

Significance of Software Engineering Techniques For Development Of Business Model

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Abstract: *Software engineers systematically organised the essence of all past programming experience and created various types of techniques, methodology and discipline. In other words they took efforts to produce software product by systematic manner, cost effectively with engineering approach. Software products are prepared very carefully by considering all possibilities and relevant parameters. This software used for most of the trusted and sensitive areas & people rely on the output of the software. The Business model is the conceptual structure. It is supporting the feasibility of a business. The contents of business model are its purpose, its goals and its ongoing plans for achieving them. Manufacturing techniques of software products can be useful for development of Business model. Software Development Life Cycle (SDLC) models are available and other relevant techniques use for development of software product. The model involves various phases such as Feasibility Study, Requirement Analysis and Specifications, Design, Coding and Unit Testing, Integration and System Testing, Maintenance. The SDLC phases are support to achieve the contents of business model like purpose, goal, plan etc. These various phases can be useful as reference phases for development of business model. Different category of Software Development Life Cycles (SDLC) models are available in software engineering techniques for development of software product. Each model has its own specialty. As per the status of software product the model can be selected for development. The similar development techniques can be used for categories product / Business model to refer the suitable model as a reference for development of model. This theoretical introductory research approach is to apply the Software Development Life Cycles (SDLC) techniques which can be convenient for keeping it as a role model for business model/ development of business product.*

Keywords: *Coding, Engineering, Feasibility, Plan, Specifications*

I. Introduction

Today, India has changed with the aid of information technical changes in all corners of life. Software engineers systematically organised the essence of all past programming experience and created various types of techniques, methodology and discipline. In other words they took efforts to produce software product by systematic manner, cost effectively with engineering approach. Software industry has become one of the important factors in the economies of the industrialized world. Software Engineering is a layered technology. It is beneficial and respected profession which is based on well-experimented principles and its techniques are used for the development of software product. In this discipline various software life cycle models are available. A software life cycle (or software process) is a series of identifiable stages that a software product has to undergo during its life time. The Business model is the conceptual structure. It is a useful plan for the successful operation of a business. It is supporting the feasibility of a business. Identifying source of revenue, focus on customer, finance sources and other relevant parameters. The contents of business model are its purpose, its goals and its ongoing plans for achieving them. Manufacturing techniques of software products can be useful for development of Business model. This research approach is to apply the Software Development Life Cycles (SDLC) techniques which can be convenient for keeping it as a role model for business model/ development business product. While preparing the study of Software Engineering's techniques with reference to business model purpose, we will have to prepare a fundamental theoretical model which will be helpful to elaborate the main objective of study.

II. Research Process

Experience is one of the master that can be useful to make correction in future activities. Past programming experience is the basic foundation of Software Engineering. Now a day, Software has become responsible for most of the critical functioning of the complex systems. Business model describes the process to execute the business successfully. It contains the study for the upcoming execution business. It deals with strategy for existing, past & future with reference the current status of business. It is a blueprint of the emerging business process. The mainly focus to obtain the profit in correct way. The creation of model in

such way to achieve it. It contains upcoming situations of process in the model before to start or execute the task. It is involved the upcoming situations in various execution of task in the model before to execute or start the business. It is required to analyze the process which contains in the model which defines all types of risk & routine procedure. It also define graphically & pictorial presentation to understand the process easily. The process of traditional business model or development of business product it shows that it can similar way of process for development of software products. Software products are prepared very carefully by considering all possibilities and relevant parameters. The software product executes as per the user instructions and it works properly. Software engineers prepare a software product by systematic way, well disciplined manner and cost effectively. This approaches of software engineering techniques are lucrative when researchers carried out their research work since inception to end result in business domain. It requires various types of planning so that researchers will achieve their objective. In software Engineering, Software Development Life Cycle (SDLC) models are available and other relevant techniques use for development of software product. Researchers can be referred SDLC models for their Business model/product subject and other software engineering techniques.

III. Research View

Software Engineering Techniques

Software Engineering has emerged as a discipline like the civil, mechanical and electrical engineering, where engineering principles such as modeling, prototyping, designing, developing, testing, delivery, installation and maintenance are the broad steps woven together to achieve the final engineering objective. While these engineering disciplines are more or less a science, based on mathematics, material sciences, physics and chemistry, the same is not true for software engineering. Software engineering tends to be closer to science essentially because of its approach being scientific, systematic and the use of standards, protocols tools and techniques, Further, it encourages the principles of good and architecture. In view of this software engineering at the core level is an engineering science [1].

IV. Foundation of Software Engineering

Emergence of Software Engineering

Software engineering techniques have evolved over many years as a result of series of innovations, and accumulated experience about writing good programs.[2] As a result various types of techniques & Methodologies are available for development of software products. Different types of Software Development Life Models (SDLC) with their specialties are available for development of software products. These SDLC models can be useful as references of development of business process activities.

Classical Waterfall Model

It is a basic model (Theoretical) and all other life cycles models as embellishments of this model. The different phases of this model are feasibility study, requirement analysis and specification, design, coding and unit testing, integration and system testing, and maintenance. The different phases starting from the feasibility study to the integration and system testing are known as the development phases. During each phase of the life cycle, a set of well-defined activities are carried out. Each phase typically requires relatively different amounts of effort. Each phase of the life cycle has a well-defined starting and ending point but no mechanism to handle errors committed during any of the phase.

Iterative Classical Waterfall Model

1. It is simple to understand and use
2. It is suitable only for well-understood problems
3. It is suitable for very large projects
4. It is handle the project which subject to have many risk

Prototype Model

1. It is suitable for project either the user requirements or the underlying technical aspects are not well-understood
2. Popular for development of the user-Interface part of the projects and object-oriented development Project

Spiral Model

1. It consist all other life cycle model
2. Risk handling mechanism
3. It is suitable for development of technically challenging software product that are prone to several kinds of risk

4. It is much more complex than other models

Evolutionary Model Or Successive Version Or Incremental Model

1. Popular for Object oriented software product development
2. To make experiment with partially developed software
3. First to develop core modules then add new functionalities in successive version
4. It is helpful to reducing chance of errors

V. Research Methodology

At its simplest, a business model is a specification describing how an organization fulfills its purpose. All business processes and policies are part of that model. According to management expert Peter Drucker, a business model answers the following questions: Who is your customer, what does the customer value and how do you deliver value at an appropriate cost? A business model is similar to a business plan in its makeup and content. However, a business plan specifies all the elements required to demonstrate the feasibility of a prospective business.

5.1 Software Engineering Approach

Keeping Software Engineering methodology as a role model for the development of business product or business research study which will be helpful and maintain proper coordination of study and analysis. The Software techniques are able to get services to the people in various technical ways. In software engineering, a software development methodology refers to the raw skeleton for the particular research domain for systematic investigation to established facts and values. The skeleton/frame work is used for the planning of the quality research, to make proper structure and to control the relevant process for development research product. The organization or problem areas are bound to these types of frame works. Each of the available methodologies and techniques are going to be best suited to specific kinds of projects, based on various technical, organizational and available resources. The frame work can be designed as the process defines in SDLC. The first phase of SDLC model the research process the said quality research work is feasible or not. Check the original feasibility criteria. Check the said topic is feasible for research work. The subsection in the feasibility study is concern with financial status. The research areas need financial aids to calculate the tentative expenses and availability of funds then to complete the first phase. A life cycle model has precise planning activity so that in every phase to get enough time for planning and confirmation. Task should be completed in time then and then only start another task. This is the type of activity that comes under entry and exit criteria. Before to start new activity the earlier should be finished with proper objective in every phase of life cycle model. With the help of such well defined entry and exit criteria software project managers to monitor the progress of the project and it provides helps to control and organize systematically various activities.

Work Procedure Model With Reference To Software Development Life Cycle (Sdlc)

The Model Involves The Following Phases -

1. Feasibility Study
2. Requirement Analysis and Specifications
3. Design
4. Coding and Unit Testing
5. Integration and System Testing
6. Maintenance

Feasibility study: The main aim of the feasibility study is to find out exactly whether the developing product is technically and financially feasible. It also involves problem analysis and collection of relevant data which would be the foundation of the system. It is just like an abstract definition of the problem and formulation of the different solution strategies.

Apply to Study

The above phase will be a paradigm for the selection of product/business. To check the availability of concerned information. To refer the different types of literature and to prepare an abstract definition of the selecting area.

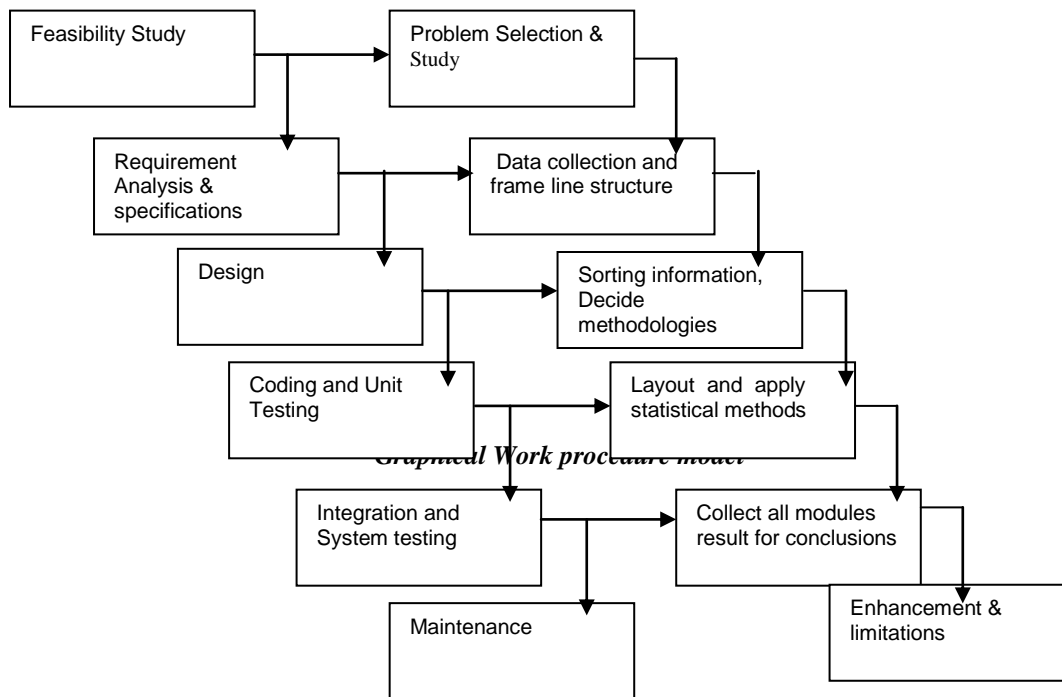
Requirement Analysis and Specifications: The objective of this phase is to understand exact requirements of the customer. Careful analysis on requirements and document it properly. Project objectives should be clear in this phase. The goal of this phase is to collect all data and information in perspective understating the customer requirements. User requirements should be properly organized and documented in Software Requirement Specification (SRS) document.

Apply to Study

Up to this phase the product/business area has been finalized. Business model is the conceptual structure supporting the viability of a business, including its purpose, its goals them. To collect all relevant data, information and interviews. To get filled questionnaires with the concern people. To refer various relevant journals, existing information, literature, books etc. in view of research study and prepare a plan.

Project planning

Project planning gets very importance during the project work once it is found to be feasible. Software project managers undertake the project planning which contains effort, cost and project duration estimation. The other parameters are tentative risk identification, analysis, project scheduling and staff organizations, staffing plans etc. In this phase to decide planning, scheduling and risk identification on the study work. This is helpful for reducing developmental effort and time to complete task. and its ongoing plans for achieving the target.



VI. Design

The main objective of this phase is to transform the requirement specification into a structure which can be suitable for computer programming language. It provides the software architecture from the Software Requirement Specification document. Various types of tools like Data Flow Diagram (DFD), data dictionary, data definition, context diagrams, structure chart etc. are used.

Apply to Study

Before to carrying out the work, the relevant information from available resources is collected. After collecting this information it is required to study the procedure by using various methodologies, techniques to achieve the significant outcome.

Coding: This phase is also called as implementation phase. The main aim of this phase is software design translate in to source code. Each component of design phase is implemented as a program module. Separately tested of program module is treated as unit testing.

Applied to Study

Partition of the project is created. Significant modules like data from questionnaires, service report, audit report, various type of customers. Information from management and employee of the concern system are to be studied. Such type of modules will make it easy to analyze the information and data for finding out the facts. It is also helpful to remove the ambiguity of any relevant portion of the project. Complete Initial report should be ready in this phase.

Integration & System testing

In this phase, those modules created in coding phase, should be integrated in planned manner. It includes step by step procedure for integration of modules and tests it stepwise till completion of the system. The system testing should be carried out according to its requirement as specified in the SRS document

Applied to Study

In this phase all modules of the project should be checked individually and all module results should be collected. The relevant data by using various techniques and methodologies for getting the conclusions should be tested. The project should be ready in all corners with proper outcome.

Maintenance: Technology is changing rapidly. Due to changing technology and new requirements of the customer, it requires to modify the existing software product so that product should have utility for long duration. In this phase software engineers have the facility to modify the software product after delivered to the customer.

Applied to Study

In this phase, the enhancement and limitations of the research study work would be decided. The fact of future demand, requirement, global competition etc. for enhancement of the project are to be considered.

VII. Conclusion

Most of the significant services like medical, military, telecommunications, industrial, entertainment transportation, education, the list is almost endless which embedded software in the system and provides services to the people with their satisfaction level. It means that most of the systems which is having huge amount of risk still in that software uses for carrying the work and obtain the desired outcome. Therefore for making of software product people requires well planning, discipline, carefulness and serious consideration of other dependent parameter by using engineering approach. An engineering approach, it includes various methods, technologies, scientific methods to solve the complex problem efficiently and obtain optimistic solution by using available resources. Therefore, the same manufacturing techniques of software product can be used as a reference for development of business model.

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