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**Key Concepts Learned**

An activity is considered as **Project Management** when it is undertaken to achieve a specific objective with a **fixed** **start and end time** using limited resources and budget. An **IT project** integrates both hardware and software to create a complete IT solution whereas **Software project** concerns only the development and/or maintenance of software. A **successful** **Project Manager** must not only understand various processes, but also requires creative solution to problems. We learn differences in initiation tasks of **Software Project** to that of **Software Product**. Due to its risky nature, **monitoring and controlling** a Software Project is very difficult. **Management Metrics** is one of the ways to handle them. We learn about the subtle differences between **Charter, Scope, and Objectives** of a project. Once a project is approved by the management, the Project Manager is required to create **initial estimates for Cost, Schedule, Scope, Effort and Expenses** and thus create an **initial Project Plan**. This must be accompanied with **Quality Planning**. All these helps in determining **feasibility** of the project and the next course of actions. Initial **project** **cost** estimation is highly dependent on existing **artifacts**. Existence of data for both existing as well as previous project would suggest using **Function Point Analysis (FPA)** technique. If we have only previous project’s cost and effort estimate, **Wide Band Delphi** model is recommended. When there is **none**, it is **impossible** to estimate the effort. **COCOMO model**, one of the original models, which uses **KLOC** as a base for calculating efforts, have also gone through various modifications based on organisational needs.

**Application in Real Project**

Based on the learnings from Chapter 1, 2, and 3, we learn that every software project must have a clear objective, start, and end time. They are also limited by the budget and available resources. Before commencing any project, it is imperative to define the project’s **Charter, Scope, and its Objectives**. We need to know the reasons for which the project is being initiated, the specific features which would be included in the project and how will it benefit the customer at the end. Although, knowing that it is not accurate, it is still required to make initial estimates of cost schedule, scope, effort, and expenses to form a preliminary project plan. The primary motive is to know whether the project is feasible in the first place or not. It is very costly to inject budget, finances and other resources into a project which is eventually going to be abandoned. It also helps in limiting the scope of the project or even spreading them out based on customer requirements.

Based on the existing artifacts of previously undertaken projects and the knowledge of current project, we can come up with the **initial estimates** for the project being undertaken. We choose the **correct model** among the panoply of models available like COCOMO, Function point analysis, Delphi Model etc. This could involve communication between customers and service providers in case of FPA, or it could be done based on communication among internal team in case of Delphi. But the important thing to note is that in all the cases, a previous experience is needed to come up with the estimates.

**Peer Interactions/collaboration**

During one of the discussions with my peer, I asked the person to give any concrete example that would explain the difference between the scope of Project with respect to the objective. He gave me an example of inventory management for a large retailer company. A scope would include setting up the cloud infrastructure and deploying the code in cloud so that it could be accessed using internet. Whereas the example of an objective would be to support up-to 100,000 concurrent users for the cloud-based system. Thus, we define the ‘**Scope’** as some work needed to be done, while the ‘**Objective’** would focus on the end-result that the project needs to achieve.

Another thing that my peer helped me with, is the scenario where we would consider a project as **unfeasible**. For example, if it turns out that the people who are involved in the inventory management would rather prefer simple solution and the effort and money required to implement such a system outweighs the benefit incurred from such an application, than the organisation might **shelve the project**.

**Challenges Faced**

One of the challenges we discussed was the need to correctly understand the **Function points** that would be analysed to come up with some initial estimates. We could not understand how we determine these function points. We made use of Generative AI to understand it better. We learned more about what constitutes as **Internal/External logical files**. Along with this, with learned what could be examples of ‘**External Inputs’**, ‘**External Outputs’**, and ‘**External Inquiries’**. Another learning point was the difference between the Data Element Type (DET) and Record Element Type (RET). These points helped us to better appreciate the concept of attributing complexity values when calculating the initial estimates.

**Personal Development Activities**

Going through the **chapters 1-3** of the book “**Software Project Management – A process-driven approach**” have helped me understand fundamentals of Project Management like defining clear objectives and timelines that would help me structuring future projects in a much better way. An important learning was in identification and separation of what needs to be done from what the objectives of a project are. I got familiar with effort estimation models like Function Point Analysis (FPA), COCOMO, and Delphi model. It helped me understand the applicability of these models based on the availability of data.

**Goals for the Next Week**

The most important goal after this week’s study is to implement these learnings to come up with a clear and concise initial estimation for the upcoming ‘Project Initiation’ phase of our project. Another goal would be to take up a very small project to learn about implementing the effort estimation using some existing data as a base.