Principles of Project Management

Project Skills

Paul Newton

www.free-management-ebooks.com

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Table of Contents

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Preface

Organizations are increasingly using project management techniques within their operations and the specialist language of project management has become more and more commonplace in managerial and executive meetings. This trend is here to stay and it means that managers need to be familiar with project management roles, terms and processes.

You will learn:

- How projects are defined and why they differ from business processes
- How the structure of an organization impacts project management
- How project management roles and responsibilities are defined
- How all projects can be mapped to the same basic life cycle structure
- How project management can be organized into functional areas

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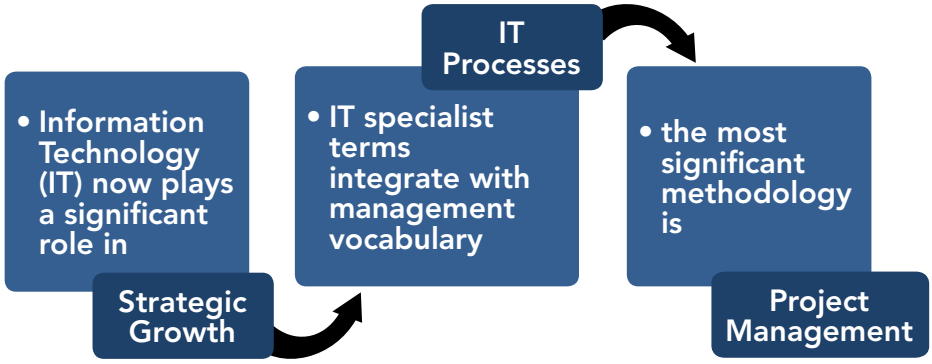
Introduction

The impact of technology and its influence on organizational processes is an essential aspect of any growth strategy. It is hard to find any development or procedural change that does not have an information technology aspect and in many cases it is actually the changes in available technology that drive the need to change organizational processes.

This has led to a merging of IT working practices into that of general management including the use of project management.



Managers now find that they are frequently involved in projects that are being managed using a formalized project management methodology. Communications forms a key part of such projects and if you are going to be successful in your role as a manager it is essential that you have a thorough understanding of project management terminology, processes, and procedures.

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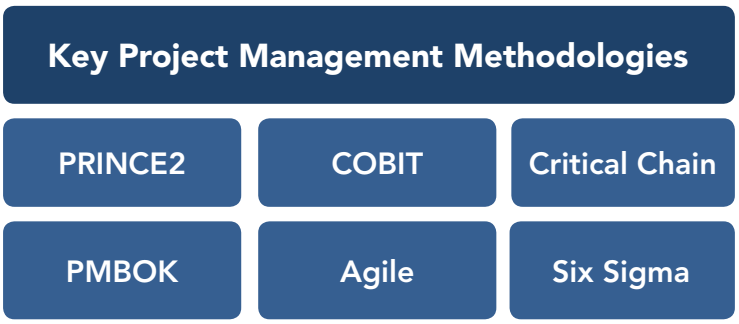
Project Management Principles

There are various ways in which projects can be approached and a host of 'methodologies,' 'frameworks,' and 'processes' have been developed over the past 60 years or so. Some of these have their origins in academic research whereas others have grown out of proprietary methods developed by organizations that are highly project focused, for example management consultancies.



Each of these approaches has its own way of looking at projects and its own terminology for the documents and processes that make up project management. There has been some rationalization in recent years but there are still a dozen widely used methods. The ones you are most likely to encounter are PMBOK®, PRINCE2, Critical Chain, and Agile.

PMBOK® is short for Project Management Body of Knowledge, which describes project management practices that are common to 'most projects, most of the time.' The PMBOK® is published by the Project Management Institute (PMI), which was formed in the USA in 1969. The PMI also offers various levels of certification and the PMBOK® is widely used and respected.

PRINCE2 is a process-based approach for project management, providing an easily tailored and scalable methodology for the management of all types of projects. The method is the standard for public sector projects in the UK and is practiced worldwide. The acronym stands for Projects in a Controlled Environment and this is a project management program that shares more of the functional and financial authority with senior management, not just the project manager.

The Critical Chain method is not fundamentally different from the current mainstream approaches but it differs in the way that it handles risk and contingency. Developed in

1997 it is a method of planning and managing project execution designed to deal with uncertainties inherent in managing projects, while taking into consideration the limited availability of resources.

The Agile approach uses an iterative method of determining requirements for engineering and software development projects in a highly flexible and interactive manner. It is most often used in small-scale projects or in cases where the final deliverables are too complex for the customer to understand and specify before testing prototypes.

The **project management eBooks** on this website are for anyone who wants to find out more about a structured approach to project management. So much work is now run as projects and so few people have the necessary skills to manage them properly that there is a huge demand for good project managers and that demand is increasing all the time.

In summary, organizations are increasingly using project management techniques within their operations and the specialist language of project management has become more and more commonplace in managerial and executive meetings. This trend is here to stay and it means that managers need to be familiar with project management roles, terms and processes.

Our free Project Management Principles eBook will help you to understand the principles of project management.

KEY POINTS

- ✔ Managers now find that they are frequently involved in projects that are being managed using a formalized project management methodology.
- ✔ Each of these approaches has its own way of looking at projects and its own terminology for the documents and processes that make up project management.
- ✔ The project management eBooks on this website will be helpful if you are relatively new to the subject.

Project Management Definition

Before concerning ourselves with the details of project management documents and processes, it is a good idea to take a step back and think about what makes something a project and why it needs to be managed differently from the day-to-day work of the organization. In other words,

> ***'Why do we need project management?'***

There are many different definitions of what constitutes a project:

> ***Project Management Institute—'A project is a temporary endeavor undertaken to create a unique product, service or result.'***
>
> ***PRINCE2—'A Project is a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case.'***
>
> ***Association for Project Management (APM)—'An endeavor in which human material and financial resources are organized in a novel way to deliver a unique scope of work of given specification often within constraints of cost and time to achieve beneficial changes defined by quantitative and qualitative objectives.'***
>
> ***H. Kerzner—'Project management is the planning, organizing, directing and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives. Furthermore, project management utilizes the systems approach to management by having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy)' (2009).***

Many organizations also have their own definition of what constitutes a project. Whichever definition you prefer does not really matter; the important thing is to be able to identify work that constitutes a project so that it can be properly managed.

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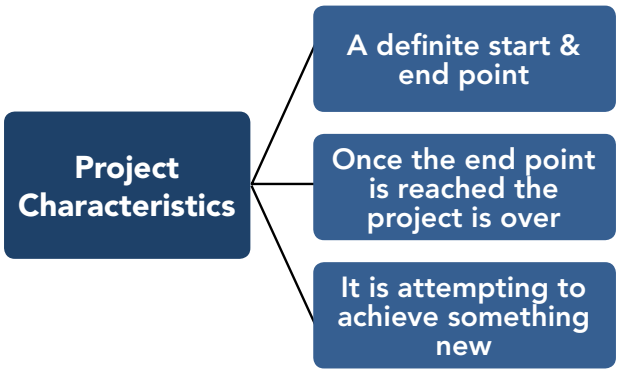


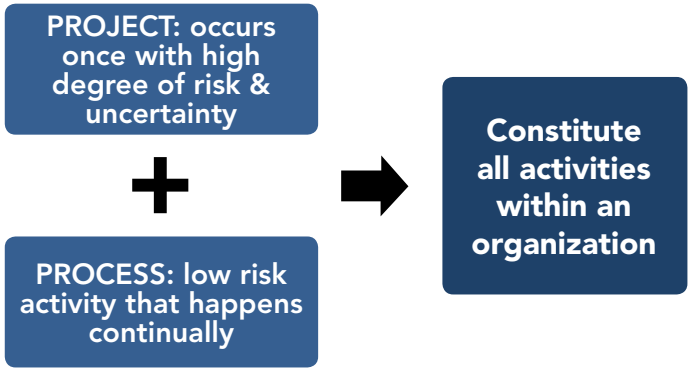
Projects have some or all of the following characteristics:

- They have a definite start and endpoint
- Once the endpoint is reached the project is over
- They are attempting to achieve something new

Projects can vary in size and small projects can be planned and managed by the same person whereas larger projects may employ thousands of people working on many sites and require a dedicated group in order to manage and coordinate the activities.

Everything that an organization does can be categorized either as a project or process. A process is something that happens continually and has a low **risk** associated with it, whereas a project happens once and has a relatively high level of risk.

To illustrate this, imagine an organization that has an **annual staff appraisal** process in which managers make a written assessment of their staff against criteria specified by the HR department. This is a process because even if the criteria change from year to year the procedure undertaken by everyone involved remains more or less the same.



If the organization decided to introduce an IT system to facilitate this process then the selection, implementation, and testing of the new system would represent a project because it would be a one-off activity which carries the risk of exceeding the budget or timescale allocated to it.

It is perfectly logical for different organizations to see the same activity in a different way. For example, the supplier of the computer system may see this activity as a process because it is something that it does every time it sells a system. Each time it does so, it gains more experience, which allows it to plan and execute future installations based on what it has learned previously.

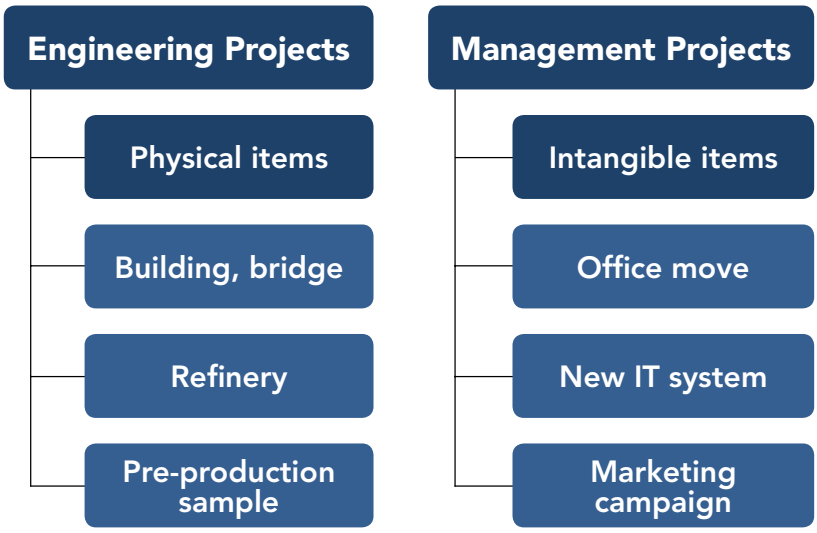
This distinction is important because project management is used where there is a high degree of uncertainty and risk because there is no experience of performing the activity.

So in this scenario,

> ***The organization buying the system would treat it as a project.***
>
> ***The vendor would treat it as part of a process.***

The vendor would see it as a process that could be refined with each iteration in order to reduce costs and increase the **quality.** The distinction between projects and processes depends on whether the organization repeats an activity often enough for it to become routine. Once an activity is repeated often enough within an organization to become routine it is no longer considered a project—it becomes one of their many management processes.

Projects can be broadly classified into engineering projects and management projects. Engineering projects encompass civil, electrical, and mechanical engineering and the final deliverables are physical objects, for example a building, reservoir, bridge, refinery, or pre-production sample. Specialist companies or consortia invariably undertake these types of project.



Management projects include things like: restructuring the organization, preparing for an exhibition, developing an IT system, launching a new marketing campaign, moving offices, or indeed anything where the objective is to produce an end result that is not identifiable as a physical item. To gain a greater understanding of the different functions within these type of projects look at the range of free PDF Project Management eBooks on this website.

A broad range of organizations perform projects of this type, including: commercial companies, government departments, charities and NGOs (Non Governmental Organizations), and other not-for-profit organizations. The differences between these types of project are:

Use of Specialist Staff

Engineering projects almost always represent the day-to-day work of the organization. For example, a construction company will employ people who specialize in building office blocks, public buildings, houses, or roads.

Similarly, a manufacturing company will have design engineers to take a product from conception, through the design process and prototyping before the work is handed over to production engineers who will then be responsible for mass production.

This is quite different from a management project where people who don't usually run projects may find themselves doing much the work.

Environmental Issues

The challenges of engineering projects are often physical in nature. For example, a construction project may be held up by bad weather, the discovery of archaeological remains, or other unforeseen environmental problems.

Management projects on the other hand usually take place on the organization's own premises and are not subject to these sorts of issues.

Specification of Final Deliverable

In the case of engineering projects the final deliverable is usually specified in detail at the beginning of the project because it will need to comply with existing standards or legislation. If the deliverable is a mechanical or electronic part then it will need to fit with the rest of the finished product.

This is not usually the case with management projects where the exact form of the final deliverable may not become clear until some of the work of the project has been done. It may also alter as the project develops, or in response to market research or other developments.

Generally speaking, engineering projects and management projects are quite different things and our **project management eBooks** are aimed at managers undertaking management projects rather than engineering projects.

KEY POINTS

- ✔ Everything that an organization does can be categorized either as a project or process.
- ✔ A process is something that happens continually and has a low risk associated with it.
- ✔ A project happens once and has a relatively high level of risk.
- ✔ Projects are attempting to achieve something new, they have a definite start and endpoint, and once the endpoint is reached the project is over.
- ✔ Engineering projects encompass civil, electrical, and mechanical engineering and the final deliverables are physical objects, for example a building, reservoir, bridge, refinery, or pre-production sample.

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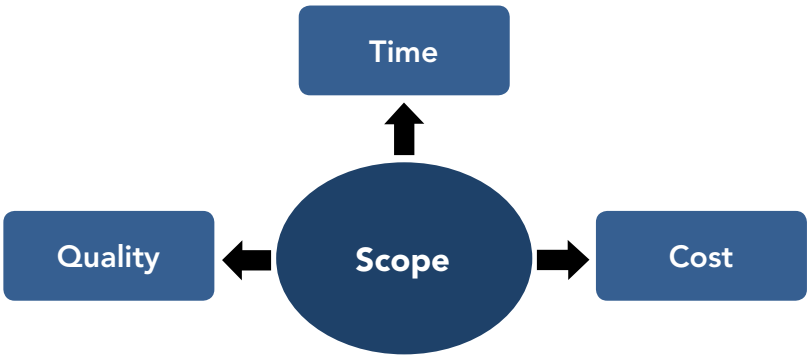
✔ Management projects include things like: restructuring the organization, preparing for an exhibition, developing an IT system, launching a new marketing campaign, moving offices, or indeed anything where the objective is to produce an end result that is not identifiable as a physical item.

Project Management Perspectives

Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor designed to produce a unique product, service or result with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value.

The primary challenge of project management is to achieve all of the project goals and objectives while honoring the constraints on scope, time, quality and cost. Projects need to be managed to meet their objectives, which are defined in terms of expectations of time, cost, and quality.



For example, Project Scope: To move the organization's head office to another location. Its requirements are:

***Time:** Complete by March 2017*

***Quality:** Minimize disruption to productivity*

***Cost:** Not spend more than $125,000*

The scope of the project is defined as: 'the totality of the outputs, outcomes, and benefits and the work required to produce them'.

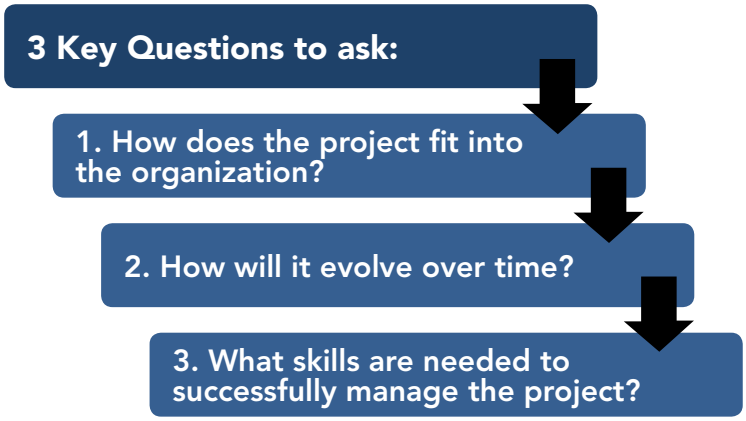
This can change over time, and it is the project manager's responsibility to ensure the project will still deliver its defined benefits. Consequently, a **project manager** must maintain focus on the relative priorities of time, cost, and quality with reference to the scope of the project.

The Project Management Institute (PMI) defines project management in the following way:

> ***'Project management is the application of knowledge, skills, tools and techniques to meet project requirements.'***

This definition begs the question 'Exactly what knowledge, skills, tools, and techniques will I need to successfully manage a project?' In order to answer this question, it is helpful to look at project management from three different perspectives.

1. How the project fits into the organization – This refers to both the project and the individuals who will be involved in it, including how their responsibilities are defined and how they interact with each other.
2. How the project will evolve over time—This is referred to as the project life cycle and is the chronological sequence of activities that need to happen in order to deliver the project. Whatever their differences, all projects will by definition share a similar life cycle; they will all have a beginning, middle, and an end.
3. What skills are required to successfully manage the project—These are usually referred to as 'Project Functional Areas' because there are discrete areas within project management that can be considered in isolation even though they are interdependent.



This might sound unnecessarily complicated, but looking at a project from each of these three viewpoints will give you a much better understanding of the whole process than using any one of them individually.

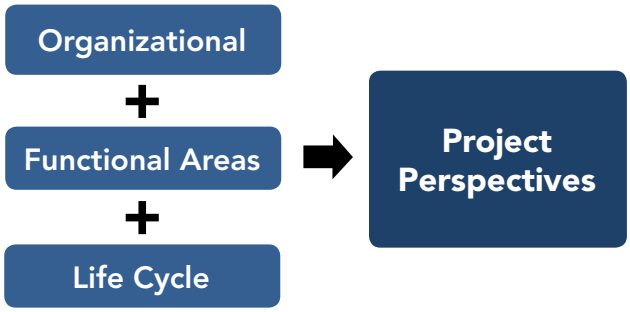
To use an analogy:

> ***Imagine that a ship is travelling from London to New York.***

The *organizational perspective* would be concerned with which members of the crew were responsible for doing what and how they communicated and interacted with each other.

The *life cycle* of the voyage would be concerned with where the ship was and what it was doing at any point from the beginning to the end of the journey.

The **functional areas** would be things like navigation, collision avoidance, routine maintenance, etc. Even though these activities would be taking place continuously and interdependently, it is still possible to think about them as discrete areas of knowledge.



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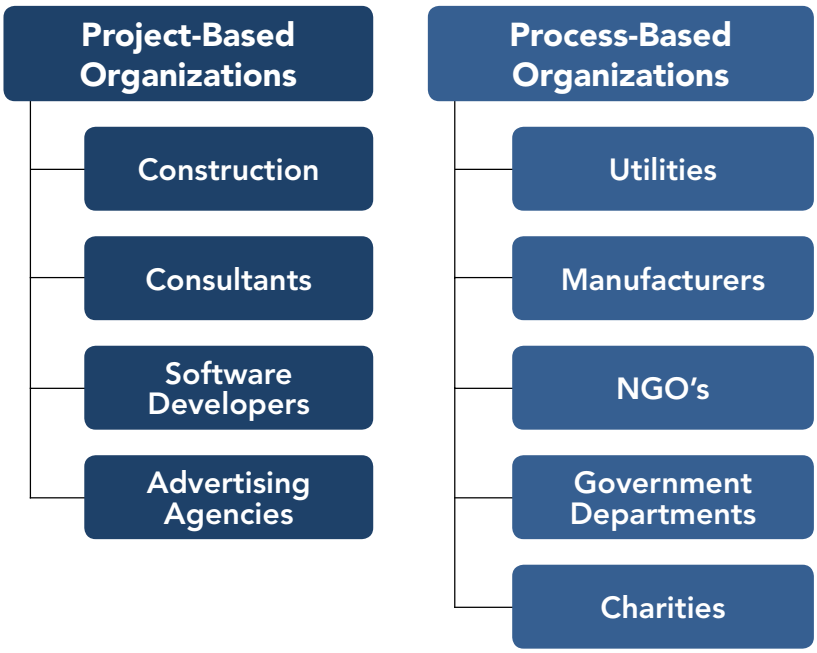
This analogy is not perfect but it does illustrate that when you are studying a complex activity it can be helpful to look at it from a variety of perspectives in order to gain a better understanding of the whole.

KEY POINTS

- ✔ Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals.
- ✔ The primary challenge of project management is to achieve all of the project goals and objectives while honoring the constraints on scope, time, quality and cost.
- ✔ Project management can be thought of in terms of organizational, life cycle, and functional area perspectives.

Project Organization & Structure

The way in which an organization is structured is largely a result of whether its day-to-day work is process driven or project driven.



Project Focused

These organizations' day-to-day work involves delivering unique projects for external customers for a set time period. Their management structure is designed to support projects and everyone working in the organization is assigned to one or more projects. Examples include: Construction companies, Consulting organizations, Software developers, and Advertising agencies.

Process Focused

The day-to-day work of these organizations predominantly involves continually delivering products or services for external customers. Their management structure is designed to support the process required to deliver the product or service to the end customer. Examples include: Utility companies, Manufacturing companies, Government departments, Charities, and NGOs.

In reality, even the most process-focused organizations will run occasional projects and some may have parts of the organization that are dedicated to project-based working. The vast majority of the staff in public utilities (electricity, gas, and water) will be employed to provide an ongoing service to their customer base. But there will be some areas of the business concerned with physical or management infrastructure that are wholly project driven. For example:

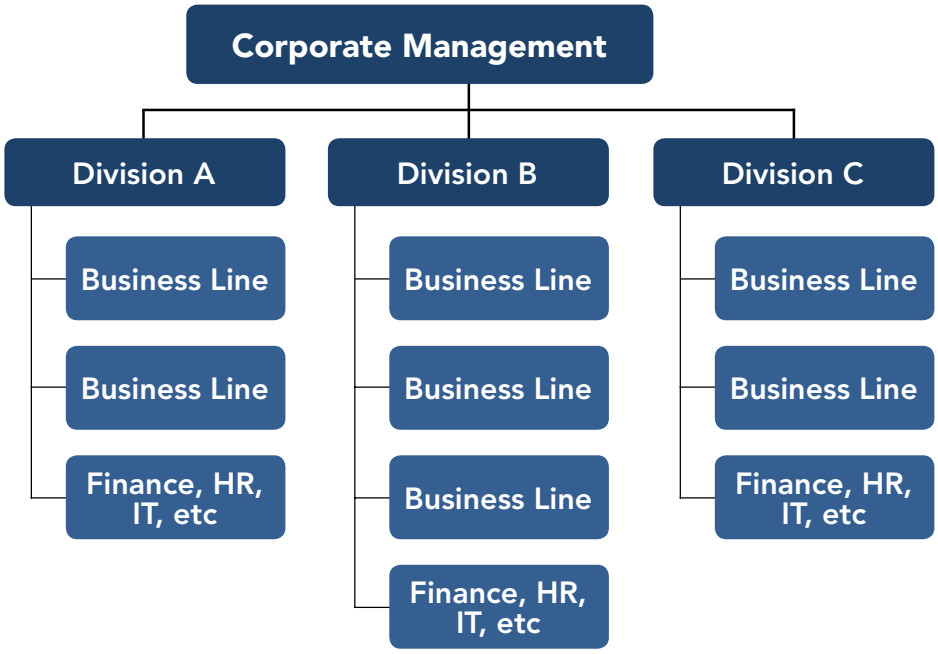
> ***Staff responsible for the development of new information systems and those responsible for the construction of new physical infrastructure, like electrical substations and water treatment plants.***

The extent to which your organization has the necessary assets and processes to conduct successful projects will play a significant role in your project costs and level of **risk**. The less experience it has, the higher your project costs will be and the greater degree of risk compared to a project-driven organization.

Every organization is unique and these classifications are only useful in that they illustrate the fact that **project management** is likely to present more of a challenge in process-focused organizations than in those that are project focused.

It is better to think of organizational structures existing on a continuum as described below. This is not only more realistic but it allows us to begin thinking about how exactly the organizational structure will impact a project in practical terms.

At one extreme are organizations in which employees are isolated within their department or division as shown.

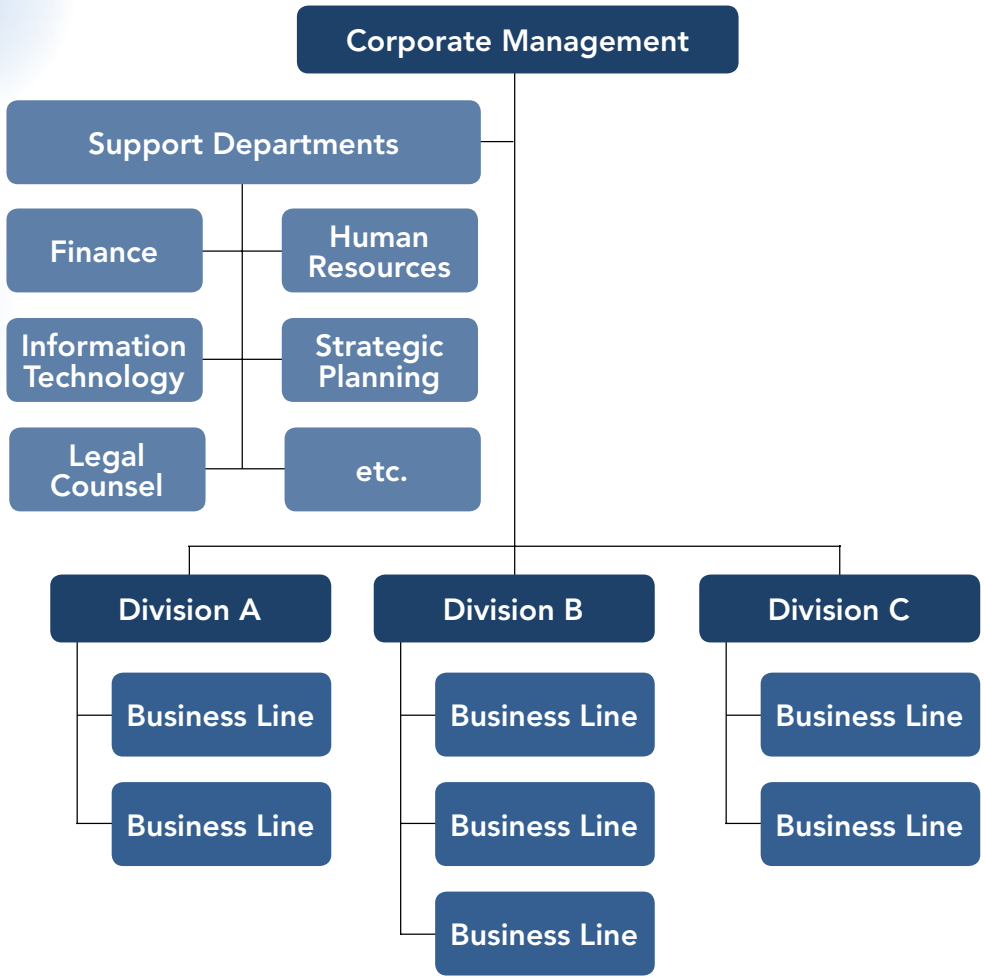


In this scenario, senior management allocate capital to each division, which then operate autonomously to return as much profit as possible. Each division is completely independent of the others and there is no mechanism to allow communication across divisions other than by going up the hierarchy to senior management who would then have to pass the decision down to the other divisions.

This type of structure makes producing a limited amount of products or services efficient and predictable, but would make it almost impossible to run a project that cut across divisional boundaries.

A refinement of this structure is shown below and is referred to as a weak matrix. This is because although each division operates independently, they no longer have direct control over support functions like IT, finance, and human resources.

This type of structure makes sense because these support functions do not need to be duplicated and can be shared between the divisions. This saves money and enables the support departments to be bigger and employ more specialist staff.



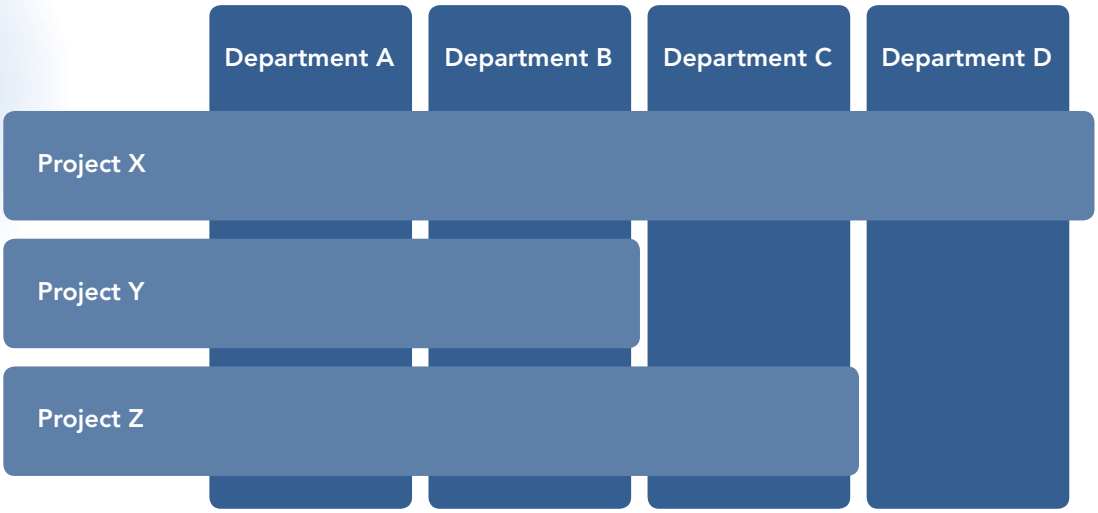
The implication for project management is that there will be mechanisms for communicating across divisions and that people will be more accepting of working with others outside of their own division.

KEY POINTS

- ✔ Organizations may be either process driven or project driven.
- ✔ Even the most process-focused organizations will run occasional projects and some organizations may have parts that are dedicated to project-based working.
- ✔ There are various ways of structuring the project environment depending on the type of organization.

Projects in a Matrix-Management Environment

This type of structure can be taken further to give what is known as a pure matrix-management environment.

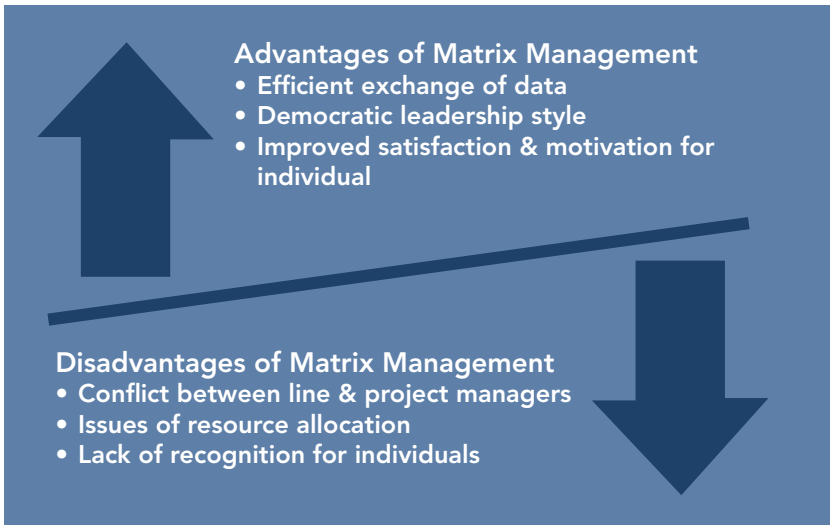


This is a type of structure in which even though an individual may 'belong to' a particular department, they will be assigned to different projects and report to a project manager while working on that project. Therefore, each individual may have to work under several managers whilst performing their role.

For example,

> ***Someone who is working in Department C and who is assigned part-time to projects X and Z will find themselves reporting to three different managers, all of whom will have some degree of authority over them.***
>
> - ***Their line manager (Dept C)***
> - ***Project Manager for project X***
> - ***Project Manager for project Z***

Matrix management is now fairly common and exists at some level in most large organizations, particularly those that have multiple business units and international operations.



One of the advantages of implementing a matrix structure is that it can lead to a more efficient exchange of information as people from different areas work closely together. This enhances overall productivity because it facilitates quick decision-making. For example,

> ***Individuals from the customer support and production departments may confer with one another to fix problems as soon as they appear. Rather than the production department remaining unaware that there is a problem until it surfaces months later in a management report or memo.***

The matrix structure also encourages a democratic **leadership** style that incorporates the input of team members before managers make decisions. The ability to contribute valuable information before decisions are made leads to employee satisfaction and increased motivation.

A disadvantage of the matrix structure is that it is a recipe for disagreement between the line manager and the project managers. This is because the latter will often try to minimize each department's billing to the project, whereas the departmental managers will usually try to secure as much of the project's budget as possible.

There can also be disagreements about resource allocation and prioritization. This occurs because project managers tend to view their own project as the most important activity and forget that the line manager may have other commitments that his department is expected to meet.

Firstly, line managers have finite resources at their disposal and often have to juggle these in such a way as to 'satisfy most of the demand for most of the time.' In addition, they often have numerous deadlines, relating to both departmental work-in-progress as well as to each project that they are supplying resources to.

Secondly, projects in progress may be subject to changes, following the agreement and commitment of the line resources required. This may result from a failure to achieve the expected progress in any area of work and is likely to have a knock-on effect on the ability of the line manager to supply the resources they are committed to. As a line manager, you may also have to accommodate unexpected resource shortages due to absenteeism and staff turnover.

All of these factors mean that conflict is unavoidable in organizations that are structured in this way and many of these issues described may be complicated further if staff are working on more than one project at a time.

Another feature of the matrix structure is that it can lead to staff members becoming concerned about the extent to which the efforts they expend on project-related work will be recognized and rewarded financially. This problem may be compounded if they feel their project-related work will not be recognized within their own department and no matter how hard they work on the project it will not affect their chances of advancement.

This concern is primarily an issue with staff seconded to projects on a full-time basis as they may feel increasingly isolated and left behind in relation to their long-time colleagues and the departmental practices with which they are familiar. Also, individuals involved with long-term projects may have worries about what happens to them at the end of the project. Their fear could be that their department has learnt to cope without them, or developed new procedures whilst they were assigned to the project.

As a project manager you should ensure each individual's performance is recorded and reported to their line manager so that it can be assessed in their annual **appraisal**. You can check out the complete range of **Project Management PDF eBooks** free from this website.

Projects are all about utilizing existing resources and expertise in an efficient and effective way to get things done. The downside of this, from a staff perspective, may be that projects are not seen as training-oriented environments in which to develop personal skills.

The questions raised by the problem of establishing a sound project management structure revolve around the creation of effective reporting lines. There are two organizational extremes that can be adopted:

- All of the personnel working on the project remain in their normal situation, reporting to their line managers. In this case, the project management staff will need to coordinate the required project work through the line managers.
- A project team is created and all personnel working on the project are drawn into a project team and report exclusively to the project manager.

In practice a combination of these approaches is often found to be the best solution, and is by far the most common method. However, this organizational framework risks breaking one of the tenets of good management—that of matching responsibility with authority. The project manager will be responsible for performance on the project but may lack sufficient authority where contributors report to their own line managers.

All of these factors mean that unless your organization is completely project focused then you can expect conflict, disagreement, and compromise to be an integral part of organizing a project.

KEY POINTS

- ✔ In a matrix environment, an individual may 'belong to' a particular department but they will be assigned to different projects and report to a project manager while working on that project.
- ✔ An advantage of the matrix structure is that it can lead to a more efficient exchange of information as people from different areas work closely together.
- ✔ A disadvantage of the matrix structure is that it is a recipe for disagreement between the line manager and the project managers.
- ✔ Unless your organization is completely project focused then you can expect conflict, disagreement, and compromise to be an integral part of organizing a project.

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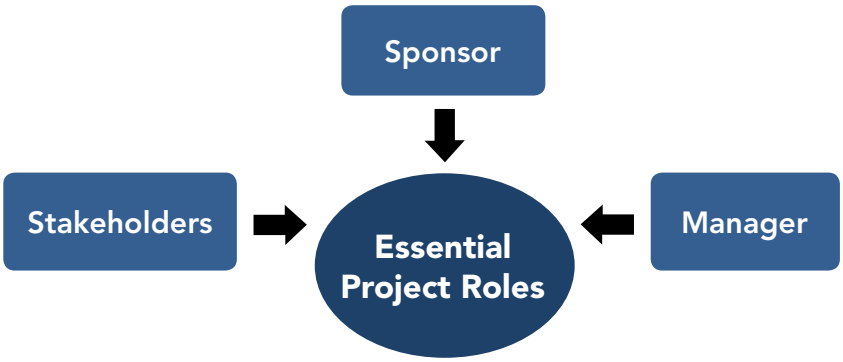
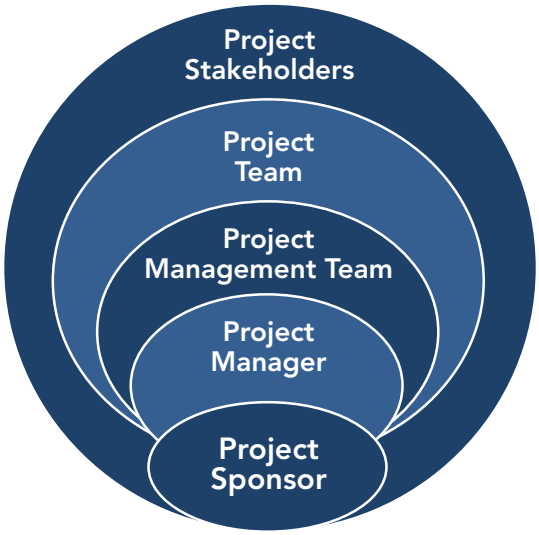
Project Stakeholder Definition

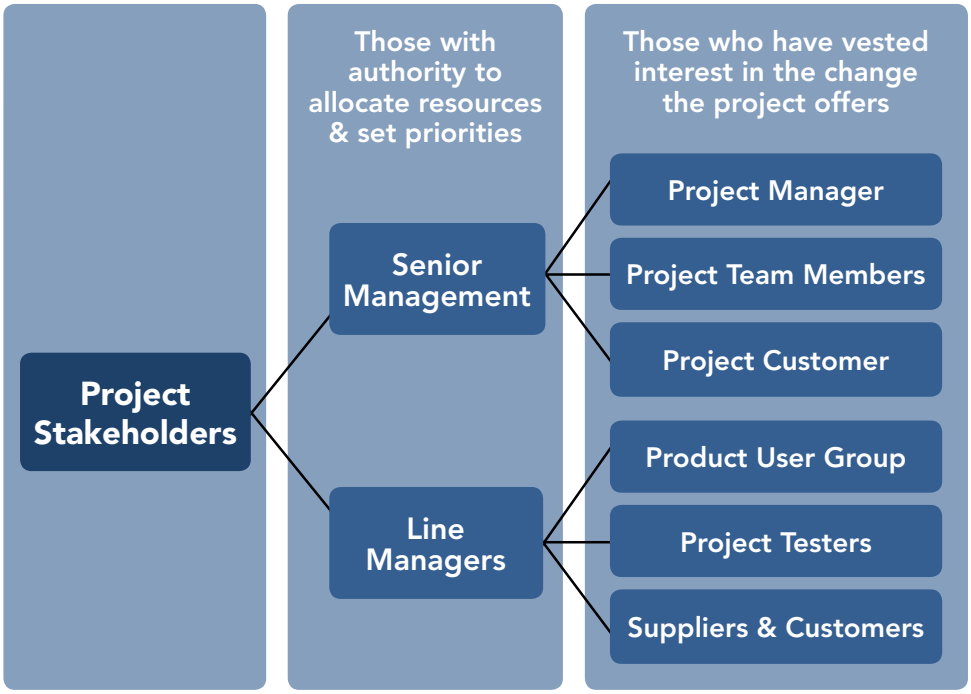
Irrespective of how the organization is structured, there are certain roles and responsibilities that are required in all projects. Different organizations may use different names for these roles but the responsibilities of each one will be the same.



It is important that you understand the rationale for each of the roles in the project along with their responsibilities as these are used extensively throughout the Project Management Skills eBooks series. You will hear the term 'stakeholders' used with reference to a particular project and it is important to understand what this term means. Stakeholders are anyone who will gain or lose from the project.



The project management team must identify the stakeholders, determine their requirements and expectations, and, to the extent possible, manage their influence in relation to the requirements to ensure a successful project.



There are narrower views of the term stakeholder, focusing on the influencers and decision-makers of a business or technological change. In this context, stakeholders are managers who have the organizational authority to allocate resources (people, money, services) and set priorities for their own organizations in support of a change.

One of the keys to a successful project is successfully managing the relationships between everyone involved—the stakeholders.

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There are three processes involved:

1) Identify the Project Stakeholders

This involves identifying the people, groups, or organizations that could impact or be impacted by a decision, activity, or outcome of the project. It analyzes and documents their interests in and influence on the project. A stakeholder is defined as anyone with an interest in the project, irrespective of whether that interest is positive or negative. They may be individuals or organizations that are actively involved in the project, or whose interests may be affected by the execution or completion of the project.

Stakeholders may be:	Employees	Competitors	Labor unions
Government	Local Communities	Investors	Potential Employees
National Communities	Shareholders	Industry Groups	Regulatory Bodies
Professional Associations	Public	Prospective Customers	Suppliers

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A project manager must be sure to identify and list all potential stakeholders for a project. In addition to those on the project team potential stakeholders include those shown in the diagram.

Stakeholders can be internal to the organization or external. In many projects the public at large will become a stakeholder to be considered during the project. The challenge for the project manager when the public is a stakeholder will be to act while considering public needs. Often there is no direct representative of the public to be consulted during project planning and execution.

2) Analyze their potential involvement with the project

This is the process that develops appropriate management strategies to effectively engage stakeholders throughout the project. Stakeholder analysis is so important that a wide variety of experts are consulted to help analyze the actual level and the desired level of engagement level of the various stakeholders. These experts are the same ones that were consulted in the previous process to identify the stakeholders and analyze their interest and/or influence on the project in order to determine the general strategy for engaging them.

3) Manage their engagement with the project

This is the process that communicates and works with stakeholders to meet their needs and expectations, address issues as they occur, and support stakeholder engagement. It details how you communicate with stakeholders and ensures appropriate engagement levels.

If you intend to manage a project then you will need a detailed knowledge of these roles and their responsibilities. However, in order to understand the basic principles of project management there are only two roles that you need to know about in any detail, the project sponsor and the project manager.

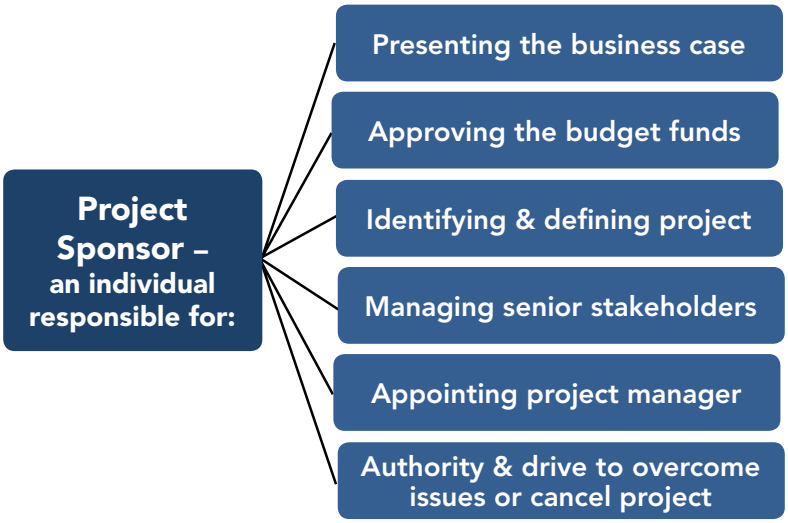
KEY POINTS

- ✔ Irrespective of how the organization is structured, there are certain roles and responsibilities that are required in all projects.
- ✔ Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected by execution of the project or project completion.

Project Sponsor & Project Manager Definitions

The sponsor is responsible for securing the financing and overall resource budget approval and owns the opportunities and risks related to the financial outcome of the project. They may be referred to as the 'business sponsor,' 'project sponsor,' or 'executive' and are usually a senior manager with a direct interest in the **business case** behind the project.

Even though this implies that the project sponsor can be a group of people, it is usually far better if there is one named individual who has been given this role. An effective sponsor will be someone with the authority and personal drive to overcome major obstacles to completing the project.



The sponsor does not concern himself or herself with the day-to-day running of the project (that is the responsibility of the project manager), but represents the 'buyer' of the project on behalf of the organization. It can be helpful to think about this in terms of the project manager working for the sponsor who is in turn working for the organization.

The project sponsor may be either internal or external to the organization that will be undertaking the project work. Many different permutations are possible—for example, an internal sponsor may commission a project that will call only on resources within the organization. Alternatively, the entire project may be outsourced to a third party.

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The role of the project sponsor is to approve and fund the project, but not to get involved in day-to-day management or financial control. The project sponsor should appoint a project manager to take on the responsibility for delivering the project in accordance with its objectives.

There are two main differences between project sponsorship and project management. Firstly, project sponsorship includes the identification and definition of the project, whereas project management is concerned with delivering a project that is already defined, if only quite loosely.

Secondly, the project sponsor is responsible for the project's business case and should not hesitate to recommend cancellation of the project if the business case no longer justifies the project.

It is important for every project to have a sponsor to:

- Ensure separation of decision-making responsibilities between project manager and project sponsor
- Ensure accountability for the realization of project benefits
- Ensure oversight of the project management function
- Carry out senior stakeholder management

The project manager is appointed to deliver the project as it is defined in the project charter or project plan. They have the authority to use cash and other resources up to the limit set in the project charter. If they believe at any stage that the project cannot be

delivered within the assigned budget and timescale then they must notify the project sponsor so that remedial action can be taken.

A project manager should have experience in the project domain and should also be familiar with the processes that make up project management.

You should now have an understanding of some of the problems involved when setting up a project that needs to run 'across' organizations, which tend to have vertical management structures. You should also be aware of some of the issues that are raised when assigning people to projects, particularly if they have continuing duties in their own department, and you can bring attention to potential issues before they arise.

Finally, with the knowledge of the specific roles and responsibilities of the project sponsor and the project manager you can ensure that others within your organization are aware of these requirements when developing a project.

The project manager should be appointed, by the project owner, to assume day-to-day management of the project. The project manager should be responsible for planning at the project and sub-project level, exercising control, ensuring product delivery and for management and motivation of staff working on the project.

Successful project management involves dealing effectively with managers and supporting personnel across departmental and functional lines, often with little or no formal authority.

The project manager should work with the project owner to appoint the sub-project managers and to define their responsibilities. Thereafter, the sub-project managers will report directly to the project manager, via regular progress reports. These progress reports represent an up-to-date summary of the status of the project and should be compiled on a regular basis, usually weekly of every two weeks.

It is the project manager's responsibility to analyze and collate the progress reports and to summarize this information in regular highlight reports, which should be presented to the project owner. Highlight reports should be produced at regular intervals, for example monthly, and may also be produced in response to exceptional circumstances.

The project manager will need to maintain clear communications with other management bodies, appropriate to the size of the project. They should submit the project plans and sub-project plans to the project owner for approval and then advise the owner if there are any significant deviations from them. If tolerances are being exceeded then remedial plans may also need to be submitted for the approval of the project owner.

An important function of the project manager is to establish an appropriate environment within which the project is to operate. A number of issues need to be addressed early on to ensure that the project can proceed efficiently and effectively from the outset.

In addition to preparing the **project plan**, the project manager should specify or create a configuration management method for the project. **Configuration management** covers the tracking, documentation and issue of all project documents and products, throughout the project life cycle.

The project manager should agree the technical and quality strategy for the project, with the section that is responsible for organizational policy. It is important that the project manager also maintains clear communication with any related projects to ensure that work is neither overlooked nor duplicated.

Decisions which effect the strategic direction of a project will almost certainly need to be referred to a senior management body or individual, but it is the project manager who will have to make the recommendations and then put into effect the decisions made.

The project manager should be aware that disagreements have the potential to arise at all levels. The intensity of any particular conflict may be affected by a variety of factors

including approaching deadlines, a squeeze on resources or the individual characteristics of those involved.

The issue that underlies a particular conflict may not be immediately apparent. Personality clashes are a classic underlying problem that very few people feel able to raise and discuss. It is common for personality conflicts to manifest themselves as a dispute over some project issue—for example a technical stand-off. This is where experience is invaluable, enabling the project manager to identify the real issues and then to address them effectively.

KEY POINTS

- ✔ The sponsor is responsible for securing the financing and overall resource budget approval and owns the opportunities and risks related to the financial outcome of the project.
- ✔ The project manager is appointed to deliver the project as it is defined in the project charter or project plan.
- ✔ Duties include: submitting the project plans to the project owner for approval, appointing team leaders and defining their responsibilities.
- ✔ The project manager will also need to liaise with project office staff to maintain project integrity and make recommendations and put into effect the decisions made.
- ✔ Be aware that disagreements have the potential to arise at all levels.
- ✔ Personality conflicts often manifest themselves as a dispute over a project issue.

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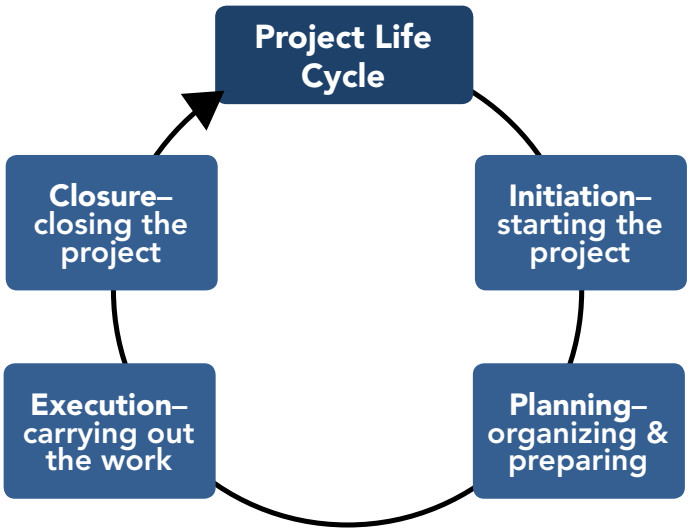
Project Life Cycle Definition

There is very little agreement about the life cycle phases of a project and many organizations have their own internal definitions and templates. This is understandable because of the complicated nature and diversity of projects, which can vary enormously in size and complexity.



Despite this, all projects can be mapped to the following simple life cycle structure:

- Starting the project
- Organizing and preparing
- Carrying out the work
- Closing the project

This is known as a four-phase life cycle and the phases are usually referred to as:

1. Project Initiation
2. Project Planning
3. Project Execution
4. Project Closure

Each of these phases is made up of discrete activities, each of which has an associated definition and guidelines. The number of activities depends on the scope of the project.

A simple project will involve only a few activities while a more complex project may involve hundreds or thousands of individual activities. This model can be applied to a variety of project scenarios although the cost and duration of each phase will vary according to the particular project. Projects are temporary structures set up with the specific aim of delivering an identifiable end-product. All projects will therefore have an identifiable life cycle, the characteristics of which will vary according to the size and complexity of the project.

For example, in the case of a project whose aim is to evaluate, recommend and implement a computerized accounts system. The costs of the project are restricted to the selection of the most suitable system available and the training and implementation necessary for its introduction. The actual purchase of the system is not within the terms of reference of the project, as this capital cost will be taken from a separate budget.

A typical life cycle will run from the formal initiation of a project through to a **post implementation review (PIR)**of the delivered end-product. This post implementation review is not shown as it is usually held some months after the project has been formally closed. There is often little agreement between industries, or even between organizations within the same industry, about the life cycle phases of a project. This is understandable because of the complicated nature and diversity of projects.

A five-phase project life cycle model can be applied to a variety of project scenarios although the cost and duration of each phase will vary according to the particular project. The conceptual phase includes the preliminary evaluation of an idea. It is common for this phase to include a first cut feasibility study for the proposed project. This analysis should also include a **preliminary risk assessment**.

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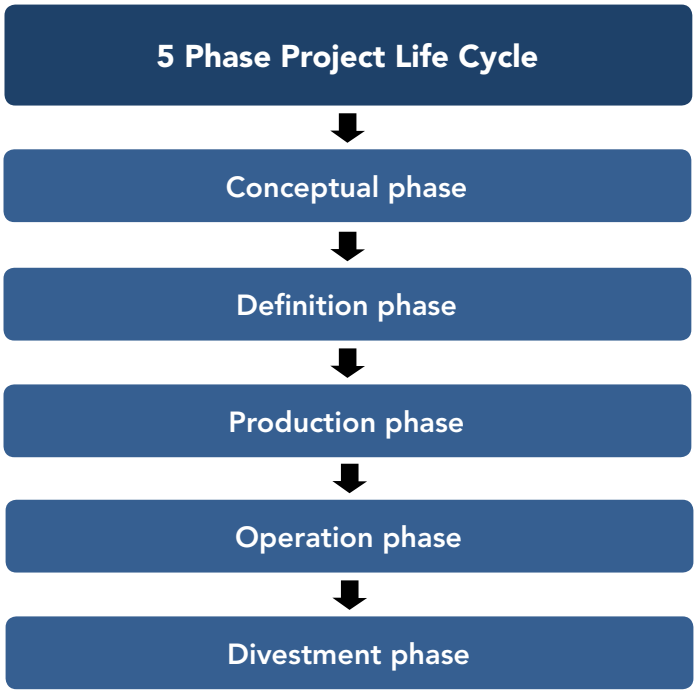

The definition phase is primarily a refinement of those areas considered in the conceptual phase. The resources required by the project should be defined along with time, cost and performance estimates. Project estimation is a difficult task—especially in this early phase. However it is essential that costs are quantified, as this information is needed to establish whether or not the project should proceed.

Once a project has received the funding and backing of senior management it can proceed to the production phase. This incorporates the production, or acquisition, of the end-product specified. This begins with the updating of detailed plans, started in the preceding phases and encompasses the identification and management of the resources required. This phase also includes the development of manuals, plans and other documentation that will support the end product in its live environment.

The operation phase involves the integration of the end-product or service into the organizational environment. If the end-product was a marketable product then this phase would typically include the product life cycle phases of marketing and refinement. The divestment phase involves the reallocation of resources that are no longer required by the current project. The end-product of any project will have a finite lifespan and therefore its ability to generate revenue will be limited. The organization will usually need to run future projects to guarantee its revenue stream.

It is therefore important to retain the services of staff and other resources that can be used in forthcoming projects. This phase also incorporates the post implementation evaluation of the delivered end-product, and this should serve as input to the conceptual phase of future projects.

The use of resources over time will vary according to each particular project. Whilst it may be possible to characterize life cycle profiles within different industry sectors, this can give a false impression as individual projects can vary radically from the generic profile.

KEY POINTS

- ✔ All projects can be mapped to the following simple life cycle structure: starting the project, organizing and preparing, carrying out the work, and closing the project.
- ✔ This is known as a four-phase life cycle and the phases are usually referred to as: initiation, planning, execution, and closure.
- ✔ Projects can also be thought of as having a five phase life-cycle consistsing of conceptual, definition, production, operation and divestment phases.
- ✔ This model can be applied to a variety of project scenarios although the cost and duration of each phase will vary according to the particular project. This model can be simplified into a three or four phase view to which formal organizational processes can be applied.

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Functional Areas of Project Management

So far in this eBook, we have dealt with the organizational aspects of the project and the project life cycle, both of these ways of looking at projects can help you to appreciate the principles of project management. However, you can also look at project management from the perspective of the individual processes involved.

These processes can be organized into functional areas, for example:

- Managing the Scope,
- Managing the Costs,
- Managing the Schedule,
- Managing Risk, etc.

The reason for doing this is that it allows complex high-level tasks to be broken down into smaller tasks, a common practice when learning something new. For example, when learning to drive you concentrate on specific tasks, such as gear changing, hill starts etc., before you drive on an interstate road or motorway.

Extending this approach to project management makes tasks easier to manage, resource, and control. Thinking about project management activities like scoping, scheduling,

quality, and risk in isolation before trying to integrate them into a real project minimizes the potential for misinterpretation, and makes each area easier to understand. However, whilst these functional areas can be presented as being more or less self-contained, in practice they overlap and interact in a unique fashion that reflects the nature of a project.

Consequently, the functional areas are not meant to be prescriptive activities that are executed one after the other. You do not perform scoping, then scheduling, then costing, then quality control, etc. in sequence. You need to be continually reviewing each area as the project progresses and new information becomes available.

For example, looking at the scope management activity as something discrete makes sense because even if it is being done at the same time as one or more of the other processes it is always done in the same way. There is no need to do different types of scope management at different stages of the project because scope management is scope management no matter when you do it and no matter what else is happening at the same time.

The project management eBooks on this website include:

Managing the Project Team
This includes all of the processes used to put together, develop, and manage the project team. It also includes identifying what information needs to be communicated and to whom, in order to ensure that the right people get the right information at the right time.

Managing the Project Scope
This is the process by which the project manager defines the boundaries of the project and ensures that any changes to the original scope are carefully managed. It defines exactly what is included in the project and what is excluded.

Managing the Project Schedule
This involves making sure that things happen on time and keeping the project on schedule. It includes techniques to estimate how long things will take, to plan accordingly, and then to keep everything on track.

Managing the Project Budget
This involves keeping the project on budget and includes techniques for estimating costs planning and budgeting as well as monitoring and controlling the costs. Some of the materials and services required to complete the project may need to be obtained

from outside suppliers. If this is the case then the project manager will also need an understanding of contract and supplier management.

Managing Project Quality

This ensures that the project meets its requirements and that the deliverables do what is expected of them.

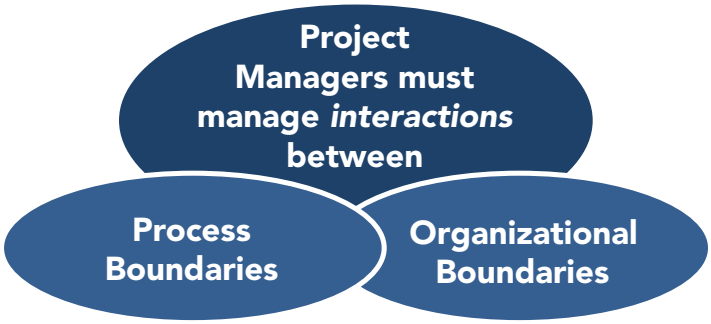
Managing Project Risk

This involves the identification and evaluation of risk as well as planning responses to ensure that corrective action is taken if the risks materialize.

It would be much easier (although far less flexible) if it were possible to specify a simple linear path involving preparing, planning, doing and reviewing. Unfortunately, this approach is only possible in very simple projects and even then it falls apart as soon as something unexpected happens. Looking at project management in terms of it's functional area approach is far more flexible, but it does require that you are able to select the right tool at the right stage in the project and this requires judgment.

This judgment requires knowledge and experience, which is one reason why experienced project managers are always in high demand. It also underlines the importance of recording as much as possible about how projects are performing. This information can be used to analyze how and why projects have succeeded or failed in the past.

By definition a project is going to change something in the way that the organization works and this is something that needs to be explained to all of the project stakeholders in order to get them on board and then to keep them there. This is easier said than done and what makes the discipline of project management so complex is that in order to satisfy all stakeholder requirements you need to manage interactions across organizational and process boundaries.



A great deal of this management takes place at the boundary of the project and involves resources other than those that are controlled directly by the project manager. Consequently, a key part of project management is to gain commitment from others outside of the project to provide these resources as and when necessary. This is something that relies on highly developed interpersonal skills including persuasion and negotiation. Complex projects need more management tools and techniques than small projects and a project manager needs to know which tools to use and when.

The aim of every project manager should be to use the smallest number of project management tools and techniques possible to deliver the project objectives. Remember, project management must never become the focus of effort. It is always a means to an end, not an end in itself.

KEY POINTS

- ✔ Project processes can be organized into functional areas, for example: Managing the Scope, Managing the Budget, Managing the Schedule, Managing Risk, etc.
- ✔ Thinking about project management activities like scoping, scheduling, quality, and risk in isolation before trying to integrate them into a real/live project makes them easier to understand.

- ✔ The Project Management eBooks on this website include: Managing the Project Scope, Managing the Project Schedule, Managing the Project Budget, Managing the Project Quality, Managing the Project Team, Managing the Project Communications, Managing the Project Risk, and Managing the Project Suppliers.
- ✔ A great deal of this management takes place at the boundary of the project and involves resources other than those that are controlled directly by the project manager.
- ✔ Project management must never become the focus of effort—it is always a means to an end, not an end in itself.

Summary

Project management is a complex activity that requires a structure, procedures and processes that are appropriate to your project. This will enable you to manage the inevitable changes that occur throughout a project's lifespan in a professional manner to ensure success. Each project function describes the expertise, skills and tools needed for your project.

So much work is now run as projects and so few people have the necessary skills to manage them properly that there is a huge demand for good project managers and that demand is increasing all the time.

The other project management skills eBooks available from **www.free-management-ebooks.com** provide you with an opportunity to read a more in-depth description of each functional area.

- Project Management Processes
- Managing a Project Team
- Managing the Project Scope
- Managing the Project Schedule
- Managing the Project Budget
- Managing Project Quality
- Managing Project Risk

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