Course Code: **GEPM-375**

Course Title**:**

Project Planning and Construction Management

What are going to discuss today?

- Project, Project planning, Construction Management
- Syllabus and References
- Definition of Project.
- Key Characteristics of Projects.
- Definition of Project in Organizations.
- **Distinction between other pieces of works:**

Project

What is Project:

PMI defines as a "**temporary endeavor** undertaken to **create a unique** product, service, or result".

- **Producing deliverables** is the key reason to start the project in the first place.
- A project deliverable can be **tangible or intangible**.
- Projects create a **unique product, result, or service** and then close. Although many construction projects result in comparable buildings, bridges, and dams, each of these structures is a unique product.
- If the output is repeated, then it is an **operation**, as an operation provides repeated output. An example of an operation is automobile production.

PRINCE2 defines the project as follows:

- A **temporary organization** that is created for the purpose of delivering one or more **business products**, according to **an agreed-upon business case.**

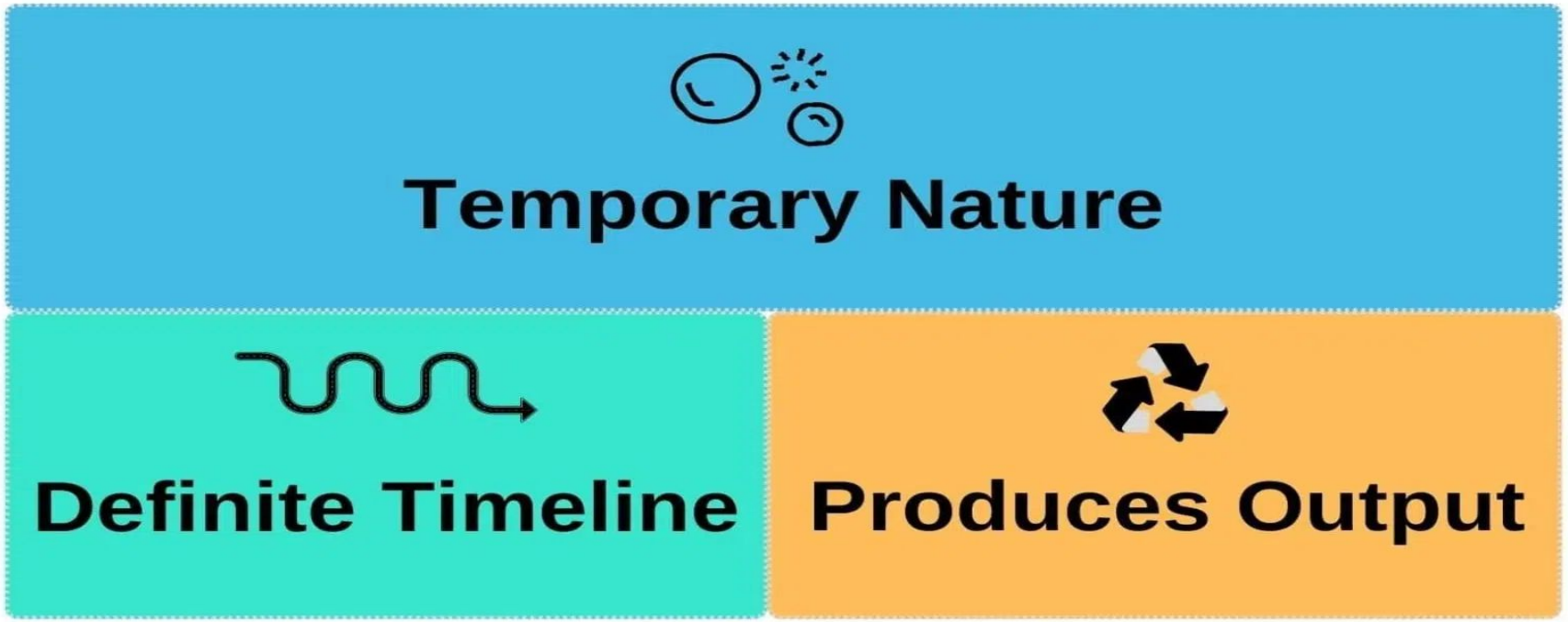
i. Word **"organization**" refers to the project team (i.e., all the people involved in the project).

ii. word **"temporary"** refers to the project having a definite start and end date.

ii. **Business case** includes reasons for completing the project, expected benefits, and the costs and time involved.

A project has the following **CHARACTERISTICS**

- **Temporary Nature:** All projects are temporary, which means that once they achieve their objectives, **they will end.**
- **Definite Duration:** A project has a well-defined timeline, with a **definite start and end date**.
- **Produces Output:** All projects produce an output, which can be a **unique product, enhancement, service, or result.**



Project Examples

- Constructing a building
- Modifying an organization's software system
- Researching the development of a new manufacturing process.

Most important characteristic of a project is its **temporary nature**; the project ends when it achieves its objective.

Project can also end when:

- Funding is exhausted.
- Project is no longer necessary.
- Resources are no longer available.
- Project is terminated for legal causes or convenience.
- **Government policy**

Types of Projects

Based on project management methodology, you can divide projects into three categories:

Waterfall:

- Most traditional, popular form of project management.
- Scope of work is fixed, and changes are uncommon.
- Most projects (e.g., infrastructure or construction) are examples of traditional Waterfall projects.

Agile:

- Newer method of managing software development projects.
- Useful when the scope of work is not well defined, and changes are common.

Hybrid:

- Combination of the projects mentioned above.
- Hybrid project management is helpful for large projects that include construction and software development elements.

Project Planning

- Project planning is an essential part of project management
- Project planning refers to the phase in project management in which you **determine the actual steps** to complete a project.
- This includes
  i. laying out **timelines**,
  ii. establishing the **budget,**
  iii. setting **milestones**,
  iv. assessing **risks,**
  v. **solidifying tasks** and assigning them to team members.
- Project planning is the second stage of the project management cycle, Full cycle includes **initiation**, **planning, execution**, and **closing**.

Components of a project plan

Components of project planning are: tasks, milestones, people, documentation, and time.

Tasks:

- Tasks are **activities** that need to be accomplished within a set period of time.
- Assigned to different members of the team according to their role and skill set.

Milestones:

- Milestones are important points within the schedule that indicate progress.
- Tend to **signify the completion** of a deliverable or phase of the project.

People:

- Includes the **people working** on your team and their roles.
- Each team member needs to understand their role and the tasks they're responsible for completing, ultimately creating a sense of personal responsibility for team members.

Documentation:

- Draft a project **plan that links to relevant documentation**. like a RACI chart, Charter, budget, risk management plan etc.

Time:

- Project plans should include the **estimated duration** of the project.
- Schedule will be the anchor of your project plan.
- Includes dates for starting and completing tasks, and dates (deadlines) for reaching specific milestones.



LEGEND
MASS RAPID TRANSIT LINES
MRT Line 1
MRT Line 1-Phase 2
MRT_L2
MRT Line 4
MRT Line 5 North
MRT Line 5 North Ph-2
MRT Line 5 South
MRT Line 5 South Ph-2
MRT Line 6
MRT Line 6 Ph-2
Gazipur
Baipail
Tongi
Uttara
Airport
Purbachal
Mirpur 10
Hemayetpur
Bhulta
Rampura
Kamalapur
Borpa
Chittagong road
Jhilmil
Narayanganj
DISTRICTS TO BE CONNECTED WITH DHAKA
NARAYANGANJ
GAZIPUR
NARSINGDI
MUNSHIGANJ
MANIKGANJ
METRO RAIL EXPANSION PLAN
Once the plan is executed, metro will have
250KM NETWORK
Daily passenger carrying capacity to rise to
75 LAKH
FIRST PHASE:
Narayanganj and Gazipur
129.90KM
new metro rail lines by 2030
MRT Line-4 from Kamalapur to Narayanganj to be included

Construction

- Covers the **processes** involved in **delivering product** (buildings, infrastructure, industrial facilities) and **associated activities** through to the end of their life.
- It typically starts with planning, financing, and design that continues until the asset is built and ready for use.



Construction Management

- **A professional service that provides a project's owner(s) with effective management of the project's schedule, cost, quality, safety, scope, and function.**
- Compatible with all project delivery methods.
- No matter the setting, a Construction Manager's (CMs) responsibility is to the owner and to a successful project.

At its core, a capital project is made up of **three parties** (excluding the CM):

- **Owner,** who commissions the project and either funds the project directly or finances it through a variety of methods.
- **Architect/engineer,** who designs the project.
- **General contractor**, who oversees day-to-day operations and manages subcontractors.

Construction Manager:

- Represents the **owner's interest and provides** oversight over the entire project directly for the owner.

- His/her mandate is to **work with all parties** to deliver the project **on time**, **at or under budget,** and to the owner's **expected standard of quality**, **scope**, and **function**.

- CMs are **uniquely qualified** through combined education and experience to work with the owner, architect, general contractor, and other stakeholders.

- A professional CMs can **save money**, **avoid or mitigate problems**, and **produce higher quality results** for the owners.

- Professional CMs use industry-standard practices to manage projects successfully and address all **six areas of construction management services: schedule**, **cost**, **safety, quality, function,** and **scope**.

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Course Content

Project Planning:

- Project Planning and Evaluation
- Planning and Scheduling
- Resource Scheduling
- PERT, CPM
- Resource Scheduling
- Project management Software
- Linear Programming and Application
- Feasibility Report

Construction Management

- Principles of Management
- Project organization, methods and practices
- Technology, management of materials and equipment.
- Site management, contracts and specifications.
- Inspection and quality control, safety and economy.
- Conflict management
- Human factors in management, human resource management.
- Demand forecasting, inventory control, stores management, procurement.
- Legal issues in construction, environmental regulation.

Finance:

- Time value of money, cash flow, payback period, internal rate of return, fisher's rate of intersection, cost-benefit ratio, cost-benefit analysis, case studies.

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References

- Project Planning and Control by Albert Lester
- The Process of Management by William H. Newman
- Introduction of Operational Research by Hiller & Liberman.
- Project Management Techniques by A. O. Awani.
- Construction, Planning, Equipment and Methods by Puorifoy.
- Material Management & Inventory Control by A. K. Dutta
- Project Management by **S Chowdhury**

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How do you define a project?

Definition:

A project is defined as a **specific, finite activities** that **produces** an observable and measurable **result/results** under certain **preset requirement**.

Characteristic of Project

Key Characteristics of a Project (TUP)

Any project can be characteristics by:

Temporary

- Every project has a finite start and finite end.
- **Start is the time** when the project its initiated and its concept is developed.

Characteristics of Project (cont..)

Unique Deliverable(s)

- Any project aims to produce some deliverable(s)
- Which can be **a product**, **service** or **some other results**.

Progressive Elaboration

- Progressive elaboration is a project management technique that seeks to add detail to a project plan incrementally.
- With the progress of the project, **continuous investigation and improvement become available.**

Characteristics of project (cont..)

Some other characteristics of a Conventional Projects are:

- **Purposeful** as it has a rational and measurable purpose.
- **Logical** as it has a certain life cycle.
- **Structured** as it has interdependencies between its **tasks** and **activities.**
- Conflicts as it tries to solve a problem that creates some kind of conflicts.
- Limited mainly by available resources.
- Risk as all the projects have always some risk involvement

Example of Project- A Building Construction



How do you define a project in organizations?

In organizations, '**A project is defined as a piece of WORK** that is **planned for implementation** within the current business/professional environment.

Example: Establishment of a new ETP.

Work

- **Amount of effort applied** to **produce a deliverable** or to **accomplish a task** (a terminal element)/ **a group of related tasks** defined in the same level.

Distinction between other pieces of works:

Portfolio

- A collection of **projects** and **programs** that are managed as a group to achieve strategic objectives

Program

- A **collection of projects** that are managed as a group to achieve efficiencies of scale.

Work package

- Group of tasks to complete a project.

Work unit/Task

- An **identifiable and measurable activity** that is done by a small unit of work.

Activity - is defined as the **amount of works performed** that **convert inputs into appropriate outputs**.

Construction of a Residential Block



Construction of internal roads



What we tried to discuss today?

- Project, Project planning, Construction Management
- Syllabus and References
- Definition of Project.
- Key Characteristics of Projects.
- What does a project include?
- Definition of Project in Organizations.
- What is a Program in project Management?
- Task/activity, work-package and work-unit with example.

Thank You