# The Software Cost Estimation

Software estimation is measuring the future effort required for the project implementation. Software estimation is one amongst the challenging tasks of the project manager. Estimations include the software size estimation, effort estimation in man months, and cost estimation of the project. There are many estimation techniques that are available such as, source lines of code, function points, use case points, object points, and feature points. There are also cost estimation techniques such as constructive cost model (COCOMO), which is a model based approach.

In current days, the resources such as time, money and programmers to software project are limited. The project manager has the pressure to execute the project within the given time and the given budget. Hence, funds are limited; the project manager has to execute the project with proper plans in place. Hence, he needs to know how much time and money are to be spent on each activity and how many resources are to be assigned to every activity, based on the required efforts.

Any project involves cost, the approximate estimation and judgement of the cost for a particular project is called cost estimation. The cost for a particular project involves many variables and can never be constant hence, cannot be exactly calculated for a project. Anything that involves human efforts is not approximate as humans are not so predictable. Any type of project's software development involves several functions whose complexity is difficult to judge due to the complicated software systems.

Effort is the metric for the software cost estimation for the development of the software. The effort is the total time a person needs to work over a period of time. It is important that the specific characteristics of the processes and programming tools are taken into consideration during the comparison of the effort of any projects because no two processes and programming tools are the same. Different elements and variables are used for cost estimation like, the factors from manufacturing, development, etc.

Any project requires planning and budgeting, which is influenced by cost estimation. The cost estimation at the beginning of any project helps in determining which features a project can possess. The important features are included in the product by prioritising the requirements. When the most important features are added at the beginning, the risk is reduced because as the complexity of the project increases, the chances of mistakes also increases. Hence, cost estimation can have a big impact on the life cycle and schedule for a project.

The risk of a project is reduced when the most important features are included at the beginning because the complexity of a project increases with its size, which means there is more opportunity for mistakes as development progresses. Thus, cost estimation can have a big impact on the life cycle and schedule for a project.

Resource allocation depends on cost estimation. A company has to assign better resources to expensive projects. Manpower loading is the metric for management and engineering personnel assigned to a project for a given period of time. It is bad if the less costly project fails, but it is worse if the costly project fails. With estimation, some resources can be traded off with others while keeping the project cost unchanged. Cost estimation of the project should be done throughout its life cycle. The first cost estimation should be done at the beginning of the project.

Majority of the projects fail or become challenged because of improper estimations. Hence, software estimation is important in project management. If you cannot estimate, you cannot measure and track as well. Hence, software estimation has a lot of importance.