Software Project Management

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Introduction

Software project management is the art and science of planning and leading software projects.It is a sub-discipline of project management in which software projects are planned, implemented, monitored and controlled.

A software project manager is a person who undertakes the responsibility of executing the software project. Software project manager is thoroughly aware of all the phases of SDLC that the software would go through. Project manager may never directly involve in producing the end product but he controls and manages the activities involved in production.

A project manager closely monitors the development process, prepares and executes various plans, arranges necessary and adequate resources, maintains communication among all team members in order to address issues of cost, budget, resources, time, quality and customer satisfaction.

History

The origins of project management software are rooted in the 1950s when Dupont Chemical collaborated with mainframe computer maker Remington Rand (Univac) to devise the Critical Path Method of network scheduling (CPM). This method was tested in 1958 with the construction of a major new chemical plant. In parallel, the US Navy working together with Lockheed Aerospace devised the automated Project Evaluation Review Technique (PERT) for the Polaris Missile program that ran on the IBM mainframe. Mainframe and Mini computers dominated the project management software arena until the early 1980s when PC computers began to proliferate across business and government circles alike.【1】

Overview

The Project Management Suite in ComputerEase Software includes multiple components to help contractors streamline every aspect of project management. Whether you're looking for tracking and control of important documents, an easy, integrated way to record meeting minutes or a simple solution to job scheduling, ComputerEase Project Management Software has the answers.

Managing People

Act as project leader
Liaison with stakeholders
Managing human resources
Setting up reporting hierarchy etc.

Managing Project

Defining and setting up project scope
Managing project management activities
Monitoring progress and performance
Risk analysis at every phase
Take necessary step to avoid or come out of problems
Act as project spokesperson

Need of software project management

Software is said to be an intangible product. Software development is a kind of all new stream in world business and there's very little experience in building software products. Most software products are tailor made to fit client's requirements. The most important is that the underlying technology changes and advances so frequently and rapidly that experience of one product may not be applied to the other one. All such business and environmental constraints bring risk in software development hence it is essential to manage software projects efficiently.

The image above shows triple constraints for software projects. It is an essential part of software organization to deliver quality product, keeping the cost within client's budget constrain and deliver the project as per scheduled. There are several factors, both internal and external, which may impact this triple constrain triangle. Any of three factor can severely impact the other two.

Therefore, software project management is essential to incorporate user requirements along with budget and time constraints.

Project Estimation Techniques

We discussed various parameters involving project estimation such as size, effort, time and cost.
Project manager can estimate the listed factors using two broadly recognized techniques –

Decomposition Technique

This technique assumes the software as a product of various compositions.
There are two main models -
Line of Code Estimation is done on behalf of number of line of codes in the software product.
Function Points Estimation is done on behalf of number of function points in the software product.

Empirical Estimation Technique

This technique uses empirically derived formulae to make estimation.These formulae are based on LOC or FPs.

Putnam Model

This model is made by Lawrence H. Putnam, which is based on Norden's frequency distribution (Rayleigh curve). Putnam model maps time and efforts

required with software size.

COCOMO

COCOMO stands for COnstructive COst MOdel, developed by Barry W. Boehm. It divides the software product into three categories of software: organic, semi-detached and embedded.

References[edit]

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