Chapter 3
When the Wisdom of Communication is Vital During the Requirements Elicitation Process:
Lessons Learnt through Industry Experience

Sabrina Ahmad
Universiti Teknikal Malaysia Melaka, Malaysia

Noor Azilah Muda
Universiti Teknikal Malaysia Melaka, Malaysia

Maslita Abd. Aziz
Universiti Teknikal Malaysia Melaka, Malaysia

Emaliana Kasmuri
Universiti Teknikal Malaysia Melaka, Malaysia

ABSTRACT

Requirements elicitation is accepted as one of the most crucial stages in software engineering, as it addresses the critical problem of designing the right software for the stakeholder. It is seldom technical difficulties that cause problems in the process of requirements elicitation but rather human factors, especially communication. This chapter presents the requirements elicitation experience with the industry and the lessons learnt throughout the process. It highlights the requirements elicitation best practices and alternative options during the process. It also discusses the issues concerning communication disparity between the stakeholders, which may affect the software development project as a whole. The outcome of the requirements elicitation process experience is reported and analysed for future improvement.

INTRODUCTION

Requirements elicitation is a process to systematically extract and identify the requirements of the system from multiple stakeholders, the system's environment, feasibility studies, market analyses, business plans, analyses of competing products and domain knowledge. Obtaining the right requirements is crucial. This is because the requirements define what the stakeholders needed from it, as well as what the system must do in order to satisfy that need. They are the basis for every project. In addition, requirements that are agreed by the system stakeholders provide the basis for planning the development of a system and its acceptance on completion. The requirements also set the scope of projects, and, hence, are inputs to project planning. In addition, the requirements define what the software should do, and, therefore, affect the time and resources needed to develop the software. With such a responsibility, it is important to conduct proper requirements elicitation best practice for the sake of a successful software development project.

The process of requirements elicitation is never straight forward. It is ideal if the stakeholder is able to comply with the system analyst's query with one absolute answer. It is excellent if all requirements can be retrieved through a one-time effort using one technique, and, it is helpful if all the needed artefacts are complete and available for reference. The 'if' is impossible in most cases, and, therefore, requirements engineering (RE) best practice is crucial to ensure the continuity of the software development life cycle and to produce a quality product.

The main focus of this chapter is the experience sharing during the requirements elicitation process with industry. It highlights the obstacles faced during the process and the action path deployed to either rectify the situation or otherwise minimize the impact on the project. The central issue of the requirements elicitation dilemma forwarded in this chapter is communication. Based on the experience with industry, communication happens to be the most critical factor in the success or failure of the process and software development project as a whole. It is also a medium to gain trust and to establish a long-term relationship with the stakeholders. In addition, RE best practices are presented in line with the discussion rose from the industry experience.

The RE process is both important and crucial to the software development project. It moulds the shape of the entire project, determines the path it will follow through and influence the value of the end product. Human factors play a vital role in ensuring the success of the RE process in which the art of communication is the central point. Effective communication links all the necessary knowledge from the different sources and unfolds untold information to be utilized for the sake of the software project.

REQUIREMENTS ENGINEERING BEST PRACTICES

The focus of this chapter is the beginning stage of RE, which specifically looks at the requirements elicitation practice. However, an overview of RE is presented in this sub-section to provide a complete picture of where requirements elicitation fits in.

RE is the process of discovering, documenting and managing the requirements for a computer-based system. Common RE activities (Mulla and Girase, 2012) include elicitation, interpretation and structuring (analysis and documentation), negotiation, verification and validation, change management and requirements tracing. Alternatively, it is stated that there are only four generic, high level RE process activities (Sommerville, 2004). These are a system feasibility study, the requirements elicitation and analysis, requirements specification and requirements validation. In addition, requirements management is introduced to

Related Content

A Novel Iterated Function System-Based Model for Coloured Image Encryption
Amine Rahmani (2021). *International Journal of Systems and Software Security and Protection (pp. 1-10).*
www.irma-international.org/article/a-novel-iterated-function-system-based-model-for-coloured-image-encryption/284557

An Adaptive System for Retrieval and Composition of Learning Objects
Burasakorn Yoosookaand Vilas Wuwongse (2011). *International Journal of Systems and Service-Oriented Engineering (pp. 42-59).*
www.irma-international.org/article/adaptive-system-retrieval-composition-learning/61315

Interoperability and Communication Issues in CPS
 (2015). *Challenges, Opportunities, and Dimensions of Cyber-Physical Systems (pp. 161-179).*
www.irma-international.org/chapter/interoperability-and-communication-issues-in-cps/121255

A Framework of Statistical and Visualization Techniques for Missing Data Analysis in Software Cost Estimation
Lefteris Angelis, Nikolaos Mittasand Panagiota Chatzipetrou (2015). *Handbook of Research on Innovations in Systems and Software Engineering (pp. 71-97).*
www.irma-international.org/chapter/a-framework-of-statistical-and-visualization-techniques-for-missing-data-analysis-in-software-cost-estimation/117920

Machine Learning Model to Predict Automated Testing Adoption
Muhammad Nouman Noor, Tamim Ahmed Khan, Farah Haneefand Muhammad Ismail Ramay (2022). *International Journal of Software Innovation (pp. 1-15).*
www.irma-international.org/article/machine-learning-model-to-predict-automated-testing-adoption/293268