APM QUALIFICATIONS

PFQ

APM Project Fundamentals Qualification

DELEGATE WORKBOOK

Name:

QA

APM Project Fundamentals Qualification Manual v4.0

Copyright Statement

Contents

01 Introduction and Welcome

1.1

Welcome to the course manual for the APM Project Fundamentals Qualification – PFQ. The manual will help your preparation and delegates are encouraged to complete the exercises as required or as directed by the course trainer. Delegates are also encouraged to take notes, create acronyms, highlight areas of interest and ask questions throughout.

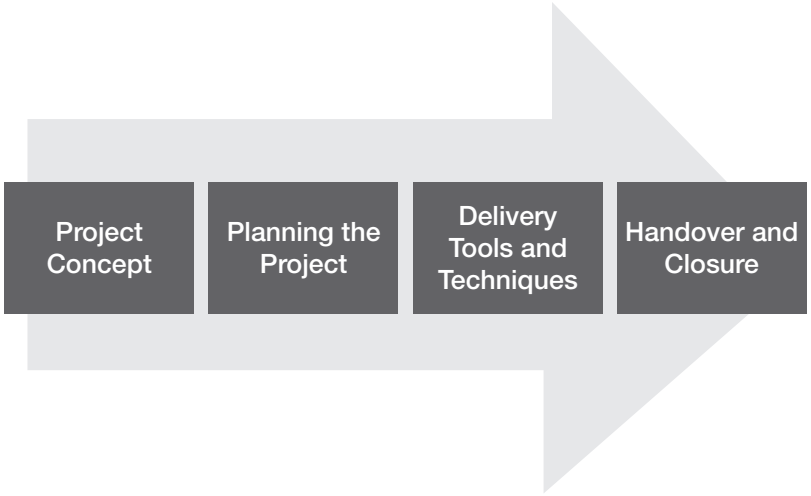
In addition to this manual, you may find it useful to download the following publications from the APM website (www.apm.org.uk).

> The APM Project Fundamentals Qualification Syllabus

> Guidance Notes Against APM Body of Knowledge 6th Edition

Note that it is not considered essential for delegates to acquire the APM Body of Knowledge although some delegates may wish to do so. Many delegates will find it useful to 'tick-off' the syllabus Learning Outcomes and Assessment Criteria as the course progresses, ensuring that they are comfortable with the level of understanding that is expected.

The course manual has six main modules – 'Context and Governance' and 'Managing the Team' are general topics that are relevant for the entire project. The other four modules roughly follow the life cycle of a typical project.



The manual concludes with a short section on 'The PFQ Exam' which provides guidance on examination study and technique.

Benefits of APM Certification

The Association of Project Management is the largest professional body of its kind in Europe. Its qualifications are internationally recognised and aligned with the International Project Management Association (IPMA). The APM states that the main benefits of choosing its qualifications are:

Achievement	Recognition	Knowledge
The range of qualifications offers a progressive demonstration of your project management achievements	Certification demonstrates to employers, clients, suppliers and team members that you are skilled and committed professional	APM qualifications are based on its Body of Knowledge which uses well-established project management techniques and best practice

How to Prepare

Many delegates will come to the course after undertaking some form of pre-course study (for example, private reading or eLearning). Delegates should ensure that any questions or concerns resulting from this study are addressed at the relevant point in the course. We trust that you will enjoy the course and the best way to achieve this is by participating fully in the discussions and exercises

- Listen to the course trainer – their job is to help you understand
- Listen to your fellow delegates
- Do not be anxious about what you are going to say
- Do not wait for the 'big moment' before you speak; ask the simple question or give the obvious example
- Share the responsibility to keep the group involved
- Relate the theory back in to your own workplace whenever possible

> This is your course and your time

> Enjoy!

#	My specific learning objectives for this workshop
1	
2	
3	

1.3

02 Context and Governance

Projects are not initiated or delivered in a vacuum and they will be impacted by factors internal and external to the organisation. An understanding of these factors and how they influence the project will greatly help in its management."

02.01 Project Management

(APM BoK 1.1.1)

2.2

"Project management is the application of processes, methods, knowledge, skills and experience to achieve the project objectives."

APM BoK 6th Edition

The concept of a 'project' means different things to different people, and may also reflect different frames of reference. A project has:

- A defined start-point and end-point
- Specific objectives
- Specific resources assigned to perform the work

"A unique transient endeavour undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits."

APM BoK 6th Edition

Projects bring about change and project management is recognised as the most efficient way of managing such change

Reasons for Project 'Failure'

Projects have multiple stakeholders who will all have their own interests and expectations as to what constitutes a successful project – and, by implication, an unsuccessful project. It is sometimes tempting to think that projects are straightforward and relatively easy to manage. The truth of the matter is that projects are often very complex and difficult entities to accomplish successfully

According to the yearly Chaos Report by the Standish Group, a significant portion of the $250billion spent annually in the USA on IT projects is wasted due to poor project management practices (source: 'Chaos Report, 2014):

- 31% of all projects are cancelled before completion
- 84% of projects run over schedule, budget or both
- For every 100 projects started, 94 are restarted

> More than half of projects will cost 189% of their original estimate

> Average time overrun is 222% of original estimate

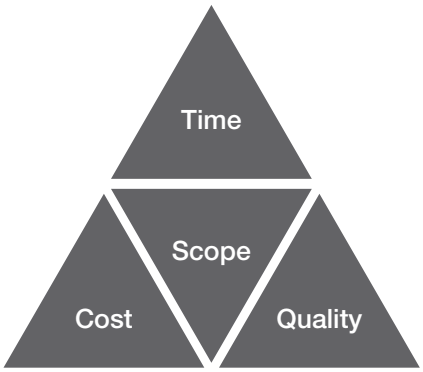
Exercise

List the factors that may contribute to the success or failure of a project.

Successful Project	Failed Project

'Triple Constraints' of a Project

The three most common words in project management are time, cost and quality (or sometimes performance). These are usually referred to as the 'triple constraints'. In order to increase the likelihood of a successful project, each one of these parameters needs to be defined and controlled.



Very often the gain in one constraint leads to a compromise in another. For instance, if a project manager attempts to complete a project in a very short time period, it will typically increase the budget and/or compromise aspects of quality or performance or both.

Note that other constraints may also be relevant. These may include benefits, resources, risk and arguably most important of all for many organisations, health and safety.

Exercise

For each situation described below, determine which single constraint (time, cost, quality, risk, scope, resources) is mainly being impacted. Each constraint should only be used once.

SITUATION	CONSTRAINT
A number of potential defects have been identified during the test phase but you do not have time to fix them	
You accept a project related to a field in which you have no expertise or prior experience	
You need to hire third-party equipment in order to meet a key milestone	
Deadlines are tight so you decide to reduce the amount of test activity	
You decide to fast-track the project as a result of a call from the customer	
Your project is late so you reassign resources from another project	

Benefits of Project Management

Good project management has been proven to be an effective and efficient way of managing change in many types of organisations. The benefits include:

1. **Improved Project Communication**

   Ensuring that project information is provided to the appropriate stakeholders at the right time in accordance with the agreed communication plan reduces conflict and provides a common understanding of the present project status and concerns.

2. **Effective Resource Management**

   Project management facilitates the prioritization of scarce resources, both within and across multiple projects, and ensures the right level of resources with the right capability are identified and allocated to project tasks.

3. **Better Delivery of Results**

   A consistent, phased approach with predefined inputs and outputs provides the team with a better understanding of the delivery processes. This in turn provides the opportunity to deliver the right product, service or result first time.

4. **Facilitates Risk-Taking**

   Clear roles and responsibilities, work identified and planned, and stakeholders engaged as appropriate, the attitude to risk and the corporate appetite for risk are likely to be increased. More risk is likely to be more acceptable when confidence is high. This provides the opportunity for greater benefits.

5. **Lessons Learned … and shared**

   The organisation's project management approach should evolve over time, thereby better meeting the organisation's specific needs. Recording what went well, what went badly and what changes are required will enable continuous improvement in the delivery of project outcomes.

6. **Improved Governance**

   The structured approach prescribed by project management provides the necessary infrastructure for good project governance. This includes a structured life cycle, clearly defined roles, formal reviews, information-based decision making and suitably skilled people.

A formal approach should increase the chances of the project being delivered, within the agreed time/cost/quality constraints, with a better chance of the benefits being realised.

02.02 Operations Management

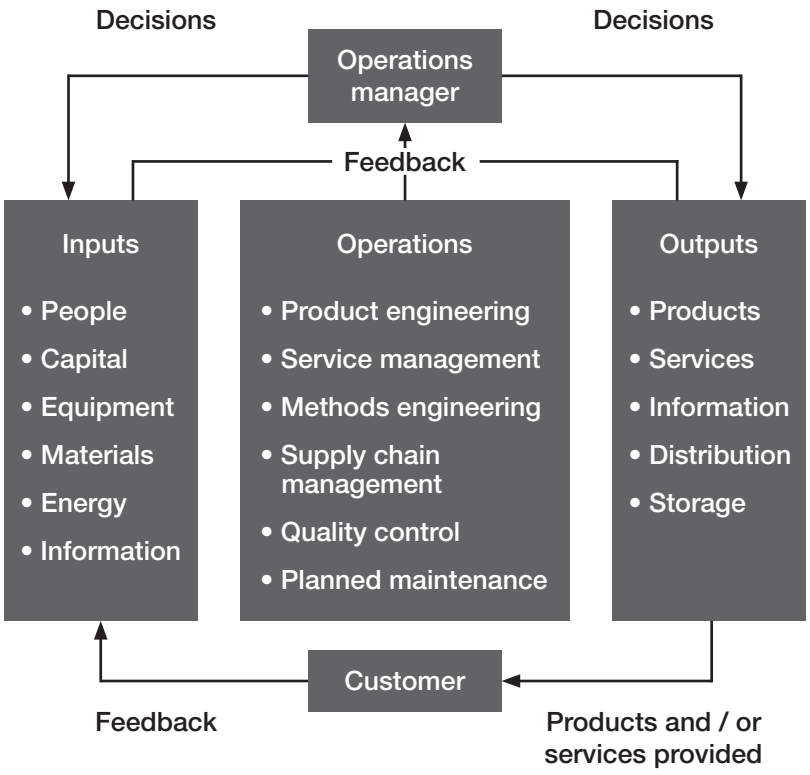
(APM BoK 1.2.2)

> **"Operations management relates to the management of those activities that create the core services or products provided by an organisation."**
>
> **APM BoK 6th Edition**

In the context of project management, operations management is viewed as the activity that is affected by, but does not form part of, a project: It is seen as 'business as usual'.

Operations management is concerned with managing routine activities, performing ongoing activities that produce the same product or provide a repetitive service

Operations management deals with converting inputs into outputs under management control. The following diagram illustrates the components of operations management:



The delivery of routine products and services fulfils the strategic mission of the organisation – and the expansion or improved efficiency and effectiveness within 'business as usual' constitutes the benefits of a project, programme or portfolio.

Project Characteristics (Projects v Business-as-Usual)

It is important that a project manager understands the differences between projects and operations. Projects exhibit many common characteristics irrespective of their size, cost or duration.

1. Projects create specific results or products with their objectives typically being measured in terms of time, cost and performance / quality parameters
2. They follow a life cycle made up of specific phases
3. They comprise complex interrelationships and are often cross-functional in nature
4. The cost of changing any of the project's objectives rises faster as completion nears
5. Stakeholder influence, risk and uncertainty is typically highest at the start of the project

Exercise

Complete the following table by considering what your organisation's day-to-day operations looks like and how these project characteristics contrast with "Business as Usual":

Project Management	Operations Management (Business as Usual)
Introduces Change	
Temporary and unique work	
Risk aware	
Produces project outputs/ products	
Resources are transient and obtained as required	
Specific aims and objectives to be satisfied. Manages time, cost and quality to achieve them	
Complex interrelationships	

Both projects and BaU are supported by disciplines such as HR management, finance, legal, marketing, IT support etc.

02.03 Programme Management

(APM BoK 1.1.2)

2.8

"Programme management is the co-coordinated management of projects and change management activities to achieve beneficial change."

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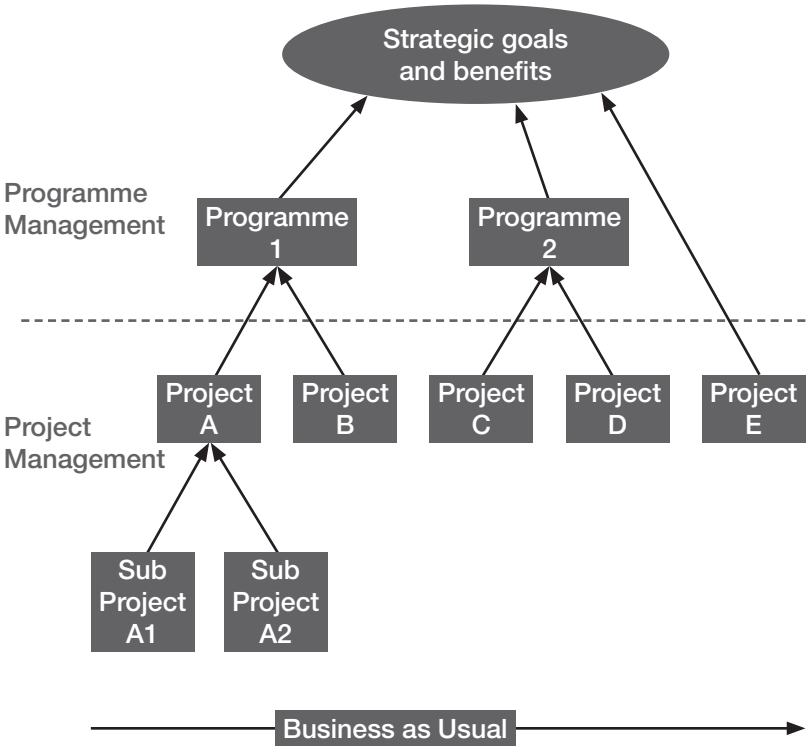
Characteristics of Programme Management

A programme emanates from a vision of a changed organisation and the benefits that will be derived from that changed organisation

This will require the co-ordinated delivery of a number of projects and ensuring that their outputs are used to derive the anticipated benefits.



The purpose of a programme is to deliver high-level benefits, which will ultimately help satisfy the strategic objectives of the organisation. A programme is comprised of a number of projects that deliver outputs and may include some BAU activities.

The Distinction Between Project and Programme Management

> *"The distinction between projects and programmes is that projects typically produce or change something and are then disbanded. The benefits of the undertaking are likely to be accrued after the project is completed. Programmes are typically used to help transform organisations. Therefore, the temporary programme organisation tends to have a lifespan that covers the realisation of the benefits – which could be several years."*
>
> PRINCE2® (2009)
>
> *PRINCE2® is a Registered Trade Mark of AXELOS Limited*

A programme has:

1. A single business case that is used by the projects
2. It delivers outcomes and benefits
3. It manages the transition in BAU
4. It is concerned with strategic benefits
5. It is longer term

Programme Manager Roles and Responsibilities

The Programme Manager is not involved in the day-to-day running of individual projects. They partner with the business and coordinate the programme, escalating to senior management as appropriate. They ensure the integrity of the programme as a whole and define the governance structures required.

Exercise

List five specific actions that the programme manager may undertake when fulfilling their responsibilities.

Responsibility	Action
Initiate, prioritise and terminate projects	
Manage project and BaU inter-dependencies	
Manage resources and conflicts	
Manage risks, issues and changes	
Define and realise the strategic benefits	

02.04 Portfolio Management

(APM BoK 1.1.3)

"Portfolio management is the selection, prioritisation and control of an organisation's projects and programmes in line with its strategic objectives and capacity to deliver. The goal is to balance change initiatives and 'business as usual' while optimising return on investment."

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Organisations must have the ability to concurrently manage a range of programmes and projects. Collectively, this is referred to as a portfolio. An organisation can have a single or multiple portfolios. For example, portfolios may be categorised by product type, market sectors, a single and/or group of customers or be defined by corporate governance.

The portfolio management process must constantly review the balance of investment and benefit, creating and closing projects and programmes as necessary.

Differences Between Programme Management and Portfolio Management

In the corporate context, programme management sits between portfolio management and project management but shares many similarities with the management of portfolios.

> *Portfolios may be even more concerned about available capacity and the identification and management of resource conflicts.*

Portfolio management also has increased governance responsibility and must ensure that the portfolio carries an appropriate mix of high-risk/high-return activities as well as activities that will ensure the long-term viability of the organisation. The management and governance of the portfolio may be supported by a Portfolio Management Office.

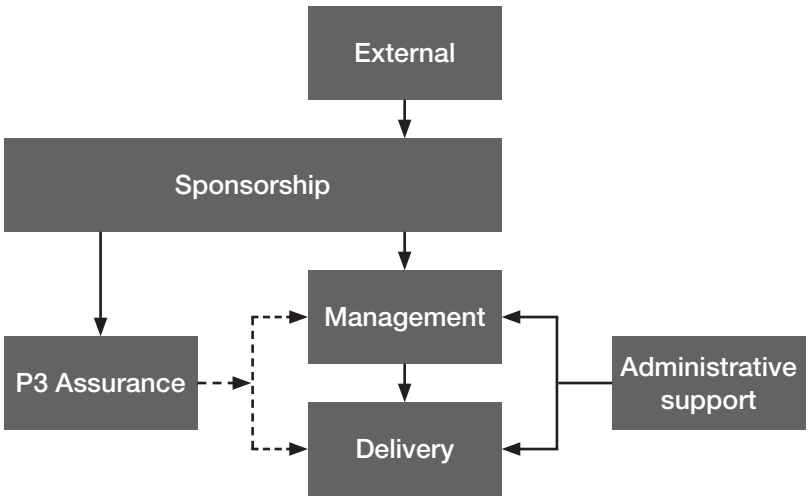
Programmes typically have a narrower scope and time-frame than portfolios with projects being smaller still.

02.05 Organisation
(APM BoK 3.1.4)

> **Organisation is the management structure applicable to the project, programme or portfolio and the organisational environment in which it operates.**
>
> APM BoK 6th Edition

One of the primary elements of project context is the organisation structure adopted by the business. The chosen structure will have a significant impact on the management and reporting mechanisms for individual projects.

The organisation structure of a project will normally have four layers.



1. **External:** representing the host or client organisation for the work. Requirements are defined and funding is provided at this level.
2. **Sponsorship:** provides a link between the management and external levels. The project sponsor has accountability for the overall success of the project and achievement of benefits.
3. **Management:** day-to-day responsibility for the management of the project and where the project manager sits.
4. **Delivery:** those who create the outputs (the team managers and the team members)

Alongside these four levels are assurance and administrative support:

> **Assurance:** provides confidence that the management and delivery of the work are being conducted effectively and appropriately

> **Administrative support:** provides services to the management and delivery levels of an administrative and/or technical nature

Temporary project, programme or portfolio organisations may be supported by a permanent governance infrastructure that 'owns' P3 management. This is usually referred to as an enterprise project management office (EPMO).

2.12

Organisational Roles

The APM states that "good governance can be demonstrated through establishing clearly defined roles, responsibilities and performance criteria for governance".

Exercise

Please assign four of the responsibilities listed below to each of the five roles that form a typical project team structure.

Identify 'need'	Define and plan project	Motivates team	Project management tool support
Realise benefits	Technical expertise	Project assurance	Owns business case
Monitors progress	Agree acceptance criteria	Deliver work packages	Assign and develop project managers
Define key constraints	Project delivery (TCQ)	Respond to Project Manager's queries	Stakeholder arbitration
Own project management method	Resolves issues	Report work package status	Time and cost estimates

Sponsor	Project Manager	Customer (User)	Project Team	Project Office

Typical roles for any project include:

Project Steering Group

A project steering group may exist for larger projects and include representation from the business, the customer or users of the deliverables and those who are producing the actual deliverables. The steering group, also known as a project board, provides strategic guidance for the project and is responsible for ensuring the project is managed correctly. It is typical for the steering group to be heavily involved in the resolution of project issues and also stage-gate sign-off.

Project Sponsor

Where a steering group exists, this will be chaired by the sponsor. Where one does not exist, the sponsor will be accountable for all of the responsibilities listed above, including the liaison with stakeholders. The prime responsibility of the sponsor is the ownership of the business case and its continuing viability, culminating in the measurement of the realised benefits once the project moves into an operational phase.

Project Manager

The project manager is accountable for delivering a product capable of achieving the project's agreed benefits. This must be done in accordance with the success criteria defined in the project management plan. The project manager must be able to define and plan the project and be competent in a range of project management tools and techniques. The project manager must also ensure the motivation of the team members.

Team Members

Team members, including external suppliers, are responsible for creating the project deliverables. Team members and subject matter experts will also be heavily involved in the identification of risks and the estimation and sequencing of project activities. Regular status updates from the team are crucial if corrective action is to be taken in an informed and timely manner.

Users (Customer)

The 'users' should define the need for the project and provide the necessary input to the specified requirements and acceptance criteria. Users may also be involved in defining the project constraints including their relative priority (although the sponsor is ultimately accountable for these decisions).

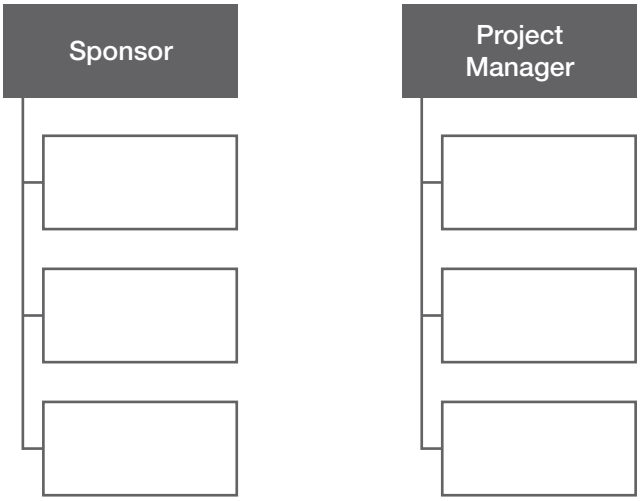
Project Office

The project office will be involved in the support and governance of the project, including the mandating of project control and reporting mechanisms. The project office may audit selected projects to ensure compliance with agreed processes and to provide an objective view of a project's health. It can provide guidance on the use of project management tools and techniques and this may even include the provision of specialist skills, for example project planners. The project office can also provide mentoring and development for project staff.

Exercise

Place the following words against either the sponsor or the project manager:

Efficiency, Outcomes, Effectiveness, Benefits, Outputs, Deliverables



The Organisation Breakdown Structure (OBS)

An Organisation Breakdown Structure (OBS) defines the organisation of the project team and represents its hierarchical structure. The OBS is useful for illustrating the communication and reporting lines within the project.

Responsibility Assignment Matrix (RAM / RACI Charts)

The OBS can be linked to a Work Breakdown Structure (WBS) in order to create a Responsibility Assignment Matrix (RAM). A RAM chart is used to help define who is responsible for each of the project's deliverables or work packages.

		OBS			
		PM	TM1	S1	S2
WBS	Charter	C	A/R		I
	PMP	A/R	C	C	C
	Risk Log	A	I	I	R
	Product Desc.	R	A	I	C

The RAM is typically high-level. Once the deliverables and stakeholders have been listed, the team then decides who is:

- R – Responsible
- A – Accountable
- C – Consulted
- I – Informed

The chart provides a useful indicator of potential bottlenecks where a single stakeholder may be overloaded or where potential gaps in responsibility exist.

02.06 Environment

(APM BoK 1.2.1)

"The circumstances and conditions within which the project, programme or portfolio must operate."

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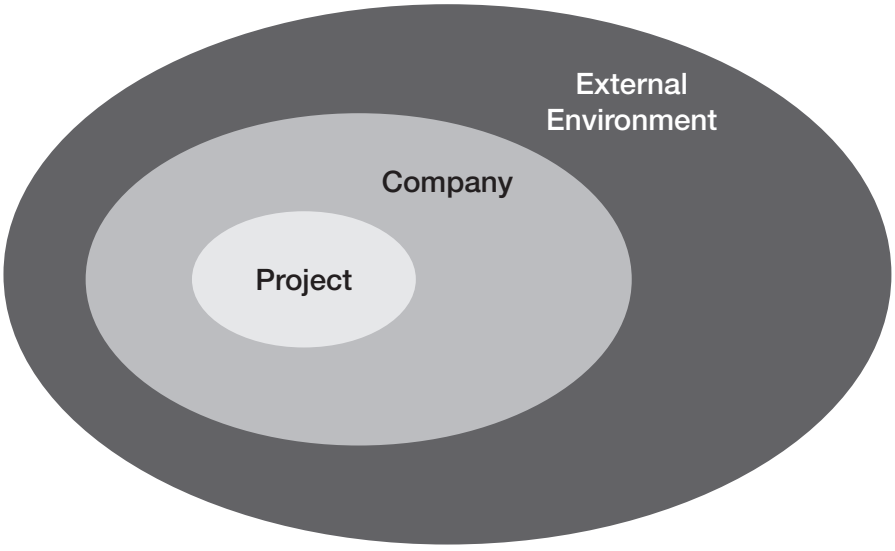
Projects, programmes and portfolios do not exist in a vacuum and their management is influenced by their environment. This demands consideration of the internal and external context in which the project is undertaken.



Internal Environment

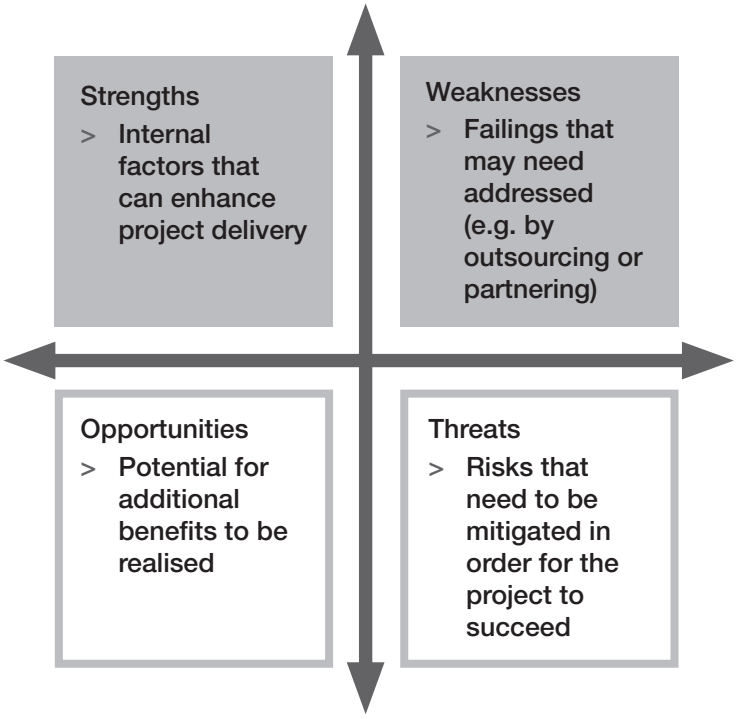
Exercise

List a number of factors that may influence the internal environment within which a project is undertaken.

Factor

SWOT Analysis

SWOT analysis can be used to analyse the project's internal and external environment.



External Factors

The external environment typically includes the influences that may affect the organisation and, consequently, the project. These factors may relate to:

> The industry sector (e.g. construction, pharmaceutical, services, IT, manufacturing etc.)
> Public or private sector
> Location – national, European, global
> Regulation (e.g. banking)
> Market factors and competition

PESTLE Analysis

The external (or macro) environment is often analysed through the use of PESTLE analysis.

Political	> Changes in central or local government and how this may impact some of the other factors – legislation, taxation, funding
Economic	> exchange rates, inflation, procurement policies, commercial terms and conditions, resource and material costs
Sociological	> Culture, income levels, social mobility, demographics, buyer behaviours.
Technological	> existing or developed, availability of skills to design/ operate/maintain,
Legislative	> Local and national laws (e.g. environmental, employment, HSE)
Environmental	> carbon footprint and waste, energy costs, flora and fauna, weather

2.18

The environment is typically analysed at the start of a project but the analysis needs to be revisited throughout as the relevant factors develop and change.

Project sponsors and managers need to monitor the relationship between a project and its environment and the resultant threats and opportunities that could arise.

02.07 Life Cycle

(APM BoK 1.1.6)

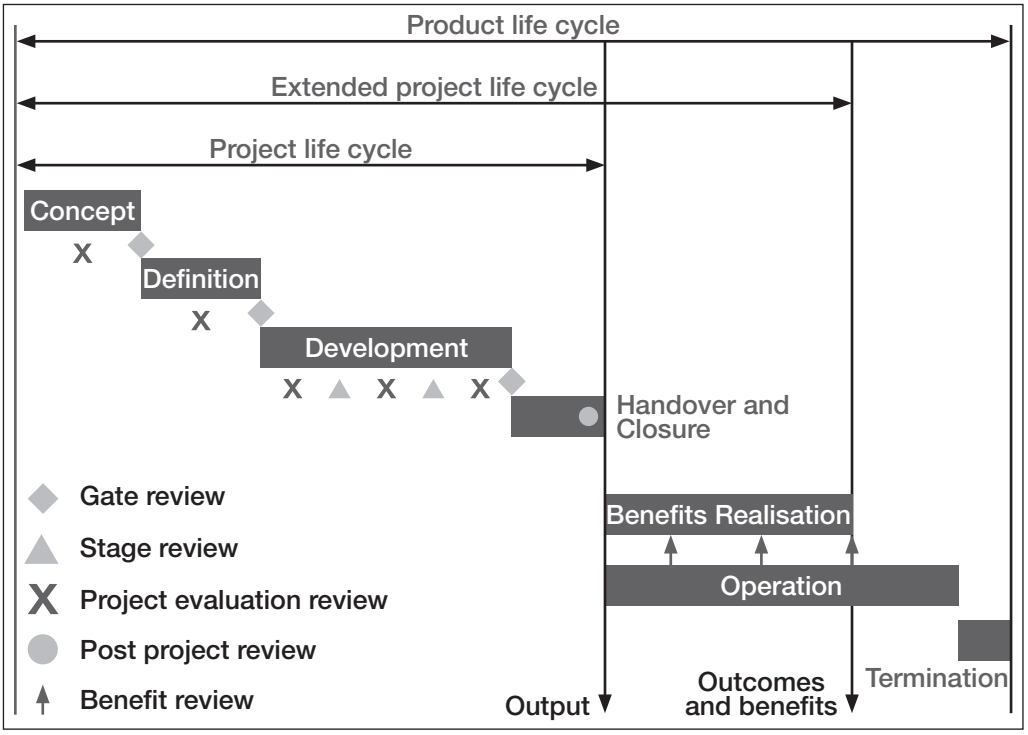
> **A life cycle defines the interrelated phases of a project, programme or portfolio and provides a structure for governing the progression of the work.**
>
> APM BoK 6th Edition

Project management is primarily concerned with ensuring that each project has a controlled start, middle and end. A formal life cycle plays a large part in making this happen.

Life cycles are likely to consist of similar generic phases although different industries and sectors may define their own version.

Project and Extended Life Cycles

A typical linear project life cycle is likely to consist of the following phases with formal reviews at the end of each phase.



Exercise

Complete the table below.

2.20

	Objective	Key Output(s)
Concept		
Definition		
Development		
Handover and Closure		
Operation		
Termination		

Project Reviews

The phased structure of a life cycle facilitates the creation of governance and feedback mechanisms in the form of project reviews. The main reviews are:

1. **Stage review**
   Development work can be sub-divided into a series of management stages with work being authorised one stage at a time.
2. **Gate review**
   A key decision point in the project where senior management will consider performance to date and sanction the continuing investment.
3. **Project evaluation review**
   Provides the project manager and the team with an opportunity to formally review the likely achievement of the project success criteria. Where this review is conducted by an external party (e.g. project office or external auditor), it is known as an audit. The audit may be triggered by concerns regarding the governance of the project and/or to determine its continuing viability.
4. **Post-project review**
   Documenting the lessons-learned for future use is a key factor in the project management maturity of an organisation.
5. **Benefits review**
   Measures the realisation of benefits against the business case, normally in the project's operational phase.

Life Cycle Benefits

Effective structure and control of the project is more likely if a consistent formal life cycle is adopted. Ensuring that the objectives and content of each phase are clearly understood will help gain active commitment from the team and other stakeholders.

Benefits may include:

1. **Improved decision-making**
   The sponsor and other relevant stakeholders are provided with an opportunity to formally assess progress at the end of each stage. This allows corrective action to be taken in a timely manner and also an informed decision can be made regarding the continuing viability of the project and whether further investment is authorised.
2. **Improved Governance**
   The life cycle provides the foundation for an organisation's project management method. The method will dictate what outputs are created during each stage and also the controls and reports that need to be generated. This consistency of approach is one of the key principles of project governance.
3. **More effective planning**
   Each phase can build on the previous work undertaken and detailed plans for the next stage developed when appropriate information is available. The life cycle also allows better planning of when the different resources will be required for each stage.
4. **Improved communication**
   Utilising a life cycle enables stakeholders to understand what has been delivered and what work is outstanding. The end of each phase or stage is likely to be marked with a key milestone and these can be used to communicate progress to interested parties.
5. **Management focus on the early phases**
   Many projects start in the execution or development phase. A life cycle mandates that the organisation formally considers the viability of a project and how can it best be delivered, creating an approved business case and project management plan in the process.

Context and Governance Recap Questions

2.22

1 **The relative importance of time, cost and quality is determined by:**

- ☐ a. The project manager
- ☐ b. The project manager and project team
- ☐ c. The project sponsor
- ☐ d. The project sponsor and suppliers

2 **Which of the following best describes project management?**

- ☐ a. The ongoing activity in an organisation, including processes and competences
- ☐ b. The application of processes and methods to achieve the project objectives
- ☐ c. The approach, knowledge and skills to deliver the business objectives
- ☐ d. How an organisation responds to a crisis

3 **Which of the following is not a characteristic of a project?**

- ☐ a. Has a defined life span
- ☐ b. Uses a pre-defined set of techniques
- ☐ c. Produces defined and measurable business benefits
- ☐ d. Has an element of uniqueness

4 **Which one of the following is best suited to being project managed?**

- ☐ a. Maintaining new procedures
- ☐ b. Operating new procedures
- ☐ c. Minor changes to new procedures
- ☐ d. Introducing new procedures

5 **Benefits of project management include all the following except:**

- ☐ a. The ability to manage risks, issues and changes more completely
- ☐ b. More effective project governance
- ☐ c. Better communication between stakeholders
- ☐ d. Guarantee of project success

6 **Business as usual (BAU) is different from project work in that it is:**

- ☐ a. On-going and repetitive
- ☐ b. Unique
- ☐ c. Temporary
- ☐ d. A part of every project activity

7 **Programme management is used:**

- ☐ a. To support strategic change
- ☐ b. When a project is running over budget
- ☐ c. During crisis management
- ☐ d. To co-ordinate line management areas

8 **Which of the following is not an activity associated with programme management?**

- ☐ a. Managing interdependencies between projects
- ☐ b. Optimising resource usage across the programme
- ☐ c. Monitoring and controlling the progress on each individual project within the programme
- ☐ d. Defining and realising strategic benefits

9 **What is a portfolio?**

- ☐ a. A grouping of an organisation's projects and programmes including related business-as-usual activities
- ☐ b. A complex project requiring special tools and techniques
- ☐ c. An archiving arrangement for project documentation
- ☐ d. A grouping of related projects including associated business-as-usual activities

10 **Which of the following is not a typical consideration for portfolio management?**

- ☐ a. Balance of risk/reward
- ☐ b. Motivation of the team
- ☐ c. Resource capacity
- ☐ d. Governance of the portfolio

11 **The project context describes:**

- ☐ a. The needs of influential and powerful project stakeholders
- ☐ b. The technical difficulties of the project being undertaken
- ☐ c. The skills and capability of the project manager
- ☐ d. The environment within which a project is undertaken

12 **The project manager is responsible for:**

- ☐ a. The number of change requests accepted
- ☐ b. The ongoing viability of the business case
- ☐ c. Realising the project benefits
- ☐ d. Managing delivery of the defined deliverables

13 **One responsibility of the steering group is to:**

- ☐ a. Co-ordinate planners
- ☐ b. Provide overall strategic direction for the project
- ☐ c. Ensure delivery to time and against plan of a project
- ☐ d. Undertake configuration management

14 **What is the role of the project sponsor?**

- ☐ a. To develop a technical understanding of the project deliverables
- ☐ b. To carry out the investment appraisals for each of the business options
- ☐ c. To maintain a detailed view of the project through daily meetings with the Project Manager
- ☐ d. To ensure the business achieves benefits from the project

15 **Which of the following is the responsibility of the Users?**

- ☐ a. Define acceptance criteria
- ☐ b. Define success factors
- ☐ c. Assess change requests
- ☐ d. Perform configuration management

16 **A generic sequence of project life cycle phases could include:**

- ☐ a. Concept, Definition, Development and Handover and Closure
- ☐ b. Starting, Organising, Reporting and Close-out
- ☐ c. Concept, Feasibility, Development and Operations
- ☐ d. Starting, Organising, Schedule analysis, Implementation and Handover

17 **One of the main purposes of dividing a project life cycle into phases is to:**

- ☐ a. Break the work into manageable sections in terms of effort and size
- ☐ b. Ensure that processes are properly implemented
- ☐ c. Ensure that the work force is certain of their individual roles
- ☐ d. Provide a means of producing overall project cost

18 **Which of the following best decribes a project environment?**

- ☐ a. The circumstances and conditions within which the project, programme or portfolio must operate.
- ☐ b. Who may have an impact on the project or be impacted by it
- ☐ c. The industry sector within which the project is being executed
- ☐ d. The interrelated phases of a project, programme or portfolio

19 **Consideration of environmental project constraints is an issue for:**

- ☐ a. Construction projects only
- ☐ b. Petrochemical/Nuclear projects only
- ☐ c. All projects except IT applications
- ☐ d. All projects

20 **A common acronym for an analysis of project context is:**

- ☐ a. PETAL
- ☐ b. PESTLE
- ☐ c. PISTOL
- ☐ d. PRETZEL

2.24

03 Project Concept

3.1

Concept is the initial phase of the project life cycle and where two key questions are answered:

- **What is the need for this project?**
- **Is this a feasible project to take on, and who needs to be involved in this decision?**

03.01 Stakeholder Management

(APM BoK 3.1.6)

3.2

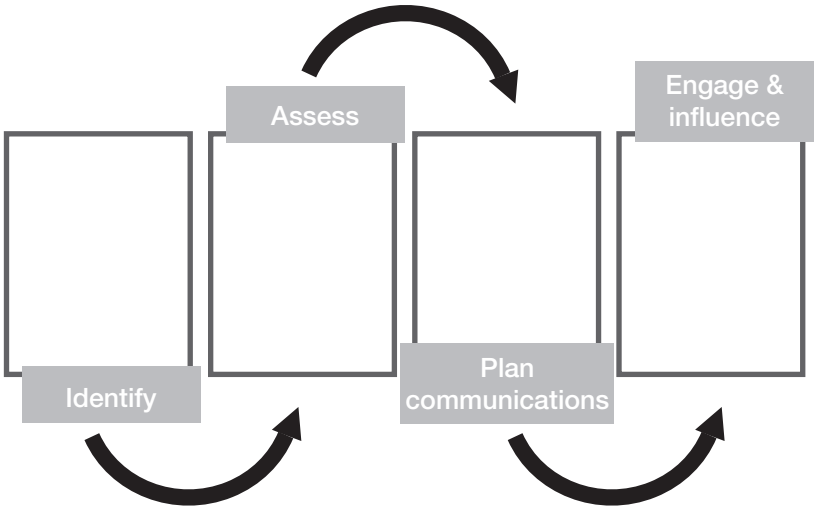
"Stakeholder management is the systematic identification, analysis, planning and implementation of actions designed to engage with stakeholders."

APM BoK 6th Edition

Stakeholders are individuals or groups with an interest in the project because they can have an impact on your work or may be impacted by it. Stakeholders ultimately determine the success (or otherwise) of your project and their expectations must be understood and managed. Stakeholders may be internal and/or external to the performing organisation.

Stakeholder Management Process

Stakeholder Management typically involves the following four steps.



Exercise

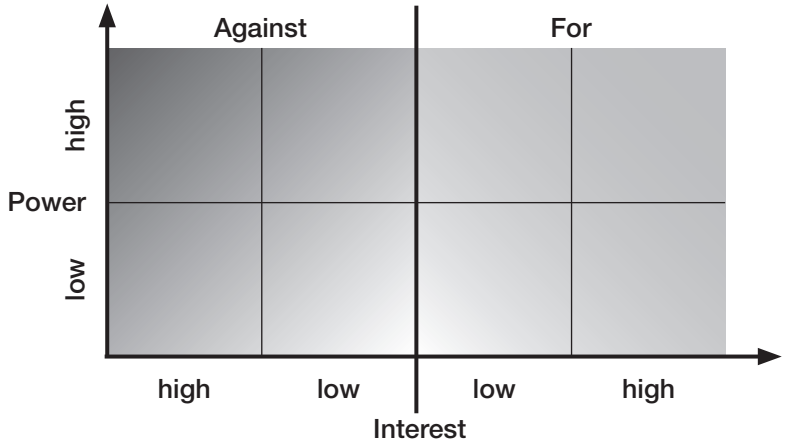
List the activities that may be undertaken by the project manager in each step of the process.

Stakeholder Map

Not all stakeholders are equal.

Stakeholders should be prioritised in order that a project manager can apply an appropriate amount of effort to communication and managing their expectations. One common method of prioritisation is to classify stakeholders according to their relative levels of power and interest.

This classification can be illustrated in graphical form:



When assessing stakeholders, it is useful to consider:

> How will stakeholders be impacted by the project?

> Will they be supportive, resistant or uncertain?

> Who and/or what can influence their views?

> How can their expectations be managed and by who?

Stakeholder Management

Stakeholders must be managed to ensure that support is maintained and opposition to the project is removed or minimised. Project managers need to use a number of different strategies to ensure that trust in the stakeholder community is built and maintained. A high degree of interpersonal skills will be required to negotiate with stakeholders, internal and external to the organisation, and to manage any conflict that might be present. It may be necessary to enlist the support of others when undertaking this task.

Stakeholder Management Benefits

The project manager plays a key role in ensuring that the correct stakeholders are identified and prioritised in order to uphold effective communication and engagement. Stakeholder management should help to realise the following benefits:

> Increase support for the project and boost the number of allies who can help influence others

> More likelihood of acquiring the necessary delivery resources

> Minimising resistance allows the project manager to focus on project delivery

> Better chance of deliverable acceptance from stakeholders who have been consulted and listened to through the engagement process

> Enhance decision-making and communication through building a safe and trusting environment

03.02 Business Case

(APM BoK 3.1.1)

3.4

"The business case provides justification for undertaking a project or programme. It evaluates the benefit, cost and risk of alternative options and provides a rationale for the preferred solution."

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Commonly argued to be the single most important document in any project, the business case defines 'why' a project is being undertaken by justifying its viability. This justification is supported by a comparison of the project's quantified costs and benefits.

Business Case Authorship and Approval

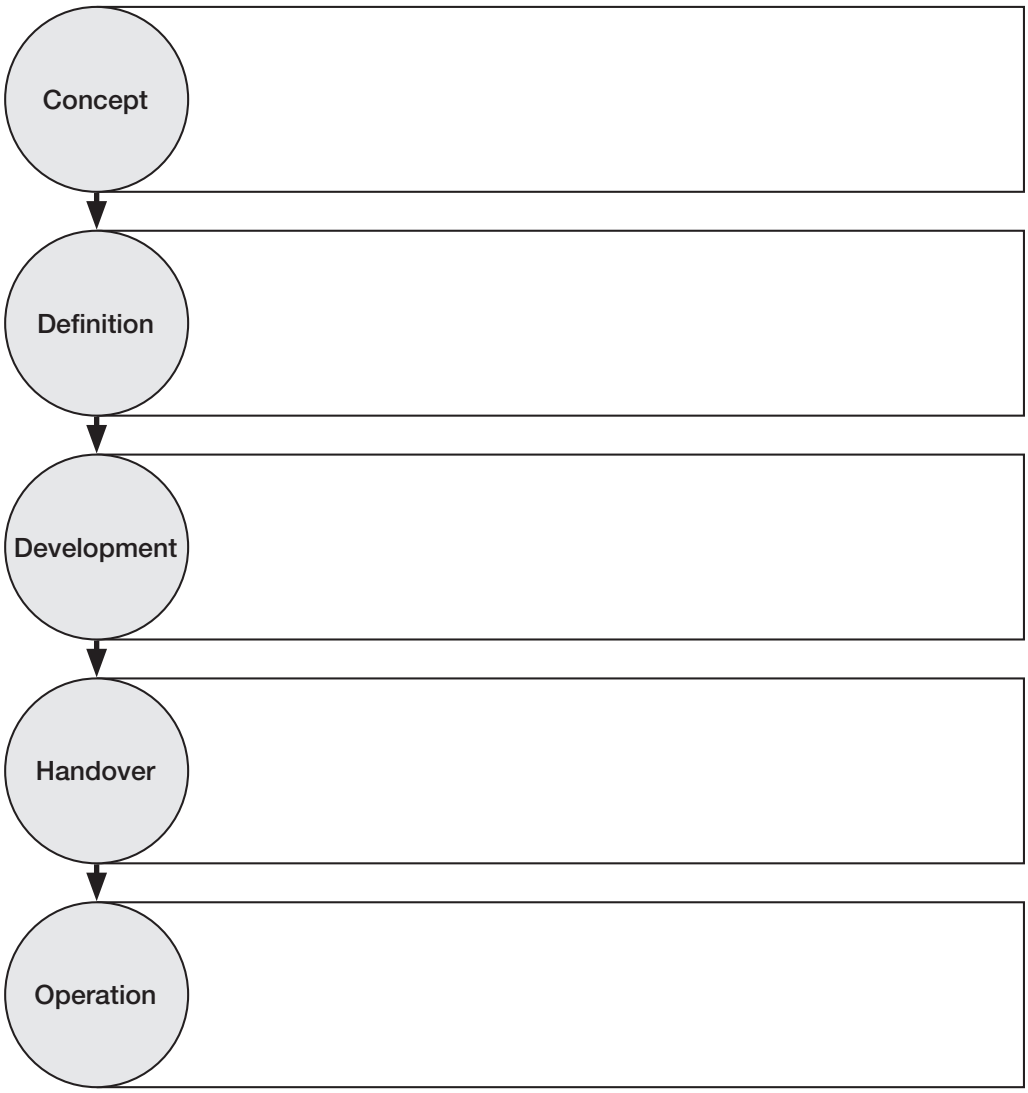
The actual preparation of the business case is often delegated to the project manager (with support from relevant subject matter experts) but the sponsor owns the document and must ensure that it remains viable throughout the life cycle. The sponsor is also accountable for ensuring that business case receives the necessary approval from senior management.

The contractor (or supplier) business case will be focused on the profitability of delivering the project outputs. The client business case will be founded on the benefits that are created from the project outputs.

The Development of the Business Case

Exercise

Complete the diagram on the following page by showing the evolution and use of the business case in each phase of the project life cycle.



An outline business case documenting the initial idea (problem or opportunity) is developed in the concept phase. This provides the basis for the project proceeding to the definition phase. The detailed business case is created during the definition phase once the project plan is complete.

> *At a minimum, the sponsor must formally review the business case at each stage-gate to ensure that it is not adversely impacted by factors internal or external to the project.*

At handover, the business case is used to determine whether the project manager and team have managed to deliver the project within the agreed success criteria (for example, within time and cost targets). At an agreed point during the operational phase, the sponsor is responsible for undertaking a formal review of whether the defined benefits in the business case have been realised.

Business Case Content

The content of a business case will vary across organisations and the level of detail required may depend on the scale and complexity of the project. Typical content includes:

Business Case

- **Strategic case** – the background of the project and why it is needed
- **Options appraisal** – what options have been considered (including do-nothing) and the preferred option
- **Benefits** – the benefits that will arise from the work and any unavoidable dis-benefits
- **Costs** - commercial aspects, investment appraisal and funding arrangements
- **Risk** – the major risks and their impact on the business case
- **Timescales** – a summary of the output delivery and the subsequent realisation of benefits

03.03 Measuring Project Success

(APM BoK 1.1.7)

"Success factors are management practices that, when implemented, will increase the likelihood of success of a project, programme or portfolio. The degree to which these practices are established and embedded within an organisation indicates its level of maturity."

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Success Factors

Success Factors are elements of the project context that increase the chance of achieving a successful outcome. These factors are often seen as 'enablers' and may well be behavioural in addition to more tangible influencers. Success factors will vary depending on the project but typically include:

- ☑ Clear project goals and objectives
- ☑ Proper project governance
- ☑ Senior management commitment
- ☑ Clear and timely communication
- ☑ Capable and motivated team

The project manager needs to apply effort in ensuring that the success factors are present. Although their presence does not guarantee success, their absence may well lead to project failure.

Benefits Management

The APM defines a benefit as *"the quantifiable and measurable improvement resulting from completion of deliverables that is perceived as positive by a stakeholder."*

Delivering benefits is the primary reason for change initiatives in an organisation. Where a project is only delivering outputs, it is essential that the project manager interfaces

with whoever is responsible for the realisation of benefits, typically this is the sponsor or business change manager.

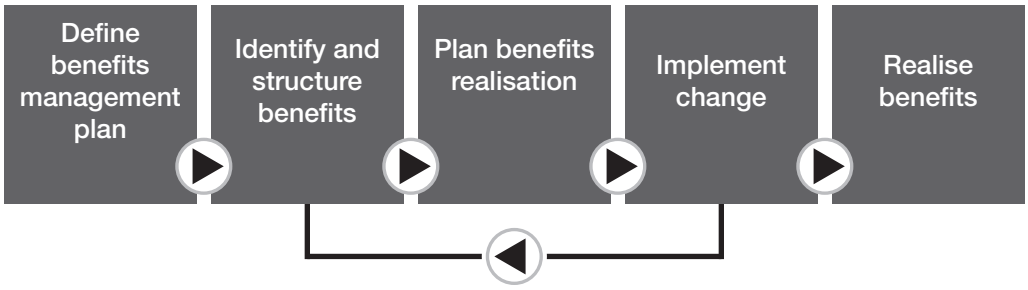
Categories of benefit include:

Tangible (hard)	Intangible (soft)	Dis-benefit
> profit > turnover > jobs created > ...	> reputation > increased capability > motivated staff > ...	> a consequence of change perceived as negative by stakeholders

Benefits normally have a tangible value expressed in monetary terms although this is not always the case. Project managers should avoid stating benefits that cannot be measured. If benefits cannot be measured, they cannot be managed, and their realisation (or otherwise) will be unclear to the organisation and the project stakeholders.

Benefits Management Process

Benefits management is the identification, definition, planning, tracking and realisation of business benefits.



Define benefits management plan	> Includes the policies for the prioritisation and measurement of benefits and KPIs and also the responsibilities for doing so
Identify and structure benefits	> Sets out the inter-relationship between outputs, outcomes and benefits (also defines priority, value, timescales, ownership etc.)
Plan benefits realisation	> Captures the baseline performance and agrees improvement targets; the realisation plan outlines the timeline and milestones
Implement change	> Identify opportunities for additional benefits when change is taking place
Realise benefits	> Track realisation and ensure embedding of change; document plans for long-term benefits realisation during BAU

Objectives of benefits management include:

> Ensure early agreement of benefits amongst the relevant stakeholders

> Establish a clear link between project benefits and the strategic objectives of the organisation

> Clear ownership of benefits and the responsibility for their management

> The benefits should provide a focus for project delivery

> Understand threats to the realisation of benefits and take steps to mitigate these risks

Benefits, Success Criteria, Success Factors and KPIs

Confusion exists regarding the difference between project success criteria, success factors, key performance indicators and benefits. Benefits are described above and the APM defines the remaining terms as:

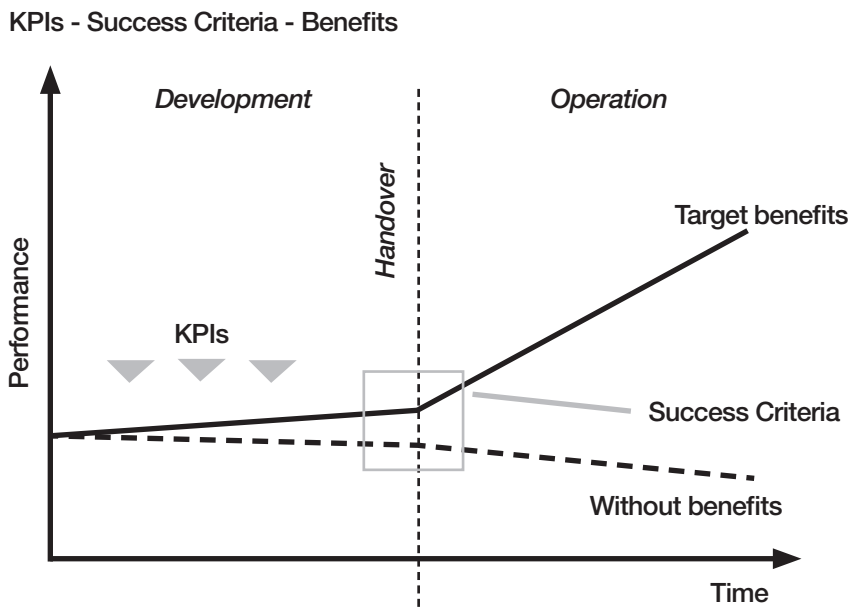
> **Success Criteria**: The qualitative or quantitative measures by which the success of project management is judged.

> **Key Performance Indicators (KPIs)**: Measures of success that can be used throughout the project to ensure that it is progressing towards a successful conclusion. Each success criterion should have an associated KPI.

> **Success Factors**: Management practices that, when implemented, will increase the likelihood of success of a project.

The benefits and success criteria are quantified in the business case to help provide justification for undertaking the project.

It is important to recognise that it is possible for a project to satisfy its success criteria but still fail to deliver the anticipated benefits (with the converse also being true).



There should be a direct link between the chosen KPIs, success criteria and benefits in order that stakeholder expectations are understood and satisfied.

03.04 Procurement

(APM BoK 3.7.3)

3.10

"Procurement is the process by which products and services are acquired from an external provider for incorporation into the project, programme or portfolio."

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Procurement is a large and potentially complex topic for inexperienced project managers. It requires an understanding of how contracts work and also the ways in which external providers should be selected and managed. Procurement typically covers the acquisition of:

- Standard 'off the shelf' goods and services
- Goods or services that are designed and provided specifically for the purchaser
- Professional advice or consultancy

Contracts

"A contract is an agreement made between two or more parties that creates legally binding obligations between them. The contract sets out those obligations and the actions that can be taken if they are not met."

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Contract Conditions

The 'contract terms and conditions' will clearly set out the intentions for both parties and is likely to include items such as:

General information
Who the parties are, description and location of the works or services, the legal system that the contracts will use, etc.

Responsibilities
The provider's responsibilities for design, approvals, assignment of responsibilities, sub-contracting

Schedule
Milestones, completion date(s)

Quality
Acceptance testing and correction of defects

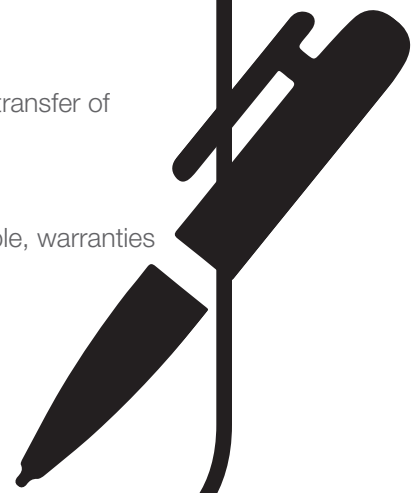
Payment
Certificates, release of payments

Alterations
Compensation events, change requests and dealing with unforeseen circumstances

Property
Who owns what during the course of the contract, transfer of intellectual property rights (IPR) and copyright

Risk
Assignment and the management of risk (for example, warranties and insurance)

Disputes
How disputes will be managed (for example, non-performance issues)



Procurement Strategy

The work involved in procuring resources can be significant. The way goods and services are to be acquired is defined in the resource management plan or in a procurement strategy. The strategy addresses the needs of the project whilst respecting any relevant organisational constraints (for example, ethical procurement policies) and/or strategic objectives. How procurement is to be managed may cover factors such as:

3.12

- 'Make' or 'buy' decision (including consideration of costs, quality, IP ownership, resource availability etc.)
- Use of single, integrated or multiple providers
- Required provider relationships
- Provider selection
- Conditions and form of contract
- Types of pricing and methods of reimbursement

Legislation such as European Union rules (OJEU – Official Journal of the European Union) might influence the process by which the organisation engages with suppliers. OJEU objectives include:

- A more transparent and objective procurement process whilst encouraging competition amongst bidders
- Public Procurement Directives that are intended to ensure fair and non-discriminatory international competition for contracts greater than defined threshold values (different contract thresholds are defined for products and services)

Provider Selection and Management

"*Provider selection and management is the process of identifying, selecting, appointing and supervising providers through the project, programme or portfolio life cycle.*"

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Provider management is a continual process throughout the project life cycle. While the process may vary from sector to sector, it generally follows six generic steps and needs to be efficient and suitable for the context within which the suppliers are being engaged.

Research	Identification of potential providers that have the capability to deliver. This may be made easier where a regularly reviewed and up-to-date 'approved supplier' list exists.
Pre-qualification	A Pre-Qualification Questionnaire (PQQ) can be used to clarify suppliers' capacity, willingness to tender, financial stability and technical experience. The PQQ seeks to reduce a long list of potential suppliers to a manageable number who are eligible for contract award and will then be invited to tender.
Tender	The shortlisted providers can be asked to provide a full bid against a set of defined requirements – typically known as an Invitation to Tender (ITT). The buyer must ensure that the requirements are clearly described and all providers are given an equal chance of success. Records for provider selection must be retained.
Award	Involves the negotiation and agreement of a contract to supply the goods and services. It is essential that both parties understand that a legally binding agreement is being entered into.
Manage	The relationship needs to be nurtured and carefully managed. Resorting to legal means to resolve contract disputes should be a last resort. The project manager should see the provider as part of the project team and integrate them as such with regular communication and effective feedback on performance.
Close	Once the goods and services have been provided by the provider, the contract will be closed. This involves: > Ensuring all financial arrangements have been honoured > Ensuring all contract changes have been accounted for > Implementing the support maintenance contract to repair, or upgrade goods provided > Conducting a performance review with the provider and capturing lessons for future use

Project Concept Recap Questions

1 **Differences between the various project stakeholders' requirements are resolved by:**

- ☐ a. The project manager
- ☐ b. The organisation's project management office
- ☐ c. The project sponsor
- ☐ d. The most senior manager in the organisation

2 **All of the following are part of the project team's stakeholder management effort except:**

- ☐ a. Identifying the stakeholders
- ☐ b. Determining the stakeholders needs
- ☐ c. Giving the stakeholders extras
- ☐ d. Managing the stakeholders' expectations

3 **Stakeholders can be typically mapped according to their respective:**

- ☐ a. Power and Influence
- ☐ b. Seniority and geographic location
- ☐ c. Power and Interest
- ☐ d Networks and communication links

4 **The business case determines:**

- ☐ a. The project deliverables
- ☐ b. The logic of the project plan
- ☐ c. How the project will be managed
- ☐ d. The feasibility of the project

5 **Which option should always be considered when justifying a new project?**

- ☐ a. The minimum quality option
- ☐ b. The minimum performance option
- ☐ c. The earliest delivery option
- ☐ d. The do nothing option

6 **The business case justifies:**

- ☐ a. The appointment of the project manager
- ☐ b. The contingency for the project
- ☐ c. The financial investment in the project
- ☐ d. The use of high level planning software for the project

7 **The business case serves as output from the _____ phase and input to the _____ phase of a project life cycle.**

- ☐ a. Concept, Definition
- ☐ b. Concept, Development
- ☐ c. Definition, Development
- ☐ d. Concept, Handover and Closure

8 **Which of the following would usually be associated with the business case rather than the project management plan?**

- ☐ a. Risk management plan
- ☐ b. Investment appraisal
- ☐ c. Schedule
- ☐ d. Project organisation structure

9 **Which of the following is NOT part of the Business Case**

- ☐ a. Issue register
- ☐ b. Do nothing option
- ☐ c. Assumptions
- ☐ d. Impact on business-as-usual

10 **Project success criteria are first determined:**

- ☐ a. During the definition phase
- ☐ b. When the deliverables are demonstrated
- ☐ c. When the business case is defined
- ☐ d. When the contracts are let

11 **An example of a project success factor is:**

- ☐ a. Good communication links
- ☐ b. On-time delivery
- ☐ c. Delivery within budget
- ☐ d. Zero-errors

12 **Key Performance Indicators indicate progress of the project towards achieving:**

- ☐ a. Success criteria
- ☐ b. Success factors
- ☐ c. The project teams personal objectives
- ☐ d. Adherence to mandated procedures

13 **Success criteria measure whether (or how well) a project has achieved its:**

- ☐ a. Benefits
- ☐ b. KPIs
- ☐ c. Objectives
- ☐ d. Customers' expectations

14 **Who is accountable for benefits realisation?**

- ☐ a. Project manager
- ☐ b. Project sponsor
- ☐ c. User
- ☐ d. Corporate management

15 **Which of the following statements is true?**

- ☐ a. Every project must create financial benefits
- ☐ b. Financial benefits must exceed the total cost of the project
- ☐ c. All intangible benefits must be given a monetary value
- ☐ d. All benefits, whether tangible or intangible, must have a form of measure or indicator to show they are being delivered

16 **Which of the following is not an example of a valid Key Performance Indicator**

- ☐ a. A communications plan showing stakeholder support
- ☐ b. A "slip chart" showing completion of milestones
- ☐ c. A status report showing a budget over-run
- ☐ d. A quality log showing the number of defects identified

17 **One of the key objectives of procurement is to:**

- ☐ a. Ensure the users are satisfied with the choice of supplier
- ☐ b. Offload as much risk as possible
- ☐ c. Get the cheapest price
- ☐ d. Obtain a fair and reasonable price

18 **Procurement includes:**

- ☐ a. Definition of technical requirements
- ☐ b. Development and maintenance of contract documentation
- ☐ c. Material purchasing only
- ☐ d. Milestone planning

19 **All of the following are examples of reimbursement methods except:**

- ☐ a. Cost plus incentive fee
- ☐ b. Fixed Price
- ☐ c. Per unit quantity
- ☐ d. Turnkey

20 **A contract is:**

- ☐ a. Always drawn up by solicitors
- ☐ b. Always has to be written
- ☐ c. Always a legally binding agreement between two or more parties
- ☐ d. Always concluded with a red wax seal

3.16

04 Planning the Project

Planning the project consists of two main components:

1. **It sets out the policies for project delivery**
2. **It estimates and defines what needs to be done, how should it be done, when will it be done, who should do it (and where) and how much will it cost**

The plan is the primary communication medium for the project and provides the basis for the monitoring and control of its development

04.01 Scope Management

(APM BoK 3.2)

4.2

"Scope management is the process whereby outputs, outcomes and benefits are identified, defined and controlled."

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Identification and definition of the scope must describe what the project will include and what it will not include, i.e. what is in and what is out of scope.

Scope management forms an essential basis for the planning, monitoring, control and handover of the project.

> *Without a clearly defined scope statement that is understood and agreed by the project stakeholders, it is very unlikely that a realistic schedule and/or budget will be created.*

Without a clearly defined scope statement that is understood and agreed by the project stakeholders, it is very unlikely that a realistic schedule and/or budget will be created. Change control is also likely to prove problematic, and conflict and confusion are inevitable.

Project scope includes the deliverables or services to be provided and also the work required to create these deliverables. Although less common, benefits may also be included in the scope of a project. The high-level scope will be defined in the Business Case and further elaborated within the Project Management Plan (PMP).

A number of tools exist that help project teams define the scope of their projects.

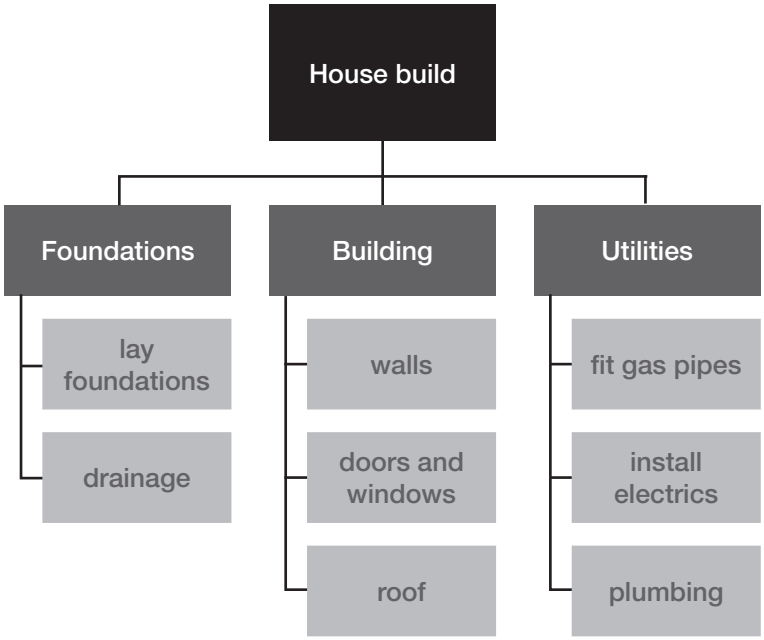
Product and Work Breakdown Structures (PBS / WBS)

The PBS and WBS are two of the most commonly used tools that help define and refine the project scope. Both tools are a hierarchical depiction of the project:

- PBS focuses on all the deliverables that the project will create (the lowest level being a deliverable)
- The WBS is still a deliverable orientated illustration of the project but also may include the work required to create the deliverables (The lowest level of the WBS is typically

a Work Package (refining the structure to 'activity' level can lead to a very complex diagram).

The WBS can be structured upon a functional, product or life cycle basis. Teams commonly start with a PBS and then add the work required to create the WBS.



Work Package

The work package content, degree of formality and level of detail will depend on each organisation's requirements. Prescribing formal and detailed work packages is more likely when working in virtual or less experienced teams and especially where work is allocated to an external contractor.

Benefits of using a PBS and / or WBS include:

- Forming the basis of effective planning and control (including cost control)
- Fostering a common understanding of scope within the team
- Providing an excellent communication vehicle and structure for clarifying misunderstanding as to what is in and out of scope
- Useful for discussing trade-offs and priorities
- Useful for delegating work to parties internal and external to the organisation
- Provides a numbering system (code of accounts) that can be used to help track and control costs

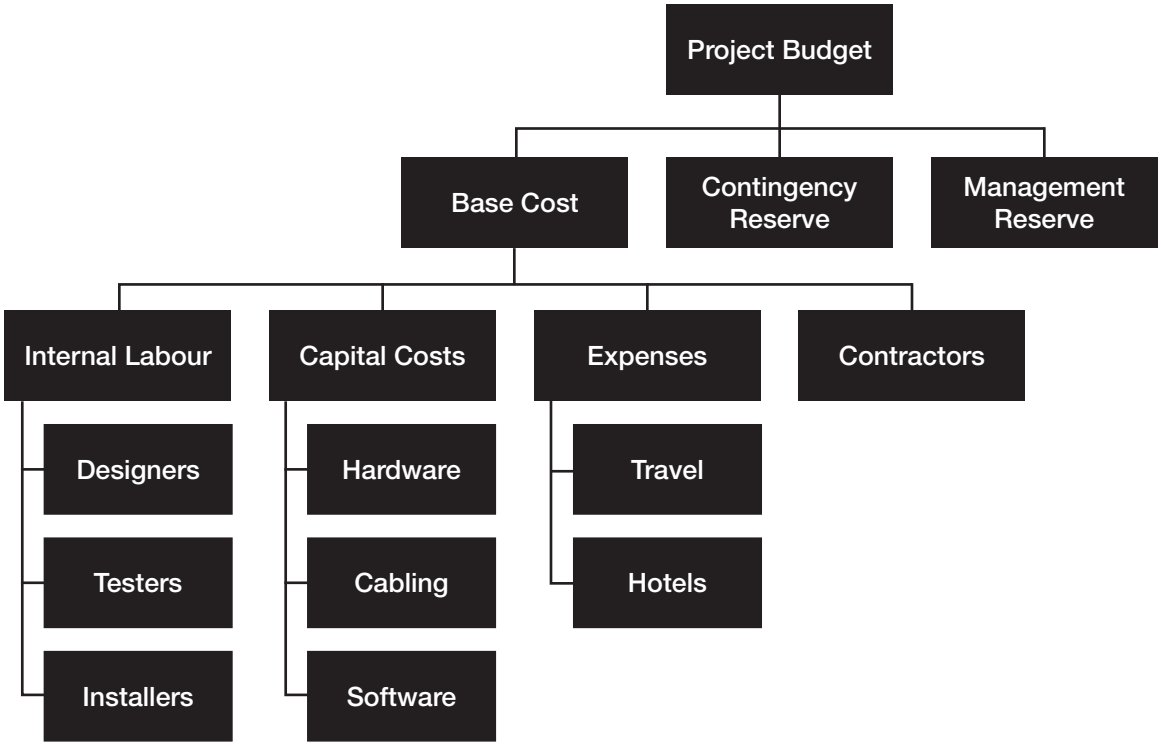
Scope Baseline

The term baseline can also be applied at a lower level than the whole project, for example to the scope and/or schedule. The baselined scope that is agreed with the project sponsor is used to control requests for change and is invaluable in helping to prevent 'scope-creep' on the project. The agreed scope will also form the basis of the project plan and ultimately the project budget.

Budget / Cost Alignment

Each work package in the WBS will have costs associated with labour, materials, expenses and possibly other cost categories. A cost breakdown structure (CBS) can be used to ensure that costs are hierarchically attributed to a specific work package as well as being aggregated to align with the financial reporting systems of the host organisation. The CBS provides increased visibility for the finance department to monitor costs and identify trends in expenditure.

4.4



Contingency reserve is the money set aside to mitigate identified risks. Management reserve covers the cost of unexpected events. The amount set aside for management reserve will depend on the level of innovation and uncertainty in the project.

04.02 Planning

(APM BoK 3.1.5)

> **Planning determines what is to be delivered, how much it will cost, when it will delivered, how it will be delivered and who will carry it out.**
>
> **APM BoK 6th Edition**

Planning occurs broadly at two levels: policy and delivery.

At the **policy** level, a series of plans set out the principles of how each aspect of the work will be managed. Examples of policy plans include:

- the risk management plan
- quality management plan
- change control process
- benefits realisation plan

Policy plans are sometimes referred to as strategies and include setting out procedures and processes for each management aspect. This might include the definition of preferred techniques, document templates, defined responsibilities etc.

At the **delivery** level, the plan answers questions such as:

Purpose	Description
'Why'	The need or problem being addressed and why it is necessary to do so. This is an expansion of the project's background as defined in the outline Business Case.
'What'	What is to be delivered along with associated acceptance criteria. It also describes the success criteria and the KPIs used to measure success on the project, including any constraints, assumptions and dependencies.
'How'	The preferred delivery strategy for the project along with the reasons for its choice.
'How much'	The budgets and project cash-flows (including income where appropriate).

Purpose	Description
'Who'	Key roles and responsibilities including how the required resources for the project are to be acquired.
'When'	A project schedule including key milestone dates, phasing and detailed timings for project activities required to complete the work.
'Where'	The geographical location of the project – where the work will be performed and the impact on costs and personnel.

This information is first developed during the Concept phase of the project life cycle in the form of the Business Case. When approval to proceed is given by senior management, detailed documentation is prepared during the Definition phase of the project life cycle. This is referred to as the project management plan (PMP).

Exercise

The PMP documents the why, what, how (and how much), who, when and where for your project. Please complete the table below indicating what specific content may be included in each of the seven areas:

	PMP Content	Comments
Why		
What		
How		
How much		
Who		
When		
Where		

Consider the following points when discussing the answer to the previous exercise:

> How does the PMP vary per organisation and/or industry sector

> Who provides and approves this information

> What is the result if this information is not documented and agreed

> What other terms are used for the PMP (e.g. PID, PEP, SoW etc.)

Objective of the PMP

The PMP is essentially the "contractual agreement" between the project manager and the sponsor.

The assembled PMP is a focal point for the project, documenting what will be delivered and how it will be managed in terms of the information detailed in the table above. The detailed planning process will provide confidence that time and cost targets are realistic and that assumptions are well founded. It is important that the PMP verifies that the success criteria for the project is achievable.

It is common for the PMP to be progressively elaborated with more detail as the project progresses through the life-cycle. It is used as the primary control mechanism during the project's development phase. It also forms the basis of performance appraisal at project closure.

Ownership of the PMP

The PMP is owned by the project manager who is responsible for:

> The creation of the PMP

> The accuracy of its content

> The maintenance of the PMP

The project manager is unlikely to have all the skills and knowledge to create the entire PMP and therefore the team members and other stakeholders are involved in the creation and approval of the PMP. This will play a key part in removing ambiguity, setting expectations and developing commitment to the plan.

During the delivery of the project, the PMP is used as the focal point for monitoring and controlling progress, stakeholder communication and managing change. It must be periodically reviewed and updated with rigorous change control. Finally, during project handover, the PMP is used as the formal mechanism for agreeing the acceptance of project deliverables. The sponsor will use the PMP to appraise the performance of the project manager and the team before ultimately determining if the project has met the agreed success criteria.

Exercise

List the key activities when creating a project plan.

1	
2	
3	
4	
5	
6	
7	
8	

04.03 Estimating

(APM BoK 3.1.5)

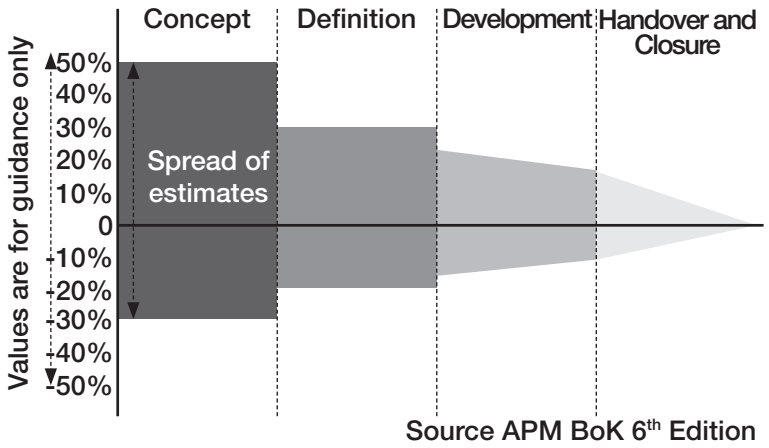
> **An estimate is an approximation of project time and cost targets, refined throughout the project life cycle.**
>
> **APM BoK 6th Edition**

The two most common questions asked of any project manager are:

- How long?
- How much?

In order to answer these questions, the project manager must be able to provide quality estimates for the resources required for the project (these may include labour, materials etc.) and the durations for each activity.

At the start of the project uncertainty will be at its highest and therefore it may be very difficult to provide an accurate estimate with any degree of confidence. As more information becomes available, risk and uncertainty will decrease and therefore estimates should become more accurate. This leads to an estimating funnel effect.



Source APM BoK 6th Edition

The concept of the Estimating Funnel is particularly important for organisations that may be involved in technologically innovative projects or where significant uncertainty and risk may be present.

Estimating Methods

Exercise:

Please estimate the following (without reference to the internet!)

Question	Estimate
The distance from London to Edinburgh if measured in a straight line	
The surface temperature of Saturn	
The height of your instructor	

Consider why some of these questions are easier to estimate than others. It should now be possible to relate some of your answers to the main estimating tools that are commonly in use. The three primary estimating methods are described in the following table.

Method	Description
Comparative (also known as Analogous)	Assumes that the organisation has data (time and cost) from previous projects that can be used to produce a credible indicator for subsequent projects.
Parametric	Also requires reliable historical data to produce reliable estimates. Typical attributes used to produce estimates will include lines of software code, cost / time per square metre etc.
Bottom-up (also known as Analytical)	Detailed estimate is produced for each work package (or activity) and then rolled-up throughout the Work Breakdown Structure.

04.04 Time Scheduling

(APM BoK 3.3.2)

"Time scheduling is a collection of techniques used to develop and present schedules that show when work will be performed."

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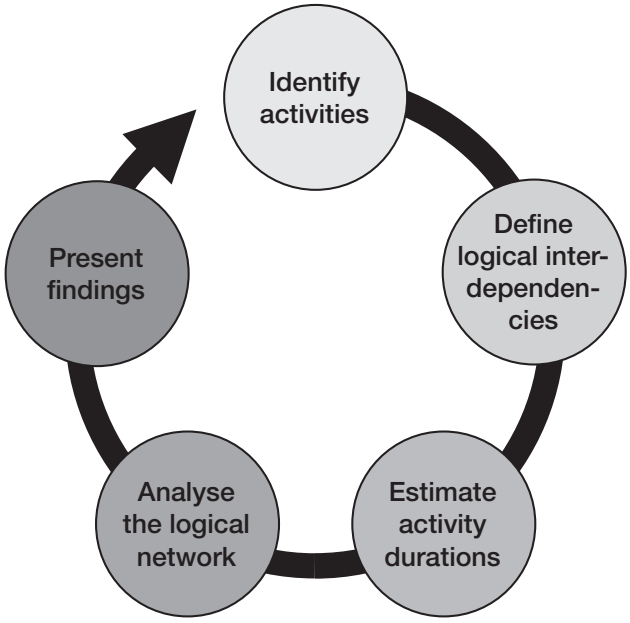
Once the project scope has been defined, scheduling typically involves a number of inter-related activities.



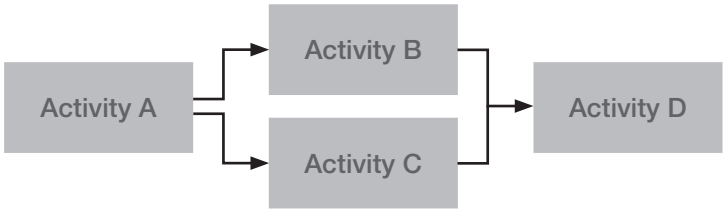
Identify Activities

The activities required to create each work-package are defined. This task is typically undertaken with the relevant subject matter expert or team-member. Project managers may not have the technical expertise in order to carry this out by themselves.

Define Logical Inter-dependencies

Using the work packages identified in the WBS the network diagram defines the sequence in which the work packages will be carried out. This method

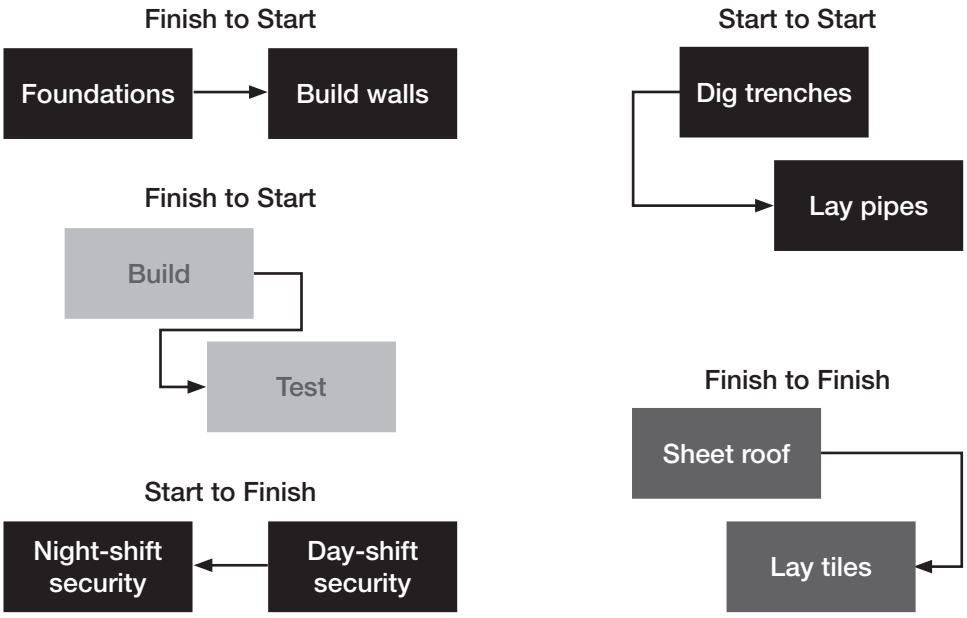
represents the activities as boxes or nodes with relationships shown as the logic connections between the boxes.



4.12

Networks can be created that only use simple 'finish-to-start' relationships. In more complex projects a number of different logical relationships may be present.

Relationship	Description
Finish-to-Start	Predecessor activity must finish before the successor activity can start (most common relationship)
Start-to-Start	Predecessor activity must start before the successor activity can start
Finish-Finish	Predecessor activity must finish before the successor activity can finish
Start-to-Finish	Successor activity must start before the predecessor activity can finish (very rare)



Network diagrams can be further enhanced through the addition of lags and leads to specific logical links:

> **Lag:** creates a defined delay in the relationship (represented by the inclusion of a '+' sign accompanied by the required time delay)

> **Lead:** indicates an overlap between two linked activities (represented by the inclusion of a '-' sign accompanied by the required time overlap)

Estimate Activity Durations

A variety of techniques may be used to estimate activity durations including comparative, bottom-up and parametric estimating. These techniques are discussed in detail in the Estimating chapter.

Analyse the Logical Network

The diagram shows a typical format for depicting network nodes (note that project planning software conventions may differ from this standard).

Critical Path (Network) Analysis

The APM defines the critical path as the "Sequence of activities through a project network from start to finish, the sum of whose durations determines the overall project duration". The critical path is generated by analysing the logical network of activities. This involves calculating the start and finish dates of activities in two passes.

> The Forward Pass calculates 'Early Start' (ES) and 'Early Finish' (EF) dates for each activity, starting at the first activity and working through to the last activity in the network.

> The Backward Pass calculates the 'Late Start' (LS) and 'Late Finish' (LF) dates of activities from the final task backwards.

Forward Pass:	Early Finish = Early Start + Duration (ES + D)
Backward Pass:	Late Start = Late Finish – Duration (LF – D)

Early Start	Duration	Early Finish
Description		
Late Start	Total Float	Late Finish

Where a successor task on the forward pass has two predecessors, the latest 'EF' must be chosen. When a predecessor task on the backward pass has two successors, the smallest 'LS' value is used.

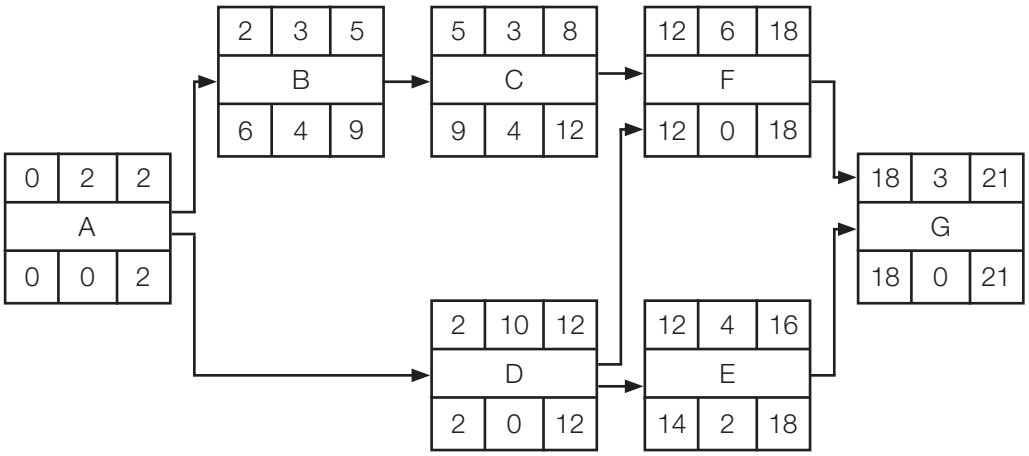
Once both passes are complete, it is possible to determine the amount of float time per activity. Two types of float are generally considered.

Float Type	Description	Calculation
Total	The amount of time an activity can be delayed or extended without affecting the total project duration (end date).	Late Finish – Early Finish (LF – EF)

Activities on the critical path typically have zero total-float.

Project managers will focus on the critical path to ensure that agreed delivery dates are achieved.

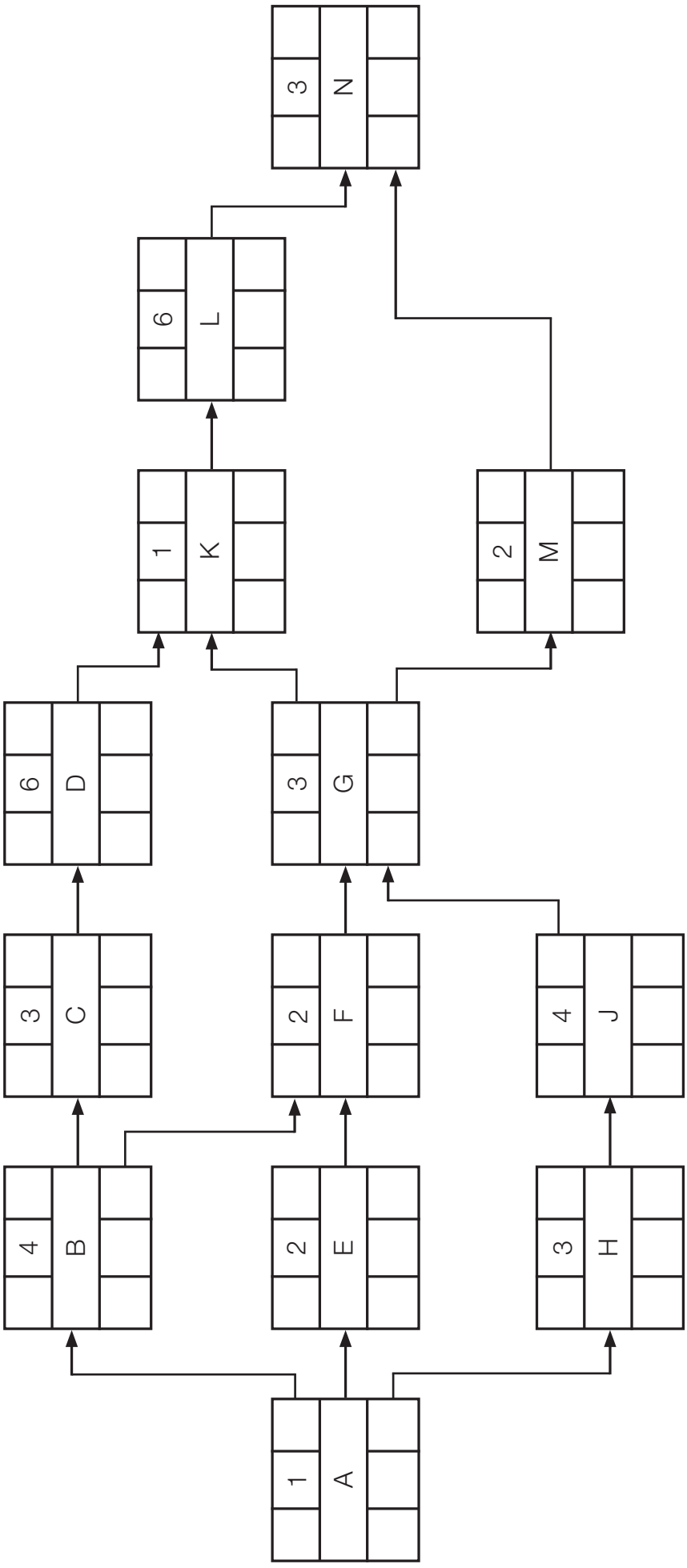
The project duration can only be reduced if the critical path is modified in some way (for example, by altering the logic or changing the duration of critical activities).



Exercise

> Analyse the network

> State the critical path


A 1
B 4
C 3
D 6
E 2
F 2
G 3
H 3
J 4
K 1
L 6
M 2
N 3

Use of Critical Path

The critical path is very important for a number of reasons:

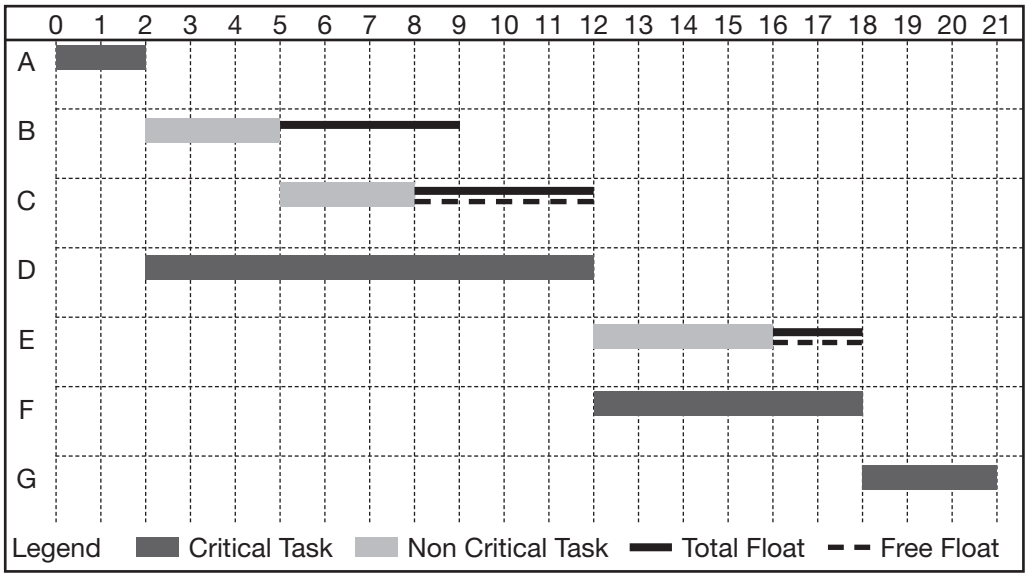
- Focus attention on activities which, if delayed, will affect project duration
- To identify 'near or sub critical' activities – those with very little float may require similar attention to critical path activities
- The critical path can be aligned with key milestones which is useful when reporting progress
- To identify 'bulk work' activities – those with large float:
  - These can be used to smooth the forecasted resource utilisation
  - They help identify where resources can be switched between bulk and critical activities to maintain progress
- Risks associated with critical path activities may have a higher impact (especially with respect to time)

Gantt (Bar) Charts

A Gantt chart is a simple form of bar chart. Its primary characteristics are:

- It is the most common representation of a project schedule
- A timeline showing the project calendar
- The bar length indicates duration
- Tasks are usually positioned at earliest start and finish dates showing any float at the end
- It can be shown with or without logic connections
- It can be rolled up into summary tasks and also show key milestones
- The critical path is identified, typically in red
- It can show comparison of the current plan to the original plan (baseline)
- It is typically generated using planning software

The Gantt chart is typically produced once the network is understood and the critical path analysis has been completed. A legend or key should be added so that anyone reading it understands the different colours and shapes.



Milestones

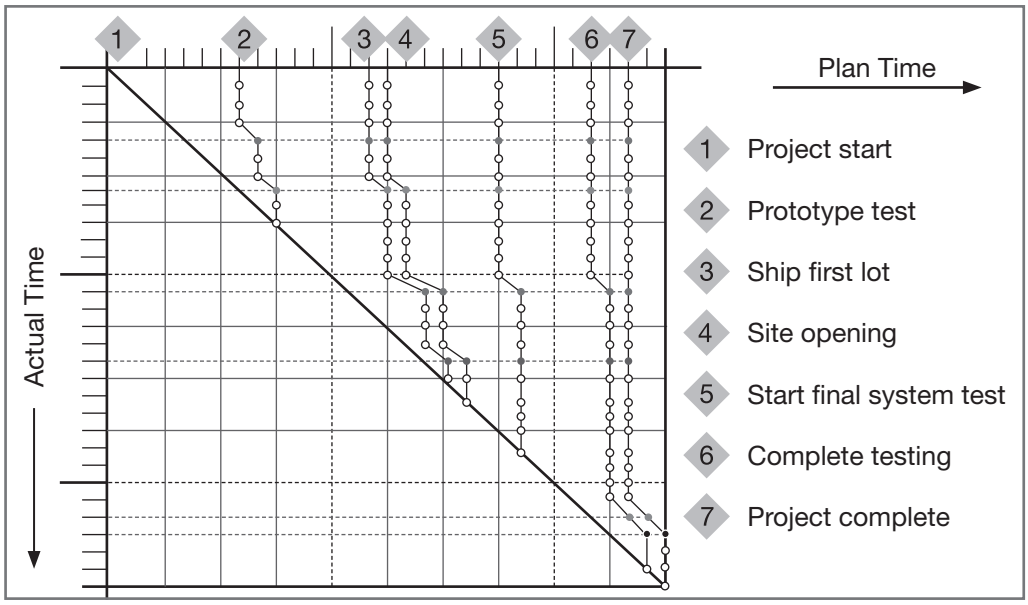
Identifying the key milestones is often the first step in schedule planning. It makes sense to plan at this level first before going into too much detail (particularly on large projects).

The characteristics of milestones include:

- They define key events in the project (typically completion of major deliverables, intermediate products or results)
- They can act as motivating factors for the team and/or suppliers (reward and recognition may be tied to successful achievement)
- They mark the key decision points in the project (and may be linked to a go / no-go decision) – this may trigger the release of further management funding
- They are good for progress monitoring (e.g. summary table showing baseline dates against forecast or better still, graphically through the use of a milestone chart)
- They avoid too much detail about low-level activities (the focus is on what is to be achieved, not how)
- They are frequently used to trigger payments to contractors and/or from customers

Milestone (Slip) Chart

A Milestone Chart summarises progress towards completion of the milestones in a project. It is a very simple but effective method of showing progress to key stakeholders in a graphical and easy to understand way. They have the added advantage of being easy for the project manager to create and update and simply require the extension of a vertical line representing the forecast timing of the milestone in each reporting period. The reporting period can be weekly, fortnightly or monthly, depending on the size and duration of the project.



Schedule Optimization

Although significant effort may have been expended on creating the schedule, it is common for the project end-date to be unacceptable to certain stakeholders. Two common responses when confronted with this scenario include:

- **Crashing:** Adding more resource to the project (additional funding may or may not be available for this).
- **Fast-tracking:** Performing tasks in parallel that you initially planned to undertake sequentially. Project managers must carefully consider any risks associated with this course of action.

A third option to **de-scope** the project may also be considered if the above two options are deemed to be unacceptable.

04.05 Resource Scheduling

(APM BoK 3.3.1)

> **Resource scheduling is a collection of techniques used to calculate the resources required to deliver the work and when they will be required.**
>
> **APM BoK 6th Edition**

Resource scheduling requires the project manager to estimate the quantity of resources required to complete the project activities, schedule when they are required and optimise their utilisation based on constraints such as target end dates for the project and the (maximum) level of resource available. The challenge for the project manager is to ensure that:

- These resources are available at the required time
- The required quantity of resources are acquired
- Appropriate resources are requested

The relative priority of a project within the business will be a key factor in determining how resources are allocated across individual projects.

Types of Resources

Two types of resource are used on projects.

- **'Replenishable'** resources include items such as raw materials and money. Once they are used up, they are no longer available and fresh quantities are required.
- **'Re-usable'** resources are items such as people, plant machinery, facilities and equipment. These are available for use elsewhere once they have completed the tasks assigned to them.

Once identified, the resource scheduling process can be summarised as:

- **Allocation –** identify what resources and number of units of resource are required
- **Aggregation –** totalling the units of resource per time period to generate a resource-histogram and accumulate these figures to generate an S-curve

> **Scheduling –** where resources are limited, schedule the project to optimise delivery based on resource availability (this may involve both levelling and smoothing the resources)

Scheduling the resources ensures:

> Efficient and effective resource utilisation

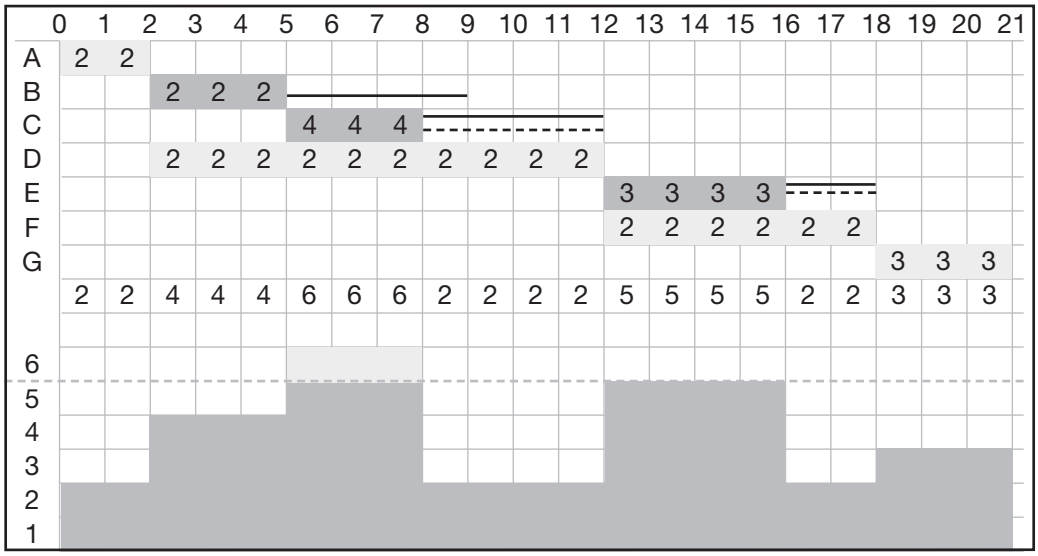
> Confidence that the schedule is realistic

> Early identification of resource capacity bottlenecks and conflicts

Resource Allocation and Aggregation (Histograms)

The project manager needs to quantify the number of required resources although these may not always be available. The resource-scheduling process may therefore amend the schedule which was initially developed.

Resource utilisation can be displayed on a time-phased histogram that can show both the total number of resources used by period as well as resources per individual skill-set. One of the key features of the histogram is that resource overloads and periods of under-utilisation can easily be identified thereby allowing informed optimization to be undertaken.



Resource Scheduling

The project manager may create a schedule that can be delivered using resources at a determined rate, but that assumes that these resources will be available. Problems may exist that will prevent the schedule from being achieved; for example, the resources are unavailable (whether already assigned to other work or the schedule requires more resources than are employed) or there may be physical constraints on the number of resources that can work on the project at the same time.

Alternatively, the project manager may wish to smooth out peaks and troughs in the anticipated utilisation to ease resource allocation for the project. Two options typically exist when optimising the use of resources.

- **Resource-limited Scheduling** – Levelling: Levelling involves scheduling the activities such that a defined resource limit is not exceeded. Resources are subject to a fixed limit which will affect the sequence and / or the duration of activities. Levelling may ultimately delay the project to keep within the resource limits.
- **Time-limited Scheduling** – Smoothing: Smoothing is used when the end date is fixed and resources are to be expended to meet that end date. Activities are rescheduled within their available total float to achieve a profile which is as smooth as possible.

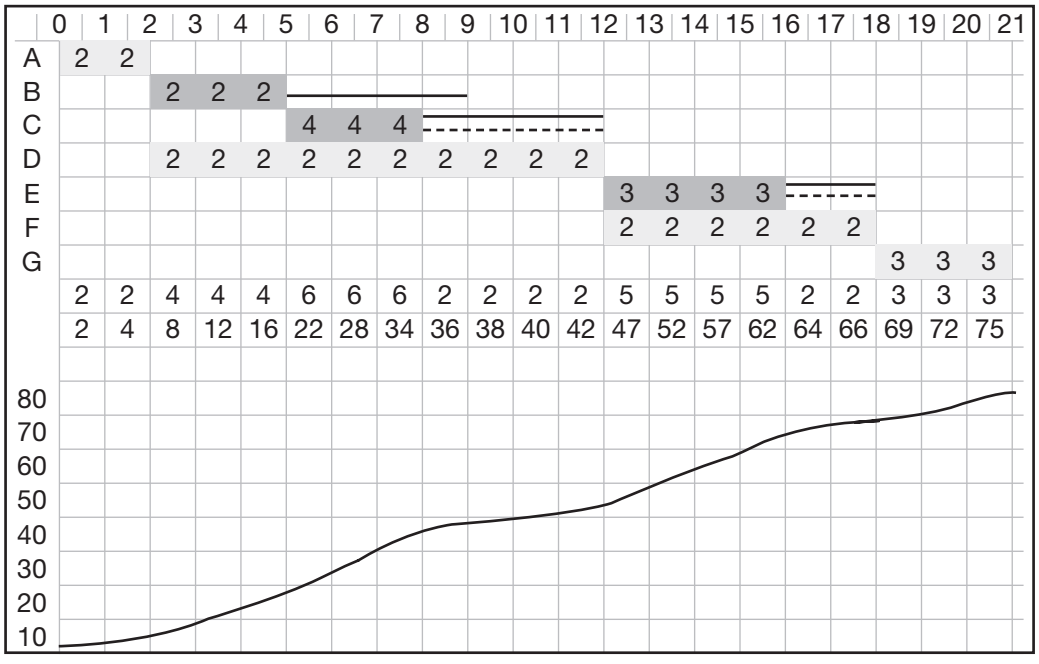
Typical options for rescheduling activities are:

- Delay an activity within its float to a period when resources are available
- Stretch an activity by using resources at a lower rate
- Compress an activity by using resources at a higher rate (including overtime working)
- Split an activity so that the resulting shorter activities can make use of pockets of resource availability
- Alter the logic of the network to allow activities to start earlier

Resource Aggregation ('S' Curve)

The final stage in the resource management process is to create a set of cumulative resource figures for each time period on the calendar to create a spend profile for the project, illustrated in the form of an S-curve.

> The spend profile is an important basis for control techniques that compare planned spend against actual spend and is used during Earned Value analysis. The spend profile is often known as a Performance Measurement Baseline (PMB).



Planning the Project Recap Questions

1 **The work breakdown structure can best be thought of as an effective aid for '_____' understanding and communications:**

- ☐ a. Team
- ☐ b. Project Office
- ☐ c. Sponsor
- ☐ d. User

2 **Which of the following is true about breakdown structures?**

- ☐ a. The lowest level of the work breakdown structure should comprise of tasks with a maximum value of £5,000 or five days' effort
- ☐ b. A cost breakdown structure is a work breakdown structure with cost attached
- ☐ c. Product breakdown structures and work breakdown structures are not used together
- ☐ d. A responsibility matrix is formed from the work breakdown structure and organisational breakdown structure

3 **Why are product breakdown structures developed?**

- ☐ a. They list the projects activities
- ☐ b. They identify the resource requirements for the project
- ☐ c. They detail the order in which the products must be delivered
- ☐ d. They detail the projects deliverables

4 **Product breakdown structures:**

- ☐ a. Represent the project specification and remain constant
- ☐ b. Must be developed in detail at the outset
- ☐ c. Are used for projects with physical and non-physical deliverables
- ☐ d. Detail the assembly of finished products

5 **The work breakdown structure:**

- ☐ a. Is based on the Gantt chart
- ☐ b. Is best determined using a computer planning package
- ☐ c. Will help to fully define the project scope
- ☐ d. Shows the precedence relationships between tasks

6 **The description of the scope, deliverables, their acceptance criteria and success criteria is the '_____' of the project management plan?**

- ☐ a. 'Why'
- ☐ b. 'How'
- ☐ c. 'What'
- ☐ d. 'When'

7 **Which of the following best describes a project management plan?**

- ☐ a. A printout from project management software
- ☐ b. A bar chart
- ☐ c. The project scope
- ☐ d. Risk, resourcing, quality and other management plans

8 **A project management plan is first drafted when:**

- ☐ a. The feasibility phase is complete
- ☐ b. The risk management plan is developed
- ☐ c. The business case has been approved
- ☐ d. The design phase is complete

9 **The project strategy should include:**

- ☐ a. Detailed cash flow plans
- ☐ b. Constraints on how the project should be carried out
- ☐ c. Risk analysis plan
- ☐ d. Technical specification

10 **The project management plan:**

- ☐ a. Is owned by the project manager
- ☐ b. Is the responsibility of the customer
- ☐ c. Has the same content for all projects in an organisation
- ☐ d. Remains unchanged during the implementation phase

11 **Estimates created by using models and simulations are known as:**

- ☐ a. Comparative estimating
- ☐ b. Parametric estimating
- ☐ c. Strategic estimating
- ☐ d. Bottom-up estimating

12 **What does the estimating funnel facilitate?**

- ☐ a. Increased accuracy of estimates over the project lifecycle
- ☐ b. Increased accuracy of estimates at the beginning of the project
- ☐ c. Decreased accuracy of estimates over the project life cycle
- ☐ d. Decreased accuracy of estimates at the end of the project

13 **Which of these is not an estimating method?**

- ☐ a. Comparative
- ☐ b. Weighted index
- ☐ c. Bottom-up
- ☐ d. Parametric

14 **Which one of the following statements best defines an estimate?**

- ☐ a. An approximation of time or costs refined over time
- ☐ b. A quantity that is nearly but not exactly correct
- ☐ c. A guess based upon experience
- ☐ d. An accurate representation of time and cost

15 **Which of the following statements about Critical Path Analysis (CPA) is true?**

- ☐ a. The critical path is the path with the longest duration in a network
- ☐ b. The critical path is the path with the least risk in a network
- ☐ c. Tasks with float will never become critical
- ☐ d. The network will remain constant throughout the project

16 **Total float is:**

- ☐ a. The cost of all activities within a network diagram
- ☐ b. The time by which an activity can be delayed or extended without affecting the next activity
- ☐ c. Also known as free float
- ☐ d. The time by which an activity can be delayed or extended without affecting the project end date

17 **Rearranging the schedule so that the number of resources used does not exceed a certain level at any point is called:**

- ☐ a. Resource smoothing
- ☐ b. Resource levelling
- ☐ c. Critical path analysis
- ☐ d. Total float

18 **In the diagram overleaf which is the critical path**

- ☐ a. ABCD
- ☐ b. AEFG
- ☐ c. ACDG
- ☐ d. ABDG

19 **The total float of activity F in the diagram overleaf is:**

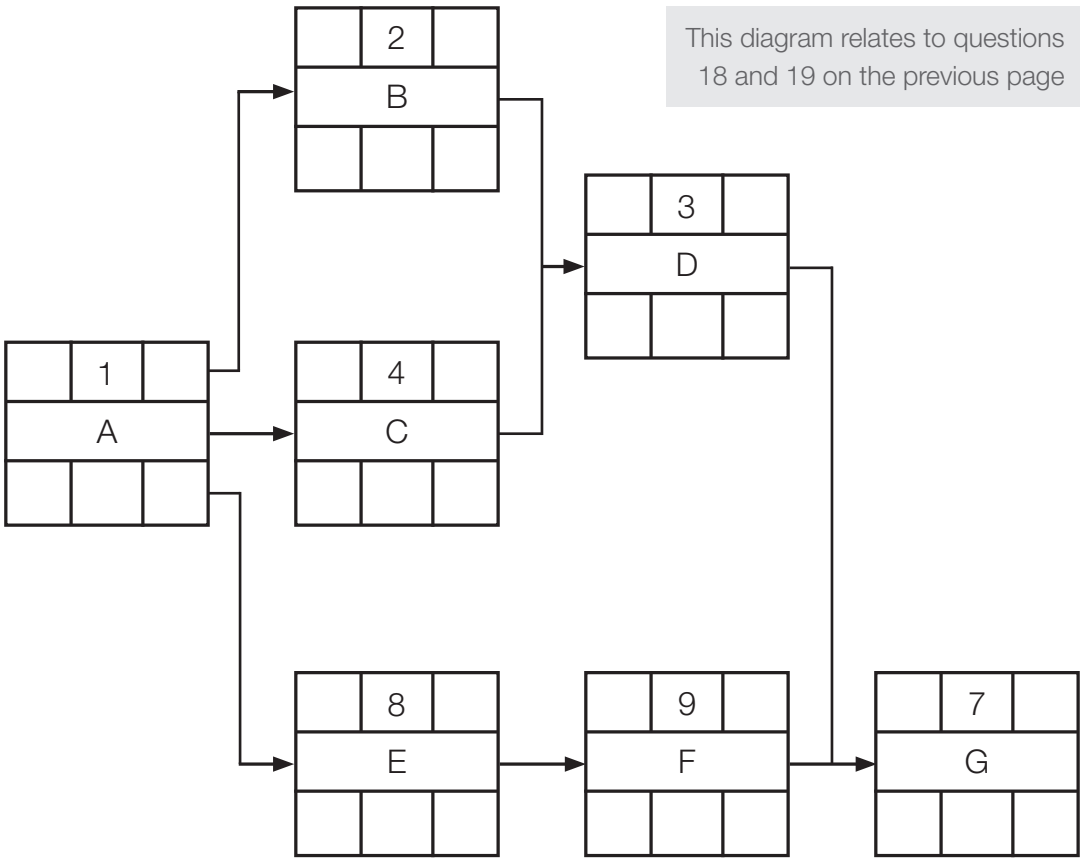
- ☐ a. 2
- ☐ b. 3
- ☐ c. 0
- ☐ d. 16

20 **People, materials, equipment, knowledge and time are examples of what?**

- ☐ a. Project resources
- ☐ b. Success factors
- ☐ c. Success criteria
- ☐ d. Project requirements

This diagram relates to questions 18 and 19 on the previous page

4.24



05 Delivery Tools and Techniques

5.1

Project delivery requires the project management plan to be put into action.

Progress must then be measured, managed and reported

05.01 Delegation & Issue Management

(APM BoK 2.1.3)

5.2

"Delegation is the practice of giving a person or group the authority to perform the responsibilities of, or act on behalf of, another."

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The objective of delegation is to get work done by others. While delegation is primarily a mechanism for distributing work, it is also a tool for motivating and training teams and individuals to realise their full potential.

Delegation is not just about instructing others to do something, it is the process of entrusting authority and responsibility. The project manager must consider matching the work to the behaviour and competences of the delegated resources and give them the authority to respond to situations and make decisions.

The project manager must also consider possible barriers to effective delegation and how these can be overcome. Barriers may include:

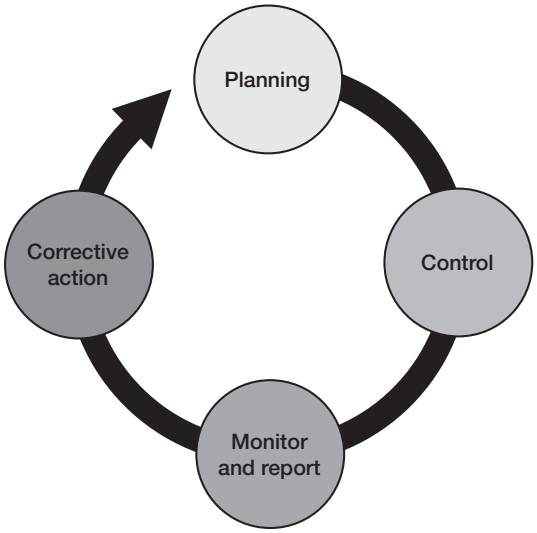
> Confused messages and authority (for example, dual-reporting lines in a matrix structure)

> Non-availability of skilled staff which may lead to less than optimal task assignment

> Blame culture which leads to fear and a reluctance to accept responsibility

> Lack of time which forces the delegator just to take on the task themselves

Delegation is a process of:



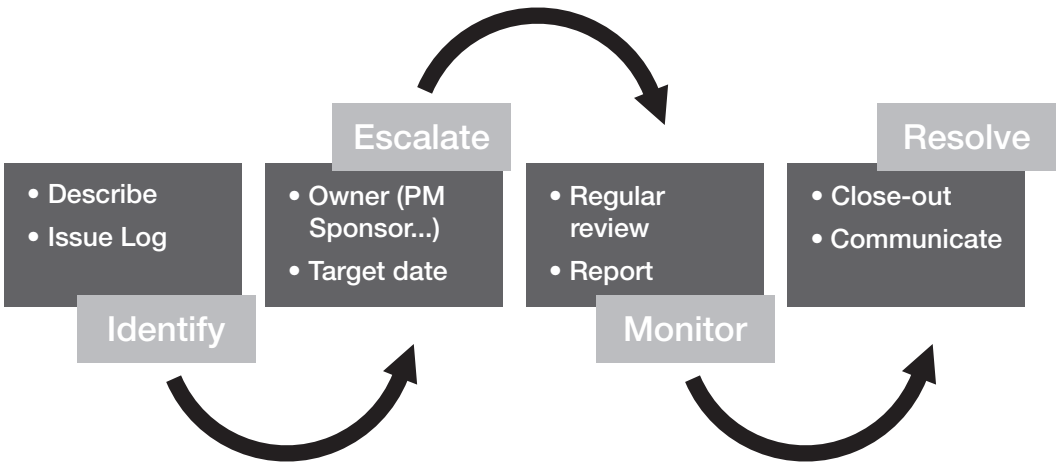
- **Plan what has to be done** – providing a clear specification of the work being delegated
- **Define the control parameters** – identifying and agreeing the performance indicators and tolerances that will be applied
- **Monitoring and reporting** – providing a clear understanding of how progress will be measured and communicated
- **Corrective actions to be taken** - bring the delegated work back on track should the control parameters be exceeded

Corrective action is likely to necessitate the definition of agreed escalation and issue management procedures

The APM states that:

> *a formal issue occurs when the tolerances of the delegates work are predicted to be exceeded or have been exceeded. This triggers the escalation of the issue from one level of management to the next in order to see a solution.*

A typical issue management process is shown below.



Issue Log

In order to effectively manage issues, each stage of the process must be documented. The issue log provides the central repository for information related to issues and will typically contain the following content:

5.4

- **Identifier:** A unique number or reference to ensure clarity in communication relating to the issue
- **Description:** Details of what tolerances have been or will be breached and why escalation is required
- **Impact:** What does the issue mean to the achievement of project work or objectives
- **Date raised:**
- **Owner:** Who is best placed to address the issue
- **Action:** Proposed solution
- **Status:** Tracks the progress of each issue (e.g. open, resolved etc.)

Common failures in issue management include:

- Wrongly identifying as issues, project problems that are the responsibility of the project manager (or the delegated party)
- Failing to further escalate an issue when the issue owner has not resolved it in a timely manner

Risks and issues are different - risks have a probability of occurrence and do not necessarily require escalation. However, risks and issues share many of the same benefits and challenges in their formal management.

05.02 Project Reporting

(APM BoK 3.1.3)

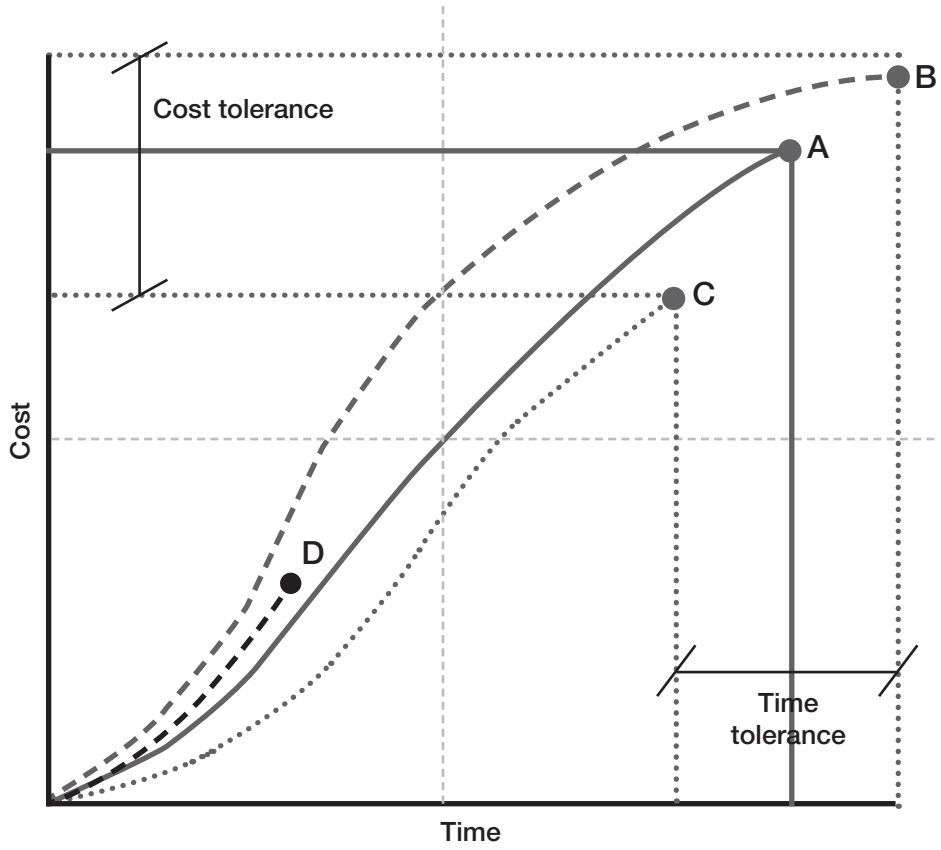
> **Information management is the collection, storage, dissemination, archiving and destruction of information. It enables teams and stakeholders to use their time, resource and expertise effectively to make decisions and to fulfil their roles.**
>
> **APM BoK 6th Edition**

Reporting is the process by which stakeholders are kept informed about the project. Information should be presented in a consistent and concise manner and standard reporting templates will greatly reduce the administrative burden for project managers and team members. The ownership and audience for each report should be defined in the project communication plan.

Examples of different project reports are:

Report Type	Examples
Progress	Gantt charts, slip charts, status reports (Checkpoint / Highlight), RAG Report (Red, Amber, Green Report)
Quality	Quality register, checklists
Risk	Risk register, checklists
Finance	Budgetary reports, cost variance spreadsheet, earned value forecasts
Review / audit	Checklists, recommendations, process improvement, stage-gate report, project evaluation report

Administrative overload can be further reduced by adopting the principle of 'Reporting-by-Exception'. Tolerances will be quantified (tolerances will typically include cost and time) and project managers will escalate only when these tolerances are threatened to be exceeded.



A - Baseline **B** - Worst case **C** - Best case **D** - Actual progress

Reporting Cycle

Information needs (content and audience) will change throughout the project life cycle and again, this should be reflected in the project communication plan.

Reports could be described in two broad categories:

Variance Analysis: Backward-look at what caused any difference (favourable or unfavourable) between the agreed baseline targets and the present actual performance.

Forecasting: Prediction of future performance based on actual performance to date. Typical examples of this within the project environment would include the use of earned value (SPI and CPI) to predict a new forecast end date and an estimate of the cost at project completion.

Reporting is normally a formal process where information is generated according to:

Time-based methods: For example, daily, weekly, monthly reports. These reports may include Checkpoint Reports, Status Reports, RAG Reports, etc.

Event-based methods: Created at an agreed point in the project life cycle; examples would include deliverable sign-off, stage-gate reports, end-project reports etc.

Ad-hoc: These reports may be created as and when required or upon request. Ad-hoc reports might include an unscheduled project audit, Exception Reports etc.

05.03 Risk Management

(APM BoK 3.5)

"Risk management is a process that allows individual risk events and overall risk to be understood and managed proactively, optimising success by minimising threats and maximising opportunities."

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Risk Context

An organisation's risk management approach will be heavily influenced by the risk context. The context is defined by the external environment, the industry sector, stakeholders and the organisation's risk attitude. The organisation's risk attitude may be:

- Risk averse: avoiding risk where possible to do so
- Risk neutral: a more balanced approach to risk is sought
- Risk seeking: risk (and return) is actively pursued

The risk appetite of the organisation determines the level of risk the individual, group or organisation is willing to accept in order to pursue its objectives.

Risk Event

The APM defines a risk event as

> *An uncertain event or set of circumstances that would, if it occurred, have an effect on the achievement of one or more objectives.*

Due to their unique and uncertain nature, all projects contain an element of risk which may be positive (opportunity) or negative (threat). It can also be useful to differentiate between:

- the cause' or source of the risk
- the risk 'event' - where the uncertainty lies
- the 'effect' or impact the risk may have on the project; note that the risk may have a different degree of impact on one or more of the project's objectives

Exercise

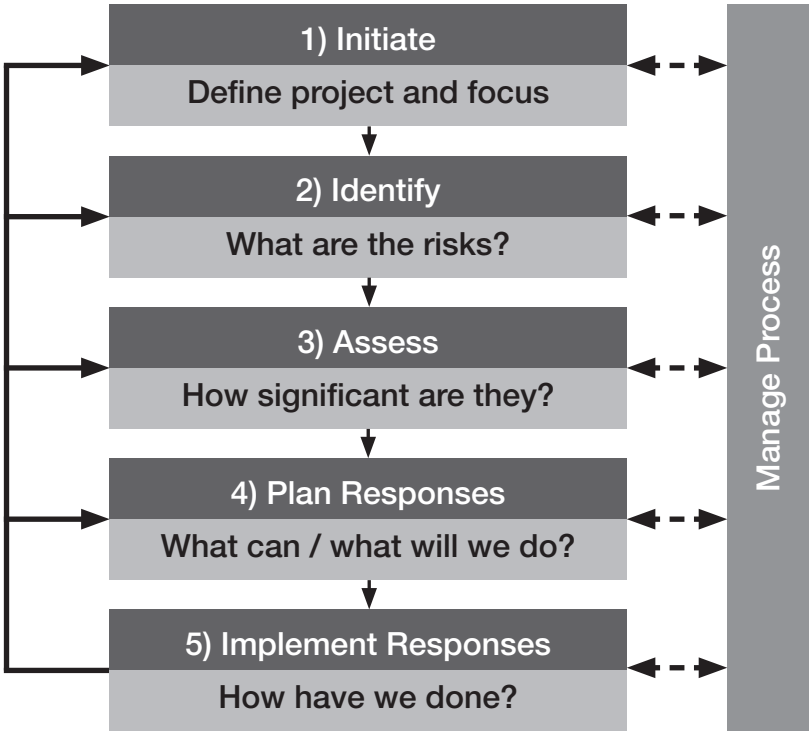
Document a risk for your project using the structure outlined below left.

Cause	
Event	
Effect	

It is useful to consider whether your planned response is focused on the cause, event or effect of each risk.

Project Risk Analysis and Management (PRAM)

The purpose of risk management is to ensure that risks are proactively identified, assessed and managed in order that the project has a greater likelihood of achieving its objectives within the agreed constraints. This process should be integrated with the other project management processes whether these are related to safety, quality, planning or procurement. The APM PRAM process has five key phases:



It is important to note that the phases will be iterative in nature and that the overall process must be actively managed. The 'Manage Process' activity will review the effectiveness of each step as well as ensuring that the process is implemented correctly.

1. Initiate

The purpose of the 'Initiate' phase is to determine how risk will be managed on this project. This may entail the creation of a Risk Management Plan that documents the process. The two main activities carried out are:

> Define the project: Ensure the team and other relevant stakeholders have a firm understanding of the project's objectives, scope and other relevant constraints. Without this understanding it is unlikely that the risk management process can be appropriately tailored to a project's specific requirements

> Focus the risk management process: Factors to consider include the size, complexity and strategic significance of the project. These factors will determine the appropriate process for managing risk in terms of the activities, tools, roles and reports that should be implemented. The thresholds for probability and impact are also defined in this part of the process.

2. Identify

Risk identification typically involves the project manager, team members, customers, subject matter experts and other relevant stakeholders. A number of techniques may be employed to help identify risks.

Tool	Description
Assumptions analysis	Assumptions are documented to assess the probability that each factor will be met and the impact if they are not.
Constraints analysis	Constraints are reviewed to consider whether the limit imposed introduces risk to the project.
Check lists	Risks are identified against criteria derived from previous projects or other standard approaches.
Prompt lists	Uses generic headings to stimulate thought across a breadth of different areas (may also be shown diagrammatically through the use of a Risk Breakdown Structure – RBS)
Brainstorming	Group session engages stakeholders from each discipline to utilise their experience.
Interviews	Structured discussion of project risks when it may not be suitable to have a group meeting.
SWOT analysis	Identification of the project's strengths, weaknesses, opportunities and threats.

Risk Register

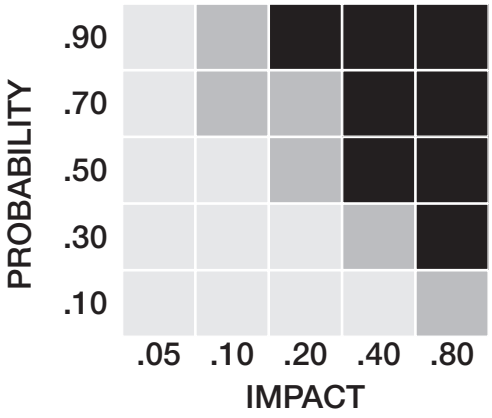
The description of each risk (including its probability and impact ratings) along with the details of the chosen response should be documented in

the Risk Register. The register should also identify the owner for each risk (the person best placed to monitor the residual risk, or full risk if accepting the threat or rejecting the opportunity).

3. Assess

5.10

The risks should be qualitatively assessed to determine the probability of each risk occurring and the possible impact on any of the project objectives (e.g. time, cost, quality, safety) should it occur. It is useful for the organisation to define appropriate quantitative thresholds for the classification of each risk (e.g. very low – very high). Each risk can then be plotted on a probability-impact grid.



Certain organisations may also ask for a report on the project's 'top-5' risks. This can be determined by assigning numerical scores for probability and impact then multiplying these factors to provide an overall score for each risk.

4. Plan Responses

Risk responses generally fall into one of four categories for threats or opportunities.

Threats	Opportunities
Avoid: Threats may be avoided by eliminating the cause (for example, removing a work package)	**Exploit:** The scope is changed to ensure that the opportunity definitely happens
Transfer: The responsibility for bearing the impact of a risk is passed to another party (most useful for financial impact)	**Share:** Some or all of the risk is allocated to another party is who best able to realise the benefits
Reduce: An investment of effort or budget to mitigate the probability and/or impact of a specific risk	**Enhance:** The probability and/or impact is increased by some form of proactive measure
Accept: Passive acceptance means that nothing will be done to address the risk; active acceptance involves doing nothing at present but having a contingency action ready if the risk should occur	**Reject:** Reject the opportunity because the benefits are not significant enough to warrant action

When considering risk response actions it is also necessary to consider:

> Secondary risks: an event that may occur as a direct result of a risk response

> Residual risk: the risk that is left after a response strategy has been implemented

5. Implement Responses

The project manager must ensure that risk response actions are undertaken and have achieved the desired outcome. Risk owners should be accountable for the mitigation of risks allocated to them. Risk events must be continuously monitored and stakeholders updated on their new status as required.

Communication regarding risks will be largely provided through the Risk Register and other formal status reporting tools. The effectiveness of the risk management process should be regularly reviewed and agreed process modifications documented in an updated Risk Management Plan.

05.04 Quality Management

(APM BoK 3.6)

5.12

> **“Quality management is a discipline for ensuring that outputs, benefits, and the processes by which they are delivered, meet stakeholder requirements and are fit for purpose.”**
>
> **APM BoK 6th Edition**

Despite being one of the key constraints in any project (the others being time and cost), quality is arguably the most subjective and most difficult to agree with the project’s stakeholders.

Project Quality Management

Quality management covers four primary processes:

- Quality Planning: defining what standards are acceptable and then how these standards will be met
- Quality Assurance: Providing confidence that projects are being well managed and ensuring that your processes effectively create consistently acceptable products and that the processes are constantly reviewed and independently audited

> Quality Control: Inspecting and measuring the deliverables to ensure that they conform to the agreed specification and meet stakeholders' expectations

> Continuous Improvement: Systematically identifying and implementing process improvements so that future projects benefit from past experience

Quality management on your project will be largely constrained by your organisation's quality methods and processes. These will be heavily influenced by whatever quality philosophy, systems or models have been adopted (for example, ISO9001, EFQM etc.).

Quality Plan

Quality planning requires the project team to assess the information available to them at the start of the project and figure out how they will prevent defects and measure quality. This will involve fully understanding stakeholders' needs and how you will measure achievement of these expectations in relation to the quality of the deliverables. The content of the quality plan will vary depending on the needs of the organisation and the project, but at a minimum is likely to consist of the following sections:

> Quality standards to be achieved

> Quality methods and procedures to be used (these may be constrained by the adoption of a formal QMS such as ISO9000)

> Specific quality tools (e.g. control charts, scatter diagrams etc.)

> Records and reports that will be created (e.g. quality register)

> Timing of reviews, audits and checks

> Specific roles and responsibilities relating to quality (e.g. quality reviewer, QA engineer).

Quality Assurance (QA)

QA aims to proactively prevent defects and problems occurring. Effective implementation of QA will ensure that quality processes are effective and are consistently adopted. Methods must be clearly documented and communicated with relevant training being provided as required. QA will also entail the independent review and regular audit of how quality processes are followed. These reviews may identify suitable lessons and continuous improvement activities.

Quality Control

Quality Control (QC) entails the measuring and inspection of deliverables to ensure that they conform to the agreed acceptance criteria. Both QA and QC will use a number of common tools that help to ensure that quality expectations are satisfied. Whether these tools are used in a proactive or reactive nature dictates whether the QA or QC process is being applied during their use.

‘Fitness for purpose’ can be a very difficult concept to define and measure but the term mandates that the project team fully understands the project ‘need’ (or purpose) before expectations can be met. The quality of the deliverables is typically expressed by agreeing specific acceptance criteria that quantifies the requirements and conditions for each deliverable and the project as a whole. The satisfaction of these criteria will be tested during the quality control process.

5.14

05.05 Change Control

(APM BoK 3.2.2)

"Change control is the process through which all requests to change the baseline scope of a project, programme or portfolio are captured, evaluated and then approved, rejected or deferred."

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Change control ensures that the stakeholders understand and agree the baseline scope and that a formal process for controlling changes is implemented throughout the project.

Change control protects the project scope and baseline from unauthorised change.

Effective change control relies on a well-defined and agreed baseline, especially in relation to scope.

Change is inevitable, but only authorised changes should be implemented. Unauthorised changes can lead to configuration problems, increase project risk, result in scope creep and lead to a project failing to achieve its objectives.

Sources of Change

Any stakeholder may request a change to the project. The stakeholder may be internal or external to the delivery organisation and this is likely to play a major part in determining who funds the change.

Internal changes:

- **Technical error:** errors may result in rework or waste costs that will need to be funded from the project's baseline budget
- **Incorrect estimate:** estimating problems may arise from not fully understanding the project scope or possibly from inexperience in the estimating process
- **Resourcing issues:** committed resources may be subject to re-prioritisation due to issues in other projects and/or business-as-usual activity. Externally sourced resources may also be subject to changes which might be largely outside the project manager's control.

External changes:

- **Business justification:** changes in a potential market (e.g. increase in the price of outsourced services) may have a major impact on the business case for the project. Significant changes to the project scope may be required to ensure that the business case remains viable
- **Requirements change:** Requirements may be subject to alteration if there is a change in a potential market and / or if competitor activity is likely to affect the business justification
- **Technology or market shift:** The introduction of new business processes and / or new technology may be an opportunity that can be exploited by the project

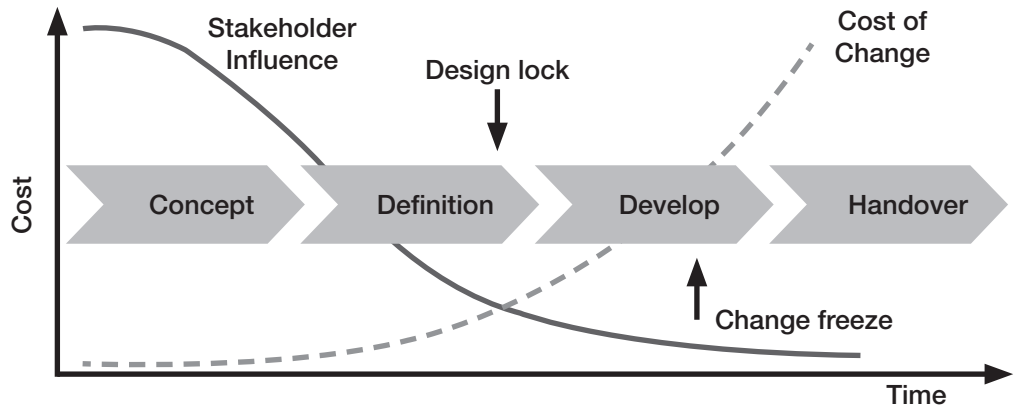
Exercise

Determine whether each scenario constitutes a change to the project or not.

Scenario	Yes / No?
The number of desktop PCs to be replaced has increased by 10% (300 to 330)	
The business requirements now ask for the project to cover regions in Asia and the United States	
The completion date must be brought forward to coincide with the opening of the new factory	
A task with 20 days float requires a material delivery which will now be 15 days late	
It had been identified during the initial risk analysis that the new IT system could need extra testing to get right. There have been some problems and the extra time is now needed	
A new manufacturing process has become available and has been incorporated into the design	

Cost of Implementing Change

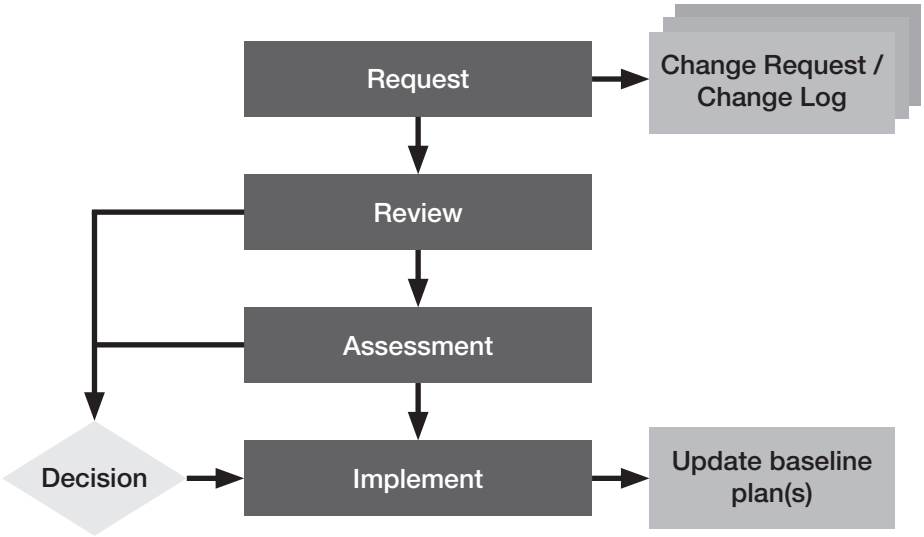
The ability for stakeholders to influence the project's requirements is highest during the early part of the life cycle and change at this stage is less likely to have a significant impact on the agreed budget. The cost of implementing change will rise substantially as the project nears completion with major rework and / or waste probable.



The scope of the project as fully agreed is documented in the Project Management Plan (PMP). This is often the trigger for the design to be 'locked' and formal change control to be introduced.

Where further change is likely to threaten achievement of the project's objectives, a change freeze may be introduced where additional changes will no longer be considered.

The Change Control Process



Stage	Description
Request	The person or body requesting the change provides the necessary information for the change. This is usually captured in a Change Request document.
Review	The initial review will consider at a high-level the impact on project outputs and benefits, and determine whether a full evaluation is required or desired. An early rejection of the change is possible at this stage to prevent significant effort being consumed in the evaluation.
Assessment	All options relating to the change (including the 'do nothing' option) are evaluated and a detailed impact of time, cost, quality and other key areas is examined. It is common for the project manager to recommend acceptance, deferral or rejection of the request, or request more information.
Decision	The Sponsor (or designated change authority) makes an informed decision which is then communicated to the team and stakeholders as outlined in the communications plan.
Implementation	Relevant plans are updated to include the new agreed activities. Where the change is funded by the customer, it is typical for the agreed objectives (time, cost, quality) to be re-baselined at this point.

5.18

Detailed documentation of the requested change in a change request form helps ensure that stakeholders have an accurate understanding of the rationale behind the change and have full knowledge of its resultant impact. The Change Log (or Register) keeps a summary of all change requests and provides an audit trail of requested changes their status and history.

The change control process should also document the responsibilities of each party in relation to the identification and management of change.

Change Control and Configuration Management

Change control and configuration management are closely linked. Change documentation must clearly identify the configuration items that may be impacted. Configuration status accounting will provide a summary of any changes that have been agreed and implemented. The storage and archiving of the project's assets should also prevent unauthorised changes being made.

05.06 Configuration Management

(APM BoK 3.2.3)

"Configuration management encompasses the administrative activities concerned with the creation, maintenance and controlled change and quality control of the scope of work."

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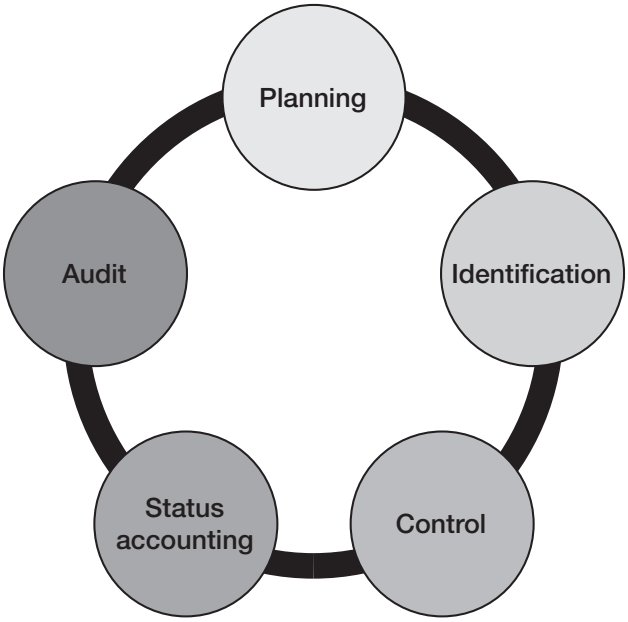
The configuration of a project comprises the physical components and documents that are created during a project. These configuration items (or assets) must be controlled and protected if the final deliverables are to comply with the agreed specification and the customer's requirements.

Configuration Management Process

Configuration management consists of the following five key activities.



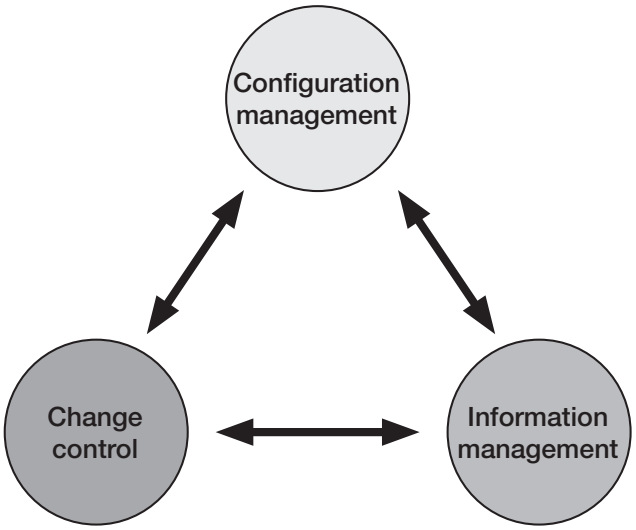
5.20

Activity	Description
Planning	The configuration management plan should provide guidelines for the level of configuration management required by the project. The plan will document how we will protect the project's assets including any specialist tools to be used along with the associated roles and responsibilities. The identification scheme for the configuration items is defined.
Identification	Each baselined configuration item (CI) will require some form of unique identification as well as the documenting of any related attributes (e.g. type of item, owner, status, version, relationship with other items etc.).
Control	Changes to the configuration baseline must only be implemented and approved by authorized parties. Storage of configuration items must also be controlled and access restricted where appropriate to do so (including archived items).
Status accounting	The current status and version of each item must be recorded and monitored. Any changes must be documented to enable tracking of an item's status during its development. It is typical for project managers to use a register of assets (sometimes known as a product status account) to ensure that the status is clearly visible.
Audit and verification	At a minimum, the project's assets should be reviewed at each stage gate to ensure that their actual status aligns with the presently authorised version. This is particularly important at project handover to ensure that the latest version of each project asset is delivered.

Roles and responsibilities associated with configuration management will vary across different organisations. Typical roles might include the configuration librarian, document controller, quality assurance etc.

Configuration Management in Context

Any configuration management process must be very closely linked to the change control and information management processes (including version control). Changes to any deliverable or project document must be recorded, evaluated, authorised, and implemented in accordance with the agreed procedures and communicated to the relevant stakeholders.



Delivery Tools & Techniques Recap Questions

5.22

1 **Which of the following is not a typical project report?**

- ☐ a. Progress report
- ☐ b. Communications plan
- ☐ c. Quality log
- ☐ d. Risk register

2 **Lessons learned:**

- ☐ a. Are shared with all stakeholders
- ☐ b. Are collated primarily to aid the future management of the project in question
- ☐ c. Documents the actions to take in future based on the causes and effects of things that went well or went badly in the past
- ☐ d. Should be identified only at the end of the project so as to benefit from complete hindsight

3 **Which of the following is a valid objective for the post project review?**

- ☐ a. To plan the next project for the project team
- ☐ b. To make proposals for the operation of the project deliverables
- ☐ c. To improve future estimating accuracy
- ☐ d. To plan how to complete the project objective

4 **The review held between project phases to determine whether it is viable to continue the investment in the project is called a…**

- ☐ a. Project evaluation review
- ☐ b. Post project review
- ☐ c. Gate review
- ☐ d. Product review

5 **Purchasing insurance is best considered as an example of risk:**

- ☐ a. Mitigation
- ☐ b. Transfer
- ☐ c. Acceptance
- ☐ d. Avoidance

6 **Which of the following is NOT a risk?**

- ☐ a. Resources may not be available as and when required
- ☐ b. We have no experience in performing this type of project
- ☐ c. Interest rates may go up
- ☐ d. Equipment may be late in arriving

7 **At what stage in the project life cycle should risk management be initiated?**

- ☐ a. When the project management plan is started
- ☐ b. When the work breakdown structure is developed
- ☐ c. At the start of the project
- ☐ d. Once the project concept is understood

8 **Generic steps in a risk management process could include all of the following except…**

- ☐ a. Assess
- ☐ b. Implement
- ☐ c. Register
- ☐ d. Initiate

9 **What is the main purpose of a risk register?**

- ☐ a. To satisfy the sponsor's need for risk reporting
- ☐ b. To provide quantitative input for risk analysis simulation models
- ☐ c. To enable accountability for failure to respond to risks to be identified
- ☐ d. To list all risks for the project, explaining the nature of each, its assessment and response action

10 **A probability impact grid assists in:**

- ☐ a. Identifying risks
- ☐ b. Identifying potential response plans
- ☐ c. Identifying appropriate probability distributions
- ☐ d. Identifying relative severity of individual risks

11 **An issue is defined as something that:**

- a. Is identified by an important stakeholder
- b. Affects an important stakeholder
- c. Is outside of the tolerance of delegated work
- d. Has an impact on the end date of the project

12 **Which of the following is a project issue?**

- a. Inclement weather may arise
- b. There is an increased likelihood of the product failing its acceptance test
- c. A supplier has submitted their invoice which is above the project manager's financial authority level
- d. A key resource has resigned causing a delay to the project

13 **Predicting a breach in tolerances of delegated work is a trigger for…**

- a. A contingency plan
- b. Disciplinary action
- c. Issue escalation
- d. Cancelling the work

14 **Which of the following best defines quality?**

- a. No defects
- b. Meeting an agreed standard
- c. Meeting the needs of the stakeholders
- d. A degree of excellence

15 **Within the context of quality management, the word 'quality' relates to:**

- a. How good the product is in a relative sense
- b. The degree to which a product conforms to the stipulated requirements
- c. The likely cost of the product
- d. How long the product will last when in use

16 **Which of the following is true in an effective project quality system?**

- a. Quality will ensure that all products are of the highest standards
- b. Quality only applies to the implementation phase of the project
- c. Quality cannot be achieved by quality control inspections alone
- d. Quality will only be achieved through the implementation of ISO 9000

17 **Quality control involves:**

- a. Measuring and inspecting completed, or part completed products
- b. Identification of standards that products must meet
- c. Pro-active steps to increase the likelihood of future products being acceptable
- d. The line management of quality inspectors

18 **Which of the following is/are typical causes of change on a project?**

- a. Change to the baseline design of the deliverable
- b. Technical errors requiring rework
- c. Change of approved supplier, requiring an extension of the project duration
- d. All of the above

19 **Which of the following is not generally seen as a standard configuration management activity?**

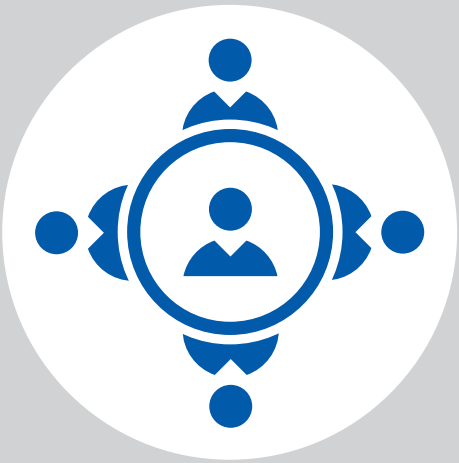
- a. Preparation
- b. Status accounting
- c. Identification
- d. Audit

20 **Configuration management includes:**

- a. Defining of the initial project success and failure criteria
- b. Managing of facts and figures
- c. Recording of the issue of documents
- d. Managing of staff time-keeping

5.24

06 Managing the Team



‘Managing the Team’ requires the project manager to utilise a number of interpersonal skills.

These skills are needed to engage the multiple internal and external stakeholders who are to be involved in the project.

Interpersonal skills will help build a high-performing team and ultimately deliver more successful projects.

06.01 Communication

(APM BoK 2.1.1)

6.2

"Communication is the means by which information or instructions are exchanged. Successful communication occurs when the received meaning is the same as the intended transmitted meaning."

APM BoK 6th Edition

Communication takes place in many ways. It can be verbal or non-verbal, active or passive, formal or informal, conscious or sub-conscious. The way in which communication takes place affects the understanding and feelings, both of which impact the meaning received.

> *The objectives of the communication process are to maintain awareness and commitment and ensure that correct expectations are set.*

Effective communication requires attention to four key elements:

1. Stakeholder identification and analysis to establish the target audience
2. The clarity of the message in order to ensure relevance and in accordance with the GoPM to foster trust and commitment
3. A system for message delivery in order to ensure that the appropriate message is provided to the appropriate stakeholder at the appropriate time in the project
4. A system of monitoring and feedback to assess the effectiveness of the communication process

Communication Media

The main media used to communicate include, but are not limited to:

- **Oral, face-to-face** – the most successful and media-rich communication method and is achieved through vocal (words), verbal (the way the words are spoken) and visual (body language and hand gestures)
- **Oral, not face-to-face** – typically telephonic in nature, but misses the visual impact
- **Visual** – this could be through displays and exhibitions

- **Electronic** – the use of the internet proliferates. In addition to email, websites can incorporate visual images as well as words and web-meetings are an excellent alternative to face-to-face meetings
- **Written** – typically letters, newsletters, reports and noticeboards but this approach is limited to using words and visual images

Communication Methods

There are three primary communication methods.

- **Interactive:** Two or more parties engage in a multi-directional exchange of information – almost certainly the most efficient way to come to a common agreement or understanding
- **Push:** Information is sent to chosen parties at a time and in a manner as designated by the sender
- **Pull:** Used for very large audiences or very large quantities of information where receivers can access the information at their own convenience

Exercise:

Complete the table below identifying specific examples of project communication from within your organisation

	Interactive	Push	Pull
Formal written			
Informal written			
Formal verbal			
Informal verbal			

Positive and Negative Factors Affecting Communication

There are many factors that affect communication which may be physical, psychological, cultural and technical in nature.

Factor	How it affects communication
Clarity of ideas	Having good understanding of what you want to communicate is a key factor in the recipient's understanding. Poor structure leads to difficulties in picking out the important points and these should be highlighted and repeated as necessary throughout the communication.
Purpose	What are you trying to achieve – instruction or direction? Consider the true purpose of the communication and how it is best highlighted and achieved.
Environment	Location, noise, temperature and comfort fall into this category. They affect not only the ability to communicate but also the enthusiasm of the participants. It is important to be sensitive to how others are reacting to their environment and, if it is having an adverse effect, try to remedy the problem.

Factor	How it affects communication
Background	It can be helpful to get some background information on the other party. Consider their role, experience and knowledge, communication preferences and what their expectations or prejudices may be. Social and cultural differences must also be carefully considered especially in an international context.
Delivery	Be aware of tone and body language and whether they align with the message content. The project manager can ensure that the main messages are highlighted and repeated as necessary throughout the communication.

Communication Plan

The development of a communication plan as a subsidiary plan to the project management plan will assist in ensuring that the appropriate information is provided to the appropriate stakeholder at the appropriate time in accordance with information reporting and management policies.

Communication is a two-way process between a sender and receiver and the communication plan must account for the needs for both parties. A project communication management plan should include:

> What information will provide the content of the communication

> Who needs to receive or send information (this may also include contact details)

> Why do they need to send or receive the information

> When do they need to send or receive the information

> How the message should be sent including the media that is used

> Where communication may be undertaken (for example, meeting venues)

Whatever forms of communication are chosen, it is important that the project manager considers how this information is created, stored, disseminated, archived and destroyed. There are very strong links between communication, information management and configuration management.

Benefits of a formal project communications plan

It is vitally important that effective communication takes place and this will provide many benefits to the project.

> Enhanced understanding of roles, responsibilities and expectations within the team

> Reduced potential for conflict due to misunderstanding and misinterpretation

> Enhanced confidence within the project team and stakeholder community

> Consistent transfer of project information that aids effective decision-making

> Higher sense of ownership and commitment within the team

06.02 Leadership

(APM BoK 2.1.5)

"Leadership is the ability to establish vision and direction, to influence and align others towards a common purpose, and to empower and inspire people to achieve success."

APM BoK 6th Edition

It is evident that a leader requires followers and this is typically achieved by communicating a vision that encourages people to follow this goal. Leadership involves argument, inducement and influencing – all skills that might not be inherent but can be developed. Effective leadership enables the project to proceed within an environment of change and uncertainty.

Management v. Leadership

Leadership is not the sole responsibility of the project manager: the role of leader may be rotated around the project team depending on the technical skills, experience and communication ability of both the team and the project manager.

Exercise

List the responsibilities and/or characteristics of both a manager and a leader.

Manager	Leader

The 'hard' skills of a manager may not be enough to guide and influence the multiple project stakeholders and 'softer' management skills may also be required, especially where the project manager does not have formal authority.

(for example, when the team is part of a matrix structure and/or if the project manager needs to influence senior stakeholders).

6.6

Leadership Qualities

Effective leaders often display common characteristics that can be learned and developed, which also help define their leadership style.

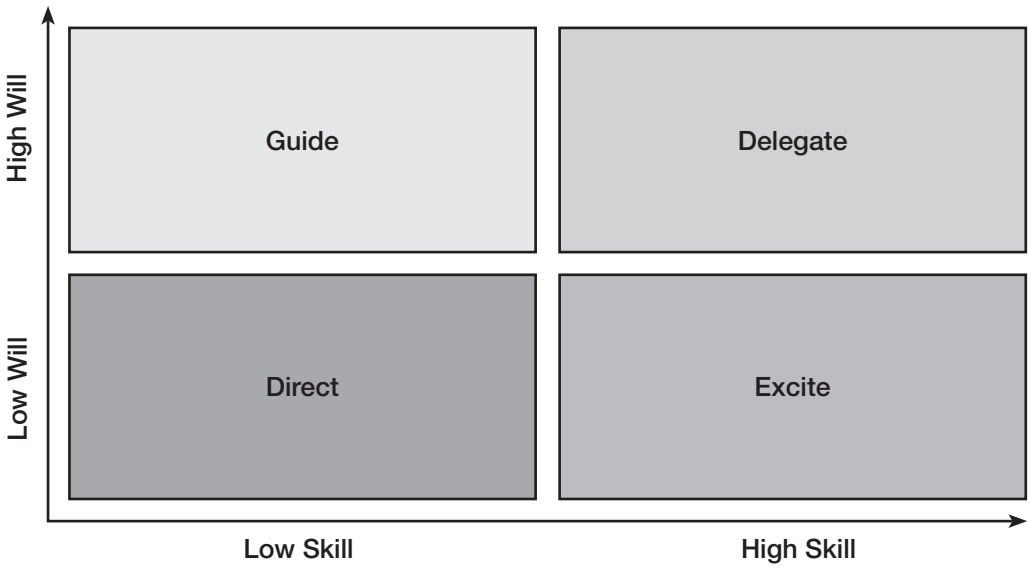
- **Can-do attitude:** Positive project managers help create a similar attitude within their team, thereby helping them to achieve challenging goals
- **Fairness:** Respect for differing views and opinions and integrity is important if the project manager is to gain the trust of team members and other stakeholders
- **Persuasive:** Project managers will need to influence stakeholders by presenting compelling arguments (for instance, negotiating project resources with functional managers and/or the project sponsor)
- **Common sense:** Sensible solutions are required to satisfy the triple constraints of the project; the best technical solution may not be the optimum approach if the other project constraints are disregarded
- **Vision:** Project managers must have the ability to define and communicate the project goals in a manner that encourages stakeholders and team members to follow their lead (especially important in the early stages of any project)

Although it is unlikely that a project manager will possess all of these characteristics, it may be that they are displayed by team members who may also adopt a leadership role at different stages in the project.

Leadership Styles

Leading a team and thus the project successfully requires the project manager to focus on the team and decide for each team member, the best management style for them to be successful. Max Landsberg offers an approach that helps match a style of interaction with the team member's readiness for the task. He further offers the following simple tool to assist in this.

The diagram illustrates the approach by contrasting a level of motivation against skill.



Skill level refers to the experience, training and understanding of the task allocated to the team member.

Will level refers to the desire of the team member to achieve, possibly based on incentives being offered and the level of security or confidence of the team member.

The following basic steps can be used in applying the matrix:

1. Identify the skill and will of the team member to accomplish the task
2. Use the matrix to identify an appropriate style to lead the team member
3. Discuss your approach and reasons for the approach with the team member

The third point above is important as it helps clarify your perception of the skill / will of the team member and allows you to modify your interaction style. It also demonstrates to the team member that you are willing to listen and adapt your style to their effectiveness.

06.03 Teamwork

(APM BoK 2.1.7)

6.8

"Teamwork is a group of people working in collaboration or by co-operation towards a common goal."

APM BoK 6th Edition

Exercise

List the advantages and disadvantages of working in teams.

Advantages	Disadvantages

A project manager must harness these advantages whilst addressing the disadvantages if the team is to perform effectively.

The following definition of a team helps to highlight the key aspects of working within teams.

> *"A team is a small group of people with complementary skills committed to a common purpose, with shared performance goals and a common approach, holding themselves mutually accountable"*
>
> **Katzenbach and Smith**

Projects normally require a group of people who interact and collectively contribute to the creation of deliverables and achievement of the project objectives. The focus of teams and teamwork is on mutual accountability and performance. An understanding of what makes an effective team and the dynamics involved is essential for an effective project manager.

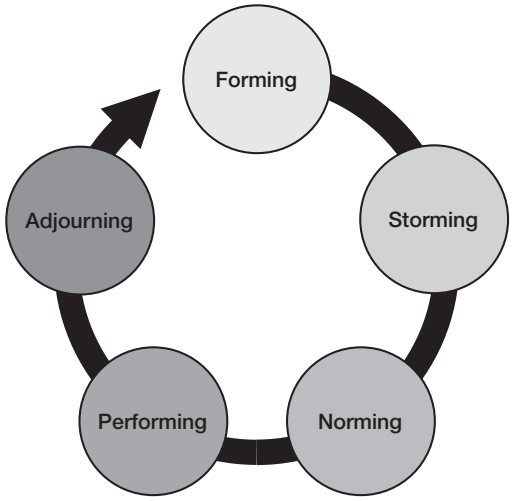
Characteristics of Effective Teams

High-performing teams share many similar attributes. The project manager should ensure that appropriate effort is applied to fostering these characteristics, thereby increasing the likelihood of a successful project:

- **Shared aims:** Members believe in the collective goals of the project
- **Trust:** There is a climate of trust and members are encouraged to openly discuss ideas and issues without fear of retribution
- **Communication:** Communication channels are defined allowing information to be shared freely amongst team members
- **Shared skills:** Complimentary skills (and roles) exist within the team, allowing members to interact and decisions to be made quickly and in an informed manner
- **Good relationship with other teams:** The team acknowledges the need to work with other parts of the organisation and fosters a mutually beneficial working relationship
- **Effective leadership:** Team members are encouraged to assume leadership of the team when necessary to do so and the project manager is also seen as a credible and effective leader
- **Self-regulating:** The team is self-managing, self-organising and self-regulating and holds themselves mutually accountable for their actions

Team Dynamics

The project manager should be familiar with the process of forming a group of people into a project team that is to work together for the benefit of the project. This can be achieved in a formal manner by using start-up meetings, seminars, workshops etc., and in an informal manner by ensuring the team works well together. Motivating and resolving conflicts between individual members of the team are important elements of teamwork.



Tuckman's 'Stages of Development of a Team' is the most popular model used when looking at team development. The five stages of team development are depicted in the above graphic and detailed in the table that follows.

Stage	Description
Forming	At this stage, the set of individuals has not yet become a group. Individuals explore each other's attitudes and background. Members are also keen to establish their individual identities and make a personal impression on others.
Storming	This is a conflict stage in the group's life and it can easily become uncomfortable. Members bargain with one another as they attempt to sort out what each of them wants individually, compared to what the collective group wants. It is likely that interpersonal hostility may be generated as differences in individual goals are revealed and the early relationships established in the forming stage may be disrupted.
Norming	The group usually develops a way of achieving its objectives together. The questions of who will do what, and how, are addressed. Working rules are established in terms of norms of behaviour and role allocation. A framework is therefore created through which each member can relate to the others.
Performing	The penultimate stage is concerned with actually getting the job done. A fully mature group has been created, which can now get on with its prescribed work. Not all groups develop to this stage, as some stall earlier.
Adjourning	Adjourning involves dissolution. It has to do with the termination of roles, the completion of tasks and reduction of dependency. There may be a sense of loss and anxiety at this break-up. The process can be stressful, particularly where the dissolution is unplanned.

Exercise

Identify one or more actions that might be undertaken by the project manager during each stage of the team's development.

Stage	Action(s)
Forming	
Storming	
Norming	
Performing	
Adjourning	

Social Roles Model

Techniques, such as team profiling, can help form an understanding of the preferred style of team members. It can also help in selecting team members or help consider personal development opportunities (which can often act as a significant motivator). Profiling may also be used as an ice-breaker at team kick-off workshops.

Meredith Belbin developed a tool (in the form of a questionnaire and subsequent analysis) which identifies nine key team roles and their primary characteristics.

BELBIN®

Team Role Summary Descriptions

Team Role	Contribution	Allowable Weaknesses
Plant	Creative, imaginative, free-thinking. Generates ideas and solves difficult problems.	Ignores incidentals. Too preoccupied to communicate effectively.
Resource Investigator	Outgoing, enthusiastic communicative. Explores opportunities and develops contacts.	Over-optimistic. Loses interest once initial enthusiasm has passed.
Co-ordinator	Mature, confident, identifies talent. Clarifies goals. Delegates effectively.	Can be seen as manipulative. Offloads own share of the work.
Shaper	Challenging, dynamic, thrives on pressure. Has the drive and courage to overcome obstacles.	Prone to provocation. Offends people's feelings.
Monitor Evaluator	Sober, strategic and discerning. Sees all options and judges accurately.	Lacks drive and ability to inspire others. Can be overly critical.
Teamworker	Co-operative, perceptive and diplomatic. Listens and averts friction.	Indecisive in crunch situations. Avoids confrontation.
Implementer	Practical, reliable, efficient. Turns ideas into actions and organises work that needs to be done.	Somewhat inflexible. Slow to respond to new possibilities.
Completer Finisher	Painstaking, conscientious, anxious. Searches out errors. Polishes and perfects.	Inclined to worry unduly. Reluctant to delegate.
Specialist	Single-minded, self-starting, dedicated. Provides knowledge and skills in rare supply.	Contributes only on a narrow front. Dwells on technicalities.

Advantages and Disadvantages of Team Models

Team models have a number of advantages and disadvantages with common themes amongst them.

6.12

Advantages	Disadvantages
Help to highlight natural tendencies and behaviours in a non-judgemental and non-confrontational way	Designed specifically for teams and reflect only on how individuals work with others
Can assist in uncovering causes of problems that prevent full team performance being achieved	Designed to be used in the workplace rather than outside where behaviours may be different
Enable teams to understand each other's preferences and become productive more quickly by building on strengths and addressing weaknesses and gaps	Developed in specific environments where behaviours are likely to be influenced by other factors (for example, culture) and so the models may not transfer reliably
Styles can be applied to a role in a particular set of circumstances in order to determine the suitability of an individual based on their own preferences	Hierarchical and personality factors may affect the way people in a team interact or the roles they assume

07 Handover and Reviews

Will the last person to leave, please turn off the lights …

Closing down a project should be a time for achievement and celebration. Formal closure and review are necessary whether the project has come to a natural or premature end

07.01 Handover

(APM BoK 1.1.6)

7.2

"The point in the life cycle where deliverables are handed over to the sponsor and users."

APM BoK 6th Edition

The objective of the handover phase is to ensure a controlled and efficient transfer of the project deliverables (including any associated documentation) into the operational environment. The formal closure of the project will ensure that all administrative tasks are completed and also that lessons are learned for future projects. Specific activities undertaken may include:

Handover	Closure
User acceptance of deliverables – this might be conditional	Post-project review
Transfer of deliverable ownership (including transition support where appropriate)	Archiving of project documentation
Documentation acceptance (including warranties, guarantees etc.)	Contractual closure – invoicing, charge codes etc.

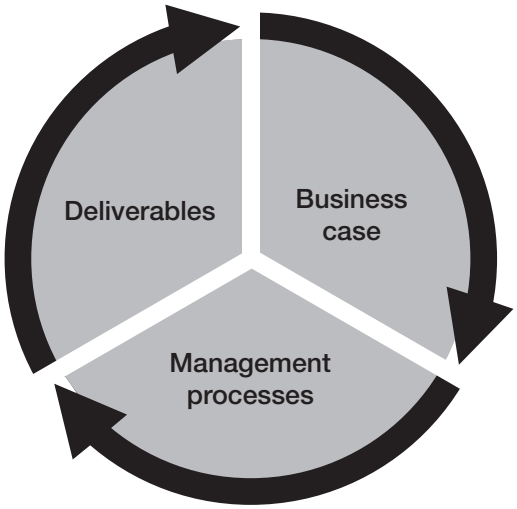
The capability for the realisation of benefits should now be in place. This is a responsibility of the project sponsor.

07.02 Reviews

(APM BoK 3.6.2)

> **"A review is a critical evaluation of a deliverable, business case or project, programme or portfolio management process."**
>
> **APM BoK 6th Edition**

Regular, objective review of the project is a key requirement of effective project governance. Typically, project reviews will focus on one or more of three key areas.



- **Management processes:** Project assurance requires the process to be regularly reviewed in order to ensure that is being well managed, in accordance with agreed procedures.
- **Business case:** The continued viability of the project should be reviewed at specific points in the life cycle (at the end of each phase as a minimum). The outcome of such a review may well be the early termination of a project.
- **Deliverables:** The review could take the form of quality control of the outputs created by the project (for example, formal inspection).

Project Reviews Across the Life Cycle

Reviews can be event or time-driven. Typical event-driven reviews will take place on the delivery of a major output or completion of a project stage. Time-driven reviews are those that are scheduled at defined frequencies (e.g. monthly progress review). The frequency of reviews is generally set out in the quality management plan. To be effective, a review should include:

7.4

> List of attendees who will add value to the review

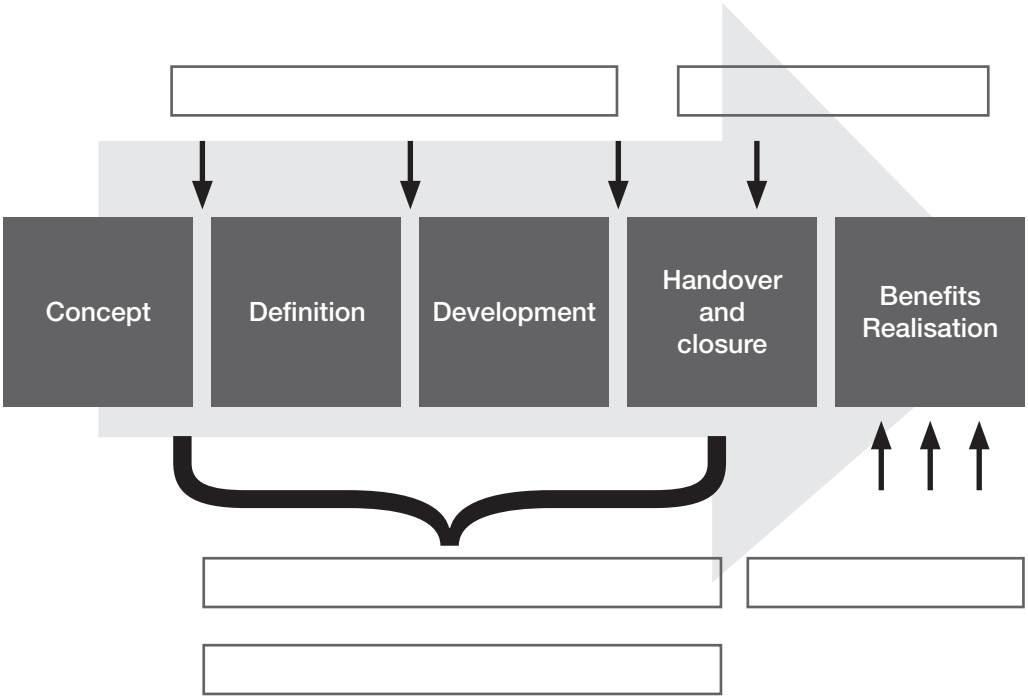
> A defined agenda, including the output from previous reviews

> A report with clear actions and owners

Exercise

Place the following reviews at the relevant point in the project

Audit, Post-project Review, Gate, Project Evaluation Review, Benefits Realisation Review



Review	Description
Project Evaluation Review	Provides the project manager and the team with an opportunity to formally review the present health of the project. This will include evaluation of the likely achievement of the success criteria as well as reviewing the suitability of technical and management processes. Corrective actions and lessons should be agreed and documented.
Post-Project Review	Undertaken after the project deliverables have been handed over but before the formal closeout of the project and disbanding of the team. The purpose is to learn lessons and improve future project delivery by: > evaluating the effectiveness of project management > comparing what was delivered against the agreed requirements > assessing performance (e.g. schedule and budget conformance) > capturing stakeholder opinions of the project delivery > communicate the findings
Audit	Where a review is conducted by an external party (e.g. project office or external auditor) then the review is known as an audit. The audit may be triggered by concerns regarding the governance of the project and/or to determine its continuing viability.
Product (Peer) Review	The evaluation of work or performance by others in order to maintain or enhance quality. Peer reviews utilise the independence, and in some cases the anonymity, of the reviewers in order to obtain an unbiased evaluation.
Gate Review	Also known as stage-gates, these are typically held at the end of each phase of the project life cycle. It marks a key decision point in the project where the sponsor will sanction the continuing investment based on a formal evaluation of the present and forecasted progress. It is important that external factors that may impact the viability of the business case are also considered.
Benefits Realisation Review	The sponsor is accountable for the realisation of the project benefits. Benefits typically materialise at a future date where the project deliverables have been in operational use for some time. Multiple benefits realisation reviews may be required depending on the nature of the project, each one determining the expected and unexpected benefits that have been realised and analysing the reason for any variance.

Team Management and Handover Recap Questions

7.6

1 **Project communication can best be defined as:**

- ☐ a. the means by which information or instructions are exchanged.
- ☐ b. a discussion between two or more parties aimed at reaching agreement.
- ☐ c. the identification, analysis and implementation of actions designed to engage with stakeholders.
- ☐ d. more complex in a projectised environment than in a functional environment.

2 **The project manager must:**

- ☐ a. Develop and use formal and informal communication networks
- ☐ b. Develop and use formal communication networks only
- ☐ c. Concentrate on the informal network to increase speed
- ☐ d. Leave communication issues to the sponsor

3 **Different methods of communication include all the following except:**

- ☐ a. Interactive
- ☐ b. Push
- ☐ c. Pull
- ☐ d. Reactive

4 **Barriers to communication can include all of the following except:**

- ☐ a. Geographical distance
- ☐ b. Different fields of expertise
- ☐ c. The use of jargon
- ☐ d. informal verbal communication

5 **Key elements of effective communication typically include all of the following except:**

- ☐ a. Identification and analysis of stakeholders
- ☐ b. Non-verbal communication
- ☐ c. A system of monitoring and feedback to assess effectiveness
- ☐ d. Relevance and clarity of the message

6 **Which of the following would NOT be included in the communications plan**

- ☐ a. Report templates
- ☐ b. Stakeholder analysis
- ☐ c. Timing of communications
- ☐ d. Feedback mechanisms

7 **The benefits of the communication plan include all of the following except:**

- ☐ a. Enhanced understanding of roles and responsibilities
- ☐ b. Reduced potential for conflict due to misunderstandings
- ☐ c. Identification of qualitative and quantitative benefits
- ☐ d. Higher sense of committment and ownership

8 **Which of the following is a leadership characteristic?**

- ☐ a. Good communication skills
- ☐ b. Position in an organisation
- ☐ c. Technical expertise
- ☐ d. Experience in all the roles of the team

9 **Which of these is NOT a common characteristic of effective leadership:**

- ☐ a. An ability to communicate the project vision
- ☐ b. A senior position within the organisation
- ☐ c. An ability to build a collaborative team environment
- ☐ d. The ability to inspire and empower the team members

10 **Which of the following should a leader aim for:**

- ☐ a. Being primarily directive
- ☐ b. Being primarily supportive
- ☐ c. Balancing direction and support to the needs of the team
- ☐ d. Adopting a style and sticking to it

11 **It would be most appropriate to use a "Directing" leadership style when:**

- ☐ a. A team member is enthusiastic but new to the role
- ☐ b. A team member is skilled and looking to grow and develop
- ☐ c. A team member has low confidence and is new to the role
- ☐ d. A team member who is skilled but needs a new challenge

12 **Typically, which project management team member(s) is/are likely to have the most communication links/channels?**

- ☐ a. Project sponsor
- ☐ b. Product users
- ☐ c. Technical development team
- ☐ d. Project manager

13 **Teamwork is defined as:**

- ☐ a. Achieving high levels of team performance
- ☐ b. Working collaboratively towards a common goal
- ☐ c. Aligning personal goals with those of the team
- ☐ d. Recruiting the right team members

14 **Which of the following is not a characteristic of an effective team?**

- ☐ a. Good communication
- ☐ b. Pursuing one's own interests
- ☐ c. Clearly defined roles and responsibilities
- ☐ d. Fair and regular analysis of team performance

15 **Ensuring that the project team is motivated is an example of a:**

- ☐ a. Success factor
- ☐ b. Success criterion
- ☐ c. Key performance indicator
- ☐ d. Deliverable

16 **Which of the following is NOT a phase in the Tuckman model of team development:**

- ☐ a. Forming
- ☐ b. Storming
- ☐ c. Recruiting
- ☐ d. Norming

17 **Which of Belbin's roles could this description be applied to? "A dynamic individual who thrives on pressure and has the drive and courage to overcome obstacles."**

- ☐ a. Shaper
- ☐ b. Monitor Evaluator
- ☐ c. Specialist
- ☐ d. Resource Investigator

18 **Which of the following issues is least likely to have an impact on the stages through which a team develops?**

- ☐ a. A change to the project manager
- ☐ b. A change to the project team membership
- ☐ c. Scope change
- ☐ d. The annual budgeting process

19 **Which of the following actions should a leader take to resolve disagreement between team members?**

- ☐ a. Joint problem solving
- ☐ b. Immediately seek a compromise solution
- ☐ c. Establish who has the highest authority level
- ☐ d. Close observation, awaiting a natural solution

20 **How should a project manager attempt to foster team cooperation?**

- ☐ a. Adopt a firm approach with all team members, having already selected their preferred solution
- ☐ b. Focus on meeting all the objectives of the stakeholders
- ☐ c. Promote the idea that individuals can have differing, but equally valid solutions
- ☐ d. Ensure that all team members are aware of the project sponsors priorities

7.8

08 Exam Guidance and Additional Resources

8.1

The secret to getting ahead, is getting started

08.01 The PFQ Examination

8.2

The APM Project Fundamentals Qualification is for those wishing to demonstrate a fundamental awareness of project management. The main points to note are:

- Duration is 60 minutes
- 60 multiple-choice questions
- Each correct answer scores one mark
- No deductions for incorrect answers
- Pass mark is 60% (36 correct from 60 questions)

Delegates will have their own strategy for undertaking multiple-choice examinations. Some common pieces of advice include:

1. Carefully read the question and highlight key words or annotate if required (for example, eliminate obvious wrong answers, then choose from the remaining choices)
2. Try to answer the question before looking at the possible answers – if your answer is there it is likely to be correct
3. Read the possible answers from the bottom-up (D,C,B,A) to help ensure that each answer is read fully and carefully
4. Manage time and ensure that all questions are answered
5. Do not get 'bogged down' with difficult questions; make a guess then mark for further consideration at the end of the exam
6. Where two or more answers look correct, try to select the 'best' answer
7. Only change an answer if you are absolutely certain that your first choice was incorrect

Next Steps

Whatever the outcome of the exam, it is important that delegates look for opportunities to reinforce learning through application in the workplace. In the unlikely event of not passing the exam (remember that most people are successful), then we need to constructively review how we both performed and prepared for the exam. Remember that there are people who can help you in this process.

FUNDAMENTALS

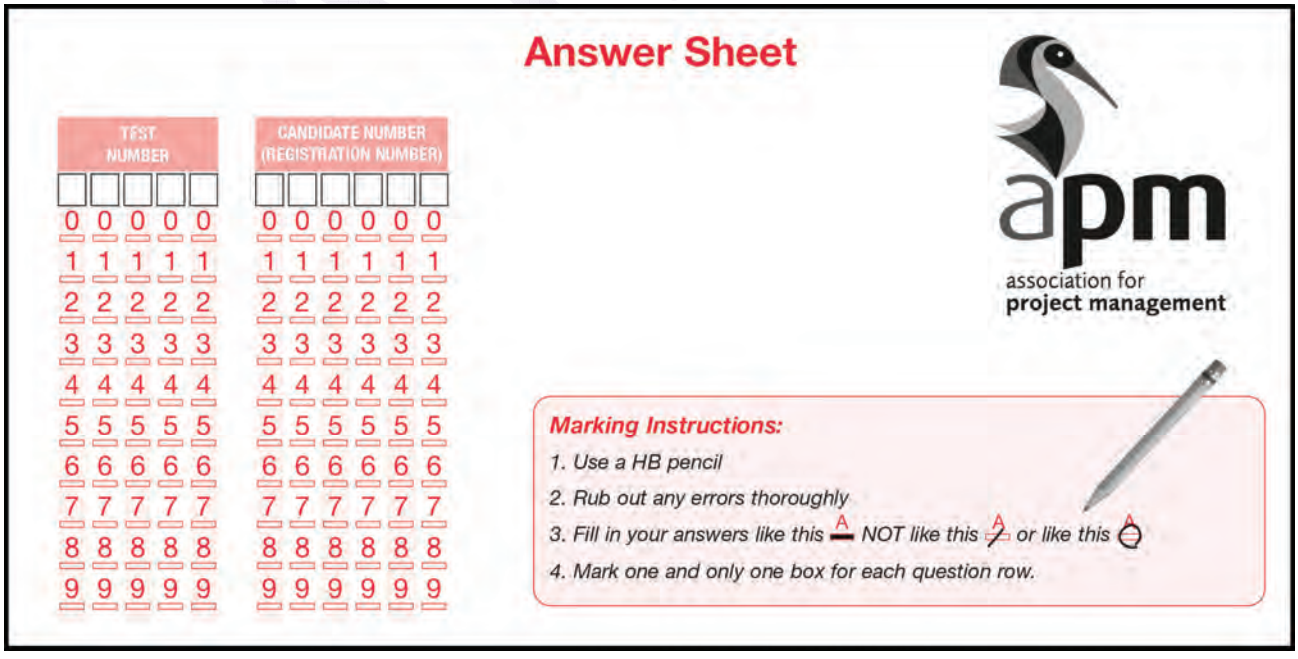
Introductory Certificate – The APM Project Fundamentals Qualification. Examination paper	
Candidate Number	
Date	
Location	
Examination Paper	Sample Paper v1.4

General Notes
Time allowed **1 hour**.

Answer all 60 multiple choice questions
Use the proforma answer sheet provided.

Completing the proforma answer sheet

- Use HB pencil provided to complete the proforma answer sheet.
- Provide only one answer per question.
- Each entry is to be made with a HORIZONTAL line in the spaces indicated.
- Errors must be removed using a good quality eraser – as provided.
- Enter the Test Number and your Candidate Number (which can be found on your examination card) on to your answer sheet, following the example set out below.



Do not open this paper until instructed by the invigilator.
Please note: This question paper must not be removed from the examination room.

1. A communication management plan identifies the relevant information that should be communicated to:

a. the project team.
b. the project stakeholders.
c. the project board.
d. the project sponsor.

2. Which one of the following statements is true?

a. Independent reviews and quality audits form part of quality assurance to ensure the project manager delivers on time and to budget.
b. Quality assurance provides confidence to stakeholders that requirements for quality will be exceeded.
c. Quality control verifies that the project deliverables conform to specification, are fit for purpose and meet stakeholder expectations.
d. Quality planning enables the project manager to manage the trade-off between customer expectations and budget.

3. Project risk management is best described as:

a. managing responses to threats.
b. identifying and acknowledging threats and opportunities.
c. planning responses to threats.
d. minimising threats and maximising opportunities.

4. Which one of the following best describes a project issue?

a. A major problem that requires formal escalation.
b. A problem that the project manager has to deal with on a day-to-day basis.
c. An uncertain event that may or may not occur.
d. An opportunity that occurs through change control.

5. Scheduling can best be defined as the process used to determine:

a. overall project duration.
b. project cost estimating.
c. the project management plan.
d. sub-contractor's responsibilities.

6. Which one of the following statements is true?

a. An increase in project scope is likely to increase project cost.
b. A decrease in the project time is likely to increase project quality.
c. An increase in the project quality requirements is likely to decrease project cost.
d. A decrease in the project cost is likely to decrease project time.

7. Which one of the following statements best defines the purpose of a Product Breakdown Structure (PBS)?

a. To define the hierarchy of deliverables that are required to be produced on the project.
b. To define how the products are produced by identifying derivations and dependencies.
c. To establish the extent of work required prior to project commissioning and the handover.
d. To identify the health and safety strategies and procedures to be used on the project.

8. Which one of the following is least likely to be a success criteria?

a. A target for the project to receive zero change requests.
b. The date by which the project is to be completed.
c. Delivery of products that meet required specifications.
d. The awarding of bonuses to senior management.

9. Which one of the following is a valid project Key Performance Indicator (KPI)?

a. Staff appraisals.
b. Management buy in.
c. Milestone achievement.
d. Master schedule.

10. Which one of the following statements is true?

a. The business case is owned by the sponsor and is created during the concept phase of the project life cycle.
b. The business case is owned by the project manager and is created during the concept phase of the project life cycle.
c. The business case is owned by the sponsor and is created during definition phase of the project life cycle.
d. The business case is owned by the project manager and is created during the definition phase of the project life cycle.

11. Who owns the Project Management Plan (PMP)?

a. The project team.
b. The chief executive.
c. The project manager.
d. The project support office.

12. Which one of the following best describes users?

a. Providers of both strategic and tactical direction to the project.
b. Those intended to receive benefits or operate outputs.
c. Facilitators of an appropriate issue resolution procedure.
d. Those providing full-time commitment to the project.

13. Which statement best describes a responsibility of the project manager:

a. to be the sole source of expertise for estimating techniques on cost and time.
b. to deliver the project objectives to enable benefits to be realised.
c. to take ultimate accountability for the delivery of the business benefits.
d. to delegate all accountability for managing time, cost and quality to team leaders.

14. A project is typically defined in terms of scope, time, cost and which other parameter?

a. Benefits.
b. Quality.
c. Tolerance.
d. Controls.

15. Which one of the following statements is true?

a. Business-as-usual activities cannot be improved.
b. Business-as-usual activities are more difficult to manage than projects.
c. Projects are transient endeavours that bring about change to business-as-usual.
d. A project is always the starting point for operation refinement.

16. What is defined as "the ability to influence and align others towards a common purpose"?

a. Teamwork.
b. Motivation.
c. Management.
d. Leadership.

17. Which one is a true statement relating to project communications?

a. A project sponsor is responsible for all communication methods and media.
b. Different stakeholders typically have different communication needs.
c. It is best to have a standard set of project reports used for every project.
d. Email is the only way to communicate with large numbers of people.

18. In project management, the term quality is best defined as:

a. inspection, testing and measurement.
b. reviews and audits.
c. fitness for purpose of deliverables.
d. professionally-bound project reports.

19. The main outcome of risk identification, in a risk management process, is to:

a. identify and determine the relative importance of the project risks.
b. identify and describe all risks that might occur on the project.
c. identify and determine the responses to the project risks.
d. identify and describe risks that have occurred on previous projects.

20. Which one of the following is not considered in resource management?

a. Identifying resources.
b. Influencing resources.
c. Assigning resources to activities.
d. Matching resources to the schedule.

21. Which one of the following does project change control primarily seek to ensure?

a. All variance to the project scope is evaluated.
b. No reduction in the perceived quality of the project outcome.
c. Management costs of the project do not increase.
d. Any decrease in the scoped deliverable of the project is rejected.

22. Which one of the following is captured in the Work Breakdown Structure (WBS)?

a. The life cycle phases.
b. The logical order of tasks.
c. The scope of the project.
d. Project costs.

23. Project reporting can best be defined as:

a. informing stakeholders about the project.
b. storing and archiving of project information.
c. gathering stakeholder feedback.
d. collecting project information.

24. Which one of the following statements best defines an estimate?

a. An approximation of project time and cost targets, refined throughout the project life cycle.
b. A prediction of a future condition or event based on information or knowledge available now.
c. The value of useful work done at any given point in a project to give a measure of progress.
d. A situation that affects or influences the outcome of the project expressed in time or cost terms.

25. The justification for the investment to be made in a project is documented in the:

a. Cost Breakdown Structure.
b. procurement strategy.
c. business case.
d. Project Management Plan.

26. Which one of the following is a responsibility of the project steering group/board?

a. To identify potential problems for the project team to solve.
b. To provide strategic direction and guidance to the sponsor.
c. To manage the project team in all daily activities.
d. To receive and consider daily reports from team members.

27. One of the reasons a project life cycle is split into phases is to:

a. facilitate formal go/no-go decision making during the project.
b. balance the costs of work in each phase of project development.
c. mirror the major deployments of resources throughout the project.
d. chunk work into time periods of similar durations.

28. Which of the following best describes a project environment?

a. The type of organisation concerned with implementation.
b. The structured method used to control the project.
c. The context within which a project is undertaken.
d. An understanding of the risks involved in the project.

29. Which one of the following statements best describes a project?

a. A project is a set of tools and techniques often used when delivering organisational change.
b. A project is the sum of activities needed to remove uncertainty from a unique piece of work.
c. A unique transient endeavour undertaken to achieve a desired outcome.
d. A project is a method of planning work.

30. The document that identifies what information needs to be shared, to whom, why, when and how is called the:

a. communication management plan.
b. stakeholder mapping grid.
c. document distribution schedule.
d. responsibility assignment matrix.

31. An important aim of a post-project review is to:

a. validate overall progress to date against the budget and schedule.
b. capture learning and document it for future usage.
c. ensure acceptance of all permanent documentation, signed by the sponsor.
d. establish that project benefits have been identified.

32. The process that evaluates overall project performance to provide confidence is called:

a. quality assurance.
b. quality planning.
c. quality control.
d. quality audit.

33. Which one of the following statements about the project risk register is false?

a. It facilitates the review and monitoring of risks.
b. It facilitates the risk appetite.
c. It facilitates the recording of risk responses.
d. It facilitates the recording of risks.

34. Which one of the following statements best defines procurement?

a. A technique to establish the best approach for obtaining the resources for the project.
b. A group of interrelated resources and activities that transform inputs into outputs.
c. The description of the purpose, form and components to support delivery of a product.
d. The process by which products and services required for the project are acquired.

35. Once a change has been requested what is the next step in the change control process?

a. Evaluate the change.
b. Advise the sponsor.
c. Update the change log.
d. Update the project plan.

36. A Responsibility Assignment Matrix (RAM) can be used to:

a. define the terms of reference of the project manager.
b. define the limits of the project sponsor's responsibilities.
c. allocate risk management response activities to project personnel.
d. allocate work packages to those responsible for project work.

37. An Organisational Breakdown Structure (OBS) is used to identify:

a. the reporting structure and current availability of all individuals in the project.
b. technical ability and line of communication for all individuals in the project.
c. lines of communication and responsibility for all the individual managers in the project.
d. the reporting structure and lines of communication for all individuals in the projects.

38. Which one of the following best describes project success criteria?

a. Actively seeking some senior management support.
b. Measures by which the success of the project is judged.
c. Achievement of milestones.
d. A motivated project team.

39. Comparative estimating uses:

a. current data from similar projects.
b. historic data from all projects.
c. historic data from similar projects.
d. current data from all projects.

40. Which one of the following best describes a project stakeholder?

a. A party who is concerned about the project going ahead.
b. A party with an interest or role in the project or is impacted by the project.
c. A party who has a vested interest in the outcome of the project.
d. A party who has a financial stake in the organisation managing the project.

41. The main purpose of the Project Management Plan is to:

a. provide justification for undertaking the project in terms of evaluating the benefit, cost and risk of alternative options.
b. ensure the project sponsor has tight control of the project manager's activity.
c. document the outcomes of the planning process and provide the reference document for managing the project.
d. document the outcome of the risk, change and configuration management processes.

42. Who has ultimate responsibility for project risk?

a. Steering group.
b. Risk owner.
c. Project sponsor.
d. Project manager.

43. When a project has completed the handover and closure phase:

a. the project deliverables are ready for commissioning.
b. the project deliverables are ready for handing over to the users.
c. the project documentation must be disposed of.
d. the capability is now in place for the benefits to be realised.

44. Which one of the following illustrates why effective project management is beneficial to an organisation?

a. It utilises resources as and when required under direction of a project manager.
b. It advocates employing a consultancy firm which specialises in managing change.
c. It recommends using only highly skilled people in the project team.
d. It ensures that the chief executive is accountable for the achievement of the defined benefits.

45. A key aspect of managing a project involves:

a. defining which operational systems to put in place.
b. identifying routine tasks.
c. ensuring ongoing operations are maintained.
d. planning to achieve defined objectives.

46. Which one of the following statements best defines teamwork?

a. People working collaboratively towards a common goal.
b. Developing skills that will enhance project performance.
c. Gathering the right people together to work on a project.
d. Establishing vision and direction towards a common purpose.

47. A review undertaken to decide whether a project should proceed into its next phase is known as a:

a. gate review.
b. feasibility study.
c. milestone review.
d. evaluation review.

48. Which one of the following statements best describes the use of an issue log?

a. A summary of all possible alternative resolutions of an issue.
b. A summary of all the project issues, their analysis and status.
c. A tool to ensure that a process is in place for capturing all issues.
d. A tool to ensure that the issue management process is adhered to.

49. The main aim of a project risk management process should be to:

a. identify project risks and then manage them appropriately.
b. identify all project risks and transfer them immediately.
c. identify all the things that are threats or opportunities on a project.
d. satisfy the organisation's project management process.

50. What is a visual representation of a project's planned activities against a calendar called?

a. A Gantt chart.
b. A critical path network.
c. A product flow diagram.
d. A Pareto chart.

51. Configuration management is best described as:

a. control in the implementation of changes to project schedules.
b. an organisation to review proposed changes to the project deliverables.
c. quality control of project deliverables and documentation.
d. creation, maintenance and controlled change of the project deliverables.

52. A Cost Breakdown Structure (CBS) shows costs assigned to:

a. individual work packages using the Work Breakdown Structure (WBS).
b. individual resources using the Work Breakdown Structure (WBS).
c. individual resources using the Responsibility Assignment Matrix (RAM).
d. individual deliverables using the Responsibility Assignment Matrix (RAM)

53. The accuracy of an estimate should:

a. decrease as a project progresses through its life cycle.
b. increase as a project progresses through its life cycle.
c. stay constant throughout the project life cycle.
d. vary independently of where the project is in its life cycle.

54. Which one of the following best defines a benefit?

a. A positive result of stakeholder management.
b. The successful management of a project.
c. An improvement resulting from project deliverables.
d. The successful delivery of project reports and updates.

55. Which one of the following is true for the Project Management Plan (PMP)?

a. The Project Management Plan is developed by the project manager and team and owned by the sponsor.
b. A draft of the Project Management Plan is developed by the sponsor at the same time as the business case.
c. The Project Management Plan is developed by the sponsor and owned by the project manager.
d. The Project Management Plan is developed by the project manager and team and owned by the project manager.

56. Who are project team members primarily accountable to?

a. External stakeholders.
b. The end users.
c. The finance director.
d. The project manager.

57. The phases of a project life cycle are:

a. starting, planning, control and closing.
b. concept, definition, development, handover and closure.
c. initiation, definition, planning, monitoring and operations.
d. concept, definition, implementation and operations.

58. A portfolio can <u>best</u> be defined as:

a. a group of projects and programmes carried out within an organisation.
b. a group of programmes carried out under the sponsorship of an organisation.
c. a group of projects carried out under the sponsorship of an organisation.
d. a range of products and services offered by an organisation.

59. Which one of the following <u>best</u> describes project management?

a. Using APM's *Body of Knowledge 6th edition* as a guide to all projects.
b. Employing a project manager who has undertaken similar projects.
c. Utilising team members who can work on a project full time.
d. Application of processes and methods throughout the project life cycle.

60. Which structure shows the reporting relationships and communications channels for a project?

a. Work Breakdown Structure.
b. Organisational Breakdown Structure.
c. Product Breakdown Structure.
d. Responsibility assignment structure.

Candidate notes

For candidate use – this page will not be marked.

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BoK 6 Sample Paper
Introductory Certificate - The APM Project Fundamentals Qualification
Answer Key

1	2	3	4	5	6	7	8	9	10
B	C	D	A	A	A	A	D	C	A
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
C	B	B	B	C	D	B	C	B	B
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A	C	A	A	C	B	A	C	C	A
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
B	A	B	D	A	D	D	B	C	B
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
C	C	D	A	D	A	A	B	A	A
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
D	A	B	C	D	D	B	A	D	B

08.02 Case Study

Hotel Refurbishment

Note: This case-study is an optional exercise on 3-day APM PFQ courses only.

You are a junior partner in a company which owns a group of 6 hotels within the south of England. One of your hotels was built in 1870 and has not been significantly modernised for 20 years. The group has been experiencing a steady decline in bookings at the premises and risks losing its AA 4* rating. You have been asked to manage a project to help reverse the hotel's fortunes.

This hotel is of a classic and striking design and is situated in a prominent position on the seafront in a small coastal town. It is seen by many to be a defining local landmark and there is currently a campaign being run by the local history society to get Listed Building status for the hotel.

The Chairman of the company bought this property 35 years ago and developed it as the original flagship hotel for the group. He has a strong attachment to the hotel and its employees. The group's Financial Director believes sentimentalism has compromised the commercial judgement of his grandfather. He feels there is not the potential customer base to warrant the refurbishment and favours selling the building to a local property developer.

Turnover of staff is less than most hotels. Approximately half of the staff have been there in excess of eight years and unlike other local hotels, staff enjoy a number of attractive perks including a performance related bonus system. It has been mandated that your project team must consist of a team-leader from each of the hotel's individual departments.

Anticipated Work

Market research and analysis has revealed the following problems:

> The hotel's communications infrastructure does not match that of other local hotels that cater for the large number of financial companies who have relocated to this part of the country

> Internal and external refurbishment is required to satisfy the growing expectations of today's more discernible business traveller and tourist

> Disabled access is inadequate and does not conform to current best practice

> The hotel's operating costs (buildings and staff) are believed to be significantly higher than the local competition

Customers

The Chairman is fiercely loyal to the hotel's traditional customer base. These include Cresta-Coach Tours who make extensive use of the hotel during the winter season for holidays for retired people. Other regular guests include the local British Legion which organises monthly tea dances at the hotel throughout the year. The local MP also makes a point of using local facilities whenever he can and hosts annual conferences in the hotel.

Local Community

In addition to the historical interest, there is significant local interest in the fortunes and future of the hotel. The hotel is situated at the end of the town's high street where most of the local shops are located. This is the only access road to the hotel and there is considerable concern that the heavy traffic attracted by a major refurbishment will turn away customers and seriously interfere with the town's commercial activity.

Timescale and Budgets

Any refurbishment work is to be undertaken between January and March next year (it is currently the end of October). The group wants to minimise disruption to existing clients during any refurbishment, although it is acknowledged that the hotel may have to close.

The budget that has been made available is £4.6M. The scope of any work is negotiable depending on initial estimates. The group has linked your work to the re-issue of the prized AA 4* rating and an increase in utilisation from 60% to 85% per annum.

Case-Study Exercises

1. Using the Business Case (or 'BOSCARD') flipchart template provided, create a high-level Business Case for the project.
   (Time: 20 minutes)

2. Using the flipchart template provided, identify a minimum of 5 stakeholders (individuals and/or groups) for the project. Once they have been identified, place each stakeholder on the grid depending on their relative levels of power and interest in the project. Pick one stakeholder (probably from the top left corner of the grid) and identify specific actions that may facilitate the effective management of this stakeholder.
   (Time: 25 minutes)

3. Using the flipchart and post-it notes provided, please create a Work Breakdown Structure (WBS) for the project. Ensure that a minimum of one branch of the WBS is developed to at least three levels.
   (Time: 25 minutes)

4. Using the risk register flipchart provided, identify and analyse a minimum of three risks for the project.
   (Time: 25 minutes)

08.03 Resources for Project Managers

Books

APM Body of Knowledge 6th Edition
Association for Project Management

Starting Out in Project Management
Ruth Murray Webster and Peter Simon

How to Delegate
Robert Heller

The 7 Habits of Highly Effective People
Stephen Covey

Project Management for Dummies
Nick Graham

The Handbook of Management and Leadership
John Adair

Websites

www.apm.org.uk

www.pmi.org

www.axelos.com/best-practice-solutions/prince2

www.mindtools.com

www.businessballs.com

08.04 Personal Action Plan

What I want to do	When I need to do it by	Who I will ask to support me	What I hope to learn

08.05 Thank You

This comprehensive and well-structured manual will hopefully provide a firm foundation for your future study of project management and its application within the workplace.

Carrying the Torch Forward

As a final word, we would like you to consider the words of Sir Dennis Hone (Chief Executive of the London 2012 Olympic Delivery Authority) speaking in the July 2012 edition of the APM 'Project' magazine.

> Let's spread the word about all of the good things that we have done here. It was basic project management – it doesn't have to be exciting – it's about getting things done the right way, on time and to budget.
>
> It isn't as if we've invented a new way of doing things, we have simply taken best practice and applied it rigorously.

Good luck! QA

09 Recap Question Answers

Testing leads to failure, and failure leads to understanding

Burt Rutan

02 Context and Governance

9.2

Project Management - Exercise 2.4

SITUATION	CONSTRAINT
A number of potential defects have been identified during the test phase but you do not have time to fix them	Quality
You accept a project related to a field in which you have no expertise or prior experience	Risk
You need to hire third-party equipment in order to meet a key milestone	Cost
Deadlines are tight so you decide to reduce the amount of test activity	Scope
You decide to fast-track the project as a result of a call from the customer	Time
Your project is late so you reassign resources from another project	Resources

Operations Management - Exercise 2.7

Project Management	Operations Management (Business as Usual)
Introduces Change	Manages day-to-day activities
Temporary and unique work	On-going and iterative work
Risk aware	Risk Averse
Produces project outputs/ products	Realises project outcomes/benefits
Resources are transient and obtained as required	Resources are dedicated and grouped by function
Specific aims and objectives to be satisfied. Manages time, cost and quality to achieve them	Works within fixed-time cost and quality constraints
Complex interrelationships	Defined relationships (single discipline?)

Programme Management - Exercise 2.9

> **Initiate, prioritise and terminate projects.**
This is likely to include significant involvement in the creation and/or approval of project business cases and the approval of project completion and/or termination. The relative priority of each project will also have to be considered.

> **Managing interdependencies**

This may be between interlinked projects, between projects and business-as-usual and the use of project outputs by subsequent projects or BAU.

> **Managing resources and conflicts**

Programme managers identify resource requirements, decide resource priorities and resolve resource conflicts within projects and across BaU.

> **Managing risks, issues and changes**

Programme managers ensure consistent processes and controls are in place and adopt a holistic overview of the impact across the programme, not just within the individual projects.

> **Define and realise the strategic benefits**

Individual projects must remain aligned with the strategic objectives of the programme. This is especially true if the strategy alters or is impacted by changes in the external environment.

Organisational Roles - Exercise 2.12

Project delivery (TCQ)	Motivates team
Project Manager	
Define and plan project	Monitors progress

Resolves issues	Realise benefits
Project Sponsor	
Owns business case	Stakeholder arbitration

Deliver work packages	Time and cost estimates
Project Team	
Report work package status	Technical expertise

Agree acceptance criteria	Define key constraints
Customer (User)	
Respond to Project Manager's queries	Identify 'need'

Project assurance	Assign and develop project managers
Project Office	
Own project management method	Project management tool support

Project Sponsorship - Exercise 2.14

> **Sponsor:** Outcomes, Benefits, Effectiveness
> **Project manager**: Outputs, Deliverables, Efficiency

Environment - Exercise 2.16

The internal environment includes consideration of factors such as:

> Company culture
> Management style
> Corporate strategy
> Company policies, standards, processes and procedures
> Resource skills and availability
> Is project being resourced internally or outsourced
> Availability of funding

Life Cycle - Exercise 2.20

	Objective	Key Output(s)
Concept	Is the project worthwhile and worth investing in?	Outline business case
Definition	Preferred solution is identified and planned	Detailed business case Project management plan
Development	Plan is executed and deliverables are created	Regular status updates Deliverables (outputs)
Handover and Closure	Deliverables are accepted by the client and the sponsor	Product acceptance Lessons learned
Operation	Deliverables are supported and maintained Benefits are measured	Benefits (outcomes)
Termination	Assets are disposed of at the end of the product's useful life	

Context and Governance Recap Questions 2.22

1. c
2. b
3. b
4. d
5. d
6. a
7. a
8. c
9. a
10. b
11. d
12. d
13. b
14. d
15. a
16. a
17. a
18. a
19. d
20. b

03 Project Concept

Stakeholder Management - Exercise 3.2

> **Identify:** Techniques used may include brainstorming, checklists (previous projects), interviews

> **Assess:** Prioritise according to their relative power and interest; assess their attitude (for/against)

> **Plan communications:** why/what/who/when/how and ensure two-way communication; create the Communication Plan

> **Engage and influence:** build trust, lead change, increase support and minimise resistance

9.6

Business Case - Exercise 3.4

> Concept: outline business case used to determine initial project viability

> Definition: detailed business case used to validate plan and sanction work to begin

> Development: review ongoing viability and update business case (stage-gates)

> Handover: used to measure success criteria

> Operation: used to measure benefits

Project Concept Recap Questions 3.14

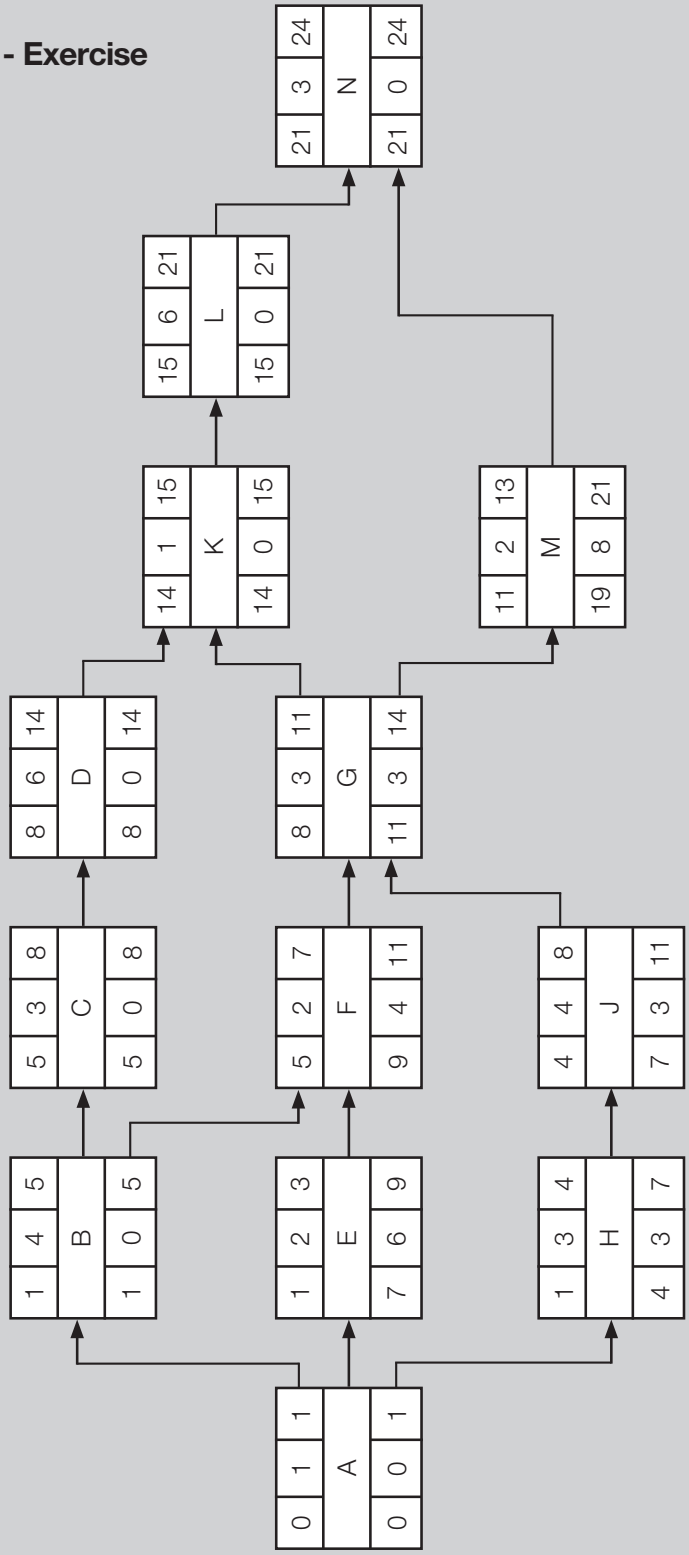
1. c
2. c
3. c
4. d
5. d
6. c
7. a
8. b
9. a
10. c
11. a
12. a
13. c
14. b
15. d
16. a
17. d
18. b
19. d
20. c

04 Planning the Project

Planning - Exercise 4.8

1. Define scope using a WBS
2. Decompose work packages into individual activities
3. Logically sequence the activities (network diagram)
4. Identify suitable resources
5. Estimate activity durations
6. Create project schedule (gantt chart)
7. Create resource histogram
8. Optimise schedule and resources

Time Scheduling - Exercise 4.14



Time Scheduling - Exercise 4.14

> The Critical Path is A, B, C, D, K, L, N

Planning the Project Recap Questions 4.22

1. a
2. d
3. d
4. c
5. c
6. c
7. d
8. c
9. b
10. a
11. b
12. a
13. b
14. a
15. a
16. d
17. b
18. b
19. c
20. a

05 Delivery Tools and Techniques

Delivery Tools and Techniques Recap Questions 5.22

1. b
2. c
3. c
4. c
5. b
6. b
7. c
8. c
9. d
10. d
11. c
12. d
13. a
14. c
15. b
16. c
17. a
18. d
19. a
20. c

06 Managing the Team

Leadership - Exercise 6.5

Manager: plan, organise, command, control, coordinate
Leader: vision, influencing skills

07 Handover and Reviews

Team Management and Handover Recap Questions 7.6

9.9

1. a
2. a
3. d
4. d
5. b
6. b
7. c
8. a
9. b
10. c
11. c
12. d
13. b
14. b
15. a
16. c
17. a
18. d
19. a
20. c

9.10

10 Course Content and APM BoK Cross-reference

10 Cross-reference

10.2

Context and Governance

Project Concept

Planning the Project

Chapter	Chapter Heading	Bok Ref.
2.01	Project management	1.1.1
2.02	Operations management	1.2.2
2.03	Programme management	1.1.2
2.04	Portfolio management	1.1.3
2.05	Organisation	3.1.4
2.06	Environment	1.2.1
2.07	Life cycle	1.1.6
3.01	Stakeholder management	3.1.6
3.02	Business case	3.1.1
3.03	Measuring Project Success	1.1.7
3.04	Procurement	3.7.3
4.01	Scope management	3.2
4.02	Planning	3.1.5
4.03	Estimating	3.1.5
4.04	Time scheduling	3.3.2
4.05	Resource scheduling	3.3.1

Chapter	Chapter Heading	Bok Ref.
5.01	Delegation (issue management)	2.1.3
5.02	Project Reporting	3.1.3
5.03	Risk Management	3.5
5.04	Quality management	3.6
5.05	Change control	3.2.2
5.06	Configuration management	3.2.3
6.01	Communication	2.1.1
6.02	Leadership	2.1.5
6.03	Teamwork	2.1.7
7.01	Handover	1.1.6
7.02	Reviews	3.6.2

Delivery Tools and Techniques

Managing the Team

Handover and Closure

10.4