

Unit 2 – Project lifecycle and methods



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Learning objectives

To gain an understanding of:

- What a project life cycle (PLC) is
- Why a PLC is required
- What a gate is
- How a project becomes authorised
- What a project methodology is

The Project Life Cycle

The APM describes project life cycles in the following way:

“All projects follow a life cycle and life cycles will differ across industries and business sectors. A life cycle allows the project to be considered as a sequence of distinct phases that provide the structure and approach for progressively delivering the required outputs”.

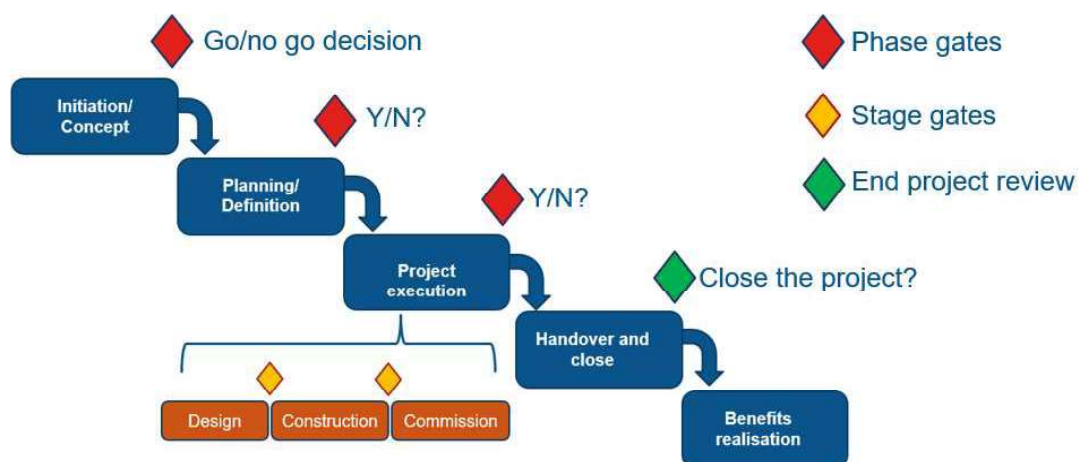
(APM Bok)

The purpose of a project life cycle is a way of controlling the project as effectively as possible. The reason for splitting the project into phases is that each phase will have a distinct piece of work to be done and by using the life cycle nothing will be missed.

The benefits of using a life cycle include.

- The project will be split into manageable chunks.
- It provides a mechanism for continual review of the of the projects progress compared to the plan, making sure that the business case is still valid.
- It ensures that the early phases of the project are not ignored. In the early phases of the project changes can be made that have a greater influence on the project for less cost. E.g. trying to make changes once you have reached the execution phase is going to cost a great deal more than they would during the initiation phase.
- Using a life cycle will help you with planning particularly with scheduling and estimating.
- The life cycle encourages the use of interim project reviews at the end of each phase.
- It will also facilitate the use of formal go/no-go decisions at the end of each phase. These are commonly known as gate reviews which we will cover later in this document.

The following is an example of a project life cycle with descriptions of the various phases. It is worth mentioning that this is not a definitive project life cycle as they can vary across the different industries and organisations.



The **project initiation/concept phase** is the first phase in the Project Life Cycle and involves starting up the project, which includes defining its objectives, scope and purpose and the deliverable to be produced.

There are six key steps in this phase which are:

- To develop a business case for the project
- To undertake a feasibility study
- To establish the Project Definition or Project Charter
- To appoint the Project Team
- To set up the project office
- To perform a phase review

This phase is the most crucial in the project life cycle as it defines the framework for the whole project and interfaces with project control as it supports the costing and planning inputs into the overall business case for the project.

In terms of costing, the accuracy of estimates will become more defined as the project moves through the planning and into the execution phases of the project life cycle. With regards to planning, the initial project plan will be based upon well-established models.

The **project planning/definition phase** involves creating a set of plans to help guide the team through the execution and closure phases of the project. The plans created during this phase will assist the project team in managing time, costs, quality, change, and risk issues.

They will also help manage external suppliers to ensure that the project is delivered on time, within budget and to the expected quality standards.

There are ten key steps in this phase which are:

- To create a Project Plan
- To create a Resource Plan
- To create a Financial Plan
- To create a Quality Plan
- To create a Risk Plan
- To create a Procurement Plan
- To create a contract for suppliers
- To perform a phase review

In terms of project control this phase is often the most challenging as the estimates and initial project plans created during the Initiation Phase now start to become more defined with a higher degree of accountability. The communication and procurement activities, especially with external suppliers will also need to be included.

In effect this phase requires the creation of a comprehensive suite of project plans which will form the 'project roadmap' from this point onwards.

The **project execution phase** is the creation of the project deliverables for the client and is usually the longest phase of the project life cycle. In a project control context this phase of the project life cycle is detailed further in the knowledge elements and the simulated project of the subsequent Units of the 'off-the-job' training programme.

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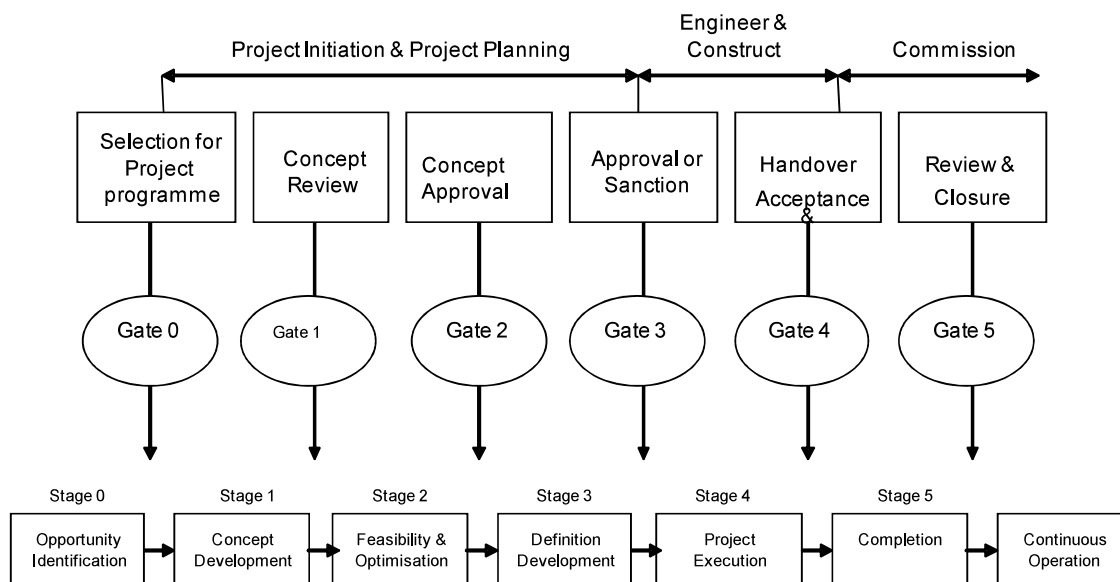
- To undertake project Time Management
- To undertake project Cost Management
- To undertake project Quality Management
- To undertake project Change management
- To undertake project Risk Management
- To undertake project Document Control and Management
- To undertake project Procurement Management
- To undertake project Handover and Acceptance Management
- To undertake project Communications Management
- To undertake a phase review

The **project handover & close phase** is when the project is officially completed and all of the project deliverables are passed to the customer. This phase involves compiling and submitting the relevant project documentation, closing all supplier contracts, releasing staff and resources and informing the project stakeholders of the closure of the project.

Lifecycle gates

The Project Process Model (PPM) incorporates best practice from a variety of sources and is a tried and tested method for delivering projects on time within budget and to the expected quality targets. Also referred to as the 'Gate Procedure' or 'Gate Process' it defines the way in which projects are managed and implemented.

A Typical Project Process Model



At each stage, approval is required from outside of the project team before proceeding to the next stage. The process requires documentary evidence at each stage together with an indication of who is able to approve the project to enable it to proceed through the gate to the next stage.

The PPM is a generic process which can be applied to any size of project regardless of the industrial or commercial sector. However, the level of detail required on the documentary evidence will be governed by the nature, monetary value and complexity of the project.

To enable the project to progress through the gate stages, the documentary evidence produced would be evaluated by a Project Control Committee, which would consist of individuals who are fulfilling the following roles:

The **Project Sponsor** is the person recognised within the business as the custodian of the projects' objectives and to whose area within the organisation the project applies. The role of the Project Sponsor may be undertaken by a variety of people within an organisation, but ultimately, one person should be the nominated individual.

The **Project Manager** is the person responsible for managing the project process, documentation and procedures as defined in the Project Process Model on time, within budget and to the expected quality targets.

Some projects which may be categorised usually by technical or commercial complexity, high cost or high impact on the business, may take a considerable period of time before it can be executed as a project. In these cases, a **Project Technical Manager (PTM)** is responsible for managing the early definition stage.

The **Commissioning Manager** is the person responsible for taking the project from conception through to operational start-up. This role may also be undertaken by the Project Manager dependent upon the size of the project or organisation.

Overview of the Process

The following information should be read in conjunction with the diagrammatical layout depicted above.

Stage 0 – Opportunity Identification

Opportunities for project proposals can come from a wide variety of sources within a business, such as engineering, business development or facilities management.

These proposals should be submitted in writing to a Project Control Committee which could be members of the senior management team of the organisation who are fulfilling the roles outlined above.

Gate 0 Selection of the Project

From the project proposals submitted, the Project Control Committee will discuss the requirements and impact of the project in both business and financial terms. Projects that are approved to proceed in principle will then pass through the gate to the next stage of the process.

Stage 1 Concept Development

Each project that has been approved in principle and passed through Gate 0 must now be developed into a more conceptualised format in both time and financial terms. However, the level of detail should be sufficient to enable a decision to be made as to whether the project should proceed or be killed.

Gate 1 Concept Review

The Project Control Committee will review the additional details provided and analyse this information in conjunction with the organisations business objectives. It is at this point that the project may be cancelled, deferred or approved in principle to proceed

Stage 2 - Feasibility and Optimisation

The purpose of this stage is to provide an opportunity to investigate alternative options across all aspects of the proposed project. This may require the input of other areas of the organisation such as procurement, sales and marketing and where necessary technical expertise.

At this point a 'first draft' of a Project Brief or Project Definition & Strategy (PDES) document should be compiled by the Project Manager. The details at this stage should be an expansion of the information provided previously and may include any legislative issues, health, safety and environmental aspects, preliminary risk assessments and a more detailed breakdown of the main financial elements of the project.

Gate 2 Concept Approval

The Project Control Committee will review the 'first draft' of the Project Brief or Project Definition & Strategy document and decide whether to cancel the project, defer it to a later date or approve it to be developed further for final approval or sanction.

Dependent upon the size and complexity of the project, the above two stages and gates may be undertaken and passed through simultaneously.

Stage 3 Definition Development

Upon reaching this stage, a project is ready to complete the pre-sanction design or definition of its purpose. In addition, Project Control principles will be introduced and followed through to project execution and closure.

The financial aspects relating to the project will need to be firmly established (e.g. Capital funds or any funding from an external agency) together with any unique aspects such as equipment with a long order period or specialist services required.

The main outcome of this stage is to develop the Project Brief or Project Definition & Strategy into a detailed 'working document' such as a Project Initiation Document (PID) or Project Execution Plan (PEP) which will provide the framework for the project in terms of objectives, outline business benefits and quality aspects.

Gate 3 Approval or Sanction

The Project Control Committee will review the Project Brief and any other supporting documentation and if they have the authority approve or sanction the project to proceed. However, in certain circumstances the Project Control Committee may need further approval or sanction before the project is endorsed as approved or sanctioned.

Stage 4 Project Execution

Once the project has been approved / sanctioned, The Project Manager will start to develop a Project Initiation Document (PID) or Project Execution Plan (PEP). Any changes that have been requested or imposed, such as design amendments, specification alterations or structure of the funding available, will be incorporated so that they remain as a 'live' working document of the project.

In addition, any equipment or specialist services which have a long lead time for delivery will also need to be ordered using the laid down procurement procedures of the organisation.

Throughout the Project Implementation phase there will inevitably be changes and these should be continuously incorporated into the any documents produced as part of the project.

Gate 4 Handover & Acceptance

The Commissioning Manager (or the person undertaking this role), will as the project moves into the implementation / operational start-up phase, accept and sign off specific elements such as equipment / services that have been installed or completion of certain elements.

Stage 5 Completion

The project is not complete until all of the necessary documentation, drawings, design specifications etc... have been compiled and accepted by the Project Sponsor.

Gate 5 Review & Closure

At a pre-determined point in time after project completion (e.g. six months), the Project Manager should undertake a Post Project Review. This is to confirm whether or not the project has met its objectives, especially those that were highlighted at Gate 3 of the Project Process Model. The stages / gates of the Project Process Model 0 through to 3 are Project Development and stages / gates 4 & 5 are Project Implementation.

The project management methodology

There are two ways to undertake the process of project management:

- In an unstructured and inconsistent way allowing individuals freedom to do whatever seems best
- In a structured and consistent way ensuring that a process driven methodology is followed

A project management methodology typically includes:

- A process model based around a life cycle
- Supporting procedures and sub-processes to cover specific elements of the overall method e.g. risk management process, change control process
- Checklists e.g. gate review checklist
- General guidance
- An organisation structure with clear roles and responsibilities e.g. role of sponsor, project manager, work-package manager, project board
- Templates for documentation e.g. business case, project plans and progress reports
- Tailoring guidelines to adapt methodology in different situations

Many organisations develop their own methodologies, based on open methods, e.g. PRINCE2™ and these may be applied in conjunction with development methods such as waterfall or agile.

The advantages of applying a methodology include:

- Provides structure (the procedures document developed and approved processes)
- Based on best practices (it works!)
- Consistency of approach and documentation
- Can be tailored for different types of projects i.e. high and low risk projects
- Improved management confidence
- Allows people to be trained in its use
- Improved governance
- Creates the environment for continuous improvement
- Avoids individuals re-inventing the same processes, sub-processes or templates
- Provides a common language

Example

This is the summary of an actual project management methodology. Each step of the life cycle will be expanded to show detailed processes, procedures, templates and roles and responsibilities.

