Unit IV Project Management: Process, Metrics, Estimations & Scheduling

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(NBA and NAAC accredited, ISO 9001:2015 certified)

Unit 4

Project Management Framework

Course Objective and Outcome

Course Objective:

To understand project planning and risk identification and management

Course Outcome:

Able to prepare project plan and risk mitigation and monitoring plan.

Unit IV Syllabus

- Overview of project Management
- Project Organization
- Planning a s/w project
- Project management life cycle
- Risk management ,Identification of Risks , Risk Analysis ,Risk
- Planning & Monitoring

Project Definition

- "Unique process consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including constraints of time, cost, quality and resources".

- A Project is a planned set of activities
- A Project has a scope
- A Project has time, cost, quality and resource constraints

Project Management

The art of organising, leading, reporting and completing a project through people

Project

- A project is a group of tasks that need to complete to reach a clear result. A project also defines as a set of inputs and outputs which are required to achieve a goal. Projects can vary from simple to difficult and can be operated by one person or a hundred.
- Projects usually described and approved by a project manager or team executive. They go beyond their expectations and objects, and it's up to the team to handle logistics and complete the project on time. For good project development, some teams split the project into specific tasks so they can manage responsibility and utilize team strengths.

Ref: Software Project Management - javatpoint

4 P's of Project Management

People

- **Stakeholders**
  - Senior Managers
  - Project Managers
  - Practitioners
  - Customers
  - End Users
- **Team Leaders**
  - Encouragement
  - Innovation
  - Problem Solving
- **Software Team**
  - Chief Programmer Team
  - Democratic Team
  - Mixed Team
- **Agile Team**
  - Highly motivated project team
- **Communication and Co-ordination**
  - Formal Communication meetings
  - Informal communication

Product

- See product objective, scope
- Consider alternative solutions
- Cost Estimation
- Risk Estimation
- Task Breakdown
- Project Schedule

Process

- Requirement Gathering
- Framework Activities
- Umbrella Activities
- Task breakdown
- Quality Assurance
- Software Management

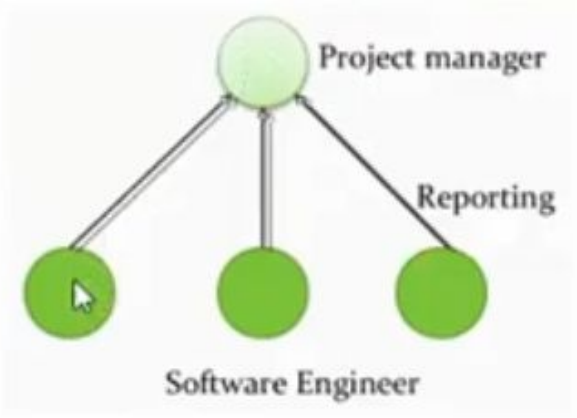
Project

- **Steps to avoid project failures**
  - Avoid common warning signs
  - Understand critical success factors
  - Proper planning, control and monitoring of project

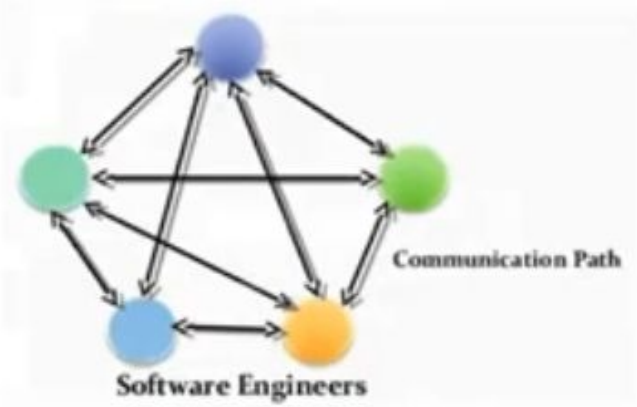
https://www.youtube.com/watch?v=6DT7qyP5tK4

People

Software Team Structures



Chief Programmer Team



Democratic Team

Mixed Team

https://www.youtube.com/watch?v=6DT7qyP5tK4

Software Project Management

- Software project management is an art and discipline of planning and supervising software projects. It is a sub-discipline of software project management in which software projects planned, implemented, monitored and controlled.
- It is a procedure of managing, allocating and timing resources to develop computer software that fulfills requirements.
- In software Project Management, the client and the developers need to know the length, period and cost of the project

Ref: Software Project Management - javatpoint

Project Manager

- A project manager is a person who has the overall responsibility for the planning, design, execution, monitoring, controlling and closure of a project. A project manager represents an essential role in the achievement of the projects.
- A project manager is responsible for giving decisions, for both large and small projects. The project manager is used to manage the risk and minimize uncertainty. Every decision the project manager makes must directly profit their project.
- Project manager plays the role of leader, intermediary and the mentor for the project team

Responsibilities of a Project Manager

- Managing risks and issues.
- Create the project team and assigns tasks to several team members.
- Activity planning and sequencing.
- Monitoring and reporting progress.
- Modifies the project plan to deal with the situation.

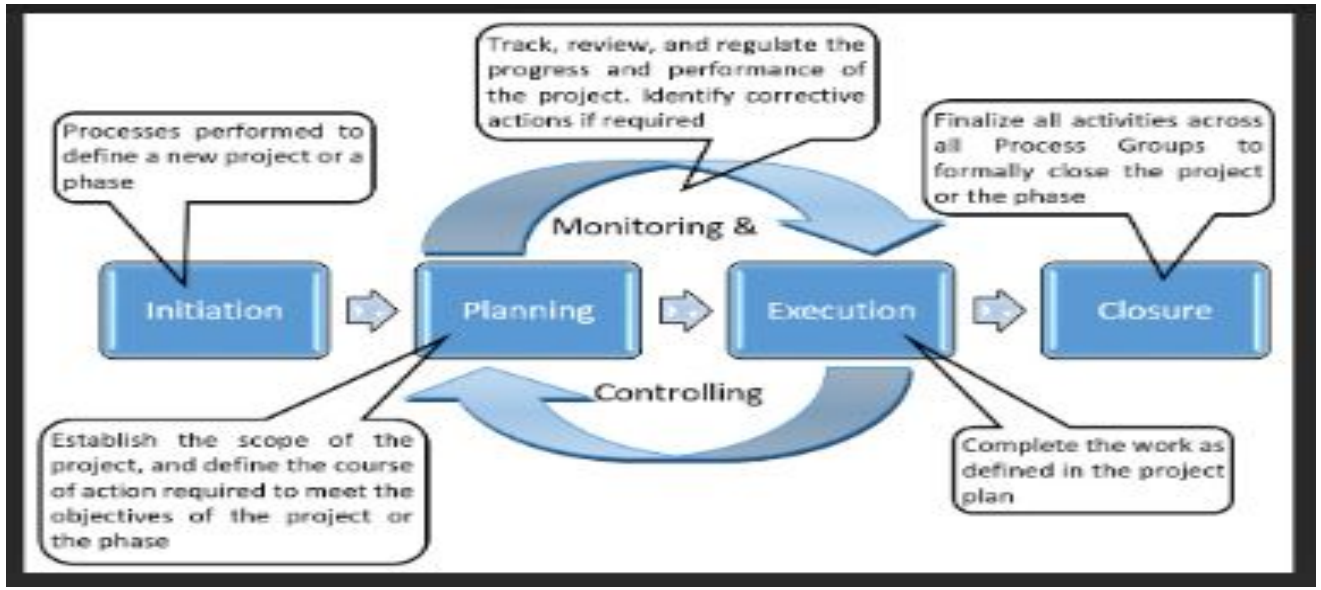
Ref: Software Project Management - javatpoint

Project Management Activities

- Project planning and Tracking
- Project Resource Management
- Scope Management
- Estimation Management
- Project Risk Management
- Scheduling Management
- Project Communication Management
- Configuration Management

Ref: Software Project Management - javatpoint

Project Management Life Cycle



A standard project typically has the following four major phases (each with its own agenda of tasks and issues): **initiation, planning, implementation, and closure.** Taken together, these phases represent the path a project takes from the beginning to its end and are generally referred to as the project "life cycle."

The Project Life Cycle (Phases) – Project Management – 2nd Edition (opentextbc.ca)

Project Management Life Cycle

Initiation Phase

- During the first of these phases, the initiation phase, the project objective or need is identified; this can be a business problem or opportunity. An appropriate response to the need is documented in a business case with recommended solution options. A feasibility study is conducted to investigate whether each option addresses the project objective and a final recommended solution is determined. Issues of feasibility (“can we do the project?”) and justification (“should we do the project?”) are addressed.
- Once the recommended solution is approved, a project is initiated to deliver the approved solution and a project manager is appointed. The major deliverables and the participating work groups are identified, and the project team begins to take shape. Approval is then sought by the project manager to move onto the detailed planning phase.

The Project Life Cycle (Phases) – Project Management – 2nd Edition (opentextbc.ca)

Project Management Life Cycle

Planning Phase

- The next phase, the planning phase, is where the project solution is further developed in as much detail as possible and the steps necessary to meet the project's objective are planned. In this step, the team identifies all of the work to be done. The project's tasks and resource requirements are identified, along with the strategy for producing them. This is also referred to as "scope management." A project plan is created outlining the activities, tasks, dependencies, and timeframes. The project manager coordinates the preparation of a project budget by providing cost estimates for the labour, equipment, and materials costs. The budget is used to monitor and control cost expenditures during project implementation.
- Once the project team has identified the work, prepared the schedule, and estimated the costs, the three fundamental components of the planning process are complete. This is an excellent time to identify and try to deal with anything that might pose a threat to the successful completion of the project. This is called risk management. In risk management, "high-threat" potential problems are identified along with the action that is to be taken on each high-threat potential problem, either to reduce the probability that the problem will occur or to reduce the impact on the project if it does occur. This is also a good time to identify all project stakeholders and establish a communication plan describing the information needed and the delivery method to be used to keep the stakeholders informed.
- Finally, you will want to document a quality plan, providing quality targets, assurance, and control measures, along with an acceptance plan, listing the criteria to be met to gain customer acceptance. At this point, the project would have been planned in detail and is ready to be executed.

The Project Life Cycle (Phases) – Project Management – 2nd Edition (opentextbc.ca)

Project Management Life Cycle

Implementation (Execution) Phase

- During the third phase, the implementation phase, the project plan is put into motion and the work of the project is performed. It is important to maintain control and communicate as needed during implementation. Progress is continuously monitored and appropriate adjustments are made and recorded as variances from the original plan. In any project, a project manager spends most of the time in this step. During project implementation, people are carrying out the tasks, and progress information is being reported through regular team meetings. The project manager uses this information to maintain control over the direction of the project by comparing the progress reports with the project plan to measure the performance of the project activities and take corrective action as needed. The first course of action should always be to bring the project back on course (i.e., to return it to the original plan). If that cannot happen, the team should record variations from the original plan and record and publish modifications to the plan. Throughout this step, project sponsors and other key stakeholders should be kept informed of the project's status according to the agreed-on frequency and format of communication. The plan should be updated and published on a regular basis.
- Status reports should always emphasize the anticipated end point in terms of cost, schedule, and quality of deliverables. Each project deliverable produced should be reviewed for quality and measured against the acceptance criteria. Once all of the deliverables have been produced and the customer has accepted the final solution, the project is ready for closure.

The Project Life Cycle (Phases) – Project Management – 2nd Edition (opentextbc.ca)

Project Management Life Cycle

Closing Phase

- During the final closure, or completion phase, the emphasis is on releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to conduct lessons-learned studies to examine what went well and what didn't. Through this type of analysis, the wisdom of experience is transferred back to the project organization, which will help future project teams.

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