



IIT ROORKEE



NPTEL ONLINE
CERTIFICATION COURSE

Project Management for Managers

Lec – 01

Introduction of Project Management

Dr. M.K. Barua

Department of Management
Indian Institute of Technology Roorkee



Project Management Fundamentals
Project evaluation methods
Project Integration and scope Management
Project Planning and Scheduling
Project networking
PERT/CPM techniques
Project scheduling with resources
Project risk management
Project contract and materials management
Cost management and Cost estimation
Quality Assurance and Quality Control
Computer Based Project Management



Project Management Course Objectives:

- To understand the importance of project management in today's world.
- To establish the importance of projects in implementing organization strategy
- To understand the rules for creating a Work Breakdown Structure for a project
- To demonstrate the importance of WBS to the management of projects and how it serves as a database for planning and control
- To develop a network diagram for a project



- To understand why estimating project times and costs are the foundation for project planning and control
- To understand the intricacies of project earned value analysis
- To illustrate approaches for risk identification, analysis, and assessment
- To understand the procurement process and the risks involved in different contracts
- To identify key characteristics of a high-performance project team
- To understand the critical success factors in project management
- To understand project closure process



- Cement Project, power project, refinery project, fertilizer project, etc.
- Term project is common - plants are not. In each case the project is for the plant but as soon as the plant is operational, the project is deemed to be completed.
- Project for method improvement.
- The explicit use of the term “project” is not always necessary - elections, admission process, road-dam-building construction.
- A project, therefore, is not a **physical object**, nor it is the end result – it has something to do with **the going - on in between**, which must be the same, whether we build a high technology process plant or merely hold an election, to deserve a common name and to be termed as a project.



A project is, thus, initiated to achieve the mission-whatever the mission may be. A project is completed as soon as the mission is fulfilled.

A combination of **human and non human recourses** pooled together to in a **temporary organization** to serve **specific purpose**.



What is project success??

A project is “a temporary endeavor undertaken to create a unique product, service, or result.”

Operations is work done to sustain the business.

A project ends when its objectives have been reached, or the project has been terminated.

Projects can be large or small and take a short or long time to complete.



What is a project??

- A group of tasks (activities) performed within a definable time period (schedule) in order to meet a specific set of goals/objectives (performance) within a budget (cost plan)
- A project generally exhibits most of the following conditions:
 - ⚙ It is *unique*
 - ⚙ A project is *finite*
 - ⚙ Usually *complex*
 - ⚙ A project is *heterogeneous*
 - ⚙ *Non-repetitive*
 - ⚙ Requires *multiple resources* from a finite resource pool



- **Fixed set of objectives**
- **Team work**
- **Life cycle**
- **Made to order**
- **Multi skilled staff required**
- **Subcontracting**
- **Risk and uncertainty**



It is a one shot, time limited, **goal directed**, major undertaking, requiring the commitment of **varied skills and resources**.

A project is defined to be a **task** which has a definite **beginning-definite end time** and which consists of several activities or jobs.



SMART project

- Specific: project should be targeting specific aim or goal.
- Measurable: It should be **quantifiable**.
- Attainable: It should be attainable with resources available.
- Realistic: It should be realistic in nature, dreaming is fine, but we certainly can not manage the dreams. We need some real things to be managed.
- Time-limited: As mentioned earlier there is fixed time limit for any project.



Examples of projects include, but are not limited to:

- Developing a **new product** or service
- Effecting a change in **structure**, staffing, or style of an **organization**
- Designing a new **transportation** vehicle
- Developing or acquiring a new or modified **information system**
- Constructing a **building** or facility
- Building a **water system** for a community
- Running a **campaign** for political office
- **Implementing** a new business procedure or process



Various elements of project: Based on set of definitions

Projects are **complex, one time** processes

Projects are **limited by budget ,schedule, and resources**

Projects are developed to resolve a clear **goal or set of goals**

Projects are **customer focused**



Process & Project Management

Process

1. Repeat process or product
2. Several objectives
3. On-going
4. People are homogeneous
5. Systems in place
6. Performance, cost, & time known
7. Part of the line organization
8. Bastions of established practice
9. Supports status quo

Project

1. New process or product
2. One objective
3. One shot – limited life
4. More heterogeneous
5. Systems must be created
6. Performance, cost & time less certain
7. Outside of line organization
8. Violates established practice
9. Upsets status quo



	Project Management	Operations Management
Repetition	Non repetitive	Repetitive
Work force required	Multi-skilled or very highly specialized for short durations	Limited skills, a huge learning effect
Revenues	No revenues	Revenues and profit/losses
Objective	Scope, performance, time, cost	Profits generated, cost reduced, quality of products or services
Equipments needed	Special purpose equipments for a short durations	Same equipments are continuously used
Subcontracting	Essential, involves many subcontracting agencies	Generally avoid use of subcontracting agencies
Risk	Very high risk as generally no chance of recursion	Risk is less as chances of improvement always there



	Project Management	Operations Management
Duration	Fixed, ceases with attainment of objective	Continuous in nature, ceases in special situations like divestment.
Improvement	Radical improvement to face the existing competitor	Incremental improvement to reduce cost or add to value
Major impact	future	present
goal	Creation of new thing	Maintenance of existing thing



What is project management??

Project management is “the application of knowledge, skills, tools, and techniques (KSTT) to project activities to meet project requirements.”*



Project Management

- Project Management are the management activities of **planning, directing, and controlling resources** (???????) to meet the **technical, cost, and time constraints** of a project.



Importance of PM??????



Importance of PM??????

Fast technological changes: Electronic goods

Narrow product launch windows:

High entropy of system: Expansion

Short life cycle of products: s/w, mobile.

Globalization impact: BRICS

Large organizations:



Customer focus



IIT ROORKEE



NPTEL ONLINE
CERTIFICATION COURSE