Implementation of Software Project Management Activities in a Company

Dr. Rekha Chouhan[1] Prof. V. Ameer Basha[2]
[1,2]Assistant Professor
[1,2]Balaji Institute of Telecom and Management, Pune, India

Abstract— Software applications are being implemented by many organizations and in many countries. Traditionally most software vendors have a common global framework for implementation. The role of different project management techniques to implement projects successfully has been widely established in areas such as the planning and control of time, cost and quality. In spite of this the distinction between the project and project management is less than precise. This paper aims to identify the overlap between the definition of the project and project management and to discuss how the confusion between the two may affect their relationship. It identifies the different individuals involved on the project and project management, together with their objectives, expectations and influences. The role of different project management techniques to implement projects successfully has been widely established in areas such as the planning and control of time, cost and quality. The aim of this research paper is to study of the software implementation activities of major software vendors, system integrators with specific focus in the area of people issues and change management.

Key words: Project, Project Management, Time, Cost, Quality

I. INTRODUCTION

Many organizations have been using Information Technology (IT) to embrace their business, improve performance and increase their productivity. IT is seen as an integral part of organization business strategic objectives and processes in many organizations. In order to realize the value of IT in various organizations, they need to apply established both IT and IT projects governance principles as part of overall organization's strategic objectives [5].

Unfortunately, organizations that uses general project governance principles in managing IT projects have encountered many problems including delaying the completion of IT projects, over or under budgeting and poor quality of project outputs. This implies that specific attention needs to be given to the management of IT projects. Moreover the literature revealed that there is a lack of formal guidance regarding IT project governance. It has been recognised over the last 30 years that project management is an efficient tool to handle novel or complex activities. The process of bringing new projects on stream and into the market imposes demands on established organisations and necessitates different management techniques from those required to maintain day-to-day operations. In such circumstances, where companies have a finite, unique and unfamiliar undertaking, the techniques of project management can be successfully implemented. These undertakings would call for more and faster decision making techniques than possible in a normal operation and making the right choices will be critical to company success. The use of project management has become associated with such novel complex problems, which are inevitably called a project. Consequently the success of project management has often been associated with the final outcome of the project. Over time it has been shown that project management and project success are not necessarily directly related. The objectives of both project management and the project are different and the control of time, cost and progress, which are often the project management objectives, should not be confused with measuring project success [3]. Also, experience has shown that it is possible to achieve a successful project even when management has failed and vice versa.

In contrast, project management is orientated towards planning and control. It is concerned with on-time delivery, within-budget expenditures and appropriate performance standards. This is the context of the short-term life of the project development and delivery. Once delivery is achieved the management, as it relates to planning and control of the development and delivery, will cease [10]. A new, or different form of management, will then establish the operation and control of the project use from this point on. The focus, therefore, of project management is distinct from that of the project because it is short term, until delivery of the project for use. In contrast the project itself is long term, based on the whole life rather than just the development cycle. Having established this distinction between the project and project management it is possible to start to distinguish between success and failure of the two. The definition of project management suggests a shorter term and more specific context for success. The outcomes of project management success are many. They would include the obvious indicators of completion to budget, satisfying the project schedule, adequate quality standards, and meeting the project goal. The factors which may cause the project management to fail to achieve these would include:

- inadequate basis for project;
- wrong person as project manager;
- top management unsupportive;
- inadequately defined tasks;
- lack of project management techniques;
- management techniques mis-used;
- project closedown not planned;
- Lack of commitment to project.

II. SOFTWARE IMPLEMENTATION ACTIVITIES

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 involved 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, and quality and customer satisfaction.
Responsibilities of a project manager includes -

A. Managing People

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

B. 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

C. Software project management comprises of a number of activities, which contains planning of project, deciding scope of software product, estimation of cost in various terms, scheduling of tasks and events, and resource management. Project Management Activities May Include

- Project Planning
- Scope Management
- Project Estimation

D. Project Planning

Software project planning is task, which is performed before the production of software actually starts. It is there for the software production but involves no concrete activity that has any direction connection with software production; rather it is a set of multiple processes, which facilitates software production. Project planning may include the following:

E. Scope Management

It defines the scope of project; this includes all the activities, process need to be done in order to make a deliverable software product. Scope management is essential because it creates boundaries of the project by clearly defining what would be done in the project and what would not be done. This makes project to contain limited and quantifiable tasks, which can easily be documented and in turn avoids cost and time overrun. During Project Scope management, it is necessary to

- Define the scope
- Decide its verification and control
- Divide the project into various smaller parts for ease of management.
- Verify the scope
- Control the scope by incorporating changes to the scope

F. Project Estimation

For an effective management accurate estimation of various measures is a must. With correct estimation managers can manage and control the project more efficiently and effectively.

G. Project Estimation May Involve The Following

1) Software size estimation

Software size may be estimated either in terms of KLOC (Kilo Line of Code) or by calculating number of function points in the software. Lines of code depend upon coding practices and Function points vary according to the user or software requirement.

2) Effort estimation

The managers estimate efforts in terms of personnel requirement and man-hour required to produce the software. For effort estimation software size should be known. This can either be derived by managers' experience, organization's historical data or software size can be converted into efforts by using some standard formulae.

3) Time estimation

Once size and efforts are estimated, the time required to produce the software can be estimated. Efforts required is segregated into sub categories as per the requirement specifications and interdependency of various components of software. Software tasks are divided into smaller tasks, activities or events by Work Breakthrough Structure (WBS). The tasks are scheduled on day-to-day basis or in calendar months. The sum of time required to complete all tasks in hours or days is the total time invested to complete the project.

4) Cost estimation

This might be considered as the most difficult of all because it depends on more elements than any of the previous ones. For estimating project cost, it is required to consider -

- Size of software
- Software quality
- Hardware
- Additional software or tools, licenses etc.
- Skilled personnel with task-specific skills
- Travel involved
- Communication
- Training and support

A poor implementation process of software could prove to be very expensive for an organization and may be counterproductive. A successful software implementation and adoption requires to address four elements, namely, commitment from leadership, the right technology, the right business process and getting it right with the people inside the organization towards adoption of this technology [4].

Software implementation in early days followed a waterfall methodology. Projects were quite large and were in a new area where the customers were early adopters of the technology solution and software vendors and implementation partners were also interested in managing the scope and defining the requirements clearly to deliver the solution. This sequential and often heavy approach made many customers to demand a more flexible and iterative approach to software implementation.

This lead to the development of agile methodologies. In this agile process, the focus was on using the best processes through empowered teams, customer involvement and the ability to analyze and quickly control changes to the project scope at the inception and throughout the lifecycle of the project. The focus in this methodology is primarily on managing the technology aspects and many

other areas, like project level budgeting, contracts, risks, human resource management, cost management and integration management are not addressed too much detail. Also organizational change management has also not been addressed completely in agile methodologies.

III. CONCLUSION

IT has been the key factor in enhancing organization performance, increasing competitive advantage and improves processes within the organizations. As a result IT is a major investment cost comprising nearly half of many organization budgets. Unfortunately IT projects in many organizations encounter a lot of problems including unintended project deliverables, over or under budgets and takes long time to complete. A lot of the activities in managing software projects are mostly repetitive tasks which are prone to human errors. As computing power increases and methods and algorithms become more sophisticated it is expected that intelligent systems become more common in management of projects in not just the field of software development. Too much planning may kill the creativity of developers, but at least a minimum amount of planning is always needed in projects. Planning does not automatically lead to project success, but lack of planning is likely to lead to project failure. On the contrary, some projects may strictly follow planning, but will lead to failure because the actual customer benefits are ignored. Generally speaking, planning is a central point particularly in connection with project management. The main conclusion of the research was that on the project and its deliverable requirements should be put a considerably amount of effort. The study also confirms previous researches related to project requirements and specifications; a significant positive relationship between the amount of project planning and the project success can be found. This study has also revealed the relationship between project success and enduser benefit. The overall success measure seems to reflect the end-user's satisfaction the results of the project. The success of an IS project can be understood in multiple ways. One is the point of view of the manager. The project is successful if it has been completed on time and it has produced the desired product. From the point of view of the employee, on the contrary, the project may be held successful if the employees have overcome some major difficulties or they have been able to increase their own skills. What affects to the outcome of an IS project is environmental variables which may cause difficulties in terms of succeeding. Monitoring is performed in order to keep the principal up to date of the agents' work. As a tool, Microsoft Project was the most commonly used project management software. The most popular techniques were periodic progress reports and periodic team meetings.

REFERENCES

[1] A Guide to the Project Management Book of Knowledge (PMBOK) 2009 Fourth edition Project Management Institute PA 19073 USA.
[2] Avots, I 'Why does project management fail?' California Management Review 12 (1969) 77-82.
[3] Wit, A D 'Measurement of project success' Project Management 6 (3) (1988) 164-170.
[4] Cash, H and Fox, R 'Elements of successful project management' J Systems Management (1992) 10-12.C
[5] Rekha Chouhan and Rajeev Mathur,"Role of Software Quality Assurance in Capability Maturity Model Integration", IJARCET, ISSN: 2278 – 1323, Vol.1, Issue 6, August, 2012.
[6] Duncan, G L and Gorsha, R A 'Project management: A major factor in project success' IEEE Transactions on Power Apparatus and System 102 (11) (1983) 3701-3705.
[7] Lackman, M 'Controlling the project development cycle, tools for successful project management' J System Management (February 1987) 16-28.
[8] Project Management Methodology: A Practical Guide for the Next Millennium by Ralph L. Kliem, Irwin S. Ludin, Ken L. Robertson - Hardcover -Published 1997.
[9] Rekha Chouhan and Rajeev Mathur,"Role of Metrics in Software Quality Assurance Process", IJCSS, Dec'2012, ISSN: 2249-8222.
[10] Project Management by Dennis Lock, Paperback - 522 pages 6th edition, John Wiley & Sons, 1996.
[11] Project Management for Managers, Mihaly Gorog, Nigel J. Smith, Project Management Institute, 175p, 1999.

