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**Key Concepts Learned**

Project planning is crucial for large-scale projects with multiple complex tasks as it enables systematic management of these tasks, laying the groundwork for successful execution. We learn about difference between Top-Down versus Bottom-Up approach of project planning constrained by the available information. We learn about the Work-Breakdown structure (WBS), and its impact on resource allocation, supplier management plan, communication plan, configuration management plan, defect prevention strategy and others. There are various techniques that help a project manager to plan a project. These include **Critical Path method** (CPM) or **program evaluation review technique** (PERT), its improvised version called **Goldratt’s Critical Chain method**. We then learn about the difficulties that can arise in a planning a project while working in an Agile environment due to its iterative approach.

Due to its dynamic nature and inherent uncertainties software project development requires continuous planning and monitoring to avoid chaos and failure. In the next chapter we learn about the tools and techniques which help are employed by the project managers to reduce the uncertainties and achieving consistency. Any controlling of the project requires to create a baseline project plan against which the project manager can compare the existing progress. We learn about how the deviation of a project’s progress is calculated against this baseline. Performance indicators are used to know the performance of project in terms of cost, schedule, and quality. **Earned Value Management** (EVM) is one of the tools for creating and monitoring performance indicators. It provides indicators like **Schedule Variance** (SV), **Cost Variance** (CV), **Cost performance Indicators** (CPI) and **Schedule performance Indicators** (SPI). Project managers control uses various techniques to manage and control the risks which include, Resource leveling, Schedule Optimization, Corrective actions against deviations and issues and resource optimization. We also learn how these measures can vary based on the life-cycle management of the project itself like Waterfall model or Agile/Iterative development. Thus, we learn about the importance of monitoring the project using various indicators and how they can help in taking corrective measures as soon as there are some deviations from project plan.

**Application in Real Project**

Based on chapter 6 & 7, we learn that software managers play a crucial role in success or failure of a project. They use various tools and techniques to plan a baseline structure which in turn is used to execute, monitor, and control the project. These project plans are used for project scheduling, project budgeting, resource planning, communication planning, supplier planning, configuration management planning, defect prevention planning, tool management planning and others. Thus, they play a crucial role in ensuring that the project stays in line with the baseline. And anytime that there is any deviation from the baseline, managers can inform the customers in advance then take corrective actions to bring the project back to schedule. It is very important for the managers to continuously track the projects progress against the baseline using various indicators. These indicators are very important to quantify the efforts required to realign the project with the baseline. The actions that they can take could either be to adjust the project by consuming the planned buffers or taking corrective actions like resource levelling, schedule optimization etc. thus resulting in overall success.

**Peer Interactions/collaboration**

I had the opportunity to connect with one of my colleagues who has earlier worked as a software manager. They told me how they plan for number of resources for a new mobile application project. The very first step is to define the scope of the project and gathering requirements. Based on the technology like iOS and/or Android and the timeline setup by the client, they estimate the effort that would be required with the help of an expert. Then they calculate the number of person months that would be required in total. Using these two values, time in hand and person-months they can determine the number of resources that they would be needing. Once known, they can then determine the number of resources that they already have in organisation with the specific skillsets required and how many new hiring would be needed. Based on the profit margin, they could also identify the PayScale of the new hires. This was a very interesting insight of how a project managers decide on hiring new people for their projects.

**Challenges Faced**

While trying to understand the various project planning techniques, I was getting confused on how Critical Path Methods are used by Software managers to create initial schedule of a project. I could not initially understand how the software managers could identify the time it would take for the entire project when planning for small tasks itself is inaccurate. As tasks are the building blocks for estimating the schedule of entire project, the inaccuracies of tasks would accumulate to give a completely wrong schedule of the overall project. And since these are used as baseline for calculating progress of the project, it would be impossible to ever get the correct status report.

To understand it better, I researched how individual tasks are estimated. I learned about the following techniques as used in industry. Managers often involve experts and even entire project team while estimating the timeline. They also use historical data from company draw parallels between previously executed similar tasks. Further, they add buffer time in case of dependencies. Thus, they use various established methods to overcome inaccuracies.

**Personal Development Activities**

Learning about the challenges faced by Software Managers has alleviated my ignorance towards the hard work and role of managers towards the success of the projects. It has now become clear to me that software management requires solving complex challenges with limited resources and strict deadlines. Recognizing this has deepened my appreciation for managers in software development.

**Goals for the Next Week**

My goal for the next week is to complete the Project planning for upcoming **Project deliverables** of next week including **Work Breakdown Structure** (WBS), **Risk assessment** and **Budgeting**.