Problems Associated with Requirement Elicitation Process: An Overview

Virendra Singh
Department of Information Technology
Babasaheb Bhimrao Ambedkar University
Lucknow, Uttar Pradesh, India
virendsingh17@gmail.com

Dr. Dhirendra Pandey
Department of Information Technology
Babasaheb Bhimrao Ambedkar University,
Lucknow, Uttar Pradesh, India
prof.dhiren@gmail.com

Abstract: There are many problems related with requirement engineering, including problem of change in the requirement, problems of the system scope, problems of understanding among the different communities affected by the development of a given system, problems of volatility dealing the nature of requirements, problem of bias in requirement and many problem may lead to poor requirements and the cancellation of system development, or as well the development of a system that is judged later is inadequate or improper, has high maintenance costs, or undergoes numerous changes. Users identify redundant technical details that may confuse, rather than clarify overall system objectives. Also, the customers/users are not completely sure of what is needed, have a poor knowledge of the capabilities and constraints of their domain environment and they do not understand that the requirements change over time.

Keywords: Requirement Elicitation, Requirement Elicitation Problems, Problem Solving.

I. INTRODUCTION

Requirement Elicitation techniques need to be wide enough to set up boundary conditions for the target system, however, still should focus on the establishment of requirements as different to design activities. Avoiding background issues can guide to which are unfinished, not verifiable, unnecessary, and unusable. Focusing on broader design behavior rudely emphasizes developers' issues in excess of the users' needs and may result in poor requirements also[1]. Requirements elicitation has to begin with an organizational and a context investigation to settle on the border of the target method as well as the objectives of the system. Less ambitious elicitation techniques not addressing this concern run the risk of produce requirements which are incomplete and potentially ineffectual, as they do not hold to the user's or organization's right goals for the system. Performing a managerial and context study allows these goals to be captured, and then used to confirm that the requirements are really usable and correct [2]. Elicitation techniques can be excessively determined as well. Elicitation must focus on the creation of requirements, not design activities, in order to adequately address users' concern and not just developers' needs [8]. Elicitation strategy which creates requirements on the type of high level designs run the risk of creating requirements which are vague to the user community [3].

These requirements might not be confirmed by the users because they cannot effectively understand the design language. Also, requirements can represent as a design are much more likely to integrate added decisions, not reflecting user or sponsor needs, i.e., the requirements will not be precise and necessary [7].

II. REQUIREMENT ELICITATION

Requirement Elicitation phase mainly focuses on investigating and gathering desired requirements and system objectives from different stakeholders. Requirement elicitation phase begins with describing stakeholders of the system and collecting user's requirements from various viewpoints [4]. The user's requirements are a requirement that has not been analyzed and written in a final requirement specification. Requirement elicitation phase aims to collect requirement from different stakeholder's. Normally, the specification of system requirements starts with observing and interviewing people. In addition, user requirements are frequently misunderstood because the system analyst might be misinterpreting the user's needs [5]. Therefore, the understanding of requirements is necessary for requirement specification. In addition to requirements gathering, standards and constraints play a vital role in software development. The specification of requirements may be contextual to software development. The final outcomes are compared with the technicality of the system and produce good and necessary requirements for software development [6].

III. REQUIREMENT ELICITATION PROBLEMS

The requirements elicitation process may appear easy: ask the client, the users and others what are the objectives for the system or product, what is to be skilled, how the system or product fits into the needs of industry, and at last, how the system or product is to be used on a day-to-day basis[11]. However, issues may arise that complicate the process. There are different requirement elicitations Problem in requirement engineering:

A. *Problem of Scope*

Avoiding contextual issues can lead to requirements which are incomplete, not verifiable, unnecessary and unusable. This problem arises when the limit of software (that is, scope) is not defined properly. Due to this, it may become difficult to identify objectives as well as functions and features to be included in the software [12].

B. *Problem of Understanding*

Users have incomplete understanding of their needs, capabilities and limitations of system and poor knowledge of problem domain. Problems of understanding during

elicitation can lead to requirements which are ambiguous, incomplete, inconsistent and even incorrect because they do not address the stakeholder's true needs [9].

C. Problems of Volatility

Requirements change. During the time it takes to develop a system, the user's needs may settled because of better knowledge got on by the development activities, or they may shift to a new set of requirements because of unforeseen organizational or environmental pressures. If such changes are not accommodated, the original requirements set will become incomplete, unreliable with the new condition and possibly broken because they capture information that has been ~~since~~ become outdated.
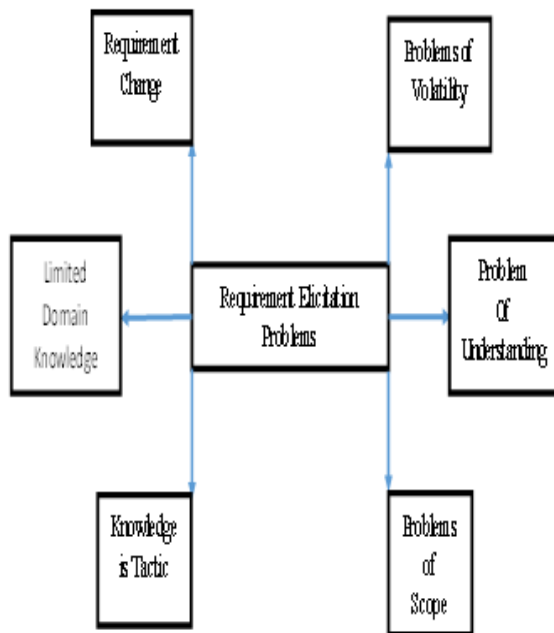

Figure 1. Requirement Elicitation Problems

D. Knowledge is Tacit

We think of knowledge as something that can be verified in words, visualized and educated. However, this isn't always the case. Tacit knowledge is a class of knowledge that's difficult to communicate.

E. Requirement Change

Requirements change over some interval. The requirements elicitation process itself is an understanding experience for users and ideas discussed at one point may cause them to change their minds about prior decisions. We must be alert to avoid taking a set of requirements that is obsolete by the time the elicitation process is completed [13].

F. Limited Domain Knowledge

Generally the most common problem in the requirement elicitation phase is that customers have only a rough idea of their requirements, and it's up to you to raise the right questions and perform the elicitation necessary to turn this vague vision into a formally-documented software requirements specification that can in turn be used as the basis for both a development plan and an engineering architecture.

IV. PROBLEM SOLVING FRAMEWORK

Everybody can be benefitted from having a good problem solving skills as these problems are encountered on daily basis. Some of these requirement elicitation problems which are discussed above are more complex for solving. It will be wonderful to have the ability to solve all requirement elicitation problems efficiently and timely without any difficulty [10].

In this framework, the process of solution of the problem is described. At initial stage all the requirements are collected from stakeholder and then focus on the objective of the organization and how goals can be achieved is documented. After this process, the solution of the required problem is achieved by the developer. S/w Engineer resolves all these problems with software, hardware and training. After completing the process it reaches to the solution domain process. Finally, the problem may be resolved and the solution comes out of the above process implements in the SDLC.
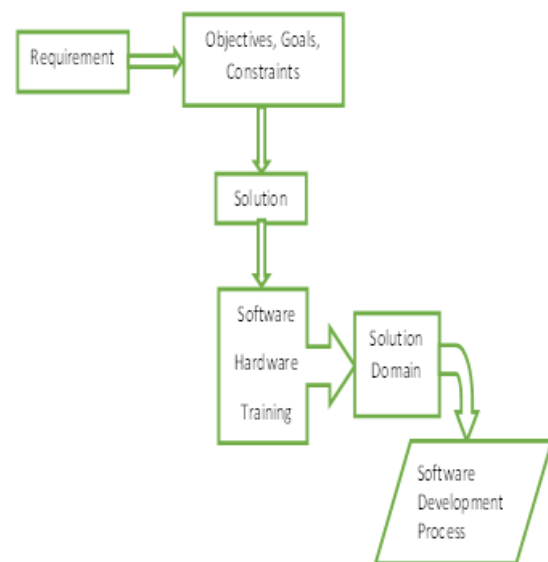

Figure 2: Problem Solution Framework

V. CONCLUSION

Most problems of the requirement elicitation stage increases when stakeholders are working on a large-scale software development project. In order to fulfill the challenge of successfully carrying out the requirements elicitation process in a large-scale software development environment, requirements gatherer need a suitable preparation and must understand the different techniques used in Requirement Elicitation. It is very essential to choose the most suitable tool for communication, because when stakeholders are distributed in different.

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