

Software Development Utility: Project Management and Software life cycle

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Abstract- The ever increasing growth and complexity of software-intensive Systems that have occurred over the last 25 years and the ensuing rise in geographically distributed projects trend. Project Managers understand in detail the customer requisites during project scope, definition, avoiding therefore changes during the execution stage that will negatively influence the schedule, cost and quality of the project results. This paper focuses on the time, cost, and reusability of the projects. Whenever a project manager and the customer have often different communication skills and scope changes are frequent throughout the project life cycle, then we have to change the software's component. This may lead the project cost and task so high due to bad design of project. This paper proposes to reduce the cost, task and using Software reusability as a tool to allow the project team to modify potential project results to customers and better understand their expectations at the earliest stage possible.

Index Terms- Project Management, Reusability, Software Life Cycle

I. INTRODUCTION

Now days, Development of software project in industries is a big advantage for the user or client. In order to gain project utility, we have to care about time management, risk management, cost management and most important task is that the software should be reliable i.e. the maintenance cost should be lower and it should be easily available. So, in this paper we have discussed some important point about the software project management. NASA developed and the U.S. Department of Defense later adopted a process to measure and communicates technology readiness with a nine-point scale for assessing the Technology Readiness Level (TRL) [1]. This is a technology, where scientific research begins to be

translated into applied R&D to the highest level [1].

II. PROJECT MANAGEMENT

One of the most important issue in project management is that the understanding the customer expectations and manage them in order to define a reasonable and doable scope [2].

Project management has two phases one is the "estimation" and other one is "development process". Initially process consists in a formal authorization of the project (through a contract or a protocol) and the second process includes the definition of what needs to be accomplished with the project and precedes the Scope Definition process at the Planning stage [2]. First of all we analyze the user requirement in the estimation process. There are following thing, for which we have to notice about the estimation of project.

- Estimated Cost
- Project Space
- Project Completion Time
- Men power
- Resources

The cost of the project should be in budget so that every resources can maintained in a proper way. Cost of any project is the back-bone of the estimated work. So when ever we decide the project cost then we should keep in mind that the project cost not be too minimum that the whole system goes in minus. [1]The project technical, cost, and schedule risks must be identified, qualitatively assessed, quantified, and mitigated as appropriate. Risk response strategies need to be developed, documented, and implemented. A risk screening and identification checklist is included in that can be used as a tool in the initial screening process to identify significant risks and establish a risk level for the project [1].

[2] This 2nd process, described in detailed in Figure 1 should generate a documentation that addresses the estimation and requirement of the project and its associated products and services, based on the information provided by the user. As defined by the standard, this document, which is static and is not changed throughout the project lifetime, has a crucial importance. It represents a relation between the project user and the project team about the project goals and boundaries and any scope management procedures, such as technology used by project leader or project team have to be discussed and agreed upon this document and are often a potential source of conflict.

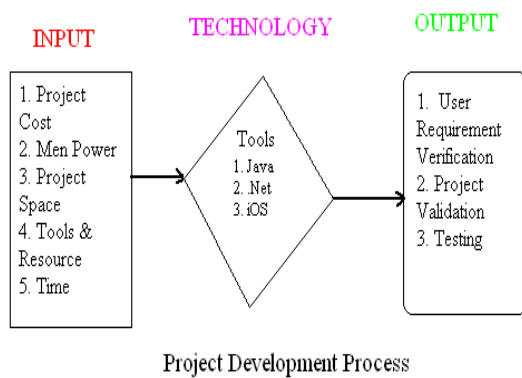


Figure1. Software Project Development Process

III. SOFTWARE REUSABILITY

[3] The rise of the Internet as a ubiquitous connection between different locations and the quickly maturing marketplace of collaborative tools are essential ingredients for complex project success. [3] Software vendors already have released Web-enabled versions of many familiar project management tools, enabling specialized tasks such as tracking requirements, fault, and budgets to be distributed to software user and scaled for multiple users. Software engineering is the best tool today, which suites are being used to solving fault in the software module. Similarly, more organizations are employing Web-based databases, such as project Web sites, portals, and workspaces, for intelligently sharing and storing files both within and across corporate firewalls [3].

IV. SOFTWARE LIFE CYCLE

Software life cycle is the basic fundamental of the any project in industries. It shows the whole system in a single view. [1] The challenge met by software baseline definition is to defined and design so that it is easily developed, while at the same time not have the project issue for open-ended blank check. For Software projects, scope is added to and deleted from as results from research become known. Software development becomes a progressive and iterative process and is cycled until they don't meet the user specifications, time restrictions or research results enable the next step of analysis to be planned in detail. Figure2 shows the life cycle of the software project development. Eventually, the project analysis does have to be designed, but baseline of definition allows it to be kept open to accommodate change and to incorporate current, evolving, and most challenging technology, and engineering solutions into the project's deliverables.

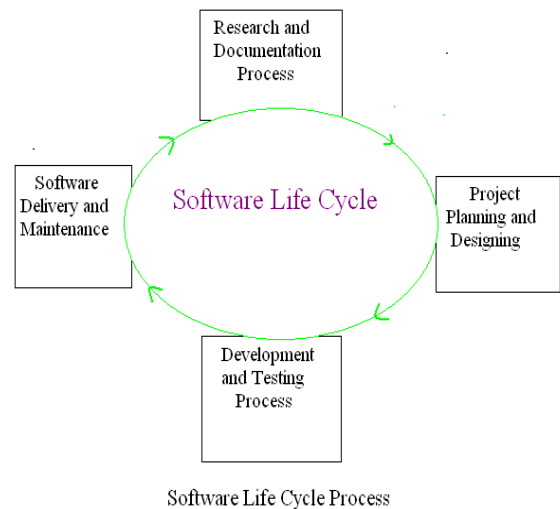


Figure2. Software life cycle

The above diagram shows the software life cycle. In this, there are four main components i.e. Analysis or documentation process, project

planning and designing, development and testing and software delivery and maintenance process.

4.1 Research and Documentation:

This phase is the initial process of any project. It includes costumer requirement, analysis of scope of the project and preparing documents according to that processes. This phase decide the budget of the project, men power planning and it contain paper presentation of the real project. In other way we can say that it is the base of the any project. The all necessary requirement regarding formula, methods etc about the project is mentioned in documentation.

4.2 Project Planning and Design:

In order to conduct a successful software project, we must understand: Scope of work to be done, the risk to be incurred, the resources required the task to be accomplished, the cost to be expended and the schedule to be followed [4]. Software planning begins before technical work starts, continues as the software evolves from concept to reality, and culminates only when the software is retired. Figure3 shows the software designing process.

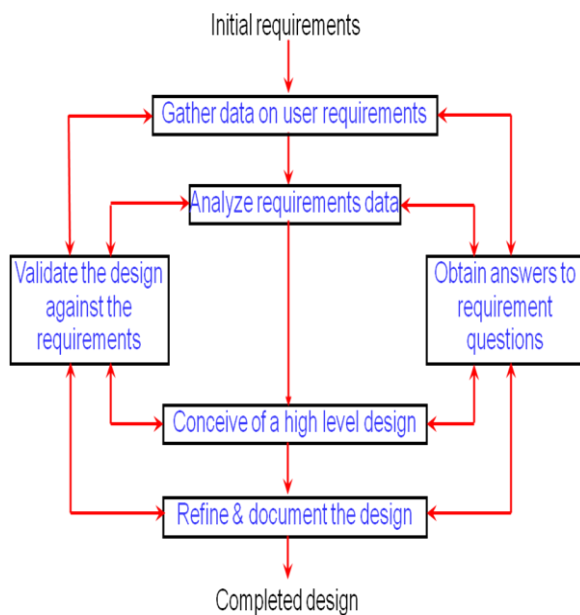


Figure3. Software Designing Process [4]

4.3 Software Testing:

Testing is the process of executing a program with the intent of finding errors. Software testing is the phase, in which we have to test specification as per requirement of user is right or not. In this, we need to design a test cases which analyze as per the condition as requirement. There are following types of testing performed by a tester team.

- Unit testing
- Integrated testing
- System testing
- Acceptance testing
- Alpha and beta testing

4.4 Delivery and Maintenance:

After completing the software project, the next step is to deliver the software and maintain it on time to time. Project module should be updated every time due to security reason and it should not be more costly than development. The software quality is the most important to fact to be mind during maintenance of the product.

V. CONCLUSION

This paper discus the development of software project processes to help project managers to develop effective projects in lower cost of the project results in order to clarify customers' requirements and requisites for the project. This approach fits the project management practices and this paper discusses the software project life cycle towards the need for preparing a good quality of product in future. As mentioned in the reusability of the software project, the use of this process allowed to maximum utilization of project and the project is easy to maintain project and avoid future modification and changes to the requirement of the project.

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