Programme : CS
Course : Project management skill
Unit - 1

Definition: A project is defined as a sequence of tasks that must be completed to attain a certain outcome. According to the Project Management Institute (PMI), the term Project refers to " to any temporary endeavor with a definite beginning and end". Depending on its complexity, it can be managed by a single person or hundreds.

or

A **project** is defined as an effort to create or modify a specific product or service.

Types of Projects:

(1) Manufacturing Projects:

Where the final result is a vehicle, ship, aircraft, a piece of machinery etc.

(2) Construction Projects:

Resulting in the erection of buildings, bridges, roads, tunnels etc. Mining and petro-chemical projects can be included in this group.

(3) Management Projects:

Which include the organization or reorganization of work without necessarily producing a tangible result. Examples would be the design and testing of a new computer software package.

(4) Research Projects:

In which the objectives may be difficult to establish, and where the results are unpredictable.(Covishield manufacturing project)

Benefits of Project Planning and Management

1. **Project Management Improves Productivity and Reduces Costs and Workload**

The ultimate goal of project management and planning is efficiency. You want to do as much as possible in as little time as possible.

2. Project Management Improves Collaboration

If everything related to your project is structured and team members know exactly what they need to be doing at any given time, it'll be much easier to manage them.

Plus, everyone will do their best work.

3. Project Management Improves Customer Satisfaction

Let's be real: you are the project manager. You are the one responsible for keeping

everyone happy.

Now, this can be a tricky thing to do.

But with a little project management magic added to the mix, you'll see how easy it can be to meet customers' expectations.

4. Project Management Helps You Improve Your Performance

When you have an organized way of tracking your performance and results from project to project, you'll be able to understand it.

And if you can measure it, you can improve it.

Without a structured process, it's anyone's guess why a project failed.

But if you stick to outlined processes, you'll easily notice bottlenecks and understand the variables putting your projects in jeopardy.

5. Project Management Helps with Problem Resolution

Finally, there are always problems in projects. After all, there's a lot of moving parts involved.

However, when you're using a PM methodology, you know exactly how to approach a problem.

A structured way of organizing work can even help you nip problems in the bud or notice them before they wreak havoc on your project.

Obstacles to Any Project and How to Clear Them

1. Unclear goals and responsibilities

"It's a lack of clarity that creates chaos and frustration. Those emotions are poison to any living goal." **– Steve Maraboli**

1. Set out the goals clearly and ensure buy-in from all stakeholders

2. Organize time management

3. Choose your team and organize them properly

4. Set the bar for high standards

5. Weigh up risk management

2. Unprepared team

"If a team is to reach its potential, each player must be willing to subordinate his personal goals to

the good of the team" **– Bud Wilkinson**

1. Organize an early meeting with your team

2. Explain project objectives, key deliverables, scope, etc.

3. Provide training if required, or ensure the team has the requisite expertise

4. Listen to any problem/concerns they may have and address them

5. Explain the tasks, time schedule.

3. **Limited resources**

"Limited resources force you to make do with what you've got. There's no room for waste. And that forces you to be creative" **–** author **Jason Fried**

This can be anything from too few team members, to lack of money or tools for the project. It can also be insufficient time. Perhaps not enough was allowed in the planning. One of a project manager's attributes is critical thinking skills and an ability to maximise the resources (human, material, and financial).

4. **Poor planning**

"A man who does not think and plan long ahead will find trouble right at his door." **Confucius**

Poor planning can only lead to project failure or delays and cost overruns. It will also infuriate all stakeholders.

5. **Lack of communication**

"The single biggest problem in communication is the illusion that it has taken place." **– George Bernard Shaw**

6. **Resistance to change**

"Changes are inevitable and not always controllable. What can be controlled is how you manage, react to and work through process." **– Kelly A. Morgan**

This is the enemy of any project. There is nothing worse than being kept in the dark about decisions, cost overruns and delays. At the outset you may have briefed team members on their responsibilities, time schedules, etc. However, it is essential to maximise communications throughout the duration of the project.

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Role of project manager

1. Planning the activities

A project manager needs to set an

1. impact strategy that includes a full list of activities that are important for the

project.

2. The key responsibility of a project manager includes planning.

3. The project manager needs to define the scope of the project and develop a project schedule accordingly.

4. In general, when a project manager is planning the activities it is important to target the activities effectively to do less but well.

5. The procedures should be efficient enough to deliver the projects within specified time and budget.

6. Also, a backup plan should be created if the situation demands.

2. Organizing a project team to perform work

Another major role of project managers has

1. focused their team's efforts on elaborate spreadsheets, long checklists, and whiteboards.

2. need to develop a plan that will support the team to reach their goal easily without hindering the performance.

3. It is their duty to organize their team to show their full potential.

4. A project manager will have have to sometimes put on the duties of human resources like negotiating current employees' job responsibilities, managing their times and achieving their commitment to the project, bids may be required and contracts will need to be reviewed and keeping everyone in check to make sure that the team's moves along in accordance with the plan.

3. Delegating the teams

The managers should also understand the strength and weakness of their teams and accordingly delegate the tasks to them. So, be a good leader who creates an environment that fosters trust through meaningful delegation.

4. Controlling time management

They need to develop a project that has the following features:

1. Objective

2. Process

3. Estimating duration

4. Schedule development

5. Schedule control

4

5. Managing deliverables

The Project Manager is also responsible for ensuring that the deliverables are delivered on time and within budget as per the business requirements. Their job is concerned with asking questions like:

1. What are the changes being made in the organization?

2. What is the team doing?

3. Why are we doing it?

4. Is there a business opportunity or risk?

5. How are we going to do it?

6. What are the popular project management techniques?

7. Who is doing what?

8. Where are the records and project documents?

9. What are the specifications, schedule, meetings etc?

10. When are the things being done?

6. Monitor progress

Most of the project manager's time revolves around monitoring the status of projects. After the project has been started, a project manager has to see how much is done and if it is being done as expected

7. Establish Regular Meeting:

Scheduling regular meetings are difficult for all project managers and it doesn't work well for every project. But a good for successful projects you probably need one team meeting per week

8. Communicate a vision with the team

A project manager should have a vision of where to go and the skills to understand the big picture related to any project. The vision should be conveyed to the entire team so that they understand the importance of their role to achieve the end results.

9. Managing reports and necessary documentation

Finally, when the project is completed on time and on a budget, the project manager has to then provide an appropriate documentation to present the final reports to clients and identify the areas where there is a need for future development

It has two main functions:

1. To maintain a record of what has been done in the project and who have been involved in it.

2. To ensure that the project satisfies all the project requirements

Major Roles of Management Consultants

Management **consultants** work to provide solutions to the client's changing business needs. As they progress in their careers, management **consultants** are often required to become aligned with a specific industry of their choice and eventually become "experts" in that field.

What is an Operation?

Operations are the ongoing execution of activities and they follow an organization's procedures to produce the same result or a repetitive service. Operations are permanent in nature.

Any manufacturing or production process can be an example of an operation.

The Difference Between Projects and Operations

There are many differences between projects and operations. Some differences are as

follows:

	Project	Operation
1	unique and temporary	ongoing and permanent with a repetitive output
2	fixed budget	earn a profit to run the business.
3	Projects are executed to start a new business objective and terminated when it is achieved,	while operational work does not produce anything new and is ongoing.
4	There are more risks in projects as they are usually done for the first time	while operations produce the same product, aim to earn a profit and keep the system running.
5	Projects are managed through project management	operations require business process management

A Real-World Example of Projects and Operations

Assume you were given a project to build a car manufacturing facility.

You build the facility and deliver it to the client. Your job is completed, and the client has started manufacturing cars.

In this example, building the facility is an example of a project, because here you constructed a car manufacturing facility and handed it over to the client and signed off.

However, once the facility starts working and the car manufacturing process begins, this is an example of operations, because here the facility is producing a repetitive output,

cars.

Therefore, this is an example of an operation.

Why Projects and Operations are Undertaken

Projects are undertaken due to the following reasons:

1. An opportunity or business need

2. Social need

3. Technological advancement

4. Customer request

5. Market demand

6. Legal requirement

On the other hand, operations are performed to run the business and sustain the system.

Project management process

1. **Project Initiation :** Project initiation is the starting point of any project. In this process, all the activities related to winning a project takes place. Usually, the main activity of this phase is the pre-sale.

2. **Project Planning :** Project planning is one of the main project management processes. If the project management team gets this step wrong, there could be heavy negative consequences during the next phases of the project.

   Therefore, the project management team will have to pay detailed attention to this process of the project.

3. **Project Execution :** After all paperwork is done, in this phase, the project management executes the project in order to achieve project objectives.

   When it comes to execution, each member of the team carries out their own assignments within the given deadline for each activity. The detailed project schedule will be used for tracking the project progress.

4. **Control and Validation:** During the project life cycle, the project activities should be thoroughly controlled and validated. The controlling can be mainly done by adhering to the initial protocols such as project plan, quality assurance test plan and communication plan for the project.

   Sometimes, there can be instances that are not covered by such protocols. In such cases, the project manager should use adequate and necessary measurements in

order to control such situations.

5. **Closeout and Evaluation :** Once all the project requirements are achieved, it is time to hand over the implemented system and closeout the project. If the project deliveries are in par with the acceptance criteria defined by the client, the project will be duly accepted and paid by the customer.

What is project scope management?

Project scope management is a process that helps in determining and documenting the list of all the project goals, tasks, deliverables, deadlines, and budgets as a part of the planning process. In project management, it is common for a big project to have modifications along the way.

1. Planning scope management

In the first process in project scope management, you create a scope plan document that you can refer to in the later stages. The document mainly helps in defining, managing, validating, and controlling the project's scope.

It includes:

1. Detailed project scope statement

2. Breakdown of all the project requirements

3. Expected project deliverables

4. Change control process

The document doesn't have to be very detailed, it just has to fit the purpose. You can also use a previous project's scope management plan as a reference for this.

2. Collecting requirements

The next step is to workout stakeholder requirements and expectations. You will be required to document all the project requirements, expectations, budgets, and deliverables through interviews, surveys, and focus groups.

This is a rather important step because more often than not, stakeholders can have unrealistic requirements or expectations and the project managers would be required to

step in to find a solution that is acceptable by everyone from avoiding project delays.

At the end of the collection requirements stage, you should have the following:

1. Functional as well as non-functional requirements

2. Stakeholder requirements

3. Business requirements

4. Support and training requirements

5. Project requirements

3. Defining the scope

At this step, you need to turn your requirements into a well-detailed description of the service or product that you are trying to deliver through the project. You will then have a project scope statement that you can then refer to throughout your project.

While it is important to list what is in the scope of the project, it is just as important to note down what is out of the project scope. Any kind of inclusions to the scope would then have to go through the entire change control process to ensure the team is only working on things that they are supposed to work on.

With a defined scope, you get a reference point for your project team and anyone else involved. In case there is something that is not involved in the scope, it doesn't need to be completed by the team.

4. Making a work breakdown structure

A work breakdown structure (WBS) is a document that breaks down all the work which needs to be done in the project and then assigns all the tasks to the team members. It lists the deliverables that need to be completed and their respective deadlines as well.

You can use project management software for this step of the process to assign and prioritize tasks which will make it easier to track the entire progress of the project and avoid any unnecessary bottlenecks.

5. Validating scope

In this step, the scope and deliverables that you have recorded need to be sent to project executives and stakeholders to get the necessary approvals. Scope validation needs to be done before starting the project to ensure that if something goes wrong then it is easy to find where it went wrong.

6. Controlling scope

Project managers need to ensure that as the project begins, it always stays within the defined scope. In case there are some things that need to change, then the proper change

control process should be followed.