

- In this lecture, we will discuss about what are exactly software projects, what are the types of software projects?
- We will identify two major types of software projects one is product development and the other is services projects.
- What are the major activities of the project manager and then we will discuss about the traditional versus modern projects.

What is a software project?

- Dictionary Definitions

1. A planned undertaking;
2. a large undertaking for example, a public works scheme and so on.

The key point are that it is a planned work and also it is a large work. There are two key attributes of a project; the first thing is that it is a planned activity, the second is that it is non-trivial; it is a large work

- According to PMBOK; Project Managers Book Of Knowledge fifth edition.
- The project is defined as a temporary endeavour undertaken to create a unique product, service or result.
- implicit in this is that it is a planned activity and it is a large activity

- We can also say that a project is a set of activities undertaken within a defined time period in order to meet specific goals within a budget.
- So, in addition to a planned activity and a large activity; we also have few other things that there is a time period; by which we need to complete the work and also there is a budget associated with it.

- Each project is large consisting of multiple tasks;
- Also there may be a precedence relationship between tasks that until some task completes the other tasks cannot be done.
- Also there may be a time period we can define for the completion of the tasks

Non Software examples of projects

- A wedding; it is a project, you need to plan, it is a large activity; there are many subtasks there is a budget associated with it, there is a duration by which it needs to complete

- . A B.Tech degree is a project, there is a duration by which you will complete the B.Tech degree, there is a budget associated with it, you need to plan how you will complete the degree
- More examples of projects: A house construction, An election campaign

What is a task?

- . A task in contrast is a small piece of work meant to accomplish a straightforward goal rather trivial.
- The effort required is only a few person hours, involves one or two people at most.

- On the other hand project will be much more large and it is not a repetition of a previously accomplished tasks

Project Stakeholders

- Individuals and organizations that are actively involved in the project and whose interests may be positively or negatively affected as a result of the project execution or project completion
- they may also exert influence over the project and its results
- Internal stakeholders: Project manager, project team, Top management
- External stakeholders: Customers, Vendors

Project Scope

- . what we want to do in the project; how it will be done and what will be the deliverable.
- Before starting a project; the project manager has to be clear about the project scope; the goal of the project, the deliverables, the tasks that need to be done to complete the project, the deadlines and the costs.

- Unless the project scope is properly defined and the project manager is clear about the project scope; the project typically ends up in a failure.

Reasons for Project failure

- 1 the development team does not understand the customer's requirements, the requirement specification has not been done properly.
- project scope is poorly defined that is, what needs to be done, what are the tasks, what is the budget, what is the deadline and so on.
- Changes are poorly managed.
- Unrealistic deadlines; when the deadline is very aggressively set, the developers try to compromise on the design, requirements, testing and so on and the project ends up as a failure.

W5HH principle for defining the project scope

- W5HH principle proposed by Barry Boehm
- The 5 Ws are the project manager need to be clear about

1why is the software being built?

2What will be its use?

- 3What will be done? That is what are the activities, that needs to be undertaken; to be able to develop the software.

4What are the deadlines by when it needs to be done?

5Who is responsible for a function

- So, the activities that, need to be done who will do what; which parts will be developed internally, which parts by a vendor and so on.
- Where are they organizationally located? That is who are; who the developers, where will they are located in different offices; across the world, where will be the vendor located? Are they properly identified

- How will the job be done technically and managerially?
- How much each of each resource is needed?

Types of Software Projects

- We have so far looked at
 1. what are the projects,
 2. how is the software projects differ different from other projects,
 3. why software project management difficult compared to other project management?

- There are basically two types of software projects;
- one are called as a products, which are also known as generic software . The products are the one which you can buy of the self, you can go to the market get it or you may order online and get it; these are generic. For example a word processing software, an antivirus software or maybe a database management system

- the second is services or the custom software. , the services are custom software which needs to be developed; once you identify, this you cannot just go to the market and directly get

- For example, a business house wants to have a software to manage the inventory. For this, you cannot just get software online and install and have it done; need to have identify what are the items that are to be managed, where the storehouse and so on. So, these needs to be developed specifically for that customer and these are the services or custom software

Types of Software

Packaged software—prewritten software available for purchase

Horizontal market software—meets needs of many companies

Vertical market software—designed for particular industry

Custom software—software developed at user's request

Custom software-Developer tailors its generic solution

Another Software Classification

- **Information Systems:**

- Store data, process data, present data and statistics
- **Example:** MIS, Stock control software, Patient Management software, etc
- **Web-based software versus Stand-alone software**

- **Embedded software:**

- Controls hardware
- **Example:** Automobile control software, Nuclear plant control software, robots, toys, TV remote...

Project management activities

- Project management = Plan the work and work the plan
- Planning = Estimating and resource allocation, scheduling
- Staffing = recruiting and motivating personnel
- Directing = ensure Team acts as a whole
- Monitoring and controlling = Detect plan deviations and take corrective actions

Major Responsibilities of a project Manager

- Feasibility study is the project technically feasible and worthwhile from a business point of view
- Planning Only done if project is feasible
- Execution monitoring and controlling Monitor and control plan implementation but the plan may be changed as project proceeds

- Project planning is carried out before development starts
- Important activities
 - 1. Estimation
 - 2. scheduling
 - 3. staffing
 - 4. risk management
 - Miscellaneous plans

Monitoring and control

- Lasts for entire active project duration
- Monitoring Checking on progress revising plans
- Controlling taking action to remedy hold ups
- Innovating Coming up with solutions when problems emerge
- Representing Liasoning with clients, users, developers and other stakeholders