# Applying a Suitable SDLC model with risk analysis for the development of a system

A. Shraban Kumar, Swathi Amancha &  U Sivaji
[1]Associate Professor, CSE, St Martin's Engineering College
[2]Assistant Professor, CSE, St Martin's Engineering College
[3]Professor, IT, St Martin's Engineering College

**Abstract**:

*The importance of making choice of the suitable Software development life cycle is a toughest job now days. So the idea behind this is to simplify the process of searching a model, it's especially useful for students, teachers, entrepreneurs and others. Many software engineering projects have high risks and failures rates. Software industry anxiously looks for effective methods to improve the software product quality. Development lifecycle has been the base for the progress of any engineering discipline to maintain the quality of a product and software engineering is no exception. The lack of quality has significant costs to developers in terms of wastage of effort, loss of market place, dissatisfaction from customers with faulty and rejected systems which fail to meet their goals. High maturity organizations expect to use accurate SDLC model and project management*

**Keywords**

*Software Development Life Cycle, Software Risks, Testing, Risk Analysis*

# 1. Introduction

Software development is commonly considered a complex   and  challenging  activity.  To  organize software development, for decades, companies have been looking for Software Process Improvement (SPI), allowing them to analyze their Development approaches and continuously improve them. In the creation of conducting a structured portrayed analysis, SPI was notified as a varied field: many SPI facets are studied, Several hundreds of custom SPI approaches  were  proposed,  e.g.,  to  address feebleness of benchmark advances like CMMI SPI grandeur aspects are gathered and examined, and new Trends such as SPI in the context of VSEs and SMEs, and SPI employing agility as improvement principle also in the context of large global players) are addressed. In general, SPI is considered highly relevant for companies.

# 2. Literature Review

Software development process issues are existent from the establishment of software development. Improving software productivity is the main focus of all who work on teams, especially leads and managers. In advance problems can be tackled, teams need to identify what issues could arise on the way of the development process. Here, we cover few common problems experienced within among software development teams.

1.   Improper SDLC/process: software development cycle play a vital role.

2.  Improper Communication: Communication is a problem  among  many  teams  across  many industries. Development teams are not immune, but miscommunication can lead to poorly made products in development teams that don't meet the customer needs. Misinterpretation among teams may leads to missed deadline and feature requests.

3.  Poor Scheduling: Aggressive timelines are one thing; unrealistic timelines are another. Projects need adequate time to be built. If sufficient time is not provided for features, testing and fixes many major issues will arise. While clients might be looking for a completed project as soon as possible, project managers must explain why more time is needed. If a client is uncooperative and obstructive practical pushback teams should think either to consider the client or not.

4.  Lack of testing: Starting with little and completely untested results in antagonistic timelines. Yet testing must be a part of the process. Testing ensures that the product is working as intended and that there are no bugs or issues. No one wants to wait until a customer either complains or returns an item to find out that there was a problem.

The software development process is complicated enough. Proper communication, planning and testing

can help ensure that teams don't fall victim to the above problems.

5. Poorly documented code: Codes are not documented properly.

6. Late in Risk analysis: It's too late by the time the various kind of risks were being identified, analysis and resolution has done.

## 3. Methodologies

The new idea behind choosing the suitable model is to first analyze and understand the various risks involved in a particular project before hand the real project work started ,as soon as the requirements gathering and analysis has been done.

The following categories of risk were to be considered.

What is a Risk?

"Risks are undetermined experiences with a probability of occurrence and a possibility for loss"
Risk identification and management are the main concerns for every software project. Successful inspection of software uncertainties will help to successful planning and assignments of work.

| Sl no | Types of Risks | What is? | Reasons for Occurrences |
|---|---|---|---|
| 1 | Schedule Risk | Project schedule get slip when project tasks and schedule release risks are not addressed properly. Risks due to schedule's mainly affects the project and finally on company's finance and leading to project failure. | Wrong time estimation Resources are not tracked properly. All resources like staff, systems, skills of individuals etc. The inability to identify complex performances and time required to develop those entities. Unexpected project scope expansions. |
| 2 | Budget Risk | | Wrong budget estimation. |
| | | | Cost overruns Project scope expansion |
| 3 | Operational Risks | Risks of loss due to improper process implementation, failed system or some external events risks. | Failure to address priority conflicts Failure to resolve the responsibilities Insufficient resources No proper subject training No resource planning No communication in team. |
| 4 | Technical risks | Technical risks lead to failure of functionality and performance. | Continuous changing requirements No advanced technology available or the existing technology is in initial stages. Product is complex to implement. Difficult project modules integration. Time constraints. Budget constraints. Unavailability of technical constraints |
| 5 | Programmatic Risks | These are the outward risks beyond the operational limits. These are all unresolved risks which are outside the control of the | Running out of fund. Market development Changing customer product strategy and priority Government |

| | | program. | rule changes. |
|---|---|---|---|

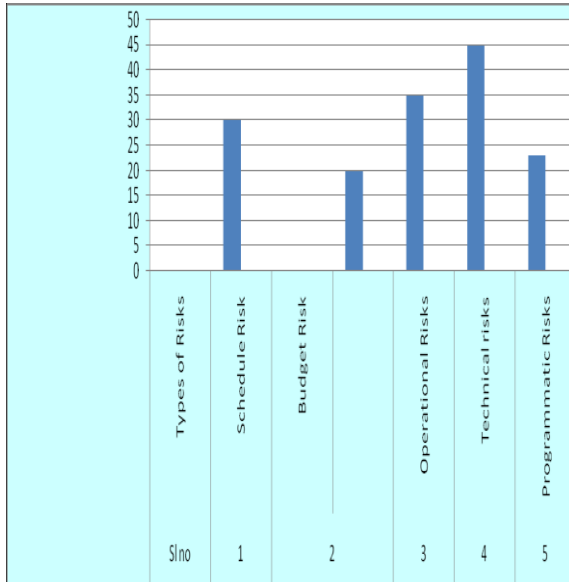## 4. Analysis of Various Risks



Figure 1: Graphical Representation of Various Risks

In the above figure we can know the statistics of occurrence of various risks.

## 5. Conclusion:

As the technical risks play major role with respect to success and failure of a defined projects, it's highly essentials to consider the major technical risks as high priority then choose a suitable model which will resolve them at the earliest. So irrespective of the model chosen, the risk analysis process should be included during requirement analysis phase itself.

## 6. Future Work

In this paper we have come up with the analysis of software development life cycle.In future we will be coming up with more new concepts of analyzing the software risks.

## 7. References

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## 8. Author's Biography

Mr.A.Shraban Kumar,Post Graduated in CSE(M.Tech) from OU, Hyderabad and Graduated from Berhampur University,Odisha.Having 14+ yrs of experience in teaching.presently working as Assoc.Professor in the department of CSE in St.Martin's Engineering college,Hyderabad.Area of interest includes ,cloud computing, AlgorithmAnalysis,Software Engineering etc.

Ms Swathi Amancha, Post Graduated in Computer Science and Engineering (M. Tech) from JNTUH in 2012 and graduated in Computer Science and Engineering (B.Tech) from JNTUH in 2009.Having 8 years of experience as Asst Professor. She is presently working as Asst Professor in Computer Science and Engineering department in St. Martin's Engineering College, Hyderabad. Area of interest in Computer Networks, Network Security, Big Data, Information Security, Image processing, Software engineering.

Mr.U.Sivaji,Pursuing Ph.D in CSE ,Post Graduated in CSE(M.Tech) from JNTU, Hyderabad and Graduated in CSE(B.Tech) from JNTUH Having 16+ yrs of experience in teaching.presently working as Professor in the department of IT in St.Martin's Engineering college,Hyderabad.Area of interest includes ,Data structures, Algorithm Analysis,Software Engineering,Software Quality,Software Verification,Reliability etc.