What is

Project Management?

An Introduction

Prepared By

P P P M Project Management Services LLC

P P P M
Project
Management
Services LLC

Why This Introduction?

Are you starting out in project management? Do you need to work with project teams as part of your role? Or perhaps you are just curious to find out what it's all about.

The purpose of this document is to introduce you to the basic concepts that lie behind the discipline of project management.

It gives an overview of what we mean by a project, how it differs from other business activities, and the basic process that is used to deliver one.

Once you have read this short paper, if you are interested in finding out more, please go to the back of this document, where you can find contact details for P P P M Project Management Services LLC.

Projects

Projects are everywhere. If you see a bridge, or a hospital or a highway, it's likely that these will have been built as a project using project management techniques. We all have some experience of projects, but we may not be aware of what they really are and more importantly, how to deliver one successfully.

When done properly, projects are an effective means of delivering change, and if you interface with a project team, work in one or wish to join one, it is essential to understand how a project works.

Whether it's developing a new drug, or sending a mission to another planet, it is now common for organisations to introduce change via projects.

The techniques used to manage a project are distinct from those used in general management. An organisation's projects are less likely to succeed and it will leak value unless it is aware of this.

Most organisations employ project teams, either directly or in their supply chain. For the individual, knowing the concepts, processes and terminology used in projects will enable you to work better with and in a team.

All projects are unique and temporary. They must also deliver results within pre-defined constraints on scope, time and cost. Achieving this needs a specific set of structures, tools and techniques to manage things like project planning, project execution and to ensure appropriate risk, change and quality management.

Although project management contains elements that are common to all management processes, it is a fundamentally different way of managing activity. We will examine this in more detail later on, but the reasons behind this include the transient nature of projects and the specific constraints laid upon them.

Key to good project management are good people skills. Proficiency in leadership, communication, negotiation and conflict management are critical to project success.

Whether or not you have other management experience, to do projects well, you will need a different set of tools.

How do we define a project?

There are several ways of defining a project. One definition, as used by the Association for Project Management (APM), is that a project is “a unique transient endeavour, undertaken to bring about change and to achieve planned objectives”.

Let’s unpack that a bit. The key elements of this definition are:

- Uniqueness
- Transience
- Change
- Planned objectives

We can look at what each of these means.

A project is unique. No two projects are the same. They can seem similar, but each one will have its own objectives and issues. If we discover at some point that we are doing virtually the same project over and over again, we are probably in a “business and usual” situation, which requires a different management approach. We will look at this more closely later.

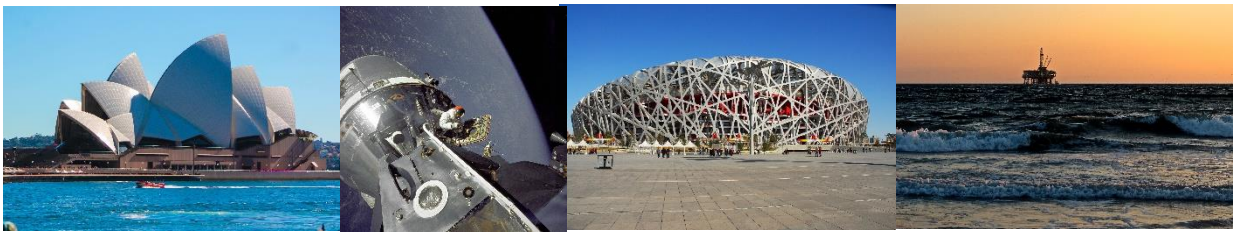
A project is transient. It has a start, a middle and an end, and then it ceases to be. The duration of the project may be quite long or quite short, but the key feature is that one day it will hand its outputs over to an operational team, or a user, or a client, or a similar recipient.

A project deals with change. There are many ways we can bring change to an organisation, but frequently, projects are used as the delivery vehicle for this. Whether this is to create a new product, or to change an organisation's structure, the methods used to manage projects are particularly suited to managing change. For example, in projects, we must involve and engage stakeholders, manage risk, and do many other things that are good practice when managing change.

A project has planned objectives. We say, before we start, what we will deliver and how we will do it. We estimate the cost and time required to do so. We are very deliberate in defining, agreeing and communicating what we will (and what we will not) achieve or produce as part of a project. To leave uncertainty or open ends invites disappointment, over-run and failure.

The world is full of projects. Here are some examples.

- The Sydney Opera House
- An Olympic Games
- Putting a man on the moon
- An offshore oil platform



As we can see, all of these are all different, unique. There is only one Sydney Opera House and every Olympic Games is different.

They have a finite time span. Can you imagine what would happen if an Olympic games was late? There is also a fixed budget. We have all heard news items about projects that cost far more than planned – which means that someone must have set a budget in the first place.

They all started with an objective. Think of President Kennedy's speech where he committed to put a man on the moon (and return him safely) by the end of that decade.

They all brought change. The world was a very different place once someone had actually landed to the moon.

As well as the above, we notice that they have all brought benefit. An Olympic games bring many benefits, for example spectators, for competitors and the host nation. The Sydney Opera House became an architectural icon, brings in much revenue and is a place where many people have enjoyed a range of different artistic performances. Oil fields, and the platforms used to produce the oil, usually bring huge benefits the host nation, for example for the economy and for skills and for exports. There have been countless innovations that resulted from the "space race". In all of these cases, the benefits far outweighed the cost and have persisted way beyond the project's lifecycle.

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

Why is a project different?

We can identify certain characteristics that are common to most, if not all, normal business activities. However, projects are different, and we can describe certain characteristics that lead us to manage them differently.

With “normal” business, we tend to find that activities continue indefinitely and there is usually repeated production of the same thing. Business tends to value consistency and continuity, since predictability increases confidence and efficiency. In fact, we intentionally develop a stable and repeatable way of doing things, in part because it makes things more efficient. Connected with this, change normally comes incrementally, partly to maintain stability. When we think of the outputs from “normal business” we tend to find that a product normally has a lifecycle, at the end of which, we improve or replace it. Finally, money and resources for activities are normally provided from operational budgets, which are reviewed and refreshed annually.

We could call this “business as usual”. Projects, however, are different.

With projects, the change that gives them birth is normally singular or unique. It is unlikely to be repeated, at least not exactly the same way, and therefore, there is usually a unique project scope and set of deliverables. This is because the business often wants step change and transformation from its projects. Although a project usually operates under a standard and repeatable set of processes, the way each project is implemented is unique. Projects are usually allocated a limited time (and budget) within which to work and change often comes swiftly. This is partly because the whole reason a project exists is to bring some sort of change and normally, swift change brings swift benefit. Like "normal business", a project also has a lifecycle, but it is internal to the project and it ceases when the project ends. Finally, money for a project is usually provided via a specific business case.

A comparison of typical features of projects and "business as usual" is given in the table below.

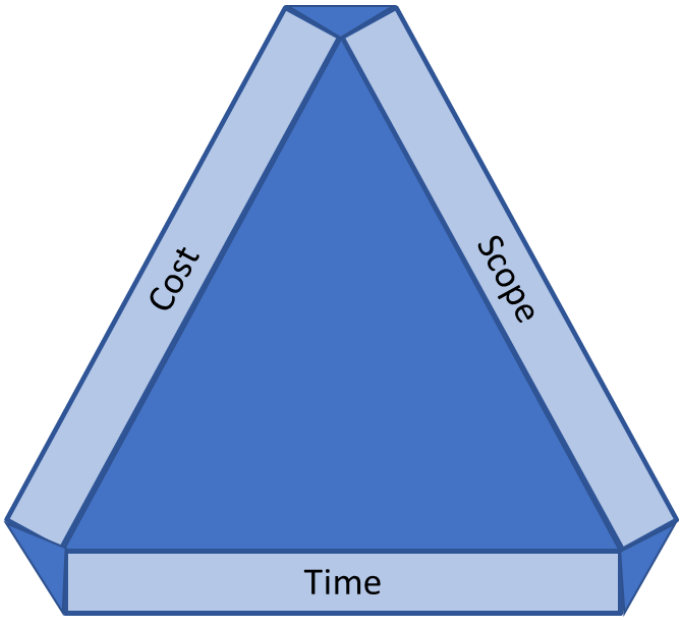
Project	Business as Usual
Introduces change	Prefers stability, often to gain efficiency
Has a time constraint	Continues indefinitely (may be repetitive)
Has unique plans & risk	Common procedures to achieve consistency
Scope is (uniquely) defined with one-off deliverables	Often has repeated production
Project lifecycle (discrete steps in a finite time)	Product lifecycle (but not usually in a finite time)
Step change and transformation	Continuity, consistency & incremental improvement
Requires specific business case	Normally funded from operational budgets

Because of these differences, we need a different process or methodology to manage projects.

Project management Due to the differences between a project and "business as usual", and because a project has unique scope delivered within defined limits, a project needs to be managed managed in a different way – using project management.	There are generally accepted methods of managing projects, along with associated competencies. Although they take several forms, they all revolve around the same core concepts and principles. In the same way that we can define a project, we can also define project management. One definition, that of the Association for Project Management, is that project management is, "the application of processes, methods, knowledge, skills, and experience to achieve specific objectives for change". Project management ensures that the stated scope is achieved, but, critically, that it is achieved within the required cost, time and quality constraints. There are no prizes for delivering late, over budget or to the wrong degree of quality. Conversely, you can be within all these boundaries, but if you don't deliver the agreed scope, you will have failed.

So, by their nature, projects are subject to constraints. This is a key reason why projects need to be managed differently. To keep within all these boundaries requires a different process and skill set. And we must commit to these before we execute – they are planned.

We often call these three constraints of scope, cost and time the "iron triangle", since there is a firm relationship between them. There are other constraints too, such as quality and risk, but we will deal with these later. Suffice to say that you cannot (usually) vary one without affecting the other. This means that (normally) it's a zero-sum game, and there are trade-offs and compromises.



For example, if you add to a project's scope, you will normally incur greater cost, and/or it will take longer. For example, after being asked to manufacture a compressor, a gear train is subsequently added to the scope, it's common sense that this will cost more. It will also take longer to do, unless you manufacture them in parallel, which will require more resource and therefore increase cost still further.

If you reduce the amount of time available, you can still deliver the same scope, but you will probably increase cost. Taking our example above, you can finish the compressor sooner, but you will probably have to increase your resource which will involve more cost.

Because of this, these boundaries are sometimes known as "competing constraints".

Given this, you can see why it is so important to tie down requirements as completely and as accurately as possible*, to gain agreement within the project stakeholders and to manage any change to them once they are set. Otherwise it becomes very much harder to complete the scope within the cost and time allocated. Projects use tools such as scope definition, work breakdown structures, schedule and cost estimation to help with this definition. And once underway, the project execution uses control techniques to keep things on track.

Like all of life, projects contain risk. Outcomes are rarely certain, and all sorts of things can push us off course. Whilst this true of all business activity, because projects define scope and place constraints on cost, time and quality, managing risk becomes a critical part of delivering as promised. Projects therefore use risk management methods to protect their outcomes.

Similarly, the quality of a project's deliverables must be managed, a key activity here is to agree the quality that is required. Without doing so, we become hostage to subjective opinion about how "good" things should be. We can use several tools to help us define quality, for example a known standard. We want to get this just right. Project deliverables whose quality is too low risk being not fit for purpose, but quality that is too high is probably a waste of time and money. Once agreed, projects use several methods to plan, control and assure quality.

Earlier in this document, we noted that project management requires good people skills. Projects are often high-pressure environments, and this brings issues of poor behaviours, stress, and quality of decision making. Personnel are often working together for the first time, and teams are coming together for a finite duration. This brings problems in co-working, productivity, communication and control. Projects are often implemented across several organisational functions, or across organisations. This brings issues of culture, of communication, of organisation and of authority. Finally, since business change often comes via projects, and because they often have high profile or have a range of different stakeholders, we need to be able communicate how we are doing - as we are doing it - including forecasting how things will turn out. All of these challenges require excellent "soft" skills.

* *Note – new methods, such as agile, are beginning to alter this.*

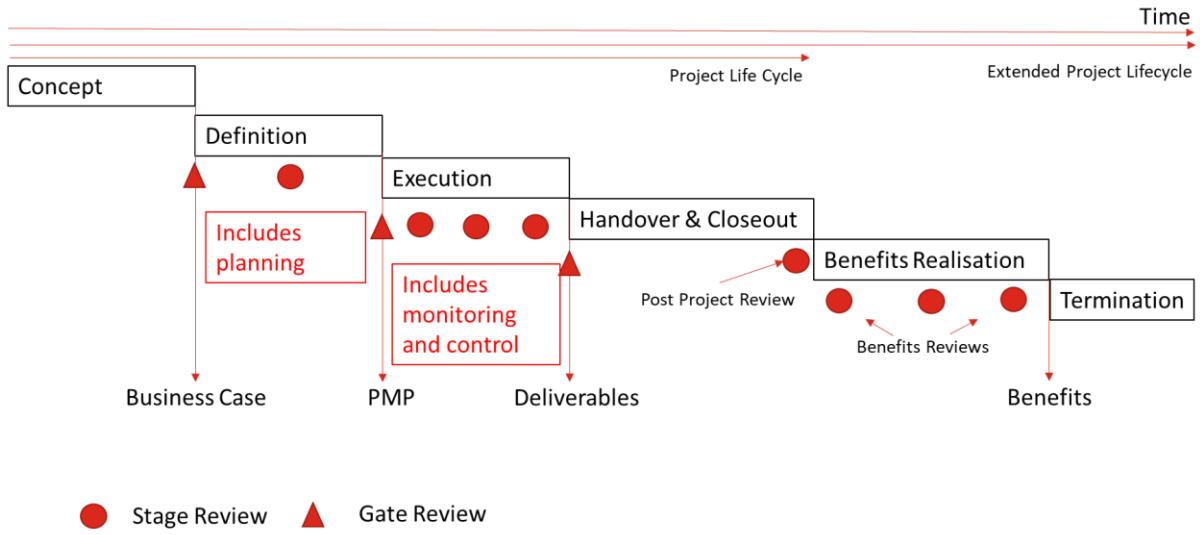
Project management is, “the application of processes, methods, knowledge, skills, and experience to achieve specific objectives for change”.

Project methodologies

Using a methodology to manage a project is good practice, making a project more likely to succeed and providing an element of good governance.

There are many such methodologies, and a project manager may use several throughout their career. Some are publicly available, for example PMI's PMBoK and Axelos' Prince2, and some are bespoke to an organisation. However, most contain common elements and we can take a brief look at these here.

An outline diagram of a generic method, known as a waterfall method, is shown below. As you can see, it is a sequential process or lifecycle, with a logical flow. In summary, the order of activities is initiate, plan, do and then close, but most methodologies give each stage a specific name. We have chosen the names used by the APM: concept, definition, execution and handover & closeout. After looking at the detail, we will also look at some post-project activities that can extend this lifecycle. Note that other processes (e.g. iterative ones) are also in use.



Concept Stage

Prior to any significant work being done, this stage allows us to consider whether a proposed project is a good idea. We state, as best as we can at this stage, what the aims and benefits of the project will be, and try to determine whether these outweigh the cost, time and risk involved. We may also consider several ways of implementing the project, to select the best one. This stage may involve activities like feasibility studies, “optioneering” and proposing a preferred option. This allows the organisation to consider viability, value, benefits and the fit to the business. The output of this stage is a business case.

This is a very important stage. If it is not done well, then the rest of the project is more likely to be poorly carried out or miss its objectives, and we may even execute an unnecessary project.

At the end of this stage, a decision whether to proceed is made and approval for expenditure given. The project should be described and documented, and one way of doing this is to produce a project charter.

Definition stage

The concept stage leads onto the definition stage, where the requirements of the project are analysed, and we plan how to execute the project. The output is a Project Management Plan (or PMP, sometimes also known as a PID or PIP). The project should not proceed to execution without this (approved) plan, as doing so will reduce chances of success, especially if success itself is not defined.

Although some work can and must be done at this stage (e.g. front-end engineering, or procurement of long lead items) this requires recognition of the provisional nature of the rest of the project and the risk that this entails, which should be managed.

Key activities at this stage include definition of requirements, constructing the schedule, estimating cost, identifying risk, setting out project procedures and methods, planning communications and identifying the team. Other items, such as quality and safety planning are also carried out here.

Execution Stage

Once the plan has been agreed and approved, the execution stage can begin. This is where the project deliverables are constructed and involves management of tasks, activities, people and much more. Monitoring and control of cost, time, risk and scope are all key to this stage. This is also where reporting and communication are critical, which includes communicating outcome forecasts. It is here that most of the project's resources, including cash, are used. Change at this stage is at its most costly, which is why control of change is critical and why the concept and planning stages are so important.

Handover and Closeout

Following the execution phase, the outputs from the project are handed over to those who will use them, and the project is closed down. A key part of this is review and learning lessons. Although lessons should be learned throughout the project, the close out stage is a good opportunity to record, analyse and pass on learning so that future project performance is improved, and organisational capacity enhanced. It is also at this stage that key project data are recorded, so that trending can be performed.

Extended Project Lifecycle

As mentioned above, work related to the project continues after close down. In particular, a benefits management activity is carried out, to ensure that the outcomes of the project are as they were intended and the planned benefits are realised, after which, a termination phase shuts the project down for ever.

The project lifecycle is often controlled by a "stage gate" process, where each stage is separated by a decision "gate". At each gate, progress to date is examined and a decision made as to whether to proceed further. As well as providing an opportunity to remedy defects or indeed stop a project, this also increases stakeholder confidence.

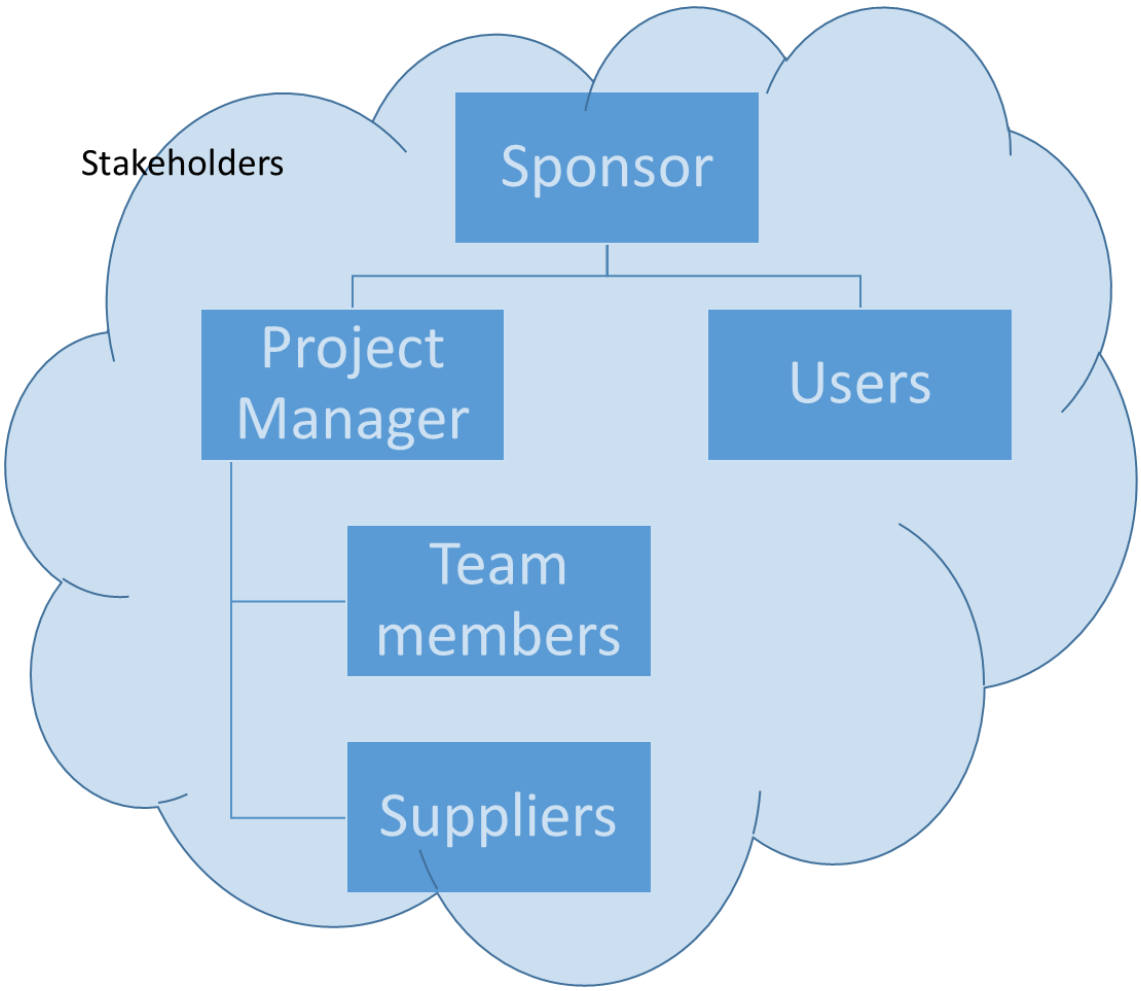
Project roles

Most of the methodologies that helps us to manage a project identify some key roles in the process.

We will look at five project roles in this section, those of:

- Project sponsor
- Project manager
- Stakeholders
- Team members
- Project Users
- Suppliers

The descriptions provided here are intended to be typical, but of course, there will be many variations. There are also many organisations structures within which a project can be executed, but most project organisations will include a requirement for these roles. The job titles and responsibilities may differ, but some core functions are usually present. Typical relationships between the roles are shown in the diagram below.



Project Sponsor

The sponsor is accountable to the business for the resulting benefit. Whilst the project manager is responsible for delivery of the project outcomes, the sponsor ensures that there will be a benefit to the business, that the project has value and fits a business need. The sponsor therefore normally owns the business case.

The sponsor is normally the keeper (or at least gate keeper) of the resources required for the project and can authorise the project manager to use them. Most notably, this includes cash. The sponsor will normally authorise the plan and ensure that it delivers the benefit specified in the business case. The sponsor also has a role in supporting the project manager in matters that are too large, tricky or outside his or her authority. This includes relationships with senior management and some senior stakeholders.

Critically, it is the sponsor's responsibility to ensure that the project remains viable, and to cancel (or suspend) it when it is no longer so.

The sponsor's responsibility for the project's extended lifecycle means that this role may extend for a long time after the project closes out.

Project Manager

The project manager does just what the title says: they manage the project. In other words, they are accountable for delivering it to the agreed requirements and within the stated constraints, usually meaning scope, time, cost and quality. The project manager owns the project management plan (and may indeed create it) and is responsible to the sponsor for the effective implementation of that plan. They generally manage the project team and suppliers and will interface with end users and other stakeholders. The project manager will oversee the planning, execution and close out of the project and its related activities. The project manager will not perform every project activity but will be responsible (to the sponsor) for them all. The project manager is appointed before or at project initiation, and the role normally ends at close out. However, there are situations (and advantages and disadvantages) for doing otherwise.

The key skills here are soft skills, or people skills, notably in communication.

Interestingly, although the project manager reports to the sponsor for the duration of the project, the sponsor may not be the project manager's line manager. In some cases, depending on how an organisation is set up, a sponsor may be junior to the project manager.

Project Team

The project team members are responsible for carrying out the project's activities and thereby for delivering the outputs of the project, under the direction of the project manager and within the agreed constraints (e.g. cost and time). The team supports the project manager to deliver the project. There will normally be one project manager and many team members.

As projects are temporary, and project teams can be drawn from different business functions, this means that team members are often not line subordinates of the project manager. This can make their work difficult, as they retain their line manager as well as working under the project manager.

Team members may be permanent staff but are often contractors, temporary staff or even members of supplier or partner organisations.

In the case where the team consists of supplier personnel, day to day relationships and reporting requirements may be the same for both groups of people, but the contractual terms may differ.

Suppliers

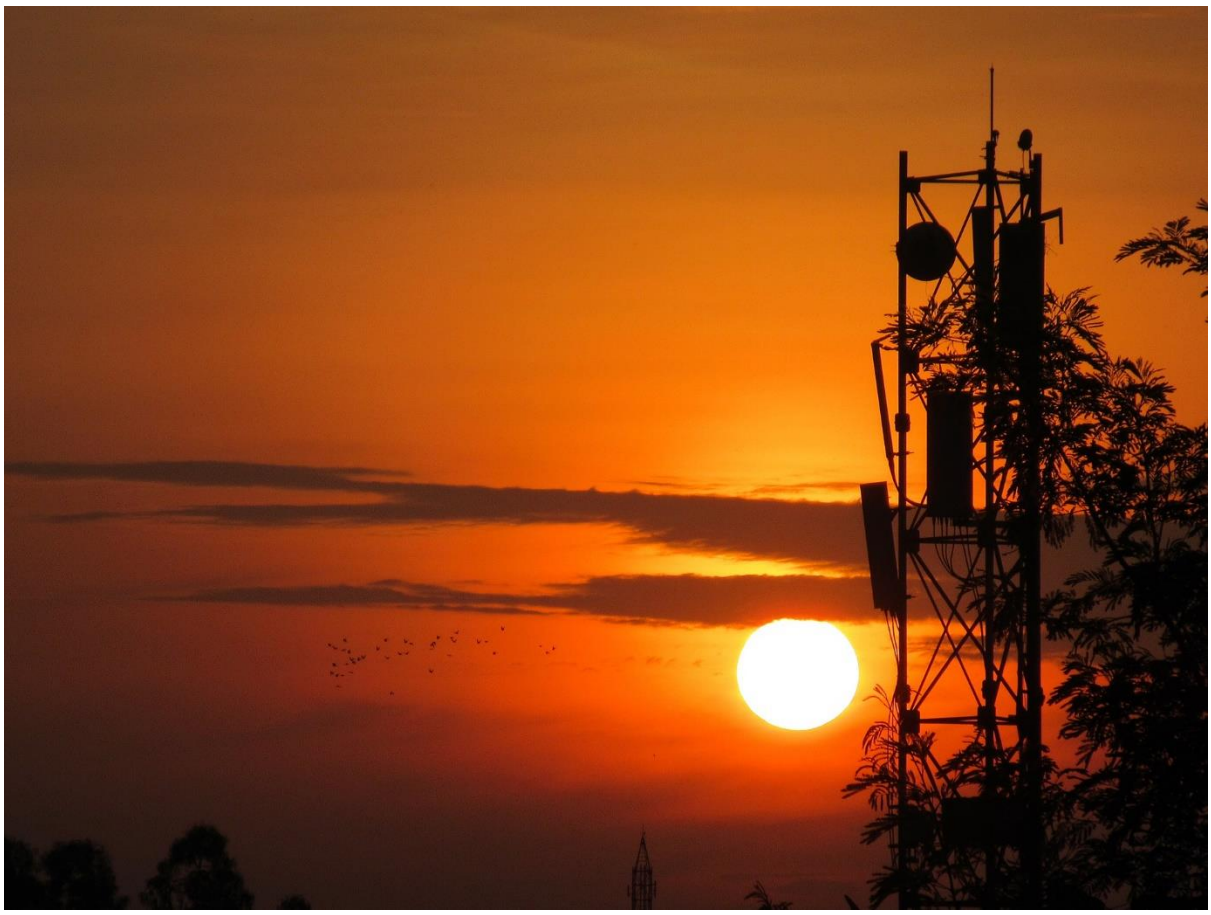
The project manager may also manage suppliers, who perform project activities or provide materials or other items. These may in turn consist of a team or several teams of people but are often managed through a single representative or point of contact. In this case, they will be managed as an entity, via a contract, rather than as individuals, as is the case for the project team proper.

Stakeholders

A project often has several stakeholders, which are people (perhaps organisations, but always represented by people) who have an interest in, or influence over, a project. Stakeholders include all of the people and groups discussed above, but can also include authorities, regulators, the public, business partners and many others. Because of their interest and influence, they need to be identified, engaged (and often managed) for the benefit of the project. Note that this can be difficult and complex, as not all stakeholders are in favour of a project, or indeed of the way it should be managed. Even if favourably disposed, they often have competing needs, and differences of opinion.

Project User

The project “users” are normally those people or groups of people who will use the outputs or deliverables of the project to achieve the business benefits or outcomes that the project is designed to satisfy. A project deliverable normally does no good unless it is used (and used as intended). For example, a new laboratory will never deliver the benefit required unless it is used properly. Partly because of this, it is normally the users (or some representative of the users) who define the requirements for the project. For the same reason, they are usually the people who determine whether the project deliverables or outcomes are acceptable, and therefore sign off on them. They are key stakeholders, deserve to be listened to and often require management. They can (and do) request change, which needs to be managed effectively.



Summary

This booklet has attempted to give an overview of project management. We have defined a project, said why it is different from “business as usual” and therefore why it needs to be managed in a distinct way. We have also seen what project management involves and seen an overview of the process and the roles concerned.

Useful References

You might like to read more about projects and project management. If so, here are some sources of information that might help you.

Association for Project Management www.apm.org.uk

APM Body of Knowledge 7th Edition

ISBN 978-1-903494-82-0

P P P M Project Management Services LLC

P P P M Project Management Services LLC has been delivering projects for many years. We are also letting others into the secret, by helping them to do their projects better. Our services range from traditional consulting, where we advise and support an organisation on its project process; review projects at all stages of delivery, where we suggest improvement or recovery actions; training, mentoring and coaching, where we empower your workforce; through to providing experienced personnel to manage projects directly. Our clients span sectors and reach across the globe. We have advised at many levels within these organisations and try to ensure that our services are a fit to the needs of our clients. Contact us now to discuss your project management needs.

	www.pppm.llc
	peter.benton@pppm.llc