ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

FACULTY OF INFORMATICS

INFORMATION SYSTEMS DEVELOPMENT OUTSOURCING MANAGEMENT IN ETHIOPIA: THE CASE OF THE ETHIOPIAN TELECOMMUNICATIONS CORPORATION.

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN INFORMATION SCIENCE

BY

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Signature of the Board of Examiners for Approval

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DECLARATION

This thesis is my original work and has not been presented as a partial requirement for a degree in any university, and all source of materials used for the study has been duly acknowledged.

Muluneh Atinaf Kebede

October, 2009

The thesis has been submitted for examination with my approval as university advisor.

Ato Tibebe Beshah

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LIST OF ABREVIATIONS

BPO -Business Process Outsourcing

CCB –Customer Care and Billing

CIOs -Chief Information Officers

ETC –Ethiopian Telecommunication Corporation

IBM - International Business Machines

ICCB –Integrated Customer Care and Billing

ICT –Information and Communication Technology

IS - Information System

ISD - Information Systems Development

IT –Information Technology

PC - Personal Computer

SLA –Service Level Agreement

Sow – Statement Of Work

UIL – Ushacomm India Ltd.

Abstract

Information systems/technology outsourcing is considered as an approach for information systems/technology management by chief information officers and organizations. Thus it is given due attention by various organizations and management because of the advantages it brings to them. Despite the advantages it brings, IS/IT outsourcing faces problems/challenges and risks at any point in the process that may even lead to failure before its maturity. However, all theses issues are not studied in the case of Ethiopia.

This study thus aims to empirically assess how IS/IT outsourcing is managed in Ethiopia, specifically at the Ethiopian Telecommunications Corporation. A case study approach considering a currently outsourced information systems development project at the corporation is followed so that a better and detailed understanding of the subject can be developed. Furthermore this research tried to identify the problems/challenges that the corporation faced during outsourcing and the possible causes of the problems.

The research employed a qualitative research methodology, and hence interview and document analysis were major data collection methodologies used. The data collected is analysed as per research questions and objectives of the study.

Finally, from the data analysis it is clearly indicated that the outsourcing organization has failed to meet its schedule, cost, requirements, and customer service objectives. The major causes for these problems were lack of detailed requirements from the beginning, lack of detail in the SLAs, lack of previous experience in software outsourcing management.

CHAPTER ONE

INTRODUCTION

1. Background

According to Jan and Tsai (2001) one of the most important missions of information systems (IS) units is information systems development (ISD). However, different factors prevent them from developing every thing in-house from scratch. One such factor which forces them to develop fewer application systems is (ibid) shortage of professional manpower in ISD. During such times it will be cheaper for organizations to solve their problems by acquiring and tailoring a set of standard modules than developing and maintaining it in-house through in-house design and programming capabilities. Thus following such a trend organizations can transfer other applications to different information systems development and management strategies.

Today, there are specialized information service firms or information systems providers functioning in the same way as in-house IS departments within an organization. These IS providers offer the organization an additional choice to ISD or IT management (Jan and Tsai, 2001). Such practice, where an organization gets its job done through other firms is referred to as outsourcing. Outsourcing is considered as one of the most recent management strategies to emerge in response to demands for more efficient ways to address organizational competitiveness (Jiang and Qureshi 2006). And now it has become the backbone of many efficient, well-organized enterprises (Heeks and Arun, 2009).

IS outsourcing is (Pati and Desai, 2005) a special form of outsourcing that began in the early 1990s as a way to supplement in-house IS development activities and continues to be a growing economic phenomenon worldwide. It is one aspect of outsourcing, where services/activities of IS are contracted out to a third-party management to obtain a required result (Willcocks and Currie, 1997). Its scope is changing due to its increase (Kini, 2007; Heeks and Arun, 2009) as a result it has transformed the IT landscape (Pati and Desai, 2005). It has become potentially viable business solution that many IT managers are looking into in order to remain competitive in the current dynamic business and technological environment (Heeks and Arun, 2009; Bensghir and Tekneci, 2008; Beaumont and Sohal, 2004; Pati and Desai, 2005).

Outsourcing, the process of shifting tasks and services previously performed in-house to outside vendors, is hardly a new idea in management (Hussey and Jenster 2003; Jenster and Pedersen 2000; Willcocks and Currie 1997). It is (Beaumont and Sohal, 2004) having work that was formerly done inside the organization performed by an external organization (Hussey and Jenster 2003; Henten et al., 2003), the make or buy type of decision making the most basic form of it. According to Beaumont and Sohal (2004), the experience of Eastman Kodak in outsourcing its activities to IBM has led other organizations to follow suit and benefit from this arrangement. Although IS outsourcing is not new, an increasing amount of attention has been paid to it by practitioners as well as academics in recent years and has become a major IS phenomenon and recognized as an important means of managing IS (Wang, 2002).

Hence, it has become a major research topic especially in the developed nations (Kini, 2007).

In addition to alleviating professional shortage, (Bensghir and Tekneci, 2008) outsourcing an IS/IT function has become fashionable to cut-off staff costs and increase efficiency, expand IT usage and hence avoid obsolescence. Moreover, (Hussey and Jenster 2003; Jenster and Pedersen 2000) the volume, extent and character of outsourcing has been changing rapidly and become a management trend as much as a reasoned decision. In addition, activities being outsourced have also moved from the traditional to the strategic heart of organizations (Beaumont and Sohal, 2004). As a result IT-intensive projects and tasks are increasingly outsourced (Siakas and Balstrup 2006).

However it requires an organization to managing its outsourcing process and relationships successfully for exploiting the maximum outsourcing opportunities and avoiding threats. Attention is required in selecting the functions being outsourced and in the management of the outsourcing process. This helps to reduce the problems that may arise due to dealing with imperfect markets that involves costs (such as identifying appropriate vendors and verifying their competence, communicating changing requirements to them, providing feedback and monitoring their performances) and risks (of vendors going out of business or being unable to meet specifications) (Beaumont and Sohal, 2004). To handle (Hussey and Jenster, 2003) the varying supplier and buyer issues with the type of outsourcing decision, a serious attention is required in making decision about managing and monitoring the process

such as contract negotiation, partner selection, implementation, control and monitoring, in identifying the functions to outsource, and the reasons for outsourcing. However (Pati and Desai, 2005) there is no an off-the-shelf algorithm available for organizations to guide their efforts in selecting and managing outsourced IT services.

The focus of this study is thus geared towards empirically assessing the experience and practice of information systems development outsourcing in Ethiopia following a case study approach of an outsourced ISD at the Ethiopian telecommunications corporation (ETC). In addition the study finds out the problems/challenges that ETC face and the causes for the identified problems that happened during the outsourcing process. Furthermore, the study assessed the reasons or drivers for outsourcing by the information systems department of the Ethiopian Telecommunications Corporation specifically the customer care and billing (CCB) department where the specific case is taken.

The terms IS/IT outsourcing will refer to the same concept throughout the paper unless otherwise specified.

1.1. Statement of the problem and its justification

As any business depends on information systems to provide standard operating environment for its activities (Kumbakara, 2008) the Ethiopian telecommunications corporation (ETC), also makes use of a range of IS in its day to day business activities. ETC is a state owned organization providing all range of basic telecom services for the citizens of the country. As the sole provider of telecom services of all range, it is facing all challenges from demanding customers as well from the

development of information and communication technology. This requires ETC to consider new technologies into its services because (Rossotto et al., 2005; Chong et al., 2007) reflecting the rapid pace of innovation in information and communications technologies is becoming increasingly important to stay competitive. Besides this, technology is increasing the number and quality of the choices available to customers and competitors (Pai and Basu, 2007). Furthermore the demand for IT services is multifaceted and changeable (McCraya and Clark, 1999). As a result continuous technology investment is essential in any business.

To address such an increasing demand and cope up with the current highly competitive market is not as such easy for an organization. Managing such a complex and diverse IT environment becomes increasingly challenging due to the volume and complexity of the hardware and software applications running on enterprise networks (Kumbakara, 2008). As a result, to make the IT operations effective and efficient, organizations are increasingly turning to the best practices and industry standards in the field of IT services management (ibid). One of these ways is to higher other organizations to do their tasks and activities or supply the services termed as outsourcing in the literature.

The outsourcing of the CCB system development of ETC seems it goes with the above premises. According to the staff of CCB division of ETC, similar situations discussed above, forced the organization to plan for acquiring new software so that it can satisfy the needs of its customers, by providing them world class telecom service in CCB, and manage them and the services better. The management of ETC thus want

to replace the old systems called the MESTENGIDO which handles customer care and AS 400 billing software. To put the new system in place, ETC contracted out the software development and implementation process to an external organization through a formal bid process in mid 2003. An Indian software developing firm called UshaComm took over the responsibility to supply a world class CCB called the Unicore 6.0. This way the process was outsourced to the contracting firm by setting minimum requirements that the new system is required to perform.

This study thus tries to empirically assess the experience and practice of information systems development outsourcing in the country. To have a thorough and better understanding of the process, the study has focused on the above described outsourced case i.e the customer care and billing (CCB) information system at ETC and a case study approach was employed. During the process, ETC faced problems in managing the outsourcing process which was another deterrent for the corporation. Problems such as, delays in meeting project schedule, project cost overruns, delivering less functionality than originally envisioned or failure to meet requirements, to achieve customer service and compliance, were manifested during the time of outsourcing and after implementing the system. This study has tried to identify the causes for the problems/challenges associated with outsourcing management at ETC for the specified case.

The Ethiopian Telecommunications Corporation is selected for this research because it is a big organization and has a good experience in using IS/IT and has better resources for implementing IS/IT outsourcing. Furthermore the case is a currently

implemented system and the fact that the corporation is currently involving itself in implementing IS/IT outsourcing as IS management strategies initiated the researcher to pick the organization.

Compared to the problems that organizations in Ethiopia are facing and the money and other resources invested for it, the less attention given by researchers and academics to IS/IT outsourcing motivates the researcher to undertake this study. That is, the issue of IS/IT outsourcing and the associated problems and challenges is not yet studied in relation to how it is being managed in Ethiopia making the area worth studying and needs investigation. Furthermore the problems/challenges associated with outsourcing and their causes are not identified and this study is a step towards this. This research thus, is an attempt to study this phenomenon and to gain an insight of the concepts and practices of IS/IT outsourcing practices in Ethiopia. Specifically, it is meant for identifying how ETC is managing its outsourcing tasks and activities and further it also tries to identify the motives or drivers to outsource. It traced out the different challenges that the CCB department has experienced during outsourcing of the specific case.

Furthermore, as the country is giving emphasis to ICT and automation of organizational activities recently, the researcher believes that the problems are also obvious in other organizations too. In other words those problems are also the concern of other organizations, due to the presence of IS/IT outsourcing practice in most of them. Hence, before investing thousands and millions of dollars, issues of outsourcing management, its problems/challenges, and causes for problems should be raised with serious attention in the country.

Though the bottom-line of this study is to empirically assess the experience and practice of IS/IT outsourcing management in the Ethiopian Telecommunications Corporation, it also identifies the problems/challenges the corporation faced and their possible causes.

In addressing the above issues, the research tried to answer the following research questions:

- How did ETC manage the outsourcing process and its implementation?
- What problems/challenges did ETC face during the outsourcing process?
- Why the problems/challenges identified so far did happen? What were the causes for the problems?

1.2. Objectives

1.2.1. General objective

The general objective of this study is to empirically assess the experience and practice of information systems development outsourcing management as well as identify the associated problems and point out the causes for the problems happened during IS/IT projects outsourcing in Ethiopia, specifically at the Ethiopian Telecommunications Corporation.

1.2.2. Specific objectives

The study tried to address the following specific objectives:

- Identifying the main drivers or motives for outsourcing the IS/IT function.
- Identifying how the vendor relationship and contracts is managed and monitored and vendor performance is assessed by the corporation.
- Identifying the problems/challenges the corporation faced during outsourcing.
- Identify the causes of the identified problems.

1.3. Methodology

1.3.1. General research approach

Given the fact that the objective of this study is to have a detailed understanding of practices and experience with the associated problems/challenges, it employed a qualitative methodology as a general approach. As stated in Hancox and Hackney (2000), when the central concern of a study is not to generate findings of statistical significance which proved or disproved causal relationships rather to get a better understanding, qualitative research can be used as an approach. It can also be used when the emphasis of the study is on discovery and understanding of the knowledge and experience of experts (Kini, 2007). As there is little or no research on IS/IT outsourcing done in Ethiopia and little is known about the subject, qualitative research approach is appropriate to undertake this study. According to Hancock and Algozzine (2006) qualitative approach can also be used when little is known and the goal is to understand the situation under investigation.

As the research is pertained to the study of the particularity of a single case coming to understand its activity within important circumstances of the identified points, a case study is used as a method.

1.3.2. Data collection methods and techniques

A review of literature is done to gain knowledge and understanding on different concepts of outsourcing; motivations or drivers, functions to outsource, different issues to be considered during vendor selection and monitoring, relationships management during outsourcing, problems/challenge, and mistakes that could be done during outsourcing, and outsourcing management in general.

Qualitative research mainly works with two sorts of data: verbal data collected through interviews and visual data result from applying various observational methods including documents (Flick, 2002). Thus, being qualitative research this study also use interview and document analysis as method of data collection.

The study employed semi-structured interview as (Hancock et al., 2006; Darlington et al., 2002) it is well-suited for qualitative research and help the researcher to get rich information. It is also the dominant types of data collection methodology for case studies (Jiang and Qureshi, 2006). Follow-up questions are also used as such questions are (Mack et al., 2005) intended to ensure that participants provide the complete set of information each main question was designed to elicit.

The interview questions are adopted from Lin et al. (2007) and Rottman et al. (2009) with some modifications. This will add on the validity of the results as the items are already tested in other researches. Interviews were made with three personnel; two of

them from the CCB division of the information systems department at ETC and one with the project manager of the new software development with ZTEsoft.

Interview conducted with the two managing staff of the customer care and billing division is focussed on the specific case. The interviewees are selected because they were involved in the process of outsourcing and are also responsible to the management of the process. These interviewees are still responsible for any kind of request whether a new contract agreement or a simple support. They are also responsible for large requests that may demand for signing a contract. In addition they are selected due to their availability and are believed to have the best information to address the research questions by the researcher because they were involved in the outsourcing process and are working with the system currently. Furthermore they are responsible for managing the contract as per agreed terms and conditions. On the other hand interview made with project manager of the new system with ZTEsoft is focussed on the need for the new software and the problems exhibited on the current system.

Generally, the interview questions focused on the organizations' major drivers for IS/IT outsourcing, vendor selection, the relationships management and communication between vendor and customer, IS/IT outsourcing evaluation methodology used, contracts evaluation methodology used, risk assessment, the problems of the current system, and the management of the contract and SLAs of the specified case. Key interview questions are included in Appendices I and II. Each interview made lasted between 40 minutes and two hours. In cases where there was a need for additional data follow-up interviews were made.

The analysis of documents is also a commonly used method in case study research (Hancock and Algozzine, 2006; Flick, 2002) and gathering data by studying documents follows the same line of thinking as interviewing (Stake, 1995). Thus document analysis is one component employed for data collection in this study to substantiate the interview. Efforts were done to access different documents and a bid document released for inviting vendors was accessed from the organizations official site. However, effort made to have access to the contract document failed due to the policy the organization has implemented regarding access to contractual documents. As per different people contacted by the researcher, a new circular has been delivered to departments and units to prohibit access to any contract agreement document except the concerned people in the organization and also told that the organization rule doesn't allow any researcher from citing a contract agreement document as a reference.

1.3.3. Analysis and presentation

Data presentation and analysis is one of the core points in this study and has been handled as follows. At the time of interview a note of each question was taken from the interview. Latter the data collected was transcribed into a meaningful form. That is, it is organized according to the objectives and the research questions of the study. Whenever necessary, additional interview was arranged to collect the required information from the interviewees and was also presented based on the objectives and research questions too.

Main themes of an outsourcing management issues were identified and the data was organized into these themes and presented accordingly. The identified topics are those which are discussed in most of the literature and could also contribute to the success or failure of an outsourcing deal. Furthermore whenever an outsourcing management is raised these are the topics for which serious attention is given to.

Data collected from interviews and document analysis is presented under those outsourcing management issues. Although the data collected is presented according to objectives and research questions raised in the study, analysis and interpretation of data is done accordingly. Comparison of the results of analysis from this study with the results of other researches is also done across the available literature according to the research questions and objectives of the study.

1.4.Scope of the study

The scope of the study is limited to the outsourcing management of IS/IT at the department of information systems of the Ethiopian Telecommunications Corporation, particularly the specified case at the customer care and billing division.

This study considers the buyer's side only that is the outsourcing organization due to different reasons. One of these reasons is outsourcing risks and problems that occur most of the time are from the customer's side. From this contract risks which include contract, performance measurement, and service level agreement account for at least 72% of the risks for outsourcing (Barnes and Barnes, nd). The other reason is because the vendor is away from the outsourcers' country (Ethiopia) there is no way to reach it and hence was difficult to get information from the vendor.

1.5.Significance of the study

Primarily the study will have a significance of creating an understanding of IS/IT outsourcing practices and experiences in Ethiopia, specifically the Ethiopian Telecommunications Corporation. Furthermore it will help organizations and chief information officers in identifying possible sources of problems/challenges and risks of IS/IT outsourcing and their causes. More generally, the study can be a source of information on how IS/IT outsourcing is managed and implemented in Ethiopia, and what the associated problems/challenges are for anyone who is interested on the subject.

On the other hand it will help ETC in general and other departments of the corporation in particular to learn lessons from the recommendations reported in this

study which will prevent it from repeating the same mistakes. In addition other organizations in Ethiopia can share the experiences and good practices of IS/IT outsourcing of the case organization from the research.

It is hoped that the study will fill the gap in providing insights on how a developing country adopts IS/IT outsourcing, and what challenges and problems are encountered with possible causes for the problems to happen. Furthermore, it will be used as a step for anyone who wants to conduct further study in the area of IS/IT outsourcing in the country as the subject is emerging as a new approach for information systems management.

1.6. Organization of thesis

The thesis is organized in four chapters where:

Chapter one discusses the problem at hand, the methodology to be used specifically the general approach being used, the data collection methods employed, and the analysis and presentation techniques. In addition the scope of the study and its significance is discussed here.

In chapter two literature reviews is presented. Different concepts and issues are raised in this chapter to build the research with existing literature. Meaning of IS/IT outsourcing, reasons for outsourcing, implementation of outsourcing, basic issue to consider during outsourcing, major mistakes that lead to failure of the outsourcing relationship are discussed in this chapter.

The results of the research are presented in chapter three and discussion is made across research issues raised based on the data collected and literature review.

Finally, conclusions of the research are given and recommendations are forwarded in chapter four. Limitations of the study and future research areas in the subject are also included in this chapter.

CHAPTER TWO

LITERATURE REVIEW

2. Background

2.1. Definitions

Outsourcing has been given different definitions by different researchers according to their objective of study, but the common definitions are summarized as follows:

Outsourcing- is the process of shifting or externalizing tasks and services previously performed in-house to outside vendors (Hussey and Jenster, 2003; Jenster and Pedersen, 2000; Beaumont and Sohal, 2004). It is basically a make-or-buy decision by organizations whether to continue to make a certain activity in-house or buy it from outside vendors (Jenster and Pedersen, 2000). This entails the purchase of a product or process from an outside supplier rather than producing this product or process in-house (Siakas and Balstrup, 2006). “In its strongest form it means, passing ownership and control of functions previously performed in-house to an outside contractor” (Beaumont and Sohal, 2004).

"Outsourcing refers to the use of an external provider of goods or services instead of having recourse to internal resources to provide the same goods or services" (Foogooa, 2008). "In the IT world, outsourcing means turning over a firm's computer operations, network operations, or other IT functions to a provider for a specified time" (McNurline and Sprague, 2006).

IS/IT outsourcing is defined as the transfer of components or large segments of an organization's internal IT infrastructure, staff, processes or applications to an external provider (VERYZONE, nd).

Offshore outsourcing- Offshoring is the term used when referring to outsourcing to another country, commonly low-wage countries such as India or China who can carryout the same task at a cheaper price than at the country of origin (Backman et al., 2006). When it refers to software development it is the contracting of a portion or all of the software development functions to software vendors outside the home country (Siakas and Balstrup, 2006).

Near-shoring- is outsourcing work to a supplier located in an adjacent country to benefit from less travel costs, less time zone differences, and closer cultural compatibility (Lacity et al., 2008).

2.2. History of IS/IT outsourcing

Outsourcing has been used since the mid-twenties (Siakas and Balstrup, 2006), but it was in the 1970s that it gained greater momentum when large and diverse corporations were considered to be underperforming and realize they can get their jobs best done through others (Kakabadse & Kakabadse, 2005). But it emerged as a popular operational strategy in the 1990s (Jiang and Qureshi, 2006). And the global IT outsourcing market has increased each year with a decreasing of the average size of individual contracts and the duration of contracts (Lacity et al., 2008).

The large amounts of outsourcing deals and agreements signed at different times indicate its growth and value in managing information systems. The 1989 IBM's agreement with Eastman Kodak to build and operate its data centre and take over the work done by four Kodak centres and 300 Kodak workers was one of those large deals (Jenster and Pedersen, 2000). It was thus in 1989 that outsourcing has become a legitimate management strategy by chief information officers (CIOs) after a well-run Kodak IS operation was outsourced. However until this time, companies outsourcing their IS/IT operations were those which are poorly run (McNurline and Sprague, 2006). According to them, an empirical analysis of outsourcing contracts between 1988 and 1990 asserts that the adoption of IT outsourcing seems to have larger acceptance by other organizations too during the time.

Getting large acceptance and popularity was facilitated by other factors such as technological developments which make (Beaumont and Sohal, 2004) outsourcing more sophisticated and changing the way outsourcing is done and managed. For instance the evolution of the Internet has facilitated outsourcing and helped

organizations to establish partnerships beyond geographical boundaries (Siakas and Balstrup, 2006).

However, different emphasis was given to different activities to be outsourced at different times. That is the extent and character of outsourcing is changing radically (Jenster and Pedersen, 2000). In the fifties and sixties, the emphasis was on diversification and to broaden corporate bases whereas in the seventies and eighties organizations focused on their core business, identification of critical processes and choice of processes that could be outsourced (Siakas and Balstrup, 2006). As a result data-processing entries were commonly outsourced and in the nineties outsourcing was used for entire IT operations and IT-intensive business processes (ibid). More recently, IT-intensive projects and tasks are being increasingly outsourced (Siakas and Balstrup, 2006) and the emphasis has moved from the hardware to the software, with the use of contract programmers to develop, customize or maintain application software (Foogooa, 2008).

2.3. Reasons of outsourcing

While it is an important duty for IS/IT departments, they might outsource information systems development and management for various reasons or to get the different associated benefits. Different drivers/motivations are listed out in the literature by different researchers. Though it was once possible to provide a simple list of the decision drivers of outsourcing, it is now no longer sensible to treat all outsourcing decisions as one and the same (Hussey and Jenster, 2003). What then drives buyers'

towards the decision of outsourcing their business functions/activities needs answers in different environments and context as expressed in the above statement.

Primarily, IT outsourcing is driven by cost concerns (Gottschalk and Solli-Saether, 2006) and the explanation from most studies support this (Hussey and Jenster, 2003; Siakas and Balstrup, 2006; (Jiang and Qureshi, 2006; Pai and Basu, 2007; Beaumont and Sohal, 2004; Agren and Winther, 2007; Kini, 2007). An other reason why organizations enter into outsourcing is to concentrate their efforts on their core-business activities and when they don't possess the knowledge and expertise needed to carryout certain parts of the business (McNurline and Sprague, 2006; Backman et al., 2006; Jan and Tsai, 2001; Hussey and Jenster, 2003; Willcocks and Currie, 1997; Jenster and Pedersen, 2000; Pai and Basu, 2007). Through outsourcing, organizations can gain access to world-class capabilities and best practices such as new technologies, skills, tools, methodologies and procedures that the organisation may not currently possess (Siakas and Balstrup, 2006; Pai and Basu, 2007; Beaumont and Sohal, 2004; and Kakabadse and Kakabadse, 2005).

Improved quality and transfer of risks to the private sector also motivate firms to outsource their activities or functions (Hussey and Jenster, 2003). Outsourcing is also motivated externally by competition pressures from the market and the increased complexity in business processes (Jenster and Pedersen, 2000; Suhaimi et al., 2007).

There can also be a kind of government-driven outsourcing, where government pressure and legislative requirements have encouraged organizations to contract out

some of their internal processes, functions and even major services (Kakabadse and Kakabadse, 2005; Kakabadse and Kakabadse, 2000). This introduces political dimensions into the calculation in situations where governments see outsourcing as a tactic to further other agendas such as:

- enhancing the expertise base of an industry by importing new technology or expertise from private sector agencies or from public and/or private international organisations; and
- organisational renewal, for example, by making an organisation more 'business like' or more externally focused (Aulich and Hein, 2005).

Beaumont and Sohal (2004) summarised the motivations/drivers of outsourcing in to four factors: the first factor is operational- which reflects outsourcing being motivated by efforts to reduce costs, obtain flexibility and to improve performance by accessing the vendor's expertise. The second is resources- which reflect using outsourcing to access skills and resources, to allow more focus on the core business and provide flexibility. The third one is cultural- which reflects a desire to eliminate internal cultural differences and power struggles, and the fourth factor is external- that reflects situations in which outsourcing decisions are dictated by circumstances or senior management.

Outsourcing can also be strategically driven focusing to tap specialized expertise, knowledge, processes and capabilities found outside the organization, and use these as inputs to help improve the effectiveness and efficiency of operations (Power et al., 2006).

As to Aalders (2002) companies continue to outsource their IT functions for reasons such as for taking the IT function to a level of competence higher than achievable in-house, facilitating best practice and best-of-breed implementation, leveraging 'business critical' infrastructure, extending global reach and standardisation of IT, converting fixed costs to variable costs, disposing of overvalued assets, reducing procurement management costs, and improved service levels to both customers and staff.

2.4. What should organizations outsource

As indicated by Kakabadse and Kakabadse (2005) IT-based activities and services continue to be a major focus of outsourcing due to the ever more rapid advances in technology, and the commercially availability of IT-based innovation. But, to gain maximum benefits from the outsourcing deals, organizations should develop a clear vision of what areas/activities to outsource and which one to keep in-house.

According to Pai and Basu (2007) businesses today consist of three types of functions: core functions, tactical non-core functions and strategic non-core functions. As to Jan and Tsai (2001), McNurlin and Sprague (2006) an organization better outsource a function if it is considered as a commodity and it should be developed in-house if the function is a strategic service. It is also important to keep in-house core capabilities such as leadership, business systems thinking, internal customer relationship building, architecture design, informed buying, contract facilitation, contract monitoring, and supplier development and to outsource non-core capabilities (Lacity et al., 2008). In the context of IT outsourcing, a company will keep its IT

function internally if this has production cost advantages, and it will outsource when the marketplace can offer production cost savings (Gottschalk and Solli-Seather, 2006)

Some of major activities currently outsourced in a bid to sustain strategic outsourcing are enumerated by Pai and Basu (2007) as follows:

Infrastructure outsourcing: Requires priority on operational excellence, with enhanced focus on business processes establishing best practices and ability to efficiently replicate the infrastructure to multiple-clients (e.g. data-centre management, desktop management, network management, applications management).

Transaction-oriented business process outsourcing: Involves contracting out back-office or transaction-oriented functions and requires priority on data security and privacy protection (e.g. payroll outsourcing, accounts processing, billing, claims processing and transaction processing).

Strategic business process outsourcing: Are business transformations firmly connected to strategic business priorities. While this model of business process outsourcing (BPOs) requires specialist experience and expertise for example the recruiting process, but, the true competitive differentiation may in fact come from a focus on customer intimacy and deep understanding of client strategy and culture in order to identify the best candidates (e.g. key human resource functions such as recruiting, operational management, market analysis and research, logistics, etc).

Business software and IT applications: The start-up opportunity requires priority on thinking "out-of-the-box" to creatively solve a business problem where no solution currently exists, but would later require operational excellence once a market has been

established; i.e. the ability to continually identify un met requirements, and to efficiently produce new versions and releases.

Business strategy consultation: Requires product leadership, market understanding and expertise in the form of future-driven initiatives, through leadership which can be applied to multiple-customers in consulting engagements.

According to Reid (1996) any part of information system areas can be outsourced including: provision of facilities, utilities, etc; applications software; systems software; personnel; consulting services; systems integration; development of new programs and systems; live system operation, management and control; communications equipment, software and interfaces; daily and periodic processing and reports; responsibility for troubleshooting; physical security; data and program security; disaster recovery capabilities; data entry; maintenance; PC installation of hardware, software, and modifications; and help desk. Though IS/IT outsourcing involves these potential areas (Kini, 2007) the most commonly outsourced functions are application/software development and help desk. Where as, a more recent survey done by Computer Economics (2009) shows that application development accounts 33% followed by data centre operations (28%) of the organizations investigated, as indicated in the following figure.

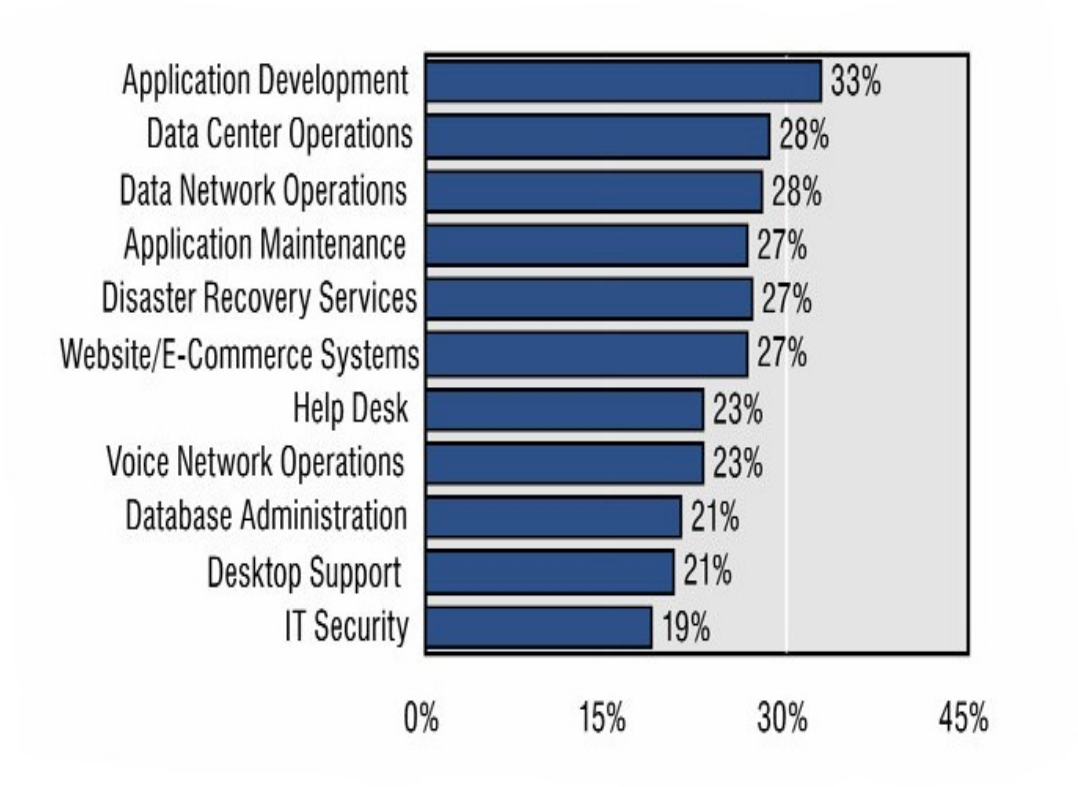

Fig. 2.1 percentage of organizations that use outside service providers

Source: Computer Economics, 2009

2.5. IS/IT outsourcing management

Once an organisation has determined that it is in its interest to outsource, or once it has been directed to do so, a contract is established with the service provider to perform the specified functions at agreed and specified prices over a specific term (Aulich and Hein, 2005). This implies the need for an arrangement or contract between the parties involved in the outsourcing process. When entering an IT outsourcing arrangement, vendor and client sign a contract (Gottschalk and Solli-Sæther, 2006). In effect, the variety of outsourcing arrangements span from transaction-based contracts (usually short-term and tightly defined) to partnering arrangements (shared responsibilities and risks) to the use of shared sourced

arrangements (joint ventures, consortia sourcing) (ibid). However, different nationalities have different expectations as to how outsourcers and vendors should act, as well as ways of expressing agreement and disagreement, different styles of management and participation in decision-making, and different approaches to teamwork, etc (Siakas and Balstrup, 2006). Whatever arrangements exist and continue to emerge, it is postulated that contracting out is becoming an increasingly influential phenomenon of working and service (Kakabadse and Kakabadse, 2000).

Regarding software outsourcing, there seems to be more knowledge of cultural issues in the literature than about management of software development and IS in general (Siakas and Balstrup, 2006). They suggest the following issues to be considered: recognition of the need for cross-cultural training, use of 'cultural bridging staff for informal sharing of experiences, use of common systems, common processes and common compatible technologies, and recognition of the importance of the communication language to the better management of the outsourcing relationship.

The emergence of partnership or alliance arrangements is also considered as an alternative to the more popular project-based contracts. It is usually shorter, single contracts with preferred, trusted suppliers, and is considered to provide a closer level of interaction between client and provider (Kakabadse and Kakabadse, 2005).

Various aspects of managing outsourcing need to be handled well to create a successful working relationship. McNurline and Sprague (2006) have identified the

following four ways of managing outsourcing: organizational structure, governance, day-to-day working, and supplier development.

According to them managing outsourcing is different from managing internal staff, because it is a joint effort between parties that may not have the same goals. In organizational structure type of outsourcing management, parties establish layers of joint teams:

- Top-level team: to say final word in conflict resolution.
- Operational team: who oversees day-to-day functioning and having a planned contact of once a week or once a month, but generally they are in daily contact.
- Joint special purpose teams: may be created from time to time to solve pressing issues.
- Committees: to oversee the use of formal change management procedures.
- Relationship manager(s): to look after the 'relationship'.

Where as in an outsourcing management which follows governance, the foundation of an outsourcing relationship is laid in the large contract(s) where the service level agreement (SLA) is a major governance item in the contract. SLA implies the responsibilities, performance requirements, penalties, bonuses, and needs to be measurable to be of use (McNurline and Sprague, 2006).

They provided the following recommendations on how to manage day-to-day interactions between two parties:

- Manage expectations, not staff: to make facilitation as a mode of working, rather than say “do this”, the approach will be “how can we solve this together”.
- Realize that informal ways of working may disappear: increased formality will be there as contract is followed and parties should find ways to reduce this tendency which is stricter.
- Loss of informal ways of working may add rigor: since rigor frequently improves work quality, employees should see new disciplines from the service providers positively.
  - Integration of the two staffs requires explicit actions: it does not happen naturally but explicit policies are likely to be needed.
- The best way to manage day-to-day is to communicate frequently.

However, supplier development refers to buying parts and services that go into one’s own products and services is receiving increased attention, but it is not prevalent in IT outsourcing (McNurline and Sprague, 2006).

2.6. IS/IT Outsourcing Cycles

It is indicated in the literature that outsourcing of an IS/IT function or process follows a kind of life cycled approach. Thus organizations entering into an outsourcing initiative must understand that success depends on a disciplined outsourcing life-cycle methodology requiring a commitment of skilled resources from executive management (Power et al., 2006).

Following such well-accepted and tested frameworks or methodologies prevents the outsourcer from risks. According to Lin et al., (2007) such frameworks are valuable for decision making about outsourcing IS/IT in four ways:

First, they all contain techniques that enable organizations to measure the benefits arising which are also critical in establishing service level agreements. Second, they provide processes and methodologies that show how these benefits can be realized which is important to assist the organization in negotiating and later managing:

- the structure and detail of the IS/IT outsourcing contract;
- the price and other contract specifications;
- supplier selection; and
- the ongoing operation of relationships with external outsourcing vendors.

Third, they also allow a formal feedback mechanism and procedure that enable experience and knowledge on benefits realization to be integrated into subsequent decision processes. Fourth, these frameworks enable the organizations to assess and analyze the level and type of benefits that can be derived from IS/IT outsourcing activities in terms of the competitive environment and customer needs.

According to Fabian (2007) the IT outsourcing has four cycles (concept, contract, fine tune, and governance) which he calls it the outsourcing spiral:

1. *Concept* –this is the stage where the outsourcing concept will be developed. The first step during outsourcing is to determine objectives, alternatives, and constraints. Questions like what the vendor must provide in order to justify outsourcing and whether outsourcing is potentially attractive will be determined.

2. *Contract* – After concluding that there is a satisfactory reason to outsource IT an acceptable outsourcing contract can be signed. The nature of the target contract will significantly determine the complexity of this cycle. If the goal is an almost commodity like IT service offering, this can be a relatively simple cycle. The resulting contract focuses attention on the concept, and provides appropriate mechanisms to drive towards success while managing risks.

3. *Fine Tune* – The goal of this cycle is to install the service (translate the contract into practice), and to fine tune the service in the light of the organization's actual experience with the service. The transition is an obvious obstacle which must be followed by establishing the right ongoing measurements to operate.

4. *Governance* – The aim of this cycle is to have in place and operating a governance process that insures maximum benefit is delivered at an acceptable level of risk.

However according to Power et al. (2006) such a methodology will cover issues from strategy formulation, organizational assessment, planning, requirements definition, request for proposal (RFP), vendor evaluation and selection, contract formulation, negotiation to comprehensive outsourcing governance. The outsourcing life cycle is thus made up of the following stages:

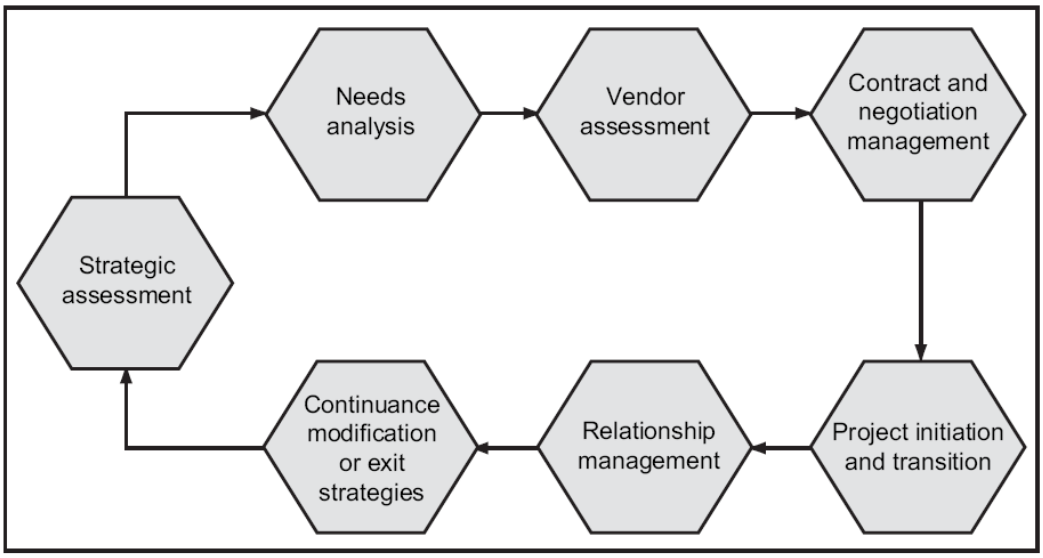

Fig. 2.2 outsourcing life cycle,

Source: Power et al. (2006)

(1) strategic assessment; (2) needs analysis; (3) vendor assessment; (4) negotiation and contract management; (5) project initiation and transition; (6) relationship management; (7) continuance, modification or exit strategies. Each of the stages of outsourcing has sub-components and sub-processes that need attention.

2.7. IS/IT outsourcing implementation

Outsourcing implementation involves a kind of a hierarchical sequence of decisions. According to Gottschalk and Solli-Seather (2006) the fundamental decision is whether or not to outsource a business process or function. This decision is the most important of a sequence of actions and decisions listed in maintaining the relationship because it can be complex and sensitive as poor task performance may affect the organization's reputation (ibid).

Another key aspect of IS/IT outsourcing implementation (Suhaimi et al., 2007) is building and structuring the outsourcing relationship which is constructed around two main elements: the formal contract, and the psychological contract. These elements lead to anticipation and expectations that in turn impact how the parties interact with each other (ibid). According to them another key activities in implementing IS/IT outsourcing involves:

- managing the resulting relationship,
- the impact of service level although some allowances have to be made, and
- availability of help desk if users have any IS-related problems.

Because, not all service providers are created equal and possess the same ability, there should be some important criteria for the outsourcer to look for regarding the service provider during implementing an outsourcing deal. Outsourcers thus should consider service providers that can demonstrate:

- appropriate outsourcing experience and proven customer satisfaction.
- sound formal best practice processes.
- Standard design and implementation methodology.
- adequate numbers of appropriately skilled resources.
- industry leading technologies that are integrated into their processes.
- sound financial performance and backing.
- Scale and geography to match the organisation's needs.
- preparedness to be flexible locally without dropping standards.
- appropriate frameworks for service level management.

- cultural fit as widely differing cultures will lead to confrontation.
- commitment to continual improvement in their business.
- strong transition experience and human resource transition skills.
- clear vision of its role in leveraging your business.
- the appropriate motivation to enhance the outsourcers' business (Aalders, 2002).

After the decision to outsourcing is made and vendor selection is completed the relationship is maintained through signing of a contract document expressing the service levels.

2.7.1. The contract document and contractual issues

"An outsourcing contract provides a legally bound, institutional framework in which each party's rights, duties, and responsibilities are codified and the goals, policies, and strategies underlying the arrangement are specified" (Gottschalk and Solli-Saether, 2006).

A good outsourcing contract is the result of a detailed due diligence, organization assessment and vendor identification, evaluation and selection by the client organization prior to formalizing it and defines for both parties the current, future and termination elements of the outsourcing relationship (Power et al., 2006). They also indicated that it will be the document that both organizations will refer to for help in managing the outsourcing relationship throughout the life of the contract.

Thus, the outsourcing contract document must have the following components and clearly describe:

- the scope and nature of the engagement;
- roles and responsibilities of the client organization;
- roles and responsibilities of the vendor organization;
- metrics for evaluating the performance of the relationship;

Pai and Basu (2007) also recomended the following issues to be considered by the outsourcing organization: one of these is the need for due diligence and careful legal planning are also important in order to avoid the common legal pitfalls. Practical issues like language barriers, potential political instability, and loss of management control; and accountability problems, should also be dealt with (ibid).

Another issue to be dealt with is when an organization considers an international outsourcing as an option. In this case it (Pai and Basu, 2007) will need to consider the legal implications of the process and will have to be aware of the judicial system of the outsourced country in case if the process fails to work satisfactorily.

The other point is about termination of the outsourcing relationship. There should be a possibility to terminate the negotiation whenever it is necessary to do it. There are different termination conditions for the vendor and the client. The vendor will want to terminate for clause relatively quickly related to payment made late where as the client does not have any difficulty with this concept because its' payroll status doesn't affect the vendors employee (Pai and Basu, 2007). But the more seriously negotiated

termination provision (ibid) is termination for convenience where the client has the ability to terminate the outsourcing arrangement without having to go through a lengthy process.

Governance of the outsourcing process should also be critically considered by the outsourcing organization. According to PricewaterhouseCoopers (2004), it is the responsibility of the customer organization to establish a disciplined IS/IT outsourcing governance structure.

All these issues have to be included in the contract document. The contract document signed between the vendor and the customer is defined by the service levels the vendor is delivering through service level agreements.

2.7.2. Service levels and service credits (SLAs)

It is mandatory that the client and vendor organizations have a kind of governing principle which will maintain their relationships and measure the performance of each party as per agreement. Pai and Basu (2007) indicated the fact that, the long-term relationships is governed by the service delivery or service level agreements (SLA) after completing the process of selecting the service provider and negotiating the terms of transfer of functions through the contract document.

According to (ibid):

> *…the SLA defines the boundaries of the project in terms of the functions and services that the service provider will give to its client, the volume of*

work that will be accepted and delivered, and acceptance criteria for responsiveness and the quality of deliverables.

According to them this agreement is likely to address two main functions to:

1 set out clearly the parties' obligation to each other; and

2 allow the parties to evolve service provision over time and to end the relationship rationally.

They also state that in this system, a failure to achieve a service level would cause a service level credit. Hence, it is necessary to have a well-defined and crafted SLA that correctly sets expectations for both sides of the relationship and provides targets for accurately measuring performance to those objectives (ibid). Service credits will help the client to have an effective mechanism to manage the service provider. Furthermore the use of service levels and service level credit structures developed to improve vendor performance and client satisfaction in outsourcing transactions can help keep the parties' interests aligned and the service provider to provide high quality and timely services (ibid).

The SLA should be clearly stated, easy to understand, easy to measure and based on the outsourcers' thorough benchmarking analysis (Power et al., 2006). To this point Lacity et al. (2008) added that SLAs typically define the "services provided, the metrics used to evaluate the services, as well as reporting and governance". A common mistake made by organizations regarding SLAs is to have ambiguous and

incoherent SLAs that cannot be measured objectively which makes them very difficult to implement and hence just useless (ibid).

Metrics is an important part of the SLAs and (Pai and Basu, 2007) there are many possible metrics from a service level credit system arrangement standpoint. They grouped them into the following four major categories:

1. ***Volume of work***

Volume of work is typically the key sizing determinant of an outsourcing project, specifying the exact level of effort to be provided by the service provider within the scope of the project. Any effort expended outside of this scope will usually be separately charged to the company, or will require re-negotiation of the terms of the SLA. Volume of work metrics should also be specified for every major deliverable cited in the SLA.

2. ***Quality of work***

Quality metrics, the most diverse of all of the SLA metrics, cover a wide range of work products, deliverables and requirements and seek to measure the conformance of those items to certain specifications or standards. When deliverables fail to meet the acceptance criteria in the specifications or standards, quality problems arise. These metrics for quality include:

- *Standards compliance practice*: Internal standards for application source code, documentation, reports and other tangible deliverables, including number of enhancement tasks passing standards reviews, number of documented programs, etc.

- *Technical quality:* Measurements of the technical quality of the application code, normally produced by commercial tools that review items such as program size, degree of structure, degree of complexity and coding defects.
- *Service availability:* The time frame for which the services have been delivered by the outsourced contractor, ranging from online application availability to delivery of reports by a specified time-of-day.
- *Service satisfaction:* The client's level of satisfaction with the perceived level of service provided by the outsourcer captured for each major function through internal and/or external surveys. Ideally, these surveys are conducted periodically by a neutral third party. Although subjective, they are a good double-check on the validity of the other SLA metrics.

3. Responsiveness

Responsiveness metrics is the measure of the amount of time that it takes for an outsourcer to handle a client request. Metrics include:

- *Time-to-market and time-to-implement:* These metrics measure the elapsed time from the original receipt of a request until the time when it is completely resolved.
- *Time-to-acknowledge:* These metrics measure how responsive the outsourcer is by focusing on when a request is acknowledged, and accessibility of status information.

4. Efficiency

Efficiency metrics measure the engagement's effectiveness at providing services at a reasonable cost. Pure cost metrics, while important, miss the relationship between volume of work and effectiveness of its delivery. Examples of efficiency metrics include:

- *Cost/effort efficiency:* This effort efficiency indicator is typically tied to an index that is based upon cost per unit of work produced, and is used to document cost reductions or increase in productivity. Sample metrics include number of programs supported per person, cost per support call, etc.
- *Team utilization:* This metric tracks the cumulative workload of each team member to aid wise utilization of the available resources. Engagements that charge on a time and materials basis should include metrics on staff utilization to measure the effectiveness of staff deployment and recommend the outsourcer to make staff reductions to gain efficiency. Sample metrics include percentage of time spent on support, percentage of utilization, etc.
- *Rework levels:* Although the rework metric demonstrates the lack of ability to adhere to the quality measures, they can be applied primarily on a percentage basis to assess, evaluate and measure the effectiveness of implementing quality improvements. The metric is a track of "wasted effort" or the percentage of work output that returned to a previous step for validation, correction or completion.

2.8. Problems/challenges of outsourcing

When companies outsource functions/activities successfully they become more flexible, more dynamic and more able to meet the changing opportunities (Siakas and Balstrup, 2006). However, failure to follow a clear, systematic and effective outsourcing strategy to assess threats, uncertainties and numerous imponderables can cause major business setbacks (Pai and Basu, 2007). Problems/challenges could be noticed now and then from different angles during the outsourcing process. It is thus common to cancel outsourcing agreements, renegotiating agreements, or hiring their

own staff to provide in-house services once again even after an agreement has been signed (Jiang and Qureshi, 2006).

Lacity et al., (2008) grouped the challenges that could face the parties as follows:

- Alignment of other business activities to the outsourced services: Before outsourcing can be successful, the client organizations must resolve some of their own enduring challenges. In many large organizations the back offices are not truly aligned with the business.
- Alignment of suppliers' incentives with their clients' needs: Incentives will clearly miss-aligned because every dollar out of a client's pocket typically goes into the supplier's pocket. Clients are incented to demand more services from the supplier without wanting to pay more. Suppliers are incented to squeeze as much profit from existing contracts or to sell additional services to increase revenues.
- Transfers of client's knowledge to suppliers while at the same time protect IP: With large-scale domestic outsourcing, knowledge transfer primarily happened by transferring client staff to the supplier. This adequate coverage provided the client and supplier managed the human resource implications early in the negotiation process. With offshore outsourcing, clients do not typically transfer knowledgeable employees to the supplier (like they typically do in large-scale domestic outsourcing). Clients complain that offshore employees have little understanding of their business domains. It is quite expensive to train offshore supplier employees, and the threat of supplier turnover and loss of IP is high.

- To retain enough knowledge by clients when engaging in large-scale outsourcing: Whereas the previous challenge focused on knowledge transfer, this challenge focuses on the client's knowledge retention. While all organizations deal with turnover, clients that extensively outsource have a smaller pool of talent to retain and develop.
- Sustaining the early enthusiasm of promising relationships for the long term among clients and suppliers: They found that contracts are renewed primarily because of the high switching costs, not because partners are still thrilled with each other. The issue here is not longevity, but sustainability of fresh ideas. Partners in sustainable relationships continually help each other actualize their potential as individuals and as partners. Another challenge in outsourcing marketplaces according to Kini (2007) is the interest of clients to have the same level of service at a lower cost from their vendors.

Apart from the challenges, organisations have to aware of the risks and dangers that outsourcing can cause before entering to outsourcing deals. Poor risk assessment will cause major problems and risks could happen at different services or resources of the organization.

According to Pai and Basu (2007) outsourcing risks include threats to security, availability and integrity of systems and resources, confidentiality of information, and regulatory fulfilment. They also provided other groups of risks such as overlooking or ignoring of costs because of the difficulty to quantify, the going out of business of the provider, poor delivery of system, delivery of more expensive system when the

contract is re-competed, contract failures, etc. Jiang and Qureshi (2006) also provide financial loss, damaged company reputations, the dismissal of senior management, and in some cases the destruction of the business itself as risks of outsourcing which is the result of poor strategic planning and poor risk assessment.

Though risk are inherent and inevitable being buried deep in an outsourcing contract (Jiang and Qureshi, 2006) it requires the outsourcer to follow a systematic approach which involves risk assessment. And this outsourcing risk based assessment considers the following points:

- assessing strategic goals, objectives, and business needs of the organisation;
- identification of the importance and criticality of the services required by the organisation;
- due diligence in selection of a service provider;
- define scope of service, with a detailed description of the services and the level to which these services are to be provided;
- operations controls, performance reviews and reporting quality of the processes;
- contractual obligations and requirements for the service provider;
- contingency plans, including availability of alternative service providers, costs and resources required to switch service providers;
- ongoing assessment of outsourcing arrangements to evaluate consistency with strategic objectives and service provider performance; (ibid) and
- regulatory requirements and guidance for the business lines affected and technologies used (Pai and Basu, 2007).

2.9. Outsourcing failure and common mistakes

Mistakes done during outsourcing will result in failure to meet the desired objectives. The reason for why so many IT outsourcing arrangements go wrong is mainly from errors being made by the customer's headquarters – within the executive boardroom, though vendors are contributing to the problem in some cases (PricewaterhouseCoopers, 2004). Mistakes are inevitable in outsourcing arrangement, and these expected mistakes include:

- failing to properly determine the motives, goals and objectives of outsourcing,
- concentrating on cost reduction rather than benefits and the value added,
- sub-standard corporate governance of the outsourcing program over time,
- failure to appoint staff to manage the relationship and contract,
- mishandled communications to staff, customers and other stakeholders, and
- inadequate incentive models that fail to motivate both individuals and the corporate entity on both sides (Aalders, 2002).

PricewaterhouseCoopers (2004) also added poor visibility, lack of accountability, and misleading metrics among the common mistakes made during outsourcing. Adopting new `hot' strategies that are advocated by management consultants and business schools in an uncritical manner without giving serious consideration to the company-specific context and lack of a formulated strategy may also lead to failure (Jenster and Pedersen, 2000).

According to Devos et al., (2008) IS failures can be categorized as expectation and termination failures. As per their explanation expectation failures can be results of correspondence, process and interaction failures, where as correspondence failures occur when IS are evaluated towards previous defined design objectives. This is the incapability of IS/IT to meet the expectations of outsourcers. A lack of correspondence between design objectives and evaluation is seen as a failure and process failures occur when there is unsatisfactory development performance, i.e., one fails to produce a workable system or to deliver within the budget constraints of time and costs (ibid). Interaction failures are situated within the mismatch between requirements and user acceptance and this kind of failure appears when an IS is not used (Devos et al., 2008).

Another cause which contributes to the failure of outsourcing is the decisions usually taken by the board who have little intimate knowledge and understanding of the daily operations and functions of the company (ibid). They also added that looking outsourcing as a means to cut costs and stressing on partial costs than total costs will also cause a major failure in outsourcing. Thus a much more strategic approach is needed if outsourcing is to provide the company with competitive advantage.

Another cause for failure according to Lacity et al. (2008) is the presence of significant hidden costs in organizations. According to them this will result in cases where learning is sometimes painfully slow, in deals where suppliers do not make reasonable margins, and when client organizations do not strategize, configure, contract for, monitor, manage their deals effectively, and there will also be those

suppliers who over-promise and under-deliver. Some outsourcing arrangements will be unsuccessful for a number of reasons, including:

- Failure to take a strategic approach: some failed to approach outsourcing as a strategic decision. This implies the importance of ensuring that the decision to outsource be made with a strategic perspective and associated with clear goals and objectives.
- Lack of experience: lack of experience, frameworks, and methods will also result in failure of outsourcing. Contracts, service level agreements, risk management, performance agreements and resource management methods usually grew from trial and error.
- Absence of method: Outsourcers lacked formal or testable means for delivering services.
- Micro management: Some outsourcers over-managed the service provider.
- Failing to understand the role of IT: some organizations simply hand over IT without understanding its role and mission.
- Ignoring interrelationships: Some failed to understand dependencies between various business processes and IT and suffered accordingly.
- Cost driven: the selection of the cheapest supplier regardless of competence is also a mistake.
- Others: such as inflexible contracts, inadequate service level agreements, confrontational management practices and a failure to appreciate that improving information technology services can be cause for failure, (Aalders, 2002).

PricewaterhouseCoopers (2004) also indicated the fact that IT outsourcing fails because senior executives:

1. Critically underestimate the level of management required to both implement and sustain a successful outsourcing initiative over time,
2. Understand the level of management oversight required but do not have the resources and necessary visibility into IT costs and spend performance, and
3. Assume erroneously that management of the outsourced IT services is the vendor's responsibility.

According to Murthy (2009), especially offshored IS/IT projects fail due to unclear scope, cross-cultural differences, communication problems, hidden costs, not able to meet timeline and delivery, not able to retain key personnel, non compliance with government regulations, overemphasis on process, and failure of outsourcing service provider but some times.

Finally mistakes that will lead to failure can be summarized into the following ten points:

Lack of management commitment.

Minimal knowledge of outsourcing methodologies.

Lack of an outsourcing communications plan.

Failure to recognize outsourcing business risks.

Failure to tap into external sources of knowledge.

Not dedicating the best and brightest internal resources.

Rushing through the initiative.

Not appreciating cultural differences.

Minimizing what it will take to make the vendor productive.

10. Poor relationship management programs (power, et al., 2004; cited in Power, et al., 2006).

2.10 . Elements of IS/IT outsourcing success

It is imperative that any organization who has established outsourcing relationship gives due attention to be successful while success is attributed to different factors. Kni (2007) strongly recommend the importance to have readily available, capable, and experienced outsourcing vendors in the market for outsourcing to be successful. Successful outsourcing relationships as verizone (nd) are differentiated by the service providers' ability to delivering:

- improved system reliability/availability,
- better capacity utilization, and
- good customer service.

Kakabadse and Kakabadse (2005) also indicated in their study that success is more likely to be achieved for those organizations that have the competence to:

- rearrange ways of working,
- integrate current processes and activities around already outsourced activities,
- facilitate ongoing relations,
- build long-lasting relationships with their suppliers, and
- effectively apply total quality management.

According to Pai and Basu (2007) the keys to success would depend on best practices guidelines given below in order to reap the benefits of an outsourcing effort:

- *Strategic planning and assessment:* Outline a long term strategy for offshoring to avoid long learning curves and to minimize redundant efforts in development of high-quality IT services.
- *Due diligence to operating models and selection of service providers:* Review the service provider's core business competencies, credibility, dependability and sustainability which are essential in maximizing returns from an offshoring initiative.
- *Risk mitigation:* Having a well-considered risk management document that measures the probability of each type of risk and the impact on the enterprise will be critical in determining the ultimate success of the offshore initiative. The risk management framework will also define which risks need to be managed, which can be transferred, and which can be simply ignored.
- *Post-contract governance:* Streamline a strong governance structure, seeded with location expertise for quality of service assessment and risk mitigation. Having a well defined strategic post-contract monitoring model is imperative in developing a "proactive" monitoring and management process.
- *Knowledge acquisition:* Despite the contract, the service provider could fail to manage the critical risks in a crisis. There is a need for crisis and contingency management plan to face undesirable outcome. Changes to the business continuity plans and invocation procedures need to be communicated properly if operational integrity is to be upheld for a stable and secure partnership with service providers.
- *Legal compliance issues:* Effective SLAs are extremely important to assure effective outsourcing engagements. The metrics used to measure and manage

performance of SLAs commitments are the heart of a successful agreement and are a critical long-term success factor. Lack of experience in the use and implementation of performance metrics causes problems for many organizations as they attempt to formulate their SLA strategies and set the metrics needed to support those strategies.

- *Conflict resolution:* Conflict resolution and contract negotiation is the process through which two or more parties arrive at mutually acceptable terms and conditions of exchange, for items they own or control. Conflict arises between two parties when there is a deadlock between them over the aforesaid terms and resolution.

Client readiness, good strategy, rigorous processes, sound contracts, and good relationship management together with people who execute these practices are also the key success factors (Willcocks and Lacity, 2006). Overall, it is known that global outsourcing can deliver on its promises, but only if both clients and suppliers diligently manage the details (Lacityet al., 2008).

2.11. IS/IT Outsourcing in Ethiopia

It is a common practice that most organizations outsource their IS/IT functions or activities such as network installation, software development, maintenance activities, and so forth for a vendor. Though there is no adequate research done on outsourcing practice in Ethiopia, it is known that organizations used it as an IS/IT management strategy for long time and is gaining popularity very recently. But the questions why, what, and how needs to be answered based on an empirical study. Tough the above

questions demand answers, studies are not done so far showing the practice and experience of the subject.

According to Mersea (2007) the top business functions outsourced by Ethiopian organizations in ascending order are maintenance and janitorial service, security service, and information technology. He also indicated that among the organizations investigated 93% of them are willing to outsource security service, 83% of them are willing to outsource maintenance and janitorial service and 76% of them are willing to outsource information technology. From this one can understand that IS/IT outsourcing takes the third place regarding the organizations interest to outsource their business functions.

While the general reasons for those organizations to outsource their business functions were to reduce costs, to get improved service, to obtain expert skills, to improve processes, and to focus on core activities; the reasons for information technology outsourcing are to improve service levels, to acquire innovative ideas and allowing more focus on core business, increase flexibility to meet changing business conditions, lack of internal expertise, and for cost savings.

CHAPTER THREE

DATA PRESENTATION AND ANALYSIS

In this chapter data collected from different data sources is presented and analysis and discussion of the data is made across the collected data and the literature.

3. Background

Before presentation and analysing the data it could be important to describe the process of data collection. As indicated in the methodology section of this research the researcher intends to collect primary data through interviews and document analysis.

It was primarily aimed to interview two people at the CCB division of the information systems department at ETC: both of them were part of the outsourcing process in managing the contract and assuring the deliverables. One of them is the head of the

CCB division and the other is a member of the CCB division. They are also responsible to mange the relationship with the vendor and were responsible for any problem the system is exhibiting and asking help and support from the vendor if required.

Before conducting the interview a number of contacts were done with the two persons for the purpose of writing the proposal and to get sources for reference. While the initial discussion with them for getting data to be used for proposal writing was fruitful, it was impossible for the researcher to get supporting documents for further reference. The interview was made in the month of August, 2009 with both of the interviewees. But the interview with the head of the CCB division was made with lots of ups and downs, with a lot of rescheduled arrangements. This was because the individual was too busy during the time with office works, other guests and customers, and for troubleshooting the CCB system for the problem it was experienced in receiving data while the new system from ZTEsoft was tested. In addition the interview was also interrupted due to the above reasons. A total of a two hours discussion was made with him on two different days. On the first day the interview lasted for an hour and ten minutes (1:10 minutes) and on the next day two consecutive interviews were made. The first section of the interview lasted for about thirty minutes and the second section for thirty five minutes. The interruptions during the interview don't affect the researcher rather it creates a room for revising the interview questions according to what has been discussed. The interview with the other member lasted for about 40 minutes. This session was also rescheduled for three

times. The other problem with this interview session was that the interviewee was not interested to talk about the content of the contract agreement document.

Document analysis was also another methodology planned to be used for collecting the required data. From those documents the contract agreement document and the request for proposal document were the major ones. But it was difficult to have access to these documents. It was told that the law of ETC prohibits any researcher to cite such documents in research reports. But the document released for inviting vendors which is available on the corporations' website is used.

Finally, the researcher realized the importance of additional interview with the ZTEsoft project manager and the interview which lasted for fifty minutes was conducted at the beginning of September. This interview session was also rescheduled more than the above interviews due to the inconvenience for the interviewee.

3.1 Case description

According to the data from the interview ETC has been forced to acquire new CCB software for the following reasons:

- **The ever increasing number of customers:** the ever increasing number of customers who need basic telecom services such as telephone lines both fixed and wireless mobile, internet, fax, etc from time to time, and the incapability of the existing system to handle this is one of the reasons for ETC to decide on acquiring new software.

- **Increasing number of telecommunication service:** the increasing number of the service types that ETC is releasing also made the existing system unable to handle it appropriately and hence a need arises.
- **Billing problems manifested in the existing system:** the legacy system, a system meant for customer care and billing operations requires punching the data into the system which is operated manually. This process takes from 3 to 4 months on average to punch the data in cases where there are a large number of customers and associated call records. As a result customer bills will not be prepared for such long time. Thus customers were forced to wait for 3 to 4 months to get their telecom service bills.
- **Costly:** furthermore, the data has to be produced on paper which costs ETC much money for paper as well as time spent by experts to produce the call summary.

Thus, it was on the mid 2003 that the Ethiopian Telecommunications Corporation realized the need for new CCB software to improve its telecom services pertaining to CCB and to respond for the above limitations of the old system. The management body of the corporation, after considering the in-house IT department's incapability to develop the software, decided to outsource the software development process and implementation to an external provider.

Beyond the problems manifested above, the corporation want its services to be a kind of on-a-spot shopping centre to customers where the customer is able to access the services he/she is using and the necessary provisioning such as activating a mobile

SIM (Subscriber's Identity Module) card without going to the telecommunication centre or having further assistant.

3.2. The why: motivations to outsource

When asked about what initiated ETC to outsource the ISD and implementation, the respondents indicated that it was difficult to develop it in-house due to lack of experienced software developers in the corporation. This supports the findings of Willcocks and Currie (1997). This was the major motivation to outsource the system development process to an offshore vendor.

The management of ETC decided to have reliable software which can handle data from different switching systems such as Erickson, Nokia, ZTE, etc and be able to manage it at a single point and able to minimize the above shortcomings of the old system. Thus developing a system which brings data from different switching systems makes the nature of the system a bit sophisticated to develop it in-house. This was another motivation to outsource the process to an outside vendor with more technical ability according to the interviewees.

However feasibility study was not conducted by the corporation. Though lack of in-house capability is a good reason to outsource a function or a service, it would make the process wiser if a kind of feasibility study was done. To support this Kakouris, et al. (2006) indicated that initial decision to outsource should be the subject of a feasibility study, in which management cautiously considers all decision criteria,

positive and negative, and does not rely simply on financial or technical factors, as is so often the case in practice.

The corporation was also initiated to have world-class software in the area of CCB technology from an experienced firm to serve its customers better. The interviewees also indicated that the need was so urgent and requires immediate solution. Thus developing from scratch will take much time and the corporation preferred to customize existing software from a bidder. This implies that the outsourcing initiative has a sense of strategic as well as political affiliation which is initiated by either for a response to the pressure from customers or for simply for reporting which gets the corporation into customization than developing new brand software. However ETC has to be curious that customization will not always fit the requirements and hence some kind of brand new module development is mandatory and this could help ETC to reduce risks if it is taken into consideration.

In conclusion, the motivations for outsourcing the software development at ETC can be categorized as system sophistication, lack of experienced developers to develop it in-house, the need to have world-class technology in CCB from experienced vendor in the industry, and strategic. Some of the results are also consistent with findings of others. Suhaimi (2007) studied outsourcing in the banking sector and his findings show that strategic, organizational and economic reasons were the major motives reported for outsourcing by the bank. Lacity and Willcocks (1997) also found in their studies that outsourcing was perceived as a solution to poor internal system development efforts.

3.3. The how: the outsourcing process

Before going to contract agreement the corporation has identified out a list of requirements the new software is required to perform. At a higher level the software is required to have the following modules:

- Customer relationship management (CRM): this module is meant for enhancing the relationship between the corporation and the customer.
- Billing: this module as its name implies is for producing bills for calls made, internet bills, etc.
- Provisioning: this module is required to facilitate services between customers and the corporation. The service this module is required to give include activation of SIM cards, reactivation of lost SIM cards, etc.
- Call detail record (CDR): the call detail record module is required to provide the detail of a call made between a caller and the receiver such as call time, connection time, the callers' number, the receiver telephone number, and so on.
- Rating: this is a module for calculating the fee for a telecom service, such as a certain call made by a caller, SMS sent, etc.
- Discounting: this module is for calculating discounts made for special users for example for calls from the corporation employees who are privileged for such discounts.

These were the initial requirements collected and this is of course done before selecting the vendor and signing the contract agreement. These requirements were

also used as initial requirements by ETC and the vendor for signing the initial agreement.

As per the decision made, on May 28, 2003 the Ethiopian Telecommunications Corporation has invited interested system development firms to participate in a bid for the development of Integrated Customer Care and Billing (ICCB) Solution, under Tender No: TF/6/2003. There were ten vendors who responded to the bid and Ushacomm India Pvt. Ltd. (UIL); an Indian company was selected to provide the ICCB software for 23 million birr. According to the interview made there were no local vendors who responded to the bid, as a result offshoring was the only solution to be followed by ETC.

The aforementioned vendor was selected based on the technical capability and the industry experience it has in providing an integrated customer care and billing system worldwide. While it is sensible to consider technical ability and industry experience to select a vendor, the researcher believes that vender selection and assessment can be said not properly done as ETC looks only two criteria. Kakouris, et al. (2006) indicated that a worthwhile and sensible initiative that reflects specific corporate goals for the relationship and the particular operational circumstances should be used for applying unique selection criteria. Those selection criteria should balance the needs of the purchaser against the capabilities of the supplier, and have the potential to deliver benefits (Ibid).

Thus it could be better if ETC used other criteria such as cost of development and implementation, the phase the vendor has in delivering similar projects worldwide and meeting requirements. This result supports the findings of Lacity and Willcocks (1997) where the case organization failed to both assess the vendor's capabilities and manage the outsourcing contract.

3.4. The pre-contract negotiation management

As per the interview made, after the decision to outsource the CCB software the identification of additional functional requirements and management of the supplier as per the identified requirements was given to the team constructed and the CCB division department.

Before the signing of a formal contract between the corporation and the supplier, negotiation was done at a higher level between the management body of the corporation and the supplier. The involvement of the information systems department and specifically the CCB division in the decision to outsource and pre-contract agreement was none at all. As one of the respondents put it, “the presence of IT professionals in the management body may be the reason for the lack of involvement of the information systems department and the CCB division“. From this one can understand that the existence of IT professionals in the managerial positions has forced them to make the decision alone without the involvement of the business owner. However, this will affect the success of the outsourcing relationship and thus is important to include the business owner in the decision of the outsourcing process. Successive involvement of the IS department especially the CCB division could have

a paramount use for the success of the outsourcing relationship. This result supports the findings of Young (2008) who reported absence of relationship between management and workers to decide on outsourcing decisions that has resulted due to lack of experience. In addition Lin, et al. (2007) indicated in their study that none of the contract managers or coordinators from one of their case studies was involved with any of the original outsourcing contracts negotiation processes.

The interview conducted with the head of CBB division also revealed that a document was prepared and developed as the final contract document. The formal contract was signed between the Ethiopian Telecommunications Corporation and the UIL during the late 2003 so that UIL to deliver the ICCB system called the Unicore Customer Care and Billing system. They call this document statement of work (SOW). The SOW contains the details of the service level agreements (SLAs) that the vendor and customer have agreed initially. The agreement is specified in such away that requirements will be collected continuously and the software is customized as per elicited requirements. If this is the case, then the contract agreement should include flexible clauses so that new requirements and functionalities can be incorporated into the agreement if any or at least should prevent ETC from spending too much. However, analysis from the interview revealed that the corporation failed to include such clauses in the SOW agreement.

3.5. Post-contract management

The written contract is the result of many days of hard negotiations and is the only authoritative means of defining the relationships of the parties concerned in an

outsourcing deal (Lee, 1996). However, signing a contract agreement will not be a guarantee for successful outsourcing. It needs serious and careful attention of the management of the contract agreement. This could better be done through the guidance of the contract terms agreed and signed between the customer and vendor. Thus, a contract manager (Lee, 1996) who will deal with routine measurement of the vendor's service level against contractual requirements has to be assigned, to handle change requests and payments, and assume the overall responsibility of ensuring the services provided by the vendor are of an acceptable quality. As per the interview made with the head of the CCB division, for the specific case under investigation the CCB division together with the team was given the responsibility to take care of the contract management. The team constructed by ETC together with the CCB division used to manage the contract against the deliverables by the vendor through test. It could be better and more logical for ETC to assign an experienced contract manager from the team members to manage issues relating to contracts, but it failed to do this. This result is inline with the findings of Lin et al. (2007) where they indicated in their studies that contract managers were brought to manage the contracts without having prior experience in managing outsourcing contracts. Studies conducted by Willcocks and Currie (1997) also indicate that in-house staff did not possess enough knowledge and expertise to manage an outsourcing contract which is also true for ETC.

The agreement between the corporation and the vendor was signed in terms of the number of customers the system can support and was not an ongoing agreement. This implies that the corporation didn't forecast the potential future growth of telecom service users in the country during signing the agreement and agreed to acquire a

system which can support around three million users. As it is put in the literature IS/IT outsourcing should be signed for long time such as spanning for about ten years with possible extensions and necessary updates (for example Lee, 1996). Though the contract with the case organization is not an ongoing agreement, support is given to the customer every year based on a request from the corporation with the necessary cost called the annual maintenance cost (AMC). The inclusion of support and AMC in the SOW document could be the possible reason to sign such a short period contract with out the need for extension.

The AMC is for maintenance to be done for a newly emerged requirement that was not covered in the SOW agreement between the vendor and the supplier. The cost of maintenance is dependent on the type of requirement or upgrading requested. If it is not as such significant and minor it will be done free of charge, otherwise it will charge the corporation money. But there is no metrics or no clauses specifying which newly identified requirements should be done free and which of those requirements need cost. This problem is again the result of lack of detail in the SLAs of the SOW and lack of the necessary requirements at the beginning. The interviewees further support this as:

> *For example, if ETC wants the system to work with the newly going project ZTE, it demands completely a new agreement with the vendor for a new cost.*

Currently, the corporation is doing on a project called Next Generation Network (NGN) with ZTE of China Company which is also supposed to provide the ICCB software to manage the customers and the services. This is an implication that ETC

was unable to articulate what is required in the near future and didn't consider the growth that the technology will exhibit in the near future and their future needs. Otherwise there should be a clause in their agreement that considers future technological advancement supporting the outsourcer to be benefited from such growth with no additional cost or at least for a minimum of it. Such a provision of future technology advancement will help the outsourcing company avoid a situation where an outsourcing deal appears attractive in the beginning but two years down the road becomes extremely expensive and the outsourcing company has no way of getting out of it (Lee, 1996). Kakouris, et al. (2006) further added that business is in a constant state of change and it is very important to choose a type of arrangement that is not only the most appropriate for the objective of the outsourcing at present time but also takes into account possible future developments.

3.6. The team constructed at ETC and communication with the vendor

The team at ETC was organised from 15 personnel consisting of programmers from CCB and software development divisions of the IT department, and one person from each other unit who will be affected as a result of implementation of the new system such as mobile, internet etc. A representative from each unit is taken because the corporation believe that the owner of the process knows the business better.

While it is an interesting point to construct a team originated from different business units, it is not well organized. This is from the point of assigning unique duties and responsibilities to each member. Project manager is assigned, but contract

management and finance or payment management were not assigned to any of the team members. This shows that the team constructed at ETC is not well done and doesn't have a formalized structure. Due to this and other reasons the project faces different management problems as discussed under the following topics. These results support the findings of Lacity and Willcocks (1997) where an outsourced systems development project management was one of the major challenges facing the outsourcer. The possible reasons for ETC for not assigning duties and responsibilities to the team members could be lack of experience that it has previously in software development outsourcing. The urgency of the need for the new system could also be a possible reason for having such not a well-done team.

The requirement was communicated to the vendor through formal documents. Due to the urgency of the need for the software, ETC preferred to follow customization of existing CCB software in the hands of the supplier. As requirements are identified, it will be communicated with the vendor and customization follows. The use of formal documents for communication has numerous advantages in decreasing problems of verbal communication such as face to face or telephone which involves different accent. Apart from using formal documents, telephone calls and e-mail messages were part of the communication ways that the customer and the vendor were using.

The vendor was using a temporary office in Addis Ababa, Ethiopia, for managing its relationship with ETC. It is clear that this strategy will clearly make the relationship management and communication between the customers' team and the vendors' team simple and easy. The office was acting as a liaison as well as the working

environment for the vendor employees. Having such a single contact point is greatly appreciated otherwise contact and communication will be affected highly as the vendors' working environment and official residence is found abroad.

There were customer level as well as factory level workers set for accomplishing the overall task. It requires the corporation to mange both levels effectively otherwise a major setback will happen while interfacing and communicating with two parties is a little bit difficult. The customer level workers were there to communicate with the project team organized by ETC and do the customization as required. This team is organized by individuals from different disciplines such as system developers, database designers, network engineers, and so on. The customer level workers are the primary responsible team to interface with the customer site and are using the office prepared for this purpose in Addis Ababa. Whereas, factory level workers reside in the vendor's home country (India).

The customer level workers communicate with factory level workers as required for example when there is dispute/disagreement with the customer team and the corporation. And some high level decisions were made with the factory level workers. During disagreements between the customer level workers and the project team at ETC, some high level managers of the corporation involved and talk to the factory level workers of the other end. However managing the relationship with the factory level workers may take time until they can come to agreement on requirements in terms of payment, SLAs, deliverables and so on due to geographical distance between them.

From the interview made with CCB division members the working relationship between the customer and vendor teams is said to be good. Moreover, communication and culture is not indicated as a problem for their relationship which is indicated as a major problem in other studies (example Siakas and Balstrup, 2006). The possible reason for this could be: the problem ETC is facing with the old system, the interest of both parties to have a smooth relation for their future working relationship, and the cost of terminating the contract for both parties.

The responsibility of the team members organized by ETC was to gather and communicate requirements to the customer level workers of the vendor organization, where as the CCB unit involves in the control of deliverables together with the project team. As indicated above wherever there is disagreement it will be forwarded to the management body of ETC. But as per the interview analysis, there wasn't such a case happened so far which takes them to the legal institutions except signing contracts for new requirements.

3.7. Management of newly identified requirements

Newly emerging requirements which are not in the contract agreement were managed differently both by the vendor and the outsourcer. When the interviewees are asked about managing new requirements, they responded that if a new requirement is found which is out of the agreed up on requirements a new deal is likely to take place between the vendor and customer. They use some criteria for the new agreement to be

signed such as volume of work, the number of professional manpower the work will require, and the time it will take to complete.

While it is necessary and good measure to sign an agreement for the purpose of payment, this kind of agreement largely affects ETC as it is forced to spend extra cost for the inclusion of the new requirement. This shows that ETC has signed somewhat an expensive and costly contract agreement that forces it to spend more than the cost planned for. This is basically due to lack of identifying their needs from the very beginning and lack of detail, comprehensibility, and flexibility in the SLAs. According to Lee (1996) the service level agreement should be as comprehensive as possible, including every possible detail, no matter how seemingly trivial or minute so that the chances of future disputes (which could be very costly to the outsourcing customer) could be minimized. He further explained that the agreement on pricing, payment terms and schedules is a very critical part of the overall outsourcing arrangement particularly to ensure that the price agreed covers all the services required. Because in the worst case (Young, 2008) inadequate contract specifications and subsequent under pricing will cause contract termination, poor quality, and difficulties in contract management in his study.

The interview made with the members of the CCB division also indicate that there were new requirements for most of the time but if the requirement is not major one the vendor will perform it without the need for a new payment installed and contract agreement. On the other hand there were times when ETC pay for some newly added requirements. This indicates that there was trust built between the customer and the

vendor which is important in an outsourcing relationship deal. But the reason this trust is built seems from maintaining their day-to-day working relationship because the SOW doesn't support them either to enforce the vendor to perform it without payment or the customer to pay or terminate their relationship.

This finding supports the results of Lacity and Willcocks (1997) who has studied information systems outsourcing in USA and reported that one of the organizations under investigation lacked the capabilities to properly define requirements, to negotiate and to manage system development contracts.

3.8. Controlling the suppliers' activities

As far as controlling the suppliers' activities is concerned the corporation used the contract agreement or statement of work (SOW) though the statement of work by it self has limitations. In anyway, ETC used the SOW to control vendor performance on quality of deliverables against the contract terms and SLAs specified. Acceptance testing and user testing were the major mechanisms for controlling what was sought initially and what has been delivered.

However, the SLAs didn't have the necessary detail regarding specifying the deliverables such as the quality of the source code. Clearly the SLAs lack metrics to measure quality of deliverables. It is only through test that the corporation can control the product delivered from the vendor. This will be one of the reasons that make ETC to wait until the test has to be performed for control of deliverables. As a result delay

in project schedule was a major problem which forces them to implement the system after half a year as compared to what was agreed in the initial SOW document.

One of the causes for the above problems to happen is the absence of a mechanism for evaluating the contract signed between the supplier and the customer. Beyond lack of mechanisms for evaluating contracts the corporation does not have a formal methodology for evaluating IS/IT outsourcing or a framework to be followed. This finding is consistent with the findings of Lin, et al. (2007) where examination of the responses reveals lack of a formal IS/IT evaluation methodology or process instead the respondents mistakenly thought contract control and evaluation mechanisms specified within the SLA constituted their formal IS/IT evaluation methodology or technique.

Proper risk assessment and management should be carried out before the signing of the IS/IT outsourcing contract and risks should be managed carefully throughout the life of the contract Lin, etal (2007). Assessing the risks before signing the agreement will also help ETC decrease problems from happening and revise the initial agreement and design the SLAs in such a way that it could be measurable and achievable.

In the specific case raised, risk assessment was not done. Any potential risk which will happen for example as a result of implementing the new system was not assessed and the corporation was fixed to have the initial requirements done.

3.9. Warranty and liability

Warranty is the heart of a service level agreement whether it is a short term or long term. Warranty for the breach of a term of agreement by the vendor in relation to service levels in delivering a product has to be specified in the agreement. It is important to ensure that losses are recoverable by explicitly providing for them in the contract. For the specific case raised in this study the vendor has provided a bid security of 250, 000 Ethiopian birr which is called a bid bond. However, such a bid bond is hold in the name of purchase for a product just like any other finished product is supplied by a supplier. Software development is different from supplying a finished good. It has processes performed at different steps and deliverables in each of those stages. And hence it requires clear and measurable SLAs for those deliverables at each stage. The warranty should also be expressed in terms of non-performance for any of the requirements and deliverables at each stage.

From the outsourcing customers' point of view, it is far better and more convenient if warranty is written into the agreement for the vendor to indemnify the company for any losses, costs, and liabilities arising from the vendor's breach of contract (Lee, 1996). (Ibid) further added that "Contractual provisions should be included to penalize the outsourcing vendor financially (e.g. in the form of liquidated damages) if at any time the vendor delivers a level of service which does not meet with the requirements in the contract". Warranty is therefore important for any non-performance or partial performance and damage or loss that will happen as a result of outsourcing.

Liability insurance against loss, injury or damage is not covered in the contract agreement made between ETC and Ushacomm according to the interview. The SLA doesn't specify warranty for non-performance or partial performance or any damage/loss of data for each and every requirement and the subsequent deliverables.

As to penalty for non-performance or being unable to meet service level agreements is concerned the option ETC used was to prevent the vendor from updating the extension of the annual maintenance. Concerning warranty and loss or damage of data one of the interviewee explained it as follows:

> *...the corporation has its own backup policy, security (physical and technical), and disaster recovery. This is the way we were prepared for avoiding damage or loss of data. The vendor doesn't have place in this issue. It is the responsibility of ETC to secure its data and protect from loosing it.*

Data security, backup, and information policy as well as disaster recovery is a must to have for any business involving an information system. It is also expected from ETC to have such policies; the core point here is to make those policies work and ensuring their reliability. Surprisingly the problem has happened, that is ETC lost its' customer data (call records) of the months of July and August, 2006 as a result of the new system implementation. The Ethiopian Telecommunications Corporation doesn't get any compensation for such a loss or damage from the vendor due to lack of warranty coverage in the SOW.

But the question here is how about damage occurring due to implementation of the new system such as the case indicated above? This is the reason for loosing two months of customer data as a result of implementing the new system. Finally, their policy didn't protect them from losing their data. Had there been a kind of warranty at least ETC will be compensated for the loss or damage. The other possible reason for this problem might be an incomplete test during implementation. The findings of this result go with some of the findings of Lacity and Willcocks (1997) where inconsistency and poorly controlled software development activities and system architectures, integration and testing were incomplete.

The written outsourcing contract is therefore (Lee, 1996) the most important instrument for defining the fights, liabilities and expectations of both parties which guides the behaviours of both parties concerned. Thus, management involved in outsourcing decision must have a kind of understanding and awareness about the complicated business and legal issues involved in IT outsourcing and how these issues should be addressed in the contracts concerned.

3.10. Dispute resolution and termination

According to Lee (1996) in cases where there are disputes the parties can use third parties (arbitration) but when arbitration does not work and the contract must be terminated, the consequences of termination must be taken into account and appropriate provisions made in the outsourcing contract. The interviewees indicated that disputes were happening for most of the time and their causes were either pay or no pay, but the good thing was either the corporation pays for what it takes to

disagreement or the vendor provides the requested service and they didn't go to the court to resolve their disputes. This is the way they tried to resolve their disagreements.

The interview made with the CCB personnel also show that the corporation doesn't have a strategy to end up their relation with the vendor. There is no a clear exit strategy defined in the contract agreement to end up either peacefully in cases when the vendor provides a cure system or during times of disagreement. Rather, either side will leave its interest and go for an agreement. What if the vendor is unable to supply part or the whole system? And how can they end up their relation if the vendor is successful and they want to stop their relation with the vendor? The contract doesn't specify how such issues will be managed and the only way is they will not update the annual maintenance. This cost is off course for a newly identified requirement and will not help to stop their relationship with regard to what is agreed before and signed in the contract.

Thus it is necessary to include dispute resolution and termination clauses in the agreement so that they can have a smooth relationship. According to Lee (1996) there should be explicit agreement in relation to the termination of services in cases where service levels are not met or when the vendor goes into liquidation and these issues be spelt out in the agreement because the relationship between the outsourcing customer and the vendor is likely to be tense in termination cases.

3.11. Ownership of intellectual property rights

For the specific case under investigation (at ETC) the right to the product such as data, manuals, and software programs is totally given for the vendor.

Lee (1996) indicated that, the outsourcing customer should insist intellectual property produced by the vendor in servicing the customer should belong to the customer otherwise it should be given provisions to access the source code for future modifications. But ETC has failed to secure any one of the two options, i.e. either provision to access the source code or the IP right is not given to it. As per the interviewees there is no single module developed by the corporation and the product is therefore the vendors' own property. The reason for why ETC gave the IP right to the vendor without having provisioning to access the source code is their mistaken perception that the product is totally for the vendor. This is dangerous to ETC as it will be difficult to either modify the modules when there is in-house capability or to renegotiate with the vendor for other requirements.

3.12. Problems/challenges of the outsourcing process

As the analysis from the interview show, a number of problems/challenges have been encountered during the outsourcing process. There were problems happening in most of the outsourcing process which were visible in the decision to outsource, in vendor selection, requirements specification, in defining SLAs, in managing the contract agreement, and testing and implementation of the new system. These problems/challenges finally have forced ETC to end up with the following major outcomes:

- ETC was unable to meet schedule, cost, and requirements; this result supports the findings of Lacity and Willcocks (1997) where a $4 billion tax modernization system was failed to meet cost, budget or functionality objectives.
- As a result the envisioned results were not seen, i.e the system was unable to handle the increasing number of user and telecom services, for example about 34,000 customers were not charged due to failure of the software implemented during the time.

Regarding the problems of the system implemented, the project manager of ZTEsoft also indicated that the initial problems which initiated the project are still visible in the new system. These problems include inability of the system to handle the required number of customers, services, and problem of provisioning module to function to the required level.

3.13. The causes for the problems

It is also revealed from the interview that why the above major problems happened. The reasons for such major problems to take place stem from different factors. The causes of the problems/challenges happened so far are attributed to one or more of the following:

- The requirements were not gathered to the necessary level of detail, as a result newly added requirements will affect project schedule and cost.
- The agreement about AMC will cause ETC to spend much to include new requirements compared to what was agreed initially.
- The SLAs didn't cover the necessary level of detail required.

- Appropriate scheduling which considers vendor capability and project depth was not done because of the urgency that ETC needs the system, and vendor selection criteria didn't consider the phase the vendor has in system development previously, its manpower, and financial position.
- Signing a new contract in times when a new requirement is found may take to much time because this needs again a lot of discussion between ETC and the vendor. Since this agreement is to be signed between the ETC management and the company level workers of the vendor, it may affect the schedule in two ways. First it may take them some time to agree up on the requirement whether it is covered in the SLAs or not and on the payment, deliverable and so on. Second since the company level workers are in India it may take some time to reach to the home country of the customer and discuss the issue. Thus in addition to cost this specific problem will affect the schedule highly.
- Because the contract agreement lacks flexibility it becomes difficult to incorporate some important modules without extra cost.
- Inability to assign experienced contract manager to manage the contract will also cause problems in contract management.
- Lack of formal framework to be followed in the outsourcing process.
- Lack of communication between the CCB division and the management of ETC, which is also seen in the current project by ZTEsoft where the CCB division interviewees told that they don't have any knowledge concerning why ETC has signed the new agreement with the company.

CHAPTER FOUR

CONCLUSION AND RECOMMENDATIONS

This study shows how ETC manages its information system outsourcing process taking the CCB software development as a case. It shows the process it has gone through, the problems and challenges it has faced, and the effort made to save the outsourcing process from failure. In this chapter, a summary of the preliminary results along with the problems identified from the outsourcing management and recommendations for future improvements and potential future research areas are provided.

4.1. Conclusions

ETC has clearly understood the problems of the existing system and the drivers for outsourcing the new system development and implementation are also sensible.

The corporation has used industry experience and technical capability as selection criteria to choose the appropriate vendor or supplier from those who responded for the bid. The reason for looking at these few criteria is because of the trust ETC has on the vendors' experience and technical capability.

The motivation behind the decision to outsource the software development process and its implementation at ETC were lack of experienced in-house developers, the sophistication of the system, the need to have the system implemented in a short period of time as well as the need ETC has to own a world-class technology in CCB.

The corporation has identified initial requirements and functionalities and preferred to follow customization to meet those requirements. Formal documents were used for

communicating the collected requirements and also were the major means of communication as a whole using English as the medium of communication. The reason for selection of customization rather than developing from scratch is the urgency of the problem the CCB division was facing.

It was very common to ETC to find new requirements which were not included in the SOW document signed while gathering requirements which takes the corporation into signing of a new agreement. This has happened because requirements were not collected at the necessary level of detail before signing the SOW document and the SLAs lack the necessary detail and flexibility to cover the newly identified requirements as well as metrics.

Initially the agreement was signed on the basis of the number of customers to be supported by the system and was not an ongoing one that considers the future growth of customers, services, and technology. The possible reason for signing such a contract document without considering the above issues might be the presence of clauses specifying support and annual maintenance.

Control of vendor performance and deliverables was done through test results against the SLAs and communication was done through formal documents. But the same team was used for both requirements collection and testing who may want to smooth their day-to-day working relationship than entering into disputes for partial or non-performance.

The study also revealed that the corporation didn't use formal evaluation methodology for the outsourcing process. Assessment of risk that could happen as a result of signing the contract and implementation of the new system was not also done for the specified case under investigation. These are the results of lack of experience and rushing into the outsourcing process with in a short time period.

Warranty and liability is not included in the agreement for non-performance, damage, or loss of data. This implies that there is no possibility to penalize the vendor for any breach of the terms of the agreements or for any damage or loss as a result of the outsourcing process. Whereas, ETC has placed a bid security for those bidders for the purpose of bid security.

Intellectual property rights for the product is given for the vendor rather than insisting to make it belong for ETC. The possible reason for this is also lack of experience in software development outsourcing where ETC employees lacked either the right or the provision to access the source code. The other possible reason is the perception that ETC employees have about who should own IP.

Finally, ETC didn't use formal strategies that could help the corporation to end up its relationship smoothly.

And in conclusion ETC failed to meet schedule, cost, requirements, and envisioned results from the very beginning.

4.2. Recommendations

On the basis of data analysis from the interview and conclusions reached, the following recommendations are forwarded.

- It could make the outsourcing process more logical if ETC had followed a formalized procedure such as feasibility study to decide upon the decision for outsourcing its functions/activities. Thus it could be better for both ETC and other organizations to follow a sound outsourcing decision which considers a kind of cost-benefit analysis prior to entering into an outsourcing deal.
- Beyond looking at technical capability and industry experience the corporation has to consider other vendor selection and assessment criteria such as the phase the vendor has in other similar projects, its financial strength, manpower quality, and so on.
- ETC has to make the decision for outsourcing involving the employees at the information systems department in general and the CCB division in particular. In addition, a strong communication and relationship between the management and the divisions needs to be maintained when outsourcing is considered as an IS/IT management strategy. An outsourcing decision thus should involve the participation of business users and with strong communication between the users and the management.
- ETC should give serious attention to managing the contracts by assigning a responsible person as contract manager as well as payment manager from the team members.
- The corporation should also collect the requirements to the necessary level of detail from the very beginning to minimize the problems that could arise due to newly

identified requirements before signing the contract document. It is also advisable for the corporation and any organization to specify the SLAs in bits and bytes having features of flexibility and measurability for each and every deliverable.

- ETC should also consider the future growth of customers and telecom services, and the growth that the technology will show as well as ongoing projects in the near future during the decision to outsource.
- The corporation should use formal methodologies such as a framework to be followed during the outsourcing process. In addition to this, risk assessment should be done before singing the contract so that the necessary warranty and liability be included for any risk that could happen. Furthermore ETC has to consider international telecom standards whenever there is a potential implementation of a new system so that it can assure its services are inline with the standards.
- Warranty and liability should also be included in the SLAs for non-performance and for any loss or damage that could happen as a result of signing the contract or implementing the new system. Furthermore, ETC should insist either to own the intellectual property right or provisioning to have access to the source code.
- Government should also set/indicate policy directions for IS/IT outsourcing procedures in the country.

4.3. Limitations and future studies

- This study is conducted considering a single organization following a case study approach, thus doesn't represent the general outsourcing management in the country. Hence other studies can be made considering different organizations for understanding the similarities and differences of the

experiences, problems/ challenges, and causes for the problems across the organizations in the country.

- This research is conducted considering the customers' side of the parties involved in outsourcing. However it is obvious that the vendors' side contributes to the success or failure of an outsourcing arrangement too. Thus future studies can be made considering both the vendor and the customer to overcome this limitation.
- Other studies assessing the capability or maturity of in-house outsourcing management can be done. In addition, evaluation of the success or failure of IS/IT outsourcing can also be another area of future study.
- Lack of appropriate outsourcing framework or methodology is indicated as one of the findings of this study which may contribute to different risks and outsourcing problem, thus one potential future studies can be development of outsourcing framework that considers the context of the country and an organizations' culture.

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Appendices

Appendix I

Interview questions for the interview made with the customer care and billing (CCB) division personnel of the Information systems department.

1) Please begin by telling your outsourcing story;
    a) Why did your organizational unit initiate an outsourced project, who was involved, what process did you go through,
    b) How did your internal organization react, and how did you manage the supplier?
2) Who was responsible for carrying out:
    a) Managing the outsourcing contract?
3) How was the involvement of the IT department and the CCB in the outsourcing process? How was the team structure made?
4) How would you describe the working relationship with the outsourcing contractor?
    a) How do you communicate with your vendor about progress? How often do the client site and the vendor site meet face to face?
    b) To what extent do the team and team members have responsibility, authority, and possibility to influence the project?
    c) How do you govern the supplier's activities? Project scheduling and tracking?
    d) How did you analyze and protect the quality of the deliverables? What mechanisms in the contract or processes did you use to protect quality?
5) Does the corporation have a formal IS/IT outsourcing evaluation methodology? If yes what?
6) Did the corporation use any methods or techniques to evaluate outsourcing contracts? If yes,

a) Who is responsible for managing/implementing the methodology?

b) Do you feel that there are any limitations in using this methodology? What?

c) Have you encountered any problems/challenges in using this methodology?

d) Did you manage to overcome/minimize some of these problems/challenges? How?

e) What were the criteria used to determine whether a contract is successful or not?

7) Did you assess risks before signing the contract? How did you assess risks associated with outsourcing?

8) When was the contract with your vendor signed? How long was the contractual period in the initial agreement?

a) Is the contractual agreement ongoing?

b) How do you describe the content of the contract?

c) How is software license and intellectual property rights managed?

9) What are the contract terms as far as baseline services, service level requirements, and penalties for non-performance?

10) How is liability insurance against loss or liability through injury or damage described in your contract?

11) How did you manage new requirements and maintenance with your vendor?

12) Did you include flexibility clauses in your contract such as computing character changes as a result of outsourcing? Are there any other?

13) What was included in the request for proposal (RFP)? Which suppliers were invited to respond? Why were they selected? What were your organization's selection criteria?

14) What are the problems you have experienced in the outsourcing process so far?
    a) Was there any effort made to manage the outsourcing arrangement? If yes:
        i) What is it and how?
        ii) Was it successful? If not, why not? What prevents this from taking place?
15) What are the lessons you learned concerning the best and worst practices of outsourcing?
    a) If you had it to do all over again, what would you do differently?
    b) What capabilities do you need in-house to make sure offshore outsourcing is a success?
16) The corporation has signed a new contract with ZTEsoft to provide new CCB software as part of the Next Generation Network (NGN). What initiated you to do that? What is going wrong with the current system (software)?
17) Have you had any disputes with the supplier? How were they resolved? Have you ever been charged for services you assumed were covered in the contract?
18) What do you perceive as the strengths and weaknesses of the contract?
19) What options or exit strategies do you have to end your contracts?
20) How satisfied are you with the overall performance/services of the outsourced IS/IT function?
21) Are there any comments that you would like to make? Anything that I haven't covered?

Appendix II

Interview questions for the interview made with the ZTEsoft customer care and billing (CCB) project manager.

1) The corporation has signed a new contract with ZTEsoft to provide new CCB software as part of the Next Generation Network (NGN) agreement.
    a) What initiated the corporation to do this?
    b) Is the current CCB system manifested any shortcomings? If yes, what are they?
    c) What do you think the cause for those problems are?
2) What were the problems the corporation faced in the outsourcing process with Ushacomm?
3) When was the contract with your vendor signed? How long was the contractual period in the initial agreement?
    a) Is the contractual agreement ongoing?
4) What measures did ETC take to solve the problems of the current system and enhance its capability before signing a new contract with Ushacomm?