

# **SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC) IMPLEMENTATION IN INFORMATION TECHNOLOGY & MANAGEMENT**

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## **ABSTRACT**

Information is the requirement of every organization. Infact, large organizations have started having information systems whose work is together the necessary data and to process those data into meaningful information. System is a buzzword today. Everybody talks of the system such as an educational system, transportation system, accounting system, financial system, computer system, and information system. A system is a set of interrelated elements that operate together to achieve an objective. The general model of system has an inputs, process and output. A system can have many inputs and many outputs. Most talk about system is information system. It receives the data and collects the information and instructions, process the data according to the instructions and outputs the result which itself has some information. An information system in which storage methods are also added, the information processing function means not only the transformation of the data into information but also the storage of the data for later use. The information system receives data as input and converts them into information.

This paper describes the importance of software development life cycle (SDLC) in information technology & management.

**KEYWORDS:** Software Development Life Cycle (Sdlc), Information Technology & Management, Requirement Analysis, Information System.

## **INTRODUCTION**

Human is dealing with the data and information since a long time, perhaps since the beginning of civilization man is manipulating data. Since then, give and take of information is in practice, but this has been considered as an important discipline for the last few decades. Today's data manipulation and information processing have become the major tasks of any organization small or big, whether it is educational

institution, government concern, scientific, commercial or any other.

An information system can comprises of both human and machines. It is not that an information system simply means machine. Information system uses the various tools to collect data. These tools can be humans as well as machines. Then these tools data is processed into information. The data can be processed

using some manual methods or electronic method. Then the information that they get after processing of data is the output of that information system.

An information system is to an organization, what a nervous system is to the body. They do not operate independently, but exists in organization to support the organization process at different levels. Timely information is required at every level of any organization to take the important decision. To cater the needs of organization, information systems in any organization, are available at different levels.

## **REQUIREMENT ANALYSIS**

A systematic investigation of a real or planned system to determine the function of the system and how they relate to each other and to any other system is known as system analysis.

System analysis is conducted with the following objectives in mind:

- Identify the customer's need,
- Perform economic and technical analysis,
- Evaluate the system concept for feasibility,
- Allocate functions to hardware, software, people, database and other system elements,
- Establish cost and schedule constraints,
- Create a system definition that forms the foundation for all subsequent engineering work.

## **SYSTEM ANALYSIS OVERVIEW**

Problem recognition means detailed study of the current system being used by the user. A detailed study of system being currently used must be carried out of sessions with customer and end user. It can be termed as a process of recognizing problems and opportunities.

A complete understanding of software requirement is essential to the success of a

software development effort. The problem evaluation and solution synthesis is the next major area of effort for analysis. It enables the system, engine to redefine the software allocation and build model of process followed:

- A. Identification of need
- B. Preliminary investigation

## **IDENTIFICATION OF NEED**

The first step of the System Analysis process involves the identification of need. The analyst meets the customer and the end user (if different from the user). The intent is to understand the products objective and to define the goals required to meet the objectives.

Timely Customer-Analyst communication is an important ingredient of a system analyst's work. The specific objectives are:

- Reducing the Duplication during manual Processing
- Designing and Developing User friendly interfaces through which user will interact with the package
- Interaction of these GUI with the Database
- Managing the Database
- Improve efficiency and quality of services

There are a number of factors that needs to be actively handled, the system must track the data and be able to manage it as well as give the detailed account of the comparative study in the forms of graphs and reports.

Every system must have some complexity attached with it, which is needed to be simplified so that we can achieve a system, which is easier, less complex and easily accessible to the less trained user.

The above stated complexity being faced by the staff in respect of such a large number of departments and variety of programs being run

by each department, each having its own criteria makes it entice the official to look for a system which can operate with a such a complex nature of data and be developed in such a way so that it becomes relatively easier to operate by the end user.

## **PRELIMINARY INVESTIGATION**

During the analysis phase of the project, first we decided to sit/talk /and understand the current workflow. And found that the basic functionality is divided into 12 major modules, which deals with registration management, searching for tender management, supplying and purchasing of tender management, generation of reports for each requirement and searching for many other facilities etc.

## **FEASIBILITY STUDY**

All the projects are feasible given the unlimited resources and infinite time. Unfortunately, the development of a computer-based system or product is more likely to be plagued by the scarcity of resources and difficult delivery dates. It is both necessary and prudent to evaluate the feasibility of a project at the earliest possible time. Months or years of effort, thousands or millions of rupees, and untold professional embarrassment can be averted if an ill-conceived system is recognized early in the definition phase. Feasibility and risk analysis are related to each other. If project risk is great, the feasibility of producing quality software is reduced.

However, we confine our attention to:

- Technical Feasibility.
- Economic Feasibility.
- Operational feasibility.

## **TECHNICAL FEASIBILITY**

A study of function, performance, and constraints that may affect the ability to

achieve an acceptable system. It is the most difficult area to assess because objectives, functions, and performance are somewhat hazy; anything seems possible if the right assumptions are made.

A clinical attitude should prevail during an evaluation of technical feasibility. The considerations normally attached with the technical feasibility:

## **DEVELOPMENT RISK**

- Can the system element be designed so that necessary function and performance are achieved within the constraints uncovered during analysis?

## **RESOURCE AVAILABILITY**

- Are skilled staffs available to develop the system element in Question? Are any other necessary resources (hardware and software) available to build the system?

## **TECHNOLOGY**

- Has the relevant technology progressed to a state that will support the system?
- All of the above consideration also applies to the work I have done. As far as developments risks are concerned, yes necessary functions and the constraints under which they have to perform have been identified and divided into modules so that each module performs its own assigned task.
- As for skilled staff for development is concerned, I am the only person performing this task and I have fully understood the problem. I am sufficiently equipped with the use of programming and can perform this tasks in the given time constraints.

The use of programming language enables the programmer to develop software that can help

end-user to operate the system more easily. The use of GUI tool can be really helpful in case of developing an information system. The tool comprises of all the components required to solve me problem system.

### **ECONOMIC FEASIBILITY**

An evaluation of development cost weighed against the ultimate income or benefit derived from the development system or product. It includes a broad range of concerns such as:

- Cost-benefit Analysis
- Long-term m corporate income strategies
- Impact on other profits/products
- Cost of resources needed for development
- Potential market growth

The work being done is economically feasible since the work is not being done at very large scale, although it might be a bit complex. The cost of resources needed to do the work was not big. I did receive the necessary monetary help required to develop this software.

### **OPERATIONAL FEASIBILITY**

This study helps us in finding whether the work to be done will be operational with the available staff and within the given time. The staff is fully capable of handling information system. The IT literacy is of good order and the software has been made in such a way that it becomes easier for the user to answer queries being asked. This will facilitate easy use and adoptability of the system. Based on this, it was felt that the proposed system would be operationally feasible. With the use of menus,

simple command buttons and proper validation required it become fully understandable to the common user and operational with the user.

### **REFERENCES**

- [1]. Klopper, R., Gruner, S., &Kourie, D. (2007), "Assessment of a framework to compare software development methodologies" Proceedings of the 2007 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists on IT Research in Developing Countries, 56-65. doi: 10.1145/1292491.1292498.
- [2]. Roger Pressman, titled "Software Engineering - a practitioner's approach".
- [3]. Laura C. Rodriguez Martinez, Manuel Mora, Francisco, J. Alvarez, "A Descriptive/ Comparative Study of the Evolution of Process Models of Software Development Life Cycles", Proceedings of the 2009 Mexican International Conference on Computer Science IEEE Computer Society Washington, DC, USA, 2009.
- [4]. Jovanovich, D., Dogsa, T.,"Comparison of software development models," Proceedings of the 7th International Conference on, 11-13 June 2003, ConTEL 2003, pp. 587-592.
- [5]. A. M. Davis, H. Bersoff, E. R. Comer, "A Strategy for Comparing Alternative Software Development Life Cycle Models", Journal IEEE Transactions on Software Engineering ,Vol. 14, Issue 10, 1988.