Project Management (Short Course)

This course covers the following topics:

Topic 1

Introduction to Project Management

What is A Project?

A project is an effort that involves a series of activities and resources, aimed to achieve a certain output, considering constraints like time, quality and cost and which often introduces a change. *Source: Lake (1997)*

Projects have a limited duration, while operations are being carried out. Projects have well defined start and end dates. When the goals and objectives of a project are accomplished, it is said to have been completed. Sometimes when it becomes evident that the goals and objectives cannot be accomplished the project is cancelled and it ends. Operations involve continuous work without an ending date and often the same process is repeated.

A project is considered a success if it meets the expectations of the stakeholders. Stakeholders are people who have something to gain or lose from the project. A stakeholder is a person who sponsors a project and is usually an executive in the organization, who has the power to assign resources and make decisions related to the project. The customer is also stakeholder like contractors and suppliers. The manager of the project, as well as managers from other departments in the organization is also a stakeholder. Identification of all the stakeholders in the project by the project manager at the very start of the project is very important.

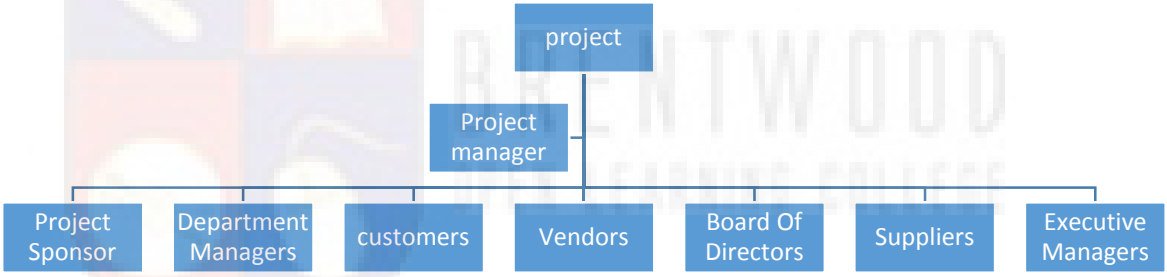


Fig: 1

The stakeholders usually have interests that conflict with those of other stakeholders. The project manager must understand these conflicts, and try to fix them. Be certain to identify and meet with all key stakeholders early in the project to understand all their needs and constraints. When in doubt, stakeholder conflicts should always be resolved in favour of the customer.

What Is Project Management?

A project uses the same skills that are used in everyday life, routine work – planning, working with others, managing different resources, reporting and so on.

It is not desirable to define a project depending on its size because this can vary largely. Some projects take a month or two to complete while others may be completed in years.

Project management is officially defined by the Project Management Institute as:

> "the application of knowledge, skills, tools and techniques to project activities to meet project requirements."

Projects can involve various types of activity. Investigating a particular problem, researching a new product or service or implementing the results of a previously completed project are some examples of the activity and aim of a project. These activities can be carried out completely by an organisation's own staff, or external consultants can be called for assistance. Even more than one company can be working together in a group. On the other hand, conventional routine work is one of the known and recurring tasks. And it does not have a clearly defined end point or deliverables. It is best to be carried out in an environment which is stable – mostly within a single function. Calling work 'a project' means that it has a unique outcome, which can be calculated in terms of time, cost and quality. For example, calling the building and launching London's Millennium Dome a project will be true, and so will be sending a man to the moon. So projects can be different in their relative sizes, but they have a common feature that they are all a series of activities, that are plotted and co-ordinated in a way that clients or sponsors can eventually decide that whether or not value for their investment has been received.

A project is different from routine work because it is a one-time effort aimed to change things in a specific way. So it can be said that creating a new web site would be a project; whereas its maintenance and small updates would not.

Managing a project can include;

- Pointing out the requirements,
- Fulfilling various needs, concerns and expectations of the stakeholders while project is being planned and carried out;
- Balancing the completing project constraints include(but not limited to);

- Budget
- Scope
- Quality
- Schedule
- Resources and,
- Risk

Time and **budget**are known terms—for example, a project should take six weeks and have a budget of £20,000. **Scope** refers to an agreed list of deliverables or features. The scale of the required solution is identified here. For example, creating a new web site for the company may be possible to do in six weeks, but if accounting software is to be rewritten then this isn't. **Quality** is exactly what it says on the tin, but a project's quality includes not only the quality of the finished product, but also the approach. Some industries require particular quality management approaches to be used—for instance, particular international standards have to be met by factories producing automotive parts.

A particular project influences the limitations on which project manager needs to focus. These factors have such a relation to each other that if any one factor changes, at least one other factor is likely to be affected. For example, shortening the schedule often results in increased budget, so that add additional resources can be added to complete the same amount of work in less time. If budget cannot be increased, the scope or quality may be reduced.

An even greater challenge is that project stakeholders may have different ideas as to which factors are the most important. Challenging the requirements of the project may create additional risks. The project team must have the capability to understand the situation and balance the demands so that a successful project can be delivered.

Fig 2

These four features (time, budget, scope, and quality) are known collectively as the **balance quadrant.** The balance quadrant shows the interrelationship between the four aspects and tells how a changing one feature will disturb the quadrant. For instance, if the project's scope is increased, it will have an impact on the time, cost, and quality of the project. In reality, making any project decision will have an effect on these four aspects.

Project management is therefore a set of skills and tools which assist in getting the project right in every way.

Project Constraints

There are usually far more project requests in an organization, than there are available resources to work on. Resources are a constraint here. The same problem occurs on individual projects as well. Every project should work under the constraint combination of time, money, and quality. One or two of the three constraints, sometimes all three, are limited. Sometimes there are projects where unlimited resources are available but time is the limitation. The changes needed for computer-programming required for the year 2000 are an example of a time-constrained project because moving the date wasn't possible.

The opposite scenario can be seen with other projects. The budget is fixed, even if you have all the time needed to complete the project. And then there are projects that have two or three of the constraints. Government agencies usually start the projects which are double constrained and sometimes triple constrained. For example, a new tax law states the impacts on computer programming, and requires new programmes to calculate and track the tax changes. A due date is usually given when the tax law takes effect, and the organization responsible has to implement the changes without additional budget or staff, i.e. they are told to use existing resources to accomplish the project goals. The specific requirements of the project are such that quality cannot be changed to meet the time deadline.

One of the biggest jobs of a project manager is to balance the triple constraints and at the same time meeting or exceeding the stakeholders' expectations. Most projects will require balancing only one or two of the triple constraints. For instance, if the project goal is a high-quality product, it is said, "I can give it to you fast or I can give to you cheap, but I can't give it to you fast and cheap."

Tools and Techniques

Project management is performed by people who describe, organize, and monitor the work of project activities using a set of tools and techniques. Project managers are those whose responsibility is to manage the processes involved in a project and who carry out the project activities using necessary the tools and techniques. Using these techniques leads to many advantages in organizing projects.

Programme is a group of projects, managed by employing similar techniques in an organized way. Programmes may include aspects of on-going operations as well. An example would be of a very large

programme with many subprojects under it like building a new shopping mall. Many subprojects exist under this programme. These might for example be excavation, construction, interior design, store placement, marketing, facilities management, etc. Each of the subprojects is basically itself a project. Each subproject has its own project manager, who is reporting to a project manager holding responsibility over several of the areas, who also has to report to the head project manager over the entire programme. Once this structure is built, the facility management is considered the on-going operations part of this programme.

Many skills and techniques are involved in project management. According to the PMBOK, “Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.” Ensuring project management techniques are used effectively is the responsibility of the project manager.

Topic 2

Role of the Project Manager

The performing organization assigns a person to achieve the project activities. This person is known as the project manager. A project manager's role is different from that of a functional manager or operation manager. Functional managers are usually focused on providing management oversight for an administrative area, whereas operations managers are assigned taking care of a facet of the core business.

A project manager may report to a functional manager, but this depends on the organizational structure. A project manager can also be one of the many project managers who report to a portfolio or programme manager.

Some organisations are involved with projects like construction, advertising, consultancy or entertainment. While in some organisations the work is centred on on-going operations like manufacturing, distribution and travel. However,to respond to changing circumstances and to create change, projects are increasingly used in all organisations.

Whatever industry you work in, you are likely to being part of managing projects at some time. For example, you may have to organize a new layout for the office, to investigate and write a report on how to introduce new updated machinery or to improve the provision of customer services. Your approach will depend on the structure of the organisation, and how projects within it are agreed and resourced.

You need to be certain about what you have been charged to deliver, the cost, the performance standards, to whose satisfaction and the time, if you want to be successful as a project manager. The nature of control you have over resources and people, and how certain you can be that the project that you have accepted is feasible are additional factors to your success.

The following characteristics must be possessed by the manager for effective project management:

1. **Knowledge:**

   What the project manager knows about project management.

2. **Performance.**

   What the project manager is capable of doing or accomplishing while applying their project management knowledge.

Personal.

What is behaviour of the project manager when performing the project related activity. This encompasses the attitudes, core personality characteristics and leadership qualities of the project manager. Leadership is the ability to guide the project team while achieving project objectives and balancing the project constraints.

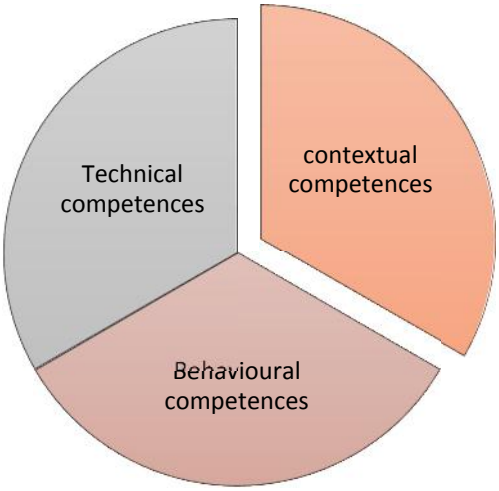


Fig 3

Project management has created tools and techniques for defining, setting up and controlling the work that has to be done. These tools make the job easier, but a project can't be managed by numbers. Project managers must be very good at managing people and handling uncertainty and risk.

Each of the skills is discussed in a bit more detail.

Communication Skills

A first-rate project manager possesses the single most important characteristics of excellent communication skills. Written and oral communications are the backbone of all successful projects. During the lifetime of a project, there will be many forms of communication. Ensuring that the information is explicit, clear, and complete so that your audience will have no trouble understanding what has been communicated is the job of the creator or manager of the project communication (project documents, meeting updates, status reports, etc.). It is the responsibility of the person receiving the information to make sure they understand it, once the information has been distributed.

Organizational Skills

Organizational and planning skills are probably the second most important skills of a project manager. Organization can be of many forms. There will be project documentation, requirements information, memos, project reports, vendor quotes, contracts, personnel records, and much more to track for the manager and he must be able to locate them in a short notice. He will also have to put together teams, organize meetings, and perhaps manage and organize media release schedules depending on your project.

Time management skill is closely associated with organizational skills, and the project manager should possess it.

Planning skills go alongside organizational skills. If you are able to combining these two with excellent communication skills, it is almost a sure guarantee of your success in the project management field.

Budgeting Skills

Project managers have to establish and manage budgets. So they need knowledge regarding finance and accounting principles. Performing cost estimates for project budgeting is the most important skill in this area. Project costs can be calculated using different methods available. These methods range from estimating the project's cost in one big chunk, to estimating individual activities and rolling the estimates up.

You can start spending after a budget is determined. This is not as exciting as it sounds. Budgeting skills like reading and understanding vendor quotes, preparing or overseeing purchase orders, and reconciling invoices will be used by the project manager on most projects. These costs will be linked back to expense items in the project's budget and project activities.

Problem Solving

All projects like everyday life have some problems.

Problem solving is a twofold process. Defining the problem comes first. When defining problems, we often end up just describing the symptoms instead of describing what the actual problem is. To avoid this problem, ask yourself, "Is it an internal or external problem?" or "Are there interpersonal problems between team members? Is it managerial?" or "Is it a technical problem?" Questions like these will help you to get to the heart of the problem.

After the problem has been defined, some decisions have to be made. Examining and analysing the problem will take a little time. The situation causing it, and the solution alternatives available all will take time to be figured out. After this analysis has been made, the best course of action to take and implement the decision will be determined by the project manager.

Negotiation and Influencing

Effective problem solving requires negotiation and influencing skills. Negotiation skills are used by us all in one form or another every day. For example, I am asked every day, "Honey, what do you want for dinner?" Then the negotiations begin, and the swordfish versus fried chicken discussion commences. Negotiating is basically working with others to come to agreement. Negotiation on projects will be essential in almost every area from scope definition, to contracts, budgets, resource assignments, etc.

Influencing can be thought of as ability to convince the other party that swordfish is a better choice than fried chicken even if that is what they want. Simply put, it's the ability to get people to do things they wouldn't do otherwise. It's also the ability to change of the course of events and minds, and to influence outcomes.

All areas of project management will utilize these skills.

Leading

Management and leadership are not synonymous terms. Leaders impart vision, inspire and motivate others, establish direction and gain consensus for strategic goals. On the other hand, managers focus on results and they are concerned with getting the job done according to the requirements. Project managers must exhibit the characteristics of both during different times on the project, even though leaders and managers are not the same. Understanding when to switch from leadership to management and then back again is a finely tuned and necessary talent.

Team Building and Human Resources

Team building and human resource management skills will be heavily relied on by project managers. People from different parts of the organization often form the teams. These people may or may not have worked together before—so there may be some component of team-building groundwork that will involve the project manager. The tone for the project team will be set by the project manager. He will help them work through the various team-forming stages to become fully functional. The project manager may take on a variety of roles during this initial team-building process.

Topic 3

The Project Life Cycle

From initial idea to completion and sign off, the projects will be passing through some well-defined stages. There are basically five stages, as shown in the following figure.

First you start the project (**Initiating**), then you go on to actually *do* the project, i.e. the **Planning**, **Executing**, and **controlling**phases. Finally you finish with everyone happy, a strategy for the future in place, and a check in your hand (**Closing**).

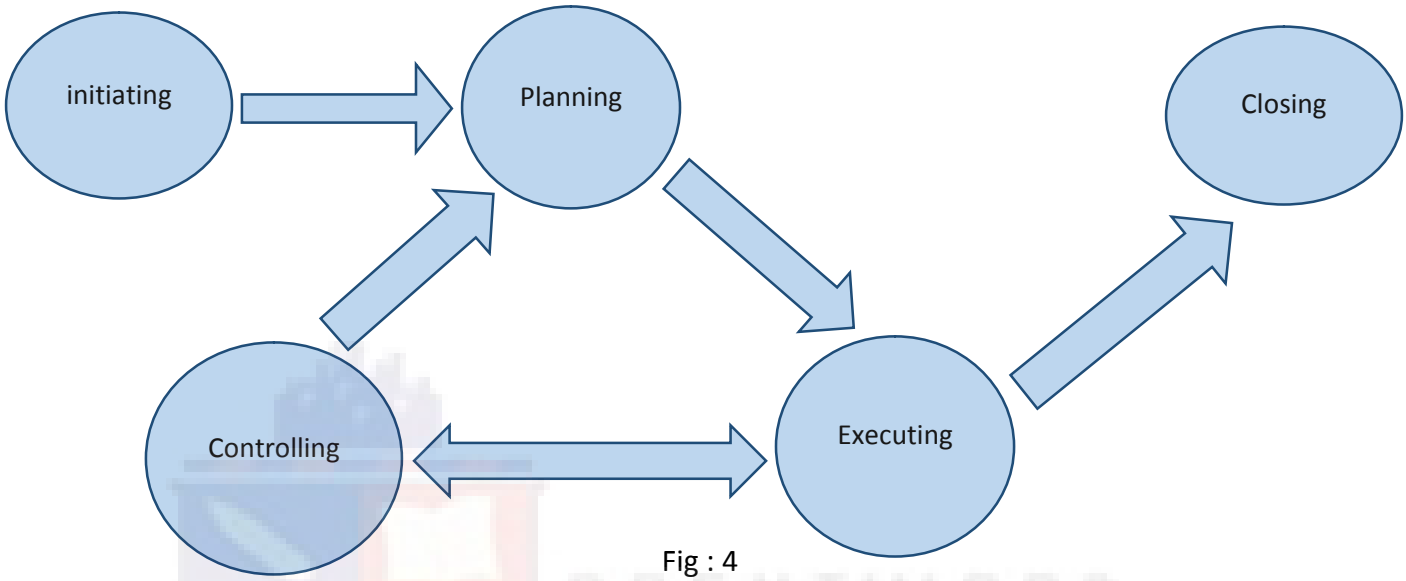


Fig : 4

In reality, each stage is rarely as neatly compartmentalised as the model shown in Figure 1.4. Although each stage has a clear purpose, stages may overlap. Monitoring and review, for instance, is inseparable from putting the plan into practice and the activities within each stage may continue to the next stage. The project manager should be aware of this. He must accept it as a part of real life, and be confident enough to manage this fluidity without losing control of the project.

Although all the stages are important, it is wise to particular importance to initiation and definition and the planning and project organisation phases. If these are skimmed over in a rush to get started on what may be perceived as the real work, implementation will be difficult and time-consuming to achieve, and the project will probably fail. The project manager is in the spotlight, but projects involve many different people who have some interest in its progress and outcome.

The project sponsor, who may have initiated the project, project team members, the customer or client for whom the work is being done, suppliers of products or services for the project, both internal and external, and possibly external consultants, all are stakeholders who have interest in the project. Each stage will now look briefly at in turn.

Initiation

Different sources and different reasons can result in projects arising.

For example:

- a customer complaint about poor delivery times
- a request from a potential customer to provide a service or product
- your boss's view that there must be a better way of doing something
- an internal proposal for a new product or service
- a policy decision in the organisation to introduce a new quality standard
- your own belief that a particular process isn't working as efficiently as it should.

Large capital projects are typically preceded by an extensive feasibility study. For example, civil engineering projects. This study concludes that the project is viable, confirms that the organisation can support the capital outlay, estimates the budget required and sets out a broad specification for the project.

Examples of this kind of feasibility study include:

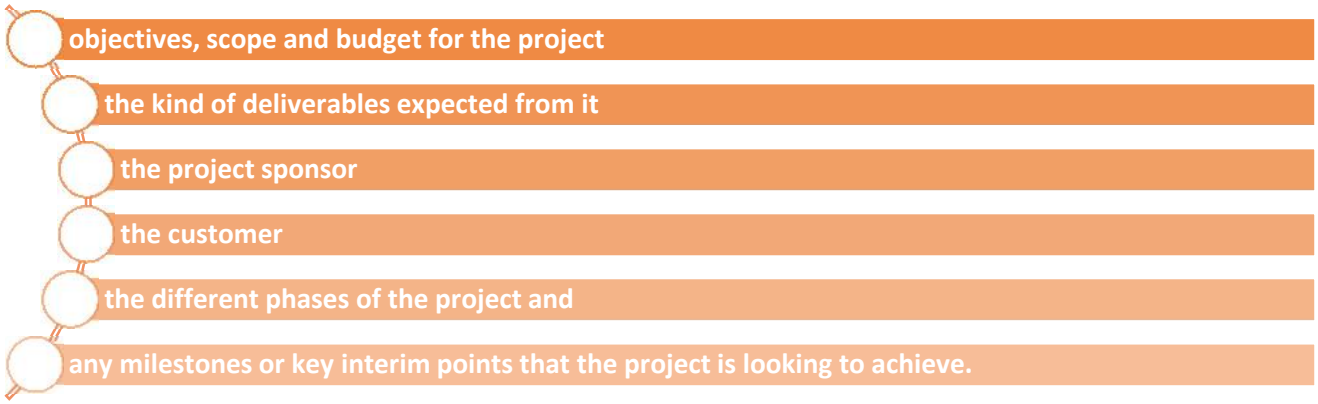
- A study which defines the financial and technical requirements of an improved system which monitors environment in a major city
- A study which defines the best methods of converting paper media, in a documentation centre, into electronic versions which are suitable for the organisation's project work
- A study which identifies businesses that need the particular attributes of a specific city or region, for example climate or raw materials, transport links, so that targeted marketing can be used by the city or region to encourage relocation.

Feasibility or scoping study can also benefit smaller but complex projects, those for which the value isn't immediately obvious or for which an initial quantification is required. This can provide a clear view of what needs to be done by the project itself, and establish a project framework and definition.

Some formal recommendations for action or change will be part of this study. On a smaller scale; projects may simply start as a gut feeling or hunch, which is then articulated into a project proposal.

We can think of it as the contract between the sponsor and the project team. This defines the scope of the work to be carried out. Initiation can be by either side, but activities covered, and any subsequent changes, have to be agreed by both parties.

The Terms of Reference will cover at least the following:



At this stage, you may be working on your own as the project manager. You may also be working with a small number of people. These will develop into the core project team.

Project planning and organization

This is a crucial and very extensive stage involving all those who have a legitimate interest in the project, that is, all the project's stakeholders. The project really begins to move from here; from an idea to a reality, as project outlines are translated into specific actions. Clarification, quantification and documentation will be the focus in this phase. All these will build up into a formal project plan:

- Who will be responsible for carrying them out?
- What resources will be required?
- In what order will tasks be performed, and to what timetable?
- What tasks will be carried out in order to meet the project objectives and how will they be grouped together?

Project planning and organization can determine its success or failure. Obtaining agreement is a key task for the project manager during this phase. Essentially, all project stakeholders should believe in it and must be committed to its success.

Implementing the plan

This is the phase when you have to go away and do it. The project becomes reality here. Success or failure of the project will depends largely on how well the project team works together, and how effectively the project manager can lead and motivate them. The project's customers take a close interest, and it must be ensured that they are kept up to date with progress and consulted as appropriate.

Monitoring and review

If project objectives are to be achieved against time and budget, careful monitoring against the key dates and milestones you have identified in the project plan will be needed. Few projects run without any

hitches. So you and your team will need to review the plan on a regular basis and deal with potential and actual problems by making any necessary changes to the plan if needed.

Project closure and evaluation

This means the end of the project. All deliverables can be formally signed off and the team disbanded. At this point, the project itself can be evaluated in terms of its success and likely impact.

Understanding the Project Life Cycle

The project life cycle tells us that the areas that take the most time are not necessarily the most important.

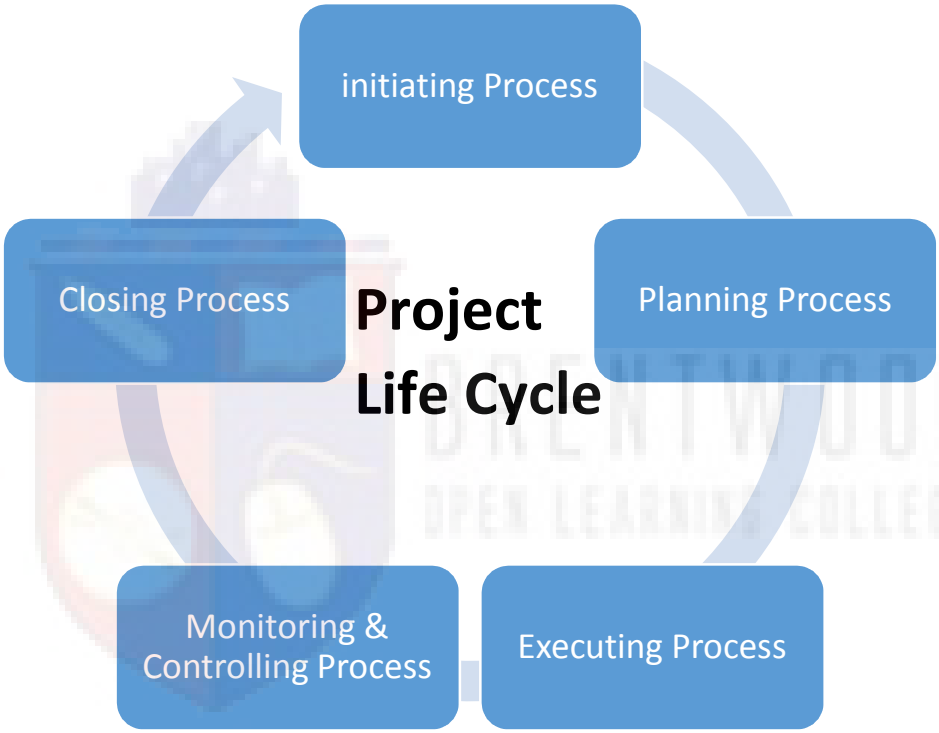


Fig: 5

Most people spend most of the project time working in the Executing and Controlling phases—actually doing the tasks, building the product, and making sure everything is on track. It is true that this work is hugely valuable—without which, there wouldn't be much point starting the project at all. But these phases aren't typically where the success or failure of a project is dictated. That lies with the other three phases—Initiating, Planning, and Closing. This makes them the most important phases of all.

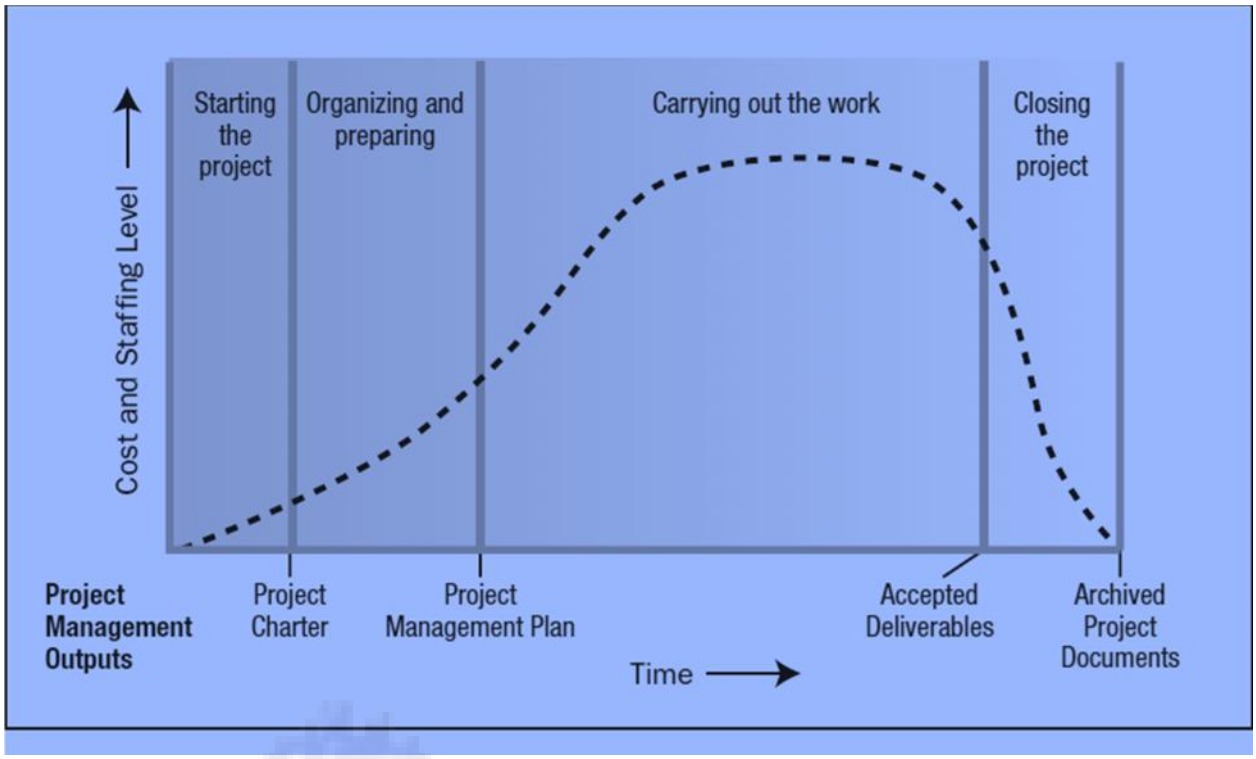


Fig: 6

We now ask why Initiating, Planning, and Closing are so important. Think about this by imagining the repercussions if these phases were completed badly or even ignored completely.

If Initiating isn't done right, a situation often arises where the project team members have very different ideas about the project's purpose. Eventually they disagree to the point at which the project is really finished. Thinking success is a good design and a series of static pages, but the customers' number one requirement being "first result on Google," you would be delivering a great product that they will be viewing as a failure.

The Initiating phase provides an opportunity to ensure that everyone in the team is on the same page from the start. Conflicts and misconceptions are addressed, rather than left to fester. Good initiation will ensures that all the project **stakeholders**(all those who are involved, interested in, or affected by the project) are identified up-front. This avoids the likelihood that they'll appear and interfere up at inopportune moments during the project.

Failing in the Planning phase can be equally disastrous for your project. Without planning, you wouldn't know what you should be doing next. Similarly, planning once at the beginning of the project, and expecting just to be able to follow that plan, is both wonderfully naïve and seriously dangerous. It's incredibly difficult to plan what should be done on a specific day three months from now.

The best planning approach is one that allows for planning the project's immediate future in detail, and planning tasks that lie further out at a higher level. This is called the **rolling wave** approach to planning.

The deliverables for the next three to four weeks are broken down into sections. This makes it possible to keep track of the project's progress on a day-to-day basis. Things to do further off than a month are left unplanned, as a high-level deliverable, so that what lies ahead can be known without the minute details being overly focus on.

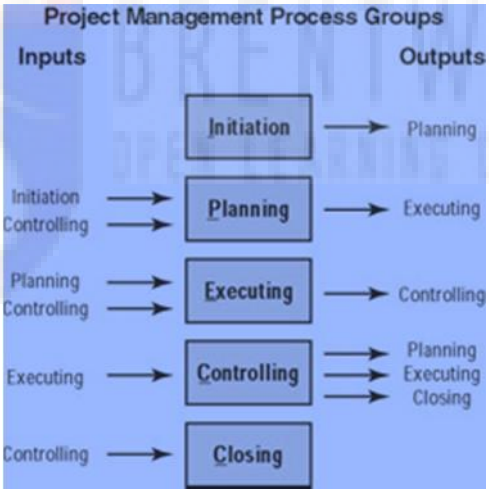
Just as problematic as poor initiating or planning, is when you don't pay proper attention to the closure of your project. If you think your project is finished when you finish building the product, then you're in for a nasty surprise:

Making sure that the product you've built has a future is part of finishing a project with excellence.

If you are interested in picking up support contracts for all the projects you implement, you need to execute the Closing phase properly. Ad hoc arrangements will always come back to bite you later. If you intend to hand over the future maintenance and support of the product to someone else—perhaps a person who's internal to your customer's organization—then, again, this needs care. Eventually there will be dissatisfaction on one side or the other if you just throw the work over the fence to them and wander off to your next project.

The Process Flow

The five processes (initiating, planning, executing, monitoring& controlling, closing) are iterative and should not be thought of as one-time processes. Throughout the project life cycle, these processes will be revisited several times as the project is refined.



Project management process groups

Assessment

Total Marks: 20

1. What is the difference between a project and routine work? 6
2. Describe different stages of the project life cycle. 8
3. Outline the key skills every good project manager should possess. 6