Abstract

Way back a short period of time, the Internet and the World Wide Web have become ubiquitous, surpassing all other technological developments in our history. The Internet and especially companies websites has rapidly evolved in their scope and extent of use, from being a little more than fixed advertising material, i.e. a "web presences", which had no particular influence for the company's business, to being one of the most essential parts of the company's core business.

Traditional software engineering approaches with process models such as, for example, CMM and Waterfall models, do not work very well since web system development differs from traditional development. The development differs in several ways, for example, there is a large gap between traditional software engineering designs and concepts and the low-level implementation model, many of the web based system development activities are business oriented (for example web application are sales-oriented, web application and intranets are content-oriented) and not engineering-oriented.

This thesis aim to introduce Increment Iterative extreme Programming (IIXP) methodology for developing web based systems. In difference to the other existence methodologies, this methodology are combination of different traditional and modern software engineering and web engineering principles.

ملخص منهجية جديدة لتطوير الانظمة المبنية على الانترنت

في فترة قصيرة من الزمن ،اصبحت شبكة الانترنت والشبكه العالمية في كل مكان ، متجاوزا سائر التطورات التكنولوجيه في تاريخنا.

شبكة الانترنت ومواقع الويب خاصة مواقع الشركات قد تطورت بسرعة في نطاقها ومدى استخدامها ،وقد تغير مفهوم المواقع الخاصة بالشركات من مواقع دعائية ليس لها تأثير ولا سيما لاعمال الشركة ، الى كونها واحدة من أكثر الاجزاء الاساسية في الشركة .

هندسة البرمجيات التقليديه مع نهجها العملية مثل الشلال (waterfall model) ، لا تعمل جيدا فى بناء المواقع الالكترونية حيث ان بنا المواقع الالكترونية يختلف عن بناء البرامج التقليدية . حيث ان المواقع الالكترونية يتم تطوير ها لعكس نشاط او فكر معين خاص بالشركة .

هذا البحث يهدف الى تقديم منهجية جديدة لتطوير المواقع الالكترونية وهذة المنهجية هى خليط من مناهج هندسة البرمجيات والمواقع الالكترونية التقليدية والحديثة.



TO MY BLOVED

FATHER UNCLES

MOTHER AUNTS

AND MY SWEET

SISTERS..... BROTHERS

AND TO MY DEAR WIFE AWATIF

Table of contents

No.	Subject	Page
	Abstract	I
	الملخص	II
	Dedication	III
	Table of contents	IV
	List of figures	VI
	List of privations	VII
	Chapter One	
1	Introduction	
1.1	Overview	1
1.2	Problem Statement	3
1.3	Research Objective	3
1.4	Research Scope	3
1.5	Research Methodology	3
	Chapter Two	
2	Nature of web based system	
2.1	Overview	4
2.2	Web application and traditional application	4
2.3	Web development	5
2.3.1	Level 1 - Webpage construction	6
2.3.2	Level 2 - Webpage design	7
2.3.3	Level 3 - Website design	7
2.3.4	Level 4 - Website construction	8
2.3.5	Level 5 - Web based systems	8
2.3.6	Level 6 - Web project management	8
2.3.7	Conclusion	8
2.4	Web application properties	9
2.5	Comparison of simple and advanced web applications	10
2.6	The importance of a structured approach	11
2.7	Web engineering	11
	Chapter Three	
3	Literature review	
3.1	Overview	13
3.2	Major web development process activities	13
3.3	Comparison of the Process Models	16
	Chapter Four	
4	Increment Iterative eXtreme Programming (IIXP)	
	methodology	
4.1	Overview	22
4.2	IIXP methodology Pre-development activities	22
4.3	IIXP methodology phases	23
4.3.1	Analysis phase	25

4.3.2	Development phase	25
4.3.3	Test Phase	26
4.3.4	Integration and Release phase	26
4.3.5	Deployment and training phase for intranet web application	26
4.3.6	Quality phase	26
4.3.7	Advertisement phase	26
4.3.8	Evaluation phase	26
	Chapter Five	
5	IIXP methodology activities	
5.1	Determine goals, motivation and purpose for building the	27
	web based application	
5.2	Problem definition analysis	28
5.3	Web application classification	28
5.4	Analysis phase for static web application	28
5.5	Analysis phase for intranet and web application	29
5.6	Development phase	31
5.7	Test phase	32
5.8	Integration and Release phase	33
5.9	Deployment and training phase for intranet web based	33
	systems	
5.10	Quality phase	34
5.11	Advertisement phase	35
5.12	Evaluation phase	35
5.13	Benefits of the IIXP methodology	37
5.14	Drawbacks of the IIXP methodology	37
5.15	Models evaluation	38
	Chapter Six	
6	IIXP methodology implementation	
6.1	Scenario	41
6.2	IIXP Pre-development activities	41
6.3	IIXP methodology for developing intranet web based	41
	system	
6.4	IIXP methodology for developing web application	47
	Chapter Seven	
7	Conclusion & Further work	
7.1	conclusions	53
7.2	Recommendations and Further work	53
	References	55
	Appendix A: Proposed web development	60
	methodologies descriptions	

List of figures

Figure number	Description	Page
Figure 2.1	The six levels of perception in web development related to	5
	the different types of web based systems	
Figure 2.2	Web-engineering – a multidisciplinary field	12
Figure 3.1	Major web development process activities	14
Figure 4.1	IIXP Pre-development activities	23
Figure 4.2	IIXP methodology for developing web based systems	24
Figure 4.3	Spiral representation of IIXP methodology for developing	25
	web based systems	
Figure 5.1	static web application analysis phase activities	29
Figure 5.2	shows analysis phase for intranet and web application	31
	activities	
Figure 5.3	development phase activities	32
Figure 5.4	shows the test phase activities	33
Figure 5.5	shows the Integration and Release phase activities	33
Figure 5.6	shows the intranet web based system Deployment and	33
	training phase activities	
Figure 5.7	quality phase activities	35
Figure 5.8	shows the advertisement phase activities	35
Figure 5.9	shows the evaluation phase activities	36

List of privation

CSS	Cascading Style Sheets
FDD	Feature Driven Development
HDM	Hypermedia Design Model
HTML	HyperText Markup Language
OOHDM	Object-Oriented Hypermedia Design Model
RMM	Relationship Management Model
WCPM	Web Composition Process Model
WSDM	Web Site Design Method
XP	eXtreme Programming
ASP	Active Server Pages
PERL	Practical Extraction and Report Language