



# **A FRAMEWORK FOR ALTERATIONSEFFORT ESTIMATION DURING SOFTWARE DEVELOPMENT LIFE CYCLE**

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**Abstract:**InSDLC alterations of project requirements are unavoidable, Risk increases based on incorrect and inconsistent, Assessment of effort and also completion of project time also Exceeds. Estimating the continually changing the requirement is a tough task. Proposed framework on alterations Requirement in ongoing project helps the managers to make best decisions.  
**Keywords:** Effort, SDLC

## **1. INTRODUCTION**

Business Requirement is a series of needs that must fulfill to achieve a high objective, this requirement help to ensure that the end result of the project fulfills the stake holder's needs the Standish group research says 31% of projects are cancelled before ever they get completed .53% of project cost almost twice.

The objective of the change effort estimation is to estimate the amount of work and the required time to implement the particular changes [10][11][12]however, allowing too many more changes can haul the project time line and increase the project cost. While declining the change request from the customer may the project timeline and increase project cost while declining the change request from the customer may generate dissatisfaction. One of the input that can assist and support the software project manager to make the best change approval decision is the effort prediction for requirement changes or change effort estimation during software development phase.

The integration of change impact analysis and effort estimation is one of the effective approach for change effort estimation some change request attributes have direct effect on predicted effort in implementation phase Furthermore, [13] stated that there were no formal impact analysis the requirement change effort estimation, and there were no traceable and there were no interpreted models for the relations between the requirements and use cases. However, right now, no reasonable explanation of change impact analysis and software effort estimation integration has been provided.

## **2. RELATED WORK**

In the past few years different requirement alterations management models for global software development have been proposed. Some of these models have been studied.

The brief description of these models is given below in detail such as: In [1] Requirement Alterations Management process in Global Software Development environment. It is a framework that could be adopted by all types of software organizations to assist them in improving their software production. The evaluation of this model will be conducted through feedback from expert reviews is the identification of alterations was to decide the success criteria. The motivation for estimating this criterion comes from experimental studies of existing Requirement Alterations Management Models. The framework is based on the quality assurance steps including Global Software Development. First of all identify the Current alterations request that comes from different stakeholders and users, 2) Formulate the Alterations, Set requirements that need to be alterations, Goals and Measurements, 3) Alterations is accepted or rejected by the project manager.

In [7], Hussain and Ehsan proposed a framework that is used for managing alterations in requirements for technical, industrial and business application. All alterations were analyzed before being approved by the alterations Control Board after analyzing the impact of alterations and by regulating the process for alterations. The complete assessment report is recorded with all alterations and also documented the individual assessment report of the alterations in Software Development Lifecycle process. Identified parameters are assessment report, analyses impact, control alterations, record alterations, proof alterations by alterations control board, update document, alterations control board.

In paper [8] Chua and Vemer determined the rework effort estimation for requirement alterations. The framework reduces the risks in effort estimation for rework and control alterations. The framework estimated the cost of rework and analyzed the impact on requirement alterations. Alterations control forms approved, implement alterations requirement, then described relationship between requirement alterations and rework in alterations management.

In Paper [3] Collecting data from field interviews of practitioners across national and linguistic borders can be quite challenging because it demands more time, resources and effort. The key to collecting useful and relevant data from the field

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studies is to demonstrate flexibility, social awareness and the ability to critically reflect on the research process. Adopting more reflexive approaches to research that require the researchers to be more cognizant about the challenges posed and the opportunities presented in field studies could help in their data collection and the overall research process.

In Paper [4] the model is divided into seven core stages: Request, validate, reject, batch, Implement, verify and Update. Each of these stages has specific activities which take place during the requirements alterations management process. This model is suggested to reduce the shortcomings of available models. It also presumes to reduce the failure rate of the software projects. Alterations management model tries to cover all of those activities which are missing in the existing models.

Proposed model has all the activities on the basis of which the models were compared. The first activity is the alterations request in which the request for the alterations occurs. In this phase, complete information about the alterations request is gathered. In the validate phase the legitimacy of the alterations request is checked and an understanding of the alterations request is attempted to be gained. The next phase is the reject phase. This phase contains all of those alterations requests which are rejected after checking their validity. The batch phase accommodates the alterations requests which are not implemented immediately but can be implemented after some period of time. Those alterations requests which are accepted are sent forward to the implementation phase where these alterations requests are implemented. After implementation, the verification of the alterations request occurs to check whether these implemented alterations are working properly or not. At the last step, the system is updated with the alterations.

### 3. PROPOSED

The main object of this frame work is identifying the relationship between alterations in requirement and effort rework in alterations management. project manager is responsible for estimating requirement alterations the software organization is required to alterations according to user needs.

The alterations requests are in the followed by the steps

- A. Implications of proposed alterations of the model;
- B. Identifying elements Affected by the alterations;
- C. Estimating required alterations effort.
- D. Impact analysis report;

Figure 1 shows the overall alterations effort estimation process (CEE). Basically there are four steps which will be discussed in following sections of this document: (1) Implications of proposed alterations of the model; (2) Identifying elements Affected by the alterations; (3) Estimating required alterationseffort. (4) Report of impact analysis

#### 3.1. Implications of proposed alterations of the model:

The impact assessment of entire product line with due consideration of the inter and intra-relationships between various objects of the product line. In the evolution of a software product line, the instances of alterations that happen can be broadly categorized into technology alterations, functional alterations and corrective alterations. A given alterations may impact a software product line in different fashion such as multiple modules impact, component impact or product framework impact.

#### 3.2. Identifying elements Affected by the alterations:

In this stage identify the dynamic and static alterations analysis will be performed to create the final improved set. This stage is considered as origin of alterations recommended [9]. The alterations type will help to estimate alterations effort.

#### 3.3. Estimating required alterations effort

The process of predicting the most realistic amount of effort required to develop or maintain software based on incomplete, uncertain and noisy input. Effort estimates may be used as input to project plans, iteration plans, budgets, and investment analyses, pricing processes and bidding rounds.

- i) Time estimation refers to the practice and process of trying to determine the amount of time (usually hours) required for a single software engineer to complete a given task (task, story, epic, etc.) before beginning development. This includes any subsequent progress tracking and target date commitments made based on these estimations.
- ii) Minimizes errors early in the development cycle as it is expensive to 'fix' errors at the later stages of the development cycle. As a result, the project costs also reduce.

#### 3.4. Report of impact analysis

Costing is used for impact analysis and for estimating the cost respectively. Impact Analysis over alterations was recorded with the help Cost functions.

### 4. SOFTWARE REQUIREMENT ALTERATIONS

The alterations can stem from alterations in the environment in which the finished product is envisaged to be used, business alterations, regulation alterations, errors in the original definition of requirements, limitations in technology, and alterations in the security environment and so on. The activities of requirements alterations management include receiving the alterations requests from the stakeholders, recording the received alterations requests, analyzing and determining the desirability and

process of implementation, implementation of the alterations request, and quality assurance for the implementation and closing the alterations request. Then the data of alterations requests be compiled, analyzed and appropriate metrics are derived and dovetailed into the organizational knowledge .

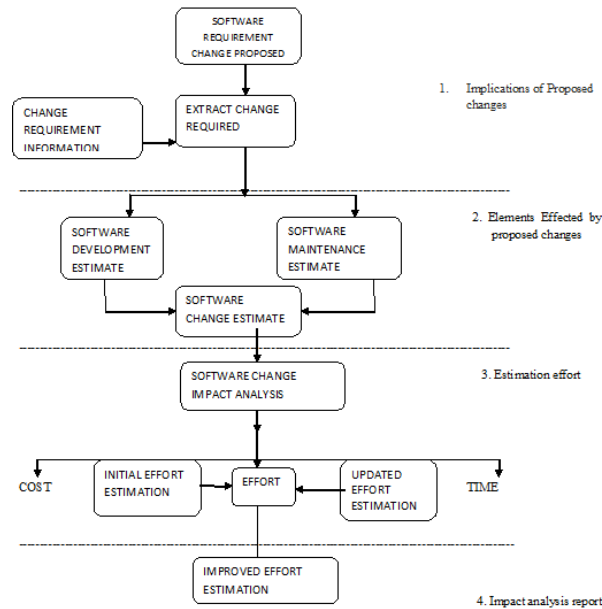


Fig-1:A Review on alterations effort estimation during ongoing project

## 5. CONCLUSION

A methodology used in system analysis to identify, organize and clarify the requirements of the system. This paper presents a theoretical framework that software effort estimation and software alterations impact analysis to solve the software requirement problem during ongoing project. This work help the project managers to make best decisions based on evidence on requirement alterations management.

## 6. REFERENCES

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