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Project Management

1. Definition of a Project :

Project is a unique process, consist of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time cost and resource.

2. Project Characteristics :

Projects share the following common characteristics.

- Unique in nature.
- Have definite objectives (goals) to achieve.
- Requires set of resources.
- Have a specific time frame for completion with a definite start and finish.
- Involves risk and uncertainty.
- Requires cross-functional teams and interdisciplinary approach.

3. Project Performance Dimensions :

Three major dimensions that define the project performance are scope, time, and resource. These parameters are interrelated and interactive. The relationship generally represented as an equilateral triangle.

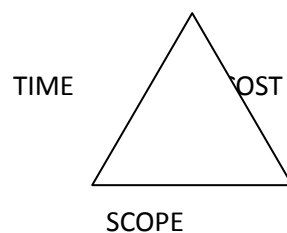


Figure 1. Project performance dimensions

It is evident that any change in any one of dimensions would affect the other. For example, if the scope is enlarged, project would require more time for completion and the cost would also go up. If time is reduced the scope and cost would also be required to be reduced. Similarly any change in cost would be reflected in scope and time. Successful completion of the project would require accomplishment of specified goals within scheduled time and budget. In recent years a fourth dimension, stakeholder satisfaction, is added to the project. However, the other school of management argues that this dimension is an inherent part of the scope of the project that

defines the specifications to which the project is required to be implemented. Thus the performance of a project is measured by the degree to which these three parameters (scope, time and cost) are achieved.

4. Project Life Cycle:

Every project, from conception to completion, passes through various phases of a life cycle synonym to life cycle of living beings. There is no universal consensus on the number of phases in a project cycle. An understanding of the life cycle is important to successful completion of the project as it facilitates to understand the logical sequence of events in the continuum of progress from start to finish. Typical project consists of four phases- Conceptualization, Planning, Execution and Termination. Each phase is marked by one or more deliverables such as Concept note, Feasibility report, Implementation Plan, HRD plan, Resource allocation plan, Evaluation report etc.

a. Conceptualization Phase:

Conception phase, starting with the seed of an idea, it covers identification of the product / service, Pre-feasibility, Feasibility studies and Appraisal and Approval. The project idea is conceptualized with initial considerations of all possible alternatives for achieving the project objectives. As the idea becomes established a proposal is developed setting out rationale, method, estimated costs, benefits and other details for appraisal of the stakeholders. After reaching a broad consensus on the proposal the feasibility dimensions are analyzed in detail.

b. Planning Phase:

In this phase the project structure is planned based on project appraisal and approvals. Detailed plans for activity, finance, and resources are developed and integrated to the quality parameters. In the process major tasks need to be performed in this phase are

- Identification of activities and their sequencing.
- Time frame for execution.
- Estimation and budgeting.
- Staffing.

c. Execution Phase:

This phase of the project witnesses the concentrated activity where the plans are put into operation. Each activity is monitored, controlled and coordinated to achieve project objectives. Important activities in this phase are

- Communicating with stakeholders.
- Reviewing progress.
- Monitoring cost and time.
- Controlling quality.
- Managing changes.

d. Termination Phase:

This phase marks the completion of the project wherein the agreed deliverables are installed and project is put in to operation with arrangements for follow-up and evaluation.

5. Project Management:

Project management is a methodical approach to planning and guiding project processes from start to finish. It is the method of planning the plan. It starts from project definitions and ends with goal achievement.

6. Objectives of Project management:

There are four major objectives of project management

- **Scope:** Scope means what are the expectations from you as a project manager and your team. A civil contractor always has well-defined scope, like all civil works including excavation, foundation, concreting, brickwork, plastering of all walls as per the attached drawings.
- **Performance:** A project is always expected to have a well defined performance level. If a project is unable to adhere to the desired performance of a customer, it is certainly an unsuccessful project.
- **Time:** A successful project is the one which is completed within the time limits perceived during the planning. As the cost is dependent on time, time management becomes a crucial activity of project management.
- **Cost:** It is dependent on all the above objectives.

Therefore, cost is a function of performance, time and scope. If any of the above increases, it is surely going to increase the cost of the project. Another approach in defining the objectives is the SMART approach.

- **Specific:** Project should target a specific goal.
- **Measurable:** It should be quantifiable.
- **Attainable:** It should be attainable with resources available.
- **Realistic:** It should be realistic in nature.
- **Time Limit:** There should be fixed time limits.

7. Importance of Project Management:

- **Rapidly changing technologies:** Technologies are changing very fast, so all manufacturing as well as service organizations have to cope up with technological changes, which provide a big scope for project management.
- **Squeezed life cycle of products:** Product life cycle is squeezed to a great extent with innovations taking place at a very rapid rate. Projects are needed for the upgradation of products.
- **Globalization impact:** All producers and service providers in the present world are exposed globally. They need to modify their system of operations to match the global practices, thus creating opportunity for projects.
- **Large organizations:** They face problems of management of huge workforce and work division, so they divide their work in projects and create a team to accomplish the objectives in the form of projects. This has also helped the organization to develop a method for performance appraisal.
- **Customer focus:** Increased customer focus has been a market trend in recent times. In recent years, customer focus has redirected market towards customization. Though it is not purely customization, it is more of a combination of standardization and customization. All this has led to the application of project management.

8. Sources of Risk in Project Management:

There are various sources of risk. Any change in economy of a nation or globe, any change in price levels of inputs or outputs may lead to risk. Let us enumerate the various sources of risk.

- **Market risk:** Although every project undergoes market potential analysis and demand forecasting, there are chances of variations due to various foreseen or unforeseen reasons, which may adversely affect market potential or sales of product or services to be rendered by the planned project. This is user acceptance risk.
- **Economic risk:** Global or national economy is always in different phases and no project can shield itself from ongoing economic changes. All projects are prone to risk of economy. Recession in economy reduces the purchasing power of the customers and thus can affect the sales or revenues of the project. It can also lead to reduce demand as well as selling price. Inflation rate varies with changes in economic situation which also affects prospects of any project.
- **Financial risk:** Any change in interest rates or cost of capital will affect the prospects of a project. A project which is feasible at the expected return of 12% may become infeasible if the expected return increases to 15%. The expected returns directly vary with interest rates. The degree of financial risk for different projects varies with its debt equity ratio and can be measured by the financial leverage.
- **Technological risk:** The failure of the selected technology is one of the biggest risks to any project. Moreover, a project may face the problem of upgradation of technology. Many projects have failed due to inability to cope up with technological innovations. This particular source of risk is vital in the present world scenario as technology is changing very fast.
- **Commercial risk:** There is always the risk of a customer or debtor becoming insolvent. Although the company does manage and keeps provision for such bad debts, at times when the customer is a major one and the amount outstanding with him is large, it may affect the working of the project.
- **Quality risk:** Today's world is quality conscious and any degraded quality product may lead to rejections and the brand may lose its value in the long run if it is not able to maintain quality norms as per the customer's requirement.
- **Legal or regulatory risk:** Political environment of a country may lead to changes in legal or regulatory changes and may cause risk due to new taxes being imposed or barriers to imports or exports being introduced.

9. Roles of the Project Manager:

- **Entrepreneur:** The project manager may not be the owner or entrepreneur himself, but has to play the role of an entrepreneur. He is responsible for procurement of funds, facilities and people for the project. He is accountable for failure and wins all credits in the situation of success. The success of any project majorly depends upon this entrepreneur.
- **Decision maker:** The project manager is the responsible for the allocation of resources, defining project scope, managing the cost and schedules as per the plans. He is controlling the project to retain the project schedules and costs and decrease the sources of deviations.
- **Communicator:** The project manager is the central point of all communications in a project. He acts like a communication hub or a server. He collects various information and processes them. He is also responsible for communicating the methods, targets to various members of the project team. He also heads the review meetings.
- **Motivator:** There are the times when the project manager's major role is to bring back the confidence of the team members in the project. He should maintain the enthusiasm and excitement of his teams.