An Analysis on the Role of Project Management in the Success Chronicle of Software Project

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Abstract—Today majority of the software projects are slip in their deployment. There are so many reasons for not completion of projects on time. A recent survey says that more than 60% of software projects fail today due to various reasons. With proper implementation Software Project management principles good number of projects are successfully completed on time with quality. In this paper we aimed to identify gap between project failures and success. We would like to identify and analyze various factors which influence the success of project through a good Software project management methodology.

Keywords: Project, Management, Quality, Failure, Success.

I. INTRODUCTION

The step of change in business and technology is going faster. As a result, no matter what your perspective is there is always more of everything to contend with such as more ideas, competitors, resources, constraints, and certainly, more people doing and wanting things. This faster going rate of change has a direct impact on the frequency and conduct of projects. Today’s most successful organizations employ Project Management as a strategic tool to bring change and achieve business objectives. Primarily focusing on developing a project plan with specific goals and objectives, Project Management assists an organization to deliver projects that fit-for-purpose, timely and within budget.

It has been recognized over the last 30 years that project management is an efficient tool to handle novel or complex activities. It [1] has suggested that it is more efficient than traditional methods of management, such as the practice of functional points in formal technical reviews, for handling such situations. The process of bringing new projects on stream and into the market imposes demands on established organizations and demand 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 tools[2] 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. Also, experience has shown that it is possible to achieve a successful project even when management has failed. There are many examples of projects which were relatively successful despite not being completed on time, or being over budget. Most of the projects failed due to lack of quality, high cost and too longer schedules.

II. REVIEW OF LITERATURE

More than 60% of software projects fail today. Studies[3] conducted by major research groups prove this. Why is this so? Are there any safety measures that can be taken to prevent this. We focused in this point in our paper.

A generic survey says that 31.1% of projects will be canceled before they ever get completed. Further results indicate 52.7% of projects will cost 189% of their original estimates.

On the other side, the average is only 16.2% for software projects that are completed on time and on budget. In the larger companies, the news is even worse: only 9% of their projects come in on time and on budget. And, even when these projects are completed, many are no more than a mere shadow of their original specification requirements. Projects completed by the largest American companies [4] have only approximately 42% of the originally proposed features and functions. Smaller companies do much better. A total of 78.4% of their software projects get deployed with at least 74.2% of their original features and functions [5].

The information given in the following table 1 collates the responses to a poll conducted by the Generic Survey.

<table>
<thead>
<tr>
<th>Project Success Factors</th>
<th>% of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>End User Involvement</td>
<td>16.1%</td>
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</table>

Table I Generic survey on software project
These statistics maybe tricky, especially to a prospective client, but having established that more than 60% of software projects fail, we have proposed a method for project success.

III. METHOD

The Project Management Institute (PMI) defines a project is a temporary endeavor[6] undertaken to create a unique product [6]. It says that this definition with the qualification that a project is a unique, multitask job which must be started and completed between two planned dates, using a planned amount of resources, and achieves expected levels of performance.

It was suggested earlier that there is a gap between project management and projects, in that the former is a subset of the latter. Some of the factors that resemble the gaps are as proposed below.

- Schedule: Project success is often commented on at the end of the project management phase[7]. At this time knowledge about the project management success will be known because the budget, schedule and quality criteria can be measured. Here each of the parties will be able to compare original data requirements to what is achieved. In terms of quality standards it could be monitored by the amount of rework or by the degree of client satisfaction. The long-term indicators will not have been realized yet and consequently they cannot be measured. Therefore, it is convenient to judge success at this time by whether the project management criteria have been satisfied rather than the project criteria. So project management success becomes synonymous with project success, and the two are inseparable.

- Quality of Objectives: The objectives of project success and project management success are often intertwined. Instead of clearly identifying the two as separate groups they are shown to be a single homogenous set. Because of this lack of distinction the two sets of objectives are seen to be correlated. For example ‘completion to budget’ might be placed alongside productivity as objectives. Budget is primarily a project management issue, yet profitability is a project objective. To suggest that a client instigates a project just to see it completed to budget alone indicates the lack of importance of the project objectives.

- Cost: Two of the objectives within project management are common across all projects and are easy to measure quantitatively. These are compliance with budget and schedule. Because of these readily identifiable measures it is easy to concentrate on project management and its success rather than the wider context of the project. Many of the project objectives will tend to be either qualitative or not easily measured in any objective manner, or longer-term and not measurable immediately. This makes it convenient to use measures of project management success as a means of determining overall project success. The confusion outlined above can be avoided by an improved appreciation of the role of project management within the project. The role [8] of project management is to use the resources available effectively to accomplish a set goal within certain criteria. This role of project management needs to be placed within the context of a wider project. Figure 1 shows a five stages model of the life of a project, the stages being as follows:

- Inception --the idea for the project is birthed within the client organisation and its feasibility determined.
- Elaboration--the method to achieve the original idea is planned and designed.
- Construction--the plans are converted into physical reality.
- Transition--the finished project is handed over to the client for use.
- Closure--the project is dismantled and disposed of at the end of its useful life.

The figure illustrates how each of the parties previously identified interact with the project during this life-cycle. It also highlights the role of a new group--that of third parties. There are various third parties which could influence the development and use of a project [9]. These include: statutory authorities, both local and national; the media; environmental groups and the general public.

<table>
<thead>
<tr>
<th>Project Factors and % of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of End User Inputs 13%</td>
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<tr>
<td>2. SRSD 12.1%</td>
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<tr>
<td>3. Change in Requirements &amp; Specifications 15.8%</td>
</tr>
<tr>
<td>4. Technology Incompetence 15%</td>
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<tr>
<td>5. Resources unavailability 6.1%</td>
</tr>
<tr>
<td>6. Unclear Quality Objectives 9.6%</td>
</tr>
<tr>
<td>7. Other Factors 21%</td>
</tr>
</tbody>
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The figure illustrates where the distinction between success and failure differs between the project and project management view. The project team will be involved with stages 2-4, whereas the client is interested in stages 1-5. As Figure 2 shows the team will be focused on the narrow task of successfully reaching the end of stage 4, at which point they will terminate their involvement and progress to the next project. The client is left to cope with the outcome, which must be effectively utilized until it reaches the last stage. Throughout this process the project performance can be assessed in one of two ways:

- The implementation--this is completed in stages 2-4 and is concerned with the project management techniques and their implementation.
- Perceived values and Satisfaction--this is the view of users who will interact with the project during the utilization phase.

Tools like Base Camp, Track Project and Work Book places a vital role in the intersection point in the above figure2.

IV. RESULTS

The relation between project and project management become success. Consider the situation where the project has failed whereas the project management process was perceived to be successful. In this situation the project has failed because it has not been used as it was initially intended, could not be marketed, or did not get its return on investment to the client; while its implementation process was produced on time, to budget and according to scope. The project management could not have prevented the failure of the project. This arises because of the project management criteria being a subset of all project criteria. Although the subset has been satisfied, the wider set has not been. The only possible criticism of the project management is that the early processes of feasibility should have discovered the potential for the project to fail, and should have warned the client of the need to abandon or redefine the scope of the project.

In this case the importance of project management success will be of little or no value to any party except the project team, unless they are concerned with the utilization phase of the final outcome. The implementation success is of no importance because the client is not able to use the investment, and the project team should have been more satisfied if the outcome of their efforts had been properly used. For example a new factory which is not occupied will lay empty and the client will spend extra money on upgrading, securing, servicing, making changes, or accepting lower offers. Obviously the investment will be a failure from their point of view even if the control aspects of it went according to plan.

The second scenario is where the project implementation was either delayed or cost more, but in the end the client was able to make profitable and good use of it. In this case the project management failure is of little significance in the longer term. In the short term the project management failure may be an inconvenience because use of the development was delayed by the schedule overrun. Alternatively, more finances have to be established to fund the budget overspend. Yet the inconvenience may only involve a brief embarrassment at the handover of the project. In both scenarios we see
that project success and failure is not totally dependent on project management success and failure, the exception being when the project is too late or too expensive and can no longer be used. Then there will be a link between project management failure and the failure of the whole project, but here the breakdown in project management must be extreme.

An evaluation process which inspect the whole project from conception to close down is required, to complement the project management evaluation process. Such a process will include issues of project economics and viability, at least, which are broader than merely how to accomplish the project on schedule, to budget and to scope. It will give less attention to the management and implementation aspects of projects and concentrate on the economic, financial and utilization aspects. This technique will probably require more input from producers and the project team into the utilization phase, which may form a closer partnership between two or more parties in a 'win-win' situation. Consequently the term 'project management' may be replaced by the 'management of projects', the focus being not so much on the tools and techniques of bringing the project in on schedule, to budget and to technical performance, but on the wider phenomena of the project and of how it can be successfully managed throughout its life.

V.  CONCLUSION

This paper has tinted the gap that exists between projects and project management technique. It has also attempted to highlight how the objectives of a project and project management are different and how the emphasis of project management is towards achieving specific and short-term targets compared to the wider aims of a project. The conclusion is that to make the project management team totally responsible for success would appear to be inappropriate and that the client should take an increased interest in the development and use of the project.

Thus, for a project to be successful there must, first, be an improved appreciation of the role of project management within projects, and this role must be placed within the context of a wider project alongside other outside criteria and long-term expectations. Second, the project manager must allow the client to contribute actively in the planning and production phases and at the same time the project team involvement has to be extended into the utilization phase. Finally, one must always bear in mind that successful project management techniques will contribute to the achievement of projects, but project management will not stop a project from failing to succeed. The right project will succeed almost without the success of project management, but successful project management could enhance its success. Selecting the right project at the outset and screening out potentially unsuccessful projects, will be more important to ensuring total project success.

REFERENCES