



APM Project Fundamentals Qualification (PFQ)

Learner Guide (v1.5)



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1.0 Introduction

Welcome to your APM Project Fundamentals Qualification. This course will introduce you to key project management concepts from the APM Body of Knowledge, 7th Edition. Whilst some of the process names and terminology might be new to you, it can be useful to think about how the concepts relate to the project work you have taken part in, or seen, in your organisation.

What is the APM Project Fundamentals Qualification (PFQ)?

The PFQ developed by APM, the chartered body for the project profession, offers a fundamental awareness of project management terminology.

Who is this qualification for?

It is for those wishing to gain a broad understanding of the principles of the profession.

No prior knowledge or experience is required for this qualification, which will offer the individual the knowledge to make a positive contribution to any project.

What is assessed?

The PFQ syllabus assesses the key elements of the project management life cycle and covers knowledge areas from the APM Body of Knowledge, including planning and



scheduling, communication, teamwork, resource management, project risk management, and project reviews.

How is it assessed?

Assessment is through a 60-question, multiple-choice examination, taken over one hour. The pass mark is 36 correct answers, or 60%.

Your learning

The PFQ syllabus has 10 learning outcomes with 59 assessment criteria – this is what your learning covers. For a detailed look at the syllabus, go to the link below:

[APM PFQ Syllabus](#)



Whilst the PFQ is based on the APM Body of Knowledge (BoK) 7th Edition, this book is not required for the course. The reason being that the BoK is not a comprehensive reference manual, additional content is needed to ensure all 10 learning outcomes and 59 assessment criteria are covered. You can rest assured that the material you will cover on your learning journey covers **everything** you need!



The course is logically designed to follow the key stages in the project life cycle as opposed to the PFQ syllabus.

1. **Introduction**

2. **Projects and organisations** – We consider the organisational and external influences that may shape how your projects are initiated and undertaken
3. **Concept** – Development of an initial idea through high-level requirements, and assessment of viability, including an outline business case.
4. **Definition** – Development of a detailed definition, plans and statements of requirements that include a justification for the work. It is typical for a project management plan to form the output of this phase.
5. **Deployment** – Implementation of plans and verification of performance through testing and assurance to realise intended outputs, outcomes, and benefits.
6. **People and behaviours** – We look at the importance of effective communication and leadership if the team is to perform to its best ability.
7. **Transition** – Handover, commissioning, and acceptance of outputs to the sponsor and wider users, culminating in formal closure.

The course consists of a mixture of theory, exercises, and mock exam questions. Completing your learning in full will give you the best chance of passing your PFQ exam.



2.0 Projects and organisations

Projects are neither initiated or delivered in a vacuum and will be heavily influenced 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.

The first module in this workshop focuses on factors that, although external to the project, are still under the control of the host organisation – all of which will help to ensure that the project has a controlled start, middle, and end.

Topics covered in this module include:

1. Project Shaping (1.1 – 1.4)
2. Programme Shaping (1.5)
3. Portfolio Shaping (1.5)
4. Project roles and responsibilities (3.1)
5. Organisational Environment (1.6)
6. Life Cycle Options (2.1 – 2.4)
7. Reviews (8.6)
8. Reporting (4.11)
9. Recap Questions

Note – the numbers in brackets reference the relevant assessment criteria in the APM PFQ syllabus.



2.1 Project shaping

A project is 'a unique, transient endeavour to bring about change and to achieve planned objectives.'

APM BoK, 7th Edition

A project has:

- a defined start point and end point.
- specific objectives aligned with business objectives.
- specific resources assigned to perform the work.

A project will deliver clearly defined outputs and hand them over to a user (internal or external), who will then utilise them to deliver desired outcomes and benefits.

When shaping a project, the sponsor must ensure it has a clearly defined rationale. This is usually documented during the project's concept phase, in the form of a 'business case'. Alternative terms used in some organisations include 'project charter', 'project brief', 'problem statement', or 'project rationale'.

Where the project is delivering to an external client, the project rationale could be comprised of an invitation to bid, which may include some or all of the required scope elements.



Project management

Project management is ‘the application of processes, methods, knowledge, skills, and experience to achieve specific objectives for change.’

APM BoK, 7th Edition

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

Good project management has been proven to be an effective and efficient way of managing change in many organisations, across all sectors and disciplines.

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.

Projects and business-as-usual

All projects exhibit many common characteristics irrespective of their size, cost, or duration:

- A project creates specific outputs or products.
- Project objectives are typically measured in terms of time, cost, and performance/quality parameters.
- A project follows a life cycle made up of specific phases.
- A project comprises complex interrelationships and is



often cross-functional.

- The cost of changing any of the project's objectives rises faster as it nears completion.
- The levels of stakeholder influence, risk, and uncertainty are typically highest at the start.

It is important that a project manager understands the differences between projects and business-as-usual (BaU), sometimes referred to as operations.

Operations

Operations management is concerned with performing and managing the routine, ongoing activities that produce the core products or repetitive services provided by the organisation. It deals with converting inputs into outputs under management control. Delivery of the routine products and services fulfils the strategic mission of the organisation.

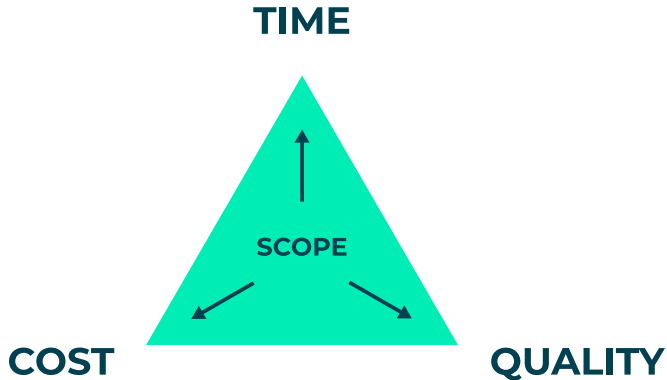
'Triple constraints' of a project

Perhaps the three most common words in project management are time, cost, and quality. These are usually referred to as the 'triple constraints'. In order to increase the likelihood of project success, each of these parameters must be defined and controlled. An understanding of the relative priorities of time, cost, and quality is also vital to choosing the life cycle approach.

For example, if time was a priority, maybe an iterative life



cycle is more appropriate to enable agility and rapid development and deployment of outputs.



Often, the change 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, performance, or both.

As the constraints of the project are key to overall project success, the project sponsor, as the person accountable for the project, is the person who will decide the relative importance of time, cost, and quality.

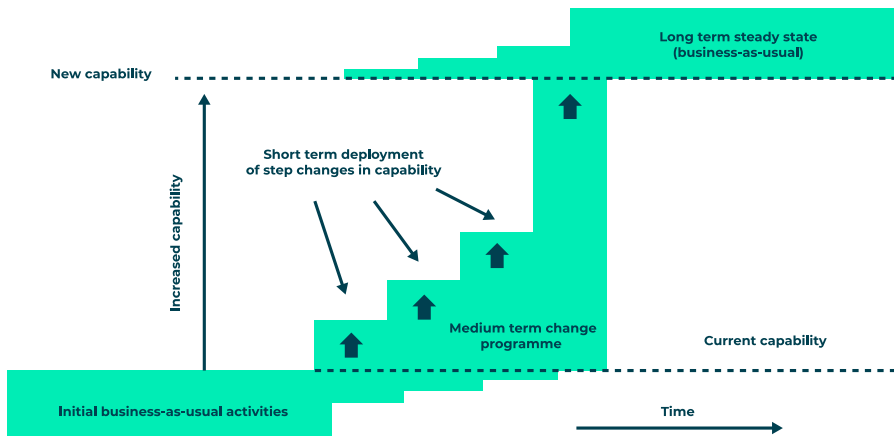
It is important to be aware that other constraints may also be relevant. These include benefits, resources, risks, and arguably most important of all for many organisations, health and safety.

2.2 Programme shaping

A programme is ‘a unique, transient strategic endeavour undertaken to achieve beneficial change and incorporating a group of related and business-as-usual (steady-state) activities.’

APM BoK, 7th Edition

A programme is a collection of projects, but it is greater than the sum of its parts. The diagram below illustrates how shaping and funding a change initiative as a programme increases the chance of success than would otherwise be achieved via a series of separate and independently managed projects.



Source: APM BoK 7 p61



The characteristics of a programme include:

- a single business case that the project business cases will align to.
- focus on the iterative delivery of outcomes and benefits.
- managing the transition of the outputs from projects into BaU.
- alignment to strategic benefits.
- a longer duration than its projects.

Programme management

Programme management is ‘the coordinated management of projects and business-as-usual (Steady-state) activities to achieve beneficial change.’

APM BoK, 7th Edition

Programme management is better suited to deal with uncertainty. Programmes often have a vision of the end-result, but cannot specify in detail how to achieve it. Larger initiatives are more likely to be run as programmes, though there are also plenty of examples of mega-projects (often in construction) which are bigger than many programmes.

For example, the construction of a major new bridge may take several years and have a very large budget, but there is little uncertainty relating to the project objectives and scope.



Programme manager

Programme managers are not involved in the day-to-day running of individual projects. The programme manager partners with the business and coordinates the programme, escalating to the sponsor as appropriate. The programme manager ensures the integrity of the programme as a whole and defines the governance structures required.

Hints and tips

Programme managers must be more comfortable dealing with uncertainty and change than project managers. The longer timespan of many programmes means that uncertainty and change is inevitable.

2.3 Portfolio shaping

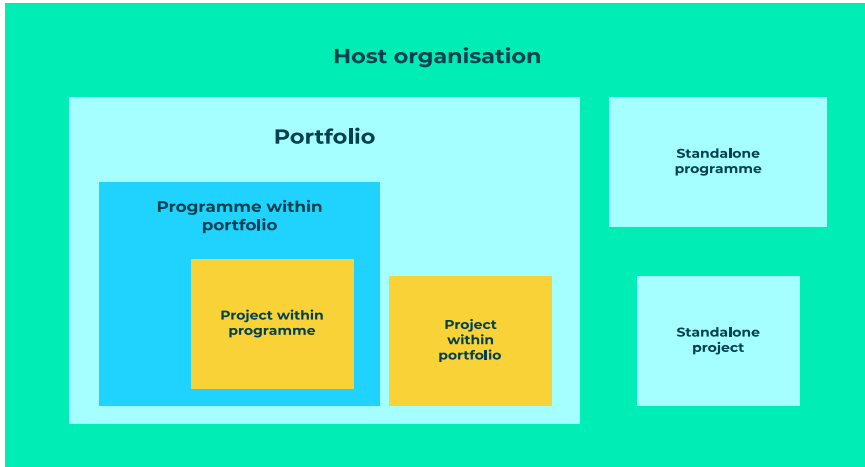
A portfolio is ‘a collection of projects and/or programmes used to structure and manage investments at an organisational or functional level to optimise strategic benefits or operational efficiency.’

APM BoK, 7th Edition

A portfolio can be managed at a functional level (such as HR portfolio, IT portfolio) or at an overall organisation level. An organisation can have a single or multiple portfolios. A portfolio may also be categorised by product type, market sectors, a single or group of customers, or be defined by



corporate governance.



Source: APM BoK 7 p13

Portfolio management

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.’

APM BoK, 7th Edition

Benefits that may result from portfolio management include:

- better prioritisation and alignment of projects and programmes with corporate goals.



- appropriate balancing of quantitative and qualitative benefits.
- suitable focus on both short and long-term organisational goals.
- adapting project and programme delivery to external change (e.g., economic fluctuation, introduction of new legislation or technology etc.).
- more efficient and effective utilisation of scarce resources.
- ensuring that risk exposure at a project and programme level is consistent with the organisation's risk appetite.

Hints and tips

Portfolio managers should ensure that they have a rational, transparent, and agreed project prioritisation process. This is likely to involve the categorisation of projects, for example:

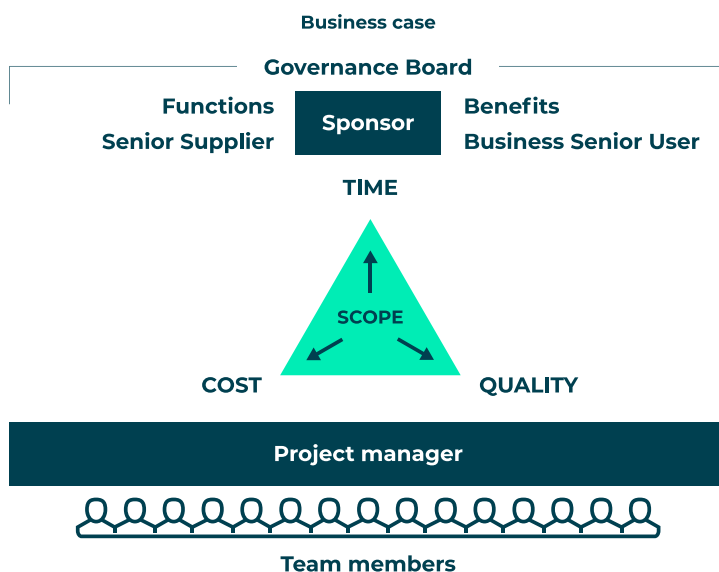
- Mandatory or compliance projects.
- The resolution of significant operational issues.
- Major strategic projects.
- Projects that have significant return-on-investment for the business.
- Preferential (nice-to-have) projects.



2.4 Roles and responsibilities

A project team will comprise a number of roles each with its own responsibilities. For simpler projects, a sponsor, project manager, and team members may all be part-time roles, but as projects become more complex, these roles may well become full-time.

Specialist roles may also be required, e.g., scheduler, risk facilitator, or cost planner, which can be found as part of a wider programme or portfolio structure in an organisation.



Some of the defined roles and associated responsibilities are depicted in the table across the next two pages.



Role	Responsibility
Project sponsor	Business Case ownership, option selection including financial appraisal, benefits identification, management, and realisation, acceptance of deliverables and transfer to BaU, project sign-off, chair the project board, authorise the PMP, changes and resolve issues, determine risk appetite.
Project (governance) board	All aspects of governance of project management, strategic guidance and direction, definition of risk capacity or tolerance, representing the business, user, and supplier interests.
Project manager	Write (with the help of the team) and own the PMP, deliver the project to meet the project objectives of time, cost, and quality, assemble team and keep team motivated through effective leadership, manage requested changes, risks, and issues, manage conflict, manage stakeholder expectations.
Project team members	Provide technical expertise, deliver delegated work packages, keep PM informed of untoward occurrences, identify risks and issues, apply change control, report progress on assigned work packages.



End users	Define requirements, highlight operational constraints, operate deliverable as BaU, provide input to team events.
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Project management office	Administrative support, project support, assurance, methodology, tools, and techniques, project management capability development.
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Product owner	Goal setting and creation of the vision for the project, maximising value to the business from the deliverables, voice of the customer representing and communicating with stakeholders outside of the project, generating a high-level release plan, generating and defining the product backlog. Product owners are generally found in agile teams.
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2.5 Organisational environment

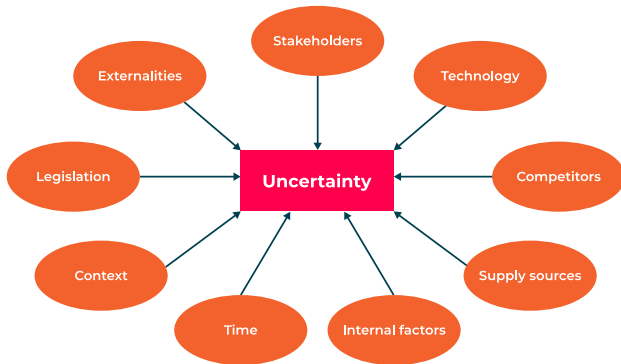
Organisations operate in an ever-changing environment. These changes could be national or global, or they could be driven by your own internal needs. The pressure to keep up with changes in the world and changes in your organisation mean that we will all need to carry out work on products, processes, procedures, tools, organisational roles, and physical assets.

Change for change's sake should be avoided. Change should always be beneficial – in other words, it should be worth doing, and should continue to be worth doing long after it is completed. The decisions made regarding what changes to respond to, and what to deliver in response to them, are referred to as an organisation's strategy.

Projects are uncertain, which is why project management exists. Uncertainty makes the future unpredictable, and the various disciplines within project management, such as risk management, change control, planning and stakeholder management, are there to help manage this uncertainty and bring some semblance of control to the situation.



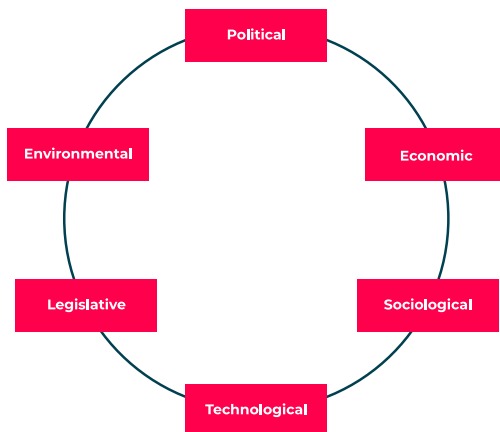
This uncertainty can come from many places, as shown below:



Source: APM BoK 7, p5

PESTLE

Change can be driven by uncertainty from the world around you. One way to identify sources of uncertainty and change is through **PESTLE** analysis – Political, Economic, Sociological, Technological, Legal, and Environmental. These are aspects of both the world and your organisation that can influence the need for change.



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, resources, and material costs.

Sociological: Culture, income levels, social mobility, level of education, demographics, customer/user behaviour.

Technological: Existing technical infrastructure, likely changes to the infrastructure, availability of skills to design/maintain/operate.

Legislative: Local and national laws as they impact the project, e.g., environmental law, employment law, contract law, health and safety.

Environmental: Ecological factors such as carbon footprint and waste, energy costs, flora and fauna, weather.



Hints and tips

Project managers should consider internal politics and culture as well as external – why do certain stakeholders support projects and others do not? What are the hidden agendas?

PESTLE analysis is often used at corporate or senior management level as part of strategic analysis and planning activities. It can help an organisation to understand the threats and opportunities it faces in its wider operating environment. This, in turn, can help determine, prioritise, and shape the programmes and projects it needs to undertake to respond to those threats and opportunities.

PESTLE analysis can also help the project manager to understand the external factors, both positive and negative, that may impact the definition and delivery of a project. This could inform decision making and anticipate changes or factors that may affect successful project delivery.

PESTLE analysis can help to identify risks as well as any constraints, such as legal, that may shape the definition and planning of the project.



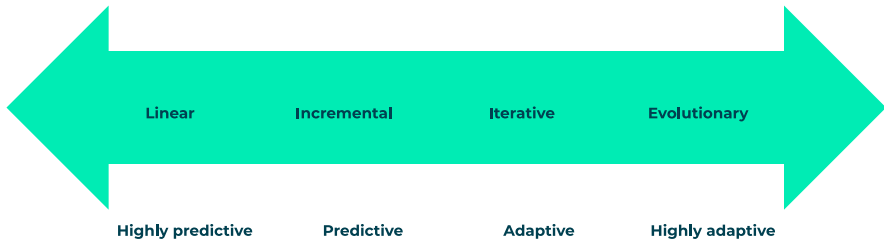
2.6 Life cycle options

When an organisation has decided to carry out a project, one of the early considerations they should make is how to deliver that project. For example, do we need to think about everything up front before we start? Can we start with a rough idea and work it out from there? Is there a middle ground between the two that would suit better? These are about considering what **life cycle** or approach to take with a project.

Types of life cycle

There are several different approaches to carrying out a project, referred to as life cycles. Each life cycle is a series of steps, separated by a decision as to whether to continue to the next step. In this way, a project has an in-built 'braking system' to ensure it does not go out of control with regards to cost, time, or any of the other key aspects.

There are, broadly speaking, four main life cycle types that are used in most industries, although some are more prevalent in certain industries than others. Each of these life cycles can be considered in terms of how predictable or adaptable they are, as shown in the diagram on the next page.



Source: APM BoK v7 p17

You could say that there is even a fifth approach, which is to combine the approaches above into a **Hybrid** life cycle. More on that later.

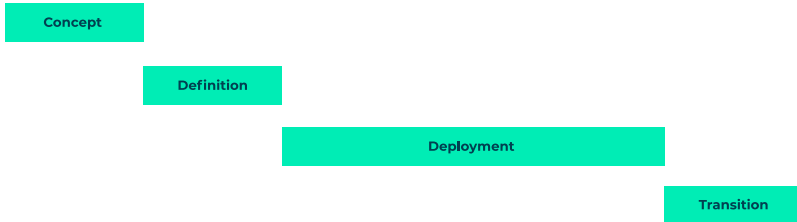
1. Linear life cycles

This approach involves a great deal of early detailed planning. In this approach, each element of the project is delivered step by step and checked before moving on to the next one. It is possible that there will not be a product that can be used until the end of the project, or at least only in a limited way. Often a good approach where the product output is very predictable (or low risk in project language) but changing would be very expensive.

A linear life cycle will be carried out in distinct steps, with a decision point at the end of each step, referred to as a **gate review**. This gate review will determine whether or not the project should continue (a 'go' decision) or stop, perhaps temporarily (a 'no go' decision).



A typical linear life cycle could look like this:



Source: APM BoK v7 p19

The different steps – or **phases**, or **stages** – represent different activities:

- **Concept:** develops the initial idea into a concrete proposition, usually in the form of an outline business case.
- **Definition:** this proposition is then designed and planned in detail, with detailed analysis of the risks involved, the costs, and the timescales.
- **Deployment:** this is where the product itself is built, following the plan and designs put together in definition. The work in this phase is subject to **change control**, where a change to what has been agreed can be considered.
- **Transition:** this is where the product that has been built is handed over to those who will use it, and acceptance for the product formally given.

Incremental life cycles generally follow the same broad approach, except that the Deployment phase can have



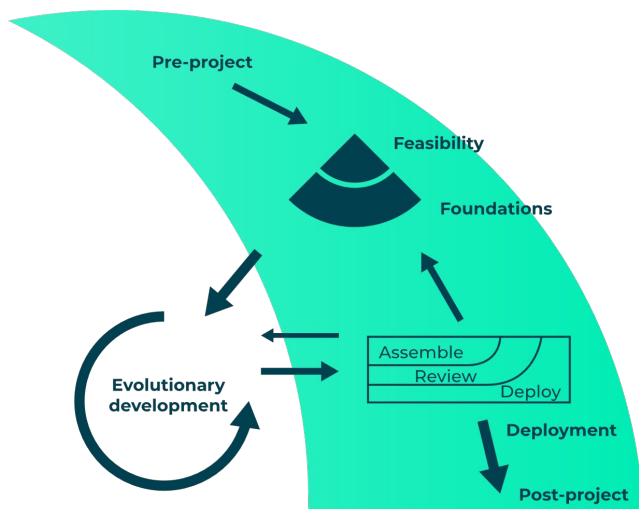
specific points in it where a version of the product is handed over to those who will use it, culminating in a final transition at the end.

2. Incremental

This approach is like linear in that it is often planned in detail upfront. The difference here is that each step produces a product that can be used, with each step building on the previous one. It is often used to deliver 'quick wins' or 'champagne moments', i.e., you can give the customer something that they can use early in the project, thus getting their buy-in and building excitement.

3. Iterative life cycles

Often also referred to as an 'Agile' approach, an iterative life cycle may have all of the steps or phases, similar to those described in the linear approach, but they will be repeated again and again as each iteration, or cycle, further develops the product and the ideas or design behind it. An example can be seen on the next page.



Source: APM BoK v7 p21

In the above diagram of the dynamic agile model, the pre-project phase selects the right project and clarifies the objective. The feasibility phase identifies the foundations, or the high-level ideas, behind the project. Then there are many smaller steps, often referred to as **timeboxes** or **sprints**, during which a subset of functionality or assets is assembled, reviewed to ensure they are correct, and then deployed.

Each iteration will find out more information, which in turn will feed future iterations, or in some cases will mean going 'back to the drawing board' and changing the fundamental ideas. Finally, the deployment phase brings the baselined solution into operational use before the post-project phase



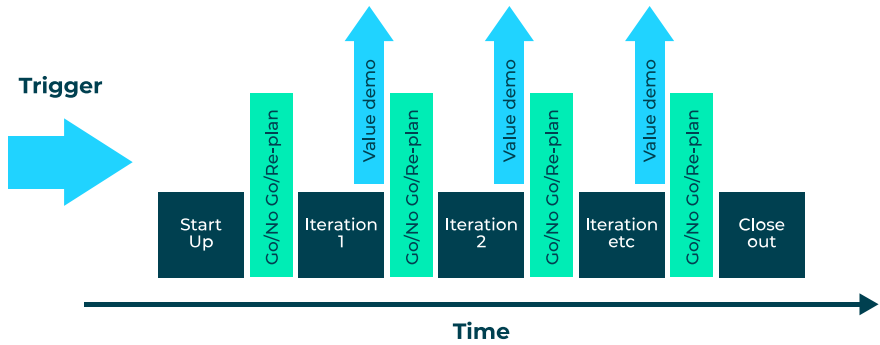
checks whether the expected benefits have been achieved.

Many successful organisations have responded to the increasing rate of change in today's world by adopting a more agile approach to developing products and processes.

Agile promises faster time to market, increased collaboration, fewer defects, and quicker delivery of value and benefits to the customer.

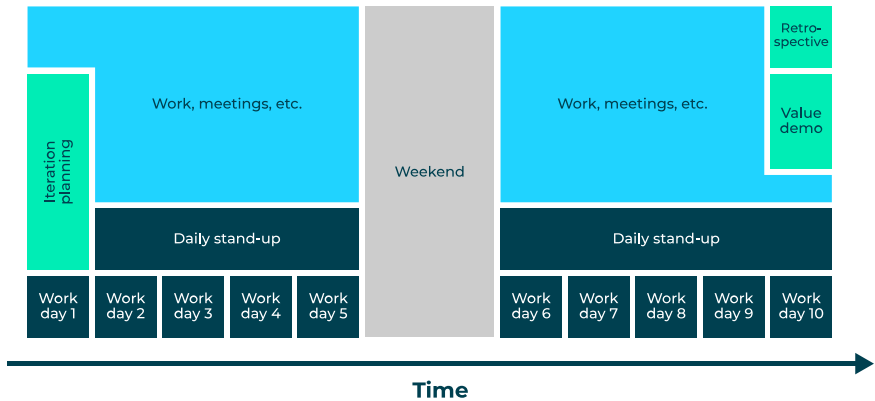
Agile concentrates on frequent delivery to the customer, focusing initially on delivery of the highest value features. Agile is an umbrella term that encompasses a number of different approaches, the most common of which is known as Scrum.

Iterative and incremental product development will accelerate the speed and frequency of new products and processes being introduced to the market. Although originating from the software industry, Agile delivery is now commonplace across many industry sectors.



Source: AgileSHIFT (Axelos)

Each iteration will consist of a number of Agile events.



Source: AgileSHIFT (Axelos)



Iteration planning

Time-boxed to a maximum of one day (for a one-month iteration), the following questions are answered:

1. What can be delivered during this iteration (i.e. which product backlog items will be created)?
2. How will the required work be achieved?

Daily stand-up

Sometimes known as a daily scrum, a 15-minute meeting is held every day. The previous day's progress is evaluated, and the imminent iteration items are reviewed and agreed.

Value demo

The increment that has just ended is evaluated and the Product Backlog is adapted as required.

Retrospective

The team reviews its own performance and develops a plan for improvements that will be implemented in the next iteration.

4. Evolutionary

This approach is often used when the final product is not fully understood or visualised, and will be discovered during delivery. It's similar to Iterative delivery in that the future steps are informed by previous steps, but here the final product will probably only be understood at the end of the project.

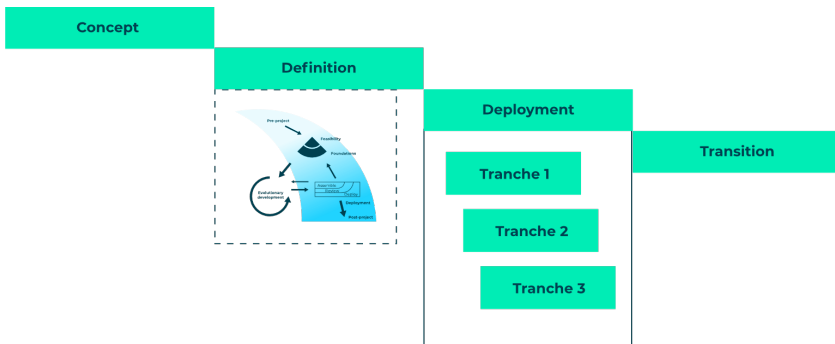
5. Hybrid life cycle

‘A pragmatic approach to achieving beneficial change that combines a liner life cycle for some phases or activities with an iterative life cycle for others.’

APM BoK, 7th Edition

Many organisations recognise the need for flexibility when deciding how to structure and deliver projects, a one-size-fits-all approach is not suitable for all projects within the portfolio. Hybrid life cycles will adopt tools from other approaches which best meet the needs of a specific project.

For example, a more agile approach may be suitable for the initial project phases when uncertainty is high. Once the requirements are clearly understood, it may then be possible to adopt a linear life cycle approach. A hybrid approach is shown in the diagram below:



Source: APM BoK v7, p23



In the example above, the main project is designed using a linear approach, but each phase is being built iteratively. As can also be seen, the deployment phase is being broken down into **tranches**. A tranche is a portion of work that results in something that can be used by stakeholders.

This shows the deployment phase as being delivered incrementally, where the rest of the project is linear. Tranche is a term that is more associated with programmes, but can be applied to projects when there is incremental deployment – see the Incremental Life Cycle section.

Extended life cycles

'A life cycle approach that adds an adoption phase to a linear or iterative life cycle, with the purpose of ensuring the accountability and governance of the investment stays with the change teams until change is fully embedded. It provides the missing connection to the benefit realisation in a linear life cycle and facilitates cooperation and knowledge sharing between change and business-as-usual teams.'

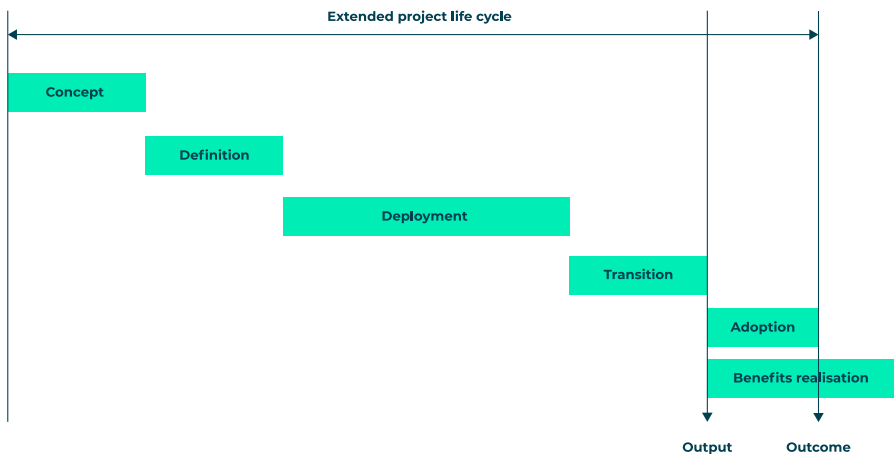
APM BoK, 7th Edition

One thing common to all the life cycles previously mentioned is that they all finish once the product or output is delivered. This is the nature of projects, it is their job to deliver and then move on to further delivery. It is important



to recognise that this is only part of the story, however. Whatever has been built will need to be used in order to realise the benefits.

The extended life cycle captures this period of use and benefit realisation, as well as the project itself, as demonstrated in the diagram below:



Source: APM BoK v7, p25

This life cycle is the same as the linear approach, except there are now two extra phases that are carried out after the project has completed.

Adoption: this is where the product of the project is implemented, but the change team retain accountability until the change is fully embedded in the business operations.



Benefits realisation: this is where the benefits from the adoption of the project outputs is measured to ensure it has been delivered.

It is very important that these steps are considered, otherwise the organisation will never know whether the work undertaken was actually worth it.

2.7 Reviews

Effective project governance demands regular reviews, which are a critical evaluation of a project's deliverable(s), business case, and project management processes. Formal reviews are therefore a key component in effective project delivery, and these will typically include:

- Decision gates.
- Post-project reviews.
- Benefits reviews.
- Project audits.

Types of review

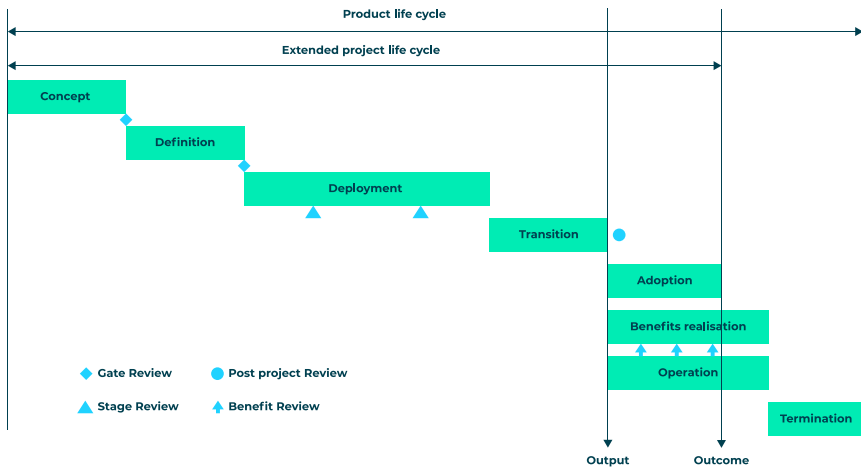
Broadly speaking, reviews are either event-driven or time-driven:

Event-driven gates will take place on completion of a phase or on completion of a stage. Typically adopted in a linear life cycle.



Time-driven reviews are those that are scheduled at defined frequencies (e.g. a weekly or monthly progress review). Typically adopted in an iterative life cycle.

Typical reviews in a linear life cycle



Source: APM BoK, p73



Decision gates

‘A point in the life cycle between phases that is used to review and confirm viability of the work in line with a business case. Alternatively called a stage gate or gates.’

APM BoK, 7th Edition

The purpose of decision gates is to review and confirm viability of the work across the chosen life cycle. In a linear life cycle, decision gates are event-driven, occurring at the end of a phase of work. In the case of an iterative life cycle, they are time-bound, this is due to the nature of the iterative life cycle, where the amount of work is defined by the amount of time available.

Many projects or programmes adopt a hybrid life cycle with a combination of main decision gates ('gate review') at the end of major phases of work, supplemented by interim review points, referred to as 'stage reviews', to reflect the iterative nature of the development.

Gate review

The purpose of the gate review is to determine whether the project should progress to the next phase. The project manager prepares the necessary documentation to enable the sponsor to make the 'go/no go' decision with regards to the project's viability and the continued progression through the life cycle.



Stage review

A stage review is an interim review point that can reflect the iterative nature of development. They are a key point for the project manager to highlight achievement and influence stakeholders.

Post project review

The purpose of the post-project review is to evaluate the project's performance and achievement of the success criteria, at the end of the transition phase. It aims to identify what went well, what went badly, and what could be done differently next time. This review is conducted by the project manager with the team and other key stakeholders.

Benefits review

Benefits reviews typically take place during the adoption or operations phase of the project. The business case is used as the baseline to help establish the answer to the question: 'to what extent have the planned benefits been realised?'

Whilst the sponsor is accountable for the delivery of the benefits, the project manager also has a responsibility for benefits realisation.

Project audits

The purpose of an audit is to provide assurance to stakeholders that the project management governance and



processes are being followed correctly, and that the project will achieve its objectives. An audit is performed by a party independent of the project, like the PMO, an internal audit department, or external auditors.

The main output is an audit report that confirms whether the project conformed to processes and governance documented in the PMP.

Note: There are other types of project review. These may include peer reviews that focus on the quality of completed deliverables, project evaluation reviews where the team objectively evaluates its own performance and identifies improvement opportunities.

Iterative and hybrid approaches may also incorporate reviews such as retrospectives, and stand-ups.

Summary

Reviews can be used to:

- demonstrate the correct level of governance and assurance is being applied.
- communicate progress to date and outline what will happen next.
- gain and maintain commitment from key stakeholders by keeping the project visible.
- highlight early warning of risk events to trigger planned response activities.
- raise and escalate issues to seek support in resolving them.
- trigger the release of funding, commitment of



resources or to authorise a procurement activity.

- validate the benefits of the project are still relevant and achievable.
- trigger early termination of a project if necessary.

2.8 Reporting

One of the key responsibilities of the project manager is to communicate the status of the project. This is referred to as project reporting.



Reports

- ‘(1) The presentation of information in an appropriate format (e.g., management report).**
- (2) A written record or summary, a detailed account or statement, or a verbal account.’**

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Purpose

The purpose of project progress reporting is tracking performance against the deployment baseline. A prerequisite to successful monitoring and reporting is the presence of a baseline to measure against. The baseline should be agreed at the end of the definition phase of the life cycle.

Monitoring the KPIs enables meaningful reports to be presented to the relevant stakeholders. This, in turn, supports effective decision-making based on current project performance. Assessment of the performance will indicate what appropriate level of corrective action is required.



Reporting

There are three elements required for performance measurement and which forms the basis of effective reporting. These are:

- A baseline to measure against.
- Data on actual performance to date.
- An assessment of the implications of the performance to date.

As indicted in the exercise above, many aspects are and may be reported against.



Content of a report

The content, format and frequency of a report will depend on the recipient of the report. This should be recorded in the communication plan. Examples of different reports include:

Content	Information presented	Source of Data
Scope	Work completed, work remaining, changes to scope	Product breakdown structure, work breakdown structures, change registers
Schedule	Plan vs. actual progress against timeline, forecast duration at completion	Gantt charts, Milestone slippage charts, network diagrams, EVA
Finance	Plan vs. actual expenditure, Forecast spend at completion	Plan vs. actual spreadsheets, cost variances, earned value forecasts, cashflow statements
Risk	Top 10 risks, RAG status reports, New / retired risks	Risk register
Quality	Non-conformance against process, Component failures	Quality register



Reports may be generated by individual topic or summarised in an all-encompassing/generic progress report. These are typically referred to as highlight reports or dashboard reports (as, similar to the dashboard of a vehicle, they show all the important indicators necessary to judge performance and whether corrective action is required).

Frequency of reports

Broadly speaking, reports can be categorised into the following three types:

- **Event-driven** reports will be triggered when an agreed point/activity in the life cycle is reached – typical examples would be at the end of a stage, end of the project, or when a deliverable needs to be signed off. If the agreed point is not reached, then the report is not issued.
- **Time-driven** reports are those that are scheduled at defined frequency, e.g., daily, weekly, or monthly progress reports.
- **Ad-hoc reports** – these are triggered when required or on request. Typical examples are an unscheduled audit or if an issue needs to be escalated (often called an exception report).

A more Agile approach

Many projects now adopt iterative, agile approaches to project control. This is especially useful where the scope of the project cannot be clearly defined. Work is delivered in a



series of iterations or time-boxes. This enables more frequent analysis of progress.

Daily stand ups/Scrums are used to verbally report on the current situation and what progress will be achieved or issues that will be addressed that day. Burn-up or burn-down charts are used to track completion and measure progress and the velocity (or how much work the team are managing to complete per day) can be calculated to improve future estimates.

Benefits of project reporting

Project reporting has the benefits of:

- improving stakeholder understanding of what is happening now and what is expected moving forward.
- improved decision making based on full facts and not 'half a story'.
- early warning indicators to identify if an issue is occurring or if a risk is more likely to occur.
- providing an audit trail showing why decisions were made, by whom, and under what circumstances.
- acting as a source of lessons learnt looking back retrospectively at progress and performance.
- using successful progress to motivate project team members.



Notes:



RECAP questions – projects and organisations

1. Operational work is different from project work in that it is:

- A. Ongoing and repetitive.
- B. Unique.
- C. Temporary.
- D. Risk aware.

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. Ensuring that project outputs are correctly utilised within BAU.
- D. How an organisation responds to a crisis.

3. Which of the following is a valid description of the phases of a complete linear project lifecycle?

- A. Start-up, feasibility, planning, execution and roll-out.
- B. Concept, screening, implementation, transition.
- C. Concept, definition, deployment, transition.
- D. Start-up, definition, development and production closedown.



4. Which of the following is not managed as BaU?

- A. Maintaining new procedures.
- B. Operating new procedures.
- C. Operating existing procedures.
- D. Introducing new procedures.

5. What name is given to the senior management team who set a project's strategic direction?

- A. Project management office.
- B. Quality assurance.
- C. Corporate management.
- D. Project steering group.

6. Which of the following is a characteristic of a programme?

- A. Focus on iterative delivery of outcomes and benefits.
- B. Prioritised list of corporate goals.
- C. Ensures risk exposure is consistent with the organisation's risk appetite.
- D. Creates specific project outputs or products.

7. PESTLE analysis is mainly used to analyse an organisation's?

- A. Operational environment.
- B. Competitive environment.
- C. External environment.
- D. Internal environment.



8. Which of the following is the most predictable life cycle?

- A. Linear.
- B. Iterative.
- C. Evolutionary.
- D. Incremental.

9. Which one of the following statements best defines a portfolio?

- A. A group of related projects, which may include business-as-usual activities, that delivers change.
- B. A timetable of how project activities and project milestones are planned over a period of time.
- C. A group of projects that represent the delivery of all, or a discrete part of a new capability.
- D. A grouping of an organisation's projects, programmes and related business-as-usual activities.

10. Which of the following is not a typical project review?

- A. Decision gate.
- B. Risk review.
- C. Benefit review.
- D. Project audit.



3.0 Concept

Concept is the initial phase in the linear project life cycle where a number of key decisions are answered:

- Why do we need this project?
- Is the project feasible and what criteria is used to decide this?
- Do we deliver the project, or do we need outside help?

Topics covered in this module include:

1. Stakeholder Engagement (4.6)
2. Business Case (4.4 – 4.5)
3. Success and Benefits (4.7, 4.10)
4. Procurement (6.6)
5. Recap Questions



3.1 Stakeholder engagement

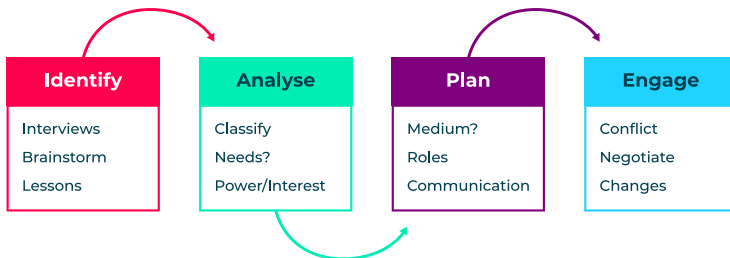
‘Stakeholder engagement is the systematic identification, analysis, planning and implementation of actions designed to influence stakeholders. ‘Stakeholder’ is the term used in most instances to refer to individuals or groups who have an interest or role in the project, programme, or portfolio, or are impacted by it.’

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Stakeholders ultimately determine the success (or otherwise) of your project, their expectations must be understood and managed, as stakeholders will feel differently about the change the project is to bring about. Some will be positive regarding changes, others less so! Stakeholders may be internal and/or external to the performing organisation.

Stakeholder engagement process

Stakeholder engagement typically involves the following four steps:





Identify

Identify who the individuals or groups with an interest or influence over the project are. We can use a variety of methods including interviews, workshops, or previous projects to derive a list of stakeholders.

A list of typical stakeholders can be found on the next page.



Stakeholder		Contribution
1	Project manager	Owns, develops, and maintains integrity of content through effective change control. Develops constituent plans. Identifies and agrees detailed requirements and scope with associated acceptance criteria.
2	Team members	Provide technical advice and estimates for work packages.
3	Client / end users	Provide details regarding needs, specifications, standards, and acceptance criteria. Inform of operational constraints that may affect project planning.
4	Supply chain	Provide detailed estimates, resources, and technical advice.
5	PMO	Provide assurance, subject matter expertise in the form of risk management and ensure PMP aligns with Governance.
6	Finance manager	Agree funding and financing options for project delivery and hence input to cost baseline considerations.
7	Sponsor	Authorises the completed PMP as aligned with the business case and approves any requested changes to the baseline.

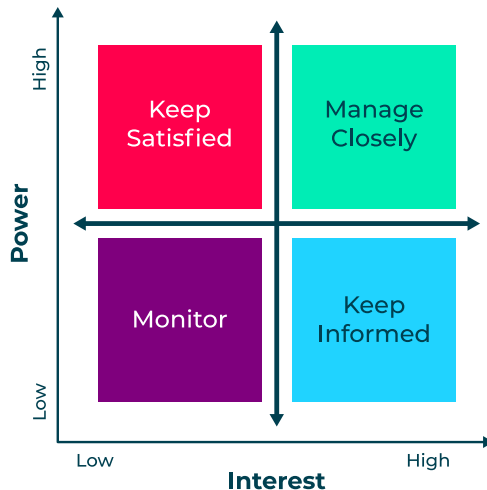


For example, stakeholders typically involved in the development and maintenance of the project management plan (PMP) include:

Power and Interest grid

Not all stakeholders are equal! Stakeholders should be prioritised in order that a project manager can apply an appropriate amount of effort in engaging with and managing their expectations. This analysis can be captured graphically in a stakeholder grid, as shown below.

We can capture this analysis in many ways: typically graphically, in a stakeholder grid, as shown below. In this method of prioritisation, the aim is to classify stakeholders according to their relative levels of power and interest, which can be plotted in a grid.



An example of a stakeholder grid.



Those in the high (power)/high (interest) category need to be managed closely, those in the high (power)/low (interest) category need to be kept satisfied with the level of information they require according to what their interest is.

Stakeholders analysed to be low (power)/high (interest) need to be kept informed to ensure continued support or persuade them of the merits of the initiative.

Finally, those in the low (power)/low (interest) category can be afforded a minimum of effort in terms of engagement and merely monitored to see if their position changes.

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?

Plan

The communication plan will document the strategy to engage with stakeholders. It builds on the analysis and outlines the who, what, when, why, and how of communication between the project team and its stakeholders. The detail of the communications plan content is described later in the 'communication' topic.

Engage

Effective engagement requires focus on understanding stakeholder perspectives to achieve the intended outcomes. Influence relies on building and maintaining relationships. This stage of the process puts the communication plan into



effect, engaging and influencing stakeholders to manage and control progress.

Stakeholder engagement 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 influence. Stakeholder engagement 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.

Hints and tips

Stakeholder engagement starts at a project's concept, as this is when stakeholder influence is at its highest. However, it is a dynamic and iterative process and should be revisited throughout the life cycle.

This is not an exact science and will involve using judgement and experience, not all opinions on who is a stakeholder and their importance will be the same.



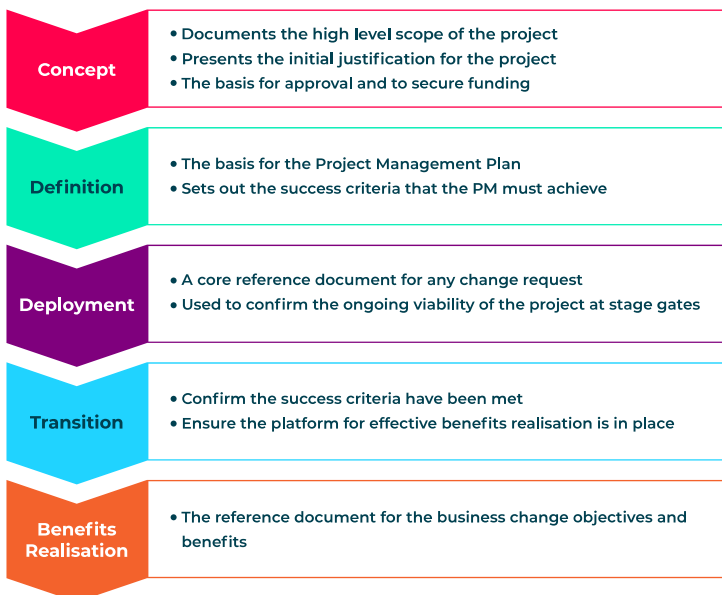
3.2 Business case

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

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The business case is often said to be the most important document in any project or programme. It demonstrates why the project is needed and options for the solution that will meet that need.

With it, you can establish the costs, benefits, and risks of the project, along with other information needed to guide the decision on whether it should be approved. It is used throughout the project life cycle.





Business case content

The content of a business case will vary across organisations, and the level of detail will depend on the scale and complexity of the project. The typical contents of a business case include:

Strategic case: Reasons for undertaking the project and how the project will contribute to corporate, programme, or strategic objectives.

Options appraisal: The business options that have been considered, including the 'do nothing' option, and the recommended option to address the objective for the project. This should include the expected return on the investment.

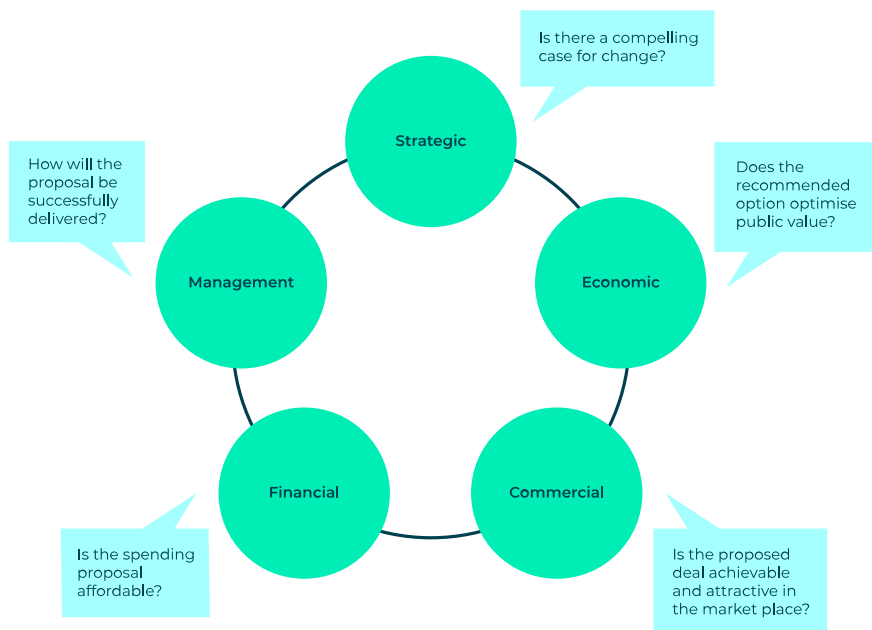
Benefits: The measurable benefits expected as a result of the project, together with any anticipated dis-benefits: outcomes perceived as negative by stakeholders. This should also include the benefits realisation requirements.

Costs: A summary of the likely projects.

Risk: A summary of any strategic or key risks.

Timescales: The period over which the project will run, and over which the benefits should be realised.

A business case may also adopt the '5-case model' illustrated below which is used in a wide range of UK government projects.



Adapted from 'The International Guide to Developing the Project Business Case'

Business case authorship and approval

The sponsor owns and is accountable for the business case, as well as its contents, and must ensure that it remains viable throughout the life cycle.

The project manager and other subject matter experts may write the business case on behalf of the sponsor. The



sponsor should present the business case to senior management for approval.

The business case is the starting point for the project manager to start creating the PMP. If the project manager is not involved in writing the business case, they need to understand the initial expectations that have been set before writing the PMP.

3.3 Success and benefits

Project success is ‘the satisfaction of stakeholder needs for the deployment of a project.’

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What does success look like?

Knowing what success looks like and proving you have achieved it are two fundamental concepts of project management. Project success can mean different things to different stakeholders:

- For the project manager, it may be delivering the project on time.
- For investors it could be delivering within budget.
- For users, it is likely to be more about whether the output does what they expect.
- For the sponsor, the focus is usually on whether the project was worthwhile in delivering.

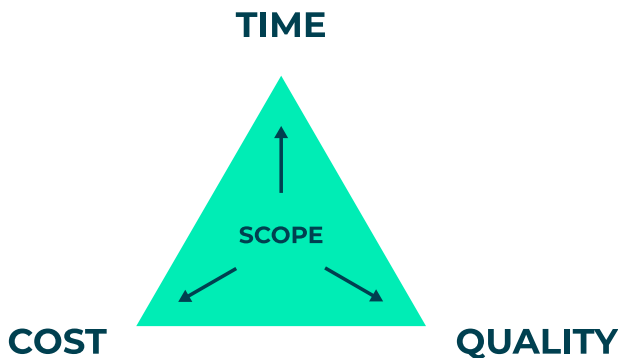


To avoid ambiguity, the metrics of success should be agreed with stakeholders as early as possible and subsequently managed through formal change control throughout the life cycle. This is normally achieved through the setting and management of success criteria and through the process of benefits management. Whilst both should be quantifiable and measurable, they serve different purposes.

All projects are designed to bring benefits to the investing organisation, but the success criteria for many projects excludes benefits realisation, as this is handled by another part of the organisation.

Success criteria

Project success criteria are the quantitative and qualitative measures used to judge if the project has delivered objectives. Traditionally, metrics are set around the scope triangle, e.g.:





Success criteria	Example measures
Deliver on time	Project is delivered by 4 April
Deliver on budget	Project does not exceed total budget of £100,000
Deliver to quality	Zero defects when going into operation

Some projects have additional criteria. This could include: level of acceptable risk exposure, correct level of resource applied, and satisfaction levels of personnel involved in delivering the project.

Success criteria should develop throughout the linear project life cycle in the light of changing circumstances and emerging understanding of the project environment. These are:

- initially set during the concept phase.
- refined during definition phase.
- reviewed at gate reviews and stage reviews.
- subject to formal change control during deployment phase.
- checked during transition phase.

In an iterative life cycle, success criteria are flexible and changes during testing with end users. This allows for gradual learning and adaptation.

It is important to note that while all projects are designed to create an environment or capability for benefits to be



realised, many projects exclude the benefits realisation from the success criteria, as this is handled by another part of the organisation.

Importance of establishing and managing the Success Criteria

Establishing and managing success criteria provides many benefits. including:

- minimising resistance allows the project manager to focus on project delivery.
- greater likelihood of acquiring the correct levels of resources from resource owners.
- a better chance of deliverable acceptance from stakeholders who have been consulted and listened to through the process.
- enhanced decision-making and communication between the PM and other stakeholders.
- developing confidence in the Project Manager through building a safe and trusting environment.

Benefits

A benefit is 'a positive and measurable impact of change.'

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Benefits are different to success criteria. They are 'quantifiable and measurable improvements resulting from



completion of deliverables that are accepted, utilised, and perceived as positive by a stakeholder.'

Emphasis on the word 'perceived'. Some stakeholders may perceive the improvements as positive (i.e., a benefit), whereas other stakeholders may see the improvement as negative – commonly known as a 'dis-benefit'.

Whilst the definition of a benefit includes the word measurable, benefits are typically categorised into tangible, and intangible:

- **Tangible:** Objectively measurable benefits (often financial) such as increased profit, increased turnover, or the number of new jobs created. These are sometimes referred to as 'hard' benefits. For example, by using a baseline from a previous year and a study of the latest financial data, we will be able to measure the benefits.
- **Intangible:** More subjective in nature (although with more work it may be possible to make these tangible measurements). Increased company reputation, increased staff capability, increased motivation are examples of intangible, or soft, benefits. The use of surveys or a proxy-measure would be a common way to capture this benefit information.



Benefits management

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

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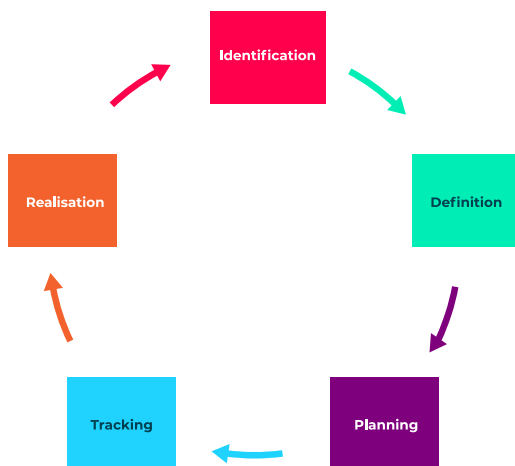
Purpose

Creating the environment or capability for benefits to be realised is a primary reason for projects 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.



Benefits management process

A typical benefits management process is highlighted in the following diagram:



Identification

Identify the potential benefits (and dis-benefits) of the project (or programme). Typically done through a workshop activity.

Definition

Having identified the potential benefits (and dis-benefits), they need defining, typically using a benefits profile: the information to be captured for a benefit (e.g., baseline and target measures, priority, ownership, resources, risk level,



scope, timing). May even use a benefit register – a log of all the identified benefits (and dis-benefits).

Planning

A benefits realisation plan shows how and when a measurement of the realisation of the benefits (and dis-benefits) will be made. Typical content includes ownership, roles and responsibilities, benefits dependency management, collection and reporting of benefits data, frequency of benefits reviews and communication, frequency and duration of benefits measurements, and all benefits profiles.

In a linear life cycle, the benefits realisation plan covers the extended life cycle.

Tracking

Tracking is about ensuring benefits realisation is happening as expected (as per the benefits realisation plan). Reporting and communication of benefits realisation (to the sponsor, or other accountable authority) will occur.

Realisation

Realisation is about ensuring the change is embedded and the business has transitioned to use the outputs. Document plans for long-term benefits realisation during BAU. There may also be benefits that were not planned – emergent benefits – so cycle back to the 'Identification' step.



As indicated, success and benefits can be a relative concept as judged by the project stakeholders. The project manager should therefore:

- explore the perception of success and benefits.
- facilitate an agreed position as far as possible.



3.4 Procurement

Procurement is ‘...securing the goods and services from external suppliers to satisfy project, programme, and portfolio needs.’

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Procurement typically covers the acquisition of:

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

Procurement is a specialist subject as it requires an understanding of how contracts work and also the ways in which external providers should be selected and managed.

A corporate level procurement strategy will usually exist, offering guidance on how to procure goods and services on a day-to-day basis.

The project environment may require a slightly different approach given its unique environment, so a project level procurement strategy needs to be agreed. This will be incorporated into the project management plan.



Procurement strategy

‘The high-level approach for securing the goods and services required from external suppliers to satisfy project, programme or portfolio needs.’

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Purpose

The project level procurement strategy addresses the needs of the project whilst respecting any relevant organisational constraints (for example ethical procurement policies) and/or strategic objectives.

It is important the rules of procurement are fully understood by all of the stakeholders. Getting it wrong can have a detrimental effect on the financial efficiency of a project: in the acquisition of resources, delays to the scheduled provision of resources, and possibly, in extreme cases, leave the organisation or the individual facing legal consequences.

Other considerations include:

- how much risk to retain in the project and how much to share with suppliers in the supply chain?
- what type of relationship is desired with various suppliers from simply buying things when needed to working collaboratively in partnership to design solutions?



Typical content of a procurement strategy

How procurement is to be managed may cover factors such as:

'Make' or 'buy' decision: Build it ourselves or get someone else to do it for us. Will include, for example, consideration of costs, quality, intellectual property ownership (who gets to use/sell it after the contract is finished), resource availability etc.

Provider/contractor relationships: Consider the use of a single provider for all aspects of the required work (Turnkey) or whether integrated providers (working in parallel) or multiple providers (working in sequence might be more appropriate).

Provider/contractor selection: Identification of the key criteria used to assess potential providers, the preparation of tender information, and the selection process to be used.

Conditions and form of contract: The standard terms and conditions to be applied and agreement on any changes in the standard form of contract used by the organisation

Types of pricing and methods of reimbursement:

Consideration of the use of 'fixed price' or 'cost reimbursable plus fee' or unit cost forms of payment.

The benefits of a procurement strategy include:

- Cost savings/economy of scale can be applied across a programme of projects. This helps to ensure the project delivers value for money on bulk buy items and avoid repetitive delivery charges.



- Minimal delays to the project schedule in the receipt of goods or services (especially if there are long lead times for items). Orders can be placed sufficiently in advance to ensure continual supply and reduce downtime of the team.
- Risks can be managed appropriately, exposure can be kept to an appropriate level through contractual agreements and ownership could be transferred to a third party.
- Accountability for decision making resides at the correct level of management as limits of authority and sign off will be clearly understood.
- Open book policy ensures the competitive process of tendering and contract award are fair, above board and legal.
- Avoidance of fines, penalties and legal action as disputes will be managed in a formal way.



Notes:



RECAP questions – Concept

1. The purpose of the procurement strategy is primarily to:

- A. Secure funding for the project.
- B. Gain stakeholder commitment and buy-in.
- C. Record risks and issues.
- D. Define how the project will acquire goods and services.

2. Success criteria measure whether (or how well) a project has achieved:

- A. Benefits.
- B. Stakeholder needs.
- C. Customer's quality expectations.
- D. Key Performance Indicators.

3. A consequence of change that is perceived as negative by some stakeholders is called:

- A. An issue.
- B. A risk.
- C. A dis-benefit.
- D. An Intangible benefit.



4. Which of the following is an intangible benefit?

- A. Increase in profit of £1M.
- B. Decrease in production time of one day.
- C. Better company reputation.
- D. Increase in repeat orders of 10%.

5. The first decision that is normally agreed when defining a procurement strategy is?

- A. Reimbursement method.
- B. Liability for risk.
- C. Make or buy.
- D. Conditions and form of contract.

6. The 'do-nothing' scenario would be considered within which part of a project's business case?

- A. Background.
- B. Benefits.
- C. Risks.
- D. Options appraisal.

7. Which category of stakeholders should be kept informed?

- A. High power/low interest.
- B. Low power/high interest.
- C. High power/high interest.
- D. Low power/low interest.



8. In a gate review, which document should be analysed to determine the ongoing viability of the project?

- A. Project management plan (PMP).
- B. Risk register.
- C. Business case.
- D. Work breakdown structure (WBS).

9. What is the purpose of a stakeholder grid?

- A. To analyse a stakeholder's position in relation to the project.
- B. Helps to identify project stakeholders.
- C. It creates an action plan for stakeholder engagement.
- D. It lists stakeholders who need to be communicated with.

10. Which of the following does not describe a key purpose of a business case?

- A. Outlines the key business risks associated with the project.
- B. Shows when project tasks will be scheduled to ensure success criteria is achieved.
- C. Details the main project costs and benefits.
- D. Supports alignment with the organisation's strategic objectives.



4.0 Definition

Definition is the life cycle phase wherein detailed planning is undertaken, it's also often the phase that demands the most attention and effort from the project manager.

Project planning consists of two main components:

- what are the policies for project delivery?
- in terms of delivery – 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 vehicle for the project and provides the basis for monitoring and control during its deployment.

Topics covered in this module include:

1. Scope Management (5.1-5.4)
2. Estimation (4.8 – 4.9)
3. Scheduling and resource optimisation (6.1 – 6.5)
4. Deployment Baseline and the Project Management Plan (4.1-4.3)
5. Risk Analysis and Management (7.1 – 7.4)
6. Recap Questions



4.1 Scope management

Scope is ‘the totality of the outputs, outcomes, benefits, and the work required to produce them.’

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Scope is all about the translation of requirements into outputs for the chosen solution. A high-level scope is typically recorded in the business case and further elaborated in the project management plan (PMP). Project scope defines the sum total of all the work required to be undertaken to deliver the project.

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

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Purpose

The scoping process will assist in clarifying the deliverables to be produced by the project and handed over to the sponsor/client, as well as the work required to create these deliverables.

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

In projects with a linear life cycle, the baseline scope (a baseline is the reference level from which the project is monitored and controlled) is defined through 'breakdown structures'. The baseline scope is deemed to be fixed across the project life cycle, and only changed via change control.

Typical breakdown structures include:

- **Product breakdown structure (PBS):** a hierarchical decomposition of all the products the project will create (the lowest level being a deliverable).
- **Work breakdown structure (WBS):** a hierarchical decomposition of all the work/activities that the project will do (the lowest level being a work package) in order to create the deliverables defined through the PBS.

Linear vs. iterative scope definition

Whereas in linear life cycles, the team attempts to define the scope in detail at the project outset, iterative delivery approaches accept that the scope will evolve throughout each iteration. In iterative life cycles, the 'must-have' requirements are prioritised in user stories and translated into a target scope of work to be achieved in a fixed timeframe (a 'sprint'). Subsequent iterations may alter the scope based on experience and feedback.

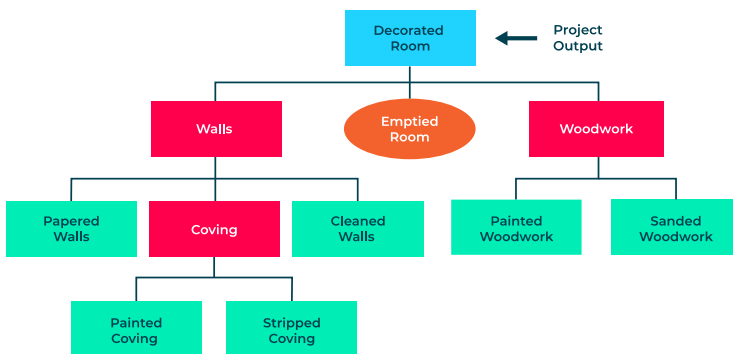


Product and work breakdown structures

The diagrams below illustrate the relationship between PBS and WBS. The first diagram is a PBS as it shows the deliverables (outputs or products) – in this example the lowest level ('papered walls', 'painted woodwork', etc.) are all the deliverables that need to be created to get the project output: 'decorated room'.

Note the ellipse 'emptied room'. This is called an external product, which is defined as:

- a product outside the scope of the project (but is needed on the project).
- a product that already exists (but is needed on the project).

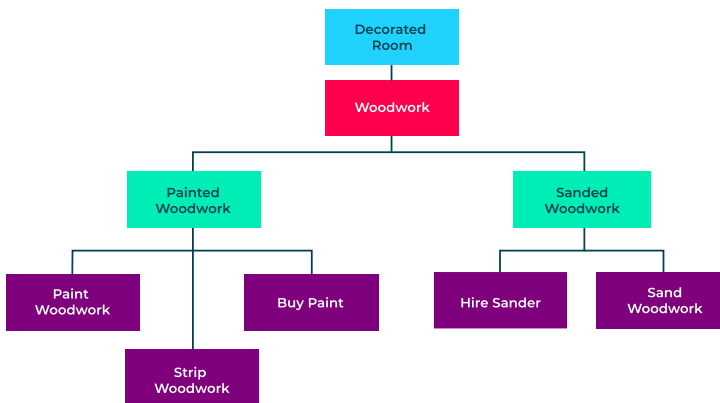


Product Breakdown Structure



The diagram below shows an example WBS. Here, the 'woodwork' group is the focus and the WBS shows the work/activities needed to create the deliverables 'painted woodwork' and 'sanded woodwork'. That is, to get 'painted woodwork', the tasks are 'paint woodwork', 'buy paint', and 'strip woodwork' – and they together represent a work package.

Note: the order or dependencies of the activities are not considered at this point in time – this is undertaken during scheduling, which will be discussed later.



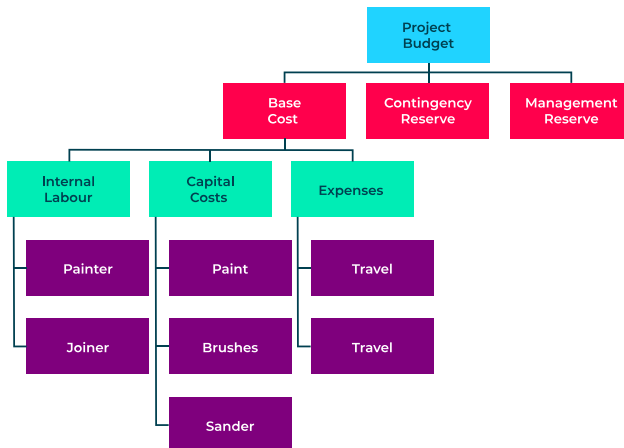
Work breakdown structure



Additional tools and techniques

Cost breakdown structure

Each work package in the WBS may have costs associated with labour, materials, expenses, and possibly other cost categories attributed to it. A Cost Breakdown Structure (CBS) is 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. The diagram below shows an example CBS:



Cost Breakdown Structure

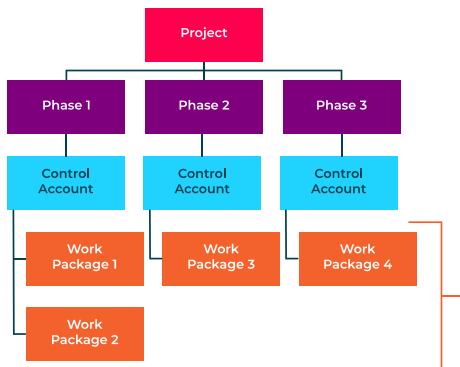


Organisational breakdown structure (OBS)/responsibility assignment matrix (RAM)

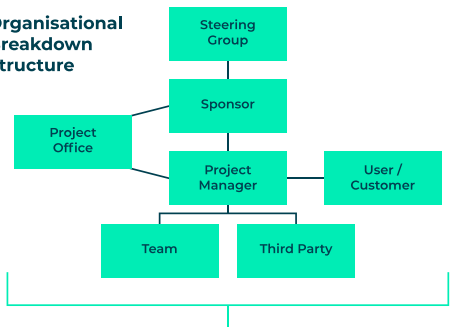
An organisational breakdown structure (OBS) is the structure of the project, communication routes, and reporting links, when combined with the WBS, a responsibility assignment matrix (RAM) is created.

A RAM is used to help define who is responsible for each of the project's deliverables or work packages, i.e., who does what on the project. The RAM is also referred to as a RACI chart.

Work Breakdown Structure



Organisational Breakdown Structure



	Sponsor	PM	Team	User / Customer
Work Package 1	R	A	C	I
Work Package 2	C	A	R	R
Work Package 3				
Work Package 4				

An example RACI chart



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

R: Responsible (R reports to A)

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.

4.2 Estimation

An estimate is 'a forecast of the probable time or cost of completing work.'

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The two most common questions asked throughout the project life cycle are:

- How much?
- How long for?



In order to determine the answer to these questions, estimates need to be produced for:

- **resources** required for the project (these may include labour, materials, etc.) as these will translate into costs.
- **durations** for each activity (as these will determine the overall timescale when scheduling).

Purpose

Estimates have multiple purposes, for example:

- To conduct economic analysis for investment appraisals and option selection to support judgements about value for money (in the business case).
- As an essential input for creating a resourced schedule.
- To enable budget setting and considerations of affordability.
- As the starting point for risk analysis and contingency determination.

Important note: All estimates are 'predictions of the future' and are therefore educated guesses. So, by definition, estimates will have a degree of inaccuracy. The role of the project manager is to ensure they are as realistic as possible.

This does not mean that the project manager is solely responsible for producing estimates, it is expected the project team, subject matter experts and other stakeholders will be consulted. The quality of estimates can have a direct impact on the success of a project, so it is important the

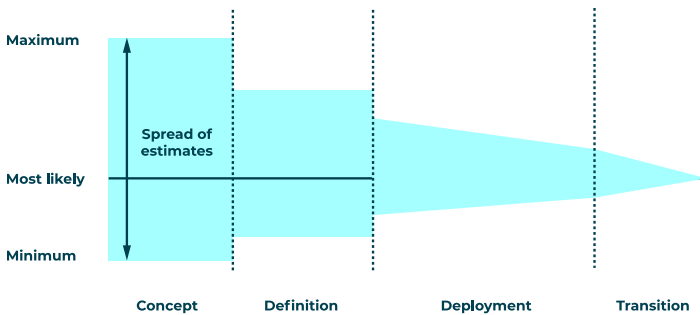


correct professionals are involved and that a range of values are considered rather than a single point value.

Estimates throughout the project life cycle

As a project progresses through its life cycle, the level of uncertainty should reduce. This suggests estimating accuracy has the opportunity to improve over time (as more information becomes available). In order to take advantage of this, it is recommended that estimating is not seen as a 'one off' activity, but rather as a continuous and iterative process.

This leads to an 'estimating funnel' effect, which shows how the degree of confidence in the values published improves over each phase of the project life cycle.



Estimating funnel



Reviewing estimates throughout the life cycle will have the benefits of:

- Helping ensure the business case remains desirable, viable, and achievable, with continued value for money.
- Ensuring the schedule for the project remains accurate, allowing evaluation of whether the project can be delivered within timescales.
- Deciding whether the budget and affordability of the project remains viable (or not).
- A more accurate risk analysis and contingency determination, which can be a deciding factor on whether to continue with the project.

Estimating

Estimating is ‘the use of a range of tools and techniques to produce forecasts of the probable time or cost of completing work.’

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Methods

To help with generating estimates and overcoming common estimating problems, a number of techniques exist. These are described on the next page.



Top-down approaches

Comparative or analogous estimating

Description – Assumes that the organisation has data (time and cost) from previous projects that can be used to produce a credible indicator for subsequent projects.

Strengths – Quick to produce. Reliable when a number of very similar projects have been undertaken previously.

Weaknesses – Relies on expert judgment and/or accurate source data. Comparisons may be invalid where there are varying circumstances or conditions.

Parametric

Description – Also requires reliable historical data to produce reliable estimates. The data is then used in statistical models or calculations to produce the estimate. Typical attributes used to produce estimates will include lines of software code, cost/time per square metre, etc.

Strengths – Widely respected within certain industries. Can provide timely estimate with limited knowledge as long as source data is available. Can be very accurate when the basis of the data has been collected over time.

Weaknesses – Industry norms (heuristics) must be kept up to date for factors such as inflation. Requires significant amount of historical data in order to define adequate norms.



Bottom-up approaches

Analytical

Description – Detailed estimate is produced for each work package (or activity) and then rolled-up throughout the work breakdown structure (WBS). The estimate is also aligned with the CBS for financial reporting purposes.

Strengths – Enables input from subject matter experts for each domain area.

Weaknesses – Takes time to create and is only useful for cost-estimating – time estimates would be meaningless as the WBS cannot account for tasks that occur concurrently. Also, cost contingency may be compounded throughout each of the WBS levels leading to an inflated estimate.

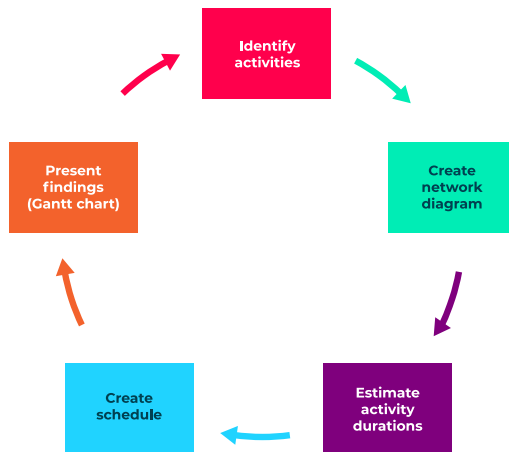


4.3 Scheduling

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 you've defined your project scope, you need to carry out a number of inter-related scheduling activities, as illustrated below:



Interrelated scheduling activities

Identify activities

In this stage, you define the activities that you need to complete to create each work package. The relevant subject



matter expert or team-member should help you do this, because you might not have the technical expertise in order to define them on your own.

Create network diagram

Using the work packages identified in the WBS, create a network diagram to define the sequence in which you'll complete the activities. This method represents the activities as boxes, or nodes, with relationships shown as the logical dependencies between the boxes.

Estimate activity durations

You can use the parametric, analogous, and analytical techniques from the 'Estimating' section earlier in this chapter to estimate activity durations.

Create schedule – critical path

Critical path places emphasis on the activities in a project and understanding the shortest time possible to complete all activities in a logical order. 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'.

It also has a few other definitions:

1. It is the longest duration through the network.
2. It is the shortest time the network can take.



3. It is the path of zero total float (total float being the amount of time an activity can be delayed or extended without affecting the total project duration/end date).

The critical path is important for a number of reasons. It focuses attention on activities which, if delayed, will affect project duration. From here, you can identify 'near- or sub-critical' activities, which have a small float, and 'bulk work' activities, which have a large float.

You can use this knowledge to allocate resources and analyse risk. Risks associated with critical path activities could have a higher impact, especially regarding time. The critical path also helps you align with key milestones, which is useful when you're reporting progress.

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)

ES	D	EF
Task ID		
LS	TF	LF

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.

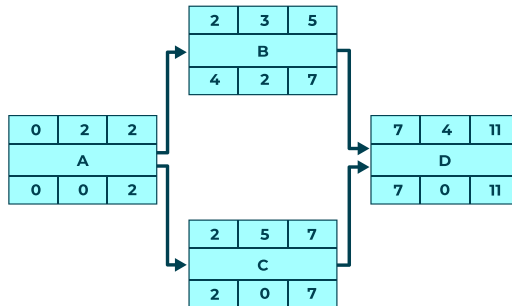
Once both passes are complete, it is possible to determine the amount of float time per activity.

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).



Present findings (Gantt chart)

A Gantt chart is a simple form of bar chart, and it's the most common way to represent your project's schedule. It's used as a timeline that displays the project's calendar. The key characteristics of a Gantt chart are as follows:

- The bar length indicates duration.
- Tasks are positioned at the earliest start/finish dates, showing any float at the end.
- You choose whether to include logic connections.
- it can be rolled up into summary tasks and also show key milestones.
- The critical path is identified in red.
- It can show comparison of the current plan to the original plan (baseline).
- It is typically generated using planning software.

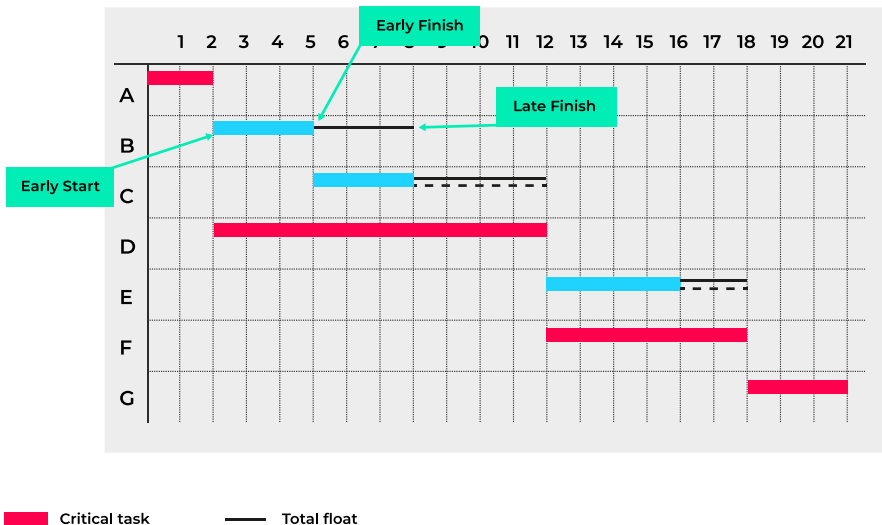


You usually produce the Gantt chart once you have a good understanding of the network and you've completed your critical path analysis. To create a Gantt chart from the critical path analysis, you need to know the earliest start, earliest finish, and latest finish.

There are three steps to creating a Gantt chart:

1. The task starts at 'earliest start'.
2. The task ends at 'earliest finish'.
3. If there is a total float, this starts and 'earliest finish' and ends at 'latest finish'.

The diagram below shows an example of a completed Gantt chart.





Timeboxing

'A generic term used in iterative life cycle approaches to refer to an iteration with a fixed end date that is not allowed to change, thereby adjusting the scope and quality to deliver on time and to cost.'

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When using an **iterative** or 'Agile' life cycle, projects normally deliver in short bursts, sometimes called sprints, rather than the longer phase or stage related approach of linear life cycles. A timebox is a fixed period of time, usually a few weeks, and is focused on delivery of short terms goals to show progress and deliver benefits to the customer as soon as possible.

In this life cycle, planning is much more short term, with a general sense of a broader timeline for projects, but only the next timebox being planned in detail. Timeboxes are also focused on delivery for a certain time, rather than delivering all the work, no matter how long it takes.

In this way, iterative life cycles are very different to linear, in that the focus is not on scope and how long it will take, but rather how much scope can be delivered within a set time.



Milestones

‘A key event selected for its importance in the schedule commonly associated with tangible acceptance of deliverables.’

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Milestones can be applied to a plan to represent a key moment in time, sometimes as a way of showing how far a project has progressed, or perhaps to give the team a short-term goal to focus on.

The purpose of milestones can 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 could trigger the release of further management funding.
- They are good for progress monitoring (e.g., a 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.



Resource allocation

‘Resource allocation is the process by which labour and non-labour resources are attributed to activities.’

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Resource allocation requires the project manager to estimate the quantity of resources required to complete project activities, and optimise their utilisation based upon constraints.

There are two types of resources used on a project: **replenishable** and **re-usable**. Once used, replenishable resources need to be replaced, whereas reusable resources are available for use elsewhere afterwards.

Once identified, the process of scheduling resources can be summarised as:

- **Allocation:** identifying the type and number of resources required.
- **Aggregation:** totalling the number of resources required and displaying them graphically.
- **Scheduling:** building confidence that delivery is realistic, based upon efficient and effective utilisation.

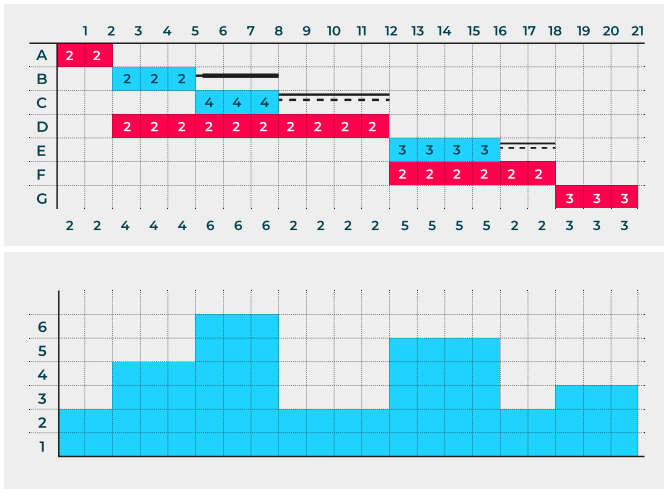
Creating a schedule using resources at a pre-determined rate assumes that the resources will be available as required.



Resource optimisation

When allocating resources to a plan, it is not uncommon to find peaks and troughs in resource utilisation: points in time where you do not have sufficient resources to accomplish all the planned work, or points where there is little work actually taking place. Whilst the organisational structure affects the impact of these occurrences, this is where resource optimisation can be used.

The project team alone are unlikely to be able to make decisions that would result in changes to scope or acceptance criteria. Instead, there are two approaches that can be considered: **resource smoothing**, or time-limited scheduling, and **resource levelling**, or resource-limited scheduling.



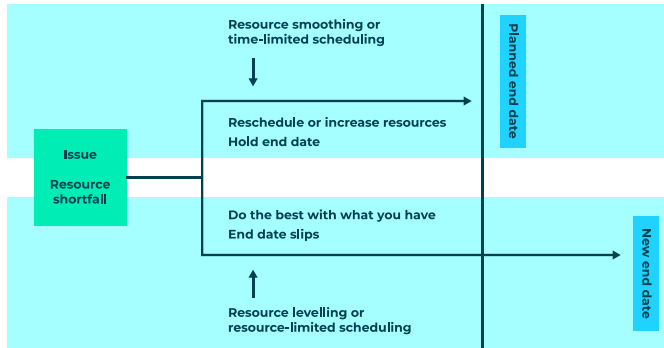


Resource smoothing is normally used when time is more important than cost and can involve adding more resources to cope with the peaks, this could be more people, or the same people working longer hours or overtime. The work may be reordered, with some work happening in parallel that was not originally considered. This should result in a plan that still stays within the deadline, but delivers the scope, often at the expense of the budget.

Resource levelling is used when resources are the key constraint and more important than schedule. It is a simple process of moving the work to points in time where the resources are available to deliver it. This in turn will almost certainly affect other activities, which in turn could delay others, and so on. In the end, this might move the work beyond the original deadline. Where resources are limited, and time is less important, this is a perfectly acceptable approach.



Both techniques are described in the diagram below:





4.4 Deployment baseline

Integrated planning is ‘the application of management processes that bring together the planning of benefits, success criteria, scope, quality, time, resources, cost, risk, communications, etc. to create the project management plan.’

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The culmination of all the 'planning' work is the deployment baseline, documented in the integrated project management plan (PMP). The deployment baseline and PMP are approved by the Sponsor at decision gates for continuation (or not) of the project.

The deployment baseline and PMP are the starting points for progress monitoring and implementation of change control, and subsequent versions (via change control once approved at decision gates) effectively form a new deployment baseline for the project.

When using a linear life cycle, the baseline (scope, quality, resourced schedule, and associated cost) is set for the whole project. In an iterative life cycle, the baseline resources and schedule are determined, but the achievement of scope and quality may vary from the plan as teams may have autonomy to re-prioritise and act on new knowledge.

Any work not achieved in the sprint is returned to the



backlog. In a linear life cycle the PMP is produced in the 'Definition' phase.

The Importance of the PMP

The PMP is 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.



PMP content

The PMP documents the why, what, how, how much, who, when, and where for your project, as in the table below:

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).
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.



Typical stakeholders of the PMP

Role	Responsibility
Sponsor	Approval of the PMP
Project manager	Ownership of the PMP
Project board / governance	Review of the PMP (sponsor has the final approval). In particular the representative of the end users (to ensure the project will deliver what the End Users expect), and the representative of the Suppliers (to ensure the technical deliverables are possible).
Project team members	Authorship of the PMP may involve specialist expertise, such as planning, finance, facilities.
Project management office	Providing support, data input, use of tools and templates, standards (e.g., PMP template).
Project assurance (could be part of the PMO)	Reviewing and providing confidence the PMP is being written in accordance with any standards, and that the content of the PMP meets the need of the project and stakeholders.



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.



4.5 Risk analysis and management

‘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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Purpose of risk management

As per the definition, the purpose of risk management allows individual risk events and overall risk to be understood and managed proactively, optimising success by minimising threats and maximising opportunities.

How well risks are managed will often be one of the 'success criteria' used to judge the effectiveness of the project and the calibre of the project manager. It can also supply useful data in the form of lessons learned (good or bad) which can reduce uncertainty, improve decision making, and reduce issues being raised on future projects.

Risk management is not just about the risks themselves – the organisation's attitude to risk taking and appetite for risk will drive behaviours and decision making at an individual, corporate, and global level, so equally must be understood from the outset.

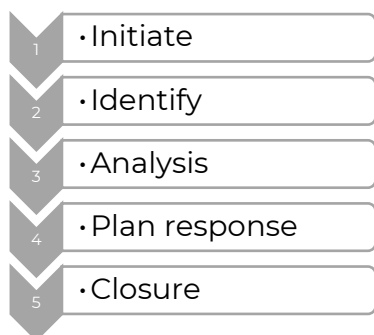


Some definitions in risk management, from the APM BoK 7:

Term	Definition
Risk	The potential of a situation or event to impact on the achievement of a specific objective.
Risk Event	An uncertain event or set of circumstances that would, if it occurred, have an effect on the achievement of one or more objectives.
Risk Appetite	How much risk investors are willing to tolerate in achieving their objectives. Expressed as risk thresholds or tolerances.
Risk Attitude	The perception driven choice of a person or group about an individual risk, or overall riskiness of a project, programme, or portfolio.

Project risk analysis and management (PRAM)

The APM PRAM process includes five key activities:





Important note: the activities are iterative in nature and the overall process must be actively managed.

1. Initiate

The 'Initiate' phase determines how risk will be managed on this project. This is documented in the risk management plan (part of the PMP) that documents the process, responsibilities, and tools that will be used to ensure effective risk management.

The two main activities carried out are:

- **Define the project:** Capture the project objectives, scope and constraints and ensure they are fully understood.
- **Focus the risk management process:** Capture factors such as the project size, complexity, and strategic importance. These factors will determine specific activities, roles, tools, and reports used to manage risk.

The **risk management plan** will be produced for the second part of this step and will form part of the PMP. It will also include scales for impact and probability, appropriate risk categories, and guidance on how to allocate ownership of risks and establish the content of the **risk register**.

2. Identify

When identifying risks, the project manager should consult with team members, customers, subject matter experts, and other relevant stakeholders.



A number of techniques may be employed to help identify risks, as in the following table:

Technique	Description
Assumptions Analysis	Analyse the level of confidence of the assumption and the level of sensitivity (i.e., the level of impact) on project objectives if the assumption is not correct.
Constraints analysis	Constraints are reviewed to consider whether the constraint imposed introduces risk to the project.
Checklists	Risks are identified based on criteria derived from previous projects or other standard approaches.
Brainstorm workshop	Group session engages attendees from a range of disciplines to utilise their experience.
Interviews	Structured discussions of project risks when it may not be suitable to have a group meeting.

Whichever of the above methods are used, the results will populate a risk register. The register will be used to record, monitor, and track information generated by all subsequent steps in the PRAM process.



Example risk register

ID	Cause	Event	Effect	P	I	Response	Actions	Owner	Status
1									
2									
3									
4									

An effective risk description comprises three parts: a cause, the event and the effect of the risk occurring.

- **Cause:** the source of the risk (i.e., the event or situation that gives rise to the risk).
- **Event:** this should describe the area of uncertainty.
- **Effect:** this should describe the impact the risk would have on the project objectives, should the risk materialise.

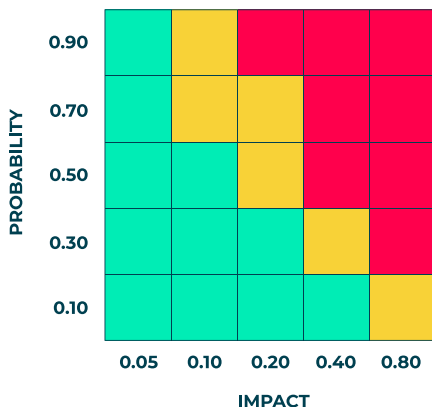
3. Analyse

The risks are always qualitatively analysed to determine the probability of each risk occurring and the estimated 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 scales for the classification of each risk (e.g. very low – very high), which would be documented in the Risk Management Plan. Each risk is plotted on a 5x5 probability-impact grid to determine their relative priority and highlight the most significant risks.



An example of this can be found below:



4. Plan responses

Risk responses can be proactive or reactive.

A **proactive** response is one that is planned to address the impact and/or likelihood of a risk, actions will be planned and carried out by risk owners within an appropriate timeframe.

A **reactive** response is a response that will be put into place where a risk cannot be dealt with proactively. The risk is accepted for now, but if a linked event occurs then a pre-approved (and funded) contingency plan will be put into operation.



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

Threats	Opportunities
Avoid: Threats may be avoided by eliminating the cause (e.g., remove a work package, or even stop the projects).	Exploit: The scope is changed to ensure that the opportunity definitely happens.
Transfer: The responsibility for bearing the impact of a threat is passed to another party (commonly used to transfer financial impact e.g., insurance or penalty clause).	Share: Some or all of the opportunity is allocated to another party who is best able to realise the benefits.
Reduce: An investment of effort or budget to mitigate the probability and/or impact of a specific threat.	Enhance: The probability and/or impact is increased by some form of proactive measure, for example adjusting a plan.
Accept: Passive acceptance means that nothing will/can be done to address the threat, Active Acceptance involves doing nothing at present but having a contingency plan ready if the risk should occur.	Reject: Reject the opportunity because the benefits are not significant enough to warrant action.



5. Closure

The project manager must ensure that risk response actions are undertaken and have achieved the desired outcome. Risk owners are accountable for the mitigation of risks allocated to them.

Risk events must be continuously monitored, with stakeholders updated on their new status using the risk register and other formal status reporting tools as required.

The risk management process should be regularly reviewed to ensure its effectiveness. Any agreed process modifications must be documented in an updated risk management plan.



Notes:



RECAP questions – Definition

1. The APM definition of the project scope does not include which of the following?

- A. Outputs.
- B. Benefits.
- C. Outcomes.
- D. Resources.

2. During iterative project delivery, the project scope:

- A. May be altered if new priorities emerge
- B. Must deliver all requirements analysed through the MOSCOW technique
- C. Must be defined in detail during the first iteration
- D. Is more important than time and resource constraints

3. A Responsibility assignment matrix is created by combining which of the two following breakdown structures?

- A. WBS and PBS.
- B. PBS and CBS.
- C. OBS and WBS.
- D. WBS and CBS.



4. Which one of the following statements about the project management plan (PMP) is false?

- A. The PMP, once defined, will remain unchanged throughout the project.
- B. The PMP defines the baselines for the project against which scope changes are considered
- C. The PMP is used as a reference document for managing the project.
- D. The deployment baseline forms part of the PMP.

5. Which technique relates the potential cost of a new project to a previous, similar project?

- A. Analogous estimating
- B. Parametric estimating
- C. Bottom-up estimating
- D. Delphi estimating

6. What does the critical path show?

- A. The most important tasks.
- B. The tasks with the greatest number of resources assigned to them.
- C. The tasks that must be completed on time to achieve the agreed end date.
- D. The tasks that will impact a subsequent task if delayed.



7. Which of the following statements is true about timeboxes?

- A. They ensure that the entire scope is delivered.
- B. They help to identify the benefits of the project.
- C. They consist of the key design, build and test stages within the project's deployment phase.
- D. They have a fixed end date.

8. Purchasing insurance is an example of which type of risk response?

- A. Transfer.
- B. Share.
- C. Reduce.
- D. Avoid.

9. What is the missing stage in the risk management process: Initiate, Identify, Analyse, _____, Closure?

- A. Prepare risk log.
- B. Assess.
- C. Plan response.
- D. Quantitative evaluation.



10. Which of the following statements is true of resource smoothing?

- A. It will extend the end date of the project.
- B. The key constraint is the maximum number of resources available.
- C. Smoothing focuses on activities that are not on the critical path.
- D. Time is less important than resources when smoothing.



5.0 Deployment

The deployment phase is where the project management plan is implemented. Project progress must be measured, managed, and reported.

Topics covered in this module include:

1. Issue Management (7.5 – 7.8)
2. Quality (8.1 – 8.5)
3. Change Control (5.5 – 5.7)
4. Configuration Management (5.8)
5. Recap Questions



5.1 Issue management

Issues are ‘a problem that is now breaching, or is about to breach, delegated tolerances for work on a project (or programme). Issues require support from the sponsor to agree a resolution.’

APM BoK, 7th Edition

Purpose of issue management

Issue management is an important element in project control. It supports the principles of good governance by ensuring the appropriate level of decision making is in place.

Escalation provides assurance to the sponsor and other key stakeholders that the project is being managed effectively, that checks and balances are present, and that appropriate resolutions are selected and actioned.

This, in turn, helps generate trust and commitment from the stakeholders, another key principle in the governance of project management.

Risk vs. issues

Issues and risks are closely related, but they are not the same. It is important to understand the differences to avoid duplication of work or, worse still, lead to omission of work,



which can lead to unresolved issues that will grow and have a negative effect on achieving the project objectives.

A **risk** description will contain the words 'may, might, could happen' or begin with the words 'what if?', i.e., there is a degree of uncertainty in the event occurring.

An **issue** will be described using the words 'is, will or has happened', i.e., there will not be any uncertainty of the event occurring.

A project manager will usually prioritise management of an issue (a problem now), over the management of a risk (a potential opportunity/threat in the future).

Important note: an **issue** only exists if the project manager cannot resolve a problem within their delegated tolerance of decision-making authority, i.e., it requires escalation to the project sponsor for resolution. This makes it different from a day-to-day **problem** which can be managed by the Project Manager without escalation.

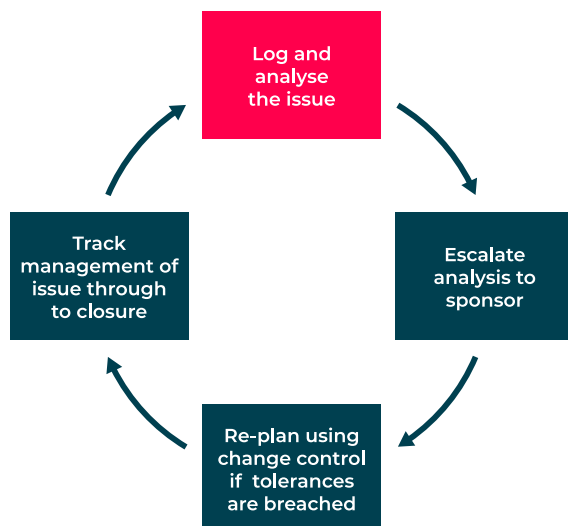
Technically, a risk that has 'landed' may become an issue, and unresolved issues can create uncertainty and lead to the identification of new risks.

However, the source of an issue may be a completely unforeseen event and not captured in the risk management process – therefore, a separate issues management process is required as a 'safety net' to capture anything not predicted in advance and where a 'Plan 'B' is not already in place. The process will be documented/ referenced in the PMP.



Issue resolution process

The key aspects of issue resolution are illustrated below:



Log and analyse the issue

As soon an issue is detected and reported to the project manager, it should be logged on the issue register.

An analysis must be carried out to understand the impact of the issue on the project if it is not resolved. This impact analysis should identify the impact on project scope, time, cost, and quality. It should also determine the impact on the project business case, expected benefits, and plans.



The priority of the issue needs to be set – this is often initially indicated by the person who raised the issue.

Escalate analysis to the sponsor

The project manager **must** escalate the results of the issue and risk analysis to the project sponsor, together with any recommended resolution and mitigation actions.

The project sponsor will need to approve any recommended actions. However, if this issue also exceeds the project sponsors remit – as set by the governance board – then the sponsor will need to escalate further before a decision is given to the project manager.

Re-plan using change control if tolerances are breached

If project tolerances are exceeded and result in scope changes, these must be managed using the documented (in the PMP) change control process.

This re-plan will result in a new project baseline, which must be managed using the documented configuration management process.



Track management of issue through to closure

The project manager must track and report progress toward issue resolution.

The groups or individuals carrying out the resolution actions must report to the project manager, using the mechanisms agreed when the actions were given to them.

Once all of the agreed resolution activities are completed, the issue can be closed-out and the outcome communicated to all affected stakeholders.



5.2 Quality

'Quality' is defined as the fitness for purpose or the degree of conformance of the outputs of a process, or the process itself to requirements.'

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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 stakeholders.



Project quality management

Quality management is ‘a discipline for ensuring the outputs, benefits, and the processes by which they are delivered, meet stakeholder requirements, and are fit for purpose.’

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Quality management covers three key components:



Quality planning

Quality planning ‘takes the defined scope and specifies the acceptance criteria used to validate that the outputs are fit for purpose to the sponsor.’ (APM Glossary)

Quality planning, a pro-active action, details the desired quality of the work defined in the project scope, along with the means by which to test the quality. The resultant quality



management plan will also reference any applicable external regulations and standards.

Quality planning involves consultation with stakeholders in order to establish their needs and expectations.

Understanding the needs and expectations of the stakeholders will provide the foundation for agreeing appropriate acceptance criteria.

'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 plan provides guidance on planning for assurance and control activities. It is important to do this after scope definition, but before any further planning, as quality management activities take time and consume resources that need to be scheduled and costed.

Quality assurance

Quality assurance (QA) can be thought of as the process of providing confidence to stakeholders that the project outputs are fit for purpose and meet stakeholders' needs. It is a proactive activity undertaken by a person or body independent from the project.

An important tool to provide assurance is audits. The aim of assurance is preventing defects and problems occurring in the technical and management processes, by ensuring that all processes are fit for purpose and operate consistently. The primary aim is to provide confidence to the



stakeholders that the agreed quality standards identified in quality planning will be met.

This is generally accomplished by providing:

- a standard methodology supported by consistent, standard processes and procedures.
- template documents to support effective data management.
- providing appropriate training and feedback.

QA reviews are generally targeted at key decision points in the project life cycle and based on clearly defined and agreed standards, as agreed in the quality plan.

All review methods used must be clearly documented and communicated. Assurance staff should have appropriate skills, training, and authority to carry out reviews as effectively as possible.

The purpose of QA is to independently review applied processes and aim to keep errors out of any applied processes, thus streamlining and adding value to project related activities.

Quality control

Quality control (QC) 'consists of inspection, measurement and testing to verify that the project outputs meet acceptance criteria defined during quality planning.' (APM Glossary).

Quality control is focused on preventing errors from being passed onto the customer. It applies to both interim and



final products equally. Agreement needs to be reached with regard to the degree of conformance of the output and what action to take in the event of non-conformance.

Both QA and QC will use a number of common tools that help ensure 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.

Hints and tips

Although quality control is important, effective project managers will 'build' quality into the development process through appropriate assurance measures, as opposed to detecting and correcting errors after the deliverables are complete.



5.3 Change control

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

APM BoK, 7th Edition

Change control ensures that the stakeholders understand and agree on 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. Unauthorised change results in 'scope creep'. Effective change control relies on a well-defined and agreed baseline, especially in relation to scope.

Sources of change

Any stakeholder may request a change to the project. As stakeholders may be internal or external to the delivery organisation, 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 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.



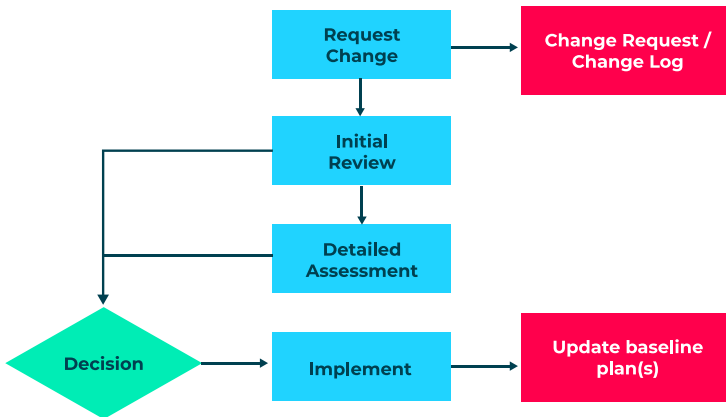
Requirements change:

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.

The change control process





Stage	Description
Request change	The person or body requesting the change provides the necessary information for the change. This is usually captured in a Change Request document.
Initial review	The initial assessment 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.
Detailed 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 to either approve the recommended change, reject the change, request, or defer it. The decision 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.



Using a standard template for change request forms (CRF or RFC) helps ensure that stakeholders have an accurate understanding of the rationale behind the change and have full knowledge of its impact.

The change log (or register) records a summary of all change requests. This allows an audit trail of requested changes together with 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

Configuration management ‘encompasses the technical and administrative activities concerned with the creation, maintenance, controlled change, and quality control of the scope of work.’ (APM Glossary).

Change control and configuration management are, therefore, closely linked: changes to any configuration item must be recorded, evaluated, authorised, and implemented in accordance with the agreed procedures, and communicated to the relevant stakeholders.

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 assets (that is, the products that the



project produces) should also prevent unauthorised changes being made.

Hints and tips

Change control is not optional and all changes should be documented, irrespective of how small they may appear and/or whether they are forced to go through the formal change control process.

5.4 Configuration management

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

APM BoK, 7th Edition

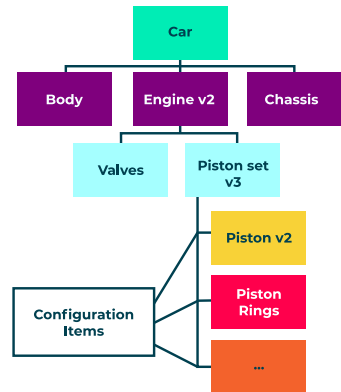
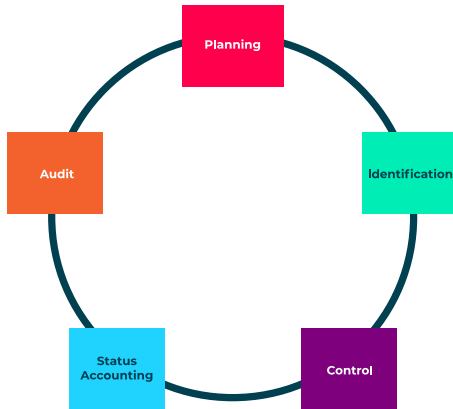
A configuration represents the functional and technical characteristics of the final integrated deliverables of the project. These are defined in the technical documents that inform the project management plan.

The configuration of a project comprises not only the technical products of the project, but also the management products in the form of documents created by the 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 requirements.



Configuration management process

Configuration management consists of the following five key activities:





Activity	Description
Planning	The configuration management plan provides guidelines for the level of configuration management required by the project. The plan documents how the project assets are to be protected, including any specialist tools to be used, along with the associated roles and responsibilities. The plan defines the identification scheme for configuration items (CI).
Identification	Each baselined CI requires a unique identification as well as the documenting of any related attributes (e.g., type of item, configuration item owner, status, version, relationship with other items etc.) The PBS typically defines or identifies the CIs.
Control	Only the authorised configuration item owner can approve and implement changes to the configuration baseline. Storage of CIs must be controlled and access restricted where appropriate to do so (including archived items).



Status
accounting

The current status and version of each CI 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
(verification)

As a minimum, the project assets should be reviewed at each stage gate to ensure that their actual status aligns with the current authorised version. This is particularly important at the point of transitioning, ensuring that the latest version of each project asset is delivered to the customer. This is generally carried out by an independent assurance/audit role.

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

Based on these roles, it is easy to see that in its simplest form, configuration management involves document and information version control.



Configuration management in context

The configuration management process is closely linked to the change control and information management processes (including version control).

Changes to any configuration item must be recorded, evaluated, authorised, and implemented in accordance with the agreed procedures and communicated to the relevant stakeholders.



Notes:



Recap questions – Deployment

1. What is ‘a problem that is about to breach delegated tolerances’?

- A. A crisis
- B. A risk
- C. An issue
- D. An off-specification'

2. A key purpose of configuration management is to:

- A. Ensure that each project team member understands their role and lines of reporting.
- B. Control the different versions of a project output during its design and development.
- C. Define the project scope in detail.
- D. Evaluate the impact of a change request.

3. Once a proposed change is logged it should then be:

- A. Accepted, rejected, or deferred.
- B. Accepted and the project plan updated.
- C. Sent to the project sponsor for approval.
- D. Assessed to determine its potential impact.



4. Which one of the following is not considered as a project change?

- A. An agreed reduction in the project scope.
- B. The potential for committed resources to be reassigned.
- C. The removal of features from the product backlog.
- D. Approval of extra expenditure to cover increased material costs.

5. Which of the following is not viewed as a key component of project quality management?

- A. Quality assurance.
- B. Quality planning.
- C. Six sigma.
- D. Quality control.

6. All of the following situations could be deemed a project issue except?

- A. The project will be delayed by one month.
- B. A supplier has not fulfilled the terms of their contract.
- C. The team might not achieve the agreed performance specification.
- D. Resources have been reassigned to another project.



7. Which configuration management activity is focused on ensuring that each project output can be distinctly recognised?

- A. Identification.
- B. Control.
- C. Status accounting.
- D. Verification and audit.

8. Which of the following is not a key step in the change control process?

- A. Review.
- B. Calibrate.
- C. Assessment.
- D. Request.

9. To which project activity is configuration management most closely related?

- A. Requirements management.
- B. Quality assurance.
- C. Change control.
- D. Risk management.



10. Whether the project team is following the correct deployment processes would be determined by which quality activity?

- A. Quality planning.
- B. Quality control.
- C. Inspection.
- D. Quality assurance.



6.0 People and behaviours

Managing a team requires the project manager to utilise a number of complementary interpersonal skills. These skills are also needed to engage the internal and external stakeholders who have an active interest in the project.

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

Topics covered in this module include:

1. Teams (10.3)
2. Team Development (10.4)
3. Leadership (10.1 – 10.2)
4. Communication (9.1 – 9.5)
5. Recap Questions



6.1 Teams

'A team is a group of people who are working in collaboration or by cooperation towards a common goal.'

APM BoK, 7th Edition

The following definition 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



6.2 Team development

‘The process of developing skills, as a group and individually, that enhance project performance.’

APM Glossary

Building a team concerns aligning individual skills, motives, and needs to a common goal. This will channel the energies of each team member towards achieving the goals and objectives of the project.

This process takes time, and a team evolves as the project progresses. Performance measures and reviews will need to highlight team progress and suggest changes to plans, work allocation, or management style to continue to keep team members focused on delivering the optimum team output and a successful delivery.

One of the first challenges of assembling a team is to try to find not just appropriate skills but also the right character and temperament for a role. Selecting the right person for a role is a combination of understanding what the role entails from a technical perspective, but also what person characteristics would best fit.

Teams and the project manager support each other in the delivery of the project objectives by:

- developing team members professionally/personally.
- providing an interesting and stimulating work environment.



- developing excellent communications and interpersonal relationships throughout the project.
- utilising a complementary mix of skills and experience, leading to creative ideas.
- greater commitment to project aims and objectives.

These traits provide the synergy whereby increased productivity, improved customer satisfaction, lower error rates, reduced scrap, efficient development/delivery, increased market share, and potential for innovation are the result.

Team development challenges

As a project manager, many team development issues will arise and need to be dealt with by:

- ensuring arguments are constructive (as opposed to destructive).
- embracing differing cultures, outlooks, priorities, and interests of team members.
- recognising that teams may form and re-form multiple times.
- roles need clarification to avoid conflicts.
- some team members may lack commitment and accountability.
- there is only a limited amount of available team energy.
- avoidance of 'groupthink' (groupthink develops when the closeness of the group makes consensus-seeking the dominant force which may in turn limit creativity).
- minimising team member incompatibility.



There are many theories and techniques that help form an understanding of the preferred style of team engagement of individual team members. These can also help in selecting team members or assist when considering personal development opportunities (which can often act as a significant motivator). Profiling may also be used as an icebreaker at team kick-off workshops.

Social Roles Model

Dr Meredith Belbin developed a profiling tool (in the form of a questionnaire and analysis) which identifies nine key team roles and their primary characteristics. The roles are focused around three key areas:

- **Task:** people who are focused on the task given.
- **People:** people who are focused on individual members in your team and the team as a whole.
- **Ideas:** people who are focused on problem solving and the challenge of finding innovative solutions.

Belbin further associated a specific role with each 'focus'. Just as with the focus areas, your team members can perform one or more of these roles. He also stated that an understanding of your team member's preferred role is important in order to assist in delegation of tasks, and that an imbalance of preferred roles within a team may have a negative impact on your team's overall success.

The following table gives a brief overview of Belbin's nine roles, grouped in three main focus groups: people, ideas, and task.

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.

Source: Belbin Team Role Summary Descriptions



When delivering your project objectives, support should be mutual between you and your team. To encourage this supportive environment, you should:

- develop your team members professionally and/or personally.
- create an interesting work environment that motivates your team.
- develop excellent communications and interpersonal relationships during your project.
- use a combination of skills and experience to build creative ideas.
- provide more commitment to project aims and objectives.

These traits increase productivity, improve customer satisfaction, reduce rate of issues, increase efficiency of development and delivery, and increase market share with potential for improvement.

Stages of team development

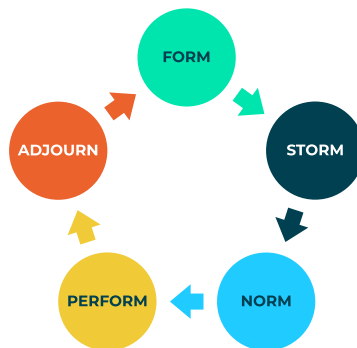
The project manager should be familiar with the process of forming a group of people into a project team that is to work together for the benefit of the project. Motivating and resolving conflicts between individual members of the team are important elements of teamwork.

A team is rarely a fully functioning, performing unit operating at the highest level of proficiency from the outset. Teams evolve through various stages to become a highly performing and effective team.



Tuckman's 'Stages of Development of a Team' is a popular model to use when considering the stage of development of the team as a whole or an individual team member. An understanding of the development stage of the team and individual provides valuable insight into development strategies for each.

Tuckman suggests teams evolve through four key stages of development followed by fifth stage of 'moving on' or adjourning. These stages can be depicted as follows:



Now we'll take a closer look at each of the stages of development:

1. Forming

Description and characteristics

As the team are new to each other, they exhibit confusion and uncertainty as they assess the situation they find themselves in. They may test the ground rules and make superficial inroads to becoming acquainted.



Leadership activities by the PM

Provide direction to the team by establishing clear objectives for the team as well as individuals. Establish processes and procedures and build trust and relationships between team members. Resolve conflict swiftly and remain positive and firm in the face of leadership challenges.

2. Storming

Description and characteristics

In this stage, the team have evolved to one of mistrust in each other as they eye up the 'competition'. This may be because they are unsure of their specific role and what it entails. Tensions start to surface, and cliques may form. This could be the result of misunderstanding over priorities and a struggle for leadership. One of the causes for this is the lack of understanding of the role and associated responsibilities.

Leadership activities by the PM

Explain the team development model so the team can understand why problems are occurring. Coach members in assertiveness and conflict resolution skills. Use a social roles model such as Belbin to help understand the differing preferred styles or role for each member.



3. Norming

Description and characteristics

This stage is characterised by the team members understanding their designated role, they start to build relationships and co-operate in setting goals and making progress towards achieving these goals. The leadership structures are accepted, trust is established, a team identity is created, and team spirit is built.

Leadership activities by the PM

Allow team members to take responsibility for progress towards achieving the final goal. Establish team building events and team identity. Develop relationships built on trust and commitment and a fair and just approach to resolving problems and conflict.

4. Performing

Description and characteristics

This stage is achieved when team members deliver results in an open, honest environment, with established communication channels. Problems are solved and the team adopt a flexible approach to working arrangements.

Leadership activities by the PM

Delegate as much as possible and adopt a light touch to managing the team. Focus on other goals and areas of involvement.



5. Adjourning

Description and characteristics

The adjourning stage is characterised by excitement, disillusion, anxiety, cheerfulness, a positive attitude, or sadness, amongst others.

This could be because the project was relatively successful, and the team bonded well with limited negative conflict, so may be sad to be broken up. Alternatively, the project suffered many negative setbacks and problems with the team enduring negative conflict and a lack of motivation, resulting in negative sentiments.

Leadership activities by the PM

Recognise the team's achievements and provide constructive (negative and positive) feedback on individual and collective performance. The PM should also facilitate the team's transition to their next project or back into BAU.



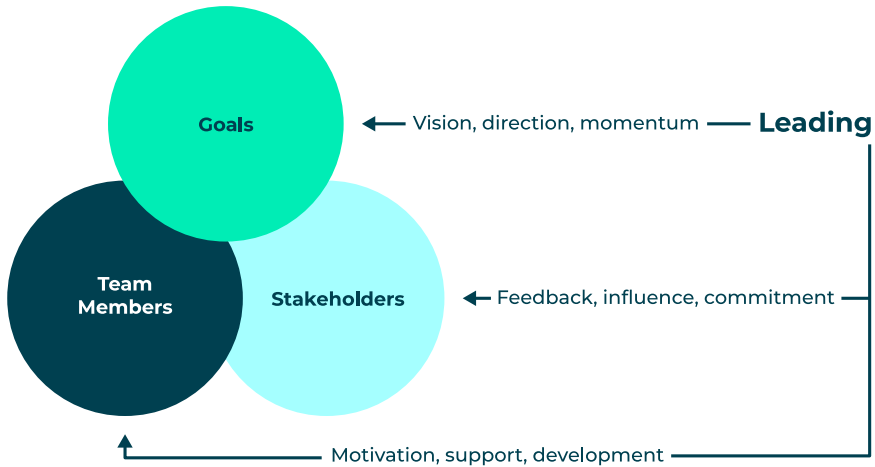
6.3 Leadership

‘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, 7th Edition

Leadership builds a common vision and goal, helping to develop a team who are motivated and working toward that vision. The primary focus of leadership is on building and retaining the vision, this includes the direction of the project, understanding and influencing the stakeholders to remain committed and motivated to achieve the vision, and continuing to support the team through the challenges they may face in an environment of change and uncertainty.

This, in turn, needs to be supported through effective feedback mechanisms and influencing techniques, to gain and maintain support and commitment to the project initiatives.



Leadership should not be confused with management. Management tends to focus on the mechanics of getting things done, including the important tasks of planning, monitoring, and controlling.

Leadership involves more subtle softer skills to motivate and make management easier. Leadership involves increased engagement with stakeholders, where being engaged is more motivating than feeling managed.

Virtual teams create special challenges for leadership, building a common vision and inspiring a team is not as easy when people are scattered. The softer skills are harder when people are not together and able to interact socially.

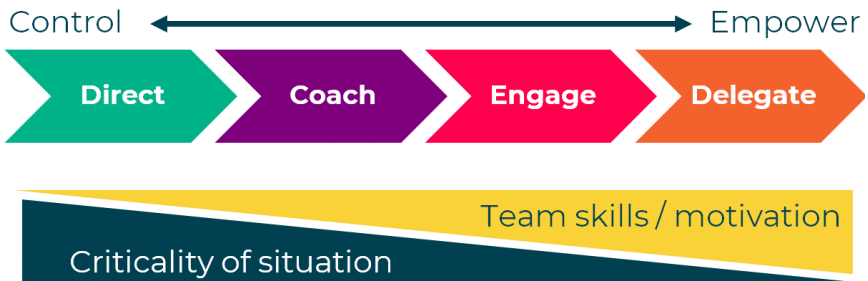


Leading the team

When a team is first assembled, it represents a group of people with different skills, competences, and personalities. Leading a team successfully requires a focus on an appropriate management style for both the team as a whole and for the individuals in the team. An experienced and skilled team member would feel that constant progress checking was an intrusion and would erode trust, whereas a new starter would feel encouraged and supported.

This means that the PM needs to constantly adjust and adapt their leadership style to suit the skill level or competency of the individual, the importance of the task being delegated and the criticality of the situation, and the attitude or willingness of the individual to perform the task.

Common leadership styles include:



- **Direct:** the PM provides clear instruction and closely supervises the team member.
- **Coach:** the PM offers guidance and the support required to develop the individual's skills and expertise.



- **Engage:** the PM motivates the team by encouraging the sharing of ideas and recognising their contribution.
- **Delegate:** the PM may provide input on what needs to be done but doesn't micro-manage by telling the team-member how to perform their tasks.

Hints and tips

Leading others means exactly that – the key mantra of any successful project manager is 'delegate, delegate, delegate'.

If you have inherited a team, take time to understand how the previous project managers led it. This is essential, because, as Confucius put it, you must 'study the past if you would define the future.'



6.4 Communication

‘Communication is the process of exchanging information and confirming there is shared understanding.’

APM BoK, 7th 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 understanding and feelings, both of which impact the meaning.

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

Communication methods

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

Face-to-face

Co-locating teams and regular face-to-face meetings are generally considered to be the most successful and media-rich communication method. It quickly builds rapport and shared understanding amongst the project team and other project stakeholders. Misunderstandings can be quickly identified and resolved where parties are in the same



physical space. However, this can also cause frequent distractions and hinder progress on project activities.

Physical communication

Non-verbal communication can be very powerful and might include body language such as gestures and facial expressions. Important tonal context can be injected into a communication through body language or the vocal tone and pitch that is used. However, when inappropriate gestures or tone are used, this can cause messages to be interpreted. It is also important to factor in the impact of cultural influences, especially when working with global teams or international customers and suppliers.

Virtual

The increasing use of virtual teams has accelerated the use of technology to ensure effective communication takes place between remote workers and, as a result, provides communication access to a wider resource pool for the project.

Numerous tools now exist for video-calling, file-sharing, and decision-making (e.g., MS Teams, Zoom, WebEx). It is important for project managers to continue to create opportunities for two-way communication as much as possible, in order to confirm mutual understanding and agreement.



Project managers can also use multiple communication methods to build understanding and keep stakeholders engaged. These include:

Visual

This could be through displays and message boards (for example- agile teams will often use 'big visible charts' such as Kanban boards and burndown charts). This is a simple, effective way of communicating simple ideas, however more complex ideas can be more challenging.

Written

Written communication includes letters, newsletters, reports, and noticeboards, but this approach is limited to using words and visual images. This provides a permanent record for auditing purposes and can help to reinforce points made in face-to-face communications.

There is the danger, however, that the extra meaning communicated by face-to-face communication can be lost, meaning that the message's intent could be misunderstood.

Electronic

The use of the internet has transformed project communication. 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. Shared folders allow for teams to communicate asynchronously (i.e., not at the same time) which means



those in different time zones can still be in regular contact. It can also help where individuals or teams are not co-located. The disadvantages of both virtual and electronic communication include relying on accessible and user-friendly technology and the lessened impact of the communication due to a reduction in physical interaction.

Communications plan

The development of a communications 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. An effective and realistic communications plan is based on rigorous and complete stakeholder analysis as part of the stakeholder engagement process.

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)?



Benefits of a formal communications plan

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

- Enhanced understanding of roles, responsibilities, and expectations within the team and other stakeholders as to what information should be shared, who should send or receive it, expected actions etc.
- Reduced potential for conflict due to misunderstanding and misinterpretation, which will ease the burden on project managers.
- Enhanced confidence within the project team and stakeholder community resulting from clear and transparent communication, this also helps to build credibility and trust with the project manager.
- Consistent transfer of project information that aids effective decision-making – decisions will be better informed and more likely to be made on a timely basis.
- Consistent and agreed communication channels will lead to more efficient working, as current and relevant information will be freely accessible – there will be less duplication of effort and/or time spent searching for information.

Hints and tips

Do not underestimate the power of informal verbal communication as a method of discovering what is really happening on the project. Ensure that your communication strategy provides the opportunity for this to take place.



Notes:



RECAP questions – People and behaviours

1. Which leadership would be most appropriate when managing a team of highly skilled and motivated subject matter experts?

- A. Direct.
- B. Coach.
- C. Engage.
- D. Delegate.

2. An advantage of virtual communication technology is that:

- A. It builds rapport quicker than face-to-face communication.
- B. It enables access to project information for a wider audience.
- C. It creates a record of all actions and agreements.
- D. It is easy for all stakeholders to access and use.

3. The project team comprises:

- A. all those responsible to the project manager who are working towards the project objectives.
- B. the members of staff who are allocated full time to the project.
- C. the members of staff who report to the project manager and who carry out work on the project.
- D. all project stakeholders.



4. Which of the following is not a Belbin social roles type?

- A. Plant.
- B. Shaper.
- C. Coordinator.
- D. Collaborator.

5. You have a completely unproductive meeting where your team members take sides within their cliques and refuse to listen to each other. What stage of development is the team most likely to be in?

- A. Forming.
- B. Storming.
- C. Adjourning.
- D. Performing.

6. Good teamwork helps to deliver a successful project because:

- A. Team members have similar skill sets.
- B. Project work can be distributed equally around the team.
- C. All team members have the same access to project information.
- D. People work collaboratively towards a common goal.



7. What is the primary objective of a project communications plan?

- A. Comply with environmental legislation.
- B. Reduce the number of formal meetings.
- C. Create and maintain stakeholder engagement.
- D. Harness virtual communication technology.

8. What method of communication is most effective in building mutual understanding and rapport?

- A. Face-to-face.
- B. Visual.
- C. Virtual.
- D. Written.

9. A project communication 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.

10. Which one of the following is NOT a function of leadership?

- A. Reinforcing positive relationships.
- B. Inspiring the individual team members.
- C. Maintaining constant tight control.
- D. Promoting the project vision.



7.0 Transition

'Will the last person to leave please turn off the lights...'

Transitioning a project into operational use should be a time for celebrating and recognising achievement. Formal closure and review are necessary, whether the project has come to a planned or premature end.

Topics covered in this module include:

1. Transition phase – Business Readiness and Administrative Closure (2.1)



7.1 Business Readiness and Administrative Closure

Transition is the fourth phase in a linear life cycle where results are handed over, commissioned, and accepted by the sponsor, culminating in formal closure.

The business needs to be ready for the receipt of the project deliverables. The objective of the Transition phase is then 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:

Business readiness – transition of outputs	Administrative 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 – ensure invoicing is complete, close all charge codes, etc.

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

Note: The post-project review is covered in the Reviews section of this workshop – and don't forget the importance of the adjourning phase of the 'team-development' model!



Notes:



8.0 Recap question – Answers

2.0 Projects and organisations

1. A
2. B
3. C
4. D
5. D
6. A
7. C
8. A
9. D
10. B

3.0 Concept answers

1. D
2. B
3. C
4. C
5. C
6. D
7. B
8. C
9. A
10. B



4.0 Definition answers

1. D
2. A
3. C
4. A
5. A
6. C
7. D
8. A
9. C
10. C

5.0 Deployment answers

1. C
2. B
3. D
4. B
5. C
6. C
7. A
8. B
9. C
10. D



6.0 People and behaviours answers

1. D
2. B
3. A
4. D
5. B
6. D
7. C
8. A
9. B
10. C



FANCY A CHAT?

0345 757 3888

INFO@QA.COM



QALtd



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