

Learning Journal 3

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Key Concepts Learned: The Project Plan is covered in detail in Chapter 6. Project planning includes fundamentals like cost and effort estimation, communication, risk planning, supplier management planning, resource planning and quality planning, among other things. Project planning can be carried out in two ways: **Bottom-up (in case of custom software development)** planning starts with assigning duration to individual tasks and aggregates them into overall project timetable, **top-down planning (in case of product software development)** starts with allocating time duration for entire project and then cascades down to smaller tasks with assigning task duration. Software engineering ensures project and product is well defined and has met desired quality at competitive cost and acceptable schedule. **Work breakdown structure** is a methodical approach to decomposing the entire project work into smaller jobs. To determine which activities come before others and which cannot begin before another work is finished. It ensures organized method of allocating resources and clarifies dependencies. **Allocating resources** should be predicated on closely matching the abilities that are needed with those that are available. Usually there is uneven resource allocation for each phase. Then supplier chain management where creating SLA'S, placing build at central location to avoid integration issues are discussed along with configuration management and communication management using project templates. Further **project planning techniques** like **critical path method** (handling issues like which task is dependent on what task and which task will start first and when it has to finish) and **goldratt's critical chain method** (that overcomes uncertainty and risks by introducing buffer) were discussed in detail. **Project's difficulty** is determined by how much it costs to discover a solution. Project's activities should be planned to yield measurable results so management can assess progress. **Activity** should have effort, deadline, length and end-point. **Milestones** are where a process activity ends. Project schedules are represented using graphic notations. Schedules are displayed against calendar times in bar charts. The longest path in the project is found by aggregating the timings for the tasks in each sequence to establish the **critical path**. Overall calendar time needed for the project is determined by the critical path. In addition to supplier planning for any hardware or software, quality planning should be explicitly discussed with the supplier. A project's quality assurance is one of its most crucial components. Once more, one of the most crucial project planning responsibilities is creating a budget. Iteration planning and planning at Project Management Office (a central organization that deals budget, staff, infrastructure, business needs) is discussed. Complete project plan is spread across multiple iterations in iterative projects. Chapter 7 discussed **project monitoring**: gathering enough information to monitor the project's progress and make sure the team is operating according to the plan. Monitoring is done using project plan, project schedule, status report, performance indicators. Project plans are tracked at milestone level whereas project schedules are tracked at task level (like resource utilization percent, resource loading). **Project Control**: process of making sure that the project meets all of its goals in terms of scope, cost, acceptable risk, schedule etc. 4 steps for project monitoring and control were covered. monitoring and control tools like Earned Value Management and S curve were covered. By combining schedule and cost performance, **EVM** is technique to provide a clear picture of project progress through variance (cost & schedule) and project health. EVM will give guidance about **schedule variance (Earned Value – Planned Value)** and **cost variance (Earned Value – Actual Cost)**. Monitoring includes comparing performance to time, cost, and scope baselines as part of risk control and baselines. Monitoring of skills and knowledge of project team plays critical role to meet milestones timely. **Resource loading** (overloading or underloading the resource as per the work requirement) and **resource utilization** (efficiently using resource in the organization) need proper attention to monitor the progress of project. **Status reports** need to be sent to customer that should contain information regarding cost, schedule and quality of project execution against project plan. Project execution performance is measured using **performance indicators** in relation to the project's baseline plan. Other name for performance indicators is project metrics. Since risk control is a dynamic process, it needs to be

updated frequently as the project develops. **Project Controlling techniques** like **resource leveling** (to tackle resource requirement issue) and **Schedule optimization** can be utilized to cut down on needless slack (amount of time a task can be delayed without affecting overall project timeline) in the project timeline and finish the project faster, **corrective actions** (using good measurements for decision making, resource planning, communicating consequences of change request to customers, quality planning for each work product) to handle deviations from the plan and **resource optimization** by using project portfolio management to optimize resource usage in project.

Application in Real Projects: When it comes to effectively managing a large software development project, Project Planning is crucial to track and move ahead in project as per plan. WBS is often required for allocating resources as it ensures that each team member is given tasks that are appropriate for their skill set while upholding the overall project structure. Using activity networks to visualize task interdependence can help complicated projects avoid bottlenecks by emphasizing critical paths and guaranteeing that high priority jobs are finished on time. Through the evaluation of both time and budget performance, EVM offers an organized method for maintaining project momentum. In actual projects, I would use this technique to spot deviations early and alter the plan of action. By just reading the company's documents, I attempted to determine the extent and effort required to relate the ideas covered in class.

Peer Interactions: We explored the advantages and disadvantages of Bottom-up planning in our group conversations for around 35 minutes. Following a provocative discussion, one peer proposed that Agile teams benefit from bottom-up planning because of its granular task concentration. Their reasoning made me reevaluate Topdown planning's suitability for iterative project cycles, even if I had previously supported it. A peer also described how they used schedule variance in their previous project to identify items that were behind schedule during the discussion of chapter 7. A greater comprehension of how minor deviations might worsen if they are not addressed promptly resulted from this. My understanding of the significance of variance analysis was aided by the peer debate. Through their experience, I was able to understand how proactive tracking can save minor setbacks from becoming more significant project problems.

Challenges Faced: Regarding Chapter 6, concepts were rather simple in comparison to Chapter 5 because I was previously familiar with some of topics, such as GANTT chart, from completing an assignment for another course. Using an example and explaining how difficulty is judged, less on was very clear, and students also learned more by reading the textbook. Time Duration Estimation: It was difficult to assign precise time frames to jobs, particularly when using top-down method, as high-level estimations may be too general to handle smaller tasks efficiently. It can be challenging to manage several dependencies in projects since they require careful monitoring and knowledge of potential changes. As project I'm working on for this course develops and iterations continue, tracking time and budget might feel like striking moving target.

Personal development: Devoting an hour a day for more expertise with bar charts will help me better visualize task dependencies and timetables. In order to improve my estimations for both small and largescale activities, I intend to simulate different project scenarios and practice assigning more precise time durations. My understanding of chapter 5 principles, such as the objective of CM, has improved significantly when the professor clarified the purposes during lecture with an example that I analyzed deeply.

Goals for the Next Week: My goal is to get better at tracking project performance with EVM tools. Finding early warning indicators of schedule or budget overruns is what I want to concentrate on. For dynamic projects, I want to test real-time tracking of EVM parameters. Long term objectives include deepening my knowledge of risk management in monitoring procedures so I'll be able to manage project risks more skillfully.