Table A7.1 – PRINCE2 Product Description Outlines in Appendix A

A8 PRINCE2 PRODUCT DESCRIPTION OUTLINES WORTHY OF MENTION

PRODUCT NAME	DESCRIPTION
Acceptance Criteria [A1]	Defines in measurable terms what must be done for the final product to be acceptable to the customer and staff who will be affected. This is either provided by program management, or is developed during the starting-up-a-project process. According to Wiseman (2002) this is essential information often overlooked in many projects.
Configuration Item Record [A.5]	Configuration management is defined as the discipline that gives management precise control over its assets (including the products of a project), covering planning, identification, control, etc. The configuration item record provides the required information about the status of each and every item and makes reference to the product breakdown structure, stage and team plans, relevant work packages, the quality log and change control.

Issue Log [A.15]	The Issue Log is the repository of a summary of all issues raised on the project that need to be brought to the attention of the project and that require an answer. Issues may range from a question or statement of concern, to an off-specification (e.g. a deficiency) to a request for scope change. Such issues may be raised by anyone associated by the project at any time. In PRINCE2 the issue log is an essential part of controlling project stages by capturing all queries, problems and similar events in a consistent way before their proper disposition has been determined. Each item can then be followed up until the required action has been taken and the item cleared.
Risk Log [A.34]	This provides a repository for the identification of all project risks, their analysis, countermeasures and status. PRINCE2 recognizes risk as a major component to be considered during the management of a project and is factored into all of the major processes. Project management must control and contain risks if it is to stand a chance of being successful.
Lessons Learned Log [A.16]	The Lessons Learned Log is a repository of any lessons learned, both good and bad, that cover management experiences or use of specialist products and tools, and so on that can be usefully applied to other projects. Captured during the project, these items provide the basis for writing up a formal lessons learned report at the end of the project. Wiseman (2002) recognizes this as an essential feature of the "Learning Organization".

Table A8.1 – PRINCE2 Critical Product Descriptions

A9 THE IRON TRIANGLE

ELASTIC MOTIVATIONAL GEOMETRY

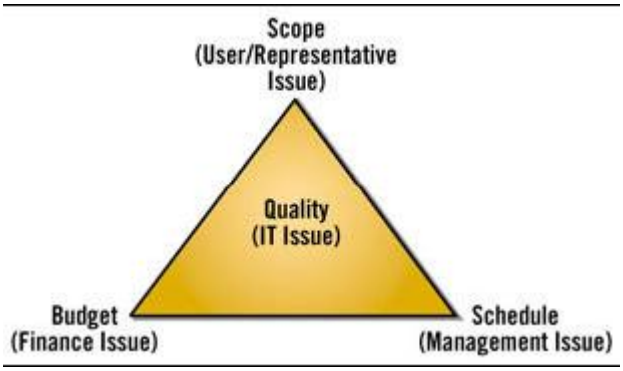

Figure A8.1 - The Iron Triangle

Ambler (2003) argues that there are three critical factors in any development project: schedule, budget and scope, which combine to affect quality. Although every group in an organization should be interested in all four issues, various factions are typically motivated by different concerns. When each factor is supported by someone with a singular focus, it becomes difficult to negotiate a reasonable approach. The IT department will insist on high quality, the finance department will insist on a streamlined budget, senior management wants the system now, and the user community will insist on a robust set of features. If no one budges, the project team is positioned for failure.

The most effective managers realize that, to ensure project success, the iron triangle has to give, accommodating change as the need arises. At the XP/Agile Universe conference in 2002, the Software Engineering Institute's Watts Humphrey, father of the CMM, stated "*What people really want is a high-quality system that implements everything they want, at no cost, right now. Everything else is a trade-off*" and this statement is the crux of the matter. By maintaining the elasticity of these three critical factors, making adjustments as the project evolves can result in successfully built and high-quality working systems meeting users' needs.