

SOEN 6841 - Software Project Management

Learning Journal [Feb 18 to Mar 9]

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Course - SOEN 6841 [Software Project Management]

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Week 1 - Feb 18 to Mar 9

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Key Concepts Learned:

In this week, I learned about Project Monitoring and Control

-> Project Monitoring and Control serves as the backbone for all the successful projects. It involves continuous tracking of project progress with the established plan, ensuring that milestones are met, and objectives are achieved within the stipulated time frame. Moreover, project control helps to take corrective actions to address any problems encountered during project execution, thereby keeping the project on track.

-> I learned about the **Project Plan structure**. A project plan primarily consists of a budget, timetable, and several other elements like plans for communication, quality, configuration, and resources. Both large and minor milestones are specified inside the timetable to track the progress of the project. There are various tools like earned value management (EVM), Gantt charts, status reports, and Goldratt's critical chain technique is used to track the project and ensures that project is under the budget.

-> I also learned about measuring **Progress of a Project**. To measure accurate progress of a project, following parameters are needed,

- a) Planned start date of the project
- b) Actual start date of the project
- c) Planned volume of work needed for a project
- d) Actual volume of work completed
- e) Project tasks duration

-> I also explored about **Performance Indicators**. It is a tool for assessing a project's performance regarding cost, schedule, and quality. In order to calculate performance indicators accurately, Earned Value Management (EVM) is used. Earned Value Management (EVM) is a method used to track and evaluate project performance by comparing planned and actual progress. EVM involves calculating several indicators such as Schedule Variance (SV), Cost Variance (CV), Cost Performance Indicator (CPI), and Schedule Performance Indicator (SPI). These indicators help determine whether the project is progressing as planned or lagging behind.

-> I also learned about **Project Control Techniques**.

a) Resource Levelling:

Resource levelling is an important method used to solve conflicts that arise when resources are assigned to multiple tasks in a project. It aims to prevent delays by adjusting task schedules to ensure resources are used efficiently. So when one task's delay doesn't cause problems for other tasks. By moving resources around or changing task timelines, project managers can make sure resources are used well and project delays are minimized.

b) Resource Optimization:

Efficiently managing resources is important for making projects run smoothly and keeping costs low. Project managers need to make sure resources are used wisely, give priority to tasks depending on resource availability, and tackle any problems in the earlier stage itself. When resources are used effectively, teams can work better, minimize downtime, and achieve better results for the project.

-> Then I explored about **Project Monitoring and Control in Iterative Model**. In iterative projects, most of the planning and action occur at the iteration level, where each iteration lasts for 2 weeks. This approach can help manage project risks effectively by breaking down the project into smaller, manageable parts. But there might be a situation where sudden changes in customer requirements within an iteration. In those scenarios, project monitoring and control become challenging. To tackle this situation, prioritizing requirements or features, can generally help manage and control iterations effectively. High-priority features are completed first, while low-priority ones are kept as optional and can be done if there is time within the iteration.

Application in Real World Projects:

a) Using EVM, Network Diagram:

While developing a project, it is important for Project Managers to monitor progress, manage resource efficiently and also must ensure whether project tasks are completed before deadline. Tools such as Gantt Charts, Network Diagrams, Earned Value Management (EVM) can be used to to plan, schedule tasks, allocate resources efficiently, assess project performance, track costs etc... Gantt Charts provide a visual representation of project tasks, their timelines, and dependencies. Network Diagrams helps to find the relationships between project activities, so that project managers can identify critical paths and allocate resources efficiently.

b) In healthcare projects, effective monitoring and control techniques are essential for managing complex activities such as implementing new healthcare systems. Critical path analysis will help to identify the longest path of activities that determine the project's overall duration, allowing project managers to focus resources and attention on the most critical tasks to avoid delays. Performance dashboards can be used by stakeholders to monitor progress, identify problems earlier, and make decisions to enhance patient outcomes and optimize resource allocation.

c) Most of the IT projects follows Agile Methodology like Scrum, Kanban in order to develop the software quickly in short iterations, improving collaboration among team members. Sprint planner charts can be used to visualize and plan the work for each iteration. Conducting Daily stand-up meetings helps team members to discuss their tasks, issues, future plans or ideas for the project.

Peer Interactions:

- I had meeting with my team and discussed regarding Phase 2 project deliverable. We reviewed the project timeline, identified critical milestones, and discussed about the report. We also divided tasks and currently working on it. We also explored Agile Methodologies and planned to implement in this deliverable.

- Also I discussed with my team members regarding various project control activities followed by the company, how project managers are dividing the tasks among the team members, allocating budgets, etc. We read some of the articles from Medium blog forum and got a clear understanding of project control and planning.
- I discussed on how to use tools Gaant Charts, Sprint Planner, EVM . Read some articles, blogs, and explored some project management softwares that can be used for effective resource allocation for a project.

Challenges Faced:

- How to schedule, plan, allocate resource for a project accurately?
- In depth understanding of Earned Value Management in Project Monitoring and Control. How to calculate EVM Metrics and interpret the results for project monitoring, performance evaluation, tracking progress of the project.
- How to overcome the Resource Allocation failure of a project? I learned about Resource Allocation, various techniques in allocating a resource. But sometimes, resource allocation will not be accurate. I am going to explore in depth about the strategies and steps that be followed when resource allocation failure occurs.

Personal Development Activities:

- I explored case studies and real-world examples of effective project monitoring and control strategies of some open source projects.
- I also explored some Project Management Softwares and used them for my projects. With the help of these softwares, I got in depth understanding of scheduling, resource allocation, and task management.
- I also volunteered for an event at my college where I had the opportunity to meet new people, coordinate various tasks. It was a great experience that allowed me to develop my leadership skills.

Goals for next week:

- Will be exploring project management methodologies and their practical applications in different project scenarios and how are risks are handled if the customer requirement changes after starting the project.
- Familiarize new Project Management tools by experimenting with sample projects to gain hands-on experience.
- Will be doing Project Phase 2 deliverable with my team. Will be having meeting with my friends, track our progress. Will be dedicating some time to prepare the report for our project.