

**SOEN 6841 - Learning Journal 2****Student Name:** Tharun Balaji**Course:** Software Project Management – SOEN 6841**Journal URL:** <https://github.com/thxrun180/SOEN6841>**Date Ranges of Activities:** Jan 20, 2025 – Jan 27, 2025**Date of Journal:** Feb 8, 2025**Key Concepts Learned**

Chapter 3 was estimation and cost. In Software Project Management, estimation of cost is necessarily important because effort is the critical element of software projects. Yet this is easier said than done, as much of software is intangible. Software estimation involves: - Considering re-estimations - Most importantly, estimation should occur over time.

- **Experience-based Estimation** – Uses past projects as a reference.
- **Estimation by Analogy** – Compares new projects with similar past projects.
- **Function Point Analysis (FPA)** – Measures software functionality based on user interactions.
- **COCOMO Model** – Empirical model using project attributes for cost estimation.
- **Algorithmic Cost Modeling** – Uses mathematical functions based on size, complexity, and productivity.

An initial estimate of where a project is going to go has so much uncertainty involved; therefore, estimating in hindsight has less uncertainty and comes with more transparency.

Chapter 4 was risks and Software Project Management. Risks can happen due to lack of access to unknown resources, downtime, outdated technology, inappropriate technology selection. Risk management involves:

- **Risk Identification** – Recognizing potential threats.
- **Risk Analysis** – Evaluating likelihood and impact.
- **Risk Prioritization** – Focusing on the most critical risks.
- **Risk Mitigation Strategies** – Acceptance, avoidance, transference, and mitigation techniques.

A crucial lesson was how iterative models help mitigate risks by incorporating user feedback at multiple stages, preventing costly rework compared to the waterfall model, where feedback is obtained only at the end.

**Application in Real Projects**

Estimating techniques and cost and effort estimation. For instance, when I encountered this topic before, I discovered that I developed a minuscule web application and subsequently overstated the hours for front end work. However, I now know that with analogous estimating, it would have been better to rely on similar projects in the past merely because my accuracy and efficiency of execution were spot on and faster.

Regarding risk management, something I've encountered in the real world relates to my group project last semester. We reached a standstill at one point. We were off task. We were not equally sharing the load. However, we had a risk response—a contingency—and a software tracking program to assess who was doing what and how much. Ultimately, we were able to successfully assess and identify risks and respond to them, mitigating our risk and finishing on time.

## Challenges Faced

**Challenges Estimating Efforts:** Estimating effort was challenging, especially for a project still in the brainstorming/project—in the intentions to develop stage—but I used the suggested technique to assess effort based on similar learned projects.

**Challenges Identifying Risks:** One of the challenges I encountered was not being able to identify all the risks ahead of time while in the nascent stages of a project. However, taking a few project discussions and a focused risk identification meeting helped me learn what to look for down the line and how to properly mitigate them.

## Peer Interactions

- I discussed with peers how to estimate effort and measured the differences between the models and how they could apply to different projects.
- Engaged in the workshop for estimation techniques and class discussion of project risk avoided and how/why projects fail from failure/overly successful limitations of risk assessment.
- Engaged in an estimation game during group work in which everyone estimated one fictitious project and by the end, we saw how well our estimations held up compared to reality.

These educational endeavours enhanced my experience because this allowed me to compare what we learned in theory during the presentations to practical application in an almost real-life classroom setting.

## Personal Development Activities

- Explored additional readings on COCOMO and Function Point Analysis to deepen my understanding of estimation techniques.
- Reviewed case studies on risk management, analysing how different companies handled project risks and applied mitigation strategies.
- Looked back at previous projects to see where I commented on errors in effort estimation and where I failed/adapted for risk.

## Goals for the Next Week

- Read Chapters 5 and 6.
- Work on a real-world case study applying cost estimation and risk management techniques.
- Continue engaging in peer discussions to enhance my learning through collaborative insights.

**Final Thoughts:** This week's learning reinforced the importance of estimation and risk management in software project management. By integrating personal experiences, peer discussions, and additional learning resources, I feel more confident in applying these concepts to future projects.