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AN INVESTIGATION OF REQUIREMENTS TRACEABILITY PRACTICES IN SOFTWARE COMPANIES IN MALAYSIA

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2016
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Abstrak


Kata kunci: Amalan Keupayaan Mengesankan Keperluan, Teknik Keupayaan Mengesan, Alatan Keupayaan Mengesan, Sorotan Kajian Sistematik
Abstract

Requirement traceability (RT) is one of the critical activity of good requirements management and an important part of development projects. At the same time, it improves the quality of software products. Nevertheless, industrial practitioners are challenged by this lack of guidance or results which serve as a rule or guide in establishing effective traceability in their projects. The outcome of this is that practitioners are ill-informed as to the best or most efficient means of accomplishing their tasks, such as found in software companies. Notwithstanding the lack of guidance, there are a number of commonly accepted practices which can guide industrial practitioners with respect to trace the requirements in their projects. This study aims to determine the practices of RT through conducting a systematic literature review. Also, this study conducted a survey for investigating the use of RT practices in the software companies at northern region of Malaysia. Finally, a series of interviews with practitioners were carried out to know the reasons that influence on the use of these practices in software development. The findings showed that majority software companies do not use traceability practices for tracing requirements due to financial issues and the lack of knowledge of these practices. This study presented empirical evidence about the use of RT practices among software companies. Thus, the findings of this study can assist practitioners to select RT practices, and also enables researchers to find gaps and pointers for future study in this study domain.

Keywords: Requirements Traceability Practices, Traceability Techniques, Traceability tools, Systematic Literature Review
Acknowledgement

In the Name of Allah, the Most Gracious and Most Merciful. First of all, I would like to thank Allah (SWT), for having made everything possible by giving me strength, confidence, and courage to accomplish my study for a Master degree after a long time of continuous work. I am truly indebted and do appreciate many persons that have encouraged me through this hard yet challenging journey. Whilst being grateful to all of them, I must register my gratefulness to some particular individuals.

I would like to express my appreciation and deepest gratitude to my extraordinary supervisor Dr. Mazni Omar who advised, supported, and assisted me during all stages of this research. Without her ideas and comments, the accomplishment of my research would have been more difficult. She has always been there when I needed her invaluable feedback and everything related to accomplish this journey. It is an honor to be one of their students.

My deepest respect and thanks goes to my parents, my father Mohammed Dahr and my beloved mother Ameena Younis for their sacrifices, unconditional love and encouragement through their prayers. I value their endless efforts which made me who I am. A very special appreciation and sincere gratitude goes to my beloved wife (Israa Sabri) and my dear son (Ali) who were the biggest motivation for me to complete my study. Furthermore, I would like to thank my brothers and sisters for their encouragement, support and patience that keep me moving forward in completing this study as without them, I could not have completed this study.

I would like to extend my sincere thanks to my best friend (Nafea Raheem), who did not forget me during period of study and all time remind me. Further, words cannot express my gratitude to my friends, who always gave me the encouragement and help to complete this work. I will be forever thankful, grateful, and indebted to them

I express my deepest thanks to Ministry of Education in Iraq for helping and supporting me and giving necessary advices and guidance and arranged all facilities to make my study (Master Information and Technology) easier. Finally, special thanks goes to all staff of College of Arts and Science, University Utara Malaysia and those that contributed indirectly towards the success of my study.

Thank you UUM
**Table of Content**

Permission to Use........................................................................................................... ii
Abstrak .................................................................................................................................. iii
Abstract .............................................................................................................................. iv
Acknowledgement........................................................................................................... v
Table of Content............................................................................................................... vi
List of Tables..................................................................................................................... ix
List of Figures ................................................................................................................... x
List of Appendices ........................................................................................................... xi

**CHAPTER ONE: INTRODUCTION** ............................................................................. 1
1.1 Introduction .................................................................................................................. 1
1.2 Background of the Study .......................................................................................... 1
1.3 Problem Statement ................................................................................................. 3
1.4 Research Questions ................................................................................................... 6
1.5 Research Objectives .................................................................................................. 6
1.6 Significant of Research ............................................................................................ 7
1.7 Research Scope .......................................................................................................... 8
1.8 Organization of the Thesis .................................................................................... 8
1.9 Summary of Chapter ............................................................................................... 10

**CHAPTER TWO: LITERATURE REVIEW** ................................................................. 11
2.1 Introduction ................................................................................................................ 11
2.2 Requirements Engineering ....................................................................................... 11
    2.2.1 Requirements Development ....................................................................... 13
        2.2.1.1 Requirements Elicitation Phase .......................................................... 14
        2.2.1.2 Requirements Analysis Phase ............................................................. 17
        2.2.1.3 Requirements Specification Phase ..................................................... 18
        2.2.1.4 Requirements Validation Phase ......................................................... 20
    2.2.2 Requirements Management ............................................................................. 21
        2.2.2.1 Requirements Change Management ................................................. 23
2.3 Requirements Traceability ....................................................................................... 24
    2.3.1 Requirement Traceability Techniques ......................................................... 26
    2.3.2 Requirement Traceability Tools ..................................................................... 28
    2.3.3 Factors in Selection of Requirement Traceability Practices ...................... 30
    2.3.4 Related Works ............................................................................................... 33
2.4 Summary of Chapter ................................................................. 37

CHAPTER THREE: RESEARCH METHODOLOGY .................................. 38
3.1 Introduction ............................................................................... 38
3.2 Research Procedure ................................................................. 38
3.3 Systematic Literature Review (SLR) ....................................... 41
   3.3.1 Formulating the Research Question ................................. 42
   3.3.2 Constructing the Search .................................................. 43
   3.3.3 Study Selection .............................................................. 44
   3.3.4 Data Extraction .............................................................. 45
   3.3.5 Synthesis of the Extracted Data ...................................... 45
3.4 Quantitative Approach ............................................................. 46
   3.4.1 Populations and Sampling .............................................. 46
   3.4.2 Data Collection Instrument ......................................... 47
   3.4.3 Data Analysis ............................................................... 49
   3.4.4 Validation .................................................................... 50
   3.4.5 Reliability Analysis ...................................................... 50
3.5 Qualitative Approach ............................................................... 51
   3.5.1 Interview ..................................................................... 52
1.5.2 Data Analysis ............................................................... 53
3.6 Summary of Chapter ............................................................... 54

CHAPTER FOUR: RESULTS OF SYSTEMATIC LITERATURE REVIEW ....... 55
4.1 Introduction ............................................................................... 55
4.2 Conducting the Review ......................................................... 55
4.3 Result of SLR ........................................................................... 56
   4.3.1 Requirement Traceability Techniques ............................. 58
   4.3.2 Requirement Traceability Tools .................................... 69
   4.3.3 Comparison between RT practices ................................. 73
4.4 Discussion ............................................................................... 85
4.5 Summary of Chapter ............................................................... 89

CHAPTER FIVE: RESULTS OF SURVEY AND INTERVIEW .................. 91
5.1 Introduction ............................................................................... 91
5.2 Results of the Use of Traceability Practices .............................. 91
   5.2.1 Demographic Characteristics of Respondents ................ 91
   5.2.2 Use of Requirements Traceability Tools ......................... 94
   5.2.3 Use of Requirements Traceability Techniques ............... 95
5.3 Reliability For Use of Traceability Practices ......................................................... 97
5.4 Descriptive Statistics ............................................................................................ 97
5.5 Analysis of Interviews .......................................................................................... 98
5.6 Discussion ............................................................................................................. 103
5.7 Summary of Chapter ............................................................................................ 104

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS ........................................ 105
6.1 Introduction ........................................................................................................... 105
6.2 Objectives Achievement ..................................................................................... 105
6.3 Contribution of the Research ............................................................................. 107
6.4 Limitation of the Study ....................................................................................... 109
6.5 Conclusion and Future Works ............................................................................ 109
REFERENCES .......................................................................................................... 111
List of Tables

Table 2.1: Requirements elicitation techniques. ................................................................. 15
Table 2.2: Specification techniques. .................................................................................. 19
Table 2.3: Requirements management tools. .................................................................. 22
Table 2.4: Requirement traceability techniques .............................................................. 27
Table 2.5: Requirements traceability tools .................................................................... 29
Table 2.6: Summaries the prior studies related to RT practices ....................................... 36
Table 3.1: The sections of questionnaire and the sources of the adapted questionnaires. ........................................................................................................................................... 48
Table 3.2: Pilot test Cronbach’s Alpha ............................................................................ 51
Table 3.3: Differences between quantitative and qualitative approach ......................... 52
Table 4.1: Factors that help software companies to select the appropriate RT practices. ............................................................................................................................................. 77
Table 4.2: Matching between the tools and techniques of traceability and the tools price .............................................................................................................................................. 84
Table 5.1: Distribution of respondents ........................................................................... 92
Table 5.2: Reliability Result ............................................................................................ 97
Table 5.3: Descriptive Statistics ....................................................................................... 98
Table 5.4: Participant’s Information ................................................................................ 99
List of Figures

Figure 2.1: The Major Activities of Requirements Engineering.................................12
Figure 2.2: Requirements Elicitation Process ..........................................................15
Figure 3.1: Proposed Research Framework .............................................................40
Figure 3.2: Systematic Review Guideline Process .......................................................41
Figure 4.1: Studies Selected of Digital Libraries .........................................................56
Figure 4.2: RT Techniques for Tracing Requirements ...............................................57
Figure 4.3: RT Tools for Tracing Requirements ........................................................58
Figure 5.1: Use of Traceability Tools in Software Companies ...................................94
Figure 5.2: Use of Traceability Techniques in Software Companies ..........................96
List of Appendices

APPENDIX A: Questionnaire ................................................................. 134
APPENDIX B: Expert Reviewer ............................................................... 139
APPENDIX C: List of Software Companies ........................................... 140
APPENDIX D: Interview Questions ......................................................... 141
APPENDIX E: Studies Selected of Systematic Literature Review ............. 142
CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter starts by explaining the background of traceability. It then highlights the problem statement related to the study. The research objectives, research question, scope of the study, as well as the significance of the research, are also highlighted.

1.2 Background of the Study

Lately, there is a rising interest in software systems which are capable of adapting to modifications in their requirements for the purpose of continuity in fulfilling their software’s goals (Silva Souza, Lapouchnian, Robinson & Mylopoulos, 2011). According to Zainol and Mansoor (2011), requirements have a propensity to be modified during software development and these modifications must be managed. Also, according to the study’s by Attarha and Modiri (2011), requirements are regarded as a challenging part in the software project because the requirements accurately determine what is to be produced. Requirements as defined by Zhou (2014), is a statement that recognizes a process or product’s functional, operational, or design characteristic or limitations, which is unambiguous, measurable or testable, and mandatory for a process or product’s acceptability by consumers or internal quality assurance guidelines. Similarly, Wen, Luo and Liang (2012) defined requirements as formal pronouncement of user’s needs.

The root of requirements traceability is requirements engineering (RE). RE is considered as the initial phase of software engineering. According to Attarha and Modiri (2011), RE is a method for defining, modeling, recognizing, linking, documenting and maintaining or preserving software requirements in software life cycle
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http://doi.org/10.1109/TEFSE.2009.5069575


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