

Master Thesis
Software Engineering
Thesis no: MSE-2003-11
June 2003



Investigation of IT/IS Outsourcing in Singapore

Angela Koh Ser Mui

Department of
Software Engineering and Computer Science
Blekinge Institute of Technology
Box 520
SE – 372 25 Ronneby
Sweden

This thesis is submitted to the Department of Software Engineering and Computer Science at Blekinge Institute of Technology in partial fulfillment of the requirements for the degree of Master of Science in Software Engineering. The thesis is equivalent to 20 weeks of full time studies.

Contact Information:

Author: Angela Koh Ser Mui

Address: 23C Polhemsgatan Lgh C11, 37140, Karlskrona, Sweden

E-mail: anko02@student.bth.se

University advisor:

Prof. Claes Wohlin

Department of Software Engineering and Computer Science

Department of
Software Engineering and Computer Science
Blekinge Institute of Technology
Box 520
SE – 372 25 Ronneby
Sweden

ABSTRACT

The concept of outsourcing information technology (IT) or systems (IS) has been around since mid 1960s. Today, it is a much talked about topic. Outsourcing has become a potentially viable business solution that many IT managers are looking into in order to remain competitive in the current dynamic business and technological environment. In Singapore, the recent IT outsourcing by DBS Bank has raised the awareness and sparked off the interest to conduct this study. The purpose of this thesis is therefore to investigate this latest IT trend and to look into the concepts and practice of outsourcing in Singapore.

An intensive literature review and an empirical survey based on questionnaire technique were conducted to learn about outsourcing concepts and practices. In the literature review, the concepts of outsourcing were explored. The different types of outsourcing practices and trends, categories of outsourcing services, drivers, benefits, risks, challenges and critical success factors of outsourcing based on the lessons learnt from past outsourcing experiences were discussed while the survey assessed the IT/IS outsourcing trend in Singapore. The survey revealed that outsourcing has been a positive experience. Generally, there are differences in views between people of different roles and there is a gap in the understanding and practice of IT/IS outsourcing in Singapore in comparison to the literature.

As part of the study, a framework based on the understanding gained from both the literature study and empirical survey was also developed in essence to be use as a methodological approach to outsourcing. The framework seeks to help organizations avoid the pitfalls of outsourcing and thereby better manage the outsourcing agreement and increases the overall success rate. It is learnt in this study that outsourcing is not a perfect and workable solution for everyone. Organizations should always stand back and examine the outsourcing option. The bottom line is outsourcing should always be backed by an objective business case. It should be not a decision that blindly follows the market trend. Organizations should not simply jump into the outsourcing bandwagon without fully comprehending the outsourcing concept. Thorough evaluation of the feasibility of such business venture is necessary.

Keywords: Information Technology, Information System, Outsourcing, Contracting

ACKNOWLEDGMENT

I would like to express my sincere thanks to my project advisor, Prof. Claes Wohlin for his advice, guidance and understanding throughout the course of thesis.

In addition, I would also like to extend my appreciation to my family and friends in Singapore and Sweden for their supports and advices.

Special thanks to the many staffs from the Information Technology Department of “Company ABC” for their assistance and help in providing all the necessary information for this study despite their busy schedules and I am also grateful all the respondents of the survey. The results would never have been obtained without their participations.

Last but not least, I would like to thank the management of “Company ABC” for the opportunity to conduct the survey within the company.

CONTENTS

Abstract	i
Acknowledgment	ii
1 Introduction	5
1.1 Background and Motivation	5
1.2 Aims and Objectives.....	5
1.3 Research Methodology	6
1.4 Structure of the Thesis	7
1.5 Reading guidelines.....	8
1.6 Summary.....	9
2 Background	10
2.1 Outsourcing Defined.....	10
2.2 Outsourcing in Singapore	11
2.3 Trends and Practices	12
2.4 Summary.....	15
3 IT/IS Outsourcing	17
3.1 Categories of Outsourcing Services.....	17
3.2 Drivers and Benefits	19
3.3 Risks of Outsourcing	22
3.4 Outsourcing Obstacles	27
3.5 Elements of Success	31
3.6 Summary.....	33
4 Empirical Study	34
4.1 Research Method	34
4.2 Design of Research	36
4.3 Summary.....	41
5 Survey Results	42
5.1 Survey Responses	42
5.2 Presentation and Analysis of Survey Results	44
5.3 Discussion.....	64
5.4 Summary.....	66
6 Framework Proposal	68
6.1 Introduction	68
6.2 Outsourcing Framework	69
6.3 Conclusion.....	85
6.4 Summary.....	85
7 Conclusion	86
7.1 Conclusion.....	86
7.2 Future Work.....	87
7.3 Summary.....	88

References	90
Appendix A: IT/IS Outsourcing Survey	A-1
Appendix B: Table of Contents for Request of Proposal (RFP).....	B-1
Appendix C: Key Area of RFP	C-1
Appendix D: Outsourcing Contract Outline	D-1
Appendix E: Definitions and Abbreviations.....	E-1

1 INTRODUCTION

This chapter seeks to introduce this master thesis and the research goals and questions. In addition, an overview of the research methodology, outline of this thesis and reading guidelines are also provided

1.1 Background and Motivation

In the current dynamic business and technological environment, many companies, large and small, are starting to realize the competitive advantage that information technologies (IT) can bring to the company. However, to stay current with technologies requires a great deal of effort, risk and expense [Williams 1998]; the development and maintenance of new technological infrastructures are both costly and time-consuming [Chen and Soliman 2002, citing Holohan, 2000]. In addition, as quoted by [Hoch et al. 1999] “software has a reputation for going haywire and taking both company and client down with it”. In the quest of delivering information services more efficiently, many IT managers are looking into outsourcing as a potentially viable business solution.

IT/IS Outsourcing became very popular in the 1990s after the success obtained by Eastman Kodak with the externalization of its information systems to IBM, DEC and Businessland [Lacity and Hirschheim 1995, Claver et al. 2002]. “Customers are increasingly turning to IT outsourcing. This tendency toward one-stop shopping will substantially affect the future shape of the software industry” [Hoch et al. 1999]. The rapid growth in IT outsourcing in the past decade has therefore encouraged much literature and research to be conducted in this area. However, the primary focus of the literature has been on the industrially developed nations of the West. As noted by [Shandre 2002], “While outsourcing is not a novel concept, acceptance has been relatively slow in the Asia Pacific region.”

Although the IT outsourcing concept has not been very popular in the Asia Pacific region in the past 5 to 10 years, it is becoming more prevalent now. Gartner predicted in 2002 that most companies in Asia are starting to jump on the outsourcing bandwagon [Yap 2003a]. In Singapore, the recent IT outsourcing by DBS Bank [Yap 2003b], one of the largest financial service providers in Singapore and Southeast Asia's largest lender, has raised the awareness and sparked off the interest towards IT/IS outsourcing. The announcement that DBS is outsourcing many IT functions to IBM, including all the infrastructure management—of desktops, local and wide area networks, open systems servers and data centers as well as the predominantly mature, mainframe-based legacy applications in the applications area signified that the scope and types of outsourcing may be advancing towards a larger scope. This thesis is thus an attempt to study this phenomenon and to gain an insight of the concepts and practice of IT/IS outsourcing in Singapore.

1.2 Aims and Objectives

The aim of this study is to evaluate the IT/IS outsourcing trend that is getting more prevalent in Singapore. The objective of this thesis is to study this phenomenon and to gain understanding on the concept of IT/IS outsourcing, including the identification of the drivers, risks, critical success factors and benefits of outsourcing. An investigation to identify if there is a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature is also made.

The main research questions to be addressed in this thesis are as followed:

- Which type of IT/IS outsourcing is most prevalent in Singapore?

- Is there a trend to advance towards a larger scope?
- What are the outsourcing drivers?
- What are the risks and success factors?
- Is there a difference in views between people of different roles?
- Is there a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature?

1.3 Research Methodology

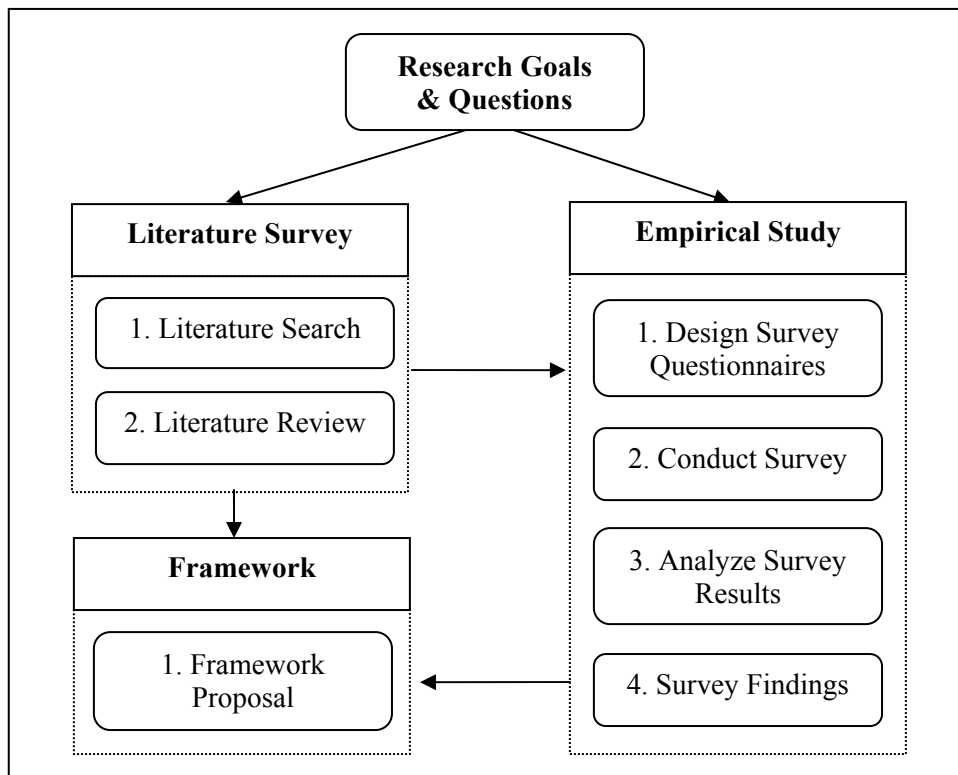


Figure 1-1: Research Roadmap

This thesis is an evaluation project that takes on the survey approach. As illustrated in the above figure, an intensive literature survey is first carried out and the survey is then designed and conducted. The results from the survey are next analyzed and lastly a framework is proposed.

➤ Literature survey

As highlighted by [Dawson 2000], literature survey is the initial foundation of the project and is composed of two main components, a literature search and a literature review. The first step taken is to systemically search for relevant information and knowledge about IT/IS outsourcing before conducting a detailed and critical evaluation of the literature. The goal is to gain knowledge and understanding of the IT/IS outsourcing concept including the identification of the drivers, risks, critical success factors and benefits is thus achieved by conducting an intensive literature survey.

➤ Empirical Study - Survey

A survey approach through the use of questionnaires is adopted as the research method. The intention of this exploratory study is to seek insights and to assess the IT/IS outsourcing trend. The survey will help to answer the research questions of whether which type of IT/IS outsourcing is most prevalent in Singapore

and is the trend advancing towards a larger scope. More importantly, it seeks to evaluate if there is a difference in views between people of different roles. In addition, the results and findings analyzed from the survey provide an indication on whether there is a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature. The survey is conducted in one company which is a statutory board in Singapore. As the company likes to remain anonymous, the company is known as “Company ABC” throughout this thesis.

➤ **Framework**

With the knowledge gained from the literature survey and findings from the questionnaires survey, a framework for IT/IS outsourcing is proposed for companies who like to learn more about successful outsourcing management, especially for “Company ABC”.

1.4 Structure of the Thesis

In the earlier sections, an introduction to the background and motivation of the study are given. The increasing acceptance of IT/IS outsourcing in Singapore has initiated a need to study this trend. Outsourcing is elevating quickly and becoming an increasingly viable option for large and medium businesses. Fundamental business events, such as increased competition and the subsequent increasing focus on core competencies are forcing organizations to carefully consider what tasks should remain in-house and what projects should be outsourced to the IT vendors. In the following chapters, more discussions with respect to the literature review, design and outcome of this study are presented.

1.4.1 Literature Review

Chapter 2 and 3 provide an introduction to the concept of IT/IS outsourcing. These two chapters summarize the knowledge and understanding gained from the intensive literature review. The intent of these two chapters is also to give the reader a background about the theory that exists and that is discussed in this study. They are important and useful to readers that have a limited knowledge and experience in this field.

Chapter 2 seeks to present the background of this study. The first part of this chapter provides an outline of what is outsourcing and a brief history of outsourcing. The second part of this chapter continues the discussion on the outsourcing in Singapore and lastly touches upon the various trends and practices of outsourcing.

Chapter 3 explores the concepts of outsourcing by looking into the categories of outsourcing services, the drivers, benefits, risks, challenges and critical success factors of outsourcing based on the lessons learnt from both successful and unsuccessful outsourcing reports.

1.4.2 Empirical Study

Chapter 4 and 5 give an overview of the design and findings of the survey conducted in this thesis.

Chapter 4 comprises of two parts. The first part provides the relevant theoretical concepts on how to conduct an empirical study while second part presents the design and structure of the survey used in this thesis.

Chapter 5 presents the survey that was conducted in this study and analyses and evaluates the results of the survey. Based on the findings of the survey, this chapter also compares and analyses if there is a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature.

1.4.3 Proposed Framework

Chapter 6 illustrates a framework on IT/IS outsourcing, designed based on the knowledge gain from both literature review and findings of the surveys. The framework provides a guideline on the arrangement and issues that companies need to take note of when considering the outsourcing approach.

1.4.4 Conclusion

Chapter 7 is the last chapter that concludes this study and therein, discusses and suggests future research directions that could be conducted in this area.

1.5 Reading guidelines

1.5.1 Audience

The intended audience for this master thesis is anyone with interests in the IT/IS outsourcing trend. It is recommended that the reader has some general knowledge and understanding in this field so as to fully understand and take advantage of the theories and discussions. Nevertheless, theory chapters that provide a foundation for the reader are given.

1.5.2 Instructions

The following terms that are used throughout this thesis shall be interpreted as follows:

- One, should be interpreted as he/she
- He, should be interpreted as he/she
- His, should be interpreted as his/hers
- Outsourcing, should be interpreted as IT/IS outsourcing unless specified otherwise
- Information technology (IT) and information systems (IS) are used interchangeably

1.5.3 Scope and Limitations

The scope of this master thesis is to study the IT/IS outsourcing phenomenon and to identify the outsourcing drivers, risks and success factors. This thesis also attempts to evaluate if there is a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature.

In order to be able to produce this thesis within the limited time of the project, it should be noted that the work has been conducted under the following limitations:

- The survey is carried out within one company, “Company ABC”, instead of multiples companies. (Chapter 4)
- No attempts are made to improve the outsourcing practice in the company. The proposed framework (Chapter 6) is the outcome consolidated from the findings of the survey and literature review.
- No validation of the results through discussion with industry experts are conducted as the study is an academic research study and the company would also like to remain anonymous.
- No attempts are made to influence nor suggest the outsourcing direction of the company.

1.6 Summary

In the current dynamic business and technological environment, many IT managers are looking into outsourcing as a potentially viable business solution so as to deliver information services more efficiently. In Singapore, the recent IT outsourcing by DBS Bank has also raised the awareness and sparked off the interest towards outsourcing. The purpose of this thesis is therefore to investigate into this latest IT trend, to look into the concepts and practice of outsourcing in Singapore. This chapter provides an overview of the background and motivation of this thesis and outlines the research goals and questions this study seeks to achieve. The research methodology deployed for this study as well as a short presentation of the other chapters in this report are also provided. In addition, reading guidelines that provide information on this report and limitation of this study are also given.

2 BACKGROUND

This chapter aims to introduce the background of this study. The definition of outsourcing is first provided before introducing Singapore and the context of outsourcing in Singapore. The discussion then continues to touch upon the various types of outsourcing known in current literature.

2.1 Outsourcing Defined

The concept of outsourcing information technology (IT) or systems (IS) has been around for a long time and hence there are much literature and research that have been conducted in this area. However, as per the text by [Hackney and Hancox 2000, citing Glass 1996], “precise definition of IT outsourcing differs in the literature”. Outsourcing in IT has been called different things, including sub-contracting, contracting-out, professional services, contract programming, facilities maintenance or management, systems management, etc. In general, outsourcing means “contracting out work” [Minoli 1995].

Throughout this thesis, the adopted definition of IT/IS outsourcing is the practice of turning over part or all of an organization's IT/IS functions, assets, resources and/or related services, to one or more external service providers, known as outsourcers, for required result [Willcocks and Lacity 1998]. Numerous authors [Minoli 1995, Kakabadse and Kakabadse 2002, Kern and Willcocks 2001, Lacity and Hirschheim 1995] have also complemented this definition where they describe outsourcing involves contracting with a third party to provide information products and services that were previously provided internally/ in-house. For example, [Kern and Willcocks 2001] defined outsourcing as “the handling over to a third party of the management and operations of an organization’s IT assets and activities.” The definition given by [Lacity and Hirschheim 1995] is also rather similar; outsourcing according to them is “the use of a third party vendor to provide information products and services that were previously provided internally.”

Outsourcing is not a new idea. It is just a new term for an old concept. In the mid 1960s, firms are turning to computer services bureaus, third party technology firms, to obtain contracted automated supports [Applegate et al. 1999]. Computer services bureaus ran a variety of programs that were both customized and general-purpose, and the individual firm had to accommodate its operations to the standard options in the package. The services bureau generally dictated the technology the customer used and its pace of change, and most of these customers were mostly small and medium size firms. One example of a provider is Perot’s Electronic Data Systems (EDS). EDS was handling data processing services for Frito-Lay and Blue Cross as early as in 1963 [Lacity and Hirschheim 1995]. Other outsourcing options such as the use of contract programmers, timesharing and purchase of packaged software have also been widely used for two decades.

An early form of outsourcing typically dealt with single-system contracts comprising a small portion of the IS budget. Today outsourcing has recently grown to span multiple systems and represent a significant transfer of assets, leases and staff to a vendor that now assumes profit and loss responsibility. Eastman Kodak’s decision to outsource its information systems (IS) function in 1988 to IBM, DEC and Businessland was the seminal event that attracted public attention [Willcocks and Lacity 1998, Applegate et al. 1999, Lacity and Hirschheim 1995, Claver et al. 2002]. Kodak took an aggressive move in outsourcing mainframes, telecommunications, and personal computers (PCs); and was the first visible Fortune 500 company to argue that IT was primarily a commodity best handled by expert vendors. Other companies have found it acceptable to transfer their IS assets, leases, and staff to third party vendors, are following Kodak’s example and are jumping onto the outsourcing bandwagon [Willcocks and Lacity 1998].

“In recent years, outsourcing has been one of the information services that has grown the most and this rising trend is seemingly going to be maintained in the near future” [Claver et al. 2002]. Indeed, even in the current economic crisis where outlook for IT services spending is gloomy, the outsourcing phenomenon is expected to grow. In the U.S. Services 4Q 2002 Forecast by Vertical Market, 2002-2006, IDC, a division of International Data Group (IDG), one of the leading IT media and research companies, sees that only outsourcing and training will experience real growth by 2006 compared with 2001 spending levels. Anne Lu, Gartner Dataquest analyst, also identify “outsourcing, both in IT and business processes, will continue to post growth.” Lu predicts that by 2006, spending on outsourcing will be more than US\$41 billion, an increase of more than 7 percent over 2001 [Keizer 2003]. In another report [Yap 2003a], Gartner also predicts a boom in the Asia’s outsourcing market. According to its chief analyst, IT services, Rolf Jester, the current outsourcing market in Asia is worth about US\$4.7 billion; it is estimated that the market will grow to US\$8.3 billion by 2006, a compound annual growth rate of 18.5 percent.

2.2 Outsourcing in Singapore

Singapore is a small country located in Southeastern Asia between the islands of Indonesia and Malaysia. From a developing nation from the 1960s, Singapore has successfully transformed itself into a developed nation with modern facilities and world class infrastructure today. The Singapore government has recognized that today new economy is extrapolated from the past. The new economy is characterized by the three themes of speed, connectivity and intangibles. Mr Lim Boon Heng [SPRING 2000], chairman of SPRING Singapore, highlighted that in the new economy, “everything is becoming electronically connected to everything else: products, people, companies and countries.” In the new economy, quality is a mere passport to competition. Speed, the ability to be ahead of others in all aspects, is the differentiating factor. As such, many initiatives have been undertaken by the Singapore government to help make Singapore a more competitive nation.

Apart from having a high literacy rate of 93 percent, Singapore is also known for the high computer literacy rate of its citizens. The nation was ranked number one in terms of computer literacy in 1994 by the World Competitiveness Report [Johnson 1996]. Recently, Singapore has even emerged as the third most information technology-savvy country in the world as reported in the first Networked Readiness Index, compiled by Geneva-based World Economic Forum (WEF) [Dutta et al. 2003, SingaporeBites 2003]. According to The WEF [SingaporeBites 2003], “Singapore, which ranked third, is most notable for ranking No.1 not only in terms of the political/regulatory environment but also in terms of the readiness of its government to employ information communications technology (ICT) in its internal processes and delivery of services.”

Clearly, IT plays a very large part in Singapore's economy. The use of IT is a major part of Singapore's strategy into the 21st century. Singapore’s government is constantly promoting Singapore as a "global hub in Asia for the digital economy" [Gwee and Lim 2001]. The reason behind this strategy is to make Singapore a more competitive nation and ideally the springboard for the rest of the Asian market. If Singapore can move forward using IT, the investment potential will continue to rise as organizations from around the world realize that they can use this to their advantage.

The Singapore’s government has been actively promoting and encouraging small and medium-sized enterprises (SMEs) to adopt e-commerce. The key strategy to encourage SMEs to jumpstart their online capabilities is by using "ready-made packages" offered by e-commerce service providers [Gwee and Lim 2001]. Such move is actually an outsourcing approach that offers a cheaper, faster alternative for SMEs to access a ready pool of online buyers and sellers, instead of developing their own e-commerce projects from scratch. Therefore, outsourcing phenomenon is not a totally new trend in Singapore. In fact, the Singapore government has always been a strong advocate of outsourcing. Most government agencies now outsource not only the development of IT applications, but also the operation and maintenance of such systems [Yeoh 2002]. In the private sectors, such as the banking and manufacturing industries, many

executives are also increasingly turning to outsourcing IT functions as a means of staying competitive and focusing attention and resources on core business activities.

In Singapore, outsourcing specific IT components is more common although there is a growing global trend towards outsourcing entire business operations or processes. As technology is becoming more of a commodity, the hardware and software technology being implemented across organizations is becoming increasingly similar. Packaged applications and industry standard platforms are replacing the norm in 1970s and 1980s of having customized applications developed in-house. Organizations in Singapore tend to look to outsourcing to address support issues, such as hardware support, networking and communications [Tang and Tan 2002]. Some organizations also turn to outsourcing to resolve their problems on the lack of skilled manpower. These organizations in Singapore are having difficulties finding and keeping skilled, experienced IT staffs in the small nation and are turning to outsourcers to implement new projects.

However, despite the IT advancement in Singapore, many local companies have been rather conservative in their outsourcing practices. Singapore although has the advantages of proximity to countries such as India and China whereby IT resources are generally abundant and cheaper, global outsourcing is still currently in the infancy stage as compared to the western countries. DBS may be the first local bank and large corporation in Singapore to outsource a big portion of its IT operations although two other local banks, UOB and OCBC, have already outsourced selective IT functions [Tang and Tan 2002]. Most local companies in Singapore do not really deploy outsourcing in a big way. According to Mr O'Brien [Chen 2002], Strategic Intelligence's Hong Kong based research director for advisory services, SMEs typically have been more averse to considering outsourcing solutions because of the data security concern. Asian markets in general have a lower risk tolerance threshold, so does the SMEs in Singapore.

Nevertheless, it was predicted that Singapore will experience an outsourcing boom. Global outsourcing trend has arrived in the region although it is already later than most. There have been signs in the market supporting this outsourcing observation. For instance, Electronic Data Systems (EDS) has recently beefed up its Singapore operations and is negotiating with several banks in Singapore to offer IT outsourcing solutions [Tan 2002]. Similarly, "Oracle is making a concerted push for software outsourcing in Asia Pacific and expects it to be the next growth driver for the company" [Wee 2002a]. As reported by [Wee 2002b], Gartner estimates that the market for IT Management Services in Singapore is expected to grow at a compound annual growth rate of 14.4 percent from US\$331 million in 2001 to US\$648 million by 2006.

Singapore hence presents a unique context to study the outsourcing trend. Singapore although is a developed nation, is part of the Asian markets. There is a need to assess the risks and concerns of the Singapore companies and in turn seek to understand the best practices in managing successful outsourcing in Singapore. At present, there is a lack of literature surveys exploring the outsourcing practices in Singapore. Most reports and best practices in the current literature are focusing on the industrially developed nations of the West. It is therefore important and essential to understand the practice of outsourcing in Singapore, especially within the government agencies and the local companies, since outsourcing is gaining its momentum in Singapore now.

2.3 Trends and Practices

As part of the background, it is important to understand the types and trends of outsourcing practices that are prevalent today. A look into the current literature on outsourcing reveals that outsourcing can be broadly classified into three basic types namely,

- **Selective outsourcing**
Selective outsourcing or partial outsourcing implies that only a subset of the IT activities is outsourced. Under such agreement, IT is viewed as a portfolio of activities, some of which are owned and managed in-house, and some of which are outsourced. It is claimed by [Kern and Willcocks 2001, Lacity and Willcocks 2001, Willcocks and Lacity 1998] that their studies and surveys concluded that selective outsourcing is the most common practice and has proven as generally successful.
- **Transitional outsourcing**
Transitional outsourcing is the practice of temporarily outsourcing during a major transition to a new technology. It has been gaining momentum to become available solution to manage the migration from legacy systems to client/server applications. Sun Microsystems's three year US\$27 million dollar contract with CSC is one of the first highly advertised cases of transitional outsourcing [Willcocks and Lacity 1998]. Sun's staff built client/server systems while CSC ran Sun's legacy systems.
- **Total outsourcing**
Total outsourcing can be referred to as "outsourcing in totality" [Barnatt 1996]. It is used to indicate that possibly all hardware and software provision and support (in practice about 90 percent) across an organization becomes the responsibility of an external vendor. The internal IT department of the organization will either downsize dramatically or cease to exist. Transfer arrangements will at times be made for the internal IT staffs to remain as employees of the vendor. Total outsourcing contracts are primarily fixed-price, exchange-based and long term deals. According to [Kern and Willcocks 2001], "total outsourcing emerges as a distinctly high risk practice".

In addition, observations by [Kern and Willcocks 2001, Lacity and Willcocks 2001] have indicated that new types of outsourcing practices and development have emerged and take off. The following list, although is not exhaustive, provides an outline of the emerging practices and developments.

- **Smarter contracting**
More and more organizations are examining options and exploring for better deals. One such practice is the inclusion of a customer written contract with the Request for Proposal. Others have built in competitive bidding for services beyond the contract, though competition does not always protect the customer from suppliers who are reluctant to support contracts with other vendors. Flexible pricing mechanism is the next growing practice that is being adopted to alter prices within one contract. Some of the other practices include negotiating shares in their suppliers' savings, using third party benchmarks and market rates to test supplier price annually, seeking the best price in line with what suppliers offer to their most favored customers, or adopting 'open book' accounting on supplier's costs which is the disclosure of the supplier's anticipated costs and savings to its customers.
- **Offshore outsourcing**
Offshore outsourcing is mainly about taking advantage of programming and software development expertise and lower prices emerging in countries such as India, Ireland, Israel, China, Russia and Mexico. The main motivation of offshore outsourcing is the attractive labor rate differentials which result in significant cost savings. However, there are also pitfalls including problems on communication and coordination, and lack of controls over quality and time schedule, etc.

- **Value-added outsourcing**
 With value-added outsourcing, the client and vendor partner combine strengths to add value to market IT products and services. As each partner shares the revenue generated from external sales, the partnership is not based on exchange, but rather an alliance with shared risks and rewards. To be successful in value-added outsourcing, the partners must truly add value by offering products/services demanded by customers in the market. An example of value-added outsourcing is Kodak and IBM formed Technology Service Solutions to provide multi-vendor PC maintenance and support services to the manufacturing industry [Willcocks and Lacity 1998].
- **Equity holdings**
 In short, equity holdings mean “taking ownership in each other’s companies. One example is the 1996 Perot Systems-Swiss Bank deal [Kern and Willcocks 2001]. Swiss Bank Corporation (Swiss Bank) in Basel, Switzerland, signed a 25-years outsourcing deal with Perot Systems and the partners agreed to sell client/server solutions to the banking industry. The bank had an option to acquire up to 25 percent share in Perot Systems while Perot Systems took shares in the software company Systor AG - owned by the bank.
- **Co-sourcing**
 Co-sourcing was originally devised by EDS to describe its own version of partnership outsourcing. Co-sourcing refers to performance-based contracts by which the vendor seeks to achieve and get rewarded on improving the client’s business performance, not just delivering on its IT goals. Quoted from [Willcocks and Lacity 1998, citing Moran 1996], EDS vice chairman Gary Fernades said: “Co-sourcing goes beyond marginal reductions in IT costs to the effective alignment of IT assets and expenditures with business objectives. The result is the enhancement for the entire enterprise.”
- **Multiple suppliers**
 This approach adopts the logic of hiring the ‘best of breed’ supplier for specific IT activities. British Petroleum Exploration’s (BPX) five year contracts with SEMA, Syncordia, and SAIC in 1993 is one example of a multiple suppliers outsourcing deal [Kern and Willcocks 2001]. BPX reported that this strategy reduced the IT staff by 80 percent, and reduced IT operating costs from US\$360 Million in 1989 to US\$132 million in 1994. With multi sourcing, the risks of going with single suppliers are mitigated. However, additional time and resources are required to manage multiple suppliers. The key to multi sourcing is vendor co-ordination and management.
- **Spin-offs**
 A spin-off supposedly empowers the IT entity to behave like a vendor. This idea is to create a separate company out of an effective IT function. Spin off companies can focus on marketing mentality, one which delivers good customer service at competitive prices. However, in reality, companies such as Mellon Bank, Sears Roebuck, Kimberly-Clark and Boeing have had limited success with their spin-off IT companies [Willcocks and Lacity 1998, citing Vebkatraman 1997]. Usually, the empowered IT function is too dependent on the former/parent company for business, and has difficulties in getting new business.
- **Application services providers (ASP)**
 The definition of ASP provided by [Kern and Willcocks 2001] is “provision of ‘pay-as-you-use’ access to centrally managed applications distributed over the Internet and other networks.” Firms such as Oracle, SAP, Microsoft and many others are offering remotely hosted software that can be applied across the complete enterprise. The market size has been predicted by Gartner and IDC to rise from US\$150 million in 1996 to anything between US\$11.3 billion and US\$21 billion in 2003.

- **Business process outsourcing (BPO)**

BPO is outsourcing a process and its IT, identified as 'non-core', which a third party can do at least as well, at competitive price [Lacity and Willcocks 2001]. It has become one of the fastest growing segments of the outsourcing market. BPO is intensively collaborative because it rests on integrating the BPO client's skills, technology base and processes with the BPO provider's distinctive offerings; strengthening capabilities along the value chain [Keen 2002]. For instance, in early 2000, BP announced the outsourcing of its human resource function, including its IT components on a US\$600 million five years deal with Exult, based in Irvine, California. BP outsourced the administrative and IT burden, keeping only 'the things that required judgment and policy' [Kern and Willcocks 2001]. Although BPO is a logical extension of IT outsourcing, customers must incorporate the planning and learning acquired through prior IT outsourcing experience.

- **Backsourcing**

Several organizations have cancelled contracts and brought IT back in-house. Such a practice is referred to as backsourcing or insourcing. Quoting the example given by [Kern and Willcocks 2001], East Midlands Electricity in 1999 cancelled its 1992 twelve-year total outsourcing deal with Perot Systems. By 1995, East Midlands had redefined the importance of IT to business and began rebuilding its in-house skills. Backsourcing mainly occurs due to changing requirements and contexts, or from the realization that the IT activities were better positioned in-house.

- **Shared services**

As the name implies, shared services is the sharing of services by several companies. The services are typically managed by a technology provider such as Oracle. The development of shared e-procurement exchanges, the online marketplace for business-to-business purchase and sale of suppliers and services, throughout many sectors from early 2000 onwards is also based on this logic.

2.4 Summary

IT/IS outsourcing is the practice of turning over part or all of an organization's IT/IS functions, assets, resources and/or related services, to one or more external service providers for required result. Outsourcing has existed for a long time, since mid 1960. Today outsourcing has been predicted and observed by many as gaining momentum, even in the Asia Pacific region.

Singapore is an information technology-savvy country located in Southeastern Asia. The use of IT is a major part of Singapore's strategy into the 21st century. Singapore's government is constantly promoting Singapore as a "global hub in Asia for the digital economy" and has been actively encouraging the SMEs to adopt e-commerce by deploying outsourcing approaches. Most local companies in Singapore do not really deploy outsourcing in a big way. Outsourcing specific IT components is more common as Asian markets in general, have a lower risk tolerance threshold. However, it has been observed and predicted that the global outsourcing trend has arrived in the region. Thus, there is a need to assess the risks and concerns of the Singapore companies and to understand the best practices in managing successful outsourcing in Singapore. The unique context of Singapore and the lack of current literature surveys exploring the outsourcing practices in Singapore have initiated a more in-depth study in this area in view that outsourcing is getting more prevalent in Singapore.

There are many types and trends of outsourcing practices today. Based on the current literature, outsourcing can be broadly classified into three basic types namely, selective outsourcing, transitional outsourcing and total outsourcing. Observations by various authors also indicated that new types of outsourcing practices and development have emerged and taken off. Some examples of the new trends

and practices are smarter contracting, offshore outsourcing, co-sourcing, application services providers (ASP), business process outsourcing (BPO), etc.

3 IT/IS OUTSOURCING

This chapter explores the concept of IT/IS outsourcing. The first part of this chapter highlights the different categories of outsourcing services while the second part is devoted on outlining the outsourcing drivers and benefits. The discussion next continues to highlight the risks and challenges which include touching upon the people factor, distinctive nature of IT as well as some of the other problem areas of outsourcing. The discussion ends with highlight on the success elements of outsourcing.

3.1 Categories of Outsourcing Services

In the 1970s and most of the 1980s, the majority of outsourced IT work was for low-end services such as tape cleaning and keypunching; the more complex tasks were handled by in-house IT shops. However, in the mid 1990s, interests in IT/IS outsourcing have expanded the definition of what an information service compassed. Today, IT/IS functions and services embraces virtually all types of computer and communication technologies and all forms of activities that are associated with acquisition, development, implementation and management of these technologies. Within the IT/IS outsourcing marketplace, there is therefore a wide variety of IT/IS functions and activities that can be outsourced. Some examples of the outsourced functions and activities include:

- Packaged Application / ERP Application
- Intranet/Internet/E-commerce Application
- Intranet Application
- Application Development
- Applications Maintenance
- Legacy Systems Maintenance
- Staffs/Users Training
- Systems Implementation
- Data Center Management
- Telecommunication functions
- Network Services
- Desktop Systems
- Technical Support
- Help Desk
- Software Distribution/Management
- Quality Management
- Security and Disaster Recovery

Among the wide variety of functions and services, applications development, applications maintenance, data center management and network services are the more common outsourced functions and activities. A number of business analysts' reports in the recent years have reported this finding. In the industry trend report by IT Pros [Goth 1999], as shown in Figure 3-1, Gartner group predicted in 1999 a tremendous growth in the spending on these areas. Likewise, this finding is also reported in the survey conducted by [InfoWorld 2001] whereby 100 technology professionals shared their services choices. The Outsourcing Institute also reported similar trends in their IT Outsourcing Index 2001 [Casale 2001].

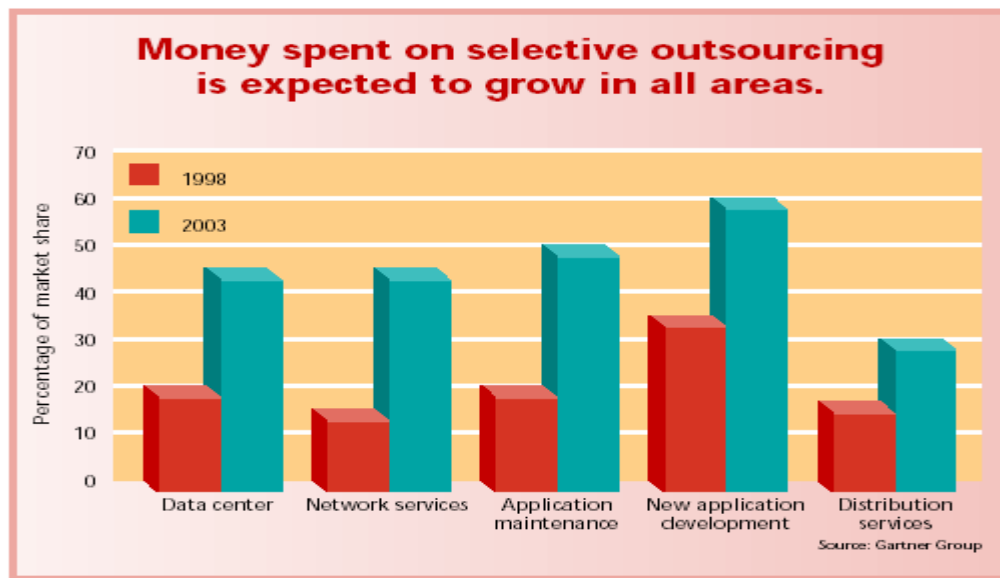


Figure 3-1: Outsourcing Categories

The following sections explain each of these five different categories as shown in Figure 3-1.

3.1.1 Application Development Outsourcing

In the application development cycle, the services involve definition of requirement to systems construction and testing till turn-over of the application to production. Outsourcer, in applications development outsourcing, delivers customer-specified or tailor-made solutions to meet company needs. Apart from engaging in the full systems life-cycle development and management, the outsourcer is also expected to provide unique and personalized services.

3.1.2 Application Maintenance Outsourcing

Applications system maintenance is the performance of those activities required to keep a software system operational and responsive after it has been accepted and placed into production. In application maintenance outsourcing, the outsourcer assumes the responsibilities and ownerships for implementing corrective actions, changes, improvements and enhancements as well as managing the process.

3.1.3 Data Center Outsourcing

Data center outsourcing allows companies to house their network and data equipment offsite. Storing data and equipment in a monitored, secured, fully managed center, companies may save time and resources involved in installation, configuration and upkeep while taking advantages of the bandwidth and supporting facilities offered by the outsourcer.

3.1.4 Network Services Outsourcing

Network infrastructure outsourcing enables companies to have their own managed and integrated enterprise network infrastructure without having a strong network technical support team and large amount of reserved network resources. With a well-designed and managed network, companies enjoy the advantages of the bandwidth, stability and supporting services provided by services providers.

3.1.5 Distributed Services Outsourcing

Current complex processing environment and dramatic growth in PCs usage have denoted a demand for distributed services outsourcing. The type of services in such outsourcing arrangement includes help desk and network services management, PCs asset management/IT life-cycle management, end user supports, etc. The role of the outsourcer is to ensure the company's services and supports are tightly integrated.

3.2 Drivers and Benefits

The growth of outsourcing in the world markets is rooted in strong business motivations and the drivers behind this growth varied. Most turn to outsourcing for either strategic or tactical reasons. At the strategic level, companies are looking for ways to gain or retain competitive advantage using IT, such as providing new products or services without excessive costs or delays. It may also be a strategy for reducing the risks associated with a new system through an alliance or a partnership with an outside firm. The tactical advantages offered by outsourcing to companies striving to cut costs include the economies of scale that occur when mass producing a good results in lower average cost, and primacy of focus on core businesses. In short, the option for outsourcing usually arises due to one or more of the top 10 reasons [OutsourcingCentre 2002] which are further elaborated in the following sections.

3.2.1 Strategic Reasons

The following are the strategic reasons of outsourcing that support business goals and objectives:

- **Improve company focus**

One of the most frequently cited reason for outsourcing is the need for businesses to focus on their core businesses. By outsourcing, companies are able to spend less time on the management of routine IT services and operational functions. Companies are freed from devoting energy to areas such as information center management and hardware acquisition that are not in its expertise. The company can focus its business efforts toward higher level business issues and focus its resources on meeting its customers' needs, instead of trying to keep up with fast changing IT trends and technologies which is a time-consuming process. DBS Bank's CIO, Steve Ingram, stated that one of the objectives for the bank to outsource is "be able to focus our attention on those core activities that add distinctive value to the bank" [Yap 2003b].

- **Gain access to world-class capabilities**

The primary business of outsourcers is to manage technology for clients. Therefore, they will make extensive investments in technology, methodologies, and people. In addition, by working with many clients facing similar challenges, outsourcers also gain expertise. This combination of specialization and expertise gives clients a competitive advantage and helps them avoid the cost of chasing technology and training since technology can change drastically within a short period of time and the resources required to keep up with these developments can get rather significance. Furthermore, the outsourcers will keep the clients informed of all advances in the industry that may be of benefit to them. As such, the client will have a choice of implementing the latest computer technology as soon as it becomes available.

- **Free internal resources for other purposes**

Every organization has its limits with respect to its available resources. Outsourcing permits an organization to redirect its resources from non-core activities toward building knowledge sets with long-term pay back and impact on innovation. The organization can redirect its people and resources onto greater value adding activities. Those who are currently concentrating on the internal issues can now focus externally on activities that serve the customers.

- **Accelerate reengineering benefits**
Reengineering aims for dramatic improvements in cost, quality, service and speed. However, while companies struggle to continually improve their performance by reducing costs, improving quality, service and speed, they face a conflict between investing in non-core process improvements versus the need to invest in their core businesses. As non-core functions lose the battle and get put on hold, systems become less efficient and less productive while the cost to update them becomes increasingly higher. By outsourcing a non-core function, the organization will be able to start seeing the benefits of reengineering. In fact, according to [Corbett 2001], “understanding the relationship between reengineering and outsourcing is central to getting the intended value out of these strategies.”
- **Share risks**
One cannot underestimate the risks associated with any investment that a company makes today. Markets, competition, government regulations, financial conditions and technologies are all changing at an ever quickening pace in today’s business environment. Companies are realizing that they are facing high risks to stay current with the pace of rapid changes. When companies outsource they become more flexible, more dynamic, and better able to adapt to the changing opportunities. Outsourcing providers make investments on behalf of many clients and shared investment spreads risk. Shared investment means lower investment, lower risk and greater rewards, which significantly reduces the risk born by a single company.

3.2.2 Tactical Reasons

On the tactical side, outsourcing supports cost-saving efforts in various manners:

- **Cash infusion**
Outsourcing may involve the transfer of assets from the companies to the outsourcers. Usually, outsourcers absorb many of the assets and employees related to the outsourced services. Equipment, facilities, vehicles and licenses used in the current operations have value and are sold to the outsourcer as part of the transaction resulting in a cash payment. This cash can then be used in other parts of the operation. Similarly, some contracts involve an up-front payment by the outsourcer to the company of anticipated savings during the first few years of the contract. Similarly, this cash is then immediately available for investment elsewhere.
- **Reduce and control operating costs**
Companies that try to do everything themselves may incur vastly higher research, development, marketing and deployment expenses. Subsequently, these costs are passed on to the customers. Outsourcers, on the other hand, can frequently provide IT services at a lower cost as their economies of scale and geographic reach in their operations enable them to manage activities more cheaply. Outsourcers have the ability to run a leaner management structure because of increased competence and critical mass volumes of work. British Petroleum Exploration’s (BPX), for example, was able to reduce their overall IT operation costs from US\$360 million before outsourcing to US\$132 million after outsourcing [Kern and Willcocks 2001]. Hence, outsourcing may reduce a company's ongoing operating costs and increases its competitive advantage.
- **Make capital funds available**
There is tremendous competition within most organizations for capital funds. Deciding where to invest these funds is one of the most important decisions that senior management makes and is often hard to justify for non-core capital IT investments. Outsourcing can reduce this need to invest capital funds in non-core functions. Instead of acquiring the resources through capital expenditures, they are contracted for on an “as used” operational expense basis.

- **Function difficult to manage/out of control**

Outsourcing is certainly one option for addressing this problem. However, it is vital to understand that outsourcing is not a panacea for all inadequacies. Outsourcing should not be viewed as abdication of management responsibility. Outsourcing should instead be viewed as a means to improve the internal functions of a company and not as a quick fix to solve a problem. It is crucial that the organization examines the underlying causes of the function that is viewed as difficult to manage or out of control. If the organization does not understand its own requirements, it will not be able to communicate them to an outsourcer. Without a sufficient understanding of the requirements, outsourcing may end up worsening the problems rather than solving it.

- **Secure resources not available internally**

One of the main driving forces of outsourcing is that companies do not have access to the required resources internally. Many businesses have difficulty in attracting and retaining technical expertise. Outsourcers possess world class capabilities, modern and efficient technologies, and other resources that an organization might lack internally. In particular, an outsourcer has access to more skilled human capital to make up for potential corporate shortages of talented manpower. By outsourcing, the cost of retaining permanent employees and/or utilizing industry consultants for short term engagements is reduced. Outsourcers are also generally more able to provide more and better career opportunities for business IT personnel if they choose to transit to the outsourcer. One of the main reasons why BP outsourced [Cross 1995] is because "it has become increasingly apparent that service companies provide us with technical skills and ideas that we could no longer develop inside our own company." Outsourcing is thus a viable alternative to building the needed capability from the ground.

3.2.3 Other Benefits

In addition to the above listed reasons, the following checklist [Corbett 2001, Doyle and Tapper 2001, Thomsett 2002] provides further considerations and benefits for outsourcing to become an attractive alternative:

- **Assistance with organizational changes.** A third-party IT service firm can help build new infrastructures or merge two existing infrastructures during or shortly after a joint venture, merger or acquisition such as Bank One and Boeing, have turned to outsourcing as a way to ease the transition and build new infrastructures.
- **Assistance with globalization.** Companies looking to move into international markets can rely on global outsourcers for assistance in broadening infrastructure and operational reach.
- **Increase access to skills and new technologies.** Outsourcing helps companies to gain skills, technologies, or other competencies they do not already have or that they cannot afford to develop. For companies with High IS/IT staff turnover, outsourcing is a viable approach that allows the companies to access to skilled personnel. This is also definitely a plus for companies with business objectives that dictate major investments in advanced technology and yet there is a lack of their knowledge base in the new technology.
- **Greater flexibility.** The flexibility gained through outsourcing helps companies to react quickly to changing market conditions, fluctuating demand cycles, and increased competition.
- **Increase productivity.** Best-of-breed practices and tools in IT become more available and better utilized. With better implementation, management and maintenance of IT resources, the working "lifestyle" is enhanced and user productivity is increased.

- **Improved predictability of costs.** Outsourcing provides companies with predictable yearly costs for the management of all or part of the IS/IT infrastructure.
- **Faster and higher quality service and improved efficiency.** Vendors' economies of scale, combined with service level guarantees, translate into increased operational efficiency for a company. For example, outsourcing vendors typically offer service level agreements (SLAs) for availability of at least 99.9 percent, and many include financial penalties for downtime.
- **Accelerated development and improved time-to-market.** In-house development can get bogged down by all kinds of factors, including staff shortages, lack of experience in key technologies, competing in-house projects, and a variety of technology or financial emergencies. Tapping into capabilities of the outsourcer increases scheduling flexibility and resource availability, this usually results in accelerated development that get a project completed and launched quickly. Processes are also examined to improve time-to-market.
- **Clear definition of expectations and goals.** Setting the outsourcing contract forces the company to clearly define its expectations and goals, giving the outsourcers clear instructions about objectives and service levels.

3.3 Risks of Outsourcing

Although there are many compelling reasons and benefits to outsource, there are also some very real problems with outsourcing that can prevent a business from deriving benefits from outsourcing. Outsourcing does not come without pitfalls. Some of the drawbacks and risks [Thomsett 2002, Claver et al. 2002, HKnet 2002] associated with outsourcing are outlined below:

- Loss of control
- Loss of in-house expertise
- Loss of intellectual capital
- Loss of flexibility/Dependency on outsourcer
- Need to manage the vendor relationship
- Double outsourcing
- Negative impact on employee morale/possible opposition from employee
- Outsourcer does not comply with the contract
- Qualification of outsourcer's employees
- Hidden costs in the contract
- Increased costs
- Security of data
- Irreversibility of the outsourcing decision
- Outsource for the wrong reasons
- Additional risks associated with offshore outsourcing

All these drawbacks and risks of outsourcing are further discussed in detail in the following sections.

3.3.1 Loss of Control

Among the risks of outsourcing, loss of control is one of the primary concerns. Companies that decide to go for the outsourcing path, especially total outsourcing, will lose the control they had over their internal IS/IT departments. The company will have to hand over the control of their processes to the outsourcer and as such lose their control over the timeliness and quality of their IS/IT functions.

In addition, according to [Thomsett 2002], there is also the risk of losing control of core activities. The entire concept of "core" versus "non-core" processes reflects the Process versus Project work issue. Traditionally, the Process work or business-as-usual was the core activity. However, as identified by numerous management gurus, the core business in the new organizational environment is the development of new products and creative client relationship-building mechanisms. Just as per what [Barnatt 1996] has observed, "Computing and associated communication systems are key weapons to be wielded in the battle to reap competitive advantage." Information technology and project development is central to these new core activities. By outsourcing the people and intellectual capital required to develop new products, services and systems, many organizations risk losing control of their future. They are outsourcing the new core of their business.

3.3.2 Loss of in-house Expertise

As processes are outsourced to an outsourcer, in-house expertise might decrease to some degree. In certain situations, local expertise might be lost. The concern over loss of critical skills and competences hence cannot be neglected. Organizations that have chosen to outsource have the potential to become more and more out of touch with IT developments and the potential to exploit them for maximum business advantage [Barnatt 1996].

The issue of the loss of organizational learning and innovative capacity resulting from outsourcing is also another downside of outsourcing. Organizational learning usually involves the business doing the tasks over and over again. Sometimes, the organization is able to learn new ways of doing business through its hands-on involvement. The capacity to innovate also stems from the hands-on experience. Migrating the functions from within the business to external outsourcers may cause the organization to lose its organization learning and innovative capacity, as it no longer performs the functions.

3.3.3 Loss of Flexibility/ Dependency on Outsourcer

Flexibility may also be lost through outsourcing. A long-term contract with a particular outsourcer may reduce flexibility, constrain alternative options when needed, and create unnecessary dependence of governance on this external vendor. Scenarios whereby managers who perceive a need for a new application are told that it is not covered in the outsourcing contract may occur. Erosion of the negotiating position may also occur when the organization becomes partially or totally dependent on the outsourcer for services and thus leading to vulnerability. When an organization always has to operate through outsourcer with regard to IT matters, their links with the customers may also be jeopardized. Therefore, organizations need to be aware of their options, in case a vendor's operation slows down or ceases for unforeseen reasons.

3.3.4 Loss of Intellectual Capital

Defined by [Davis 2002], "intellectual capital can be regarded as the hidden value of an organization." Intellectual capital has three primary components, human, organizational and customer. These three components are "to value the intangible asset and reassess the knowledge gaps to improve the business advantage" [Davis 2002]. As for knowledge, it has two forms, explicit and tacit. Explicit knowledge is published and public while, tacit knowledge is 'in the heads of the experts' [Thong 2002, citing Michael Polanyi 1966]. In the IT area, very little knowledge has been made explicit. As a result, the loss of IT personnel associated with outsourcing leads to a loss of tacit intellectual capital and capability. "The best people tend to leave first, as they have the greater options, leaving an 'averaged-down' group for the outsourcer to recruit" [Thomsett 2002].

3.3.5 Need to Manage the Vendor Relationship

Although a return of management focus to core businesses can be achieved with outsourcing, companies tend to underestimate the management time required for the outsourcer and contract management. Managing and maintaining an outsourcer relationship is one of the major difficulties facing a company once outsourcing has been implemented. The outsourcing relationship has to be managed well to avoid any conflict between the outsourcer and the company. Amidst the talk of managers being freed from IT to concentrate on core skills, this is an additional management responsibility. Furthermore, there is also a need to develop new quality control and problem resolution procedures.

3.3.6 Double Outsourcing

When a company outsources its whole IT/IS functions to a single outsourcer, it must be recognized that the outsourcer may not have the expertise to manage the entire IT functions. These outsourcers may in turn outsource these functions to other outsourcer. This is commonly known as double outsourcing. Double outsourcing complicates the outsourcing management process and makes accountability difficult. One example is the nightmare experienced by The OshKosh B'Gosh Inc [Anthes 2000] when the orders from their online store went nowhere and yet they had to abide to the sub-outsourcer, Digex, policy to provide two days advance notice before they are allowed to access to the hosting web server to troubleshoot the problem. The problem was further complicated because OshKosh's outsourcing contract was actually with Sunnyvale, Calif-based application service provider (ASP) Pandesic LLC, which had, in turn, subcontracted with Digex for the hosting site and servers. The double outsourcing problem is also made worse when the outsourcer does not inform the company of its arrangement with a third party outsourcer. Such problem has to be prevented in the contract.

3.3.7 Negative Impact on Employee Morale/Possible Opposition from Employee

As outsourcing invariable involves the transfer of IT specialists between the two organizations and often has a negative effect on employee morale and confidence. In addition, a move to outsourcing may also be perceived as a lack of faith, on the organizations' part, in their own IT specialists. Employee morale issues hence arise in all outsourcing environments, whether or not there are any employee layoffs or retrenchment. The organization and managers must invest a significant amount of time to address the morale problems and possible opposition from the employees. The organization also needs to identify ways of reassigning and retraining employees, as work disappears and as new work is identified. Although it is also possible for the organization to transfer some of its employees to the outsourcer, employees inevitable will find being caught up in an outsourcing initiative unsettling. The concern for politics, downsizing, or layoffs is also an especially sensitive issue with unionized businesses and certain countries, such as Japan and South Korea, which embrace a policy of lifetime employment.

3.3.8 Outsourcer does not comply with the Contract

Failure to meet the contract by the outsourcer is another risk faced by companies who are considering outsourcing as there are potential costs of violating or abusing contracts by the outsourcer. Outsourcing contracts tend to be structured for a very long period of time; "ten years is the normal length of a contract in an environment in which computer chip performance is shifting by 20 percent to 30 percent per year" [McFarlan and Nolan 1995]. Companies lock-in to a long-term contract and to a single outsourcer can lead users back to a kind of vendor dependence that open systems promised to move them away from. Contract failure and "backout" scenarios must therefore be explored and weighted because rebuilding in-house IT capabilities from scratch will be time consuming and expensive.

3.3.9 Qualification of Outsourcer's Employees

One of the main reasons for outsourcing is access to the international pool of technical expertise. Companies outsource because they face problems recruiting and keeping technical expertise and they turn to outsourcers as a way to supply these expertises. However, it is easy to forget that the outsourcers also face the same worldwide technical expertise shortage problem. The outsourcer may not be able to attract talent any better than the business. The explosive growth of outsourcing has severely stretched the available 'talent pool'. It is stated by [Thomsett 2002] that "there are not enough real experts to meet the demand".

Therefore, it is sometimes difficult to tell whether outsourcers are as good as they claim to be. In reality, the outsourcer may not be able to perform the function better than the business, although it may be able to perform it cheaper. The outsourcer may have little understanding of the organizations' business and be less responsive to changes in business strategy and take a longer response time to problems. Usually, the outsourcer will use the same employees to manage the company's outsourced function.

3.3.10 Hidden Costs in the Contract

Although the most primary rationale for outsourcing is cost-effectiveness, there are much hidden costs such as the costs of organizing tenders, signing contracts, determining legal matters such as ownership and copyright, monitoring projects, evaluating outcomes, continuous liaison with outsourcing providers, and maintaining transparency. Based on a study of 50 outsourcing deals by French Academic Jerome Barthelemy [ComputerWorld 2001], reported in the MIT Sloan Management Review, hidden costs for outsourcing include:

- Finding the outsourcer and writing the contract costs about 3 percent of the average total outsourcing cost.
- There are hard-to-quantify transition costs. It usually takes about a year for the outsourcer to free itself from dependency on the in-house IT staff.
- Managing the outsourcer costs an average of US\$300,000 per year.
- Companies rarely think about costs at the end of the contract, such as the price to switch outsourcer or bring IT back in-house.

3.3.11 Increased Costs

Apart from hidden costs in the contract, there is also a risk that the costs of outsourcing may prove to be higher than anticipated. [Thomsett 2002] highlighted that "experts such as Bryam Johnston now argue that in IT areas, cost reduction should not be the prime reason for outsourcing." In his experience, the most significant reason is that internal IT project groups often worked 30 to 50 percent additional effort which was treated as non-cost, unpaid and bonus, and few outsourcers will tolerate those levels of unpaid and uncharged work. It is clear that there is a conflicting agenda between the outsourcers and companies who are considering outsourcing. While outsourcers are profit driven, the companies are looking into cost reduction/saving. Outsourcers usually have much more highly-refined and focused cost tracking systems and will thus charge the companies for those previously-untracked costs. Unexpected savings may accrue to the outsourcer instead of the company as the initial savings the companies gain may turn into higher costs in the long run. Once the contract is signed, outsourcer may "recoup losses by charging exorbitant high fees for any change, releasing that the customers are captive" [Kern and Willcocks 2001].

3.3.12 Security of Data

An outsourcing agreement means that an external company has the access to privileged information. Such agreements invariably have considerably security implications. A company may have trade secrets or vital customer information that not everyone within the company has access to. However, the outsourcer will have access to the information. The security of the company's information is dependent on the security that the outsourcer provides at their data centers. It may be possible for someone other than a provider employee to gain access to the company's information. For financial institutions and research centers where data confidentiality and security are absolutely paramount, it may not worth the risks to go for outsourcing due to the increased data security and control vulnerabilities as IT being in the hands of a third party.

3.3.13 Irreversibility of the Outsourcing Decision

The potential of irreversibility of the outsourcing decision is another key risk. The rapid development in technology has created a fluid and ever-changing business environment. Although the business can theoretically in-source the functions again after outsourcing, there are many practical problems, especially if the business has given up both its hardware and human resource capabilities. It is not easy and expensive to rebuild these functions, especially in view of the worldwide shortages of technical expertise. It may thus be sensible to prepare for backup plans even while negotiating the outsourcing contract. Using the example by [Willcocks et. al 1995, citing Houghton 1991] to illustrate, an industry consultant commented “After a costly battle to end the contract, the client company is rebuilding its internal group minus several good people who found other jobs during the chaos. Rebuilding that staff is turning out to be far harder than expected. You can’t put Humpty Dumpty together again as easily as they’d thought.”

3.3.14 Outsource for the Wrong Reasons

Although outsourcing is a powerful strategic tool, companies may outsource for the wrong reasons. Some companies choose to use outsourcing as a convenient way to downsize their operations. An independent study [Strassmann 1995] seems to support this contention. The study revealed that companies who outsourced heavily are economic losers trying to shed IT from the corporate functions in a bid to cut employment costs and end commitment to keep up and maintain technology. When outsourcing is employed as such, not only are the possible benefits unattainable, the company may actually be creating long term disadvantage by giving up their IT capabilities.

Even when outsourcing is done for strategic reasons, other problems can still arise. With the current hype surrounding outsourcing, executives are feeling the pressure to outsource. Some do so without a clear understanding of the objectives they want to achieve from outsourcing. Without clear objectives, companies are effectively eliminating their chances to derive maximum benefit from their outsourcing exercise.

3.3.15 Additional Risks Associated with Offshore Outsourcing

For offshore outsourcing, there are also other additional problems. In this case, risks also come in the form of cultural factors with foreign operations. Cultural and social customs and traditions, language barriers and business norms are the characteristics that define the market. If the outsourcer traditionally operates in a different market, the ability to cope and adjust to these factors is a high priority concern. Geographical separation can create communication problems. The lack of person-to-person contact and fewer information exchanges can exact a toll in the form of less effective communications. These communication problems can complicate the outsourcer selection process, the contract negotiation and also contract management. Legal issues also differ from country to country and these differences

complicate the contract negotiation process. Without a clear understanding of the legal issues in each different country, the companies can be put in an unfavorable position during the contract negotiation process.

3.4 Outsourcing Obstacles

Apart from the above stated risks of outsourcing, there are also other potential outsourcing challenges that require attention. Outsourcing is not totally without obstacles and barriers. There is a strong correlation between outsourcing and changes. Any outsourcing decision, irrespective of the scope, will bring about changes to the organization and these changes must be carefully managed. Before jumping into the outsourcing bandwagon, there is a need to stand back and carefully scrutinize the impacts of outsourcing.

3.4.1 Distinctive Nature of IT

It is important to realize that outsourcing IT/IS although is similar to outsourcing of other activities and resources in many ways, it is also different in at least 5 different ways as highlighted by [Kern and Willcocks 2001, citing Willcocks, Feeny, and Islei 1997]. IT, unlike other functions such as legal departments or distribution, cannot be easily handed over to an external vendor due to the following differences:

1. **IT is not a homogeneous function, but comprises a wide variety of IT activities.** IT activities are integrated across business functions such as customer service, sales, etc. As such, it is difficult to isolate IT to be outsourced. Business performance can be hindered when outsourcing IT as the outsourcer may be lacking in their understanding of the implications and role played by IT on other business processes.
2. **IT capabilities continue to evolve at a dizzying pace; predicting IT needs past three-year horizon is wrought with uncertainty.** Just as the observation made by [Lacity and Willcocks 2001], “mega deals are usually contracted around current technologies with only vague references to future technologies”. Most companies realized that by the third year into an outsourcing deal, the original contract actually hinders their adoption of new technologies although they initially perceived the outsourcer would provide access to new technologies.
3. **There is no simple basis for measuring the economics of IT activity.** The economic of IT is moving in such a fast pace that makes it extremely difficult to evaluate the long term costs of outsourcing. For instance, a unit of processing power that cost US\$1 million in 1965 costs less than US\$20,000 today.
4. **Economic efficiency has more to do with IT practices than inherent economies of scale.** The research by [Lacity and Willcocks 2001] suggests that outsourcers’ bids are based on improvements in management practices than inherent economies of scale. To illustrate, outsourcers may cut cost by consolidating data centers from multiple sites to one site, or by standardizing software. It is highly possible for IT managers to also duplicate such cost reduction tactics if they are empowered to overcome resistances from the end users.
5. **Large switching costs are associated with IT sourcing decisions.** Extracted from [Lacity and Willcocks 2001], the CFO from TRANS, an American airline, who signed a 10 year total outsourcing contract in 1991, perceives that switching costs pose a major risk. He commented: “Once you sign with a vendor, you have no options other than onerous contract terms, so when you get into that situation it’s a lose/lose for both parties. What are you going to do? Sue them?”

Fire them? Stop buying services? There is nobody else, in a short period of time, who you can buy services from.”

3.4.2 The People Factor

When an organization is contemplating on outsourcing, one of the many challenges faced by the management is none other than the people factor, the concern to the reactions of the existing employees. Outsourcing's benefits are often seen as coming at the expense of the organization's current employees, especially those within the scope of the services under consideration for outsourcing. Organizations who are more experienced in outsourcing remark on the need for sensitivity on human resources issues. It is very easy to get wrong and there are case histories [Willcocks et. al 1995] to illustrate this. Two of the largest outsourcing contracts signed in the UK during 1994 were at British Aerospace and the Inland Revenue; both organizations experienced strikes from the IT employee during the building to award the contracts.

Managing the reaction of the affected employee is a key issue that needs to be addressed at an early stage if outsourcing is seriously being considered. The management needs to take care of the reactions of the employees if a decision to outsource is made and announced, and the earlier possibility of 'leaks' during the decision making process. Generally, employees are hostile and react strongly to outsourcing decisions. There is a pressing need to understand the root causes of these reactions and in turn learn to better manage such reactions. One will understand why there are such resistances by looking at the impact of outsourcing on the employees and the organization structures.

Outsourcing has always been viewed as directly affecting the jobs and careers of the employees. Once an outsourcing decision has been made, employees whose job scopes belong to the range of the services to be outsourced will see a major change in their career. Outsourcing impacts every aspects of the employee's job, ranging from financially on the structure of the compensation and benefits to the nature of the work on the job scope, the reporting officers, the company, the location, culture, career advancement, etc. In practice, there are three main types of solutions [Scardino 2002] offered by the organization for these employees:

1. Transfer the greatest number possible to the outsourcers.
2. Finding other opportunities inside the organization for the displaced employees.
3. Helping the employee to find opportunities outside of the organization. In the worst case, the organization may take up the alternative to retrench the employees.

Although it is often a practice to establish agreements with the outsourcers to take over a portion of the current employees, anxieties among the employees are inevitable. The uncertainty over one's future outlook is disturbing and the lack of control inevitably resulted in resentment and hostility. The overall feeling of the employees can be summarized [Orbys 2001] as “This is being done to me, not by me”.

For the other employees who are not affected by the outsourcing decision, their moral will also be affected although the impact on them is not as great. This group of employee will have to accustom to the new organization structure, practices and ways of getting things done. They will need to work with the outsourcer's employees and may be concerned whether there will be any changes to their existing job nature and that the organization may directly compare their performance with a professional service firm. In addition, there is also the fear that they may become the next victims since there is always a possibility for the organization to outsource more services in future. The employee's loyalty and productivity for the organization will thus be affected and may even wane.

The worry of job security may also at times prompts top employees to start sourcing for new opportunities outside, causing a brain drain of skilled in-house IT personnel and loss of valuable institutional knowledge. Such scenarios may also occur when employees get wind of a possible

outsourcing plan before any announcement has been made. The organization must carefully handle such situation and try to boost the morale of the employees.

Open communication has been recognized by most as the best way of trying to minimize the concern and potential disruption caused by outsourcing. However, the timing to make the announcement is a difficult decision. If the plan for outsourcing has not been made clear to the employee on time, there is the likelihood of rumors and leaks that “distort the true position and undermine the management’s credibility” [Orbys 2001]. On the other hand, early confirmation that outsourcing is under formal consideration can tend to weaken morale. It is also likely that there are pressures to accelerate the contract finalization, causing disadvantage to the organization’s negotiating position with the outsourcers. In some extreme cases, employees may even be lead to feel that they should have a say in the decision, or even a “vote” in outsourcer selection. For example in the North East Thames Regional Health Authority case [Willcocks et. al 1995], the first inclination was to go for a total approach but the employee enthusiasm was low for both this option and that of a management buyout that the eventual decision was to go for selective outsourcing route, ensuring the outsourcer selected was the one offering the best deal to the employee being transferred.

Clearly, the impact of the people factor cannot be neglected nor underestimated. The management of the organization should focus and be committed on how to manage the outsourcing decision and their communication to the employees in achieving positive outcomes for both the employees and the organization.

3.4.3 Other Problem Areas

There are other issues [Willcocks and Graeser 2002, Kern and Willcocks 2001], identified below, that are very real possibilities of which any organizations considering outsourcing should be aware of. Some of these issues although are quite widely known, are still experienced by organizations undertaking outsourcing. Others are those that are more difficult to predict.

- **Significant effort may be needed to develop an adequate measuring system**
An adequate measuring system with clearly specified service level measures is essential to monitor the outsourcer’s performance. However it is not easy to setup such a measuring system and it requires an immense amount of efforts. It is especially important to have user involvement in the establishment of service level agreements so as to be able to clearly define and incorporate users’ needs and to achieve user buy-in to the measurement activity. However, it has also been noticed that more detailed service measures and costing procedures can have unanticipated effects on users’ behaviors [Willcocks and Graeser 2002]. These problems are further discussed as the other problem areas. Additionally, the intense detail of the services level agreements may also create a monitoring problem. It is thus vital to stress the importance of focusing on the key measures in any service level agreements.
- **Outsourcing can require a culture change on measurement**
It is easy for one to underestimate the gap between the pre-outsourcing and post- outsourcing approaches to measurement and control. Many organizations do not divert far from their existing measures and standards for IT performance and this can cause some latent problems and conflicts that will emerge across the outsourcing contract period. Outsourcers who are ‘sharp and alert’ may take advantage and decline to provide ‘up-to-standard’ services. Extracting from the example given by [Kern and Willcocks 2001], one IT director of a UK public sector organization commented, “The performance measures were not strong enough. This was because of the culture we operated in. I think they took us and I don’t blame them, we weren’t professional. I think there have been some good attempts at tightening up performance measurement. But once you’ve got a contract you’ve got a contact and if you are dealing with sharp guys like them, then it’s very difficult.”

- **The possibility of outsourcer opportunism**

Over time, organization often will learn about vendor opportunism and how to deal with it. Some adopted a multiple suppliers (See Section 2.2) strategy to limit vendor opportunism. Quoting one revealing case illustrated by [Willcocks and Graeser 2002, citing Lacity and Hirschheim 1993] on a ten year contract which was the product of senior management looking at ways to contain or reduce rising IT costs. A six month baseline period was measured with the outsourcer contractually bound to deliver the average service level of this period. However, the contract was signed before the baseline measurement was completely defined. In the data center operations, the contract specified a fixed number of resources for a fixed price while for the applications' development and maintenance, a fixed number of man-hours of services will be provided. Other utility services were also poorly defined in the contract. Although the outsourcer delivered on a fix price the promised 20 percent reduction of projected in-house IT budgets, the 'excess' charges incurred due to the incomplete contract well cancel out any benefits.

- **Internal charging systems may create problems**

Problems between users in the business units, the IT people managing the contract and the outsourcers could also arise in a well managed outsourcing contract. In many examples, the problems built around the charging system as it affected users. In this instance, the experience of a major brewing company in the first year of the contract is quite a common one, as a senior manager explained [Kern and Willcocks 2001], "...it's all around communication with the business divisions and their understanding of the agreement. At the end of the day they will be paying, not directly, but I recharge to them. I am taking it to a central pot and reallocating it. Complexity of recharging is what's causing those communication challenges..... They (the business users) are very wary of it because they now realize that it's an outsider who's charging them and maybe there is a risk they will get charged more and people are going to get more commercial."

- **Users may become more wary of IT/IS services**

As illustrated in the previous example on the case about charging system, users clearly are becoming more anxious about the service they were getting in for the money they were being charged. To a certain extent, this is a good sign as it may lead users to focus on getting the 'must-have' services rather than 'nice-to-have' services. In addition, it may also encourage a much greater awareness about computer use in their department. However, there is also some downside in the outsourcing situation in that it gets in the way of true fast response from users as they become more concern with the costs of the services they will be getting.

- **IT/IS costs may become too transparent**

In contradiction to viewing the transparency of costs as a result of outsourcing as a desirable outcome, this is a problem area where there is still a large in-house IT capability and inflexibilities may arise in the ways in which funds can be utilized and additional IT work achieved. The IT manager of a US bank points out Willcocks and Graeser 2002], "One of the things that some of us were concerned about as part of the deal, but which was overlooked by senior management who signed up to the deal, was the fact that we know the way we operated here in IT. We could always fudge costs.... There's always a little bit of fat in any budget that allows us to take on something unexpected. I am talking about the ability to bring on a new software package which might enhance processing in an area, a systems software package, a new tool, which might cost you a license fee plus £5000 a year in maintenance costs. We could always do these simple things in-house." The irony is that the in-house employee felt that the outsourcer had done too good a job of analysis costs and breakdown the prices for different services. The problems are more for operational IT employee instead of the senior managements.

3.5 Elements of Success

While the previous section is highlighting the possible pitfalls and considerations that need to especially cater for in outsourcing, this section is devoted to study into the success factors. It is essential and crucial for any organization to understand how they could achieve a successful and effective outsourcing. There are a number of critical success factors that may be deployed to optimize the success and these factors are further elaborated below.

3.5.1 Thorough Needs Analysis

Conducting a thorough needs analysis prior to proceeding with the outsourcing is necessary for getting the most from any outsourcing deal. A company must do a certain amount of analysis, interpretation and forecasting, which includes having a clear understanding of the company's goals and objectives, a strategic vision and business plan. Such efforts will help the company to determine its business case on whether to take on the approach of outsourcing. Having a clear idea of the goals and objectives allows the company to assess whether outsourcing will achieve the desirable objectives. As reported by [Stone 2002], it has been noted that in one of the case studies, a comprehensive needs analysis exercise had caused an enterprise to postpone plans for outsourcing. The company realized that it did not have sufficient knowledge of the current environment, and it failed to have an organization in place that was capable of supporting a successful outsourced relationship. This company correctly refocused on implementing internal improvements.

3.5.2 Getting the Right Outsourcer

Selecting the right outsourcer is a paramount decision. In essence, selecting the vendor should be an objective process [Kliem and Ludin 2000]. Careful scrutiny of the track records, reputations, experiences, financial solvency of the outsourcers is critical. The outsourcer should demonstrate proven competence in its field. For example, describing the past success on similar projects, including the benefits derived by customers. The outsourcer should also possess the breadth of capabilities and resources and is committed to quality, delivery, integrity and innovation. Furthermore, the outsourcer's growth capabilities and responsiveness are also essential. It is vital to choose an outsourcer who can meet the organization growing requirements, and who also has the ability to react to changes quickly. Success requires more than a cursory review of an outsourcer's capabilities and prior engagements [Stone 2002]. Select outsourcers that will be long-term partners. If they are not committed to working as a partner, the relationship will become a deal without flexibility and it will grow stagnate over time.

3.5.3 Contract and Deal Development

Many have identified critical success factors related to contract structures. A properly drawn up, structured business contract will give the company good value at a fair price, while allowing the outsourcer the opportunity to make a reasonable profit. It is also important that the contract carefully document a comprehensive and accurate description of the nature and scope of the services, service-level agreements, compliance responsibilities, performance reporting, pricing and fees, schedules, etc.

The contract must also be flexible and capable of evolving over time to keep aligned to the changed business requirements. For example, Kodak altered its outsourcing agreement as both business circumstances and technologies changed and General Dynamics had eight contracts to provide for different division evolving in separate ways [McFarlan and Nolan 1995].

In addition, the contract must also create the capability, such as metrics, to measure the performance of the outsourcer against the defined requirements. Before outsourcing, the company should carefully

benchmark its IT operations, compare its internal performance against world-class companies, and then set realistic expectations for the outsourcer. After outsourcing, ongoing measurement and comparison can establish targets for continuous improvement.

3.5.4 Open Communication

A fundamental basis of any relationship is timely and open communication with all those concerned with the success of the company. The first and foremost is assessing the stakeholders' requirements and having open channels of communication during this time are vital. Everyone concerned should be involved in the process. In particular, there should be care attention to the personnel issues and open communication with the affected individuals or groups that will be affected by the outsourcing decision. Most people fear outsourcing because they fear losing their jobs. Communicate with these personnel about outsourcing plans and having personnel involved in the decision, informing them each step of the way, will go a long way towards a successful transition.

The importance of the interface between the company and the outsourcer cannot be underestimated too [McFarlan and Nolan 1995]. There should also be ongoing management of the relationships and effective channels of communication at various organizational levels. Regular exchange of feedbacks and reporting by the outsourcer to representative bodies regarding the progress and problems in the outsourced projects will facilitate common understandings, and conflicts and problems raised could then be resolved more amicably. Such governance mechanisms based on mutual awareness and understandings are essential in achieving successful outsourcer relationships [Clark et al. 1998].

3.5.5 Management Support

Strategic objectives, such as outsourcing initiatives, must come from the top management of the company. It is hence desirable to have the support from top management and stakeholders. Gaining involvement and supports from the top management signify a higher rate of success. The top management articulates the goals and objectives of the outsourcing initiative, communicate how the process will benefit the company and allocate required resources to the whole process. More importantly, the top management will ensure that the outsourcing objectives are aligned to the business objectives.

3.5.6 Others

There are many different success factors stated in the literature. The above 5 factors are the most common stated success elements for establishing successful outsourcing management. In addition to the list, some of the other factors include:

- Open, adequate, and transparent tendering of IT outsourcing. There should be maximum competition among outsourcers in order to get an optimum deal.
- Use performance incentives and penalties. Motivate outsourcer to meet and exceed the contracted performance standards. Pay bonuses when the outsourcer exceeds expectations and charge penalties when performance falls below expectations.
- Disaggregate outsourced functions/component. Disaggregate the outsource functions and activities and give its various components to diverse outsourcer could reduce the complexity of the outsourced functions, reduce the monopoly of the outsourcers and minimize dependence on them.

- Maintain well trained and skilled in-house personnel to deal with the external expertise. It is essential to maintain a pool of well trained and skilled IT experts in-house to deal with the IT-smart external outsourcers, especially to understand, adopt, and implement contracts, and monitor and assess the activities and performance of the outsourcers.

Like any organizational decision, outsourcing requires effective management from the outset of the outsourcing evaluation through the life of the contractual relationship. The list of success factors seeks to provide a background on areas to take note of when considering and taking on the outsourcing approach. It is essential to understand that the success of the outsourcing initiatives is highly influenced by the approach and management style of the company and it takes time and experiences to effectively manage outsourcing relationships.

3.6 Summary

IT/IS functions and services today embrace virtually all types of computer and communication technologies and all forms of activities that are associated with acquisition, development, implementation and management of these technologies. Within the IT/IS outsourcing marketplace, there is therefore a wide variety of IT/IS functions and activities that can be outsourced and among which, applications development, applications maintenance, data center management and network services are the more common outsourced functions and activities. This chapter hence sets to provide an introduction on the concept of outsourcing.

The drivers and reasons of why many are turning towards outsourcing vary. Some of the known drivers and benefits of outsourcing includes reducing and controlling operating costs, to improve company focus, gaining access to world-class capabilities, free internal resources for other purposes, unavailability of internal resources, to reduce and share risks, etc. In addition, there are also other benefits of outsourcing. Some examples are increased access to new technology, having greater flexibility, faster and higher-quality service and improved efficiency.

Although there are many compelling reasons and benefits to outsource, there are also some very real problems with outsourcing. Some of the discussed drawbacks and risks include loss of control and in-house expertise, dependency on outsourcer, negative impact on employee morale, hidden costs in the contract, security of data, etc. In addition to these risks, there are also other obstacles to outsourcing decisions. There is a need to stand back and carefully scrutinize the impacts of outsourcing before jumping into the outsourcing bandwagon. Firstly, the discussion stressed the importance of realizing the distinctive nature of IT. The people factor in the concern to the reactions of the employees to the outsourcing decision is another important consideration. Lastly, the discussion also touched upon some of the other problems areas such as the significant effort needed to develop an adequate measuring system, the need for a culture change on measurement, internal charging systems may create problems, etc.

The last part of this chapter was devoted to highlight some of success factors that may be deployed to optimize the success of outsourcing. The most common stated success elements are conducting a thorough needs analysis, getting the right outsourcer, structure contract and deal development, open communication and gaining management support. It is essential to understand that the success of the outsourcing initiatives is highly influenced by the approach and management style of the company and it takes time and experiences to effectively manage outsourcing relationships.

4 EMPIRICAL STUDY

This purpose of chapter is to provide an understanding of the research method deployed in this study. The theoretical concepts on how to conduct empirical studies and the design and structure of the selected research technique used in this study are explained.

4.1 Research Method

“Research is a considered activity which aims to make an original contribution to knowledge” [Dawson 2000]. It is “a systematic investigation to find answers to a problem” [Williamson et al. 2000, citing Burns 1990]. Explaining in simple term, one can perceive research as exploring concepts, knowledge and ideas based on observations and measurements of reality. Research is associated by theoretical concepts and empirical studies, and may be conducted by following a process. There are also many different approaches and designs, known as research methods, for undertaking research. This section is devoted to highlight the theoretical background of how research empirical studies are conducted.

4.1.1 Types of Research Methods

In order to be able to “make an original contribution to knowledge”, there are many different techniques that can be used to elicit information and gain insights. Four of the most common research methods one may use are action research, experiment, case study and survey [Dawson 2000].

- **Action Research**

As defined by [Baskerville 1999, citing Blum 1955] the essence of action research is a simple two stage process. Firstly, in the diagnostic stage, it involves a collaborative analysis of the social situation by the researcher and the subjects of the research. Theories are formulated concerning the nature of the research domain. In the second stage, the therapeutic stage, collaborative change experiments are involved whereby changes are introduced and the effects are studied. Action research is an attempt to better understand and deal with problems. [Dawson 2000] comments that “action research involves working on a specific problem or project with a subject or, more usually, an organization and evaluating the results”.

- **Experiment**

Experiment is the study that uses tests to investigate causal relationships under a controlled environment [Dawson 2000, Kitchenham et al. 1995]. Causal relationships are cause-and-effect relationships that an experiment seeks to understand by replicating the study several times. Each conduct of the study may be termed as ‘treatment’ and it is necessary to have at least two ‘treatments’ in an experiment, one of which acting as the ‘control’ – the status quo, before making any conclusions [Kitchenham et al. 1995]. A randomized experiment is one whereby random assignment is used to randomly assign the sampling to the ‘treatments’. Such experiments are the best design for investigating causal relationships. Quasi-experiments occur when random assignments are not used.

- **Case Study**

A case study is an intensive study focusing on a specific context. It can be conducted directly (e.g. interviews, observation) or indirectly (e.g. studying reports, documentation) [Dawson 2000]. Although a case study allows for the thorough examination of a particular situation, the results of such a study cannot be generalized beyond the single case as it is conducted in a typical situation. A case study should be deployed when “a how or why question is being asked about a

contemporary set of events, over which the investigator has little or no control” [Kitchenham et al. 1995, citing Yin 1984]. In addition, [Kitchenham et al. 1995] also highlights that case studies are also important for answering the ‘which is better’ questions in the software engineering domain.

- **Survey**

A survey is “a system for collection information to describe, compare, or explain knowledge, attitudes, and behaviour” [Fink 1995]. When there is a need to collect large amount of data over a large group of projects, survey is the ideal choice [Kitchenham et al. 1995]. Surveys can be divided into two broad categories, interviews and questionnaires. Interview can be in the form of group interview, one to one interview or telephone interview while questionnaires may be mail surveys, email and internet surveys or group administered questionnaires which is a questionnaire carried out in a group setting [Martella et al. 1999]. As part of a survey, it may be necessary to identify samples, select samples, design questionnaires and define interviews [Dawson 2000]. In depth discussion regarding the various types of survey techniques and design will be covered in the later sections.

4.1.2 Sampling

“Sampling is the process of selecting units (e.g., people, organizations) from a population of interest” [Trochim 2000]. The selected units are known as sample and its role is to represent its population which typically is much larger and inaccessible [Martella et al. 1999]. One should note that the choice of sampling techniques to produce the sample is important. It is crucial to have a representative sample in any investigation.

Sampling methods are usually divided into two types, namely probability sampling and non probability sampling [Trochim 2000, Martella et al. 1999, Fink 1995]. According to [Fink 1995], every member of the target population has “a known, nonzero probability” of being selected in probability sampling. It is a method of sampling that utilizes some form of random selection that eliminates subjectivity in choosing a sample. Non probability samples are selected based on judgment with respect to the characteristics of the target population and the need of the research [Fink 1995]. In this method of sampling, the probability of selecting a member of the target population is unknown, some members have a chance to be selected and others do not [Martella et al. 1999] and it may even be possible that the findings is not applicable to the target group at all [Fink 1995].

4.1.3 Reliability and Validity

Reliability and validity are two important components that affect the quality of measurements. Reliability is concerned with obtaining consistent, stable research results with replication, that is, when a study is repeated [Williamson et al. 2000]. It indicates whether the results obtained would essentially be the same at different times and provide a way to assess the trustworthiness of the findings. Validity, on the other hand, is concerned with accuracy [Williamson et al. 2000]. It refers to the degree to which the measurement device assesses what it purports to measure [Fink 1995, Williamson et al. 2000, Fowler 2002].

Reliability and validity are often viewed as separate ideas but they are actually related to each other. Using the following example by [Trochim 2000] to illustrate, take for instance the center of the target as the concepts to be measured and a shot at the target represent the subjects being measured. The shot will hit the center of the target if the measurement is taken correctly and vice versa. The further the shot is away from the center, the higher is the measurement errors. Figure 4-1 shows four possible scenarios that could have happened.

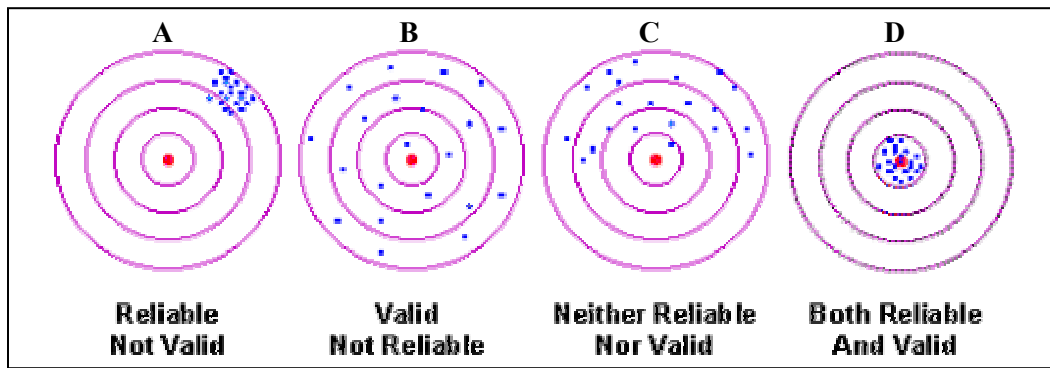


Figure 4-1: Scenarios

In scenario A, the target is hit consistently however it is missing the center of the target. This implies that the research is consistently measuring the wrong value. This measure is reliable, but no valid. Although the measurement is consistent, it is wrong. Scenario B shows that hits are randomly spread across the target. Although the shots seldom hit the center of the target, on average the right answers are obtained from the group of subjects. In this case, there is a valid group estimate, but the shooter is inconsistent. Scenario C presents a case whereby the shots are spread across the target and are consistently missing the center. This case is neither reliable nor valid. Lastly, scenario D highlights that the shots consistently hit the center of the target. This measurement is both reliable and valid. Scenario D is the kind of scenario one should achieve. Unreliable measurement devices cannot be valid; however, a measurement device that is reliability also does not promise that it is valid [Martella et al. 1999].

4.2 Design of Research

The design and structure of the research for this study are outlined in this section. Overview of how the study was conducted and the considerations made when developing the study are discussed.

4.2.1 Selected Research Method

A screening of the four research methods was first performed and, case study and survey both surfaced as the appropriate methods that can be deployed. In order to undertake a case study, the researcher needs to be available physically in the host environment where the case study is to be conducted. In other words, it is essential that the researcher is physically attached to one or more organizations in Singapore over a period of time to understudy the situations. Due the unavailability of the researcher to be in Singapore to conduct the study and the time constrain of this thesis study, the final choice of research method is therefore to go for survey research.

Survey research is useful in this study because it enables the gathering of views from different people and thus provides answers to some of the research questions of this study. It also allows the explanation and exploration of the IT/IS outsourcing phenomenon.

4.2.2 Selected Sample

The study is an attempt to investigate the IT/IS outsourcing trend in Singapore. It also seeks to identify the IT/IS outsourcing strategies, drivers, benefits, risks, and some success factors. As such, there is a need to sample from a target population who has experiences with contracting IT/IS services and functions to external parties. In addition, this study also tries to find out the difference in views between people of different roles. Therefore, the sample also needs to fulfill this criterion. The sample must contain

respondents of different job scope and all the respondents must either have experiences in managing outsourced services and functions or are users of the outsourced services and functions.

As a start, the choice is to contact multiple organizations to participate in this survey. However, lack of responses, except one company, initiated a change in plan. With the consideration of resource and time constraints, it has been decided to go for samples that are randomly selected within a company to conduct the survey. Hence random probability sample is used.

4.2.2.1 “Company ABC”

To keep the company name anonymous, this company shall be known as “Company ABC” in this thesis. “Company ABC” is one of the 9 statutory boards under the umbrella of Singapore’s Ministry of Trade and Industry. “Company ABC” is established since 1986 and is one of the major players influencing the economic of Singapore. At present, “Company ABC” has a total headcount of about 800 employees, spanning across 12 departments, including an in-house IT department (ITD).

There are 70 employees in ITD providing IT services to the internal users in the other 11 departments. ITD is experienced with contracting applications development to external vendors and other staffs of “Company ABC” are also well acquired with using the applications developed by the external vendors. Sometimes, some internal users also get involved in managing the contracts.

Outsourcing is not a new term within “Company ABC”. Apart from outsourcing IT and IS services, “Company ABC” also had prior experiences in business process outsourcing (BPO), which is commonly termed as privatization or corporization in Singapore. “Company ABC” had conducted two series of BPO within the past 3 years and hence its management and employees are familiar with outsourcing practices. Therefore, “Company ABC” has the population that fulfills the objectives of this study.

Contacts thus have been established with “Company ABC” to seek participations in this survey and it has been targeted to achieve 20 percent of the total headcount of “Company ABC” as the sample size. In addition, the survey is also to be conducted across all the departments involving employees playing different roles, ranging from management level to the junior admin officers.

4.2.3 Selected Data Collection Technique

The main survey data collection technique adopted in this study is using a questionnaire. Through the use of a questionnaire, the geographical constraint inherent in this study is resolved. The questionnaire is designed and emailed to the selected sample. Secondly, due to the sensitivity of the IT/IS outsourcing topic within the IT personnel in Company ABC, questionnaire emerges as an ideal solution to ensure confidentiality. The use of an anonymous questionnaire will encourage more people to participate and express their opinions. The third reason of using a questionnaire is that it is less intrusive. The respondents are given the flexibility to complete the questionnaire at ease and when they are free. Questionnaires are also more cost effective as compare to interviews. A questionnaire consists of uniform question presentation and therefore it reduces prejudice and bias. The respondent will not be influenced in answering the questions since there will not be any verbal or visual communication. Last but not least, using a questionnaire is a technique that is familiar to most and nearly everyone has had experiences completing questionnaires.

4.2.3.1 Questionnaire Structure

The questionnaire designed for this survey, as given in Appendix A, comprised of 19 questions. Both closed and open questions are used; some of which are factual questions while others are opinion questions. Closed questions are questions with pre-selected acceptable choice of answers and open questions are questions which require the respondents to answer in their own words [Fink 1995, Fowler

2002]. Factual questions are straightforward questions asking for facts such as demographics questions. Opinions questions, on the other hand, are asking for opinions. Majority of the questions in this survey are closed, opinions questions.

The response choices in the closed questions given are mainly in nominal and ordinal form. “Nominal response choices have no numerical or preferential values” [Fink 1995]. The questions that used nominal choice in this survey are those which required the respondents to answer either ‘yes’ or ‘no’. When the respondents are requested to rate or order the response, those choices are ordinal response choices [Fink 1995]. The following scale shown in figure 4-2 is an example of the ordinal response choice used in the survey. The respondents are asked to specify the degree of the benefit that was experienced and realized by IT/IS outsourcing using this scale.

Significantly Worse than Expectation		Exactly As Expected		Significantly Beyond Expectation
1	2	3	4	5

Figure 4-2: Scale

The questions that deal with the same specific aspect of the IT/IS outsourcing are grouped together. The first four questions in the questionnaire, asking for background profile of the respondents, are classified into one section. The others are questions relating to IT/IS outsourcing. Questions relating to IT activities, benefits, risks, consequences, trends and practices, outsourcer selection criteria, success factors and human resource arrangements of IT/IS outsourcing are put together as one single question respectively. Hence, each of these topics although is one question on its own, are composites of multiple questions in alphabetical form. One example is question 5 where question 5(a) is asking for IT/IS activities currently being outsourced and question 5(b) is asking for IT/IS activities that are being considered or will be outsourced in the near future.

4.2.4 Reliability and Validity Considerations

The reliability of a questionnaire is the ability of the questionnaire to give the same results when filled out by like-minded people in similar circumstances. The validity of a questionnaire is the degree to which the questionnaire is actually collecting the data that it is intended to collect.

Some of the steps taken to increase the reliability and validity of the questionnaire are:

- The wording of the questions are carefully examined to ensure that all questions are fully and clearly written. Every question is a complete question.
- To ensure each question has a consistent meaning to all the respondents, all terms used are simple and unambiguous.
- Definition of IT/IS outsourcing and definitions of the different practices and trends of outsourcing are also provided to avoid confusing and wrong interpretation of the questions.
- Each question is constructed to ask only one question at any one time. Questions that are related in topic are grouped in series. Figure 4-3 is an example showing how Question 16 had been designed into two questions in series instead of having two questions being asked within Question 16. Figure 4-4 presents how question 16 could have been designed if it asks two questions at once.

16.	(a)	Do you think your organization should consider ‘Total Outsourcing’? Please answer either ‘Yes’ or ‘No’.
Answer:		
		(b) Please state the reason for your answer in 16(a).

Figure 4-3: Two questions in series

16.	(a)	Do you think your organization should consider ‘Total Outsourcing’? Please answer either ‘Yes’ or ‘No’ and the reason.
Answer:		

Figure 4-4: Ask two questions at once

- Closed questions are used to standardize respondents’ expectations of what constitute as adequate answers.
- In the cover letter, assurance that all answers will be treated in confident is given. The questionnaire is also designed in such a way that identity of the respondents is not asked, hence allowing anonymity. No identifier is used in any way to trace the respondent. This step seeks to increase the accuracy of the answers especially since IT personnel in “Company ABC” viewed this as a sensitive research topic.
- More categories are designed for the ordinal response choices so that respondents could have a wider selection and thus giving answer of higher precision. All the ordinal response choices have at least five categories such as the ordinal scale in Figure 4-2. If the scale has only three categories, the accuracy of the answer may be reduced. Although having more categories of selection could result in higher precision, the drawback is it will be more difficult to analyze and follow up on the results.
- In the ordinal scale, the response alternatives given are one-dimensional and are presented in order without any inversion. Figure 4-5 shows two examples of scales of poor designs that impaired validity of the answer.

Example A: Multi-dimension response alternatives			
very rewarding	rewarding but stressful	not very rewarding but not stressful	not rewarding
1	2	3	4
Example B: Response alternatives not presented in order			
very rewarding	rewarding	somewhat rewarding	not rewarding
1	2	3	4

Figure 4-5: Problematic Scale

- A pilot study of the questionnaire to make the questions as reliable as possible and also to increase the validity was carried out. The pilot study is described and discussed in the next section.

4.2.4.1 Pilot Study

A pilot study was conducted prior to sending the questionnaire to the respondents. The purpose of this study is to evaluate the clarity and relevancy of the questions. The pilot group is made up of five persons.

All the five persons are all Singaporean with working experiences in Singapore. The reason for selecting people with working experiences in Singapore is to ensure that the context and language used in the questionnaire are culturally correct and understandable. Among the five persons in the pilot group, three of them are existing employees of “Company ABC” with two persons from ITD and one person from the business department. The other two persons in the pilot group are non-employee of “Company ABC”. The reason for choosing non-employee is to ensure that the questions in generally are understandable and clear while the other three employees of “Company ABC” evaluate the relevancy of the questions. Having one person of the business department also helps to provide feedbacks from the user point of view and to check that the terms used in the questionnaires are simple and easy for a non-technical person to understand.

The result of this pilot study has been very enriching and fruitful. The respondents from the pilot group had provided numerous feedbacks such as

1. Pointing out the questions that are not clear and are difficult to interpret and these questions are subsequently rewritten and refined.
2. To include in the questionnaire questions relating to the people factor as this pilot respondent feels that IT/IS outsourcing will greatly affect the employees and it will be good to capture such opinions. This suggestion is adopted and a question relating to the type of arrangement that can be made for employees affected by outsourcing decision was designed and inserted to the questionnaire.
3. The cover letter of the questionnaire is too lengthy to read although it contains all the required information. For this, the cover letter is segregated into various sections using headlines so that the information can be easily picked up.
4. To change one of the questions relating to the risks associated with outsourcing to collect answers in ordinal form instead of providing nominal choice. The respondent deems that the ordinal choice will provide more information and this feedback is incorporated.

Other minor feedbacks and comments are also given and all the feedbacks are screened through thoroughly and refinements are made to the questionnaire.

4.2.5 Response Rate Considerations

In this survey, some specific actions have been taken to obtain more responses. Consideration has also been given on the possible cause of non-response. The following sections will examine the steps and considerations made.

4.2.5.1 Obtaining Responses

In order to engage as many respondents as possible, two approaches have been used:

- **Pre-notification email**

Sending pre-notification emails to the respondents is one of the steps that is used to encourage more responses. It basically is sending emails to all the respondents a week before sending the questionnaires. The intention is to build expectation and to reduce the possibility of the actual questionnaires being ignored when it reaches the respondents. Thereby, increase responses. In the pre-notification emails, the reasons for the survey and explanation on why the respondents are receiving the emails are given. In addition, the emails also reveal how the results from the survey will be used and urge for participation from the respondents. The pre-notification emails had yielded a positive response in that some respondents actually reply that they will participate in the survey.

- **Reminder email**

Reminder emails are actually follow-up attempts on non-respondents. However, in this case, instead of sending to non-respondents only, it had been send to all the respondents again in this case because there is no tracking on the respondents. Reminder emails were sent two weeks after the questionnaires had been send. In the reminder emails, the intent of the survey is again explained and thanks and appreciation are expressed to those that had responded. The emails also seek participations of those who have yet to start doing the questionnaire to get started and remind those who have forgotten to return the completed questionnaire to return them the soonest. Therefore, the purpose of the reminder emails is threefold. The emails also explained the importance of responses to this survey and how the results from the survey will be used. Lastly, the respondents will be reminded on the survey cutoff date.

4.2.5.2 Non-response

One consideration that may have resulted in non-response in this survey is the length of the questionnaire. The questionnaire including the cover page is 16 pages long. This is due to the design and layout of the questions that questions are grouped together according to its purpose. In addition, there are also many choices of answers provided in the closed ended questions. This weakness of the design may have deferred some respondents from participating and completing the questionnaires. While it has been noted that the design of this survey questionnaire has this inherent weakness that can compromise responses, no solution has been thought of that could have shorten the length of the questionnaire. All the questions are deemed necessary for answering the research questions.

4.3 Summary

Research is a systematic investigation to find answers to a problem and there exists many research methods for undertaking research. In this chapter, the theoretical concepts on the types of research methods one may use, the sampling methods and the importance of reliability and validity in affecting the quality of measurements are outlined. After understanding the theoretical aspects of research, the design and structure of this research were also explained and discussed. The main research method used in this study is survey research. Due to the time and resource constraints of this study, the survey is conducted within a company and a brief introduction of the company was made. The sample for the survey is randomly drawn from the employees of the company. The use of a questionnaire was the key data collection technique adopted to gather information and design considerations taken to increase the reliability and validity of the questionnaire were examined. The last part of the discussion focuses on discussing the efforts made in sending pre-notification and reminder emails to the respondents in an attempt to increase the response rate and why the length of the questionnaire may have resulted in non-response.

5 SURVEY RESULTS

This chapter presents and examines the results of the survey that was conducted in this study. A discussion based on the findings of the survey is next given. In addition, this chapter also compares and analyses if there is a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature.

5.1 Survey Responses

The total number of responses received at the end of the survey period amount to 105 replies. The replies in general are rather well distributed across the organization. 24 persons out of the 68 eligible headcounts in ITD (two IT personnel participated in the pilot run of the questionnaire) responded and this makes up about 23 percent of the total respondents. 2 out of the 6 managers in ITD also participated in the survey with one of the managers from the application team and the other from the infrastructure unit in ITD. Thus, their inputs are rather significant and reliable although they only make up 2 percent of the overall responses.

Within the business groups, there are some departments such as the learning and training department and corporate communication department, which did not participate in this survey. Nevertheless, the main business groups handling with the key businesses of “Company ABC” did participate in this survey. The departments involved include the customer service department, sales and marketing department, business planning department, finance department, human resources department, etc. Hence, the answers are still considered as wide ranging, covering most of the major departments. In addition, there is also a good mix of managers and analysts. 13 business managers participated in the survey and that corresponds to 12 percent of the total responses. Thus, there are 15 responses from the managerial level and 90 replies from the analyst level in total. The following pie chart illustrated the responses.

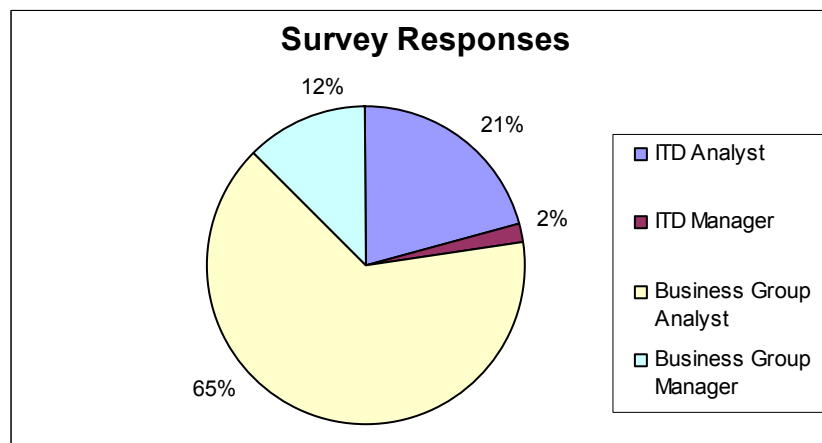


Figure 5-1: Survey Responses

Overall, the total responses received correspond to 13 percent of the total headcount in “Company ABC”. Although the response rate does not meet the initial expectation and target, the answers are considered as reliable and satisfactory. The next three sections highlighted the efforts that had been put in to increase the survey responses and to ensure the reliability and accuracy of the replies. Reasons for the poor response rate are also discussed and pointed out.

5.1.1 Rejection of one survey reply

Originally, 106 replies were received at the end of the whole survey period. However, in the process of screening through the answers, one of the survey answers was rejected as the answers given appeared highly suspicious and the respondent had claimed to be part of the senior management. The answers provided by this respondent seem to be a prank. All the questions that grouped together are given the same ratings and many of the questions are left unanswered. Hence, the reply was excluded and the total number of responses that could be considered is 105.

5.1.2 Extension of reply date

In addition to sending reminder emails (stated in Section 4.2.5.1) in trying to increase the response rate, an extension to the survey reply date had been made. This is because the total number of responses received at the end of the initial survey period was still not up to the expectation. The survey was thus extended for another week, hoping that more people will reply. An email was sent to all the respondents to inform them that the survey had been extended for another week due to the poor responses and also to urge them to participate in the survey if they have not reply. In addition, email exchanges and contacts were also being made with the IT personnel in “Company ABC” on an informal basis. The purpose is to seek assistances from these internal personnel to engage their help in encouraging their users to participate in the survey. A slight improvement has been achieved although the final results and responses still do not reach the targeted expectation.

5.1.3 Reasons for low responses

Some of the respondents who did not participate in the survey had emailed a reply to inform that they are too busy and could not participate in this survey. Through these feedbacks and the informal communication with IT personnel in “Company ABC”, it was highlighted and brought to the attention that there are various reasons for the low responses:

- **Survey coincided and affected by internal surveys**

It was told that one of the possible causes of the low response rate could be attributed by the two internal surveys being conducted in “Company ABC” prior and during the survey period. It was highlighted that there was an internal survey, Survey A, conducted by the Human Resources Department (HRD) which just ended a week before this survey was conducted. It was a major exercise that was only conducted once every two years and was mandatory for all employees to participate. Since this survey is on a voluntarily basis, many were thus not very enthusiastic to participate in another survey since they had just completed Survey A. Thus, Survey A explained the poor response rate during the first two weeks of the survey period. The other internal survey, Survey B, conducted by another department, clashed with the last few days of the extended survey reply date. Therefore, it is understandable that the response rate of this survey will definitely be highly affected. The employees most likely were not keen to take part in any survey since there are about three surveys being conducted within these few months.

- **Closing of financial year and appraisal period**

It was also highlighted that April was the closing of the financial year in “Company ABC” and most are busy working on their financial year accounting. In addition, it was also the time for the employees to work on their yearly appraisal. The two major yearly activities that were conducted in April had deterred many from participating in the survey. Two responses were actually received after the survey closing date and the respondents had indicated that they are too busy and could not reply earlier.

- **Severe Acute Respiratory Syndrome (SARS)**

The outbreak of severe acute respiratory syndrome (SARS) in Singapore had caused the government to make an emergency closure of schools from end of March till mid April [Lui and Chai 2003]. This highly impact most working parents and resulted many to go on urgent leaves. As a result, there is a lack of manpower in most organizations, including “Company ABC”. During the whole epidemic period, many employees in “Company ABC” are either busy covering duty for those who are not around or clearing their works which got piled up when they were on leave.

5.2 Presentation and Analysis of Survey Results

The results of the survey are each illustrated in the following sections. The number of responses to each question varies as some of the questions are left unanswered or are answered incorrectly. The answers had all been screened through and only those answers that deemed correct and unambiguous are taken into consideration. In addition, some clarifications had also been made with the contacts in “Company ABC” in order to understand some of the observations and findings from the survey results.

For each of the illustrations, BG will be used to refer to the business groups in “Company ABC” while ITD referred to the IT department of “Company ABC”. For some of the charts, the legends are presented in the format “group-number”. The group refers to either business groups or ITD while the number indicates the rating of the answers according to the scales used in the questionnaire. Similarly, there are also charts with legends presented in the format “group-ranking”. Ranking holds the value “1st”, “2nd” or “3rd” with “1st” being the most important.

5.2.1 Outsourcing Authorities

The first three questions of the questionnaire are questions that seek to find out the background profile of the respondent. This question is question 4 of Appendix A. It seeks to find out the authorities who are dealing with outsourcing decisions in “Company ABC”.

5.2.1.1 Presentation of result

As illustrated in Figure 5-2, senior management and directors, BG and ITD managers are the three distinct authorities that were perceived as outsourcing decision makers.

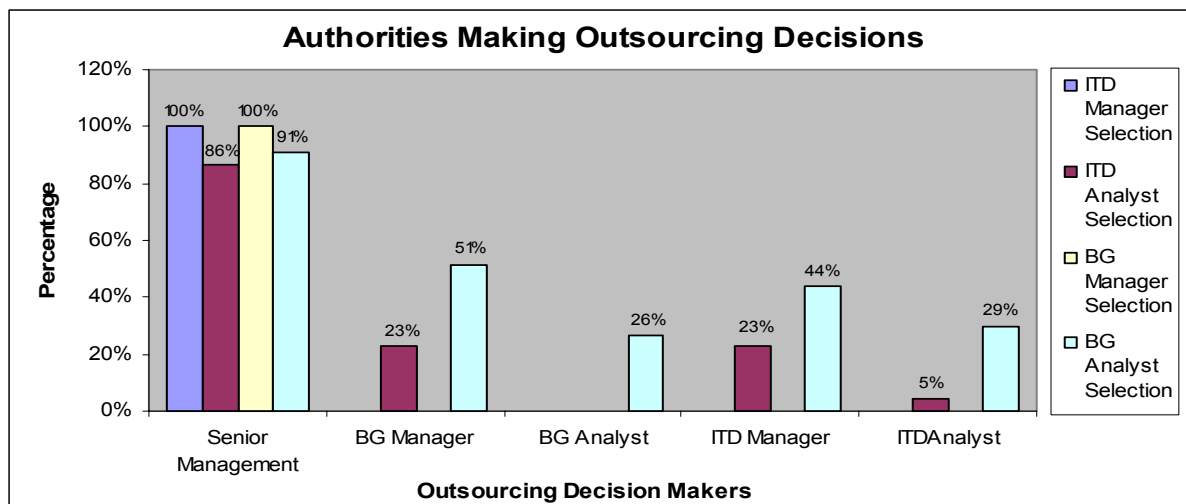


Figure 5-2: Authorities Making Outsourcing Decisions

5.2.1.2 Analysis

It is very obvious that the main authority making outsourcing decision in “Company ABC” is the senior or top management that involved the directors. All the managers from the BG and ITD as well as a huge majority of the BG and ITS analysts stated that senior management and directors are the sole authorities making the outsourcing decisions. Some of the BG and ITD analysts felt that BG and ITD managers also have a say in the outsourcing decisions while a handful of the analysts from BG indicated that analysts also influenced outsourcing decisions. BG and ITD managers and possibly a small percentage of the analysts, at times, may influence the decision-making progress. This scenario is possible since these BG and ITD managers and analysts tend to be part of the working committee evaluating outsourcing approaches and providing recommendations to the steering committee that are made up by the top management.

5.2.2 Categories of Outsourcing Services

This question is question 5 of Appendix A. It seeks to understand the types of services that are being outsourced and are being considered for outsourcing in “Company ABC”. A list of IT/IS services is listed for the respondents to select from in this question.

5.2.2.1 Presentation of result

From the answers, the top ten services that are currently being outsourced and are being considered for outsourcing in “Company ABC” are listed in Figure 5-3A and Figure 5-3B respectively. The ranking from the BG and ITD are also illustrated in the figures.

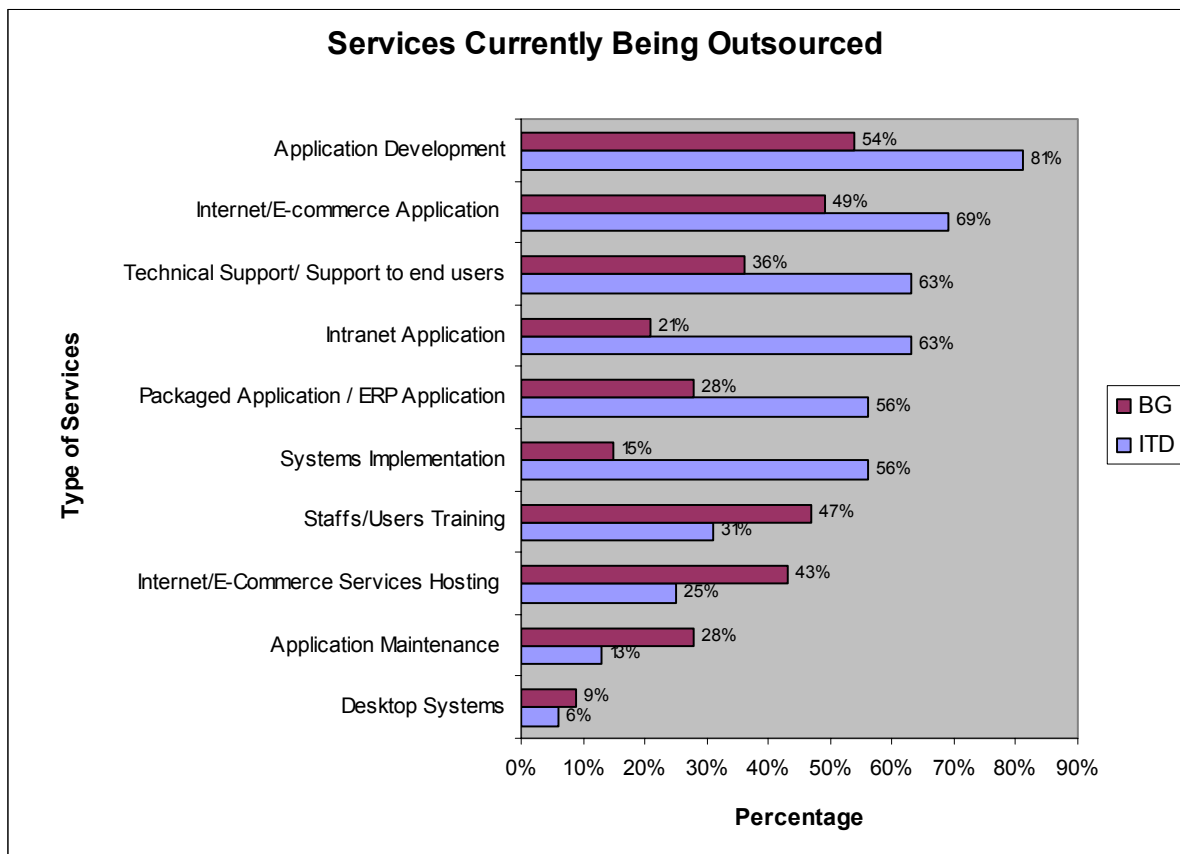


Figure 5-3A: List of Services Being Outsourced

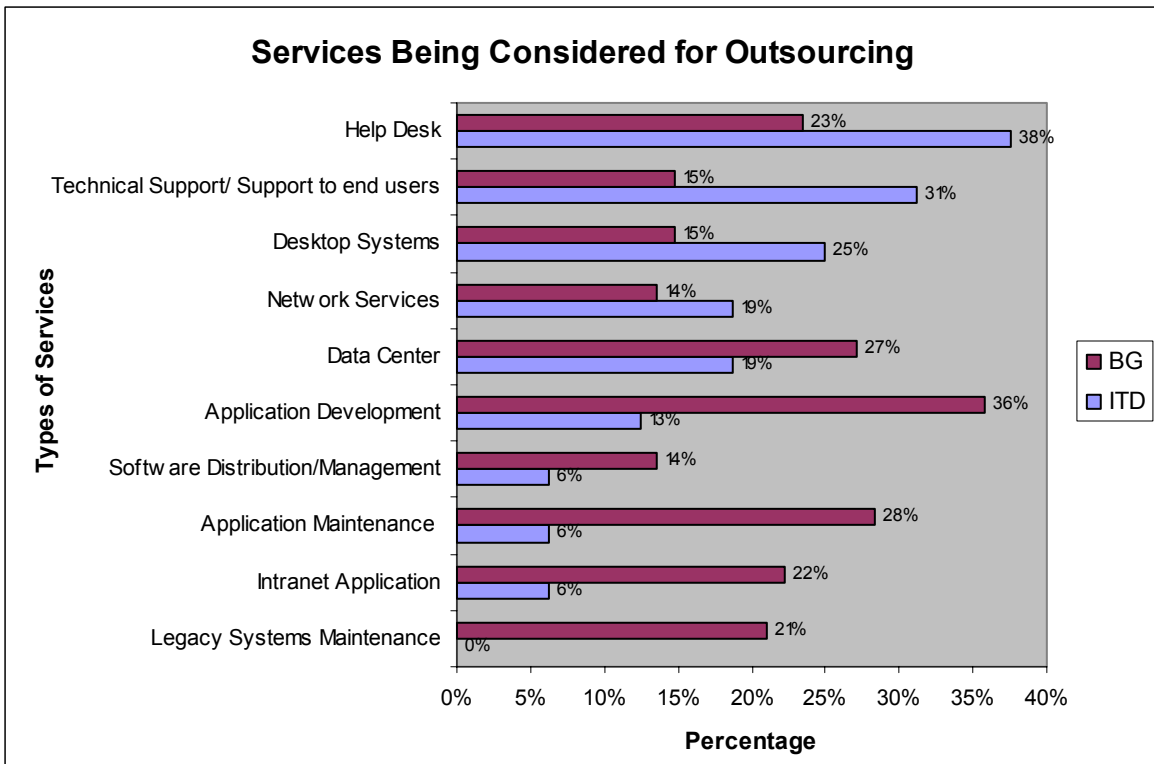


Figure 5-3B: List of Services Being Considered for Outsourcing

5.2.2.2 Analysis

The BG did not answer this question well as compared to ITD. Many of the BG’s answers were left unanswered and some only provide one selection when they could have selected more than one answer from the given list of IT/IS services. The answers from the ITD, on the other hand, were more accurate. The possible cause could be the BG personnel do not really know much about the IT/IS services they are using and are unsure of the services that are being considered for outsourcing at the moment.

From Figure 5-3A, it clearly indicates that most agreed that application development is the top activity that is being outsourced in “Company ABC”. Following closely is internet application. Both ITD and BG agreed that these two services are most commonly being outsourced. However, while ITD indicated a high percentage between 63 to 56 percent for intranet application, packages application/ERP application and system implementation, the BG did not give such high ratings. One possible cause is that most of the current on-going projects in “Company ABC” belong to internet based applications and the personnel in the BG hence do not perceive the intranet application or other package application as one of the services currently being outsourced. This reason also explains the 43 percent rating given by BG for internet/e-commerce.

Likewise, staffs/users training yielded 47 percent from the BG while only 31 percent of ITD deemed it as being currently outsourced. The cause of this trend could be due to the fact that most of the managers in BG and some of the key users from BG are given training by the outsourcers. It is clarified that ITD is practicing “Train-the Trainer” scheme for their outsourced projects. Hence, the IT personnel will be trained by the outsourcers to conduct some of the training lessons for the users. However, the outsourcers are still required to provide training to the key users and those from the managerial level.

Most of the options In Figure 5-3B did not even attained 35 percent of the answers. Many did not answer this question. One possible cause could have been that there are already many services being outsourced in present. Another reason could attribute to that the BG does not really know what are being considered

for outsourcing currently. Nevertheless, help desk, technical support/support to end users, desktop systems, network services and data center are the services that are deemed by ITD to be considered for outsourcing. One interesting observation is that 63 percent from ITD considered technical support as currently being outsourced (Figure 5-3A) and yet, 31 percent also deemed that this service will be considered for outsourcing (Figure 5-3B). Clarifications with the contacts in “Company ABC” revealed that that it was in the pipeline to fully outsource technical support and the plan just got completed in early April. Hence, the answers from ITD indicated some differences.

The BG also viewed that application development, application maintenance, intranet application may be considered for outsourcing. The BG may view that future application development projects are likely to be outsourced than to be done in-house and hence explained the results as illustrated in Figure 5-3B. On the whole, help desk and data center are observed to be the top candidates that may soon be outsourced in “Company ABC”.

5.2.3 Drivers and Benefits of Outsourcing

This question is question 6 of Appendix A; the purpose is to understand the types of drivers and benefits of outsourcing that motivate “Company ABC” to opt for outsourcing and to find out if “Company ABC” experienced the various different types of outsourcing benefits as learnt from the literature.

5.2.3.1 Presentation of result

The answers on the degrees of the benefits that were experienced and realized by outsourcing are illustrated in Figure 5-4A to Figure 5-4D while the top five reasons that motivated “Company ABC” to adopt outsourcing are listed in Figure 5-4E. The scale used for this question is shown in Figure 5-4. As most of the answers given were more conservative falling within the ratings, “Worse Than Expectation” or “Beyond Expectation”, the percentages of answers under the rating “Significantly Worse Than expectation” and “Significantly Beyond Expectation” are left out in the Figures.

Significantly Worse Than Expectation		Exactly As Expected		Significantly Beyond Expectation
1	2	3	4	5

Figure 5-4: Scale used to rate degrees of the outsourcing benefits

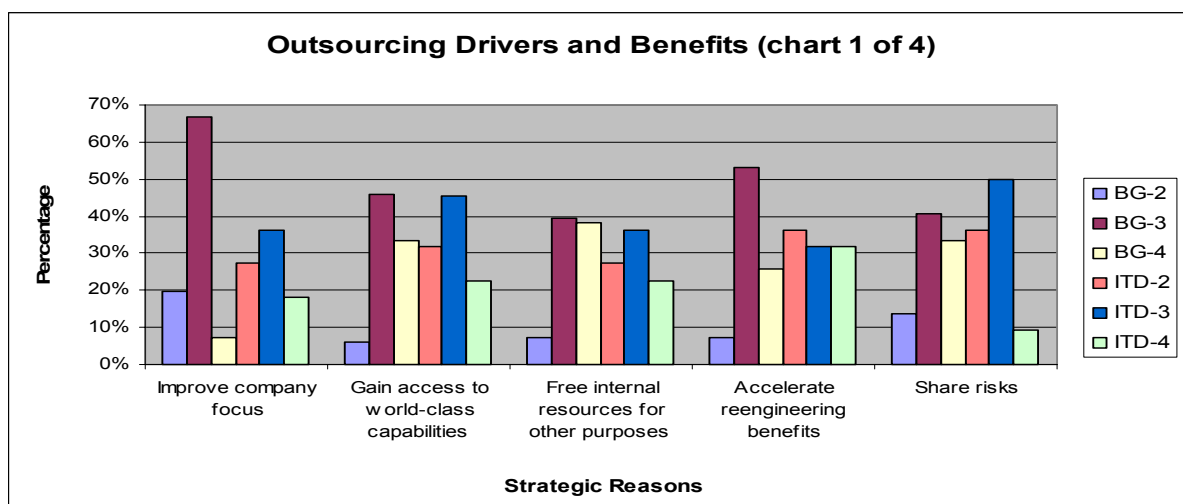


Figure 5-4A: Degree of Strategic Benefits experienced by Outsourcing

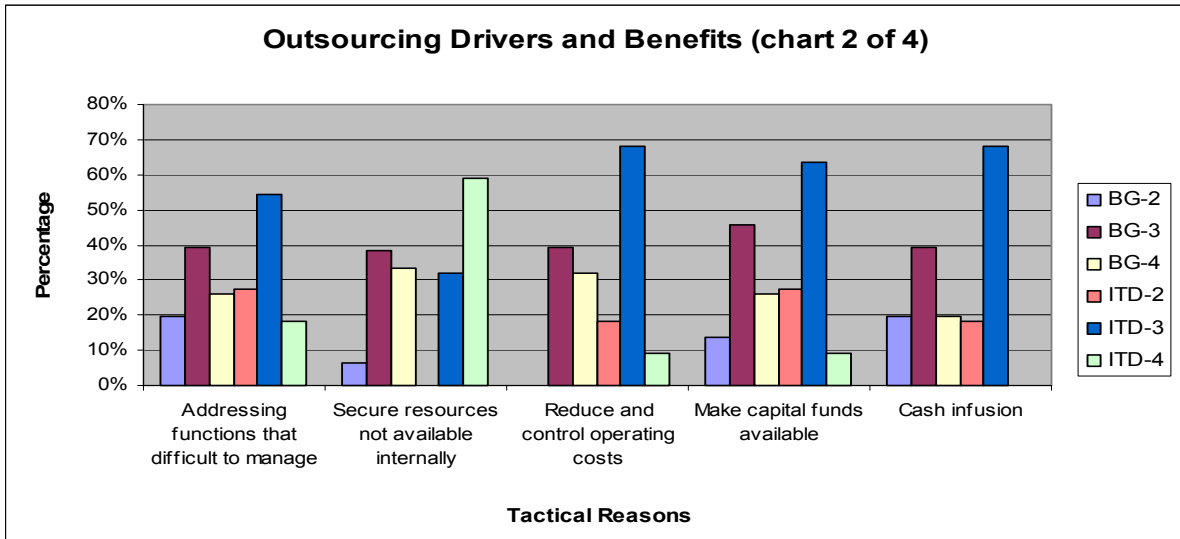


Figure 5-4B: Degree of Tactical Benefits experienced by Outsourcing

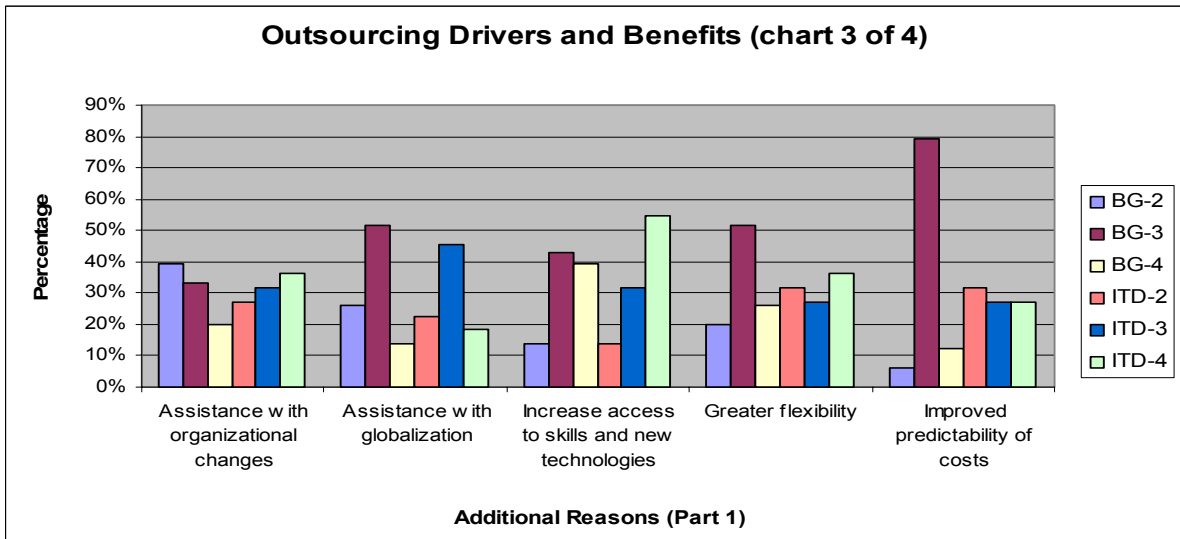


Figure 5-4C: Degree of Benefits experienced by Outsourcing (Part 1)

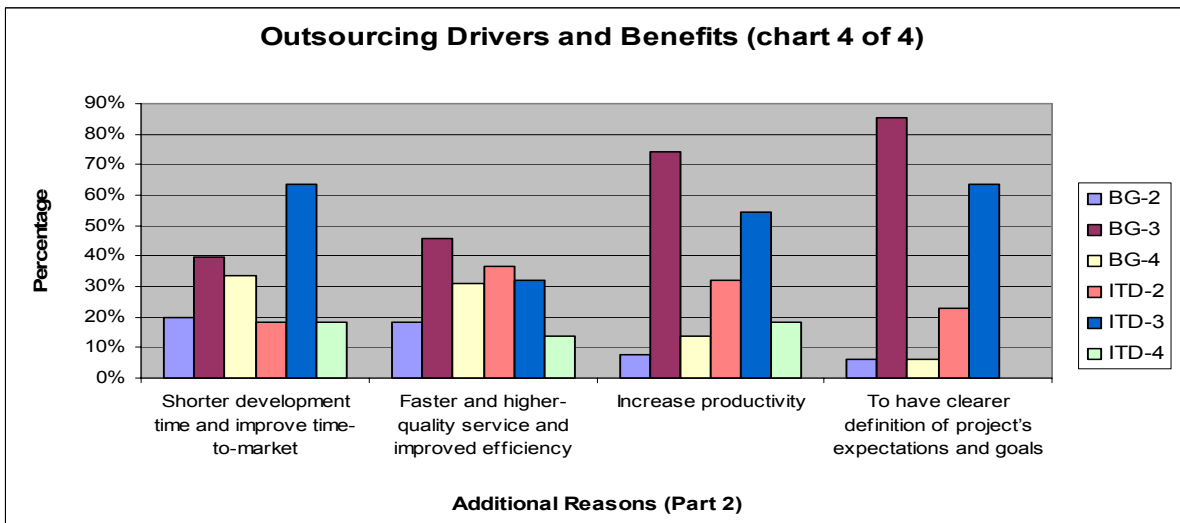


Figure 5-4D: Degree of Benefits experienced by Outsourcing (Part 2)

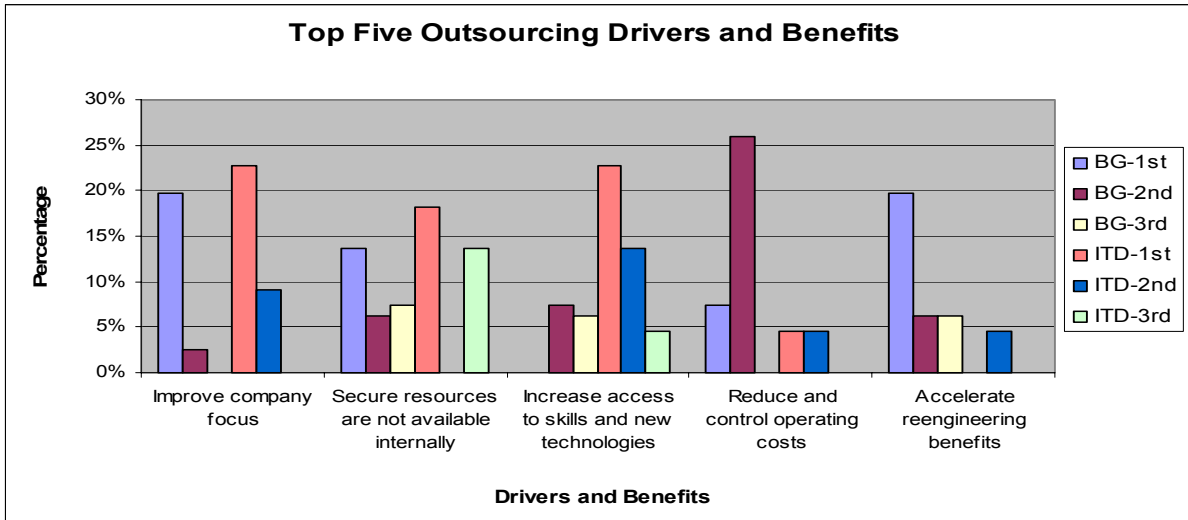


Figure 5-4E: Top Five Outsourcing Drivers and Benefits

5.2.3.2 Analysis

In general, ITD is more pessimistic than the business groups in term of the rating for the strategic reasons, illustrated in Figure 5-4A. The ratings given tend to be within the scale of 2 (i.e. “Worse Than Expectation”) and 3 (i.e. “Exactly As Expected”). The BG, on the other hand, gave more neutral and optimistic answers. For example, 6 percent of the BG rated 2 (i.e. “Worse Than Expectation”) for the factor gaining access to world-class capabilities while 32 percent of ITD gave the same rating. Similarly for freeing internal resources for other purposes, only 7 percent of the BG gave the rating 2 (i.e. “Worse Than Expectation”) as compared to 27 percent from ITD. One possible reason for this difference is the employees from ITD are more experienced with handling outsourcers and are usually the front liners dealing with outsourcing problems. Thus, they tend to be more reserved in rating the benefits. The expertise and skills of the outsourcers may not have attained the standards demanded by ITD and hence resulting in higher risks. Likewise, outsourcing such as application development projects has created more paperwork for the employees in ITD and thus it is perceived negatively.

A slight improvement can be seen in Figure 5-4B where ITD is more neutral in the assessment. Most of the answers are neutral. The answers from BG remained the same with neutral to optimistic ratings. One interesting note is 59 percent of ITD rated 4 (i.e. “Beyond Expectation”) for outsourcing securing resources not available internally. Even 33 percent of the BG assessed rating the same for this point. This strongly indicated that this factor is one of the key and most important reasons for outsourcing in “Company ABC”. The strong rating for benefit, increase access to skills and new technologies in Figure 5-4C re-confirmed the point that one of the key reason and driver for outsourcing in “Company ABC” is to gain access to technological expertise that is lacking in-house.

The answers from the BG on additional outsourcing reasons and benefits, in Figure 5-4C and Figure 5-4D are again mostly neutral. The answers by ITD in Figure 5-4C are quite well spread while the answers as shown in Figure 5-4D are slightly more negative. As illustrated in Figure 5-4C, the two factors - greater flexibility and improved predictability of costs, both gained a good mix of answers from ITD. The cause of such results could arise from the different teams within ITD whereby some employees are from applications teams while others from the network, database, and infrastructure teams. The application teams may feel that predictability of costs did not really improve with outsourcing as re-works and additional changes in the applications required additional charges whereas the costs of infrastructure are more predictable. Likewise the same reasoning may be applicable for the factor on flexibility.

One notable observation is the differences in rating between the BG and ITD for the factor on assistance with organization changes. While ITD are positive in the rating, the BG perceived more negatively. It is

highly possible that the technological assistances received are mostly infrastructure setups that the BG is not aware of. This type of benefit is more contained within ITD. In Figure 5-4D, the same observation can be seen for the benefit on faster and higher quality services and improved efficiency. The employees from ITD may deemed that efficiency did not really improve due to the additional paperwork required whereas the BG who is the one receiving and using the end products may experienced more on this benefit.

Based on the results in Figure 5-4E, the five most important outsourcing drivers and benefits consists of both strategic and tactical reasons. Most managers and a high percent of ITD and BG deemed that improved company focus is highly important, ranking it first in the list. This strategic reason is also one of the many reasons that had motivated DBS to go for outsourcing [Yap 2003b]. Following next, the earlier observations of the importance of the two reasons, that is, secure resources not available internally and increase access to skills, also surfaced in the list. As for the tactical reason on reducing and controlling operating costs, they top the list for the second most important driver among the BG. This clearly pointed out that costs and pricing is a concern for the BG. The BG also viewed the reason on accelerate reengineering benefits as a key driver in outsourcing non-core functions to seek improvements in cost, quality, service and speed. Obviously, the results indicated that BG looked for benefits from the business angle while ITD viewed from the technological perspectives.

5.2.4 Risks of Outsourcing

This question is question 7 of Appendix A. The aim of this question is to understand the common risks associated with outsourcing that were being taken into considerations when “Company ABC” opts for outsourcing and the respective risk levels of those risks.

5.2.4.1 Presentation of result

The five most common outsourcing risks “Company ABC” faced and their corresponding risks level are shown in Figure 5-5A and Figure 5-5B respectively. Figure 5-5C is used to illustrate the three most important outsourcing risks.

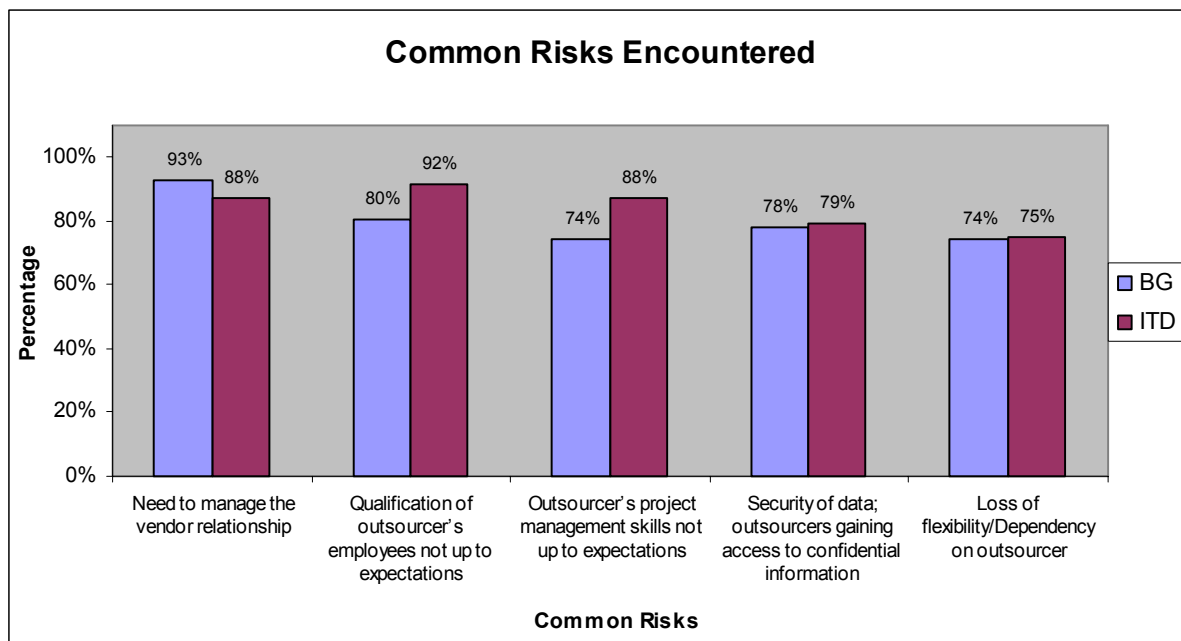


Figure 5-5A: Common Outsourcing Risks Encountered by “Company ABC”

For Figure 5-5B, most of the answers fall within the rating of “Low Risk to “Very High Risk”. Hence, the answers for rating “No Risk” are left out. The ratings used are shown in the following scale:

No Risk	Low Risk	Medium Risk	High Risk	Very High Risk
1	2	3	4	5

Figure 5-5: Scale used to rate outsourcing risk levels

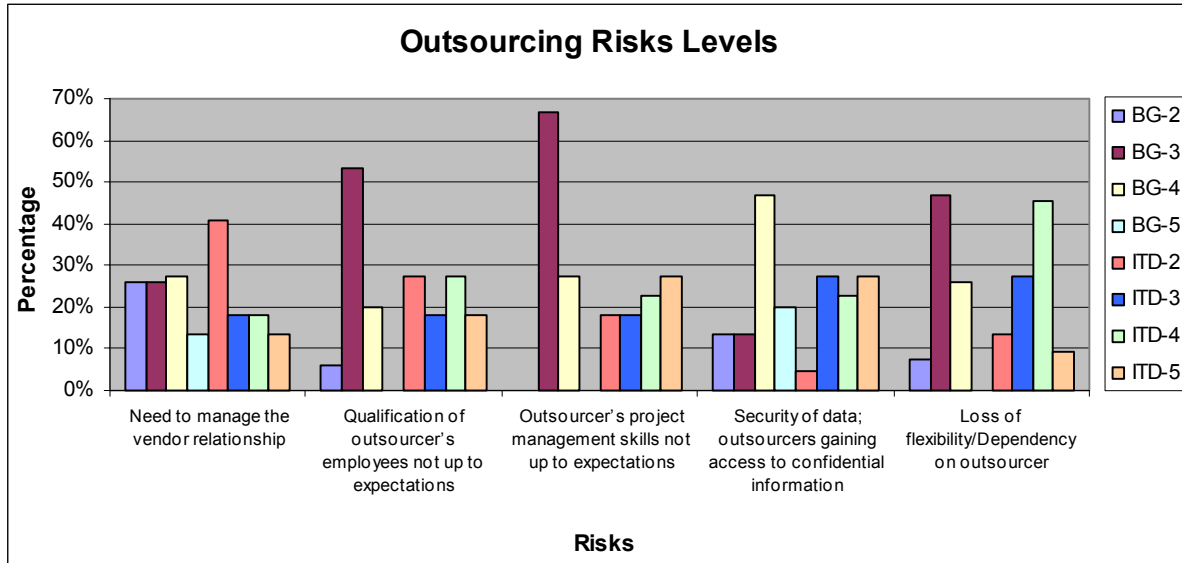


Figure 5-5B: Associated Risks Levels of Common Risks

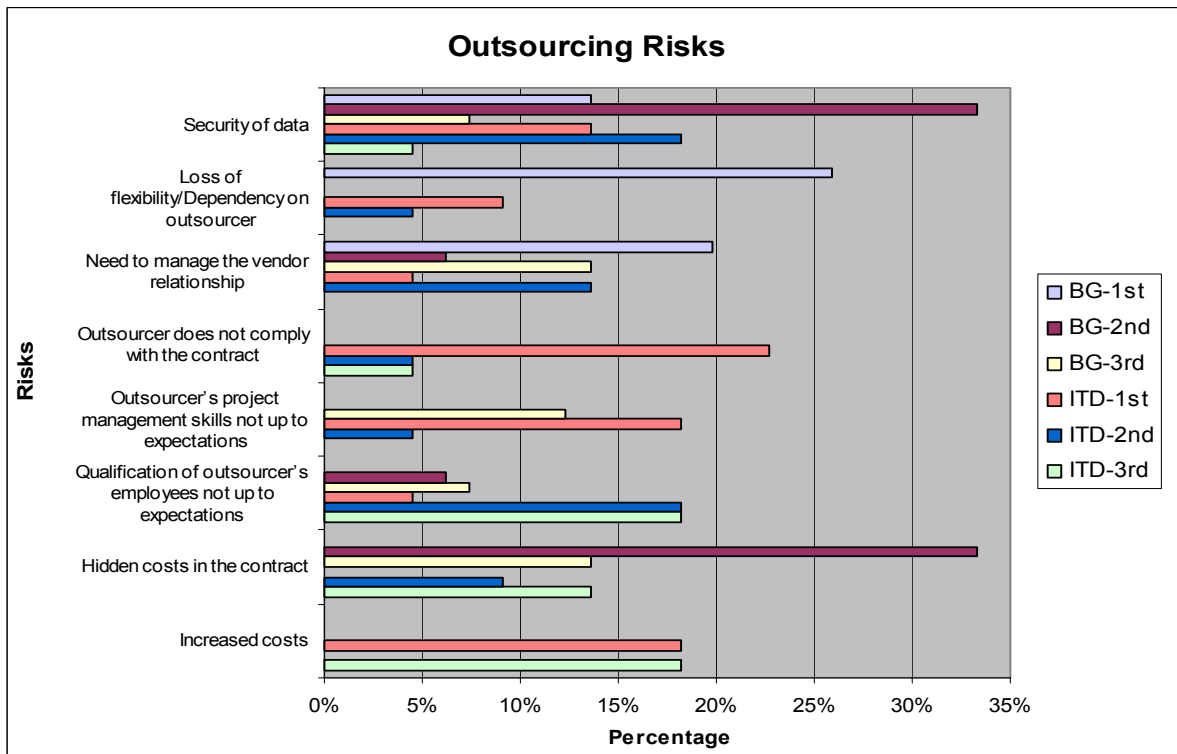


Figure 5-5C: Most Important Outsourcing Risks

5.2.4.2 Analysis

As can be seen in Figure 5-5A, the common risks encountered by “Company ABC” generally belong to risks associated with management of the outsourcers and security and confidentiality of the data. Illustrated in Figure 5-5B, 41 percent of the ITD felt that the need to manage the vendor relationship is low risk. However, the BG rated this consideration between low to high risk. The employees from ITD may be better trained and are more experienced in dealing with outsourcers than the users from BG. Nevertheless, there are still a handful of employees from ITD who rated this consideration between medium to very high risk. These may come from the bad experiences in failures of outsourcing due to poor management of the relationship with the outsourcers.

For the two risks on the qualification of outsourcer’s employees and outsourcer’s project management skills not up to expectations, most BG rated them with a medium risk level whereas majority of ITD rated higher risk levels (Figure 5-5B). Again, the need of ITD to be the core contact persons for the outsourcers and to monitor the performance of the outsourcers stressed the importance of having good outsourcers with the expected qualifications and skills and thus explained the results. BG, in this case, tends to be more neutral. There is a small percentage of IT personnel who rated these two risks as low risks could be those who felt that the organization has safeguarded these risks as ITD has the rights to request for changes of the outsourcers’ employees and project managers should they find that the qualifications and skills of the outsourcers’ employees are not up to the expectations.

It can be seen from Figure 5-5B that the BG and ITD are both equally concerned with the risk of losing flexibility and the dependency on outsourcers. The ratings fall between medium to high risk with most of the BG rated it as medium risk while ITD rated it as high risk. The different levels of involvement between the BG and ITD in managing the outsourcers may cause this difference in opinions. Naturally, IT personnel will tend to be more concerned about the loss of flexibility because they are the main person negotiating with the outsourcers. Regardless of this difference, the observation based on the result is the risk of losing flexibility is one area that should not be neglected.

Security of data surfaced as the key risk. Both BG and ITD agreed and rated it as high to very high risk (Figure 5-5B). It is thus clear that security and confidentiality of the data is a very important risk that could cast a major vote against outsourcing in “Company ABC”. It is one important area that needs to be addressed before “Company ABC” is comfortable with outsourcing any IT/IS services. Security also gained the most number of votes from the BG and ITD as shown in Figure 5-5C. The importance of data security is also supported when [Chen 2001] stated “concerns on security and performance are among the reasons why many companies are unwilling to outsource their IT services.” Similar supporting statement can be found in [Chen 2001] when Ross O’Brien, Strategic Intelligence’s Hong Kong based research director for advisory services, made the remark that “many also feel that their data cannot be trusted to somebody else”.

It is interesting to learn that 26 and 20 percent of BG ranked the risks on loss of flexibility and the need to manage the vendor relationship top risks respectively while ITD top rankings are for the risks on outsourcers do not comply with contract (23 percent) and the project management skills not up to expectations (18 percent). It can be deduced that there is some dependency of ITD on the outsourcing contracts which are used to negotiate terms with the outsourcers and this process is usually spearheaded by IT personnel. The cause of such deduction is because none of the BG ranked this risk as one of the top three important risks. Nevertheless, there is a significance percentage of the BG who is worried about the loss of flexibility. The rankings from ITD are based on operational viewpoints while the BG looks from the business angle. Likewise, the differences in the BG and ITD rankings on the hidden costs in contract and increased costs are explained based on the same reasons. The operational concern on higher costs in the long run existed within ITD while the users from the BG see the costing factors embedded in the contract.

5.2.5 Consequence of Outsourcing

This is question 8 of questionnaire in Appendix A. The intent of this question is to find out if outsourcing is more beneficial than in-house efforts.

5.2.5.1 Presentation of result

The presentation of the results is shown in Figure 5-6A to Figure 5-6C. The scale used is shown in Figure 5-6 and the answers for rating “Decreased Dramatically” and “Increased Dramatically” are left out because only three persons selected these two answers.

Decreased Dramatically	Decreased Significantly	Decreased Slightly	No Change	Increased Slightly	Increased Significantly	Increased Dramatically
1	2	3	4	5	6	7

Figure 5-6: Scale used to assess outsourcing consequences

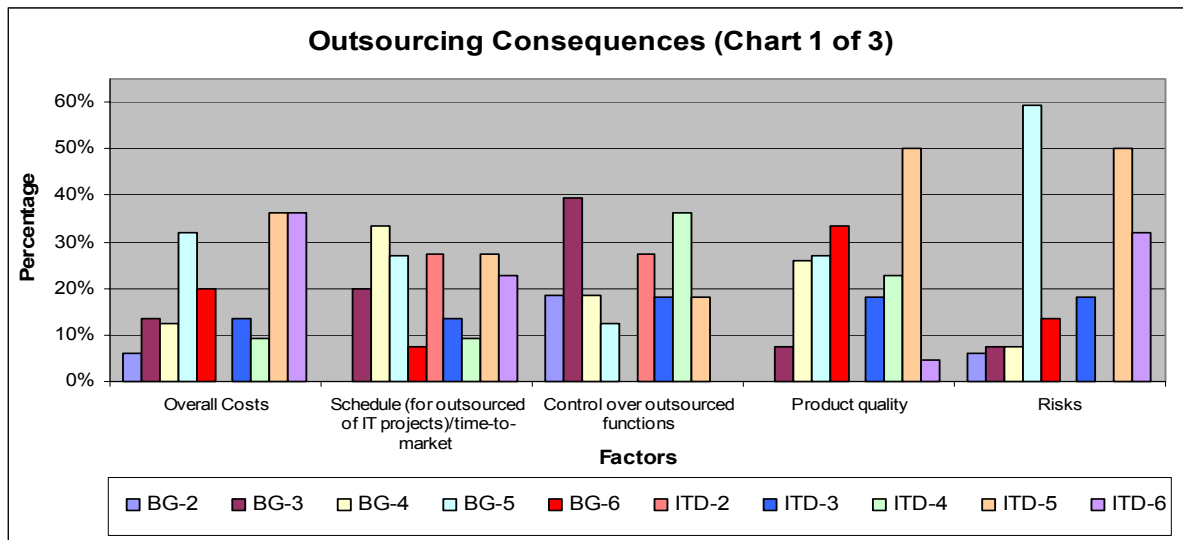


Figure 5-6A: Assessment of Outsourcing Consequences to In-House Efforts (Part 1)

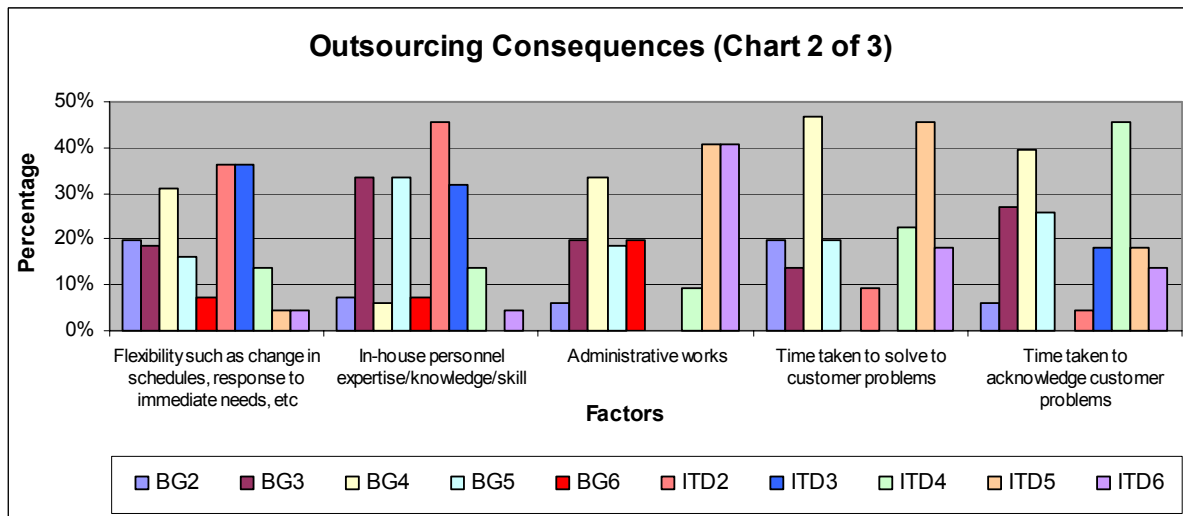


Figure 5-6B: Assessment of Outsourcing Consequences to In-House Efforts (Part 2)

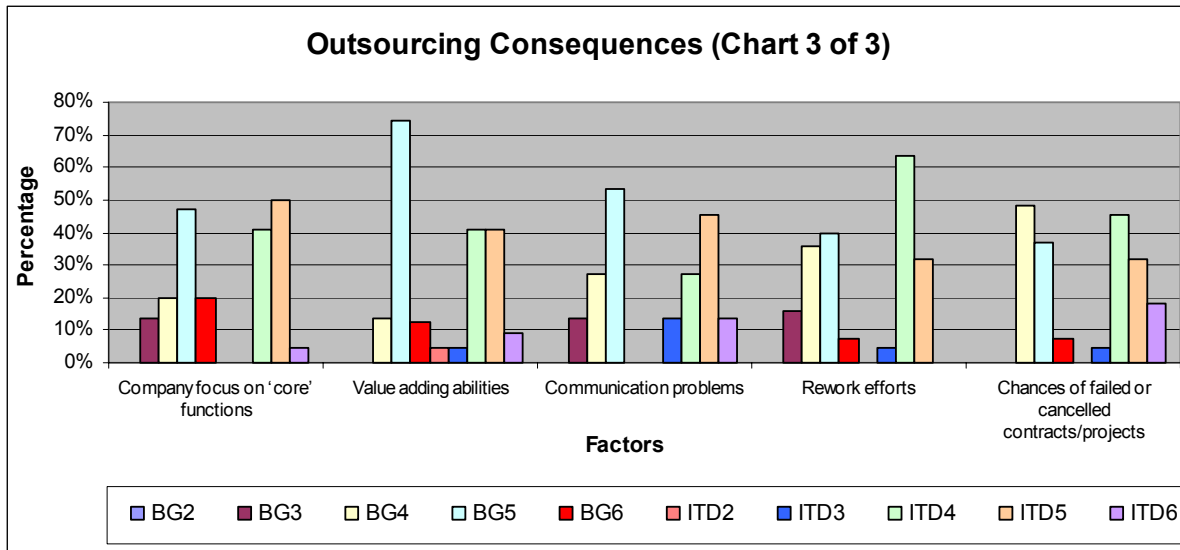


Figure 5-6C: Assessment of Outsourcing Consequences to In-House Efforts (Part 3)

5.2.5.2 Analysis

ITD is once again more pessimistic in the rating than the BG. Overall, there is a general agreement that costs, quality and risks increased with outsourcing while the control over outsourced functions decreased (Figure 5-6A). No doubt it has also been noticed that there is still some personnel from BG and ITD that felt otherwise, the cause can be traced to the different success and failures of past outsourcing experiences. The results displayed for the schedule as shown in Figure 5-6A is one area that need more investigation. The answers are diversified and contradicting. The explanation given is that the BG may be disappointed with the large number of IT/IS projects that do not complete on time. Almost 90 percent of the IT projects were delivered late. However, it is also acknowledged that the project schedule and time-to-market may be even longer should the projects be solely developed in-house. Thus some employees still viewed and rated it positively.

In Figure 5-6B and Figure 5-6C, the general consensus are rather similar too. This is especially true for Figure 5-6C whereby the answer from both BG and ITD are rather consistent, that is, indicated a higher level of risks such as communication problems and chances of failed projects, and a higher assessment for some outsourcing benefits such as gaining more value-added services and better focus on 'core' functions. In Figure 5-6B, it is also agreed that there is an increase in the administrative work and lesser flexibility. Interestingly, the knowledge of the outsourcers as illustrated in Figure 5-6B indicated that IT personnel felt that the outsourcers were not as good as the in-house IT personnel. This is probably caused by having outsourcers who do not meet the expectations and who could not grasp the business knowledge of the internal process in "Company ABC". BG, on the other hand, provided contradicting ratings. Some felt that the knowledge of the outsourcers is better while some do not think the same way. Once again, it is highly believable that the outsourcers are technically more knowledgeable than in-house IT personnel in the products they are offering but are lack of the business knowledge that the in-house IT personnel possessed.

5.2.6 Trends and Practices of Outsourcing

This question, question 9 of the questionnaire in Appendix A, seeks to understand the trends and practices of outsourcing being practiced in "Company ABC".

5.2.6.1 Presentation of result

Figure 5-7A presents the top five outsourcing trends and practices that are common and prevailing in “Company ABC” while Figure 5-7B pointed out the most common outsourcing practice that is being undertaken.

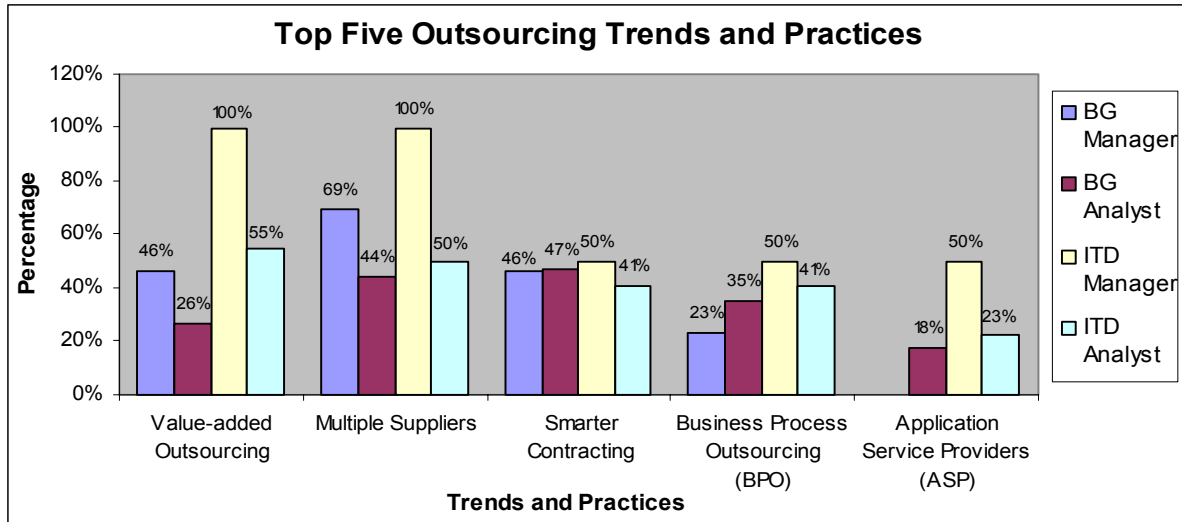


Figure 5-7A: Top Five Outsourcing Trends and Practices

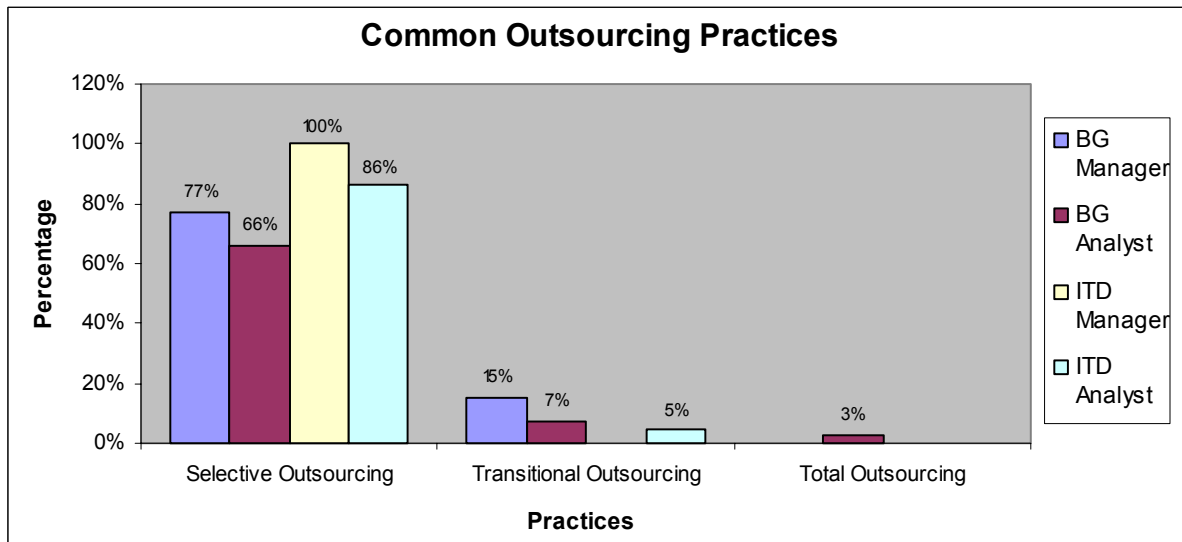


Figure 5-7B: Most Common Outsourcing Practice

5.2.6.2 Analysis

There are many different types of outsourcing trends and practices and as illustrated in Figure 5-7A, value-adding outsourcing, multiple supplies and smarter contracting are some of trends that are commonly engaged in “Company ABC”. In fact, business process outsourcing (BPO) is also not new to “Company ABC”. As discussed in Section 4.2.2.1, “Company ABC” had conducted two series of BPO within the past 3 years. Nevertheless, BPO did not receive 100 percent selection and this is because some employees may not have joined the company when the BPO took place while others may feel that the BPO that had taken place is not the same as the BPO stated in this survey as ITD was not involved in the past two BPO.

In the result, there are also five IT analysts who selected offshore outsourcing and the clarifications shared that ITD indeed practiced offshore outsourcing five to six years ago in the late 1990s but the results and experiences had not been rewarding. The offshore outsourcing was more of contracting IT/IS application developments to India that has cheaper labor costs. However, the performances of the works were not up to expectations, and the difficulties and effort in coordinating, monitoring the progress was highly tedious as face-to-face meetings and communication were almost not possible. Most often, there were even delays and ignorance of the reworks requests. The bad experiences with offshore outsourcing coupled with the new initiative to go for packaged and off the shelves solution available in the markets set the new outsourcing practices in “Company ABC”.

From Figure 5-7B, it is obvious that “Company ABC” is practicing selective outsourcing. Occasionally, transitional outsourcing also takes place when “Company ABC” decided to engage external assistance to transit to a new technology. Based on the understanding of the operations in “Company ABC”, ITD is currently sourcing and tapping onto outsourcer’s assistance and expertise to implement wireless technology. This finding on selective outsourcing being the most common practice is similar to the finding in the literature by [Kern and Willcocks 2001, Lacity and Willcocks 2001, Willcocks and Lacity 1998] whereby their studies concluded that selective outsourcing is also the most common practice.

5.2.7 Outsourcer Selection Criteria

This question is question 10 in Appendix A. The objective is to find out the important criteria “Company ABC” look for when selecting outsourcers.

5.2.7.1 Presentation of result

Figure 5-8 highlights the five most important selection criteria when evaluating and selecting outsourcers.

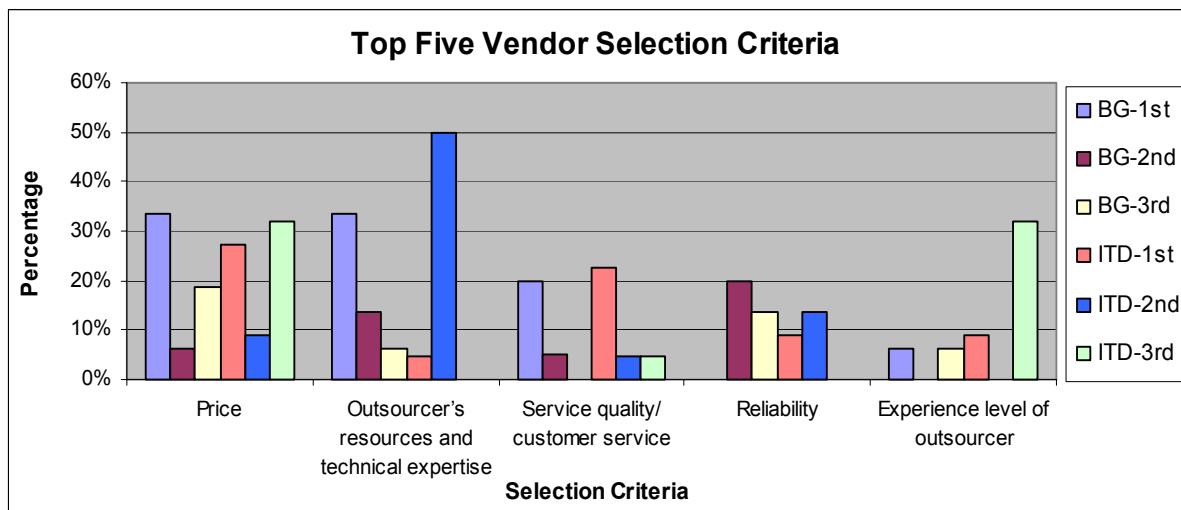


Figure 5-8: Top Five Outsourcers Selection Criteria

5.2.7.2 Analysis

The results illustrated in Figure 5-8 are not out of the expectation. From the earlier results and findings on the benefits, risks and consequences of outsourcing, it is not surprising that the price, outsourcers’ resources, expertise, experience level, service quality are listed as important evaluation criteria. The general concern on the management of outsourcers and the risks of not having skillful outsourcers that could meet expectations makes it imperative that these factors should be duly considered and evaluated when selecting outsourcers. Pricing and costs will never be neglected as they are always part of the

tangible benefits used to justify for the decision to outsource. In addition, they are also one of the factors for assessing the success of outsourcing. The reliability of the outsourcers is also another important consideration given that reliability may also impact the success of outsourcing and the quality of work. Outsourcer’s reputation, solvency and stability and commitment to quality, which are not shown in the above figure, also received about 10 percent ranking from both BG and ITD. These evaluation factors can be the secondary considerations for evaluating reliability.

5.2.8 Outsourcing Success Factors

This is question 11 of the questionnaire in Appendix A that aims to learn about the factors affecting the success of outsourcing and the top outsourcing critical success factors in “Company ABC”.

5.2.8.1 Presentation of result

The presentations of the results are shown in Figure 5-9A to Figure 5-9C and the five outsourcing success factors deemed as most important are presented in Figure 5-9D. The answers for rating “Totally Not Important” are omitted in Figure 5-9A to Figure 5-9C because most of the answers are classified as from scale 2 and above, as shown in Figure 5-9.

Totally Not important	Somewhat Important			Very Important
1	2	3	4	5

Figure 5-9: Scale used to assess the level of importance

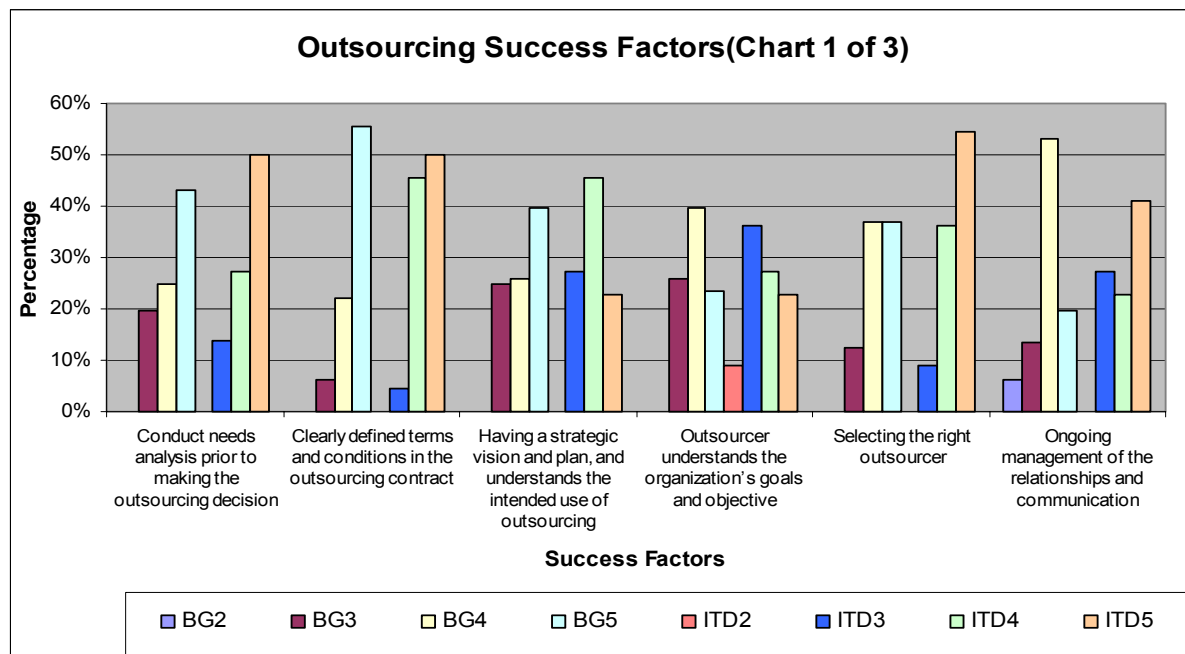


Figure 5-9A: Importance of Outsourcing Factors (Part 1)

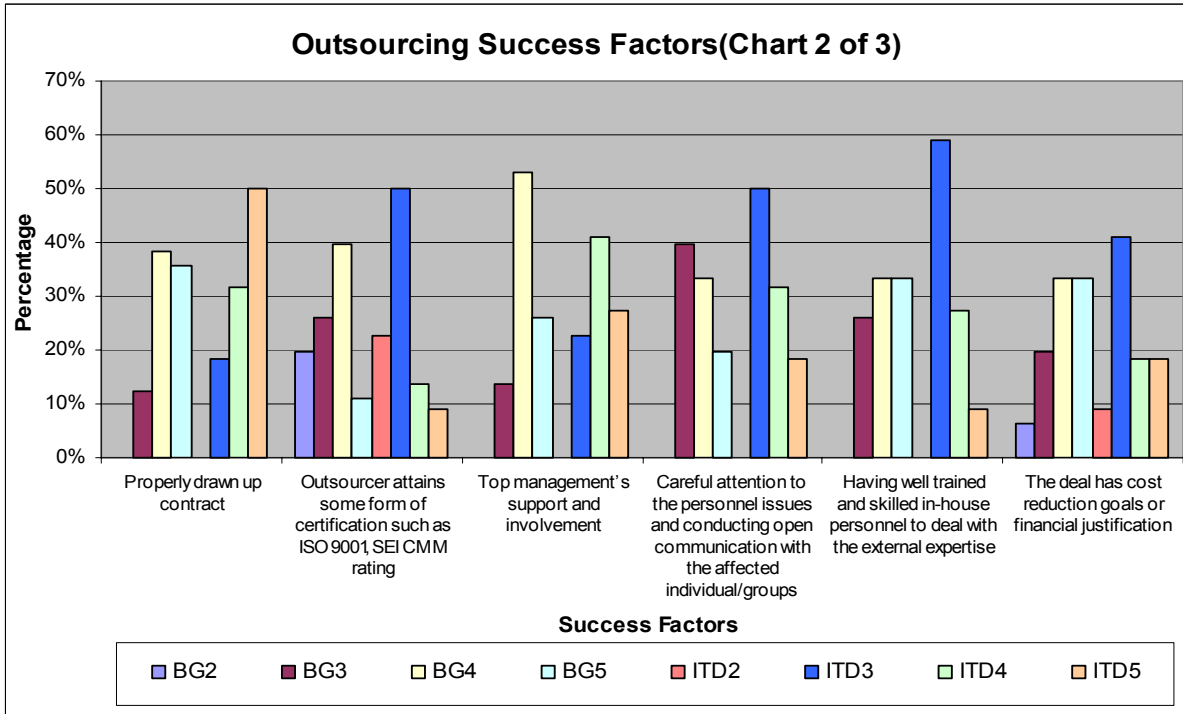


Figure 5-9B: Importance of Outsourcing Factors (Part 2)

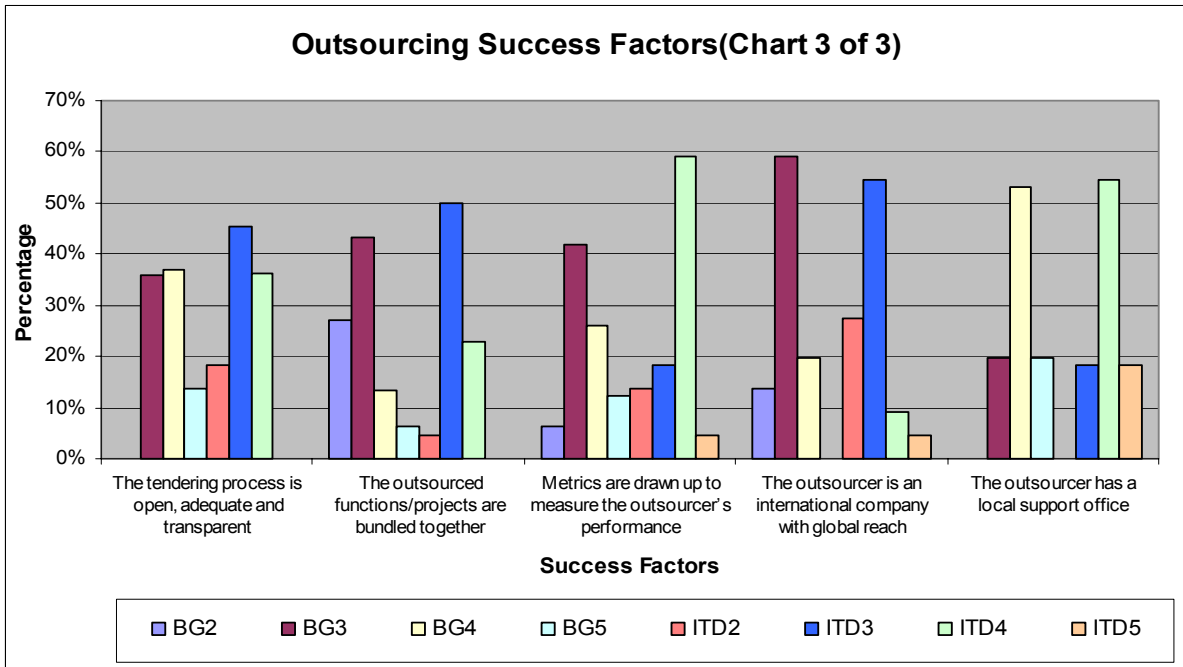


Figure 5-9C: Importance of Outsourcing Factors (Part 3)

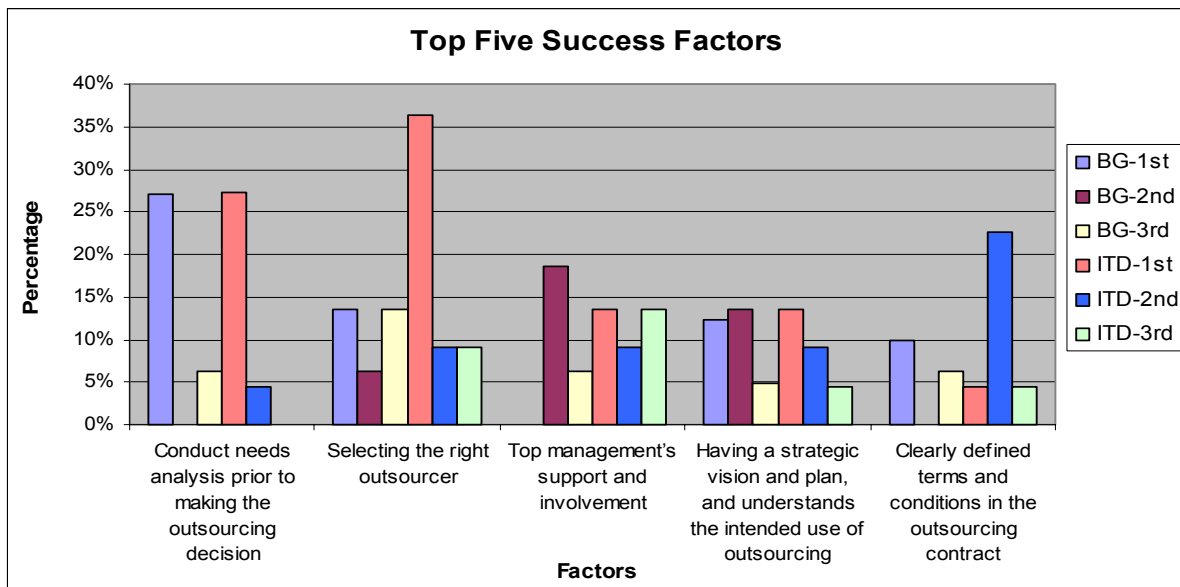


Figure 5-9D: Top Five Outsourcing Success Factors

5.2.8.2 Analysis

The overall impression is that most of the factors are important. As presented in Figure 5-9A to Figure 5-9C, some of the “Very Important” factors includes conducting needs analysis prior to making the outsourcing decision, clearly defined terms and conditions in the outsourcing contract, selecting the right outsourcer, gaining top management support and involvement and having a properly drawn up contract. Most of these factors, in fact, also surfaced as the top five success factors as illustrated in Figure 5-9D. Two factors, having strategic vision and plan and ongoing management of the relationships and communication, also received high rating with the BG giving higher ratings than ITD. This is again caused by the different priorities between the operational and business interests.

Unexpectedly, 9 percent of IT personnel deemed that outsourcer having understanding of the organization’s goals and objective is not important. A further investigation revealed that these IT personnel mostly belongs to the infrastructure unit whereby the work involved are highly technical and backend, thus they do not see the importance of this factor. Likewise, a significant 20 percent of both BG and ITD also deemed that it is not important that outsourcer attains some form of certification (Figure 5-9B). The reason is ITD had attained ISO 9001:2000 certification and has its own internal quality assurance (QA) committee to oversee the internal IT policies, standards and guidelines. With such a system in place, ITD will require outsourcers to abide with their internal guidelines instead.

Although the ratings from the BG for the factor on cost reduction goals as shown in Figure 5-9B also re-emphasized the importance of costs and pricing issues as discussed in the earlier analysis, it is noted that costs should not be the overwhelming factor as a handful of the replies still rated between “Not Important” and “Somewhat Important”. Having metrics drawn up to measure the outsourcer’s performance and ensuring that the outsourcer has local support were both graded as important success factor in Figure 5-9C. Having a measurement system is to assess if the outsourcer’s is performing as promised while having outsourcer with local support office safeguard and allow “Company ABC” to receive prompt supports from the outsourcer when problems occurred.

Figure 5-9C also highlights that 27 percent of BG felt that bundling outsourced functions/projects was not important while 23 percent of IT personnel felt that it was important. IT personnel may find that integration issues can be overcome more easily when all the functions are bundled together while BG who does not need to deal with integration problems finds that bundling all functions together increased the complexity of the project and thus discouraged such actions.

It can be seen from Figure 5-9D that ITD ranked selecting the right outsourcer as the most important success factor while BG ranked conducting needs analysis prior to outsourcing top of the list. IT personnel being highly involved in managing outsourcers inevitable will perceived getting the right guy to do the work coupled with clearly defined terms and conditions in the contract will increase the chance of successful outsourcing. While the BG also agreed with ITD in these aspects, conducting needs analysis is still the most important success factor. This indicated that the BG are confident and trust that the in-house ITD is also capable of performing the IT/IS services. In addition, since outsourcing had resulted in higher overall costs as presented in Figure 5-6A, it is imperative that a proper and thorough needs analysis should be carried out to fully justify the need for outsourcing.

5.2.9 Human Resources Arrangement

This question hopes to understand the preferred human resource arrangement in “Company ABC” in the event when outsourcing affects the employees. This question can be found under question 12 in Appendix A.

5.2.9.1 Presentation of result

Figure 5-10 illustrates the type of arrangement that is most preferred among the employees of “Company ABC”.

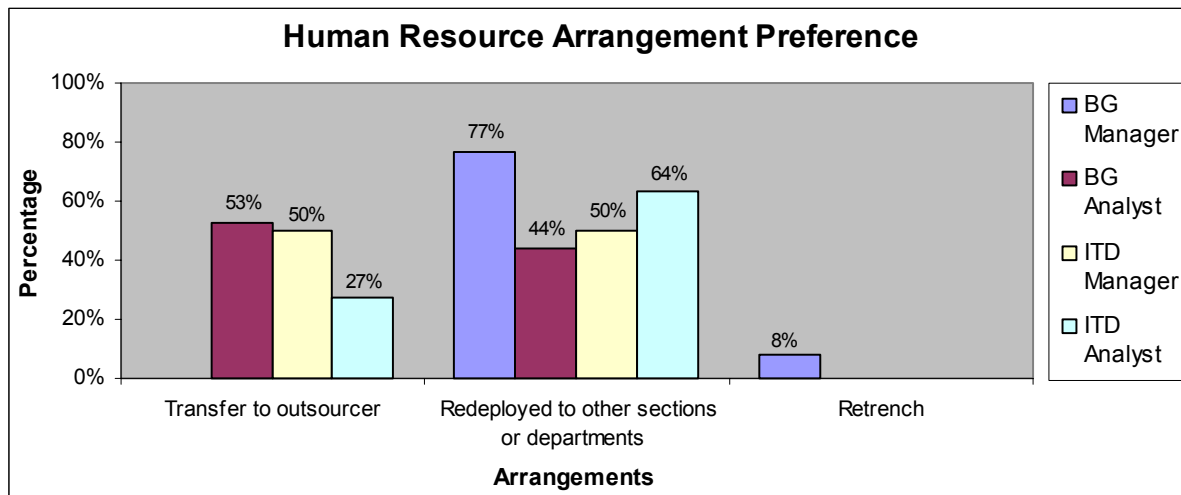


Figure 5-10: The Preferred Human Resource Arrangement

5.2.9.2 Analysis

As can be seen in Figure 5-10, redeployment to other sections or departments is the most preferred arrangement while retrench is totally undesirable. On average, about 50 percent of the BG preferred to transfer to the outsourcer. This preference, however, is not popular among the IT personnel with only 27 percent selected this arrangement. More than 50 percent from ITD would like to remain in the company with redeployment arrangement. A lack in faith and trust on the outsourcers as well as a lack of knowledge of the new offer are the two most probable reasons for this result. Another factor may have been the welfares and benefits offered by “Company ABC”. Since “Company ABC” is a statutory board, some of the more senior employees who had joined the company before 1975 are actually enjoying better benefits such as highly subsidized medical benefits and pension scheme. As these types of welfares no longer exists in most of the companies in Singapore, the offer that outsourcer will provide may thus be unattractive.

5.2.10 Outsourcing Satisfaction

To find out the outsourcing satisfaction level in “Company ABC”, question 13 to 16 as shown in Appendix A are used. These questions presented a peep into the future of outsourcing in “Company ABC”

5.2.10.1 Presentation of result

Figure 5-11A presents the satisfaction levels of the employees with outsourcing and Figure 5-11B shows the opinions of the employees in continuing with outsourcing. The answers for recommendation for further outsourcing are illustrated in Figure 5-11C.

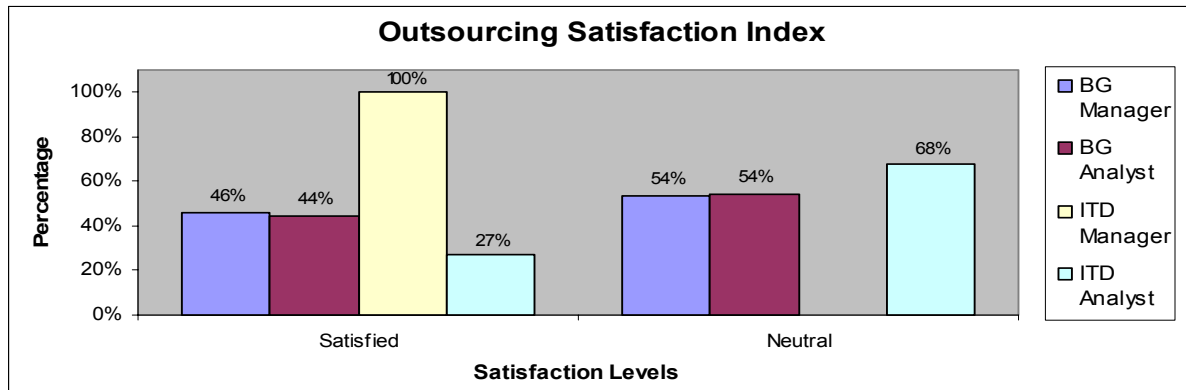


Figure 5-11A: Satisfaction Levels

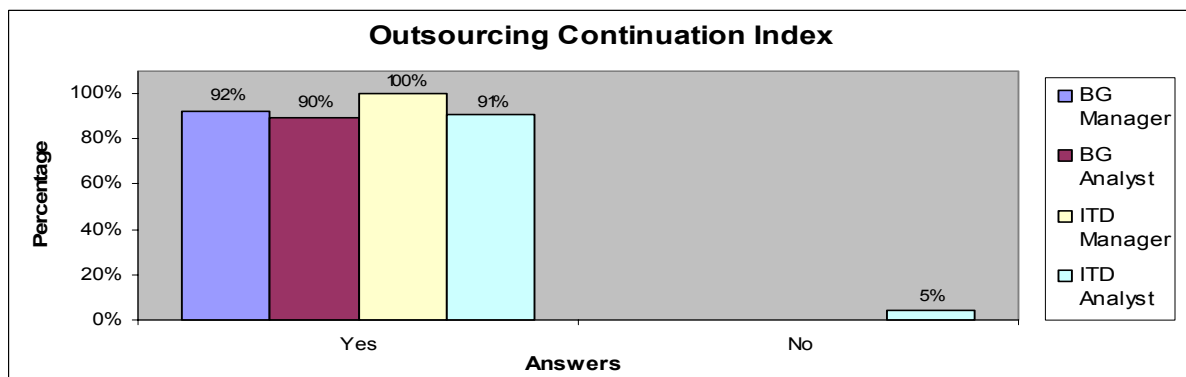


Figure 5-11B: Opinions on Continuing with Outsourcing

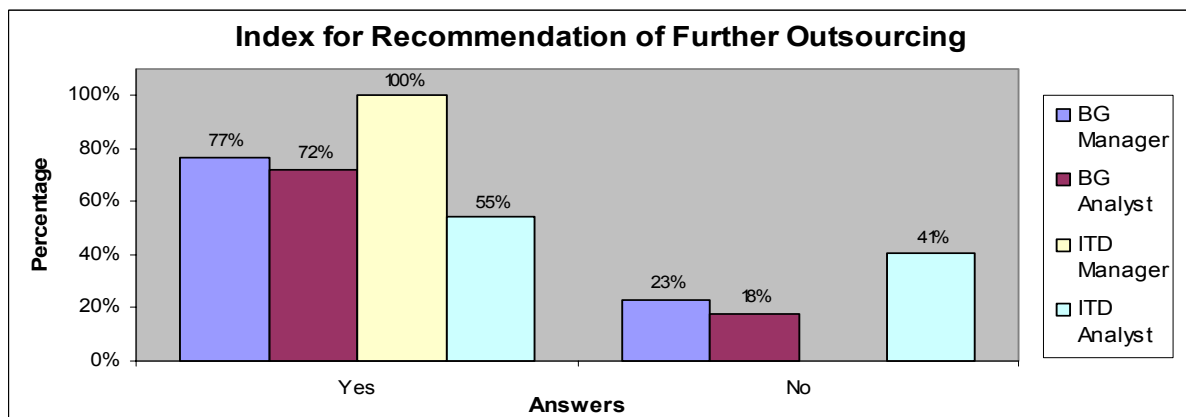


Figure 5-11C: Opinions on Recommending Further Outsourcing

5.2.10.2 Analysis

As presented in Figure 5-11A, all the answers are mostly satisfied or neutral. While some did not answer this question, there is no voting for dissatisfaction. 68 percent of ITD indicated that they are neither satisfied nor dissatisfied while 27 percent stated that they are satisfied with overall performance/services of the outsourced IT/IS functions. All the ITD managers rated satisfied. Among the users from the BG, the ratio for these two scales is about the same. Hence, it could be concluded that the employees on the whole find the overall performance of outsourcing satisfactory and acceptable. The results illustrated in Figure 5-11B further supported this deduction whereby as high as 90 percent of all the respondents indicated that they will continue to deploy an outsourcing approach.

However, in Figure 5-11C, the results also indicate that there are a handful of employees who deemed that there should not be further outsourcing. This is especially obvious in the case for the ITD analysts with 41 percent of them voted for “No”. Generally, the analysts from ITD are concerned with the risks and impact of further outsourcing. Further outsourcing of IT/IS functions and services may cause jobs redundancy within ITD and that will impact their employment. A link with the earlier discussion on the IT/IS services that are being considered for outsourcing can be seen in this instant. It is explained that the outsourcing of technical supports in “Company ABC” recently had resulted in some excess overheads in ITD and thus if more services and functions, such as the help desk and data center, are to be recommended for outsourcing, more IT personnel will be affected. Thus, extra care should be exercised when handling human resource arrangement in outsourcing as employee morale will inevitably be shaken.

5.2.11 Total Outsourcing

Question 17 and 18 in Appendix A were used to find out if total outsourcing is a viable approach for “Company ABC”.

5.2.11.1 Presentation of result

Figure 5-12 highlights the different opinions on total outsourcing among the employees of “Company ABC”.

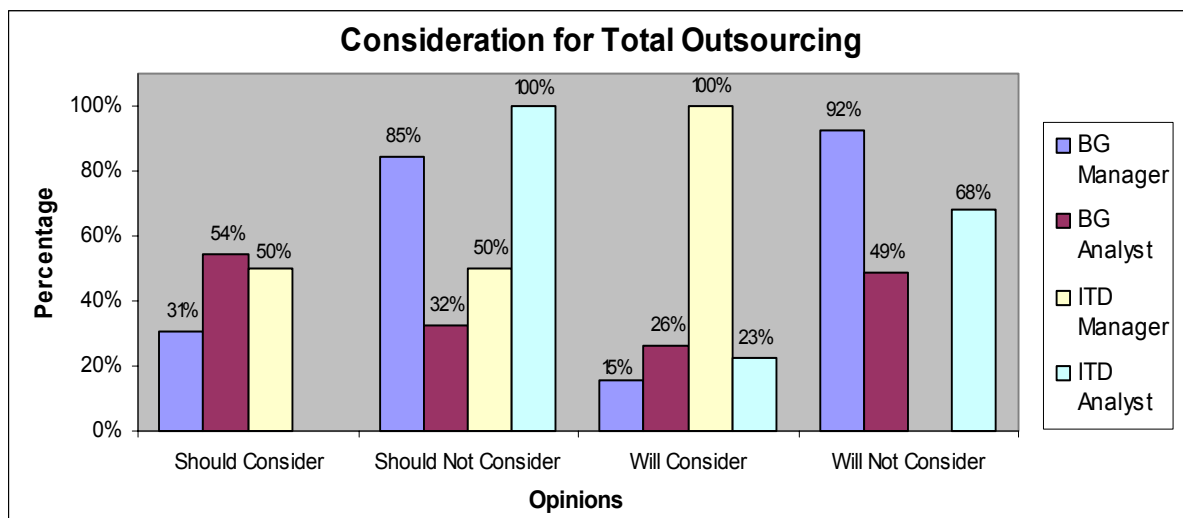


Figure 5-12: Total Outsourcing Considerations

5.2.11.2 Analysis

From the earlier discussion and analysis, it is clearly denoted that outsourcing is currently a very “touchy” and sensitive topic in ITD. Thus, it is not a case to be alarmed of when 100 percent of the analysts in ITD felt that total outsourcing, being the extreme case of outsourcing, should not be considered (Figure 5-12). While one of the managers from ITD stated that “Company ABC” should consider total outsourcing, this could have been the positive opinions from this manager and may thus not be representative. “To allow focusing on core functions of the organization and reducing overheads” is the reasons given by this manager. The following are the most frequently mentioned reasons for “Should Not Consider”:

- Job at stake; internal in-house talents will become redundant
- For Confidentiality and reliability; risks and concerns over security and sensitivity of the data. There are sensitive information and thus a need to retain in-house IT personnel. The security and integrity of data should never be compromised.
- The business processes are too complicated and constantly changing to fit the economy and industry. The IT/IS system that is supporting the organization needs to be flexible and tune to constant change. To outsource the support of the core IT/IS system will be too expensive and gains no benefit.
- The risk on total dependence on the outsourcer is too high. The loss of control, some loss of security, communication problems, as well as the impacts and problems that could arise should the outsourcer folds up, for example, in the case of Arthur Anderson.
- There will be total loss of knowledge/skills of the outsourced IT functions if the organization decides not to renew the contract with the outsourcer. In addition, the outsourcers will not have a sense of belonging to the organization. Hence, they will be less committed to the organization and may even make decisions or take actions that would benefit themselves instead of the organization since there will not be anyone around to control them. Hence, an internal IT department will still be required to handle such situations.

While most felt that total outsourcing should not be considered, 54 percent of the analysts and 31 percent of the managers from the BG actually felt that total outsourcing should be considered. The reasons for the selection are:

- To allow focuses on core competencies and functions of the organization as well as reducing overheads.
- To achieve cost efficiency; to leverage on outsourcer’s economies of scale for lower prices.
- To increased professionalism for IT services and total outsourcing provide greater learning opportunities for internal IT staffs and maybe better career prospects for the staffs transferred to outsourcer.
- To tap on global expertise and efficiency that could be brought about by an external technology expert.
- To consider the option but need not necessarily implement it. It is to think through which functions can be better performed if outsourced.

Many indicated that they do not know if their organization will consider total outsourcing but most of those who voted that their organization should not consider total outsourcing also stated that their

organization will not consider total outsourcing too. The alarming observation here is that the managers from ITD all deemed that the organization will consider total outsourcing while a majority of the managers from the BG did not cast the same vote. Although it may be argued that the two managers from ITD are not representative, these two managers actually correspond to 33 percent of the IT managers and thus their responses should not be fully neglected. There is always a possibility that there is some internal confidential planning between the senior management and ITD on such an approach for large scale of outsourcing in the future.

5.2.12 Outsourcing in Singapore

This is question 18 as shown in Appendix A. It presents the opinions of the respondents on outsourcing advancement in Singapore.

5.2.12.1 Presentation of result

Figure 5-13 presents the different opinions among the employees on the possibility of advancement of outsourcing towards a larger scale in Singapore.

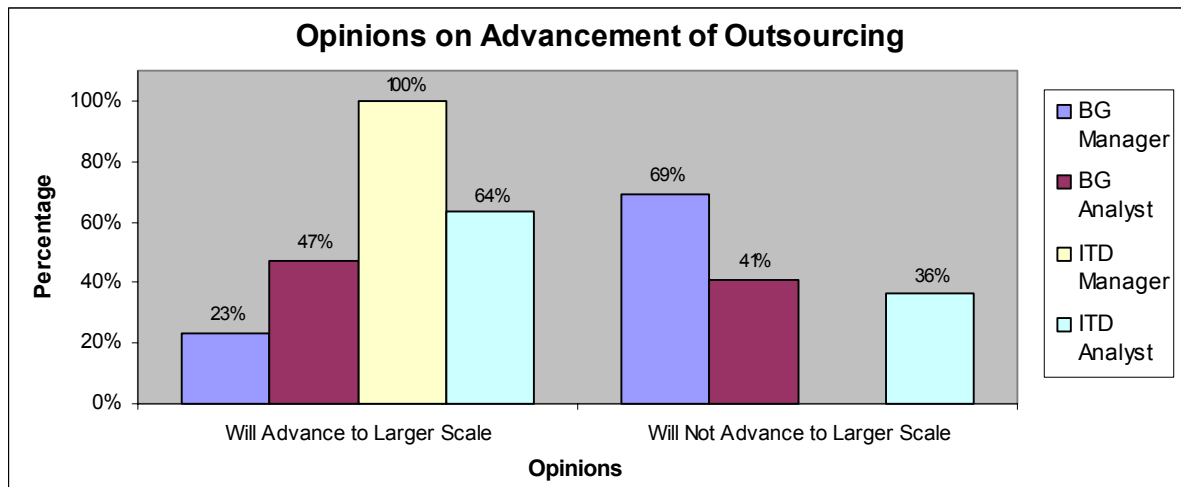


Figure 5-13: Outsourcing Advancement in Singapore

5.2.12.2 Analysis

Most of the IT personnel felt that outsourcing will advance to a larger scale while those from the BG felt otherwise. Since the employees in BG are usually not as updated as the IT personnel on technology trend, the opinions may be attributed to general feel. Most who felt that there is a possibility for advancement in this domain are those who are aware of the DBS’s outsourcing decision which is a major event in Singapore then. While signs of more advancement and growth of outsourcing in Singapore is currently not very obvious, the results do indicate that there are general agreement, especially among the IT personnel, that outsourcing in Singapore is advancing slowly and will extend to a larger scale.

5.3 Discussion

In this survey, the overall responses received correspond to 13 percent of the total headcount in “Company ABC”. All the respondents were randomly selected from the population and fairly distributed across the organization covering most of the key departments. Additionally, the received responses also

consisted of respondents performing different roles. Hence, while the end results of the survey failed to achieve the target set upon during the initial design of the study, it is still representative of the population.

The following discussions review the research questions this study seeks to address:

- **Which type of IT/IS outsourcing is most prevalent in Singapore?**

Based on the answer in Section 5.2.6, selective outsourcing distinctly is the most prevalent type of outsourcing practice. Total outsourcing is not a popular belief because more risks are involved (Section 5.2.11). This result is in line with the findings by [Kern and Willcocks 2001, Lacity and Willcocks 2001, Willcocks and Lacity 1998] as highlighted in Section 2.3. Selective outsourcing is also the most common practice among the developed nations of the West. Similarly, in the report by [Tang and Tan 2002], it has also been implied that selective outsourcing is generally more acceptable and common in Singapore. Among the IT/IS services that are to be outsourced, application development, internet application, technical supports, help desk and data center are the few common choices (Section 5.2.2). Again, this list is almost similar to the most common outsourced functions and activities discussed in Section 3.1.

- **Is there a trend to advance towards a larger scope?**

The results in Section 5.2.12 signified that most people feel that there is a trend for this domain to advance towards a larger scope and scale. However, in Section 5.2.11, the result also revealed that total outsourcing is not a favorable choice for many and hence while advancement to a larger scope may be expected, the scope will be limited within selective outsourcing where and when outsourcing make business senses. In addition, although the result is supported by many external analysts' predictions reports for example Gartner's prediction mentioned in [Yap 2003a] that an outsourcing boom is to unfold in the region, the survey findings also reveal that there are a handful of people who felt outsourcing will not further advance. Therefore, it is suggested that more studies should be conducted to further verify the findings.

- **What are the outsourcing drivers?**

Although this question is answered under the literature review, the survey results and analysis in Section 5.2.3 presented the differences in views between the business users and IT personnel. On the whole, the key outsourcing reasons and drivers in Singapore are mainly management related reasons. The interesting observation on the outsourcing drivers is that costing is not the main reason for outsourcing even though it does has a part to play. The main reasons of outsourcing are more of securing resources that are not available in-house and increasing access to skills and new technologies. In short, the main driver is to use outsourcing as a solution to overcome the problem on skills and manpower shortage.

While cost has always been the key reason for outsourcing as stated in the literature such as in [OutsourcingCentre 2002], it is not the case in this finding. Nevertheless, this finding is still supported as similar findings by [Yap 2003a, Grayson 2003, Then 2002] also reveals that cost reduction is not the key driver for outsourcing. For example, in a survey of Asian companies, Gartner [Yap 2003a] found that saving money is not as an important factor for companies to outsource and the report by [Then 2002] highlighted "Malaysian companies grudgingly turn to outsourcing partners not for cost savings" while [Grayson 2003] stated "cost reduction is not the main driver for organizations planning to outsource their IT".

- **What are the risks and success factors?**

In Chapter 3, the various outsourcing risks, issues, challenges and success factors learnt from the intensive literature review were examined. In the survey, the risks and success factors that are perceived as most important for “Company ABC” are identified. While all the known risks and threats of outsourcing are classified as important factors to be taken note of, the most threatening risks that would deter companies in Singapore to opt for outsourcing are security issues. The risks of dependency on outsourcers and lose of flexibility also top the list and these risks had also been associated as the reasons of resistance for total outsourcing. Hidden costs in the outsourcing contract and increase costs are the other wary factors.

As for success factors, conducting need analysis and selecting the right outsourcers are identified as the dominating success factors and so is gaining supports from the top management. The importance of having an outsourcer that has the right alignment with the organization’s IT and business strategy is being stressed. There is a need to make sure that the outsourcer has a good risk profile, are a cultural fit, capable, and can provide the right type of service. These are in fact best practices and elements of success that had been discussed by numerous authors such as [Stone 2002, Kliem and Ludin 2000, McFarlan and Nolan 1995]. While these critical success factors had been identified as similar to the literature, it should be emphasized that considerations and the evaluation process will have to be adjusted according to each organization’s business needs.

- **Is there a difference in views between people of different roles?**

Generally, there is a difference in view between people of different roles. Each person has different understandings and viewpoints of the outsourcing domain. While IT personnel are looking into the operational and technological issues of outsourcing, the business users are more concerned over the business needs and if outsourcing makes business sense. Between the managers and the analysts, managers tend to have slightly more business focus than the analysts. The differences in view between the different roles had been discussed and highlighted at length in the earlier sections while analyzing the results and findings.

- **Is there a gap in the understanding and practice of IT/IS outsourcing in comparison to the literature?**

From the presentations of the results and the analysis, it could be deducted that there are some differences between the literature and some aspects of outsourcing practices in “Company ABC” while there are also similarities. Thus, it can be said that there is some gap in the practice of outsourcing in Singapore. As already discussed in the previous questions, the drivers, risks and success factors are slightly different from those stated in the literature which mainly encompasses the outsourcing practices in the western developed nations. Singapore, which is in the Asia Pacific region, has a different culture and is faced with a different set of benefits and risks. Therefore, while companies learnt about the concepts of outsourcing through past success and failure stories of outsourcing, modifications to the actual outsourcing practices to fit into the Singapore context are required and necessary.

5.4 Summary

In the first part of this chapter, the overall responses received from the survey were presented. The overall responses received correspond to 13 percent of the total population in “Company ABC” and the responses are fairly distributed across the organization. As the responses did not reach the initial 20

percent target, the survey was extended for another week as an attempt to increase the overall responses. Additionally, an investigation was also conducted to find out the causes of the low responses. The final replies received from all the respondents were then screened and checked through to ensure the highest accuracy of the answers.

The results and findings of the survey were subsequently presented and analyzed in the second part of this chapter. For each of the survey questions, the answers were first illustrated graphically before the analyses were conducted. The results revealed several interesting observations and highlighted some of the similarities and differences between the literature and the current outsourcing practice. The differences in view between different roles were also further touched upon while possible causes and reasons were elaborated. Lastly, a short highlight on the research questions this study seeks to answer were assessed and given. With all these findings and understanding, a framework proposal that provides guidelines on the arrangement and issues of outsourcing that need to take note of is presented in the next chapter.

6 FRAMEWORK PROPOSAL

This chapter illustrates a framework on IT/IS outsourcing. This framework is designed based on the knowledge gained from both the literature review and the findings of the surveys. The intent of this framework is to provide a guideline on the arrangement and issues one needs to take note of when considering an outsourcing approach. Unlike the other proposals in the literature, this framework focuses on the success factors learnt from the survey findings and uses some of the relevance steps and guidelines learnt from the literature.

6.1 Introduction

Outsourcing although may seem appealing, is full of high stakes. In fact, as per the texts by [Boudreau 2002], “Outsourcing brings with it a variety of obstacles, which cannot be ignored. They include political acceptance, organizational buy in and support, maintaining employee satisfaction, and in some cases, union challenges.” Indeed, just taking on an outsourcing approach is already by itself a challenging task. To achieve a successful outsourcing implementation is by no means much easier. In order to create a successful outsourcing and win the outsourcing game, it is essential that organizations take a proactive approach in evaluating and managing outsourcing. Organizations need to weigh outsourcing against in-house efforts, gauge and evaluate the suitability of outsourcing against organization’s long term goals, carefully craft the outsourcing contracts and continuously monitor and maintain a good working relationship with the outsourcers.

In the following sections of this chapter, further illustration of a framework that consolidated the critical success factors of outsourcing is presented. The framework defines an outsourcing process that aims to help organizations avoid the pitfalls of outsourcing and thereby better manage the outsourcing agreement and increase the overall success rate.

6.1.1 Background

With a greater awareness of outsourcing getting more prevalent now in the Asia Pacific region and in Singapore, an attempt to investigate the outsourcing phenomenon in Singapore is being undertaken in this thesis work since January 2003. An intensive literature study relating to the concept of outsourcing has been made in concurrent to designing and conducting a survey consolidating opinions of outsourcing approach in Singapore. This framework proposal is an effort based on the understanding gained from both the literature study and empirical survey. With the knowledge gained in this domain and a careful analysis of the benefits, risks, success factors of outsourcing, this framework is developed in essence to be used as a methodological approach to outsourcing.

6.1.2 Objective

The objective of this framework proposal is to provide a guideline for organizations in Singapore who are:

1. considering taking on an outsourcing approach
2. contemplating taking on a wider scope of outsourcing

This framework serves to highlight the outsourcing arrangement and issues that require attentions. It is imperative that organizations in Singapore, especially the government bodies and SMEs, to clearly understand the complexities involved in an outsourcing arrangement and how they could realize the full

potential of outsourcing before they embark on an outsourcing investment. This framework seeks to assist organizations to design a strategy to evaluate the suitability of outsourcing and to address the challenges of outsourcing and thus aids in creating a successful outsourcing implementation.

6.1.3 Audience

This framework is designed for any parties who like to learn about successful outsourcing management. It may be especially useful and relevant to “Company ABC” as the survey results had contributed to the design of this framework. This framework may also be of interest to organizations in Singapore including SMEs, government bodies or even multinational companies (MNCs). In addition, students and researchers with academic interests may also be keen to look at this framework.

6.2 Outsourcing Framework

This outsourcing framework provides information, steps, and recommendations that should be considered for successful outsourcing implementation. It comprises five different phases listed as followed:

1. Evaluate the Current Situation
2. Outsourcing Analysis and Evaluation
3. Outsourcer Evaluation and Selection
4. Outsourcing Implementation: Negotiate Contract and Statement of Work
5. Management of Outsourcing

As a general guideline, outsourcing initiatives should come from the top management of the organization. This factor had surfaced in the survey as one of the success factors and is thus crucial factor especially when outsourcing is to be conducted in large scale having high impacts. In organizations where heavy organizational politics prevails and within government bodies, top management support is even more essential. The long daunting public sector project tendering process and hierarchical levels of authorization pose a major setback in making quick approval and often result in a more difficult implementation. In addition, government bodies’ concern over data security and confidentiality must also be well agreed upon. Lack of top management support in such instances will doom mark any outsourcing initiatives. Top management should articulate the goals and visions of the outsourcing initiatives and communicate the potential benefits of outsourcing to the entire organization.

In smaller scale of outsourcing, top management support is required to ensure the project teams attain all the required resources to manage the outsourced projects. Top management will also ensure that the overall outsourcing approach is aligned with the organization’s long term goals. Gaining supports from top management is thus an essential ingredient that should be emphasized in any outsourcing practice and is also no exception in this framework.

6.2.1 Evaluate the Current Situation

Before contemplating any outsourcing decisions, organizations should first carry out a careful evaluation of their current IT/IS operations. The intent of this evaluation is to allow the management to gain new insights into how its IT/IS performance can be enhanced to gain strategic advantages.

❖ **IT/IS functions and processes analysis**

As the first step to this evaluation, a baseline model of the existing IT/IS functions and processes is to be developed. This encompasses identifying and defining the major IT/IS functions and processes of the organization. In this process analysis phase, it is vital to learn as much as possible about the existing IT/IS

functions and processes. It is also necessary to understand the governing policies and procedures of the existing processes. The information and knowledge gained is then to be documented so that they may serve as documentation for future use should an outsourcing approach is sought for. This process analysis is also a good method for identifying ways and pinpointing those IT/IS functions that can be reorganized through internal efforts to streamline the existing processes.

❖ **Costs analysis**

In conjunction with the process analysis phase, data relating to the cost of the existing IT/IS functions and processes should also be identified and gathered in the costs analysis phase. It is essential to analyze the cost structures and drivers of the functions against the IT/IS department's budget and the organization's profits and losses. Such data is also useful in illustrating how successful the organization is in achieving an overall costs reduction gain by streamlining its internal operations. Similarly, having such cost structure data also allows the organizations to make a comparison between the current costs and costs of services offered by outsourcers, and determining the cost savings resulting from outsourcing in the future.

❖ **Other technological components**

Apart from identifying and defining the IT/IS functions and processes, and their respective cost structures, other technological components that make up the organization's IT should also be elicited. The baseline model must be as complete as possible so as to enable the management to develop objective and comprehensive performance measures, which can be used to assess the productivity of the IT/IS functions and processes. With these performance measures, the organization can then determine the significance of IT to the organization. In essence, this requires answering questions such as whether IT can provide the organization with competitive and strategic advantages, or whether IT can differentiate the organization from its competitors in the industry.

❖ **“If you can't measure it, don't outsource it”**

According to [Thomsett 2002], there are many organizations that have extremely poor costing and productivity measurement systems. Hence, the expectations of savings are often based on financial data derived from poor cost and tracking systems resulting in ineffective benchmark for evaluating whether productivity has been improved. The advice to those who are unable to measure their strategic and business contribution of IT is to avoid outsourcing; as per [Thomsett 2002] comment: “If you can't measure it, don't outsource it”.

It is important that an organization, before undertaking outsourcing, is capable of assessing the total net business contribution of IT. This is to prevent outsourcing of IT/IS functions and activities that do not have a real part to play in the IT/IS portfolio [Willcocks et. al 1999]. There are many possible ways to conduct such evaluation to assess the total IT/IS contribution. One of the complementary approaches is to use the Balanced Scorecard (BSC) approach developed by Kaplan and Norton [Willcocks et. al 1999, citing Kaplan and Norton 1992] in the early 1990's. The use of BSC is rather widespread among MNCs and some of the Singapore government bodies are also increasingly adopting it.

6.2.2 Outsourcing Analysis and Evaluation

Once the baseline model has been setup with all the IT/IS functions, processes, activities and related costs structure, the next step is to identify those areas where internal management is potentially less desirable compared with outsourcing. It should be stressed that the process of analyzing and evaluating the needs to be realized from outsourcing is to be business driven rather than technically driven.

At this point onwards, every step of the outsourcing process should also be well communicated to the entire organization, especially employees who are directly affected by the outsourcing. Improper or lack

of communication may lead to inaccurate and insufficient information being collected, resulting in erroneous judgments in the outsourcing decision. The importance of open communication has already been discussed at length in the earlier Section 3.5.4.

6.2.2.1 Formation of outsourcing committee

To start off this phase, an outsourcing committee, which typically includes the functional managers of the different business units and the in-house technical experts, should be formed to carry out the analysis and evaluation. The mix of business and technical viewpoints in the committee will ensure that the user areas directly impacted by the outsourcing initiatives are well represented. Representatives from the human resource and legal departments may also be included in this task force after the activities to be outsourced had been determined, during the outsourcers' evaluation and contracts negotiation phases. In addition, a steering committee comprises of the top management to steer the committee should also be formed.

The role and responsibilities of this outsourcing committee and of each member should also be clearly defined. Appropriate empowerments and delegation of authority as well as adequate resources should be given. It is crucial that each of the committee members clearly understand the objective of the committee and is fully committed to effectively assess a fair and comprehensive review and evaluation. Similarly, the effort required in this exercise should not be underestimated too. The members may even be required to work full time in this assessment.

6.2.2.2 Making the outsourcing decision

Great care should be taken by the outsourcing committee to ensure that only those portions of the IT/IS components that make the most sense in terms of benefits, risks, and cost are considered for outsourcing. The decision should be made based on a complete and thorough assessment.

❖ Distinctive nature of IT

Due to the distinctive nature of IT, discussed in Section 3.4.1, the outsourcing committee should carefully study the suitability and identify the IT/IS components to be outsourced. During the assessment, it is essential that the committee takes into consideration of the 'Business Factors', the 'Technical Factors' and the 'Economic Factors' [Lacity et. al 1996, Kern and Willcocks 2001, Lacity and Willcocks 2001] of the IT/IS components.

- **Business Factors**

The committee should analyze the role of each of the IT/IS components so as to identify and nurture those components on which the future of the business may depend upon. IT should not be treated as a 'single homogenous function' [Lacity et. al 1996]. IT/IS components that differentiate the organization from its competitors should be kept in-house, while the 'commodity services' can be selectively outsourced to outsourcers in a bid to take advantage of benefits of outsourcing including the ability to have more focus on the organization core competencies. The committee should also map the contribution of IT/IS components to the competitive and business operations to distinguish those candidates for outsourcing. According to [Lacity et. al 1996], IT/IS components that are classified as commodity and are non critical to the organization should be considered for outsourcing.

- **Technical Factors**

Since it is difficult to predict the IT capability and the organization's future needs, the committee should look into the choice of outsourcers and the form of outsourcing arrangement to tackle this problem. The degree of the technology maturity and integration of the IT/IS component should be assessed prior to selecting the suitable outsourcing arrangement [Lacity et. al 1996]. In this case, new and unstable technologies that the organization is not familiar

with will be classified as immature while the IT/IS components that not standalone and are closely link up with other components are considered as having high degree of integration. Depending on these factors, different types of outsourcing arrangements and contracts may be chosen. For example, it may be better to outsource an IT/IS component that has a high degree of technology maturity and a low degree of integration fully to an outsourcer on a fixed price contract because the component could be easily isolated out and the organization could easily come out with a detail specification for the outsourcer. More discussion on the type of contracts will be discussed in Section 6.2.4.

- **Economic Factors**

The committee cannot always assume that outsourcers will always enjoy economy of scale. It is essential for the committee to question whether outsourcers are more economically efficient [Lacity et. al 1996, Kern and Willcocks 2001]. Before arriving at a decision, the committee needs to evaluate if there is any internal IT management practices being implemented to improve cost efficiency and are the existing IT/IS components well managed. If the in-house IT/IS department is already running at optimal efficiency, it is unlikely that outsourcers will be able to further reduce the overall operating costs. Nevertheless, the organization should always “try to perform to drive down costs as much as possible internally before then considering outsourcing” [Kern and Willcocks 2001]. The decision to outsource a particular activity or function is determined by the bottom-line:

1. What is the financial trade-off between performing the job in-house versus working with an outsourcer?
2. What is the impact on organization operations?
3. Can the additional management time and energy gained through outsourcing produce better, more mission-critical results if applied elsewhere?

- ❖ **Cost-benefit assessment**

The benefits and risks associated with outsourcing should always be part of the evaluation criteria. The benefits of outsourcing should be weighed against in-house efforts. The committee should conduct a cost-benefit assessment. For example, the extent of cost reduction, service quality improvements, and the improved ability to compete on a global basis are some of the benefits that should be measured. The performance measures derived from the baseline model developed in phase one can serve as the index that measures these potential benefits against the current status of IT/IS in the organization. The outsourcing committee should focus on the long-term benefits and goals.

- ❖ **Risks assessment**

Apart from assessing the benefits of outsourcing, it is also imperative to conduct a risk assessment. The potential risks and pitfalls of outsourcing, such as those highlighted in Section 3.3, that will impact the organization should be examined and the level of these risks must be determined. If offshore outsourcing is deemed as a feasible option, the committee should also evaluate whether the costs of managing the legal issues, cross-cultural issues and international teams outweigh the benefits of offshore outsourcing. Emphasis must also be placed on the impact of outsourcing on the employee. The human factor is one important area that needs to be addressed at an early stage. If the final decision of the committee is to proceed with outsourcing, a communication plan is required to promote open and frequent communication about the process to employees.

6.2.2.3 Defining outsourcing objectives and scope

Precise strategic outsourcing objectives as well as the scope of areas to be outsourced should be clearly defined at this stage if outsourcing is deemed feasible. The outsourcing committee should proceed to

determine the specific needs and services to be provided by outsourcers. This ensures that all essential services will be clearly stated in the outsourcing contracts and the outsourcers will not be able to charge excess fees for these services. The relationships between the systems to be outsourced and those that will be kept in-house should be also be clarified, so that the required interface between these two system categories can be communicated clearly to the outsourcer during negotiation of the contract. Again, the detailed understanding and review of the current IT/IS components and the baseline model provide the measure to help the committee determine the kind of services that the outsourcer is obligated to provide. Organizations that venture into outsourcing without explicit goals in mind are bound to fail in their outsourcing endeavor. It is also important to highlight that the outsourcing committee should look three to five years ahead in defining outsourcing goals so that the outsourcing deal is one that could increase the organization's competitive and strategic stand.

6.2.2.4 Develop service level measures

Separate service level measures should also be developed for each service component that the outsourcer is expected to provide, based on historical performance data and business requirements. The committee should establish both targets and minimum service levels. These measures will enable the organization to evaluate the outsourcer's performance, as well as benchmark their performance later in the outsourcing relationship. A good understanding of the needs and service levels to be realized will enable a strong contract that can be negotiated in the later phase.

A general rule is to identify everything that is necessary to measure and not just what is easiest to measure [Willcocks and Graeser 2002]. As a general guideline, outsourcing contracts commonly include the following types of service level measures [Mayer et. al 2003] as shown in the table below:

Types	Examples
Availability	During scheduled times, response time, batch processing time
Reliability	Limited unplanned failures, provision of stand by or back-up facilities
Efficiency	Demonstrable improvement in performance
Maintenance services	Time to respond, time to resolve problem
Processes	Error rates, re-work required, cycle times
Projects	Milestones and specifications
Call center	Call waiting time, percentage of inquiries successfully resolved on first call, user satisfaction levels, sales goals
People	Turnover rate, performance reviews
General	Cost, user satisfaction
Risk management	Control volatility in underlying commodity pricing

❖ Measurement system

It is highly desirable that the outsourcing committee implements a measurement system in this instance. The measurement system acts as a mechanism to determine if the outsourcer has achieved the service level measures and also as a tool to support the achievement of performance improvements.

❖ **Reporting expectations**

Coupled with the service level measures in the measurement system, reporting expectations should also be developed. Periodic reporting and reviews of the outsourcer's performance is required. Normally, the maximum reporting period is one month. This is to facilitate the timely identification of performance issues and to ensure that serious loss of service events have an appropriate impact on the overall performance measure for the time period. For example, 98 percent systems availability for a month can be achieved even though there is a single loss of service of a duration that is unacceptable to the business users. For such problems, it may be necessary to adopt other forms of measures to overcome them. Quarterly benchmarking analysis against external industry performance standards may also be requested. Likewise, it may also be feasible to state in the outsourcing contract that the outsourcer also needs to produce an annual baseline report.

❖ **Refinement, penalties and rewards**

It may be necessary to redefine the service level measures as historical performance levels may be unsatisfactory after the outsourcing contract has been awarded. Therefore, it should be noted that such provision are to be included in the outsourcing contractual agreement [Willcocks and Graeser 2002] to allow a renegotiation of the expected service levels from the outsourcer.

As part of the effort to develop the service level measures, the committee also needs to establish the penalties for not meeting the established minimum service levels. These should be reflected as the impact of loss of service to the business users. The penalties should be significant enough to ensure that performance issues are resolved promptly, and are provided for an escalation process. Likewise, service level bonus may also be setup to motivate the outsourcer to go extra miles. Service level bonuses should only be awarded when the exceptional performance "provides demonstrable business value" [Mayer et. al 2003].

6.2.3 Outsourcer Evaluation and Selection

Having decided on what to outsource, the outsourcing committee should now focus on the outsourcer evaluation and selection. This phase begins by actively scouring the outsourcing market for and then issuing the request for proposals (RFP) to the potential outsourcers. Following the RFP is the evaluation and selection of the right outsourcer.

6.2.3.1 Request for proposals (RFP)

The RFP contains, among other things, the organization's requirements. It outlines the objectives the organization wishes to achieve from outsourcing, as well as the services and requirements expected from the outsourcers. The RFP is a legal invitation to request for outsourcers to bid the project. As pointed out by [Vacca 2000], "the content of the RFP is the key to ensure that the subsequent outsourcing contract contains the rights and remedies the organization requires." The RFP must be comprehensive and covered the organization's business needs. The RFP thus must clearly and fully communicate the business and technical requirements for the following purposes:

1. Ensure high quality, focused responses from the interested outsourcers.
2. Reduce the time and effort required during the contract negotiation phase.
3. Ensure that the quality of service will be satisfactory to the organization and other stakeholders.

Sufficient time and effort should be allocated to the preparation phase. Experiences indicate that such investment is essential and worthwhile. It is also vital that the written terms in the RFP are clear, indisputable and unambiguous [Vacca 2000, Hoyt 2000]. Therefore, it is preferable to have the

organization's legal advisor to run through the RFP before it is issued. It is important that the outsourcing committee now include representatives from the legal, contracts and audit departments if they have not been involved.

❖ **Tendering process within Singapore government agencies**

Within the Singapore government agencies, the RFP is commonly known as the tender specification. The government agency who likes to outsource part of its IT/IS components will prepare the RFP and put up a notice of tender to the general public to invite potential outsourcers to bid for the project. Interested bidders may purchase a copy of the RFP and put up a proposal to the agency within a specific timeframe stated in the RFP. The agency will subsequently carry out an evaluation exercise before awarding the project to the selected outsourcer. The selected outsourcer will then have to abide to the contract and fulfils and delivers all the requirements stated in the RFP.

❖ **RFP contents**

At a minimum, a RFP should contain four sections [Williams 1998] namely:

- **Section 1: General information for the bidders**
This section should include all information that is necessary for bidders to respond to the tender invitation.
- **Section 2: Organization background information**
Information in this section should provide detail for the bidders to understand the nature of the businesses the organization is in and the history of the system environment that led to the decision to consider outsourcing as a viable solution.
- **Section 3: General requirements**
This is the section whereby all specific business and operational requirements are documented. Sufficient detail must be ensured so that the bidders can fully understand and appreciate the scope of the outsourcing agreement.
- **Section 4: Information required from the bidders**
This section contains specific information that is needed from the bidders. It should also specify the format of the proposal.

A suggested table of contents extracted from [Williams 1998] based on the outline of these four sections, is also provided in Appendix B for references.

❖ **Key areas**

In addition, the following compilation of the key areas that should be addressed in the development and issuance of an RFP is also given in Appendix C. It should be noted that the list is provided as a guideline only. The actual RFP must be tailored to the specific needs of the organization.

6.2.3.2 Selecting the right outsourcer

Selecting the outsourcer should be an objective process. However, it is sometimes inevitable to inject some bias into the process and thus causing the evaluation results to be biased too [Kliem and Ludin 2000]. In order to minimize the bias and create an objective evaluation and selection exercise, the committee should:

1. Create specific and meaningful selection criteria that have been agreed by all the committee members
2. Use and apply the criteria consistently to all the potential outsourcers to minimize bias and retain objectivity
3. Follow a methodical, logical process in evaluating the potential outsourcers
4. Seek inputs and opinions from all the committee members prior to selecting the right outsourcer
5. Reevaluate the selection to ensure objectivity and consistency, if necessary
6. Communicate the results to all affected and interested parties in the organization

❖ **Outsourcer selection criteria**

Selecting the right outsourcer is often considered as one of the most important determinants of success. When selecting outsourcers, the most fundamental criteria to assess is which outsourcers can best meet the organization’s needs. The outsourcers must be able to understand in detail all the needs of the organization, and have the technical expertise to meet these needs, add value to the organization business and continually look for the most cost-effective way to optimize the organization IT/IS operations. Both the outsourcer and the business must also “speak a common language”, so that the needs and wants of both parties can be effectively articulated.

The following table contains some of the common outsourcer selection criteria, as derived from the survey conducted in this study.

Criteria	Description
Price	Charges and fees offered by the outsourcer.
Outsourcer’s resources and technical expertise	Skills, knowledge and know-how of the outsourcer.
Service quality / customer service	Type of support and services the outsourcer will render.
Reliability	Credibility of the outsourcer.
Experiences	Past experiences of the outsourcer in the domain. The organization may request for a site visit or references of the outsourcer’s customers.
Outsourcer’s solvency and stability	Refers to the financial stability of the outsourcer. It may be checked by running through the financial report of the outsourcer.
Outsourcer’s reputation	In short, it is how well known is the outsourcer in the outsourcing market. Usually it is related to the outsourcer’s experiences, knowledge and skills as well as the reliability and stability
Commitment to quality	Evaluation of the outsourcer’s quality level and whether there are any quality assurance activities enforce to ensure high-quality services and products.
Value-added capability	In addition to providing technical expertise and assistance, it will be good if the outsourcer can also further value add by providing consulting advices and best practices to streamline the businesses.
Contract flexibility	The level of flexibility the outsourcer is willing to exercise for the contract.
Location	This refers to the headquarter offices and support offices of the outsourcer. This is to ensure that the outsourcer can be reached easily.

❖ **Evaluating offshore outsourcers**

It should be emphasized that when selecting offshore outsourcers, the outsourcer must understand the specific organization local business environment, legal framework, cultural and administrative issues.

This understanding will enable both parties to jointly anticipate and devise strategies to overcome the numerous challenges and problems involved in offshore outsourcing. If the organization has global sites and the scope of the outsourcing affects the other sites located in other parts of the world, the outsourcers should also be evaluated on their abilities to understand and handle the unique environments of each of the sites. In such instances, the preference may be sourcing for a suitable outsourcer with outsourcing experiences on the international level.

When assessing each of the bidder's proposals, the approach to be undertaken should be carefully analyzed, country by country, so that ultimately the selected outsourcer can provide the connectivity that enables the organization to function effectively and globally. Price should not be the overwhelming factor during the evaluation process although it is important. Other issues, including studying the outsourcer's financial stability, the outsourcer's fit with the organizational culture, quality, speed and range of tasks that can be covered, should also be considered when selecting offshore outsourcers [Lacity and Willcocks 2001]. In short, an engagement that includes global sites or offshore outsourcer yields a tangle of cultural, administrative, legal and even technical implications that must be addressed accordingly.

❖ **One or more outsourcers?**

Note that in total outsourcing or in large scale outsourcing, the risks involved in outsourcing all or majority of the IT/IS components to a single outsourcer requires careful evaluation and consideration. Not all outsourcers have the capability to provide seamless service to the organization business units. Other disadvantages of outsourcing to a single outsourcer include being charged higher fees for services and incurring higher switching costs as well as the possibility of a "total disaster" when the single outsourcer fails [Hoyt 2000].

However, if the consideration is to outsource to more than one outsourcer, each of which is strong in a particular area, the evaluation of how the multiple outsourcers should work with one another to provide the organization with seamless service is an important criterion. The effort to manage multiple outsourcers should be assessed.

The organization and its outsourcing committee should identify and go through a thorough and conscientious analysis process prior deciding and embarking on the most beneficial and suitable approach of having one outsourcer or multiple outsourcers. As per the result from the survey, thorough need analysis and selecting the right outsourcers are key success factors.

❖ **"Compete" environment**

If the organizational culture permits, create an environment that allows both the external outsourcers and the internal IT department to compete to bid for outsourcing contracts [Lacity et. al 1996, Lacity and Willcocks 2001]. The benefits of such competition are twofold. Firstly, the organization is able to maximize flexibility and control on its part. Secondly, the competition allows the organization to reinforce their understanding of the costs of a given service and the best way to provide it.

❖ **Keep in-house**

In the event whereby the bidders' proposal is not as desirable as expected or the internal IT/IS department can achieve the similar offering without any outsourcers' assistance, reevaluation of outsourcing is necessary and the outsourcing committee should consider the proposal to keep the IT/IS components in-house [Kern and Willcocks 2001, Lacity and Willcocks 2001].

If the outsourcer committee is unable to find the right outsourcer for the job, it would be safer to cut down the scope of the outsourcing or even keep the components in-house. The organization will be at risks with

not being able to realize its business goals of outsourcing and achieve the full optimal benefits of outsourcing when they proceed with the outsourcing agreement.

At times, it is also possible that the proposals from the bidders reveal ways in which the organization could improve the in-house performance [Willcocks et. al 1999]. The in-house IT/IS department may thus consider taking up the tasks instead of outsourcing. Similarly, if the in-house team is already contemplating some of the proposals and improvement measures, the bidders' proposals may be the catalyst speeding up the in-house team to take actions. In such case, the option to retain the IT/IS component in-house is more appealing.

6.2.4 Outsourcing Implementation: Negotiate Contract and Statement of Work

Upon completion of the last milestone in deciding if outsourcing is feasible and having decided on the right outsourcer(s), this phase aims at studying the outsourcing contract. It is important to negotiate a sound and clear outsourcing contract that minimizes risks and maximizes control and flexibility.

6.2.4.1 Contracting models

In general, there are four types of contracting options [Kern and Willcocks 2001, Lacity and Willcocks 2001, Lacity et. al 1996] that are available to organizations:

- **Fee-for-service contract**
For this type of contract, the organization pays a fee to an outsourcer in exchange for the management and delivery of the specified IT/IS components. This strategy is most successful when the organization can clearly specify their needs in the contract.
- **Buy-in Contract**
Organization buys and manages the outsourcer resources to supplement in-house capabilities in this type of contract. This strategy was most successful for the development of applications using new technologies. In such cases, the organization would like to “use the outsourcers' expertise but could neither negotiate a detailed contract nor afford to miss a learning opportunity” [Lacity and Willcocks 2001].
- **Strategic alliance**
This refers to collaborative inter-organizational relationships involving significant resources of two or more organizations to maximize their joint value.
- **Preferred supplier**
In this model, an organization has developed trusts with a chosen outsourcer, based on its past experiences with the outsourcer and the performance. Hence allowing a degree of flexibility and creativity in establishing a contract for a new set of IT/IS components to be outsourced.

6.2.4.2 Contract

Success in outsourcing is dependent on creating a win-win situation for both parties and engaging in an appropriate contract type that provides an incentive to the outsourcer to continually improve service and to work with the organization as a team. The relationship between the organization and its outsourcers should therefore be one of mutual benefits that are reflected in the outsourcing contract. If multiple outsourcers are involved, the relationships between each outsourcer should also be stated in the contract. Legal advisors can provide assistance in handling this issue.

An outsourcing contract has the central role in determining whether the outsourcing expectations can be fulfilled. It therefore must be well defined and well written. All agreements must also be clearly

documented in the contract. This is because the contract will be the main referencing document whenever disputes over agreements occurred. As per the texts by [Williams 1998], “changing business requirements over time and personnel turnover will necessitate referring to the contract to ensure that both parties are functioning within the scope of the contract.” Based on the lesson learnt from the survey, IT personnel who are the main party managing the outsourcers tend to use the contract heavily whenever there is a need for negotiation. Good contracting is therefore required to ensure there is no hidden cost in outsourcing arrangement.

❖ **Length of contract**

The length of the outsourcing contract may affect the success of outsourcing. Generally, an organization should pursue short-term outsourcing contracts whenever possible, since business needs and environments change rapidly and the outsourcer may fail to meet the expected service levels. In the current rapid changing technological world, it is a necessity that the outsourcing contract is a "living" document. John Cross, IT director at BP, commented in 1999 [Kern and Willcocks 2001], “In the course of five years, we experienced two generations of technology.”

❖ **Flexibility of contract**

Outsourcing contracts, especially those for long-term outsourcing deals, may be required to change since the technology in use may also become obsolete halfway through the life of the outsourcing contract. High costs will be incurred if the organization wants to upgrade to a more advanced system. As such, it will be desirable if the outsourcing contract can cater to changes in the IT/IS requirements of the organization. Flexibility is the key term here. The organization and its outsourcers should engage into an agreement whereby open communication and constant dialogue are the norms. The contract should not be perceived by any parties as an unchangeable document.

For large scale outsourcing, it may be appropriate to include a provision in the outsourcing contract that the outsourcer need to perform or provide a periodic report at reasonable intervals to the organization on the available technology and the new forthcoming technology. Outsourcer tends to possess the market expertise to conduct such findings better than the organization. Having such contractual obligation from the outsourcer will ensure that the technology review is being conducted since day one of the agreement. Since there is a limit to the pace of the technological change, it may be realistic to conduct a major review in a less frequent interval, for instance once every three years. Flexibility should be incorporated as that the organization may request to for a more detailed technology review and when such a review is to be conducted. A balance needs to be established that both parties see the importance of keeping abreast of the technological developments, while not overburdening either party with the requirements of performing unnecessary technology reviews.

❖ **Contents of contract and statement of work (SOW)**

In the main body of the contract, the information contain therein are legal representation from both the organization and outsourcer. The content covered topics such as liabilities, remedies, penalties for failure of delivery of outsourced services, termination clauses, payment schedules, warranties, security, etc. A clear contingency plan and exit strategy must also be developed in the contract to protect the organization’s interests in the event that the outsourcers failed to deliver expected results and reducing undesirable service disruptions.

It is also desirable to have a statement of work (SOW) as an addendum to the contract. The SOW is the technical description of the actual work to be performed [Williams 1998]. Some examples of the information in SOW are clearly defined roles and responsibilities, performance measures, service level measures, hardware and software used, etc.

Most of the information required in the contract is available and already prepared in the earlier RFP. A sample outline of an outsourcing contract presented by [Williams 1998] is also provided in Appendix D for reference.

❖ **Considerations relating to offshore outsourcing**

In Section 3.3.15, the discussion highlighted the risks associated with offshore outsourcing. It should be pointed out that different countries may have different laws for doing international business. For organizations having global sites, the differences in the local organizational cultures, ethical cultures and societal norms of each site will impact the outsourcing agreement. As such, a generic framework agreement with the outsourcer should be established in the contract. Such a framework agreement enables the organization to standardize the expected services and requirements across all the business sites while allowing individual business sites at each location to negotiate more specific terms of contract with the outsourcer that caters to that particular location's legal, cultural and business context. This ensures that the different problems encountered at different locations can be suitably resolved.

6.2.4.3 Contract negotiation

Negotiating an outsourcing contract should be a structural and well planned process. The following steps [Williams 1998] are some suggestions on how the organization could approach the contract negotiation:

1. **Define the right negotiation team**

A negotiation team in charge of negotiating the contract with the outsourcer should be formed. The team should consist of members from the outsourcing committee, including legal and human resource representatives. The legal representative is to ensure that all the legal aspects of a contract are duly covered while the human representative is to take care of the human resources issues. All the members must fully understand the objectives of the outsourcing agreement and be equipped with the essential business knowledge. In addition, the team members should have experiences in negotiating contracts.

2. **Understand the outsourcer to be negotiated with**

To successfully negotiate a contract, the negotiation team must have a good appreciation of the outsourcer's strengths and weaknesses. In phase three during the process of selecting the outsourcer, the organization would have conducted a thorough analysis and evaluation of the outsourcer to be negotiated with. Reference checks and sites visits that are conducted then are means in which the organization could learn more about the outsourcer. It is important to recognize the areas in which the outsourcer are likely to be more flexible with and the areas that are more important.

3. **Define the organization's expectations**

Realistic expectations must be established prior the negotiation. The outsourcing agreement should be in a form of partnership with value added benefit. The negotiation should strive to create a win-win agreement for both parties. Hence, having a good grasp of what to expect during the negotiation is important.

4. **Determine the organization's limitations and weaknesses**

In a negotiation, apart from knowing your opponent's limitations and weaknesses, it is also necessary that the negotiation team clearly understand its limitations and weaknesses. This is to provide insight of the areas the organization is weak in, and hence able to identify solutions and strategies to those address the vulnerable areas before the negotiation starts. This step is essential to prevent the outsourcer from exploiting the organization's weaknesses during the negotiation.

5. **Develop a cost model**

In the baseline model developed in phase one, the costing of the IT/IS components would have already been identified. Before proceeding with the negotiation, the costing should be updated. The costing in the baseline model will serve as a tool that could be used to forecast and predict the cost savings of different type of outsourcing arrangements and scenarios that surfaced during the negotiation.

6. **Develop the negotiating strategy**

The negotiation team should always develop a strategy in term of how the negotiation team will approach the negotiation. The strategy will identify the approach the team should adopt on all the issues that are to be covered during the negotiation. The negotiation team also needs to determine the ‘must-have’ and ‘nice-to-have’ requirements in the contract. Additionally, the sequence of the topics to be discussed is also another important consideration. Typically, costs related issues are the last to discuss as both parties can only assess the actual price when all the requirements have been finalized.

7. **Understand the bottom line**

The bottom line in this case refers to the minimum benefits the organization is willing to settle on with the outsourcer. As highlighted in step 3, the negotiation team should understand their expectations prior to the negotiation. However, during the course of the negotiation, trade-off may be made for some of the other benefits the outsourcer is offering. Hence, the final results of the negotiation may be different from the initial expectations.

The negotiation team should handle the negotiation professionally and avoid clashes with the outsourcer throughout the whole negotiation process. It should be emphasized that emotions and subjectivities should not be injected in the process. The negotiation team should also conduct regular sessions to coordinate the negotiation process and ensure that all the members are focusing on the same objectives.

❖ **Human resource considerations**

[Minoli 1995, citing Horwitt 1993] commented that “Research shows that the success of outsourcing is more likely to be hindered by human problems than by technological problems; however, if both the outsourcer and the organization address employee concerns, outsourcing has a good chance of yielding positive results.” The causes of resistance by employee toward outsourcing and the importance of careful management of the people aspects have been discussed in detail in Section 3.4.2. It is important that the outsourcing committee and the negotiation team ensure all human resource and employee concerns are well handled.

In global outsourcing or outsourcing in large scale whereby there is a need to transfer some of the existing IT/IS personnel to the outsourcer, it is essential that the following concerns [Minoli 1995] are being taken into consideration and are addressed by the negotiation team:

- Does the outsourcer routinely employ all or a significant number of employees from the organization?
- After the transfer or re-deployment of the employee from the organization, does the outsourcer retain these employees, or does it reduce headcount after the critical transition period?
- How do the outsourcer’s compensation program and compensation levels compare to the current compensation package?

- Will the benefits decline in value? For example, will the employee premiums and co-payments increase? For some government employees, their concerns may be whether there still will be a pension plan? Will there still be vacation entitlement?
- Are there differences in working conditions, such as increased work hours, longer shift schedules, added duty to provide 24 hours support, etc?
- What are the career opportunities with the outsourcer? Is there a need for relocation? Is there commitment to training and development, especially retraining for new technologies?
- What happens to the perks of belonging to the present organization, such as office size, secretarial support, employee discounts, free or subsidized parking, subsidized lunches, unlimited travel, flexible work hours, short workdays, transportation claims, etc?
- What has happened to employees involved in previous outsourcing by the selected outsourcer? Were all promises kept?

There are many concerns and the specific and degree of concern varies. It is vital that the negotiation team ensure that all crucial concerns are answered, agreed upon and duly documented in the contract. For instance, using the example by [Minoli 1995, citing Horwitt 1993], the employees of Eastman Kodak filed a court case because they did not receive the promised job security benefits when Kodak implement an outsourcing contract. The negotiation team should always position themselves in the shoes of those employees affected by the outsourcing agreement and see that all concerns are answered. It is important to have all the facts ready and be ready to expect questions and reactions of the employees when the outsourcing news is announced. The management and the negotiation team must exercised good judgment and understanding when facing these affected employees.

As in the result of the survey, most IS/IT employees prefer to be retained or re-deployed to other departments than to be transferred to the outsourcer. This is due to the uncertainties involved and that most of the employees do not really see the benefits of transferring to the outsourcer. Therefore, there is a need for a good communication plan to introduce the outsourcer, the new working environment and the benefits and to provide assurance to the employees. The organization can take on this task together with the outsourcers to promote the outsourcing deal.

In addition, the organization should also move early to retain quality employees [Williams 1998]. These employees are usually those who will leave first before the transition period. The organization should come out with a strategy to highlight to these employees on their important parts they play in the outsourcing implementation, and to provide assurance to these employees about their future job security. The organization may also try to retain these employees through other measures such as providing a retention bonus. For employees who are to be re-deployed to other sections or departments, a training plan may also be up forth for them. As far as possible, the organization should not try to lay off any employee [Williams 1998]. When this is not possible, the organization may work with some agencies to minimize the impact of job termination. Most of the time, organizations will also make use of the outsourcing decision to layoff non-performance employees. It is highly not advisable and not productive that the organization attacks these employees personally as it could have future repercussion of bad reputations, law suits, and even loss of business.

Apart from taking care of the employees affected by the outsourcing decision, the organization should also ensure that the reactions from the non-IT/IS employees in the other departments are not overlooked [Williams 1998]. Some of these employees may have concerns over their future work arrangements or even perceived the outsourcing event as a threat to their own job security since it is possible for the organization to move on with more outsourcing arrangements in other departments. The management should conduct open communication with all its employees.

While communication is the key to success in handling the human resource factors, it should be pointed out that a mixture of different sessions and conducts are required. Some of the sessions may be conducted solely by the outsourcer without the involvement of the management while others are conducted with the management presence. One to one interviews or open sessions with the top management that work in most western countries usually do not function in Asian context. Therefore, the management should try to come out with other plans and means to help answered the employees' concerns. One suggestion is to have all frequently answered questions (FAQs) setup in the corporate intranet so that the employees may access to look out for the answers they wanted to find out.

Last but not least, it is imperative that the negotiation team and the organization announce the outsourcing decision at an optimal time. The announcement should be made at a time that will have a least amount of impact on the employee and their productivity. For example, making the announcement on a Friday afternoon and arranging a session on the following Monday morning allows the employees to have the weekend to think about the deals and have their questions and concerns ready for further clarification on the following Monday's session. Examples of bad timings to make such announcement are dates near to holidays such as Christmas and New years.

Due to the sensitivity of this topic, the organization and its team should exercise extreme care, conduct regular and period communication, treat employees in a fair manner with respect and dignity, address the employees' concerns, and demonstrate flexibility and willingness to deal with all the concerns.

6.2.5 Management of Outsourcing

Outsourcing does not end with designing and implementing the contract. After the outsourcing contract is signed, the organization needs to monitor the outsourcer's progress and efforts continuously.

❖ **Formation of contract management team**

First and foremost, a contract management team consisting of individuals with contract-management skills, technical people with a thorough understanding of the company's IT, and system integrators who ensure that all externally and internally provided IT systems work together seamlessly should be formed to manage the outsourcing. It is preferably to have some of the same members who are part of the members in the earlier outsourcing committee and negotiation team. This will facilitate the team to have a better understanding of the whole outsourcing process. The team is to take on the task of monitoring the outsourcers and ensuring the 'day-to-day' operations are functioning as promised [Kern and Willcocks 2001].

❖ **Contract monitoring**

While the organization may have the greatest respect for the outsourcer, it is important that the organization review the outsourcer's performance regularly so as to achieve the desired results and objectives of outsourcing. Using the service level measures developed in phase two and the outsourcer's service level reports, the organization can compare the actual performance of the outsourcer against its expected performance. It is essential that the performance measures are tracking changes and trends in improving quality, improving level of service, reducing costs or reducing lead time [Williams 1998].

In addition, the organization also needs to regularly benchmark the outsourcer's performance against the IT outsourcing market, so that it can ensure the outsourcer is employing the most cost-effective solution to its problems. The contract management team must develop a clear understanding of the emerging technologies and the potential applications although it may already have been stated in the contract that the outsourcer must provide periodic technology report. While parts of the responsibilities are given to the outsourcer, the organization should also make an effort to assess the technology by attending vendors'

briefings, peer group seminars, attend courses or even visit firms that are currently using new technology [McFarlan and Nolan 1995]. It is also important that the contract management team keeps a lookout to identify discontinuous application and opportunities and problems posed by these applications.

Likewise, the outsourcing contract will also need to be regularly reviewed so that any changes in the requirements can be addressed and accommodated. Therefore the contract management team should always be informed and actively plan and deal with issues, disputes, risks, threats or changes that are surfaced to them. In cases whereby the issues could not be settled or are of high risks, the case should be escalated to the senior management for decision. The contract management team hence also takes on the role to ensure that there is a change management process whereby all changes are properly documented and assessed.

❖ **Open communication**

There must also be consistent, active communication and interaction between the outsourcer and the organization at all times. Such communication facilitates the joint planning of service delivery and problem resolution encountered, as well as the joint discussions of proposed innovations and changes in the outsourcing approach. Regular meetings should be conducted to exchange views on challenges and plans. As mentioned in Section 3.5.4, regular exchange of feedbacks and reporting by the outsourcer to the contract management team on the progress and problems in the outsourced projects will facilitate common understandings.

Generally, organizations tend to underestimate the cost of relationship management. It should be pointed out that information flows must be defined. The organization should not assume that the outsourcer will learn about the business in the same ways as how the employees learn about the business. It is desirable that the outsourcers pick up the business knowledge in the shortest possible time. The outsourcer should voice out the assistances they required to the organization and its contract management team. Some outsourcers may not wish to be managed, believing that they can achieve higher margins if they have a free hand [Mayer et. al 2003]. Hence, the contract management team should maintain an active dialogue with the outsourcer to understand their needs as well as the plans that are lined up in the pipeline.

❖ **Partnership management**

The management of the outsourcing contract between the two parties must be cooperative rather than adversarial. By continually implementing the policies of profit and risk sharing, and performance incentives and penalties, both parties can cultivate a win-win relationship and motivate the outsourcer to perform beyond its expectations, thereby delivering better results. This kind of measurable partnership, where both parties have complementary or shared goals, enables both the outsourcer and the organization to maintain a strong and successful working relationship. To attain such relationship, both parties must:

- Demonstrate good will and trust.
- Promote an understanding of the nature of the relationship and the objectives and responsibilities of the parties at all levels of the organization.
- Proactively seeking information on outcomes and customer satisfaction.
- Demonstrate a commitment to identify and resolve issues of concern.

The following two quotes extracted from [Mayer et. al 2003] clearly highlight the importance and criticality of maintaining a good and rewarding relationship:

"Failure in BPO is seldom caused by inability to perform. Rather, poor relationship management causes a mismatch in results and expectations. This causes a breakdown in communications, which leads to dissatisfaction or an inability to recognize a cultural gap." - Business Process Outsourcing, Sourcing Interests Group Research Report, 1998, page 5-1.

"You can have the best contract in the world, but if you don't manage it, it doesn't do you any good," says Peter Gearhart, director of information technology procurement at AlliedSignal Inc. - "The Art of the Deal," R. Pastore, CIO Magazine, May 15, 1996.

6.3 Conclusion

In today's competitive marketplace, organizations are searching for ways to improve their competitive edges. Outsourcing although may be a potential driver in assisting organization to realize their competitive advantage, is not be a viable move for every organization. It is useful for organizations to be stand back and examine the outsourcing option. This framework attempts to encompass the required steps in the outsourcing process. It covered the essential steps ranging from evaluating if outsourcing is a possible option for the organization, to highlighting the areas to take care of when preparing the outsourcing contracts and managing the outsourcers. This framework seeks to enable both the outsourcer and organization to maintain a strong and cooperative relationship through shared vision and measurable partnership. By applying this framework, the organization will be able to understand what it has currently, and what it needs from the outsourcer to streamline the existing structure. The organization will also be able to negotiate a strong contract, maintain amicable relationship with the outsourcer and effectively assess whether the outsourcer can meet its business needs and expectations. All these are critical factors that ensure the success of outsourcing.

6.4 Summary

Outsourcing although may seem appealing, is full of high stakes. In order to create a successful outsourcing and win the outsourcing game, it is essential that organizations take a proactive approach in evaluating and managing outsourcing. This framework proposal which is an effort based on the understanding gained from both the literature study and empirical survey is developed in essence to be use as a methodological approach to outsourcing. It serves to highlight the outsourcing arrangement and issues that require attentions, and seeks to assist organizations to design a strategy to evaluate the suitability of outsourcing as well as to address the challenges of outsourcing.

This outsourcing framework comprises five different phases namely:

1. Evaluate the Current Situation
2. Outsourcing Analysis and Evaluation
3. Outsourcer Evaluation and Selection
4. Outsourcing Implementation: Negotiate Contract and Statement of Work
5. Management of Outsourcing

In each of these phases, information and recommendations that should be duly considered are pointed out and discussed. Some examples of the issues highlighted includes the steps on how to approach the evaluation of the current situation, the need to setup committee teams to perform the analysis, evaluation and contact negotiation, the factors to consider when evaluating the outsourcing options and the outsourcer evaluation criteria, the steps to take on the contract negotiation, delicacy of the human resources management, the importance of contract monitoring, etc.

This framework attempts to encompass all the critical success factors in the outsourcing process. By applying this framework, organizations will be able to understand what they currently have, and what they need from the outsourcers to streamline their existing structures. The organizations will also be able to negotiate a strong contract, maintain amicable relationship with the outsourcers and effectively assess whether the outsourcers meet their business needs and expectations.

7 CONCLUSION

In this chapter, the conclusion of this study and the areas of further work that may be conducted in the outsourcing domain are presented.

7.1 Conclusion

Today new economy has set forth organizations to constantly seek for improvement so as to remain competitive. While quality has always been the ingredient of success, organizations also need to possess 'speed' now so as to be ahead of others. Outsourcing therefore presented a very attractive offer to organizations in streamlining their information technology systems and enabling them to jumpstart to new technologies by tapping onto the expertise and using the solutions offered by the external outsourcers. Outsourcing offered numerous benefits including strategic and tactical benefits. The main outsourcing drivers and benefits which caused organizations in Singapore to pursue an outsourcing approach are to gain access to expertise, skills, new technologies as well as to resolve the problem on manpower shortage. Costs reduction benefits brought about by outsourcing are in fact secondary. Nonetheless, it has been acknowledged that the ability to be able to focus on the core competencies is also an important strategic outsourcing driver which prompts managers and managements to contemplate outsourcing.

Just like a coin, outsourcing also has two sides to it. While the outsourcing drivers and benefits are extremely appealing, the risks associated with outsourcing are equally challenging and risky. Some examples include loss of flexibility, increased costs, dependency on outsourcers, irreversibility of outsourcing decision, etc. In Singapore, security and data confidentiality are the key concerns of outsourcing. The reservations over the outsourcers gaining access to the organization's business information as well as the lower risk tolerance threshold in the Asian markets had resulted outsourcing to only arrive in the region now. However, the gloomy economic outlook in Singapore coupled with the impact of SARS may further delay the outsourcing boom that external analysts had predicted. The survey results also indicated that signs of outsourcing advancing to a larger scope are not clear although generally a majority felt that this domain is slowly gaining momentum.

Apart from the inherent risks of outsourcing, many other obstacles also challenge an outsourcing decision. Employees, regardless of whether affected or not affected by outsourcing, feared large scale outsourcing. This is because outsourcing introduced uncertainties and jeopardizes their employment. This soft aspect of outsourcing is highly sensitive and should always be handled with care. Alternative arrangement should always be planned in advance when the outsourcing approach required some of the existing employees to be transferred to the outsourcers. Representatives from the human resource department will be able to provide insights and advices on the issues that are of interest to the employees. The importance of careful management of the people factor should be emphasized since any inappropriate moves can incur a heavy loss and costs to the organization.

The existence of outsourcing is known to have taken various forms since mid 1960s. On a smaller scale, outsourcing practices may include performing maintenance on proprietary platforms by external vendors or having experts in certain technologies, business areas or technical supports. Conversely, outsourcing may also be contracting out the entire information technology systems – total outsourcing. Amongst the many different outsourcing trends and practices, this study had identified selective outsourcing as the most dominant and successful outsourcing practice while total outsourcing is a distinctly minority pursuit. The literature review and the survey results both certified that selective outsourcing is generally the most preferred and common practice. It capitalizes on the inherent advantage of both internal IT/IS department and external outsourcers' inherent advantages. Total outsourcing, on the other hand, had been perceived to possess much higher risks with regards to control and flexibility, and thus due considerations have to

be exercised. It is worthwhile to note that while a slow advancement in the scope of outsourcing has been predicted in this study, the strategy is to go for more selective outsourcing and not toward total outsourcing.

On the whole, the survey results revealed that outsourcing has been a positive experience. Both the literature and survey also indicated numerous critical success factors, for instance gaining top management support, conducting thorough need analysis and selecting the right outsourcer. The lessons learnt from this study were consolidated and presented in a framework that hopefully could help to guide companies who are keen to take on an outsourcing approach. It is essential to understand that outsourcing may not be a viable solution for everyone and different outsourcing approaches have different benefits, risks, obstacles and style of management. Organizations should always stand back and evaluate the feasibility of outsourcing, and determine if it is a viable business venture. While the framework attempts to serve as a guide on areas to consider in the outsourcing process, the reader should read it with an open mind and adopts only the applicable steps. The bottom line is outsourcing should always be backed by an objective business case. It should not be a decision that blindly follows the market trend. The triggering point for outsourcing should be based on the manifestation of the inter-play between business cost and benefits of retaining or releasing non-core and supporting activities as well as the decision on whether it is an absolute essential to have the IT/IS services outsourced for competition or survival reasons.

7.2 Future Work

The result of this study to a great extent is influenced by the survey conducted and the literature review. Since the influence of IT on various industries differ given the differences in the nature of the business activity, the market and the customer profile and the sample of the survey is rather small in comparison to the total population in Singapore, more studies and investigations should be undertaken to examine the practice of outsourcing in Singapore as it is today; only then will the conclusion have more practical validity. Additionally, there are also several observations and areas that were found as worthy to further probe into during this study. However, due to the time constraints of this study, these issues are thus presented below as further work that may be conducted.

- **Outsourcing advancement in Singapore**

The survey results and findings on the outsourcing advancement in Singapore did not provide a very clear outlook. While most IT personnel deemed that the outsourcing practice in Singapore will move on to larger scale, there are also others who think otherwise. It is imperative to conduct more studies in this domain so as to truly understand the stand of the outsourcing trend. Face to face discussions, meetings and interviews would be able to provide better assessment than using survey questionnaires as they offer opportunities to further probe and question the rationale of the answers. Investigations to understand the economic outlook and the market conditions in Singapore will also provide significant insights. When there is more news and observations that the major players in the outsourcing domain are setting up offices and talking to companies in Singapore to clinch outsourcing deals, it may duly indicate a starting point in the outsourcing boom. Therefore, more efforts are required to clearly signify the outsourcing advancement.

- **Further investigations into the other industry sectors**

The survey in this study was conducted within one company, i.e. "Company ABC". A more desired arrangement would be to conduct more studies in more organizations from varying industry sectors. Further investigations into the other industry sectors will facilitate better understanding and increase the knowledge in this domain. The findings will also highlight the differences and similarities between different industries and reveal if outsourcing is an industry specific trend which is more dominant and popular within a particular sector. In addition, findings that are similar within the same specific industry sector will also carry higher validity and are generally more reliable and accurate.

- Detailed investigation into specific areas of outsourcing**

While this study looked into the benefits, risks and success factors of outsourcing in brief, it is practical to further drill into each of these specific areas to study them in greater detail. Since the culture and business environment differ in different countries and regions, new learning and conclusions may be revealed. It is especially important to understand the social influences that may impact the success of outsourcing in different settings and contexts. There is a need to increase the knowledge base of how to achieve the optimal advantages of outsourcing and better understand the causes and impacts of the numerous outsourcing risks as well as finding out the best approaches that can be used to overcome and minimize the risks.
- Offshore outsourcing**

The vast supply and cheap skilled IT workers in China has resulted many to eye on China for potential offshore outsourcing opportunities. Singapore, being close to China could easily exploit the abundant and cheaper labor there. Although the Chinese IT professionals fall short in their language ability to converse in English, it is not a major challenge since about 77 percent of the Singapore's population is Chinese and most are equipped with the knowledge to converse in simple Mandarin. For that reason, more investigations are suggested so as to help to establish better understanding on the option of offshore outsourcing, especially in China. In this study, the IT/IS strategies in "Company ABC" is to go for packaged solutions and thus offshore outsourcing is not deployed. In addition, the past experiences with failures in offshore outsourcing in India had dismay the company to opt for offshore outsourcing. While offshore outsourcing is not in favor in this study, it may be a viable approach for others. Thus, detailed research into the option of offshore outsourcing should be conducted.
- Business process outsourcing (BPO)**

Apart from offshore outsourcing, BPO is another outsourcing option which had drawn much attention. Organizations in Singapore, especially the statutory boards and banking sectors, had undergone major reforms in the past few years. While the few local banks in Singapore have taken on the merger and acquisition path the last two years, statutory boards have taken an interest in BPO. However, plans of BPO in statutory boards had been shelved due to the weak market conditions in Singapore. With such awareness, it is interesting to explore into this area and get educated on how prior IT outsourcing experiences could assist the planning and conduct of BPO.
- Backsourcing**

Backsourcing or insourcing is a realistic option when outsourcing approaches fail to achieve the intended benefits and advantages. [Lacity and Willcocks 2001] found in their studies that about one-third of the organizations that had cancelled their contracts brought IT back internally. Even when in the case of cancelled total outsourcing contract whereby it is unpractical for organizations to take all the outsourced IT/IS services back in-house, certain amount of backsourcing may still be performed. As such, more studies on backsourcing should be carried out. When one understands the pros and cons of backsourcing, especially total backsourcing, the overall understanding of the general outsourcing concept will be improved.

7.3 Summary

In this last chapter of the report, the conclusion of this study and a list of suggested future works were given. In the conclusion, brief discussions on the various benefits, risks and challenges of outsourcing learnt from both literature review and the empirical survey were made while the differences between the outsourcing practice in Singapore and the literature had also been highlighted. The discussion also touched upon the framework that had been developed as part of this study. The framework is an attempt

that seeks to highlight the critical success factors of outsourcing derived from the lessons learnt in this study. Before ending the chapter, a list of some of the possible future works that may be conducted in this domain was also given. The suggestions that had been highlighted include further investigations into the outsourcing advancement in Singapore, conducting more studies with different industry sectors, exploring into the specific areas of outsourcing such as the benefits and risks, and carrying out more research in offshore outsourcing, BPO and last but not least, backsourcing. In short, this chapter concluded that successful outsourcings are always backed by business cases and organizations should never blindly follow the market trend and jump into the outsourcing bandwagon without fully comprehending the outsourcing concept. Thorough evaluation of the feasibility of such business venture is necessary.

REFERENCES

- [Anthes 2000] Gary H. Anthes (2000): “Avoiding ASP Angst”, ComputerWorld, October 16, 2000
<<http://www.computerworld.com/managementtopics/management/outsourcing/story/0,10801,52410,00.html>>
- [Applegate et al. 1999] Lynda M. Applegate, F. Warren McFarlan, James L. McKenney (1999): “Corporate Information Systems Management: Text and Cases”, 5th Edition, Irwin/McGraw-Hill, ISBN: 0-07-2902833
- [Barnatt 1996] Christopher Barnatt (1996): “Management Strategy and Information Technology – Text and Readings”, International Thomas Business Press, pp 43 – 56, ISBN: 0-412-74950-5
- [Baskerville 1999] Richard L. Baskerville (1999): “Investigating Information Systems With Action Research”, Association For Information Systems , Volume 2, Article 19, October 1999
<http://www.cis.gsu.edu/~rbaskerv/CAIS_2_19/CAIS_2_19.html>
- [Boudreau 2002] Mark Boudreau (2002): “Getting the measure of outsourcing - Recent studies evaluate government outsourcing in Canada”, Summit: Canada’s Magazine on Public Sector Purchasing, September 2002, pp 28-29
<http://www.summitconnects.com/Articles_Columns/PDF_Documents/05_03_05.pdf>
- [Casale 2001] Frank Casale (2001): “IT Outsourcing: The State of the Art”, The Outsourcing Institute, IT Index 2001, Sponsored By Sungard eSourcing
<http://www.outsourcing.com/content.asp?page=02b/other/_sungard/ITIndex2001.pdf>
- [Chen 2001] Huifen, Chen (2001): “Outsourcing of IT services likely to increase in Asia”, AsiaOne-News, 21 November, 2001
<http://it.asia1.com.sg/newsarchive/11/news005_20011112.html>
- [Chen 2002] Huifen, Chen (2002): “Outsourcing boom expected in Singapore soon”, AsiaOne-News, 28 January, 2002
<http://it.asia1.com.sg/newsarchive/01/news002_20020128.html>
- [Chen and Soliman 2002] Lei-da Chen and Khalid S. Soliman (2002): “Managing IT Outsourcing: A Value-Driven Approach to Outsourcing Using Application Service Providers”, Logistics Information Management Volume 15, Number 3, 2002, pp. 180±191, # MCB UP Limited, ISSN 0957-6053
- [Clark et al. 1998] Thomas Clark, Robert Zmud and Gordon Mccray (1998): “The Outsourcing of Information Services- Transforming the Nature of Business in the Information Industry”, Strategic Sourcing of Information Systems: Perspectives and Practices, edited by Lesile P. Willcocks and Mary C. Lacity, John Wiley and Sons, pp 47 - 78, ISBN: 0 471 97787 X

- [Claver et al. 2002] Enrique Claver, Reyes González, José Gasco and Juan Llopis (2002): “Information Systems Outsourcing: Reasons, Reservations and Success Factors, Logistics Information Management”, Volume 15, Number 4, 2002, pp. 294±308, # MCB UP Limited, ISSN 0957-6053
- [ComputerWorld 2001] Computerworld (2001): “Dealmaking – Hidden Costs of IT Outsourcing”, Computerworld ROI, September 24, 2001
<<http://www.computerworld.com/managementtopics/roi/story/0,10801,64058,00.html>>
- [Corbett 2001] Michael F. Corbett (2001): “Why Companies Outsource”, Firmbuilder.Com, January 18, 2001
<<http://www.firmbuilder.com/articles/19/50/592/default.asp?>>
- [Cross 1995] John Cross (1995): “IT Outsourcing- British Petroleum’s Competitive Approach”, Harvard Business Review, May-June 1995, pp 94 - 102.
- [Davis 2002] Mark Davis (2002): “The value of knowledge management”, KnowledgePoint, Intellectual Capital Management, 2002
<http://www.knowledgepoint.com.au/intellectual_capital/Articles/IC_MD001c.htm>
- [Dawson 2000] Christian W. Dawson (2000): “The Essence Of Computing Projects - A Student’s Guide”, Pearson Education Limited, ISBN: 0-13-021972-X.
- [Doyle and Tapper 2001] Cynthia Doyle and David Tapper (2001): “Evaluating the Benefits of IT Outsourcing - An IDC White Paper”, IDC, August 2001
- [Dutta et al. 2003] Soumitra Dutta , Bruno Lanvin and Fiona Paua (2003): “Global Information Technology Report 2002-2003”, World Economic Forum
<<http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CReports%5CGlobal+Information+Technology+Report+2002-2003+-+Readiness+for+the+Networked+World>>
- [Fink 1995] Arlene Fink (1995): “The Survey Handbook”, SAGE Publications, ISBN: 0-8039-7388-8
- [Fowler 2002] Floyd J. Fowler (2002): “Survey Research Methods”, 3rd Edition, Applied Social Research Methods Volume 1, Sage Publication, ISBN:0-7619-2190-5
- [Goth 1999] Greg Goth (1999): “Industry Trends - The Ins and Outs of IT Outsourcing”, IT Pros, January/February 1999
- [Grayson 2003] Ian Grayson (2003): “Is IT outsourcing the way to go?”, AustralianIT, February 25, 2003
<<http://www.careerone.com.au/newsviews/story/0,8523,6038130-22554,00.html>>
- [Gwee and Lim 2001] Seng Kwong, Gwee and Wilson Lim (2001) : “Accelerating E-Commerce Adoption” , Cover Feature Of Productivity Digest, June 2001
<http://www.spring.gov.sg/pd/2001_06/02.html>

- [Hackney and Hancox 2000] Ray Hackney and Martin Hancox (2000): “IS/IT Outsourcing: Conceptualising Practice and Perception”, Business Information Technology Management Alternative and Adaptive Futures, Edited By Ray Hackney And Dennis Dunn, Macmilan Press, pp 277-290, ISBN: 0-333-79253-X
- [HKnet 2002] HKnet - Beers P.C.W, Klaassen Koen, Pol, M.A.A.P.M, Scherrenburg, L.A (2002): “Outsource”, HKnet project 2002, December 2002
<<http://hknet.tn.tue.nl/section13/index.html>>
- [Hoch et al. 1999] Detlev J. Hoch, [Sandro K. Lindner](#), [Cyriac Roeding](#) (1999): “Secrets Of Software Success: Management Insights From 100 Software Firms Around The World”, Harvard Business School Press, Boston, ISBN: 1578511054 (Alk. Paper)
- [Hoyt 2000] Douglas B. Hoyt (2000): “How to select an outstanding vendor”, Winning the Outsourcing Game: Making the Best Deals and Making Them Work, edited by Janet Butler, CRC Press LLC, pp 105 – 121, ISBN: 0849308755
- [InfoWorld 2001] InfoWorld (2001): “Readers say Yes to Outsourcing IT Functions”, Infoworld Publishing Group, February 12, 2001, InfoWorld Vol. 23, Issue 7, pp 46 – 47
<http://80-bth.lub.lu.se.miman.bib.bth.se/cgi-bin/ftxt/ebsco/01996649_2001_23_7/4090130>
- [Johnson 1996] Julie Johnson (1996) : “Information Technology in Singapore”, 16 March, 1996
<<http://gurukul.ucc.american.edu/MOGIT/jj7134a/sing.html>>
- [Kakabadse and Kakabadse 2002] Andrew Kakabadse and Nada Kakabadse (2002): “Smart Sourcing- Internaional Best Practice”, PALGRAVE, ISBN: 0-333-36348-2
- [Keen 2002] Peter G.W. Keen (2002): “Business Process Outsourcing - Imperative, Historically Inevitable, Ready To Go, Computer Sciences Corporation”, Computer Science Corporation, 26 July, 2002
<<http://www.csc.com/solutions/businessprocessoutsourcing/knowledgelibrary/915.shtml>>
- [Keizer 2003] Gregg Keizer (2003): “Gloomy Outlook For IT Services Spending”, Information Week, January 29, 2003
<<http://www.informationweek.com/story/IWK20030129S0008>>
- [Kern and Willcocks 2001] Thomas Kern and Lesile P. Willcocks (2001): “The Relationship Advantage- Information Technologies, Sourcing, and Management”, Oxford University Press, ISBN: 0-19-924192-9
- [Kitchenham et. al 1995] Barbara Kitchenham, Lesile Pickard and Shari Lawrence Peleeger (1995): “Case Studies for Method and Tool Evaluation”, IEEE software, July 1995, pp 52-62
- [Kliem and Ludin 2000] Ralph L. Kliem and Irwin S. Ludin (2000): “The Essentials for Successful IT Outsourcing”, Winning the Outsourcing Game: Making the Best Deals and Making Them Work, edited by Janet Butler, CRC Press LLC, pp 57 – 65, ISBN: 0849308755
- [Lacity and
- Mary C. Lacity and Leslie P. Willcocks (2001): “Global Information Technology

- Willcocks 2001] Outsourcing – In Search of Business Advantage”, John Wiley and Sons, ISBN: 0-471-89959-3
- [Lacity and Hirschheim 1995] Mary C. Lacity and Ruby Hirschheim (1995): “Beyond the Information Systems Outsourcing Bandwagon – The Insourcing Response”, John Wiley and Sons, ISBN: 0-471-95822-0
- [Lacity et. al 1996] Mary C. Lacity, Lesile P. Willcocks and David F. Feeny (1996): “Sourcing Information technology Capability: A Framework for Decision-Making”, Information Management - The Organisation Dimension, edited by Michael J. Earl, Oxford University Press, pp 399 to 425, ISBN: 0198257600
- [Lui and Chai 2003] John Lui and Winston Chai (2003): “Killer flu churns up online storm in Asia”, Cnet Asia – News and Technology, March 31, 2003
<<http://asia.cnet.com/newstech/personaltech/0,39001147,39122921,00.htm>>
- [Martella et. al 1999] Ronald C. Martella, Ronald Nelson, Nancy E. Marchand-Martella (1999):” Research Methods – Learning to become a critical research consumer”, Allyn and Bacon, ISBN: 0-205-27152-1
- [Mayer et. al 2003] Mayer, Brown, Rowe and Maw (2003): “Outsourcing: Maximizing Value and Avoiding Pitfalls”
<<http://www.mayerbrown.com/outsourcing/primer/primer1.PDF>>
- [McFarlan and Nolan 1995] F. Warren McFarlan and Richard L. Nolan(1995): “How to Manage an IT Outsourcing Alliance”, Sloan Management Review, 36(2), Winter 1995, pp 9 – 23
- [Minoli 1995] Daniel Minoli (1995): “Analyzing Outsourcing – Reengineering Information and Communication Systems”, McGraw-Hill, ISBN: 0-07-042593-0
- [Orbys 2001] Orbys (2001): “Why staff hate outsourcing”, Orbys, 3 October 2001
<<http://www.orbys.co.uk/press/press20011003.html>>
- [OutsourcingCentre 2002] Outsourcing Centre (2002): “Reasons For Outsourcing”
<http://www.outsourcingcentre.net/outsourcing_sm/reason_outsourcing.html>
- [Scardino 2002] Lorrie Scardino (2002): “Human Resource Issues in Outsourcing – Overview”, Gartner Inc, 23 December 2002
<<http://www4.gartner.com/pages/story.php.id.3176.s.8.jsp>>
- [Shandre 2002] Hayma Suppiah-Shandre (2002): “Outsourcing: Making a Cost-and-Benefit Analysis - How working hand-in-hand with your IT outsourcer can help you get the best for the right price”, SME IT Guide, June 2002 Issue
<<http://idg.com.sg/48256AE8002F59C5/0/99DC487A738730D748256BCA00312CA0?Open>>
- [SingaporeBites 2003] Singapore Bites of the Week (15 - 21 February 2003) :“S'pore is third most IT-savvy nation”, BITES OF THE WEEK (15 - 21 February 2003)
<<http://app.sgnews.gov.sg/data/Bites/20030215.htm>>
- [SPRING 2000] SPRING (2000): “PSB Annual Report 1999/2000”, SPRING Singapore
<http://www.spring.gov.sg/portal/aboutus/annual_report/ar1999_2000/review/in>

[dex.html](#)>

- [Stone 2002] Lisa Stone (2002): “Critical Success Factors for Outsourcing Relationships”, Gartner Inc, 17 September 2002
<http://www.gartner.com/DisplayDocument?doc_cd=110026>
- [Strassmann 1995] Paul A. Strassmann (1995): “Outsourcing: A Game for Losers”, ComputerWorld, August 21, 1995
<<http://www.strassmann.com/pubs/cw/outsource-losers.shtml>>
- [Tan 2002] Angela Tan (2002): “EDS talking to banks here for IT outsourcing”, IT AsiaOne-News, 9 September, 2002
<http://it.asia1.com.sg/newsdaily/news009_20020909.html>
- [Tang and Tan 2002] Weng Fai, Tang and Audrey Tan (2002): “Other majors expected to follow DBS-IBM pact”, IT AsiaOne-News, 14 November, 2002
<http://it.asia1.com.sg/newsdaily/news001_20021114.html>
- [Then 2002] Justin Then (2002): “Outsourcing push or pull factor?”, Computerworld Malaysia, 2002
<<http://idg.com.sg/48256B9000249EA4/0/005CD84C8A03873448256BA40017614F?Open>>
- [Thomsett 2002] The Thomsett Company (2002): “Outsourcing: The Great Debate”
<http://www.thomsett.com.au/main/articles/hot/hot_outsource.htm>
- [Thong 2002] Thong Lip Fei (2002): “Tacit versus Explicit Knowledge”, CS6212 Project, 06 November, 2002
<http://www.scholars.nus.edu.sg/cpace/ht/thonglipfei/tacit_explicit.html>
- [Trochim 2000] William M. Trochim (2000): “The Research Methods Knowledge Base”, 2nd Edition
<<http://trochim.human.cornell.edu/kb/index.htm>>
- [Vacca 2000] John. R. Vacca (2000): “A Step-by-Step Guide to Writing a Successful RFP”, Winning the Outsourcing Game: Making the Best Deals and Making Them Work, edited by Janet Butler, CRC Press LLC, pp 105 – 121, ISBN: 0849308755
- [Wee 2002a] Gerald Wee(2002) , “Radical outsourcing” , Computerworld Singapore, Vol. 9, Issue No. 6, 8 - 14 November 2002
<<http://computerworld.com.sg/pcwsg.nsf/unidlookup/BB7824438A6E94A048256C6900282091?OpenDocument>>
- [Wee 2002b] Gerald Wee(2002) “Inhouse out, outsourcing in”, [Computerworld Singapore, A Computerworld Year-end Special: The Next Big Thing , 13 December 2002 - 9 January 2003](#)
<<http://idg.com.sg/pcwsg.nsf/unidlookup/8533F49A36546E4E48256C8E001DA901?OpenDocument>>
- [Willcocks and Lacity 1998] Lesile P. Willcocks and Mary C. Lacity (1998): “Strategic sourcing of Information Systems: Perspectives and Practices”, John Wiley and Sons, ISBN:

0 471 97787 X

- [Willcocks and Graeser 2002] Lesile P. Willcocks and Valerie Graeser (2002): “Delivering IT and E-Business Value”, Butterworth Heinemann, pp 159 – 190, ISBN: 0750647442
- [Willcocks et. al 1995] Lesile P. Willcocks, Guy Fitzgerald and David F. Feeny (1995): “Outsourcing IT: The strategic implications”, Long Range Planning, Vol 28, No 5, , October 1995, Elsevier Science Ltd, pp 59 to 70
- [Willcocks et. al 1999] Lesile P. Willcocks, Guy Fitzgerald and Mary C. Lacity (1999): “To Outsource IT or not?”, Beyond the IT Productivity Paradox, edited by Lesile P. Willcocks and Stephanie Lester, John Wiley and Sons, pp 293 to 333, ISBN: 0471986925 (cloth)
- [Williams 1998] Oakie Williams (1998): “Outsourcing: A CIO’s Perspective”, CRC Press LLC, ISBN: 1-57444-216-3
- [Williamson et. al 2000] Kirsty Williamson, Amanda Bow, Frada Burstein, Peta Darke, Ross Harvey, Graeme Johanson, Sue McKemmish, Majola Oosthuizen, Solveiga Saule, Don Schauder, Graeme Shanks, Kerry Tanner (2000): “Research Methods for Students and Professionals: Information Management and Systems”, Centre for Information Studies, Charles Strut University, ISBN: 0-949060-89-5
- [Yap 2003a] Jimmy Yap (2003): “The growing Asian pie (cover story)” , MIS Asia, January 2003
<http://www.misweb.com/magarticle.asp?doc_id=21208&rgid=5&listed_months=-1>
- [Yap 2003b] Jimmy Yap (2003): “DBS banks on outsourcing (cover story)”, MIS Asia, January 2003
<http://www.misweb.com/magarticle.asp?doc_id=21207&rgid=5&listed_months=-1>
- [Yeoh 2002] Francis Yeoh(2002): “Consider 'collaborative outsourcing' for e-government projects”, AsiaOne-This is IT, 28 October, 2002
<http://it.asia1.com.sg/thisisit/sayit_20021028.html>

APPENDIX A: IT/IS OUTSOURCING SURVEY

Background

On 12 November 2002, DBS bank made an announcement that they are outsourcing many IT functions to IBM, including all the infrastructure management—of desktops, local and wide area networks, open systems servers and data centers as well as the predominantly mature, mainframe-based legacy applications in the applications area. These news have raised awareness and sparked off the interest in this thesis work to study the phenomenon of IT/IS outsourcing in Singapore.

Definition

IT/IS outsourcing, defined in this survey, is the practice of turning over part or all of an organization's IT/IS functions, assets, resources and/or related services, to one or more external service providers for required result. The external service provider(s) are termed as outsourcer(s).

Objectives and Purposes

With your assistance and cooperation, this survey seeks to identify and investigate the IT/IS outsourcing strategies, drivers, benefits, risks, and some success factors in your context. The information you provide will help to evaluate if there is any gaps and differences between the practice in Singapore and the current literature.

Structure and Confidentiality

This survey is part of a master thesis project at Blekinge Institute of Technology in Ronneby, Sweden. It is purely an independent study that is not conducted on behalf of any organization or department

There are 19 questions in this survey and should take about 15 – 20 minutes to complete. Please answer all the questions. There are no right or wrong answers. The focus of the survey is on your opinions. All your answers will be held in the **strictest** confidence. No individual respondent will be identified by name in any analyses or report. Only summarized data will be reported.

Survey Period and Contact

The closing date for this survey is Friday, **4 April 2003**. I would greatly appreciate if you could please try to complete and return this survey before the target closing date.

Upon completion of this survey, please email the soft copy to
anko02@student.bth.se or kohsermu@yahoo.com

Alternatively, you may send it to this address:

Angela Koh
Polhemsgatan 23C
Lgh C11, 37140
Karlskrona, Sweden

A copy of this questionnaire can also be downloaded online at:
<http://www.geocities.com/kohsermu/survey>

Please feel free to contact me with any questions you have regarding this thesis work or survey. Thank you very much for your assistance.

Best Regards,

Angela Koh

Part 1: Background Profile

1. Which of the following best describes the department you work under? Please check (i.e. mark a 'X') the most appropriate answer.

Sales and Marketing
 Business and Policy Planning
 Finance
 Human Resources
 Information Technology
 Customer Services
 Legal and Audit
 Communication
 Learning & Training
 Others (please specify) _____

2. Which of the following best describe the role you play in your organization? Please check (i.e. mark a 'X') the most appropriate answer.

Directors or Senior Management
 Business Group Managers
 Business Group Analysts
 IT/IS Managers
 IT/IS Analysts
 Others (please specify) _____

3. What is the level of your involvement with IT/IS outsourcing decisions? Please check (i.e. mark a 'X') all appropriate answer(s).

Decision maker
 Influencer
 Implementer
 Personnel affected by outsourcing decisions
 End users using outsourced services
 Not Involved
 Others (please specify) _____

4. Which authority deals with IT/IS outsourcing decisions in your organization? Please check (i.e. mark a 'X') all appropriate answer(s).

Directors or Senior Management
 Business Group Managers
 Business Group Analysts
 IT/IS Managers
 IT/IS Analysts
 Others (please specify) _____

Part 2: Outsourcing

5. For each of the following IT/IS activities,
- (a) Which of these are currently being outsourced in your organization? Please check (i.e. mark a 'X') all appropriate answer(s).
- (b) Which of these are being considered outsourcing or will be outsourced in the near future? Please check (i.e. mark a 'X') all appropriate answer(s).

(a) Current	(b) Pending	IT/IS activities
		a. Packaged Application / ERP Application
		b. Internet/E-commerce Application
		c. Intranet Application
		d. Application Development
		e. Application Maintenance
		f. Legacy Systems Maintenance
		g. Staffs/Users Training
		h. Systems Implementation
		i. Internet/E-Commerce Services Hosting
		j. Data Center
		k. Telecommunication functions including email systems
		l. Network Services
		m. Desktop Systems
		n. Technical Support/ Support to end users
		o. Help Desk
		p. Software Distribution/Management
		q. Quality Management
		r. Security
		s. Others (please specify)
		i.
		ii.
		iii.

6. For each of the following drivers and benefits of IT/IS outsourcing,
- (a) Specify the degree of the benefit that was experienced and realized by IT/IS outsourcing using the scale below:

Significantly Worse than Expectation		Exactly As Expected		Significantly Beyond Expectation
1	2	3	4	5

Degree of Realization	Drivers and Benefits
	<i>Strategic Reasons</i>
_____	a. Improve company focus; focus attention on those core activities
_____	b. Gain access to world-class capabilities
_____	c. Free internal resources for other purposes
_____	d. Accelerate reengineering benefits; outsource non-core functions to seek improvements in cost, quality, service and speed
_____	e. Share risks; reduces the risk in investment
	<i>Tactical Reasons</i>
_____	f. Addressing the problem of having functions that difficult to manage or out of control
_____	g. Secure resources are not available internally, outsourcer has access to more skilled human capital to make up for potential corporate shortages of talented manpower
_____	h. Reduce and control operating costs by taking advantage of outsourcer's economies of scale
_____	i. Make capital funds available; reduce the need to invest capital funds in non-core functions
_____	j. Cash infusion from sales of assets including facilities and licenses to the outsourcers
	<i>Additional Factors</i>
_____	k. Assistance with organizational changes; outsourcers can help build new infrastructures
_____	l. Assistance with globalization; assistance in broadening infrastructure and global operational reach
_____	m. Increase access to skills and new technologies
_____	n. Greater flexibility; able to react faster to changing market conditions, fluctuating demand cycles, and increased competition
_____	o. Improved predictability of costs for the management of all or part of the company's IS/IT functions
_____	p. Shorter development time and improve time-to-market; project completed and launched in a shorter timeframe
_____	q. Faster and higher-quality service and improved efficiency such as higher systems availability and uptime, improved response to customers' problems

Degree of Realization	Drivers and Benefits
_____	r. Increase productivity; best-of-breed practices and tools in IT become more available and better utilized
_____	s. To have clearer definition of project's expectations and goals
_____	t. Others (Please specify)
_____	i.
_____	ii.
_____	iii.

(b) Based on the above list of drivers and benefits (i.e. a. to t.), list the 3 most important motivation factors for IT/IS outsourcing in your organization.

Top	Second	Third

(c) Remarks on IT/IS outsourcing drivers and benefits:

7. For the following risks/considerations,

(a) Specify all the risks/considerations that occurred during IT/IS outsourcing. Please check (i.e. mark a 'X') all appropriate answer(s).

(b) Specify the risk level of these risks/considerations using the following scale:

No Risk	Low Risk	Medium Risk	High Risk	Very High Risk
1	2	3	4	5

(a) Occurrence	(b) Risk Level	Risks
		a. Loss of control
		b. Loss of in-house expertise
		c. Loss of intellectual capital; loss of knowledge and capability due to the loss of IT personnel
		d. Loss of flexibility/Dependency on outsourcer
		e. Need to manage the vendor relationship
		f. Double outsourcing by outsourcers
		g. Negative impact on employee morale/possible opposition from employee
		h. Outsourcer does not comply with the contract
		i. Qualification of outsourcer's employees not up to expectations
		j. Outsourcer's project management skills not up to expectations
		k. Hidden costs in the contract
		l. Increased costs; higher costs in the long run
		m. Security of data; outsourcers gaining access to confidential information
		n. Irreversibility of the outsourcing decision
		o. Outsource for the wrong reasons
		p. Communication problems, especially in the case of offshore/global outsourcing
		q. Legal issues that complicate the contract negotiation process
		r. Others (Please specify)
		i.
		ii.
		iii.

- (c) Based on the above list of risks/considerations (i.e. a. to r.), list the 3 most important factors for IT/IS outsourcing in your organization.

Top	Second	Third

- (d) Remarks on IT/IS outsourcing risks/considerations:

8. For the following consequences of IT/IS outsourcing,

(a) Based on your experience(s), assess the consequences of IT/IS outsourcing in comparison to similar in-house efforts using the scale below:

Decreased Dramatically	Decreased Significantly	Decreased Slightly	No Change	Increased Slightly	Increased Significantly	Increased Dramatically
1	2	3	4	5	6	7

Assessment	Consequences
_____	a. Overall Costs
_____	b. Schedule (for outsourced of IT projects)/time-to-market
_____	c. Control over outsourced functions
_____	d. Product quality
_____	e. Risks
_____	f. Flexibility such as change in schedules, response to immediate needs, etc
_____	g. In-house personnel expertise/knowledge/skill
_____	h. Administrative works
_____	i. Time taken to solve to customer problems
_____	j. Time taken to acknowledge customer problems
_____	k. Company focus on 'core' functions
_____	l. Value adding abilities
_____	m. Communication problems
_____	n. Rework efforts
_____	o. Chances of failed or cancelled contracts/projects
_____	p. Others (Please specify)
_____	i.
_____	ii.
_____	iii.

(b) Remarks on IT/IS outsourcing consequences in comparison to similar in-house efforts:

9. For the following IT/IS trends and practices,
- (a) Which of these trends and practices is your organization currently practicing or may use in the future? Please check (i.e. mark a 'X') all appropriate answer(s).

Possible Engagement 'X'	Trends and Practices
_____	a. Smarter Contracting – exploring for better deals such as competitive bidding for services beyond the contract, flexible pricing mechanism to alter prices within one contract, negotiating shares in their outsourcers' savings, using third party benchmarks and market rates to test outsourcers price annually
_____	b. Offshore Outsourcing – taking advantage of programming and software development expertise and lower prices emerging in countries such as India, China, Russia
_____	c. Value-added Outsourcing – the company and the outsourcer partner to combine strengths to add value to market IT products and services
_____	d. Equity Holdings – taking ownership in each other's companies
_____	e. Co-sourcing – performance-based contracts by which the outsourcer seeks to achieve and get rewarded on improving the company's business performance, not just delivering on its IT goals.
_____	f. Multiple Suppliers – the hiring of 'best of breed' supplier for specific IT activities.
_____	g. Spin-offs – this idea is to create a separate company out of an effective IT function.
_____	h. Business Process Outsourcing (BPO) –outsourcing a process and its IT, identified as 'non-core', which a third party can do at least as well, at competitive price
_____	i. Application Service Providers (ASP) – provision of 'pay-as-you-use' access to centrally managed applications distributed over the Internet and other networks
_____	j. Backsourcing – canceling contracts and brought IT back in house
_____	k. Shared Services – the sharing of services by several companies e.g. shared e-procurement exchanges
_____	l. Others (Please specify)
_____	i.
_____	ii.
_____	iii.

- (b) Which of the following list of trends and practices is currently the most common practice in your organization? Please check (i.e. mark a 'X') the most appropriate answer.

Most Common 'X'	Trends and Practices
_____	a. Selective Outsourcing – only a subset of the IT activities is outsourced
_____	b. Transitional Outsourcing – temporarily outsourcing during a major transition to a new technology
_____	c. Total Outsourcing – outsourcing possibly all hardware and software provision and support across the organization

- (c) Remarks on the type of IT/IS outsourcing practices in your organization:

10. For the following selection criteria/factors,

Factors

-
- a. Service quality/ customer service
 - b. Price
 - c. Outsourcer's reputation
 - d. Contract flexibility
 - e. Outsourcer's resources and technical expertise
 - f. Cultural match
 - g. Outsourcer's solvency and stability
 - h. Reliability
 - i. Outsourcer's security control
 - j. Existing relationship
 - k. Experience level of outsourcer
 - l. Commitment to quality
 - m. Responsiveness
 - n. Additional value-added capability
 - o. Location
 - p. Others (Please Specify) _____

(a) Based on the above listed criteria (i.e. a. to p.), list the 3 most important criteria when selecting outsourcer.

Top	Second	Third

(b) Remarks on IT/IS outsourcer's capability or outsourcer's selection criteria:

11. For each of the following factors,

- (a) Based on your experience(s), assess the importance of the factor in affecting the success of IT/IS outsourcing using the following scale:

Totally Not important		Somewhat Important		Very Important
1	2	3	4	5

Importance	Assertions
_____	a. Conduct needs analysis prior to making the outsourcing decision.
_____	b. Clearly defined terms and conditions in the outsourcing contract.
_____	c. Having a strategic vision and plan, and understands the intended use of outsourcing.
_____	d. Outsourcer understands the organization's goals and objective.
_____	e. Selecting the right outsourcer.
_____	f. Ongoing management of the relationships and communication.
_____	g. Properly drawn up contract.
_____	h. Outsourcer attains some form of certification such as ISO 9001, SEI CMM rating.
_____	i. Top management's support and involvement.
_____	j. Careful attention to the personnel issues and conducting open communication with the affected individual/groups
_____	k. Having well trained and skilled in-house personnel to deal with the external expertise.
_____	l. The deal has cost reduction goals or financial justification.
_____	m. The tendering process is open, adequate and transparent.
_____	n. The outsourced functions/projects are bundled together.
_____	o. Metrics are drawn up to measure the outsourcer's performance.
_____	p. The outsourcer is an international company with global reach.
_____	q. The outsourcer has a local support office.
_____	r. Others (Please specify)
_____	i.
_____	ii.
_____	iii.

- (b) Based on the above list of factors (i.e. a. to r.), list the 3 most important factors that will affect the success of IT/IS outsourcing in your organization.

Top	Second	Third

- (c) Remarks on factors affecting the success of IT/IS outsourcing or IT/IS outsourcing issues you have experienced:

12. For the following options,

- (a) Which of these is the most preferred arrangement for personnel affected by IT/IS outsourcing in your organization? Please check (i.e. mark a 'X') the most appropriate answer.

Most Preferred 'X'	Arrangement
_____	a. Transfer to outsourcer
_____	b. Redeployed to other sections or departments
_____	c. Retrench
_____	d. Others (Please Specify) _____

- (b) Remarks on human resource arrangement for personnel affected by IT/IS outsourcing:

13. How satisfied are you with the overall performance/services of the outsourced IT/IS functions? Please cross out (i.e. mark a 'X' in the box) the most appropriate answer.

Very Satisfied	Satisfied	Neutral	Not Satisfied	Very Dissatisfied
_____	_____	_____	_____	_____

14. Would you continue using an IT/IS outsourcing approach? Please answer either 'Yes' or 'No'.

Answer: _____

15. Would you recommend further outsourcing of other internal IT/IS functions? Please answer either 'Yes' or 'No'.

Answer: _____

Questions 16 to 18 are related to ‘Total Outsourcing’:

The definition of ‘Total Outsourcing’ is the outsourcing of possibly all hardware and software provision and support across the organization and the internal IT department of the organization will either downsize dramatically or cease to exist.

16. (a) Do you think your organization should consider ‘Total Outsourcing’?
Please answer either ‘Yes’ or ‘No’.

Answer:

- (b) Please state the reason for your answer in 16(a).

17. Will your organization consider ‘Total Outsourcing’? Please answer either ‘Yes’ or ‘No’.

Answer:

18. Do you think that the IT/IS outsourcing trend in Singapore will advance towards a larger scale such as ‘Total Outsourcing’? Please answer either ‘Yes’ or ‘No’.

Answer:

19. Comments/Suggestions about this survey, or IT/IS outsourcing in general.

Thank you very much for taking time to participate in this survey!!

Please email the completed survey to anko02@student.bth.se or kohsermu@yahoo.com

APPENDIX B: TABLE OF CONTENTS FOR REQUEST OF PROPOSAL (RFP)¹

Section I — General Information for Bidders

- a. Purpose
- b. Key dates
- c. Contract pricing
- d. Bidder's questions
- e. Proposal preparation
- f. Oral presentation
- g. Site visits
- h. Acceptance of proposal content
- i. Contractor responsibilities
- j. News release
- k. Selection criteria
- l. Independent price determination
- m. Changes in the request for proposal
- n. Sealed bid receipt
- o. Award
- p. Contract payment schedule
- q. Cost liability
- r. Insurance
- s. Equipment that can be bid
- t. Cancellation
- u. Copyrights and right to data
- v. Confidentiality
- w. Conflict of interest
- x. Contract documents
- y. Amendments to contract
- z. Communications and notices
- aa. Payment for goods and services
- bb. Business recovery plan

Section II — Company Background Information

- a. Introduction
- b. Organization
- c. History

Section III — General Requirements

- a. Objectives
- b. Scope
- c. Specifications
 1. Introduction
 2. Information Systems organization
 - Telecommunications services
 - System services
 - Application services
 - Other
- d. Maintenance and service
- e. Contracts
- f. Leasing
- g. Current costs/budgets

¹ This appendix is extracted from [Williams 1998]

Section IV — Information Required from Bidders

- a. Proposal approach
- b. Business organization
- c. Statement of the problem
- d. Management summary
- e. Proposed hardware
- f. Contractor support
- g. Maintenance and service
- h. Cost
- i. Project plan and implementation
- j. Project organization and staffing
- k. Additional information
- l. Proposal submittal

Appendixes (If any)

APPENDIX C: KEY AREA OF RFP

The following highlights the key areas that should be addressed in the development and issuance of an RFP:

- **Scope of work and description of services**

The scope of the areas to be outsourced as confirmed in the earlier phase two may need to be defined in more detail in the RFP. The roles and responsibilities, including the transition point of responsibilities, also need to be spelled out of each party. Similarly, if more than one outsourcer will be contracted to provide services, it should also be clearly stated. Disputes may arise if the descriptions are not thorough
- **Human resource plan**

A detailed human resource plan is required once the scope of the outsourcing has been finalized. The plan should detailed the positions that will be retained, the need to recruit any new positions, the process for transferring of staffs to the outsourcers, and how to promote retention of staff through the transition period. In the RFP, a summary of the current staffing pattern for the services to be outsourced as well as the expectations for the transition of staff, and for continuity of overall compensation may be given. If the requirement is to offer employment to existing staffs, detail on all existing salary ranges, hours of work and benefits is required.
- **Outsourcers minimum qualifications**

Based on the objectives of the outsourcing, the desired characteristics and the minimum qualifications of the outsourcers should be determined so as to create the potential for competition in the evaluation and selection process. The types of contracts and structure of the services to be provided will also be affected. For example, if the decision is to consider more than a single outsourcer, a consortium structure with a primary outsourcer may be required to promote accountability and cooperation between outsourcers.
- **Contract term/duration**

The duration of the contract or contract term, will also be driven by the objectives for the outsourcing. For example, application development outsourcing project usually are very short term whereas data center outsourcing may be contracted for five years or more.
- **Bidding process**

The RFP must describe the bidding process to be followed which includes:

 - ✓ conduct of a bidders' conference to highlight supplementary information,
 - ✓ an initial compliance review of proposals to confirm that they meet minimum requirements,
 - ✓ a preliminary short-listing of superior bids,
 - ✓ invitation for presentations and discussion of proposals, which may be followed by a further short-listing and
 - ✓ final selection to enter contract negotiations
- **Evaluation criteria**

The evaluation criteria should be developed before the RFP is issued so as to ensure that the objectives for the outsourcing and the important characteristics of the outsourcer will be accurately reflected in the RFP. The main principles for rating should be incorporated in the RFP itself to ensure an open and fair evaluation process. There are many different approaches that can be deployed to perform the scoring and weighing of the items.

- **Business environment and organization direction**
The current business environment and the organization direction need to be documented in the RFP. Any known re-structuring or re-engineering initiatives also need to be identified. The bidders depend on this information to outline the skills and supporting technical solutions that they are proposing.
- **Technical overview**
A comprehensive description of the technology environment and how it supports the business processes is required. Even if the outsourcing affects only part of the technical environment, the bidders may need to see a bigger picture. A listing of significant assets and a summary of other assets is required.
- **Service levels and reporting structure**
As highlighted in the earlier phase two, section 6.2.2.4, the service level measures and reporting structure for each component must be clearly defined in the RFP so that the bidder are aware of the expectation required from them.
- **Data integrity and security**
This area is especially sensitive for government bodies and SMEs. Hence, bidders should be required to sign a non-disclosure agreement to protect proprietary information and to safeguard security. The expectations for maintaining the security and integrity of the technical environment must also be established. They may include measures such as separation of test and production environments, firewall and encryption standards, user I.D. and password administration, etc.
- **Transition period**
The RFP should require the bidders to provide a detailed plan for the transition of staff, assets and services, along with a schedule. In addition, the RFP should also stipulate the business requirements and concerns such as the maximum time period for the transition.
- **Provision of outsourcers resumes and references**
The RFP should require the outsourcers to provide resumes and references for all the key personnel. This is to ensure the quality of the outsourcer's staffs The RFP should also indicate the time period these personnel are required to stay and that approval must be sought for if substitutions of these personnel are needed. Continuity in staffing is a key success element to ensure familiarity with organization environment and to build on effective working relationships.
- **Protection clauses**
The potential costs resulting from loss of data or loss of service need to be determined so that insurance, liability and performance security requirements can be established and outlined in the RFP and in the contract. The RFP should also clearly highlight the termination clauses to terminate the contract.
- **Pricing and payment**
Depending on the objectives of outsourcing, the outsourcing committee needs to determine if pricing central to central to the selection decision. It is generally better to stipulate the desired results than indicate the available budget. However, if there are expectations for major cost reductions, the RFP should indicate this relative to the base budge and require the bidders to provide a detailed cost for each service to permit effective comparison and analysis of how cost reductions are to be achieved. The payment term should also be included. The outsourcing contract may also include provisions that require a periodic analysis of the outsourcer's prices for specific services and a comparison with industry standards to ensure that the pricing continues to be competitive. This process can prevent the problem of overpaying the outsourcer.

- **Change management process**
The RFP and the contract will need to identify a change management process to accommodate the changing of service requirements such as the adoption of new technology and new applications.
- **Dispute resolution**
A dispute resolution process must be included in the contract so that all parties are clear on who to approach and how they could resolve disputes.
- **Performance Review**
Consideration should be given to conduct a review of the outsourcer's performance during the term of the contract. The process of the performance review needs to be described in the RFP.

APPENDIX D: OUTSOURCING CONTRACT OUTLINE²

Article I. Agreement, Term, and Letter Agreement

- 1.1 Agreement
- 1.2 Term
- 1.3 Certain definitions
 - a. Access
 - b. Outsourcing firm software
 - c. Outsourcing firm-supplier software
 - d. Your company software
 - e. Your company-supplier software
 - f. Software
 - g. Application services
 - h. System Services

Article II. Services to Be Performed by Outsourcing Firm

- 2.1 Outsourcing firm personnel and management
 - a. Outsourcing firm Account Manager
 - b. Interviews and performance
 - c. Transition of personnel
 - d. Financial responsibility of outsourcing firm
- 2.2 Outsourcing firm Information Technology services
- 2.3 Acceptance process
- 2.4 Telecommunications services
 - a. Voice telecommunications services
 - b. Billing administration
 - c. Additional locations
 - d. Quality, performance, and remedies
 - e. Payments to outsourcing firm
 - f. Service orders
 - g. Telecommunications equipment
 - h. Management and maintenance of the telecommunications equipment
 - i. Billing administration
 - j. Service problems
- 2.5 Additional services
- 2.6 Information Technology changes

Article III. Company Obligations

- 3.1 Personnel and management
 - a. Your company representative
 - b. Transitioned employees
- 3.2 Operational obligations
- 3.3 Financial obligations

Article IV. Equipment and Related Agreements

- 4.1 Your company equipment
- 4.2 Third-party approvals
- 4.3 Further assurances

² This appendix is extracted from [Williams 1998]

Article V. Software

- 5.1 Your company software
- 5.2 Your company-supplier software
- 5.3 Outsourcing firm software
- 5.4 Outsourcing firm-supplier software
- 5.5 Ownership of developed software
- 5.6 Outsourcing firm development tools
- 5.7 Software maintenance

Article VI. Confidentiality, Security, and Audit Rights

- 6.1 Your company's data
- 6.2 Confidentiality
- 6.3 Security
- 6.4 Audit rights

Article VII. Payments to Outsourcing Firm

- 7.1 Charges for services
- 7.2 Cost of living adjustment
 - a. Adjustment
 - b. Change of index
- 7.3 Invoicing and time of payment
- 7.4 Taxes
- 7.5 Verification of costs
- 7.6 Supporting documentation
- 7.7 Price review

Article VIII. Dispute Resolution

- 8.1 Annual quality review
- 8.2 Performance review
- 8.3 Alternative dispute resolution
- 8.4 Arbitration
 - a. Procedures
 - b. Payments during arbitration
 - c. Services during arbitration
 - d. Enforcement

Article IX. Termination

- 9.1 Termination for cause
- 9.2 Termination for nonpayment
- 9.3 Termination for insolvency
- 9.4 Termination upon sale or other disposition
- 9.5 Significant business change
- 9.6 Termination at will
- 9.7 Termination for failure to provide critical services
- 9.8 Transition services upon termination
 - a. Services
 - b. Charges
- 9.9 Recovery of costs

Article X. Outsourcing Firm Performance, Warranties, Indemnities, and Liability

- 10.1 Performance
- 10.2 Warranty disclaimer
- 10.3 Intellectual property indemnification
- 10.4 Cross indemnification
- 10.5 Indemnification for employee costs
- 10.6 Indemnification procedures
 - a. Notice and control
 - b. Settlement
- 10.7 Limitation of liability
- 10.8 Contractual statute of limitations
- 10.9 Acknowledgement

Article XI. Miscellaneous

- 11.1 Right of outsourcing firm to engage in other activities
- 11.2 Binding nature and assignment
- 11.3 Notices
- 11.4 Relationship of parties
- 11.5 Hiring of employees
- 11.6 Approvals and similar actions
- 11.7 Force majeure
- 11.8 Severability
- 11.9 Waiver
- 11.10 Attorney's fees
- 11.11 Media releases
- 11.12 No beneficiary
- 11.13 Entire agreement
- 11.14 Governing law

Statement of Work

- 1.0 Introduction
- 1.1 Your company and outsourcing firm relationship
 - 1.1.1 Outsourcing firm account management
 - 1.1.2 Your company management
 - 1.1.3 Organizational relationship
 - 1.1.3.1 Executive steering committee
 - 1.1.3.2 Outsourcing firm and your company organizations
 - 1.1.4 Service level metrics
 - 1.1.5 Staffing
 - 1.1.6 Customer satisfaction surveys
 - 1.1.7 Operational review meetings
 - 1.1.8 Methodology/change control
- 1.2 Definitions
- 2.0 Operate and consolidate systems
- 2.1 Operate and maintain data centers systems
 - 2.1.1 Service description
 - 2.1.2 Consolidation of data centers
 - 2.1.3 Backup and disaster recovery
- 2.2 Resources
 - 2.2.1 Equipment
 - 2.2.2 Staff
 - 2.2.3 Retained expenses
- 2.3 Roles and responsibilities

- 2.4 Deliverables
- 2.5 Performance measures
- 3.0 Manage data network and support
- 3.1 Service description
 - 3.1.1 Long distance voice and data services
 - 3.1.2 End-user desktop support
 - 3.1.3 Services
- 3.2 Resources
 - 3.2.1 Equipment
 - 3.2.2 Staff
- 3.3 End-user training
- 3.4 Roles and responsibilities
- 3.5 Deliverables
- 3.6 Performance measures
- 4.0 Manage voice communications services
- 4.1 Service description
- 4.2 Resources
 - 4.2.1 Equipment
 - 4.2.2 Staff
- 4.3 End-user training
- 4.4 Roles and responsibilities
- 4.5 Deliverables
- 4.6 Performance measures
- 5.0 Manage application development and support
- 5.1 Service description
- 5.2 Resources
 - 5.2.1 Equipment
 - 5.2.2 Staff
- 5.3 End-user training
- 5.4 Roles and responsibilities
- 5.5 Deliverables
- 5.6 Performance measures

Attachment A – Hardware and Equipment

Attachment B – Staffing Plan

Attachment C – Hours of Staffing

Attachment D – Service Levels

Attachment E – Your Company-Retained Expenses

APPENDIX E: DEFINITIONS AND ABBREVIATIONS

The following tables highlight the definitions and abbreviations that are used in this report:

Term	Definition
IT/IS outsourcing	The practice of turning over part or all of an organization's IT/IS functions, assets, resources and/or related services, to one or more external service providers for required result.
outsourcers	External service providers or vendors providing IT/IS outsourcing services.
“Company ABC”	Name used to address the company that participated in the survey conducted in this study. The company likes to remain as anonymous.

Abbreviation	Name
ASP	Application Services Providers
BG	Business groups in “Company ABC”
BPO	Business Process Outsourcing
CIO	Chief Information Officer
CMM	Capability Maturity Model
ERP	Enterprise Resource Planning
FAQ(s)	Frequently Answered Question(s)
HRD	“Company ABC”’s human resources department
ICT	Information Communications Technology
IS	Information Systems
IT	Information Technology
ITD	“Company ABC”’s in-house IT department
MNCs	Multinational Companies
PC(s)	Personal computer(s)
QA	Quality Assurance
RFP	Request for Proposals
SARS	Severe Acute Respiratory Syndrome
SEI	Software Engineering Institute
SLA(s)	Service level agreement(s)
SME(s)	Small and Medium-Sized Enterprise(s)
SOW	Statement of Work
WEF	World Economic Forum

Abbreviation	Company Name
BP	British Petroleum
BPX	British Petroleum Exploration
EDS	Electronic Data Systems
IDG	International Data Group
SEI	Software Engineering Institute
Swiss Bank	Swiss Bank Corporation