THE MOST COMMON FACTORS FOR THE FAILURE OF SOFTWARE DEVELOPMENT PROJECT

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ABSTRACT

Most software projects fail completely or partial failures because a small number of projects meet all their requirements. These requirements can be the cost, schedule, quality, or requirements objectives. Over the last 20 years many cost and schedule estimation techniques have been used with mixed sensation due to restrictions of the assessment models. A major part of the failure can be due to a lack of understanding of the software development process and the effect of that method used in the project plan, schedule and cost estimates. Organizations and individuals have studied a number of projects that have both succeeded and failed and some common factors emerge. A key finding is that there is no one overriding factor that causes project failure. This Paper review the numbers of factors are involved in project failure, some of which interact with each other.

Keywords: Failure Reasons, Success factors, Failure Statistics.

INTRODUCTION

One of the most serious complaints against software failure is the inability to estimate with acceptable accuracy the cost, resources, and schedule necessary for a software project. According to many studies, failure rate of software projects is between 50% - 80%. One of the major causes of both cost and time overruns is restarts. For every 100 projects that start, there are 94 restarts. This does not mean that 94 of 100 will have one restart; some projects can have several restarts. Project failure is when you do not get what you expect at the end of your project. It is a terrible situation when you cannot say anything about the received results as these results do not meet requirements of the project customer and sponsor. This paper discusses on why most projects fail and what the top reasons for project failure are in software development project.

MOST COMMON REASONS FOR PROJECT FAILURE

The following list has been inspired by actual mistakes encountered in real-world systems projects.

1. Lack of Customer or User Involvement

This is the primary reason for project failure. [2]When you do a project and the customer does not participate in it, the project is doomed to fail. Without user involvement you cannot feel committed to the product, to avoid the reason of project failure, senior management needs to establish a working environment in which the customer can actively participate in the project and communicate with the team. Then, project expectations will be clear and right priorities will be set up. Therefore senior management need to continuously support the project to make it clear to staff it is a priority.

2. Unclear goals and objectives

Many projects are elaborated progressively and in these scenarios project managers rely on rolling wave planning. As a result, the goal of a project may be only partially clear due to a poor requirement gathering in the definition stage of the project. In such case, the scope and schedule developed by

project managers cannot possibly be accurate because their objectives are unclear. Defining clear requirements for a project can take time and lots of communication.

3. Poor Requirement Set

Project failure due to [1]poor requirements management takes place when the project team delivers the product without having a clear understanding of what the customer wants and without having any real knowledge of the requirements. When the product is produced, the customer does not like it because the requirements have not been met, and this becomes one of the reasons for project failure. Poorly set requirements and lack of requirements understanding are closely linked to lack of customer involvement.

4. Lack of Resources

Every project needs resources. [4]How much and how many depends on the size and scope of the project. Like most project managers can attest, working on projects with scarce resources is not all that unusual. Management will always invariably try to minimize costs while working with maximum productivity. Projects running somewhat 'lean' are not an unknown in project management circles. However, there are situations where the project is simply unattainable because the allocated resources are insufficient. In those types of situations, it may be a case whereby key personal required for project success are just made not available.

5. Failure to communicate and act as a team

Projects sometimes fail due to improper communication. The projects usually impact a large amount of people. This requires constant communications to all levels of people throughout the organization. A strong communication strategy can help with this. Many large projects are so complex that these projects always require large amount of analysis and work. The project teams are busy doing the analysis, creating WBS, time estimation etc. and project managers do not communicate progress regularly because they believe that progress will not be seen by the executive management or they fear of improper reporting.

6. Project Planning & Scheduling

Project planning means creating work breakdown, and then allocate responsibilities to the developers over time. [10]Project planning consists of construction of various tasks, timelines and essential pathways including Gantt charts and PERT charts and different written plans for various situations. Allocation of roles and responsibilities has to be clearly defined, and it becomes crucial while hiring the stall from outside. Proper scheduling is also required before the start of the project. It includes the time scheduling, teams scheduling. Project managers don't know what they have to plan and schedule. They just only tell the programmer what to do and the programmers can come up with a proper solution. The top secret of a winning software development project is to control the quality up and lower the risk.

7. Cost Estimation

Cost estimation is mainly involved the [5]cost of effort to produce the software project. But it's not limited to the effort only. It also includes the hardware and software cost, training the employees and customer, travelling to the customer, networking and communication costs. Cost estimation should be done as a part of the software process model. Cost estimation needs to be done well before the start of the project development. Failure of the budgeting for the cost of the project results in complete disaster. As stated above the infrastructure cost, development tools cost and hardware cost also needs to be estimated first.

8. Inappropriate Estimation Methodology

Another reason would be the use of an inappropriate cost estimation methodology. Not a single methodology is better than other. Every methodology has its own strong and weak points which should be considered. Dr. Barry Boehm's book Software Engineering lists seven estimation methodologies. One or more of these methodologies can be used to estimate the cost of a project. "Good suggestion is that more than one software cost estimation methodology should be used for accurate estimation".

9. Cost Estimation Tools

There are many drawbacks in manual cost estimation. This technique is almost out of date now. [3]These days successful cost estimation includes the use of appropriate commercial software cost estimating tool. Good software estimating tools do not always guarantee reliable software estimates. Wrong input of the software size will result in wrong estimate. Estimation software also needs to be customized for the specific need of organization. These customizations require the data from the past projects as input for the tool to estimate. There are number of reasons these tools can return the wrong estimate.

10. Poor Testing

The project failure is often caused by lack of testing resources. [7]While software developers focus on creating code, they do not deal with testing. Testers are those who should do "testing" during the development process. Often lack of testers and their poor skills and knowledge will make an project un acceptable because acceptance tests to see whether the product meets the business requirements are not run. Poor testing may be caused by poor requirements set, lack of change control, inadequately trained staff, lack of time for performing testing. As a project manager must prevent these project failure causes in order to build an acceptable product for customer.

11. Risk Management

Risk management is an important factor towards software project failure if it's not managed timely and effectively. As nothing can be predicted that what will happen in future so we have to take the necessary steps in the present to take any uncertain situation in the future. Risk management means dealing with a concern before it becomes a crisis.

12. Unrealistic Expectations

Projects with [12]unrealistic expectations are also about equally likely to be poorly managed projects that fail to validate the feasibility of satisfying user expectations, or well-managed projects that try to validate feasibility and find unavoidable factors— such as immature technology, overhyped COTS products, or a saturated market—that justify a project's prompt termination.
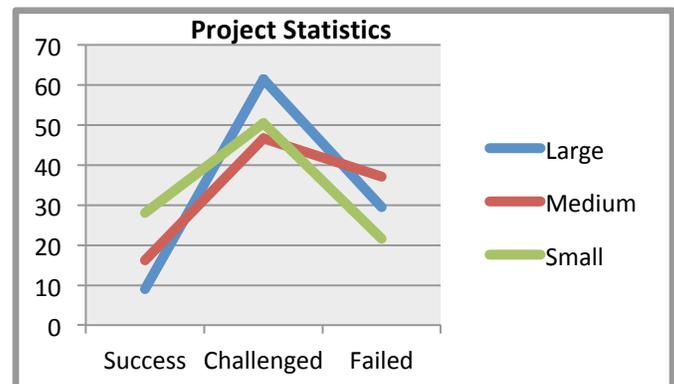
PROJECT SUCCESS FACTORS

There are three factors that all successful projects seem to have in common. Each project can be viewed as a tripod. All three legs must be in place for the tripod to stand sturdily: [11]Top management support, a sound methodology and Solid technical leadership by someone who has successfully completed a similar project. In any systems project, there are four interdependent factors are Cost, Quality, Speed and Risk. Of these four factors, in any project, two are always possible to achieve successfully, leaving the other two to be managed. Of these four factors, the two most important are risk and quality. The system must work and successfully meet user requirements. This leaves speed (time) and cost (money) to be adjusted accordingly.

FAILURE STATISTICS AND RECOMMENDATIONS

The Standish group and [13]CHAOS report is, only 9% of projects in large companies were successful. At 16.2% and 28% respectively, medium and small companies were somewhat more successful.

Project	Success	Challenged	Failure
Large	9	61.5	29.5
Medium	16.2	46.7	37.1
Small	28	50.4	21.6

A [8]enormous 61.5% of all large company projects were challenged compared to 46.7% for medium companies and 50.4% for small companies.

The most projects, 37.1%, were spoil and subsequently cancelled in medium companies, compared to 29.5% in large companies and 21.6% in small companies.

Some recommendations for project success:

1. Monitor the project - the accuracy of the estimate.

2. Effective software process can be used to increase accuracy in cost estimation in a number of ways.

3. Do not depend on a single cost or schedule estimate.

4. Fully satisfied the user requirements

CONCLUSION

This paper has deal the basic factors which can cause the software development project to fail. All of these factors are to be considered at the management level and then transferred to the lower management. Projects succeed and sometimes, projects fail. Knowing what factors can lead to project failure is important for the project manager so they know what to look for when managing their projects. The processes and practices complement each other for improvement and both require human effort from everyone in the organization. In Conclusion all of these failure factors are rectified to success in Software development project.

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