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Factors Leading To Software Project Failure

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Abstract -This primary aim of this paper is to discern the main reasons why Software Project Failure occurs. Various articles are being considered why projects have been failed and few prime conclusion are made on how such scenarios could be resolved in future. The most important thing to keep in mind throughout a Project is, in-case if failure occurs it is not only caused by one reason it is being caused by technical decisions, business decisions, and project management, and each of these above mentioned elements are interlinked in a complex way. And out of all these it is always recommended to follow the Project life cycle in order to obtain a successful project.

Keywords- Software project management, Technical decisions, Business Decisions, Project development, Project life cycle.

I. INTRODUCTION

There are near about 10,000+ Software development companies in the world, and the most important hurdle that these companies have to overcome is project failure. Let us have an overview over the scenarios why a developed Software is termed to be failed or lead to failure, so as a layman the things that would strike our mind would be insufficient money to lead the project, improper manager who was in-charge and etc. But there are many other reasons as per Software project management theory , all those projects that don't follow the specific rules or a certain procedure (steps of Project Life Cycle) will be lead to failure which would be discussed in later course in this paper.

In earlier days of IT industries the ratio of project failure to success would be very high because the tools and technologies that were available in those days are very few in number, but project failure these days is consider to be most inappropriate due to availability of various technologies such as tools for Planning, scheduling, advancement in languages for coding, Various managerial approaches and etc. So in the following course of this paper the main motto is to primarily focus on why and how project failure occurs and as well as few tips on how to overcome those situations.

II. LITERATURE SURVEY

In the present world there are many thesis and research papers which focus on the reasons for software project failure, and most of them depict that failure can be overcome by paying attention to success factor. Which is true but not in all cases, it is ones duty to focus on how importantly we can follow the project norms which help in reducing failure rate in turn increasing the success rate.

The main motivation to choose this topic is across world there are millions of IT service companies of small, large and mid-scale, and each of them take up one or the other project, so it is important for these companies to know what are the prime reasons for a software project failure, so that they wouldn't repeat them in their due course of procedure to come out with successful project. The main aim of any thesis would be to tell the IT service company to follow Software Project Life Cycle. It is considered to be one of the main component in the development of any software product. Project life cycle deals with the various stages that a project has to undergo during its development for example Requirements phase, Analysis phase, Development phase Testing phase, and finally the Implementation phase. Therefore the core interest of any thesis or paper in this topic would be the above mentioned elements.

III. ANALYSIS OF FAILED IT PROJECTS

Software project failure occurs when they don't meet the standard procedure in which they have to be carried out. There might be various reasons such as budget overrun, not meeting the desired output etc. And most important reasons regarding the failure of the project occurs due to following reason:

Scheduling: Over optimistic and unrealistic.

Requirements: Unclear about what is required for the development of the project.

Resources: Lack of resources, resources not on time again a scheduling problem.

Planning: Improper planning of project and over optimistic.

Risk: when not identified or managed on time [4].

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TABLE I
LIST OF FAILED IT PROJECTS AND PROPOSED SOLUTION

S.no	Year	Project	Reason for failure	Proposed solution for the cause
1	1988	Bank of America	Loss of control of Billion dollar accounts [7].	Developing a software application is not enough, but on time maintenance is important. Which is the primary rule of software project management.
2	2008	Nokia	Nokia was outrun by android and IOS [10].	Understanding the customer is a major step in software product development, know your customer need and meeting their requirements is key to success.
3	2011	SAP payroll project	Improper delivery of payroll to the employees [8].	Testing is one of the major component in software project, a proper testing and re-checking would have helped overcome the above problem.
4	2013	Healthcare.gov	Where only 1% of people could enrol when the site was hosted, later on the site was down completely [6].	By estimating perfect budget we can easily employee good skilled employees, and proper requirements are to be collect like how many users would turn out, server capacity etc.
5	2014	Infosys	Infosys fails to deliver BESCOM project on time. Due to which it had to pay an additional amount of 3.52 cr [9].	Planning is one of the major component, with proper planning we can easily estimate the project run time. Improper planning might lead to project outrun.

The above table gives a glimpse on how Software Project Failure occurs, as we have seen Bank of America, Infosys, SAP, and Nokia are not small IT industries they are very reputed in their domain but they still contain few failed project. And all those project failure can be easily overcome by using few simple steps which were highly neglected, one such industry that is being highly effected is Nokia which has lost its very own existence. All it had to do was to understand the costumer requirement. So, from the above table we can clearly conclude that Project Failure is not confined to small or medium scale industries, it basically occurs in all the industries that don't follow the Project guide lines and those are the guide line set up International Organization for Project Management (IO4PM), and which has been highly emphasising on few norms on how Software Projects have to be carried and those norms are discussed in the following section.

IV. STEPS THAT NEED TO BE FOLLOWED DURING DEVELOPMENT OF A PROJECT

A. Understanding the stake holder

By this it is clear that gathering requirement about the desired software product is must and the first step that is to be considered. For which one has to spend a lot of time and as well as clear set of communication and understanding should be put in, as this is the basic foundation for the project development. For which it is always recommended to have an IT- expert rather than a non IT expert [1].

B. Team size and skilled work force

Team size is one of the crucial aspect of project development, based on the scale of project it better to have small, medium or large sized team. It is important to note that large no of small teams is better than one very large team, because it is easy to handle meeting, divide work among groups, and also work can be carried out on a parallel procedure. And most important it is always better to have skilled and experienced employee than a fresher [1].

C. Time constraint

Time is an important factor for a project development, it always advisable to deliver a project on time. For which we have to follow proper planning and scheduling techniques, it better to divide the time for each module based on its intensity scale and also to have a basic idea about the entire duration of the project [4].

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D. Budget constraint

Every project has to have a valuation before its start to know over all expenditure that the company has to put in. In certain cases the budget has to be increased due to change in requirements, technology shift, or because of change in client requirements during the development [3].

E. Quality management

A good well experienced manager should be appointed for the project, and regular monitoring should be carried out so that the status of the project will be known and based on the status report one can take further decisions. The interaction between the Project manager and other members of that project should be regularly conducted to know the problems that are being faced by the employees, and based on which he can take a decision [4].

F. Testing

The major importance of testing is to identify the defects in the project and rectify them before it is handed over to stake holders. And most of them perform testing on the final product, instead testing should be carried out at each stage of development to eradicate most of the financial issues such as reconstruction of project etc. [5].

TABLE III
FACTS ABOUT SOFTWARE PROJECT FAILURE

S.no	Source	Facts
1	IBM, Oct 2008	Only 40% of project meet budget, schedule, and goals. Best organization 10 times much better than worst organization.
2	Dr Dobbs Journals, Oct 2011	Non- tradition method success rate 28%, and for traditional approach its 62%. 70% of the companies know that their project will fail from the staring stage.
3	McKinsey & Company, 2012	17% large IT companies project failure have threatened their very existence. 45% Large IT projects fail due budget overrun, 7% for overtime, and 56% for less value outcome.
4	KPMG, Dec 2012	70% IT organization have faced at least one failure in their past year project.

V. CONCLUSIONS

This paper makes an attempt to figure out the various reasons for Software project failure. One thing we can clearly come to a conclusion is that it is important for all the IT industries to follow the rules that are being put forward by IO4PM for a successful project. The core discussion is carried out with the help of few stats that were collected from various sources, and certain solutions are given on how one can overcome the Software project failure. The above mentioned actions that are to be considered are not the only one, but they are the most important ones that are most often forgotten.

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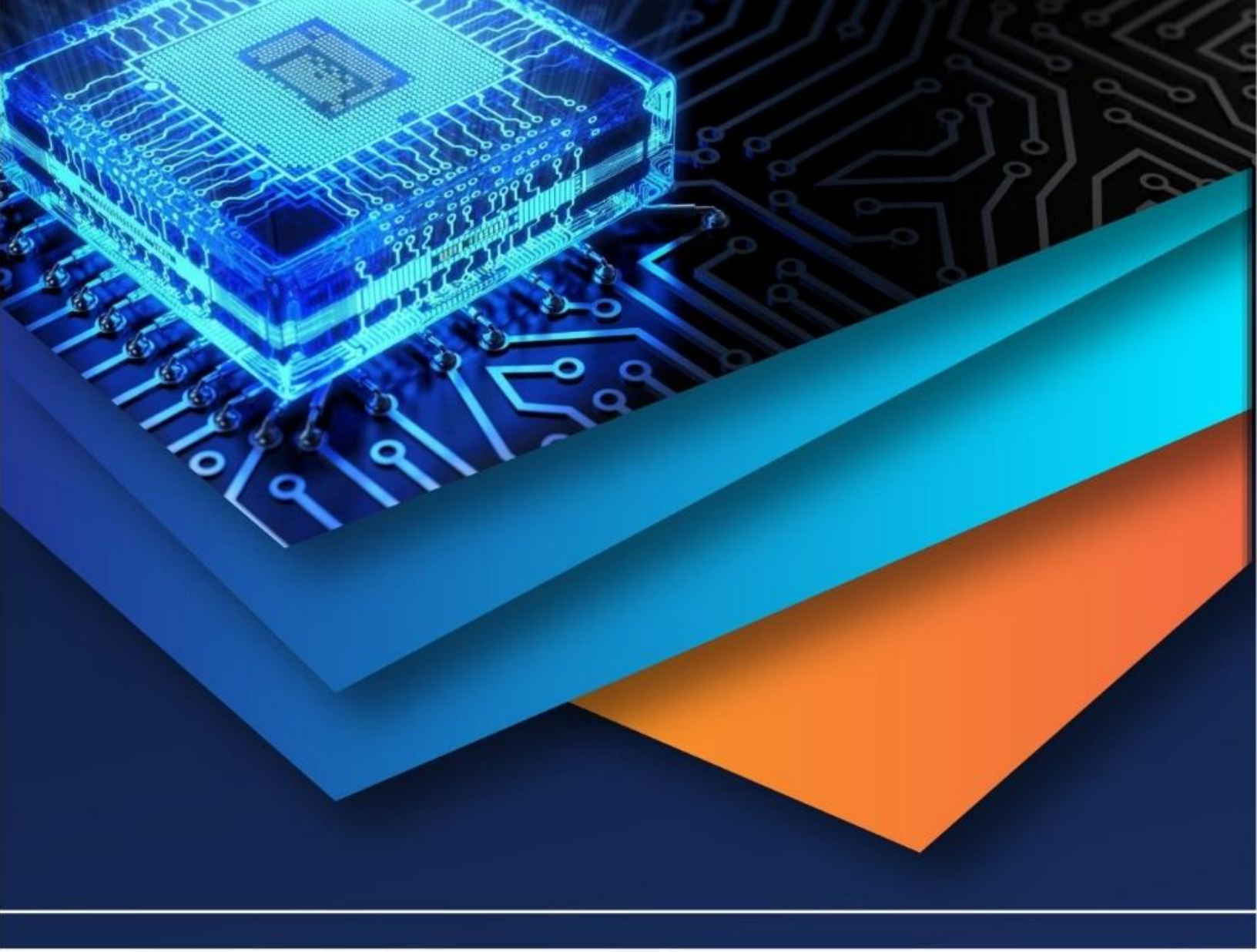

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