Overview of Project Management

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What is a Project?

A project is

a one-time, multitask job with a definite starting point, definite ending point,

has clearly defined scope of work, a budget, and usually a *temporary* team.

A project is a problem scheduled for solution

It is defined as a unique set of **co-ordinated** activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined **schedule**, **cost** and **performance parameters**.'

Cont...

It is a temporary endeavor undertaken to *create unique product or service*

Thus, projects are designed to bring about a product, service, or result that didn't exist before.

Projects are temporary in nature and have definitive start dates and definitive end dates. Thus, a project is completed when its goals and objectives are accomplished to the satisfaction of the stakeholders.

Cont...

Sometimes projects **terminate** when it's determined that the goals and objectives cannot be accomplished or when the product, service, or result of the project is no longer needed.

Cont...

A project is also defined as **a sequence of unique, complex, and inter-connected activities** having one goal or purpose and that must be completed by a specific time, within budget, and according to specification.

A project is a proposal consisting of collection of activities performed to achieve a specific purpose so as *to get benefits that exceed costs.*

Important concepts in the definition a project

1. **Sequence of activities**: a project is comprised of a series of activities that are follow one after the other
2. **Unique activities:** activities in a project are typical to the project
3. **Complex activities:** The activities that make up the project are not simple and repetitive actions
4. **Connected activities:** logical or technical relationship between pairs of activities**.**
5. **Specific goal:** the goal of a particular project is specific to it. *Multipurpose projects are normally called programs.*
6. **Specific duration/completion time**
7. **Within a budget**
8. **According to specification**

Important Characteristics of a Project

1. It has established objectives.
2. It has a defined life span with a beginning and an end.
3. Usually, it involves several departments and professionals.
4. It involves typically doing something that has never been done before (Novel).
5. It has specific time, cost, and performance requirements.

Cont...

Unique: accomplishment of specific purpose
Specific deliverable in terms of outputs
Specific due date
Multidisciplinary in nature (involves different types of professionals)
Complex in nature (activities are not routine)
Conflict
Part of programs
Needs capital and commitment of other resources
Collection of activities that generates benefits in the long run
Associated with risk and uncertainty

What is not a project?

Projects should not be confused with *everyday routines*. A project is different from daily routines that involve repetitive work!

Ordinary daily work typically requires doing the same or similar work over and over, while a project is done only once; a new product or service exists when the project is completed.

Comparison of daily Routine Work with Projects

Routine, Repetitive Work	Projects
Attaching tags on a manufactured product	songs Wire-tag projects for Wal-Mart

Program versus Project

In practice the terms project and program cause confusion. They are often used synonymously.

A program is a group of related projects designed to accomplish a common goal over an extended period of time.

Each project within a program has a project manager. The major differences lie in scale and time span.

A program is defined as a group of related projects, which may include related business-as-usual activities that together achieve a beneficial change of *a strategic nature for an organisation*.

It is *a group of related projects managed in a coordinated way* to obtain benefits. Programmes may include elements of related work outside the scope of the discrete projects in a programme

Cont...

A programme is also defined as *a temporary flexible organisation created to* ***coordinate, direct and oversee the implementation of a set of related projects*** and activities in order to deliver outcomes and benefits related to the organisation's strategic objectives.

A programme is likely to have a life that spans for several years.

Program management is the process of *managing a group of ongoing*, *interdependent*, related *projects in a coordinated way to achieve strategic objectives*.

Portfolios Vs Programmes

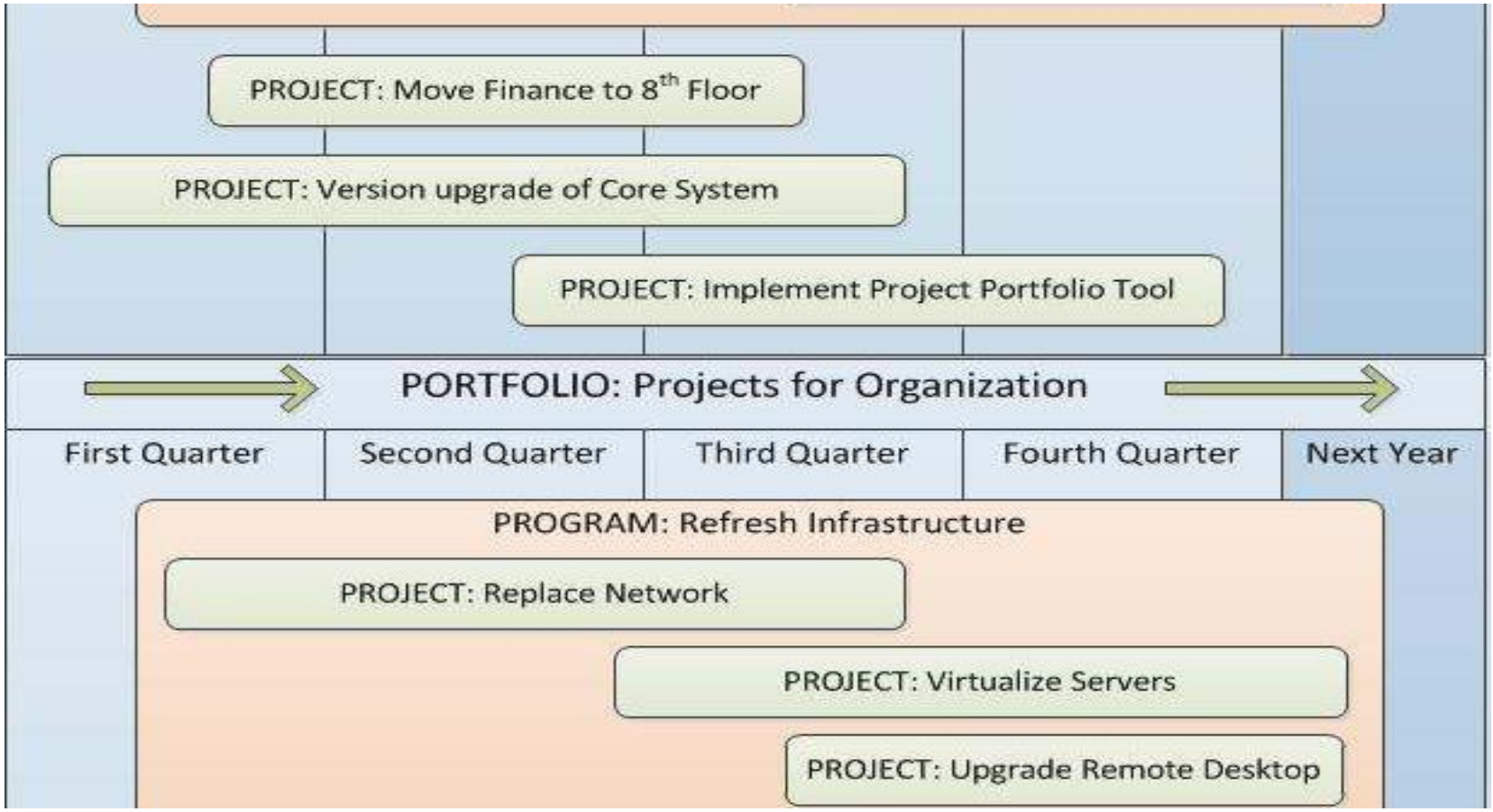
Portfolios are collections of programs and projects that support a specific business goal or objective.

Let's say consider a company in the construction business. The company may have several business units such as *retail, single-family residential, and multifamily residential*.

Each unit may have different projects that are inter-related, which will form a programme but different from the projects in other units.

Collectively, the projects and the programmes within all of these business units make up the ***portfolio***.

Project, Programme and Portfolio



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Programs and projects within a portfolio are not necessarily related to one another in a direct way.

However, the overall objective of any program or project in this portfolio is to meet the strategic objectives of the portfolio, which in turn should meet the objectives of the department and ultimately the business unit or corporation.

Cont...

Programs are *collections of related projects*.

Portfolios consist of *programs, projects, and other portfolios that meet a business objective.*

Projects or programs within a portfolio are not necessarily related or dependent on each other.

Types of Projects

The principal identifying characteristic of a project is its ***novelty***. It is a step into the unknown, which is *fraught with risk and uncertainty*.

No two projects are ever exactly alike: even a repeated project will differ from its predecessor in one or more *commercial, administrative or physical* aspects.

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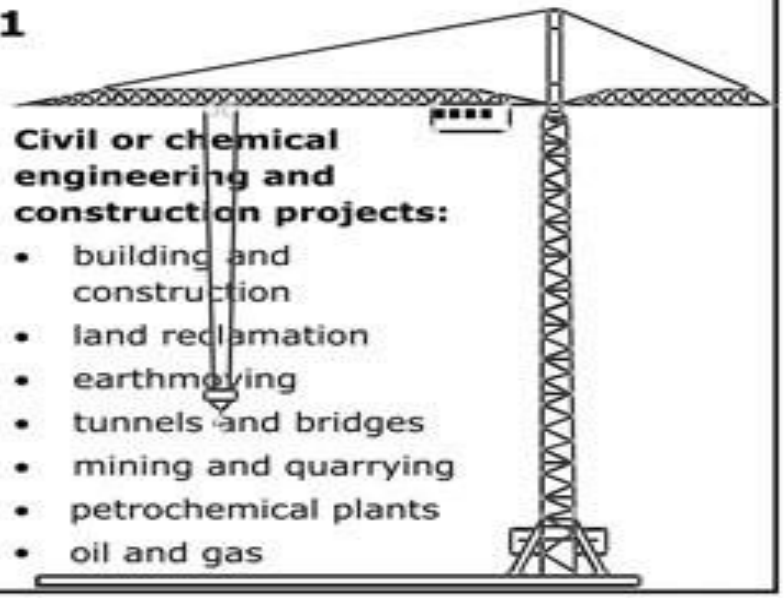

Civil or chemical engineering and construction projects:

- building and construction
- land reclamation
- earthmoving
- tunnels and bridges
- mining and quarrying
- petrochemical plants
- oil and gas

2

Manufacturing projects

- new product R & D
- equipment manufacture
- shipbuilding
- automotive
- aircraft and aerospace
- heavy engineering
- food and drink
- pharmaceuticals

3

Management projects (often internal, for the company's own benefit)

- IT systems
- reorganization
- recruiting drive
- regulatory change
- marketing projects

4

Projects for pure scientific research projects

- high risk
- often high investment
- may be no precise objective
- outcome unpredictable
- not amenable to normal project management

Cont...

Project Type 1: civil engineering, construction, petrochemical, mining and quarrying

These types of projects:

incur special risks and problems of organization.

they may require massive capital investment, and they deserve (but do not always get) rigorous management of progress, finance and quality.

operations are often hazardous so that *health and safety aspects demand special attention*, particularly in heavy work such as construction, tunnelling and mining.

Cont...

Project Type 2: Manufacturing

Manufacturing projects result in the production of a piece of mechanical or electronic equipment, a machine, ship, aircraft, land vehicle, or some other product or item of specially designed hardware.

The finished product might be purpose-built for a single customer but internal research and development projects for products to be sold in all market sectors also fall into this manufacturing category.

Cont...

Project Type 3: IT projects and projects associated with management change

Every company, whatever its size, need this type of project at least once in its lifetime.

These are the projects that arise when companies engage in operations that involve the management and coordination of activities to produce an end result that is not identifiable principally as an item of hardware or construction. This may happen when:

- companies relocate their headquarters,
- restructure the organization,
- develop and introduce a new computer system,
- launch a marketing campaign,
- produce a feasibility or other study report, and
- prepare for a trade exhibition.

Cont...

Project Type 4: Pure scientific research projects

Pure scientific research projects (should not be confused with research and development projects) are truly a special case. They *occasionally result in dramatically profitable discoveries*.

They can consume vast amounts of money over many years, *yet yield no practical or economic result*.

They carry the highest risk because they attempt *to extend the boundaries of current human knowledge*.

The **project objectives** are usually difficult or impossible to define and *there may be no awareness of the possible outcome*.

Therefore, pure research projects *are not usually amenable to the project management methods* that can be applied to industrial, manufacturing or management projects.

Project Management

Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project goals.

It is the application of a set of principles, methods, and techniques to effectively plan and control a project work.

Project management is the discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals.

It is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing.

Cont...

Project management establishes a sound basis for *effective planning, scheduling, resourcing, decision-making, controlling, and re-planning.*

Project management principles and techniques help complete *projects on schedule, within budget, and in full accordance with* ***project specifications***.

At the same time, it helps to achieve other goals of the organization, such as **productivity**, **quality**, and **cost effectiveness**.

The objective of project management is to optimize project cost, time, and quality.

Cont...

Project management is the application of modern management techniques and systems to the execution of a project from start to finish, *to achieve predetermined objectives of* ***scope, quality, time and cost***, to the equal satisfaction of those involved.

The Balance Quadrant

In some literature project constraints also include, but not limited to: Scope, Quality, Schedule, Budget, Resources, and Risk.

Interdependence of Project Constraints

What is interdependency of constraints?

The relationship among these factors [the constraints] is such that if any one factor changes, at least one other factor is likely to be affected.

Example:

For example, if the schedule is shortened, often the budget needs to be increased to add additional resources to complete the same amount of work in less time. If a budget increase is not possible, the scope or quality may be reduced to deliver a product in less time for the same budget.

Benefits of Project Management

1. Clear Objective
2. Risk Assessment
3. Milestones
4. Resource Allocation
5. Task Dependencies
6. Communication
7. Avoid Scope Creep
8. Client Appreciation

Your team will know what's going on and what is expected of them. *With clear objectives*, *scheduled milestones* and a *detailed task list* , there should be *no confusion* about who is to do what.

Without a Project Management

The Life Cycle of a troubled Project:

Project initiation

Wild enthusiasm

Disillusionment

Chaos

Search for the guilty

Punishment of the innocent

Promotion of the non-participant

Skills needed by Project Managers

Project managers accomplish work through the *project team and other stakeholders*.

Effective project managers require a balance of ***ethical, interpersonal, and conceptual skills*** that help them analyze situations and interact appropriately. Therefore, Project Managers require:

Leadership,
Team building,
Motivation,
Communication,
Influencing,
Decision making,
Political and cultural awareness,
Negotiation skills
Trust building,
Conflict management, and
Coaching.

Project Management Vs General Management

General management	Project management
Responsibility limited to own their function	Responsible for **overseeing change**
Works in 'permanent' organisational structures	Lines of authority **fuzzy/unclear**
Tasks described as 'maintenance'	Ever-changing set of tasks
Main task is optimisation	Responsibility for cross-functional activities
Success determined by achievement of interim targets	Operates within structures which exist for the life of the project
Limited set of variables	Predominantly concerned with innovation
	Main task is the resolution of conflict
	Success determined by achievement of stated end-goals
	Contains intrinsic uncertainties

How Project Management Relates to Other Disciplines

Much of the knowledge needed to manage projects is unique to the discipline of project management

Project mangers must also have knowledge and experience in

- general management
- the application area of the project

Project Cycle: Project Process Groups

From initiation/authorization to completion/closure, a project goes through a whole lifecycle that includes:

1. defining the project objectives (**Initiation**),
2. planning the work to achieve those objectives (**Planning**),
3. performing the work (**Execution**),
4. monitoring and controlling the progress (**M&E/Controlling**), and
5. closing the project after receiving the product acceptance (**Closing**).

Cont...

Initiating

This stage defines and authorizes the project. *The project manager is named, and the project is officially launched through a signed document called the project charter*, *which* contains items such as the purpose of the project, a high-level product description, a summary of the milestone schedule, and a business case for the project.

Project charter

1. defines what is to be done to meet the requirements of project customers.
2. should be used to authorize work on the project;
3. defines the authority, responsibility, and accountability of the project team; and
4. Establishes the scope boundaries for the job.

When such a document is not produced, the team members may misinterpret what is required of them, and this can be very costly.

Another outcome of this stage is a document called the *stakeholder register, which identifies the project stakeholders and important information about them*.

Planning

In this stage, the project manager, along with the project management team, refine the project objectives and requirements and develop the project management plan, which is *a collection of several plans that constitute a course of actions required to achieve the objectives and meet the requirements of the project*. The project scope is finalized with the project scope statement.

The project management plan, the outcome of this stage, contains subsidiary plans, such as a:

project scope management plan,
schedule management plan, and
quality management plan.

Executing

In this stage, the project manager, implement the project management plan, and the project team performs the work scheduled in the planning stage.

The project manager coordinates all the activities being performed to achieve the project objectives and meet the project requirements. Of course, the main output of this project is the project deliverables.

Approved changes, recommendations, and defect repairs are also implemented in this stage. But where do these changes and recommendations come from? They arise from monitoring and controlling the project.

The stakeholders can also suggest changes, which must go through an approval process before implementation.

Monitoring and controlling

You monitor and control the project through its lifecycle, including the executing stage.

Monitoring and controlling includes:

- defending the project against scope creep (unapproved changes to the project scope),
- monitoring the project progress and performance to identify variance from the plan, and recommending preventive and corrective actions to bring the project in line with the planned expectations in the approved project management plan.

Requests for changes, such as change to the project scope, are also included in this stage.

The changes must go through an approval process, and only the approved changes are implemented.

Closing

In this stage, you manage the formal acceptance of the project's product, close any contracts involved, and bring the project to an end by disbanding the project team.

Closing the project includes conducting **a project review** for lessons learned and possibly turning over the outcome of the project to another group, such as the maintenance or operations group.

At the closing stage **celebration** is important.

Terminated projects (that is, projects cancelled before completion) should also go through the closing stage.

Project Management Knowledge Areas

Knowledge areas describe the key competencies that project managers must develop

- **Four core knowledge areas** lead to specific project objectives (scope, time, cost, and quality)
- **Four facilitating knowledge areas** are the means through which the project objectives are achieved (human resources, communication, risk, and procurement management)
- **One knowledge area** (project integration management) affects and is affected by all of the other knowledge areas
- **Project integration management** ensures that the project is properly planned, executed, and controlled, including the exercise of formal project change control.
- As the term implies, every activity must be coordinated or integrated with every other one in order to achieve the desired project outcomes.

Project Management Tools and Techniques

Project management tools and techniques assist project managers and their teams in various aspects of project management

Some specific ones include

- Project Charter, scope statement, and WBS (work breakdown structure) (scope)
- Gantt charts, network diagrams, critical path analysis, critical chain scheduling (time)
- Cost estimates and earned value management (cost)

Thank You