Summary of PMM010 Introduction to Project Management

This is a brief overview of module PMM010 Introduction to Project Management. It serves to remind you of the topics covered. You can dip in and out of this guide as needed to refresh yourself on these key foundational concepts.
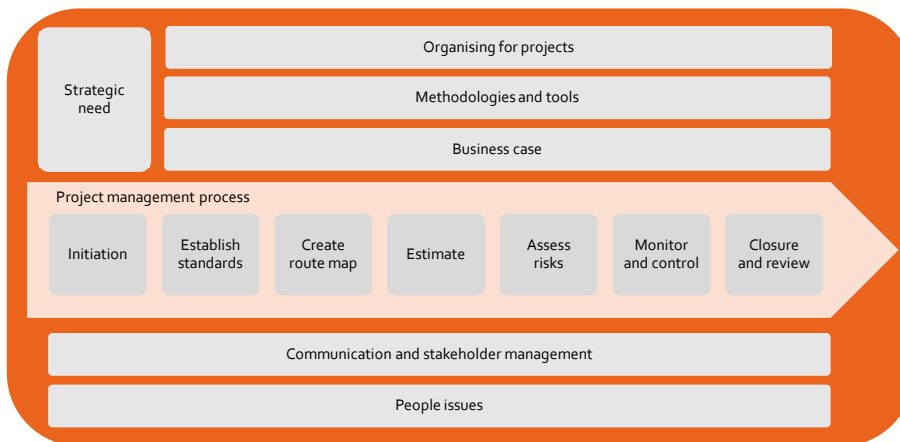
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Project management framework

Project management is the process by which projects are defined, planned, monitored, controlled and delivered. All else flows from that.

Figure 1: The project management framework

The strategic need

Strategies are how an organisation fulfils its objectives. These all require change, which is brought about by projects. This is the key role of projects: they are used to take what a company has now and change it into what the company needs in the future.

Organising for projects

The key principle is to have defined roles and responsibilities.

An organisation needs a project management team structure that is different to the business-as-usual structure. Projects draw on people from all over the organisation at different levels, doing different kinds of jobs. There must be an explicit project management structure that is different from normal day jobs. It is very important that each role has a name assigned to it.

Another key aspect is that all stakeholder interests are engaged, in particular the business interests, the users or the customers as well as suppliers (the people who are going to be delivering the output from the project).

A particular role is the business sponsor or, in PRINCE2 terminology, the executive. As they hold the budget, they are responsible for the business case and, ultimately, for ensuring that value is created by the project.

Methodologies and tools

The key thing about methodology and standard tools is to have them! Project management is about planning, delegating, managing and controlling all aspects of a project. A standard method using familiar documents, tools and vocabularies has immense value for an organisation in improving efficiency because everybody knows the terms and where to look and what to expect to see. It also improves effectiveness because it uses proven principles and makes it easier to adopt best practice.

Consequently, using a methodology reduces risk. This is a key issue with projects because each one is unique and has never been done before. Doing something for the first time always leads to more uncertainty.

The key project methodologies are as follows.

- PRINCE2, which is a UK government-based methodology. This module doesn't teach PRINCE2, but everything you learn will be compatible with PRINCE2 and nothing will contradict it.
- The Project Management Institute (PMI) makes use of a project management body of knowledge. This is a US-developed standard and is used by US corporations. It is efficiency driven.
- The APM approach comes from the European tradition of industrial and product manufacturing.

These different methodologies are compatible with each other and don't dramatically contradict each other. But the emphasis, terminology and processes are somewhat different. What you learn on this on this module is compatible with all of them.

The product-based planning we are going to be learning, which is fundamental to the PRINCE2 approach, is compatible with other approaches.

The business case

A key principle of project management is that the project has **continued business justification**. This means that there was a justified reason to start the project and this remains the same throughout the life of the project. The business case is where this justification is documented and approved.
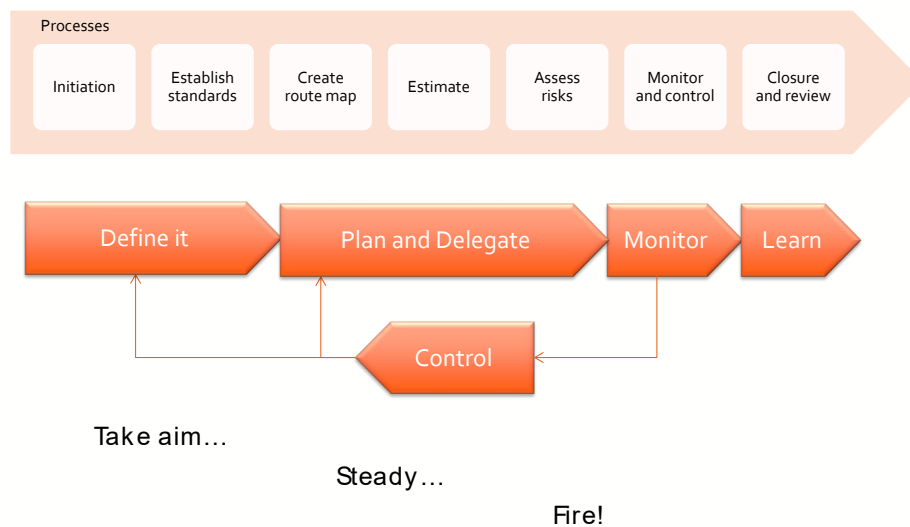
Project management process

Figure 2: The project management process

Central to project management is the project management process. It applies to managing either the whole project or part (or stage) of a project. It is in the processes that the project management methodologies differ most.

A process is a set of structured activities designed to transform an input into specific outputs or objectives. In the case of project management we have to:

- Define what the project is by **initiating** it and **establishing standards**.
- Then we need to plan the project and delegate the various tasks to people. This involves **creating a route map**; **estimating** the effort and time required and the resources needed; and **assessing risks**.
- Then once you've set the plan in motion, it's unlikely to run strictly to plan. Inevitably progress will diverge from the plan, so it's necessary to **monitor** when things don't go according to plan and take action. This **control** involves replanning, for example, by revising resources or timescales.
- Finally, when you **close** the project or stage, always **review** what you learnt and so improve in the future.

Communication and stakeholder management

Communication is a key aspect of project management. People are drawn from all parts of the organisation and across organisations, sometimes many of them working part time. So communication is vitally important. Or, to put it another way, failure to communicate well is a key source of project failure.

Project managers spend a lot of their time communicating, putting together information and presenting it to key stakeholders, both internally and externally, particularly customers and suppliers.

It is important to create this bridge across the diverse groups of people involved, including different cultures, expertise, perspectives and interests. By cultures, we don't just mean different nationality or ethnic cultures. There are dramatically different working cultures between marketing departments and engineering departments or finance departments, for example. They are cultures in their own right. The role of the project manager is to breach that gap in cultures.

People issues

Projects are done by people, obviously. People are therefore are key risk factor that can make or break the project. This includes the project manager, which you are aspiring to be. There are so many qualities required that it is quite difficult to find them in one person. In this module, we will be exploring, in particular, the difference between leading and managing.

Project management principles

Principles are the foundation of good practice in project management and apply to every project. They have been proven in practice over many years.

Continued business justification

A key emphasis in this module is on continued business justification and we will be repeating this a lot in the course of this module.

Learn from experience

This means not only learning from past projects, but also continuing to learn lessons throughout the life of a project, from one stage through to the next.

Defined roles

It's important to implement a management structure with clearly defined roles for projects.

Manage by stages

Projects of any length are too complex and uncertain to plan in detail from the start. Therefore, the principle is to break the project into stages and then have an overall high-level plan of the whole project and a detailed plan only for the current stage. Detailed planning for the subsequent stage is completed as you approach the end of the current stage. This allows a detailed plan to emerge from the current status of the project, taking into account lessons from earlier stages.

Manage by exception

This allows managers at every level to delegate responsibility while applying the necessary amount of supervision. For any package of work being delegated, key parameters such as time, cost, scope and quality are given defined tolerances. Escalation to the management level above is only needed if these tolerances are likely to be exceeded.

Focus on products

Products are final or intermediate deliverables from the project. These can be physical, like a piece of equipment or a document, or intangible like a changed process or newly trained workforce. This module teaches a product-based planning approach that involves planning around deliverables rather than activities.

Tailor the methodology to suit the environment

This simply means don't be straitjacketed by any methodology you adopt. Simplify it or make it more complex depending on the nature of the product or organisation.
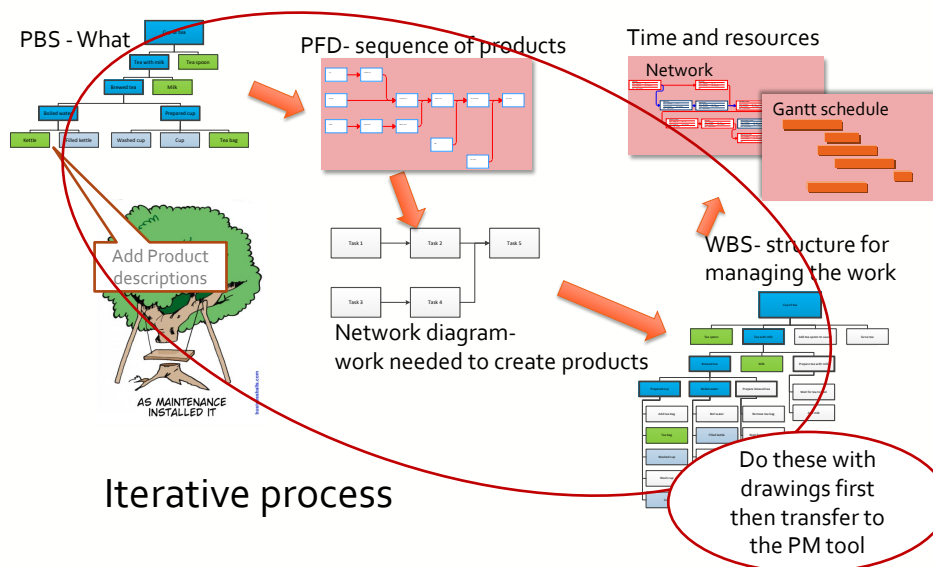
Project planning method

Figure 3: The approach to planning

This is the design process. Using the drawing tool, you must first build a **product breakdown structure**, which defines what it is you are going to deliver throughout the project (i.e. all the sub-deliverables).

Then you create your **product descriptions**, ensuring you are clear so that everyone involved has the same understanding about what each sub-deliverable actually is.

Next you **sequence the deliverables** with a product flow diagram, which includes the order, but not timing, in which things are going to be delivered.

From that, you can **build a network diagram**. This is the work that is required to produce the products. Make sure that you include what work needs to be done and an outline of what tasks are needed to create deliverables.

This is put into a **work breakdown structure** that you will use to manage the work.

At this point, transfer this information to your **software project management (PM) tool**.

You can use the PM tool to plan resources and produce a Gantt chart to schedule the timing of when things will be done and products delivered.

This is an iterative process that has to be revised until you think that you have produced an acceptable plan, in terms of scope, budget and timescale and which works within the available resources or staff, suppliers and equipment.

Project management approaches: waterfall and agile

The waterfall approach emphasises stages that follow each other in a logical order. This makes a lot of sense for many types of project. However, it can be inflexible. Projects that are primarily information technology (IT) based are difficult for end users to envisage and software is very flexible in terms of delivery. IT systems and software products lend themselves to incremental delivery. There is also the option to deliver a minimal level of features of a product and to keep providing releases and improving these. That is not a realistic strategy if you're building a dam or staging a music festival.

The need to cater for this flexibility or agility has led to the development of a different approach, known as 'agile' project management.

The approaches represent different philosophies. In waterfall, there's a lot of emphasis on processes. This is structured as a set of steps leading to an output. With agile, the focus is on individuals and their interactions. Waterfall has a greater emphasis on documentation, whereas in agile, it's all about getting working deliverables into the hands of users. Waterfall places great importance on defining requirements before you move on, whereas agile is all about customer collaboration and making changes in response to user reactions.

Waterfall frontloads effort in planning and emphasises knowing what you are going to do before you start doing it. For example, for a dam construction project it is pretty important to know where you are going to put the dam before you start blasting rocks and pouring concrete. Software is not like that – much of it easily changeable (e.g. screen layouts). We could say that agile is about responding to change: putting something in front of the customer, seeing what and how they react to it or how they work with it and then altering it. It also allows rapid adaption to market changes.
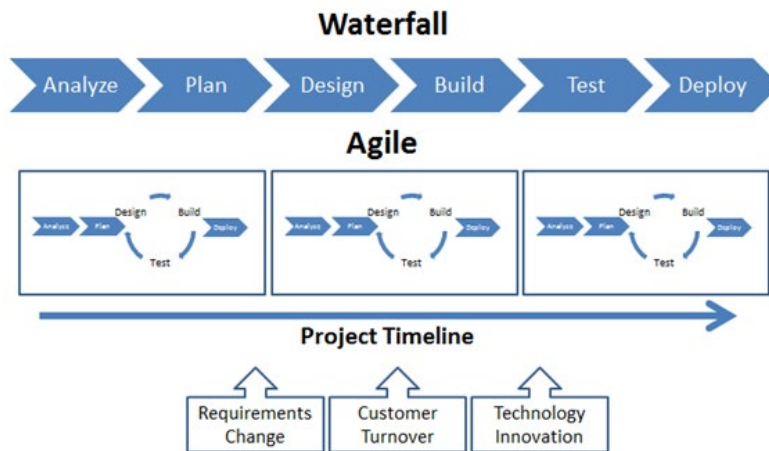
Figure 5 shows how it manifests.

Figure 5: Agile vs waterfall

In summary, in the waterfall approach, each stage logically follows from the previous one. You start by analysing the situation, making a plan, designing and building the product, testing it before it is deployed. In agile, this process is accelerated into a whole series of lots of different deliverables. The cycle of analyse, plan, design, build and test is done on a limited product before putting it out there and seeing how people react to it. This process is repeated again and built on. This approach can respond rapidly to changes such as requirements, customers or technology during the course of the project.