

*Sudan University of
Science and Technology
College of Graduate Studies*



A Study of Software Development Outsourcing In Sudan

دراسة تطوير الاستعانة بالمصادر الخارجية
للبرمجيات في السودان

*A thesis submitted in partial fulfillment for the
requirements of M.Sc degree in Information Technology*

By:

Mohja Yousif Mohammed

Supervisor:

Prof. Izzeldin Mohamed Osman

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى ﴿ فَتَعَالَى اللَّهُ الْمَلِكُ الْحَقُّ وَلَا تَعْجَلْ

بِالْقُرْآنِ مِنْ قَبْلِ أَنْ يُقْضَىٰ إِلَيْكَ وَحْيُهُ

﴿ وَقُلْ رَبِّ زِدْنِي عِلْمًا

صدق الله العظيم

طه الآية (114)

Dedication

For every one who gifted me with constant scientific and incorporeal support with love, without their believable stand with me, this project might not have seen the light

Mother how much I love you, you are the real secret of my success I owe.

Thank you Mom with all my affections and kisses

Acknowledgment

Alhamdulillah and all praise be to Allah

Prof. Izzeldin Mohamed Osman who under his supervision I had the honor of being one of the most privileged and lucky person to gain him as a model teacher and supporter, for his guided role with all advices and needed information and instructions to complete this research, Really he made me believe in myself, efforts and ability to finish this work as it is, thank you prof with respect and uncountable greetings.

And thanks to the respondents who gave their reliable views.

I would not forget to thank my friends for everything they had done for me. Also thanks to my brothers and sisters.

Abstract

Recently notable software development experience enlarged globally development worldwide to take advantage of the benefits of multi-such as reducing the cost of software development and for the benefit of quality systems and international stability and applying scientific methods in the issuance and others.

It's seemed to Sudan in the use of external sources of software, but with a big difference on the subject of costs, where increase the cost significantly for local systems. In spite of the high costs of unexplained Sudan is heading significantly for outsourcing of software development.

This research is a study of the subject of outsourcing of software and tries to surround the extent of its success and the study of shortcomings and constraints; researcher used the questionnaire and the interview to check the status of outsourcing of software in Sudan.

The researcher doing empirical Study on two different sample(users and experts), the study concluded from the perspective of the user that outsourcing software development does not attention of end user, user guide, and usability of the system , as well as technical problems. A large percentage of those surveyed believe that outsourcing software development is not successful and it does not meet their requirements. Either from experts point of view there are a lot of problems in implementation outsourcing software development. As well as the high costs unjustified.

In case of conducting outsourcing software, this study presented suggestion such as:

- 1- Do several study before ask for advice from external software development.
- 2- It is very necessary for organizations to plan and implement in outsourcing software development, because its play a vital role for success of outsourcing software development.
- 3- -Organizations have to focus on end users as well as train them that help them to do their job effectively.

Finally, the study gives some guidelines for obtaining desired results when software development is outsourced, the researcher recommends doing more studies in this field and focusing on other factors.

المستخلص

في الآونة الأخيرة تنامت تجربة الاستعانة بالأنظمة الخارجية لتطوير البرمجيات عالميا وذلك للاستفادة من فوائدها المتعددة مثل تقليل تكلفة تطوير البرمجيات وللإستفادة من جودة الأنظمة العالمية واستقرارها وإتباع الطرق العلمية في إصدارها وغيرها .

بدأ السودان في استخدام المصادر الخارجية للبرمجيات ولكن مع إختلاف كبير في موضوع التكاليف, حيث تزيد التكلفة بصورة كبيرة عن الأنظمة المحلية . وعلى الرغم من التكاليف العالية غير المبررة يتجه السودان بصورة كبيرة للاستعانة بالمصادر الخارجية لتطوير البرمجيات .

هذا البحث عبارة عن دراسة لموضوع الاستعانة بالمصادر الخارجية للبرمجيات ومحاولة للإحاطة بمدى نجاحه ودراسة أوجه القصور والمعوقات , وقد إستخدم الباحث الاستبيان والمقابلة للتحقق من حالة الاستعانة بالمصادر الخارجية للبرمجيات في السودان .

قام الباحث بدراسة ميدانية علي فئتين متباينتين من المستهدفين هم الخبراء والمستخدمين بأستخدام الإستبانة والمقابلة , وقد خلصت الدراسة من وجهة نظر المستخدمين إلى أن المصادر الخارجية للبرمجيات لا تهتم بالمستخدم النهائي , وبدليل المستخدم , وقابلية النظام للإستخدام والمشاكل الفنية , وهنالك نسبة كبيرة من الذين شملهم الاستطلاع يعتقدون أن المصادر الخارجية لتطوير البرمجيات ليست ناجحة وأنها لا تلبي احتياجاتهم . أما من وجهة نظر الخبراء فيرون أن هنالك مشاكل في التنفيذ عند الاستعانة بالمصادر الخارجية لتطوير البرمجيات بالإضافة إلى تكلفتها العالية غير المبررة .

وقد قدمت الدراسة مقترحات للإسترشاد بها في حالة اللجوء للمصادر الخارجية للبرمجيات ومن أهمها :

1. إجراء مزيد من الدراسات قبل اللجوء الى الإستعانة بالمصادر الخارجية للبرمجيات

2. زيادة الإهتمام بمرحلتى التخطيط والتنفيذ وذلك لأهميتهما البالغة في نجاح التجربة .

3. الاهتمام بالمستخدم الاخير وتدريبه حتى يتمكن من أداء واجبه بكفاءة.

و في نهاية هذه الأطروحة يقدم الباحث بعض التوجيهات للحصول على النتائج المرجوة عند الإستعانة

بالمصادر الخارجية لتطوير البرمجيات, ويوصى الباحث بإجراء المزيد من الدراسة في هذا المجال حتى يمكن

الحصول على النتائج المتبتغاة .

Table of Contents

<i>Particulars</i>	<i>Page no</i>
Ayah	ii
Dedication	lii
Acknowledgment	iv
Abstract	v
Arabic Abstract	vi
Table of contents	vii
list of Figures	ix
List of Tables	ix
Chapter 1 : Introduction	
1.0 Introduction to the Research	1
1.1 Background	1
1.2 Problem of thesis	2
1.3 Objective of thesis	3
1.4 Research question	3
1.5 Research design	5
1.6 scope of thesis	5
1.7 Organization of thesis	6
Chapter 2 : literature review	
<i>Section one</i>	
2.0 Introduction	7
2.1.1 Definitions	7
2.1.2 Types of outsourcing	8
2.1.2.1 the different between outsourcing and off shoring	10
2.1.3 The Specific areas of Outsourcing	12
2.1.4 The reason for outsourcing	12
2.1.4. Benefits of the software development outsourcing	17
2.1.5 1 the top six advantages of outsourcing	17
2.1.6 The Disadvantages of outsourcing software development	22
2.1.7 The risk of outsourcing	28
2.1.8 Effectiveness and Efficiency	35
<i>Section two</i>	
2.2.1 The contract	37
2.2.2 The reason for renegotiation	39
2.2.3 The criteria for selection outscoring software development	40
2.2.4 Identifying Organization Need	41

2.2.5 The trusted partners	45
2.2.6 What is important the cost or the benefits	46
2.2.7 The security of outsourcing	47
<u>Chapter 3: statistical analysis</u>	
3.0 introductions	49
3.1 The community and the study sample:	49
3.1.1.1 The Age (<i>users</i>)	51
3.1.1.2 The Academic Qualifications(<i>users</i>)	52
3.1.1.3 The Specialized(<i>users</i>)	53
3.1.1.4 The Jobs (<i>users</i>)	54
3.1.1.5 The Years of Experience(<i>users</i>)	55
3.1.2.1 The Age(<i>experts</i>)	56
3.1.2.2 The Academic Qualifications(<i>experts</i>)	57
3.1.2.3 The Specialized(<i>experts</i>)	58
3.1.2.4 The Jobs(<i>experts</i>)	59
3.1.2.5 The Years of Experience(<i>experts</i>)	60
3.2.0 The study tool:	61
3.2.1 questionnaire Description	61
3.2.2 The used statistical methods	62
3.2.3 application tool study	62
3.3.0 The research questions (users)	63
3.3.1 The research questions (experts)	77
3.3.3 Data analysis and answers of the questions	130
<u>Chapter4 : the result and recommendations</u>	
4.0 Introduction	138
<i>Section one</i>	
4.1 The Results	138
4.1.1 from the point of view of users	138
4.1.2 from the point of view of experts	140
<i>Section two</i>	
4.2 Recommendations	142
4.2.1 With respect to the users	142
4.2.2 With respect to the experts	143
References	147
Appendix	149

List of Figures

Figure one : Outsourcing Decision Flowcharts	43
Figure two : illustrates the steps in the outsourcing process.	44

List of Tables

Table one: SWOT analysis of the pros and cons of outsourcing	30
--	----