

‘Saya akui bahawa telah membaca  
karya ini dan pada pandangan saya karya ini  
adalah memadai dari segi skop dan kualiti untuk tujuan penganugerahan  
Ijazah Sarjana Muda Pengurusan Teknologi (Inovasi Teknologi)’

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Tarikh : 25<sup>th</sup> Jun 2014

SUCCESSFUL IMPLEMENTATION OF  
QUOTEWIN SOFTWARE TENDERING SYSTEM:  
CASE STUDIES IN MULTINATIONAL COMPANIES

CHOOK XUA CING

Laporan ini dikemukakan sebagai memenuhi sebahagian daripada syarat  
penganugerahan

Ijazah Sarjana Muda Pengurusan Teknologi (Teknologi Inovasi)

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JUN 2014

'I declare that this degree's report is the result of my own research except as cited in reference to the literature.'

Signature :.....

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## **DEDICATION**

For my family, lecturer and friends

## **ACKNOWLEDGEMENT**

I would like to express my appreciation all those have contributed to successful completion of this project. Most especially, a big thank you to my supervisor, Dr Yusri for all his entire guidance, advices and suggestions in preparing my Bachelor Project.

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## ABSTRAK

Matlamat tujuan projek ini adalah menyiasat peranan QuoteWin dalam sistem tender dalam syarikat multinasional. QuoteWin direka untuk mempermudah pengurusan quote. Selain senang guna penggunaan, ia juga direka berasaskan Microsoft, IBM, iOS and Linux. Perisian ini menyediakan penyelesaian berskala dan fleksibel untuk menguruskan projek-projek dan bertindak laju terhadap quote yang rumit. Rangka kerja ialah Semantic-based Planning Optimization Composition (SPOC) untuk menilai permintaan sebut harga dan tender respons. Dalam kajian, empat fasa SPOC: Discovery, Planning, Quote Execution dan Optimization melaksanakan penilaian. Kajian ini adalah untuk menyiasat QuoteWin dapat memenuhi keperluan syarikat dalam kerja permintaan sebut harga. Data mengumpul daripada Flextronics Technology Sdn Bhd dan Escatec Sdn Bhd bagi mengenalpasti perisian QuoteWin sebagai alat perniagaan dalam teknologi peningkatan era. Sebagai proof-of-concept, perisian QuoteWin bertemu rangka kerja SPOC sebagai sifat tersendiri permintaan untuk quote perisian dalam syarikat. Kajian ini berjalan secara temu duga dengan pengguna perisian. Kajian ini mengenalpasti lima bahagian penting iaitu penempatan sumber bahan, dokumen bahan, perbincangan kos, mengekalkan hubungan dengan pembekal dan pemberitahuan pertanyaan untuk menjayakan proses tender. Hasil kajian ini ialah persisian ini layak sebagai alatan dalam talian untuk tender. Data yang dikumpul menunjukkan persisian ini padan dengan SPOC. Cadangan untuk perisian ini ialah menambahkan ruang untuk bahan dan tarikh yang berformat antarabangsa. Kajian ini mencadang bahawa mengadakan buku tatacara dan menambahkan fungsi perisian.

## ABSTRACT

The aim of this study is to investigate role of QuoteWin software in tendering system in multinational companies. QuoteWin software is designed to make software quote management hassle free and straight forward to the tendering system. Despite the simplicity of use, the software is sophisticated system based on Microsoft, IBM, iOS and Linux. This robust software provides scalable and flexible solution to manage and respond projects of any complexity level. A framework called Semantic-based Planning Optimization Composition (SPOC) is composed to evaluate the request-for-quote software and observe tender respond. In the study, four phase of SPOC: Discovery, Planning, Quote Execution and Optimization are implements to evaluate the software performance in company tendering system. The study is to investigate QuoteWin software fulfills requirements of company works needs to be leading business software in request-for-quote process. The data collected from Flextronics Technology (Malaysia) Sdn Bhd, and Escatec Sdn Bhd. The means of this study to identify QuoteWin software as a success business tool in technology boosting era. As a proof-of-concept, QuoteWin software met SPOC framework as distinctiveness request-for-quote software in companies. The research method of the study through interview with software users in both companies. The researcher identified five elements important to success the tendering process which are sourcing strategy, BOM document, cost discussion, maintain relationship with suppliers and enquiry notification. The finding of the study is the QuoteWin software suitable to classify as an on-line tool for tendering system. The data collected from both companies proved that the performance of this software is efficient and match with Semantic-based Planning Optimization Composition. Suggestion to the software to be column customize on BOMs and date in international format. The recommendation of the study is to develop software' consistent and consequence manual for the system and increase the function of software.

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**LIST OF ABBREVIATIONS**

SPOC	Semantic-Based Planning Optimization Composition
BOM	Bill of Material
iOS	Mobile Operating System
IBM	International Business Machines Corporation
RFQ	Request For Quote
EMS	Electronic Manufacturing Service
OEM	Original Equipment Manufacturer

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of the Study

QuoteWin software is specially design for quote management and request-for-quote processing solution for manufactures industries. The software manages all aspect of material quote management and product costing process. In this study, QuoteWin software is select for as investigate tool because QuoteWin software is adopt in the company.

Request-for-quote (RFQ) is a proposal precisely structured to meet the requirements of users. The materials quotation proposal describes items to be purchase and ask for offers from suppliers who are interest to obtain bids of the project. A complete profile of a project' material quote will pull in material cost, compare and judge by the selection criteria that the project organizations has established. In the end of process, Material Quotation Manager will evaluate and approve the materials quotation profile.

Semantic-based Planning Optimized Composition (SPOC) is the first implemented framework to compose RFQ web services, which participated into four phases: Discovery, Planning, Quote Execution and Optimization. SPOC will develop in the study to investigate the performance and benefits of QuoteWin software.

## 1.2 Problem Statement

In the study, there are many similar web based service software available in the industry, users may confuse with the similar software which facilitates creation of RFQ documents, data entry and streaming bidding process. Due to current situation in market, the researcher wants to identify the benefits of QuoteWin software features by evaluate it with SPOC to understand the software is correspond to the industry needs. In previous research by Carlo et al. (2007), SPOC is designed for RFQ in material quote management framework.

## 1.3 Research Question

The empirical research is to investigate the use of QuoteWin software in tendering system under the requirement of Semantic-based Planning Optimized Composition (SPOC) for request-for-quote (RFQ).

The research questions are below:

- i. How does QuoteWin software fulfil the four phase's requirement of Semantic-based Planning Optimized Composition?
- ii. How QuoteWin software perform efficient in tendering system?
- iii. How does the implementation of QuoteWin software improve the tender performance?



## 1.4 Research Objectives

In the past, there are not many research made on request-for-quote, because it is a minor part in the Procurement process but intended it is an important process for request seller response. Flextronics Technology (Malaysia) Sdn Bhd and Escatec Sdn Bhd have related departments for materials quotation in request-for-quote to suppliers.

The objective of the project is:

- i. To investigate QuoteWin software in the framework of RFQ process and explaining SPOC phases in company operation. The researcher want to study the strategic sourcing of the system on what to determine the best source for a project requirement with the knowledge based on factors that affect a sourcing decision.
- ii. To understand the implementation of QuoteWin software in Material Quotation Department. The researcher wants to know about the process time frame and the business performance and understand how far the system enhances the tendering process when multiple quotes turn around and perform efficient accurate data.

## 1.5 Significance of the Study

The research to study QuoteWin software' performance in tendering system and significantly leading the web-based service in Material Quotation Department in Flextronics Technology (Malaysia) and Escatec Sdn Bhd. In previous research of RFQ by Carlo et al. (2007), framework of the web-based software could be measure by Semantic-based Planning Optimized Composition. The study of the research will observe QuoteWin software about the role of business intelligent and integrating planning in Material Quotation Department. Furthermore, the researcher also studies

how QuoteWin software interacts with SPOC' phases at the web based service factors in tendering system.

### 1.6 Scope and Limitations of the study

The scope of the research is limit to the four phases of Semantic-based Planning Optimized Composition on the web-based service which is the phase of Discovery, Planning, Quote Execution and Optimization, thus other process put of SPOC in not going to discuss. The companies to investigate are limit to Flextronics Technology (Malaysia) Sdn Bhd. and Escatec Sdn Bhd only.

Several assumptions are made for this project. The first assumption is the data collection instruments would accurately generate data of the previous research. Next, it is assumed the subjects had the capacity to clearly and consistently express research concept.

### 1.7 Structure of the Study

Table 1.7: Structure of the Study

Chapter	Description
1 Introduction	The chapter discuss background of the study of the QuoteWin software, the problem statement occur in current situation, the research questions and research objectives. The studies investigate the software in tendering system and significantly identify the leading web-based services in quote management. The chapter includes the scope of study which under the four

	phases of SPOC and research limited to two companies only.
2 Literature Review	The literature review on semantic-based planning optimized composition (SPOC), QuoteWin Software, Request for Quote Process (RFQ) and quotation department in Flextronics Technology (Malaysia) Sdn Bhd and Escatec Sdn Bhd, online tools for tendering system, and tendering system.
3 Conceptual Framework	The chapter reviews the variables and factors in previous chapter. The research model is develop for conceptual framework and context of study to answer the research question and clarify the process of QuoteWin software development in quote management.
4 Research Methodology	The chapter identified the research methodology to apply in the study. Research Design in qualitative method research and exploratory research. The location of study conduct in two multinational companies who implement the QuoteWin software in the quotation department. The chapter brief on the validity, reliability and rigorous of method. The data collection method through interview and case studies, data analysing performance in grounded theory. The time horizon is cross sectional.
5 Data Analysis	The chapter analysis the information collected and coding. The transcript according to interviews respond. Presented transcript excerpts.
6 Data Discussion	The chapter discuss the information collected and identify analysis result. The discussion compare two companies respond and observation through the software, the discussion show the software fulfil the requirement of SPOC.

7 Conclusion and Recommendation	The chapter concludes the result of the study and recommend the elements for future research study.
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### 1.8 Summary

Material Quotation Department is to create the documents needs to support the processes of requesting suppliers and selecting suppliers based on materials quotation. In Flextronics Technology (Malaysia) Sdn Bhn. and Escatec Sdn Bhd, QuoteWin software is developed for the material quote management web-based services. The software intends to increases the business performance and maintains long-term customer relationships. By evaluating into Semantic-based Planning Optimized Composition, study on the software may reveal the benefits of this feature in tendering system and product strategic sourcing for resources planning.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

The previous chapter discussed about background of study and this chapter provides the background information needs to study on QuoteWin software. Section 2.2 is discussing about the definition of terms. In section 2.3, it is discussing the basic terminology of Semantic-based Planning Optimized Composition. In section 2.4, it is exploring about QuoteWin software. In section 2.5, it is reviewing the request-for-quote process. In section 2.6, it is discussing about tendering system. In section 2.7, it is exploring material quotation department in companies. In section 2.8, it is discussing about similar online tools for tendering system.

#### 2.2 Definition of Terms

According to Beaver (2014), successful implementation is measured over the complete life-cycle of the technology that would be graded on all the projects and tasks performed on the infrastructure during the complete life-cycle of the development. According to Oxford Dictionary (2013), software is the programs and other operating

information used by computer, and, case study in research is a particular instance of something used or analysed in order to illustrate a thesis or principle. According to Business Dictionary (2014), e-tendering is an internet based process wherein the complete tendering process, from advertising to receiving and submitting tender-related information are done online which enables firms to be more efficient as paper-based transactions are reduced or eliminated, facilitating for a more speedy exchange information. Electronic manufacturing services (EMS) according to Venture outsource (2006), is an industry based on providing contract design, manufacturing and product support services on behalf of OEMs and OEM define as a company that designs and specifies products under its own company brand and name.

### **2.3 Semantic-based Planning Optimized Composition**

Bryan (2011) described semantic as a study of meaning, it focuses on the relation between words and phrases due to the relationship in context. A semantic platform is an infrastructure that is able to pull in undefined data and push out defined data with the proper meaning attached in the form of new semantically relevant meta-data describing the unstructured content. It's in turn creates new insight and knowledge or people to access at the right time in a usable presentation.

According to Carlo et al. (2007), Semantic-based Planning Optimized Composition (SPOC), is an implemented framework to composed web services based on 1) Unambiguous services description. 2) Automatic services combinations to achieve a proposed goal. 3) Optimal services compositions. A minimum human intervention imply into the web services composition process, which means that user will input values and will receive the proposed web services compositions at the end. Data is requested in the middle of the process in order to execute the services and to obtain estimated quote values. User can manipulate the compositions or restart the process. It is to minimal user intervention in an automatic composition framework. SPOC divided into four phases:

Discovery, Planning, Quote Execution and Optimization. The phase of Discovery is where the services are found using semantic features. The second phase is Planning where determines which services achieve the user request based on their pre-conditions and effects. The third phase is Quote Execution concerns a simple call to each candidate web services found from the Planning phase which retrieves estimated values from each service. Finally, the fourth phase is Optimization which optimizes the composition and finds a subset of services according to the non-functional criteria. The four phase mentioned by Carlo et al. are the frameworks which specially design for RFQ process.

Carlo et al. (2007) state that the Discovery phase of SPOC is responsible for retrieving in the Profile ontology the input and output parameters, the preconditions and also the effect of the service. Thus at the end of the first phase, the web designer will have to have the location of all candidate services and the input, output, precondition and effect parameters of each candidate web services. In the second phase, Planning is responsible for determining which task will participate in the composition in which order. In the phase, composition is considered as planning problem which composed to three components: user requests, web services, and initial user parameters which represent in planning domains respectively the goal, the actions and the initial planning state. In Quote Execution phase, all candidate services found in the planning phase will called as inputs and outputs the parameters found in Discovery process for each service, the phase is responsible for retrieving the estimated quotes values from the candidate web services. The fourth phase is Optimization which responsible for making compositions using candidate services. The phase was incorporated into SPOC to guarantee the optimal compositions will be found respecting a compromise among the solutions and give results on trade off solutions.

### **2.3.1 Summary and Comment**

Currently, SPOC developed for semantic web-services, the four phases of SPOC which is Discovery, Planning, Quote Execution and Optimization are purposely designed for the request-for-quote service. The process of this four phases are the based to design and implement any semantic web-services program or software. The SPOC do act as a framework to any related or similar software, and it is the initial to start up in correlated semantic software.

### **2.4 QuoteWin software**

QuoteWin software provides intelligent quote management for Electronic Manufacturing Services (EMS) providers and Original Equipment Manufacturer (OEM) and Defence Contractors. QuoteWin software manages all aspects of the complex quote management process as well as sub-processes that contribute to the final price proposals submitted to end customers. QuoteWin software is used to streamline quote activities and data resulting in more competitive material costs, reduces quote cycle time and increased data accuracy (Polydyne, 2002)

Statement of Perunovic (2012), in Quotation Department, QuoteWin software is an application to serve as a tool for supporting the quotation process with suppliers. QuoteWin was developed to manage all aspects of the complex quote management process. QuoteWin software also utilization developed the analytical skills competence and enabled the cost management capability.

According to Reed (2006), QuoteWin software enable to upload Bill of Materials (BOMs) from the OEMs into the system and automatically plug in any contract or negotiated pricing with suppliers into the system. The pricing recorded via the database instead of sending suppliers endless RFQs. Almost 90% if the quoting process is integrate across the web.