Research Paper Information Technology

Study of Systetm Devtelopment Life Cycle: Uses of Technology Advancement

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ABSTRACT

The systems development life cycle (SDLC) is a conceptual model used in management that describes the stages involved in an information system development project, from an initial feasibility study through maintenance of the completed application.

Keywords : System Development Life Cycle and Information Technology

Meaning of SDLC:
Various SDLC methodologies have been developed to guide the processes involved, including the waterfall model (which was the original SDLC method); rapid application development (RAD); joint application development (JAD); the fountain model; the spiral model; build and fix; and synchronize-and-stabilize. Frequently, several models are combined into some sort of hybrid methodology. Documentation is crucial regardless of the type of model chosen or devised for any application, and is usually done in parallel with the development process. Some methods work better for specific types of projects, but in the final analysis, the most important factor for the success of a project may be how closely the particular plan was followed.

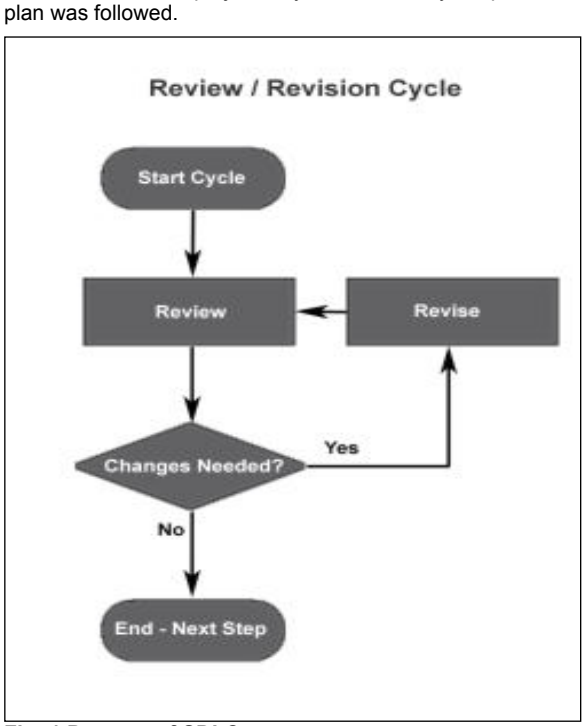

Fig: 1 Process of SDLC

SYSTEM DEVELOPMENT LIFE CYCLE ACTIVITIES
The following sections provide details on each SDLC activity; a description of the purpose of the activity, entry and exit criteria, and the sequence of tasks to be completed or initiated within each activity. Various SDLC methodologies have been developed over the years to guide the processes involved, including the waterfall model (which was the original SDLC method), rapid application development (RAD), joint application development (JAD), the iterative development model, the spiral model, and others. Service Oriented Architecture (SOA) developmental processes align themselves closely, but not exclusively, to iterative development methodologies. At a very high level, the Requirements, Design, Coding, and Testing phases would each be a part, in varying degrees, of iteration.

System development life cycle A system is a set of components that interact to achieve a common goal, We constantly deal with different systems

Examples: Solar systems, decimal systems, digestion system, heating system

Use in IT Industry:
The System Development Life Cycle (SDLC) process applies to information system development projects ensuring that all functional and user requirements and agency strategic goals and objectives are met. The SDLC provides a structured and standardized process for all phases of any system development effort. These phases track the development of a system through several development stages from feasibility analysis, system planning and concept development; to acquisition and requirements definition; design; development; integration and testing; deployment and acceptance; though deployment and production; and finally to system retirement.

Most SDLCs today recommend the use of a number of the software engineering techniques for displaying the processes and data of a system. Therefore, the SDLC itself should use these techniques. It could use hierarchy charts, data flow diagrams and structured English to describe the processes. It could use entity-relationship diagrams and data structure charts to describe the data produced. There are many alternative structured techniques for displaying this information. The specific techniques chosen are less important than the fact that a set is used consistently throughout the SDLC.

In order to meet all of the SDLC's objectives and requirements there are certain design approaches that are required: the SDLC must be an example of a system created using the techniques it espouses; it must use a layered approach to analysis, design, installation support and production support; it must keep distinct the "what" from the "how" in regards to doing the tasks and creating the outputs; and it must organ-

ize its information in a hierarchical manner so that users with varying degrees of familiarity can find what they want easily and quickly.

System Development Methodology:-
SDM, also known as SDLC, is a formalized, standardized and well documented set of activities used to manage a system development project.

Characteristics of a good SDM includes -

- SDM visualizes a project as divided into number of identifiable process. Each process comprises several activities, deliverables and management checkpoints.
- SDM ensures various reports and other documents (Deliverables) are prepared & submitted periodically during system development. These reports make development personnel accountable for faithful execution of system development tasks. Management monitors the development process by reviewing these deliverables.
- SDM suggests that the users, managers and auditors are required to participate in the project to provide approvals (Sign off).
- SDM makes sure that thorough system testing is done prior to implementation to ensure that it meets user's need.
- SDM also checks for an appropriate training program is developed for users.
- SDM calls for post implementation review to access efficiency & effectiveness.
- SDM checks that formal program change controls are established to preclude unauthorized changes to computer program during system modification.

The Waterfall Model
The waterfall model, though not perfect, shows the stages of development, and how each stage 'flows' into the next hence the title waterfall.

The stages are:

No	Name of Stage
1	Problem Identification
2	Feasibility Study
3	Requirements Analysis
4	Design
5	Development and testing
6	Implementations
7	Post Implementation review
8	Maintenance

Fig: 2 Stages of SDLC

Today, in this world of globalization, there is a growing competition and influence of Information Technology on every sphere of business; and it has become very difficult for the organization to survive with only land, labor and capital resources. To carve its niche in the market, the organizations need to look beyond the traditional system and be more innovative in approach. In this scenario innovation becomes the key factor to sustain and the knowledge is being considered as basic enabler of innovation. Knowledge is an intellectual asset that plays a key role in the success and survival of an organization. This knowledge residing in the brains and minds of the people acts as intangible intellectual asset of the organization. It is challenging for any organization to exploit this knowledge asset in a way which will improve productivity, customer relations and cut cost and time. Hence, there is a need of a systematic approach for managing this knowledge which will enable the company to strengthen its core capabilities and compete more effectively in the market place. This led to the introduction of Knowledge Management, which helps in creating, storing and sharing knowledge in the organization. Amrit tiwana defined knowledge managemt as, "KM enables the creation, distribution and exploitation of knowledge to create and retain greater value from core businesses competencies. KM addresses business problems particular to your business – whether it is creating and delivering innovative products or services, managing and enhancing relationships with customers, partners and suppliers or improving work processes.

Fig 3: Business Process

Conclusion:
The analysis and design approach must allow the system definition to be viewed from an external viewpoint and an internal viewpoint. The external viewpoint is also often referred to as the logical or user or requirements-oriented view. The internal viewpoint is also called the physical or design oriented viewpoint.

An SDLC must also allow these various views from the perspective of the total system, from a single component, or anything in between. One problem we face in this discussion is terminology. In evaluating an SDLC the important thing is whether or not each item is fully addressed. It is less important what these things are called or how the collection of them is organized.

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