Software Project Management

Author name:ChengLuJie
ZheJiang Normal University
Software project management

Abstract

Information technology (IT) projects can fail for any number of reasons and in some cases can result in considerable financial losses for the organizations that undertake them. One pattern of failure that has been observed but seldom studied is the IT project that seems to take on a life of its own, continuing to absorb valuable resources without reaching its objective. A significant number of these projects will ultimately fail, potentially weakening a firm ' s competitive position while siphoning off resources that could be spent developing and implementing successful systems.

Keywords: Software project management, IS failure, escalation, escalating commitment,implementation

Introduction

What is new is the way we manage projects. Project management as a special form of management evolved from the work done on large-scale military projects where an organized approach was necessary to manage the complex interrelationships among an enormous number of different tasks performed by many different specialists. In recent years project management emerged as a major new form of management to deal with the complexities of knowledge-based teamwork in organizations facing rapidly changing business environments.Project management provides managers with powerful methods and tools for planning, organizing, and managing team-based activities for accomplishing specific objectives.

Users are often unsure of their needs and frequently change requirements midway through the project. Asa result, the software industry is plagued by cost overruns, late deliveries, poor reliability, and user dissatisfaction (Abel-Hamid and Madnick, 1991).Why is managing projects so difficult? Why are we seeing so many project failures, especially in software development? Some of the difficulties stem from the inherent nature of the product, others are management related. Among the common software related problems are:

Communications of AIS Volume 2, Article 174Software Project Management: The Manager ' s View by J. Jurison

•Intangibility. Software, unlike hardware, is intangible. As a result, software is difficult to manage because it contains no visible milestones to measure progress and quality.

•Complexity. The sheer complexity of software makes it difficult for people to comprehend it, creating not only technical, but management problems as well.

• Volatility of requirements. Software requirements are under constant pressure for change. Because software can be changed more easily than hardware, change is a way of life in software development.

Among the management-related difficulties the following the most frequently cited in the project management literature:

•Poorly defined goals and specifications.

•Lack of project plan

•Unrealistic deadlines and budgets.

Although some projects fail for technical reasons, most project failures are caused by people who ignore the principles of good project management. The purpose of this tutorial is to present these principles and show how they can be applied to the development of information systems.

Communications of AIS Volume 2, Article 175Software Project Management: The Manager ' s View by J. Jurison for software project managers are presented in Section VII, with concluding remarks in Section VIII.Two appendices provide information on earned value calculations and project management software packages.

Project management is a broad subject that cannot be described completely in a single paper. Therefore a bibliography is included for those who want to dig deeper into any of the topics discussed in this tutorial.

History of Software project management

In the 1970s and 1980s, the software industry grew very quickly, as computer companies quickly recognized the relatively low cost of software production compared to hardware production and circuitry. To manage new development efforts, companies applied the established project management methods, but project schedules slipped during test runs, especially when confusion occurred in the gray zone between the user specifications and the delivered software. To be able to avoid these problems, software project management methods focused on matching user requirements to delivered products, in a method known now as the waterfall model.

As the industry has matured, analysis of software project management failures has shown that the following are the most common causes:[2][3][4]

1.Insufficient end-user involvement
2.Poor communication among customers, developers, users and project managers
3.Unrealistic or unarticulated project goals
4.Inaccurate estimates of needed resources
5.Badly defined or incomplete system requirements and specifications
6.Poor reporting of the project's status
7.Poorly managed risks
8.Use of immature technology
9.Inability to handle the project's complexity
10.Sloppy development practices
11.Stakeholder politics (e.g. absence of executive support, or politics between the customer and end-users)
12.Commercial pressures

KEY DIMENSIONS OF PROJECT MANAGEMENT

Project management is a series of activities associated with carrying out the project as effectively as possible. Kerzner (1989, p.4) defines project management as "the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives." The purpose of project management is to provide focus for using the resources to achieve a specific objective. In short,the fundamental objective of project management is to "get the job done," to reach the objectives within• time,• cost, and• performance.These three variables are the critical project dimensions which require continual project management attention.Time refers to the timeliness of progress relative to the schedule. The key questions to be addressed are: "Is the project on schedule?" or "How large is the schedule slip?" Cost means the expenditures for project resources, usually measured in terms of expenditure rate and cumulative expenditures.Performance is the degree to which the objectives or specifications are met. In information systems projects, performance is specified in terms of certain functional and quality requirements, some of which are quantitative, some qualitative.These three dimensions provide the focal point for all project management efforts. They require the project manager’s undivided attention and energy. They are also the constraints within which project management operates. Therefore they are sometimes referred to as a triple constraint. The challenge of project management lies in finding a balance among these constraints.

REFERENCES

Alter, S. (1999) “A General, yet Useful Theory of Information Systems,” Communications of AIS, Vol. 1, Article13,March1999.http://cais.isworld.org/articles/1-13/

Gogan, J.L., J. Fedorowicz, and A. Rao. “Assessing Risks in TwoProjects: A Strategic Opportunity and a Necessary Evil,” Communications of AIS, Vol. 1, Article15,May1999.http://cais.isworld.org/articles/1-15/

Jurison, J. (1999) “Software project Management: A Manager’s View, ” Communications of AIS, Vol. 2, Article17,September1999.http://cais.isworld.org./articles/2-17/