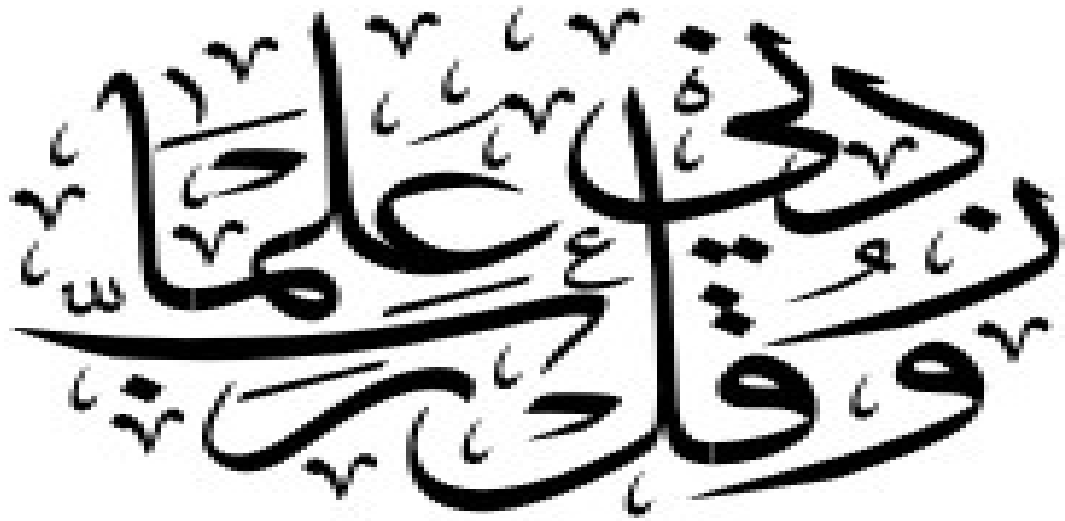


آية

بسم الله الرحمن الرحيم



صدق الله العظيم.
سورة طه ، آية (114) .

DEDICATION

To

My Parents ,,,

**My Brothers and
Sisters ,,,**

All Muslims ,,,

ACKNOWLEDGEMENT

I would like to thank all the people supporting me during the process of this research and helped me with suggestions along the way.

To my supervisor Dr. Mohammed Awad - The Deputy Dean of College of Computer Science and Information Technology / Sudan University of Science & Technology - for his guidance and constant support which helped me to stay focused from the beginning to the end of the research process. I sincerely thank you for your support.

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To my parents who has always believed in me and had always supported me at the moments when would feel down.

The thesis would not be possible without people mentioned above.

المستخلص

الهدف من هذا البحث هو دراسة نوعين من منهجيات تطوير البرمجيات، بشكل محدد - منهجيات تطوير البرمجيات التقليدية ومنهجيات تطوير البرمجيات الخفيفة - من اجل مقارنتهما مع بعضهما البعض. هناك هدف آخر هو اقتراح إطار عمل لاختيار أفضل منهجية برمجية خفيفة للمشروع المعطى.

تم استعراض بعض من منهجيات تطوير البرمجيات التقليدية والخفيفة. وكذلك تم استعراض خصائص وعيوب كل من منهجيات تطوير البرمجيات التقليدية والخفيفة.

ومن خلال هذه المقارنة تم إيجاد بعض أوجه التشابه والاختلاف بين منهجيات تطوير البرمجيات التقليدية والخفيفة، وكذلك بين بعض المنهجيات الخفيفة.

وكذلك وُجد من خلال هذه المقارنة أن منهجيات تطوير البرمجيات الخفيفة يمكن أن تكون ذات فوائد عديدة بالنسبة للمشاريع الصغيرة والمتوسطة الحجم، أما المشاريع الكبيرة فنلاحظ أن المنهجيات التقليدية هي التي تسيطر عليها.

ما تم التوصل إليه في هذا البحث هو اقتراح إطار عمل وذلك من اجل اختيار أنسب منهجية لتطوير البرمجيات من بين مجموعة من منهجيات تطوير البرمجيات الخفيفة للمشروع المعطى.

هناك بعض المواضيع في هذا المجال تحتاج للمزيد من إلقاء الضوء عليها مثل تطبيق إطار العمل المقترح في شركات إنتاج البرمجيات، كذلك الدراسات التجريبية لتقييم فعالية وإمكانية استخدام منهجيات تطوير البرمجيات التقليدية والخفيفة في السودان. وكذلك مقارنة أداء منهجيات تطوير البرمجيات مثل (الإنتاجية والجودة)، وكذلك دراسة إمكانية دمج أو تهجين عدة منهجيات لعمل منهجية واحدة.

ABSTRACT

The objective of this thesis is to study two types of software development methodologies, more specifically – traditional software development methodologies and agile software development methodologies – to compare them together. Another goal is to propose a framework for selecting suitable agile methodology for a given project.

Some of traditional and agile methodologies were presented. Also the characteristics and limitations of each methodology were introduced.

It was found some similarities and differences between traditional and agile methodologies. Also the similarities and differences were found between some of the agile methodologies.

Also it was found that agile methodologies can provide good benefits for small-scaled and medium-scaled projects but for large-scaled projects traditional methods seem dominant.

The achievement of this thesis is a framework for selecting most suitable agile software development methodology for a given project were proposed.

Other areas that need to be explored are the implementation of framework in software development company. Also empirical studies for evaluating the effectiveness and the possibilities of using traditional and agile software development methods. Also comparing the performance of the software development methods (for example; productivity and quality aspects). The studies of the combinations of different methods and process content are also other area of study.

LIST OF ABBREVIATIONS

BDUF	Big Design UpFront.
BUP	Basic Unified Process.
DSDM	Dynamic Systems Development.
ICT	Information and Communication Technology.
IEEE	Institute of Electrical and Electronics Engineers.
IS	Information System.
ISO	International Organization for Standardization.
IT	Information Technology.
MDE	Model Driven Engineering.
OPENUP	Open Unified Process.
OSF	Organization Suitability Filter.
PSF	Project Suitability Filter.
RUP	Rational Unified Process.
SDM	Software Development Methodology.
UML	Unified Modeling Language.
XP	eXtreme Programming.

LIST OF FIGURES

Figure 2.1	The Role of the Software Process	5
Figure 2.2	Two Conceptual Models of Processes	6
Figure 2.3	Definition of Agility	1
		2
Figure 2.4	The Evolution Map of Agile Methodologies	1
		3
Figure 2.5	eXtreme Programming Process	1
		4
Figure 2.6	The Scrum Process	1
		6
Figure 2.7	The RUP Process and Disciplines	1
		8
Figure 3.1	Waterfall Model	2
		1
Figure 3.2	The Spiral Model	2
		3
Figure 3.3	The Incremental Model is A series of Waterfalls	2
		3
Figure 3.4	Comparison of the Methodologies	2
		5
Figure 3.5	Slider Tool	2
		8
Figure 6.1	Agile Methodologies Selection Framework	4
		6

LIST OF TABLES

Table 4.1	Difference in Traditional and Agile Methodologies	3
		7
Table 5.1	A comparison of Agile Methodologies	4
		4
Table 6.1	Project Classification	4
		7
Table 6.2	Methodology Description	4
		9
Table 6.3	Methodology Selection	5
		0
Table 6.4	Suitable Methodology Selection Characteristics	5
		1

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1 Background	1
1.2 Problem Definition	1
1.3 Thesis Objectives	2
1.4 Scope and Assumptions.....	2
1.5 Methodology	3
1.6 Overview of the Thesis	3

CHAPTER 2: SOFTWARE PROCESS AND AGILE OVERVIEW

2.1 Introduction	5
2.2 Process Definition	5
2.3 Method Definition	6
2.4 Software Development Process Definition	7
2.5 Model Definition	7
2.6 Agile Overview and Definition	9
2.6.1 Overview	9
2.6.2 Principles of the Agile Methodologies	10
2.6.3 Agile Definition	11
2.6.4 Existing Agile Methods	13
2.6.4.1 eXtreme Programming	33
2.6.4.1.1 XP Process.....	41
2.6.4.2 Scrum	51
2.6.4.2.1 Scrum Process	61
2.6.4.3 Rational Unified Process	67
2.6.4.3.1 RUP Process	71
2.6.4.4 OpenUP	78
2.6.4.4.1 OpenUP Process	81
2.6.4.5 OpenMethod	89

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction	2
	0
3.2 Literature Categorization	2
	0
3.3 Software Development Methods	2
	0
3.3.1 Category 1: Traditional Methodologies	2
	1
3.3.2 Category 2: Agile Methodologies	2
	4
3.4 Agile Suitability Filters	2
	5

CHAPTER 4: TRADITIONAL VS. AGILE METHODS

4.1 Introduction	2
	9
4.2 Characteristics and Limitations	2
	9
4.2.1 Characteristics of Traditional Methods	2
	9
4.2.2 Characteristics of Agile Methods	3
	0
4.2.3 Limitations of Traditional Methods	3
	1
4.2.4 Limitations of Agile Methods	3
	2
4.3 Traditional Versus Agile Methods	3
	3

CHAPTER 5: COMPARISON BETWEEN AGILE METHODS

5.1 Introduction	3
	9
5.2 eXtreme Programming	3
	9
5.2.1 Pros	3
	9
5.2.2 Cons	3
	9
5.3 Scrum	4
	0
5.3.1 Pros	4
	0
5.3.2 Cons	4

5.4 Rational Unified Process	0
5.4.1 Pros	4
5.4.2 Cons	1
5.5 OpenUP	4
5.5.1 Pros	1
5.5.2 Cons	4
5.6 OpenMethod	1
5.6.1 Pros	4
5.6.2 Cons	2
5.7 Differences and Similarities	4
	2
CHAPTER 6: A FRAMEWORK FOR METHODOLOGY SELECTION	
6.1 Introduction	4
6.2 Framework Architecture	6
6.2.1 Step One: Project Classification	4
6.2.2 Step Two: Methodology Selection	7
6.2.2.1 Step 1: Methodology Description	4
6.2.2.2 Step 2: Methodology Selection	8
6.2.3 Step Three: Suitable Methodology Selection	8
	5
	0
	0
CHAPTER 7: CONCLUSIONS AND FUTURE WORK	
7.1 Conclusions	5
7.2 Future Work	3
	5
	4
REFERENCES	5

