

**OUTSOURCING OF GOVERNMENT INFORMATION SYSTEMS:
CHALLENGES AND OPPORTUNITIES**

MASTER OF SCIENCE (INFORMATICS) THESIS

By

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DECLARATION

I the undersigned hereby declare that this thesis is my own original work which has not been submitted to any other institution for similar purposes. Where other people's work has been used acknowledgements have been made.

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CERTIFICATE OF APPROVAL

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DEDICATION

I would like to thank God for the gift of life, health and wisdom that He gave me throughout the time I was studying and working on this thesis. Without you Lord, I would not have made it.

I dedicate this work to my parents Mr. H.P Kaipa and Mrs. Kaipa. You have been my inspiration and thank you very much for your encouragement and belief that I could pursue this master's degree. You always wished your children to pursue further education. Thank you very much.

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ABSTRACT

Information Systems (IS) are very important for the provision of e-services by government, to Ministries, Departments and Agencies (MDSs) and its citizens. There are several ways in which the public sector acquires its information systems and these include in-house development, buying off-the-shelf and outsourcing development among others. Outsourcing has now become a common practice across the globe and most of information systems in the public sector are being outsourced. IS outsourcing literature mainly focuses on the private sector in developed countries, leaving a gap on IS outsourcing in the public sector. Therefore, this gap compelled the researcher to conduct this study to investigate challenges and opportunities of IS outsourcing in the public sector in Malawi; specifically investigating factors that lead to IS outsourcing, assessing how it is done, and determining strategies required for resolving its challenges. Qualitative research method was used for data collection where thirty one participants (31) from various MDAs were interviewed. Purposive sampling was used to select participants who would provide relevant data either because they were previously involved in IS outsourcing or are using the outsourced IS. Case study approach was employed with ten outsourced information systems from eight ministries/departments forming part of the study. The findings of the study show that most IS in the government are outsourced and this trend is likely to continue into the foreseeable future. The study further revealed that there are IS outsourcing opportunities and among them are: access to latest technology, skills and knowledge transfer and Service Provider's capacity among others. It also revealed that there are challenges like inability to understand requirements, inadequate training, hidden costs and hidden information that need to be resolved.

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LIST OF ABBREVIATIONS

DISTMS:	Department of Information Systems and Technology Management Services
DPD:	Data Processing Department
DPU:	Data Processing Unit
E-Government:	Electronic Government
GoM:	Government of Malawi
HRMIS:	Human Resource Management Information Systems
ICT:	Information Communication Technology
IFMIS:	Integrated Financial Management Information Systems
IS:	Information Systems
IT:	Information Technology
IPC:	Internal Procurement Committee
MALTIS:	Malawi Traffic Information System
MDA:	Ministries, Departments and Agencies
MDGS:	Millennium Development Goals
MGDS:	Malawi Growth and Development Strategy
MSCE:	Malawi School Certificate of Education
OPC:	Office of President and Cabinet

CHAPTER 1

INTRODUCTION

1.1 Introduction

The importance of Information Systems (IS) to the organization cannot be over emphasized and most organizations now realize that they cannot compete well on the local and global market without investing in information systems. Organizations are therefore making huge investments in IS in order to realize the benefits that IS brings. There are several ways in which an organization can acquire an IS and among them are: in house software development, buying off-the-shelf and outsourcing software development from a third party. For the past decade, organizations have resorted to outsourcing software development rather than buying off-the-shelf or developing in house and this is due to its cost effectiveness, time factor, lack of skilled personnel within the organizations, complexity of the systems and access to latest technology among others (Stamirovic, 2013; McIvor, 2005; Clark, et al., 1995).

Outsourcing means transferring work, responsibilities and decision rights to someone else (Power et al., 2006). Martinsons (1993) defined it as subcontracting all or parts of the organisational functions to an external vendor whilst Ashley (2008) defined outsourcing as sharing of risk and responsibility for performing a service or a function to another entity. One thing which is common to all these definitions is the delegation of work to a third party. Business leaders agree that outsourcing involves purchasing services from an outside company (Linder, 2004). However, Linder (2004) has narrowed this definition further to those services that organisations currently provide or those which organisations normally provide for themselves. Information Technology (IT) functions that may be outsourced include application development, telecommunication management, systems integration and systems operation (Gover, et al., 1996).

Although outsourcing creates competitiveness and add value by enabling employees to focus on core activities, cost saving, access to experience and latest technology,

improving performance and flexibility among others (Tayauova, 2012), it also has its own challenges which if not properly managed, can offset all the benefits. Study conducted by Lacity and Willcocks (2009), provide counter evidence that some organisations are not achieving the intended benefits from IS outsourcing. The study conducted in United States, United Kingdom and Australia found that 50% of the 192 respondents were satisfied with the outsourcing arrangement which their organisations made while 29% of respondents indicated that they were not satisfied with their organisation's arrangements (Lacity and Willcocks, 2009). Another survey conducted by PA Consulting Group (PA) found that only 5% of organisations with IS outsourcing arrangement achieved high level of benefits (ibid.).

In Malawi, currently the government outsources most of its major IS for its ministries and departments. It is important therefore to have a clear picture as to how the outsourced Information Systems (IS) are benefiting government and what challenges and opportunities are associated with it.

1.2 Background

Information systems are key to organisations success, including government departments. In Malawi, the mandate to provide Information Communication Technology (ICT) services, including Information Systems to MDAs is with the Department of E-Government. The Department of E-Government started in 1966 as a Data Processing Unit (DPU) under National Statistical Office. Then the Unit was responsible for processing population census. When processing of population census of 1966 was over, the computer equipment was handed over to Accountant General to process mainly payroll and Government Accounts. In 1982 the unit became a department called Data Processing Department (DPD) under the Ministry of Finance. With time, the functions of DPD expanded, and in 2001, DPD was renamed Department of Information Systems and Technology Management Services (DISTMS) to reflect its new responsibilities of leading ICT development in the civil service through the provision of network services, application development and maintenance, policy development, offering IT technical support to Civil Service and provision of ICT education and training.

In 2007, the Malawi Government came up with e-Government Project to maximize ICTs utilization for efficient delivery of public services and intra-government communications. In 2011 the Malawi Government created a Department of E-Government in the Office of the President and Cabinet (OPC) to oversee the implementation of the e-Government project as its initial objective. In order to synchronize and harmonize ICT functions and Programmes in the civil service, in the same year (2011), DISTMS was transferred from Ministry of Information to OPC and was renamed as department of E-Government. The Department of E-Government was mandated to lead, coordinate and manage ICT development at all levels, including the delivery of innovative and efficient e-government solutions and services for the improvement of delivery of public services and maximizing impact of ICTs on the achievement of Malawi Growth and Development Strategy (MGDS) goals and Millennium Development Goals (MDGs). The overall goal of the Department of E-Government is to provide leadership in ICT development and utilization in the public service, focusing on policy and strategic management, coordination, standardization, monitoring and evaluation, management of the ICT Common Service and overall development of ICT solutions. In 2014, the Department of E-Government moved from OPC to Ministry of Information, Tourism and culture.

The Department of E-Government has ICT units in all government ministries and departments to provide ICT services. These units are mandated to develop systems that provide solutions to respective units and in case where they cannot develop such services at the unit level, the same is referred to the department of E-Government.

E-Government department has been developing its systems in house but of late most of its major systems have been outsourced. According to the Malawi Civil Service ICT policy review report (2011), fourteen (14) major systems that were implemented in government ministries and departments were procured, developed by hired local systems developers or developed by consultants from outside the country. Some of the systems that have been outsourced by ministries or departments are Passport Issuance System for Immigration Department, Land Administration System for Ministry of Lands, Housing and Urban Development, Human Resource Management Information System (HRMIS) for Department of Human Resources and Management Development and Integrated Financial Management Information system (IFMIS) for Accountant General Department, Case Management System for the Malawi Judiciary,

and the most recent Road Traffic System (MALTIS). These systems are very important in the provision of public services.

1.3 Research Problem

Outsourcing has now become a common practice in both the private and public sector and has turned out to be a significant issue in the restructuring of organisations (Cox et al, 2012). Although this is the case, much of the research has focused on the private sector (ibid.). Simo et al. (2007) agrees with Cox et al. (2012) that there is little research that has been done investigating IS outsourcing in public sector and argued that there is need to have much understanding in this area because public sector is the major customer for any supplier of information systems, technologies or services. They further argued that if outsourcing is well managed, public sector can become a role model in how outsourcing is supposed to be conducted, how the relation of the service provider and client must be managed and methodologies or standards used in tendering process.

There has been a lot of academic literature on IS outsourcing covering areas like risk and risk management, critical success factors in Information systems outsourcing, role and responsibility change due to IS outsourcing, models and outsourcing frameworks that are used to manage IS outsourcing practices and several other studies. Most of these studies have focused on the private sectors in developed countries leaving a gap on IS outsourcing in the public sector. According to the researcher's knowledge, little or no formal research work has been done in understanding IS outsourcing trends in Malawi. Therefore, this gap compelled the researcher to conduct this study and investigate the challenges and opportunities of IS outsourcing in the public sector in Malawi. The findings can contribute to better understanding of IT outsourcing in government.

1.4 Purpose of the study

1.4.1 Research Objective

The aim of this research is to investigate the challenges and opportunities of outsourcing are within government ministries, departments and agencies.

1.4.2 Specific Objectives

The specific objectives for this research are as follows:

- To investigate factors that lead to IS outsourcing by government ministries, departments and agencies
- To assess how IS outsourcing is done in government ministries, departments and agencies
- To determine strategies required for resolving challenges in public IS outsourcing.

1.4.3 Research Question(s)

The primary research question is:-

Why and how are IS outsourced and how does this practice impact the provision of government services?

The primary research question is addressed using the following secondary questions: -

- a. What are the factors that lead to IS outsourcing by government departments?
- b. How is IS outsourcing done in government ministries and departments
- c. What challenges and opportunities can IS outsourcing have on government services?
- d. What role does the Department of E-Government as custodian of ICT services play in IS outsourcing?

1.5 Thesis Outline

The first chapter has provided an introduction and background to the study. The purpose of the research has been highlighted followed by the research problem and research questions.

Chapter two discusses IS outsourcing literature. It starts with an introduction to outsourcing, then reasons for outsourcing, benefits and risks involved in IS outsourcing, outsourcing stages, critical success factors and finally discusses outsourcing in public sector and Africa.

Chapter three is about research methodology. It discusses research design, data collection process, data analysis, validity and ethical considerations. Chapter four presents the findings and data interpretation. Chapter five discusses the findings and finally chapter six presents the conclusion, recommendations, limitations and further research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature in information systems outsourcing defining key concepts that will be used throughout the study. In order to understand why the public sector outsources IS and the impact it may bring to the provision of government services, this chapter has presented key concepts like outsourcing stages, outsourcing benefits, outsourcing risks, critical success factors, IS outsourcing in African and IS outsourcing in Public Sector.

2.2 Outsourcing

Literature in outsourcing indicates that IT outsourcing is not a new phenomenon. Outsourcing is traced back to 1960s when Electronic Data Systems (EDS) handled various data processing services for Frito-Lay and Blue Shield companies (Lacity and Hirschheim, 1993 cited by Weinert & Meyer, 2005). The outsourcing contract between EDS and its companies was relatively low but after Kodak's decision to outsource its data centre's operations to International Business Machines (IBM) in 1989, there was tremendous growth of IT outsourcing (Bartell, 1998). This saw the private and public sectors entering IT outsourcing relationship with the external service providers (Weinert and Meyer, 2005).

Outsourcing can be divided into internal and external types. Internal outsourcing involves an organisation reallocating its business functions among units/departments within the same organisation for saving control over its performance and external outsourcing is delegation of business functions to external outsourcer (Anika & Rudaya, 2009). In this study, the focus is on the external outsourcing with understanding that IS in the GoM are usually developed by either local or international consultants.

Outsourcing may further be divided into partial or full outsourcing. Partial outsourcing is the delegation of selected business functions to outsourcer, while some functions are performed by company itself and full outsourcing refers to the delegation of more than 80% of the business functions to outsourcing company and entrusting it with full responsibility (Doyle & Tapper, 2001). In this study, the focus is on partial outsourcing with understanding that certain business functions are performed by members of staff within the organisation.

2.3 Outsourcing Stages

Dibbern et al. (2004) cited by Pena (2012) defined **five** stages that must be analysed when a business is outsourcing IS as depicted in Figure 2.1.

- **Why:** This is a strategic stage. Top management evaluates the idea of outsourcing and identify the core competent area. It enables them to decide whether outsourcing could be done or not. At this stage, advantages and disadvantages of outsourcing are considered.
- **What:** Different alternatives of outsourcing arrangements are analyzed. At this stage, decisions such as whether to go for partial or full outsourcing are made.
- **Which:** The outsourcing decisions that are made are based on organisation's guidelines, procedure and stakeholders that are involved.
- **How:** When a decision to outsource is made, the next stage is the selection of vendor. The best vendor may be selected based on terms of price and competence among others. This stage also deals with contracts and relationship management.
- **Outcomes:** The analysis of the outsourcing decision is made and the assessment of whether it was a success or failure is carried out.

Outsourcing stages in Figure 2.1 were considered in this research.

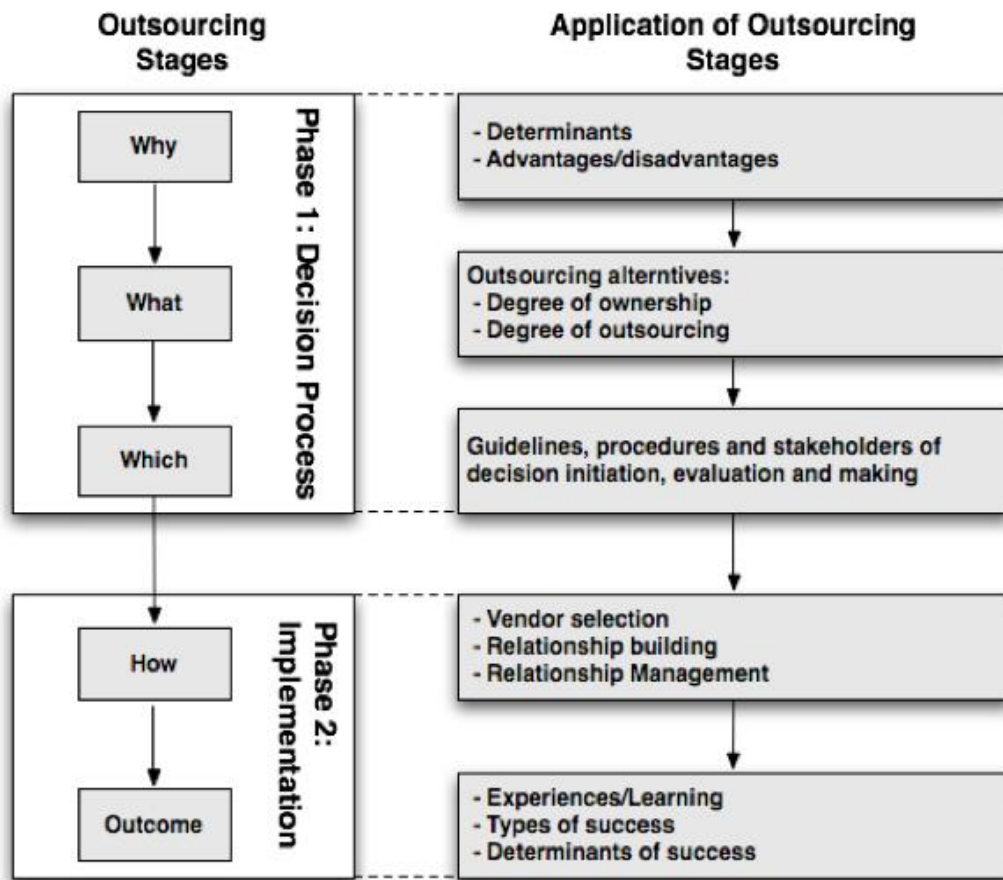


Figure 2.1: Outsourcing stages (Source: Dibbern et al., 2004 cited by Pena, 2012).

2.4 Reasons for Outsourcing

There are many reasons why organisations outsource IS other than developing them in house. Literature on IS outsourcing has defined several factors that motivate organisations to outsource. Financial and cost benefits are always put forward as the main factors that influence organisations to outsource (Badwin et al., 2001) and this agrees with literature from other studies (Stanimirovic, 2013; Bartell, 1998; Gonzalez et al., 2005).

The findings from a study carried out by Badwin et al. (2001) in United Kingdom (UK) on outsourcing IS in banks suggest that other factors like political perspectives and organisational issues influence the strategic decision making to outsource information systems. Stanimirovic (2013) in his study in Slovenian Municipalities

found out several factors that influence outsourcing and the leading one was lack of expertise, knowledge and skills within the organisation.

Many researchers agree on the fact that by handing over noncore activities to a trusted third party, a company can concentrate on activities central to its value proposition and increase its competitive positioning (Fan et al., 2006; Lacity & Hirschheim, 1994).

Outsourcing enables companies to have the possibility of access to highly qualified personnel, who may not be available to the client organization (MCIVor, 2005) and fully exploit the suppliers' investments, innovations, and specialist capabilities (Axelrod, 2004). Additionally, with service providers, the level of operational experience is expected to be higher because of the greater concentration of staff on tasks as compared to internal operations (Allen et al., 2003).

Clark, et al. (1995) argued that organisations may outsource IS because of its flexibility. Organisations have got the freedom to continuously redesign the contract to suit their requirements. As the technology is changing, they may also change and therefore prevent from becoming technologically obsolete without making large investment in technology (ibid.). Clark et al. (1995) further argued that outsourcing allows the client to have access to state-of-the art technology.

2.5 Risks associated with IS Outsourcing

According to Krishnamurthy et al. (2009) cited by Lam (2009), nearly 70% of all outsourcing deals fail to meet some of their targets while nearly 20% completely miss their objectives. The finding therefore gives an indication that outsourcing projects are complex and can have high failure rate.

One of the risks associated with IS outsourcing as defined by Khalfan, (2004) is loss of managerial control over outsourced operations which occurs due to the requirement of special skills for managing external resources which is a combination of the skills of people and process management, contract management, and power negotiation. Another risk as observed by Clark et al. (1995) is lack of compliance with the contract

by the provider. The provider may not perform the task as expected or as outlined in the contract.

Gonzalez et al. (2005) defines inability to adapt to new technology as another risk that may hinder success of IS outsourcing. One of the reasons why organisations outsource IS is to gain access to state-of-the art technology but this may not be the case if the contract does not include a clause specifically dedicated to technological advancement (Glass, 1996). Terms of security and confidentiality may be spelled out in the contract but for the provider to execute them and the client to audit if they are being executed according to the contract is always difficult (Jiang et al., 2003). Hidden costs is another major risk in IS outsourcing. A client signs a contract with the provider which covers the details of the service that they will be providing and anything not specified in the contract will be the basis for additional cost (Cox et al., 2012).

Demaria (2011) investigated IS outsourcing risk and risk management practices within private higher learning institutions in Ethiopia. The study found that security, retaining the loyalty of existing staff, inability to get user requirements, inability to increase reliance on the contractor, lack of prompt attendance to problems, and delays in fault resolution as points of risks attributed to outsourcing.

2.6 Information Systems Outsourcing Critical Success Factors

Due to lack of success in many IS outsourcing contracts, Gonzalez et al. (2008) proposed the following set of success factors:-

- **Providers Understanding of Clients' Objectives** - Providers must understand the client' objectives. The client – provider relationship management should basically focus on the provider achieving the clients' aim. The provider who has interest in client's objectives will be in a better position to help define beneficial goals.
- **Provider's attention to client's specific problems** – Different clients have got different technological and business characteristics. Contracts must therefore not be standardised. Each organisation is different and will therefore require a different contract.

- **Choosing the right provider** – Outsourcing success can be guaranteed if a capable vendor is selected. The success or failure of outsourcing is largely depended on this choice. Before contract signature, a detailed evaluation and selection of potential vendor is necessary. Analysis of stability, quality and reputation of the provider must be done.
- **Frequent Client –Provider contacts**- Communication is very important if outsourcing arrangement is to be successful to both parties. Management of client-provider relationship is very significant for the success of IS outsourcing and therefore there must always be contacts between the parties.
- **A good-value-for-money relationship** – Organisations outsource information systems because of the financial gains. Outsourcing is said to be successful when it covers such financial economic expectations as cash infusion, cost production and transaction cost economies, financial slack or tax advantages.
- **Top management support and involvement** – One of the determining factors for the performance of the IS department within an organisation is the involvement of top management in IT related decisions. The involvement of senior management and IT management is necessary when conducting a rational outsourcing evaluation.
- **Proper contract structuring** – A contract is document that spells out the expectations of both the provider and the client. It is therefore important that a contract must be properly structured. It must contain all the necessary information to ensure fulfilment of the expectations.

2.7 Agent and Principal Relationship

Cox et al. (2012) found the items below as some of the things that must be considered when building a relationship between a client and a provider:-

- **Contract Management** – Contract has got the largest impact on the success or failure of the outsourcing arrangement. In order to minimise the risks and avoid hidden costs, contracts must be detailed and must specify all the requirements that must be met by the provider during the life of the contract. Well written contract can minimise the risks posed by outsourcing. Apart from the contract, the organisation also needs to

develop internal capacity that must monitor the provider to make sure that implementation is in line with what was specified in the contract.

- **Trust** - No matter how detailed a contract may be, it is not possible to include all the clauses in anticipation for changes in requirements due to technological changes. Trust is therefore necessary to ensure the provider remains flexible to changing needs because it is difficult to negotiate subsequent changes to the contract. Therefore, both trust and contract management are the key to IS outsourcing success.
- **Partnership Mode** - A client must build a relationship with the provider based on high level of trust to ensure IS outsourcing success.

2.8 Information Systems Outsourcing in Africa

Africa has predominantly been sourcing its IT services from developed countries but in recent years, there has been demand for new markets' emerging from Africa and Africa has made sure not to miss the emerging opportunities in IS outsourcing (Nduwimfura and Zheng, 2015). Nduwimfura and Zheng(2015) attributes the fast growth of IS outsourcing market in Africa due to various factors such as an increased awareness of the benefits of developing the IS outsourcing sector among African firms, the recent phenomenon of globalization, the commitment of many African governments to develop their ICT sectors, a strong desire to access the latest technologies due to rapid changes in information technology and slowdown of economic growth in developed countries which has brought the need to look for cheaper markets. They further argued that African firms have realized that their survival in today's ever competitive global economic environment largely depends on being competitive globally, and one of the best ways to do that is through improving their ICT sector.

In their study, Nduwimfura and Zheng (2015) found four main challenges that may affect outsourcing in Africa. The first challenge is the availability of enough, adequate, and qualified skilled people. Another challenge is the absence of proper regulation in the area of outsourcing in general, and IS outsourcing in particular and this is discouraging some of the foreign countries to outsource to Africa. African

governments must therefore put in place proper legislation and regulations if foreign companies are to outsource to Africa. A third challenge is the lack of proper coordination between governments and the private sector. Those countries which have reformed, invested in IT and supported their private sector, have seen tremendous growth in the IS outsourcing industry. A fourth challenge is the management of the outsourcing relationship. Some clients have high requirements for privacy of their data, and therefore they require that the company they outsource their services must have an office or representation in their country so that in case of conflict they may be able to bring them to court. The last challenge is related to the availability of modern IT infrastructure. Most African countries do not have modern IT infrastructure.

Another study conducted by Smuts et al.(2010) investigating outsourcing issues in Communication Technology (CT) sector in Southern Africa, found that lack of local skilled resources, cultural differences, project team conflict, service delivery and turnaround times, breakdown in communication and cost escalation as major challenges faced by organisations in Africa. Smuts et al. (2010) concluded that organisations in the CT sector in South Africa experience similar IS outsourcing challenges to other countries and markets, but also specific issues that differ. They further concluded that IS outsourcing should still be considered in Southern Africa, but organisations should clearly define and manage core IS functions, service level agreements, processes and procedures for the outsource partner.

2.9 Information Systems Outsourcing in Public Sector

There has been remarkable growth in Information Systems outsourcing in the public sector just like the private sector. IS in the public sector has also become one of the most outsourced business activities.

2.9.1 Reasons for Outsourcing in Public Sector

Cox et al. (2012) in their study that investigated three councils in the United Kingdom (UK) found that improving quality and reducing costs were the most important reasons of outsourcing IT at local councils. They also found out that access to external expertise was the second important reason why councils outsource

information systems. Other factors that were considered were recruitment issues, focus on core competence, flexibility and restructured costs.

Another study conducted by Stanimirovic (2013) revealed that lack of expertise, knowledge and skills are the most important reasons for outsourcing information systems in public organisations among others. The study further revealed that most municipalities do not have comprehensive outsourcing strategies and there is need for a better outsourcing strategy

Gill (2013) argued that an outsourcing initiative can be successful if in-house staff and services are thoroughly evaluated prior to outsourcing, outsourcing contracts are carefully created and managed, a relationship between a service provider and the client is trust worthy and customers are satisfied by managing their expectations and complaints.

Gramatikov (2002) argued that the public sector outsources information systems because of the following reasons:-

- Reduce cost of the service – IT is considered as a non-profit making service and most public organisations would reduce its expenditure where service level would not be compromised.
- Capital Intensiveness of the technology - Public sectors have got so many other projects that compete for the same public funds. Outsourcing is therefore seen as a viable option that reduces cost other than in-house software development.
- Tied market for IT talent - Public sector has challenges in retaining skilled ICT personnel due to unattractive remunerations that it offers as compared to the private sector.
- Access to know-how and specific technological knowledge- Outsourcing can help public sector have information on latest technologies on the market and gain access to such technologies.
- Enforcement of standardisation and interoperability in the public administration - In- house software development may risk development of non-standard systems and proprietary technologies which may not be compatible with other systems in the public sector.

2.9.2 Risks in Public Sector Information Systems Outsourcing

Public sector may have other risks different from those faced by the private sector. Gramatikov (2002) identified cultural differences between the public and private organisations as having an impact on the relationship between the client and the service provider. Another risk is the annual budget which may be cut off due to limited resources and may affect the contractual compliance. Public sector instability may also have impact on the outsourcing relationship.

Cox et al. (2012) concluded that hidden costs are one of the greatest risks when outsourcing and they occur during selection, contract management and when making changes to contract. Other outsourcing risks may include security of sensitive information, loss of key skills due to retaining less knowledge on the outsourced activity, inflexible contract and over dependency on the service provider.

2.10 Theoretical Framework

Theoretically this study is guided by Agency Theory of Jensen & Meckling (1976).

2.10.1 Agency Theory

Agency relationship is one in which a person (the principal) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent (Jensen & Meckling, 1976). Agency Theory is a well-known theory and has been used by a number of researchers in IS and outsourcing (Dibbern et al., 2004; Aubert, 2005; Bahli and Rivard, 2003 cited by Devos et al., 2008).

Although Agency Theory is a well-known theory in outsourcing, Eisenhardt (1989), in her assessment and review of Agency Theory argued that the theory ignores some complexity of the organization and must therefore be used with complementary theories.

In this research, the Agency Theory complemented with Outsourcing Practices (discussed under conceptual framework) were used to view the relationship of an agent (service provider) and the principal (client) and the problems that occurred in

outsourced environment as a result of the following three factors as defined by Devoc et al. (2008).

- **Goal differences** - This may occur when the principal is unable to observe and verify the actions of the agent and may be faced with an agent engaged in hidden actions and not acting in the principal's interest.
- **Risk behaviour differences** – May occur when the outcome is not stated in a measurable outputs and only partly verifiable by organisation members.
- **Information asymmetry**– May occur when an agent possesses private or hidden information about the real quality of his/her service.

2.10.2 Conceptual Framework

Figure 2.2 is the framework that was used to investigate the challenges and opportunities in outsourcing public information systems. It is based on Agency Theory three factors of: goal differences, risk behaviour differences and information asymmetry. The Agency Theory was complimented by some instruments that are used to assess risk management practices in IS outsourcing (Demaria, 2011) and the following factors have been investigated.

- **Outsourcing Strategy** –investigated the availability of IS outsourcing strategy, ICT policy and guidelines in ministries/departments and how the absence of these contributed to service providers risk behaviour and information asymmetry. It also investigated the first, second and third stages of IS outsourcing decision which responded to three question; why outsourcing, what to outsource and which strategy, policy and guidelines to follow when outsourcing. The first question investigated if an organisation considered advantages and disadvantages of outsourcing before moving into IS outsourcing, the second question considered the degree of outsourcing; whether the ministries/departments carried out full or partial outsourcing and the third question assessed if various outsourcing options were considered. The outsourcing strategy also helped to assess if two critical IS outsourcing success factors were considered; provider understanding of client objectives and choosing the right provider.

- **Stakeholders in Outsourcing Project** – investigated the participation of different stakeholders in IS outsourcing, their roles and responsibilities and how their absence contributed to goal difference, risk behaviour and information asymmetry. It also investigated the third and fourth stages of IS outsourcing which responded to two questions: which stakeholders were involved in outsourcing and how to select the vendor, building relation with the vendor and managing the relationship. The following critical success factors were also investigated: The impact of management support and their involvement in IS outsourcing process, service provider's support to client's specific problems, how frequent contacts between client and service provider improve their relationship, contract management and trust.
- **Impact of Outsourcing** - investigated the negative and positive impact of IS outsourcing in relation to goal difference, risk behaviour, information asymmetry, stakeholders involvement and outsourcing strategy. The fifth stage of IS outsourcing that assessed the IS outsourcing outcome by looking at outsourcing experience, types of success and determinant of success was also investigated.

Agency Theory

Outsourcing Practices

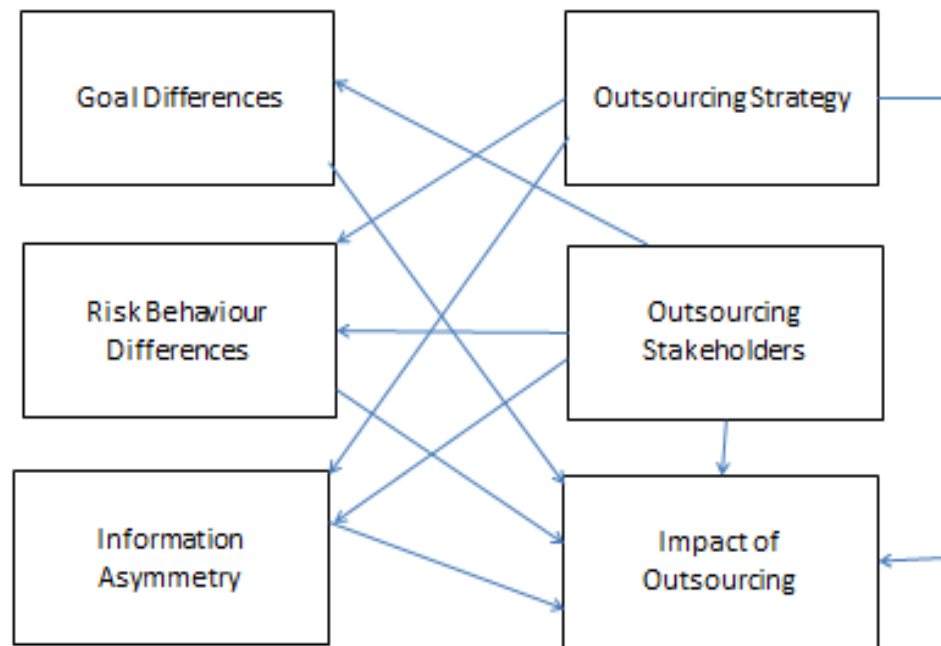


Figure 2.2: Conceptual Framework

2.11 Summary

The literature review has revealed that a lot of organisations are outsourcing their IS. Although a number of studies regarding IS outsourcing have been conducted, most of these have focused on private sector in western countries. There is little research that has been done investigating how IS outsourcing is carried out in public sectors in Africa and the challenges and opportunities that outsourcing brings with it. The literature review further reveals lack of both literature and research in IS outsourcing in Malawi.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the process that was followed to obtain the research results. Emphasis is on the significance of using qualitative method and employing case study approach. The chapter also presents sampling and data collection methods and analysis techniques that were used in the study.

3.2 Research Design

This research adopted qualitative approach. Qualitative research was chosen because it is designed to help researchers understand people, their social and cultural context within which they live (Myers, 1997). The approach further provides a deeper understanding of the phenomenon under investigation (Yin, 1994). This qualitative research was carried out in different ministries and departments and it helped the researcher to understand the environment in which outsourcing is done, the processes that are followed and the challenges and opportunities which government has in outsourcing information systems.

3.3 Research Purpose

This research followed exploratory approach. The approach allowed the researcher to gain background information in IS outsourcing in government ministries and departments. It also allowed the researcher to explore why government is outsourcing IS, the processes that are followed and the challenges and opportunities of IS outsourcing from different sources.

3.4 Approaches to Theory

In this research, deductive approach to theory was employed. A theoretical framework based on Agency Theory and Outsourcing Practices was developed and data was collected based on the main themes defined in the framework such as; *Outsourcing*

Strategy which was investigated in relation to risk behavior and information asymmetry, *Stakeholders in Outsourcing* were investigated in relation to goal difference, risk behavior and information asymmetry and *Impact of Outsourcing* was investigated in relation to goal difference, risk behavior, information asymmetry, stake holders in outsourcing and outsourcing strategy.

3.5 Research Strategy

The researcher employed a case study approach because it takes place in natural setting and the researcher collected data at the sites where participants experience the issue or problem under study. In case studies, researcher explores in-depth a program, event, activity, process, or one or more individual (Creswell, 2009). This strategy helps the researcher in gaining a rich understanding of the context of the research and processes being enacted (Morris & Wood, 2009). Using case study approach, relationships and social processes may be analysed (Miles and Huberman, 1994)

The research was aimed at investigating challenges and opportunities associated with IS outsourcing by government ministries, departments and agencies in Malawi. The case study approach was therefore, the most appropriate for this research to gain deeper insights of IS outsourcing in government ministries and departments.

The other reason why case study approach was chosen is that it allows the researcher to use several methods that are interactive and humanistic therefore allowing the researcher to get more insight on issues. The studies are useful in providing answers to ‘how?’ and ‘why?’ questions (Creswell, 2009).

3.6 Research Population and Sampling Criteria

Participants in this study were Malawi Government Civil Servants from Ministry of Agriculture, Ministry of Education, Science and Technology, Ministry of Lands, Housing and Urban Development, Accountant General, Human Resource Management and Development, Department of E-Government, Immigration Department, Road Traffic Directorate, Treasury Cashier and Blantyre High Court. Participants were head of departments who are involved in strategic decision processes, head of IT responsible management of ICT units, Procurement officers/Project managers responsible for procurement processes, systems

analyst/programmers responsible for software development and systems support and users of the systems.

Purposive sampling within the non-probability technique was employed to identify the MDAs that were involved in the study. This technique was employed because it relies on the judgment of the researcher when it comes to selecting the units that are to be studied (Lisa, 2008 cited by Palys, 2008). The sampling technique focused on MDAs that had been outsourcing information systems and whose participants could be easily accessed. The technique also allowed specific categories of participants to give relevant data, either because they possessed it or met criteria set by the researcher.

The sample size for this research was ten ministries/departments and thirty-one (31) participants (see Table 3.1). Out of these ten ministries/departments, eight had outsourced information systems while one department (Treasury Cashier) was included because it is a user department of Integrated Financial Management System (IFMIS) implemented by Accountant General's Department. Department of E-Government was included because of its mandate of coordinating ICT issues in government. A number of sites were used to enable the researcher explore different processes that ministries/departments use in outsourcing information systems and that findings could be replicated across cases because comparisons would be drawn (Yin, 2003).

Table 3.1: Number of Participants per Ministry/Department

MINISTRY/DEPARTMENT	NO OF PARTICIPANTS
Ministry of Agriculture	4
Ministry of Education	4
Ministry of Land , Housing and Rural Development	5
Department of Human Resource Management and Development	3
Accountant General	4
Immigration	4
Road Traffic Directorate	3
Treasury Cashier	2
E-Government	2
Total	31

See Tables 3.2 to 3.6 for participant's demographic data.

Table 3.2: Participants Demographic Data-Heads of Department & Heads of IT Sections

Interview Number	Interview Code	Gender	Position	Year of Service	Age
001	HIT1	Male	Senior Deputy Director	>24	>47
002	HIT2	Male	Deputy Director	>25	>49
006	HIT3	Male	Deputy Director	>30	>55
010	HIT4	Male	Deputy Director	>28	>50
013	HIT5	Female	Deputy Director	>25	>50
021	HIT6	Female	Systems Analyst	>8	>30
026	HIT7	Male	Judge of Supreme Court	>30	>55
027	HIT8	Male	Systems Analyst	>3	>22
030	HIT9	Male	Systems Analyst	>2	>25

Table 3.3: Participants Demographic Data - Internal Procurement Committee Members/Project Officers

Interview Number	Interview Code	Gender	Position	Year of Service	Age
003	PO1	Male	Business Accountant/Project officer	>14	>36
008	PO2	Male	Principal Transport Officer/Project Officer	>12	>40
009	PO3	Male	Chief Statistician	>13	>40
007	PO4	Male	Economist	>7	>33
019	PO5	Male	Immigration Officer/Project Officer	>10	>35

Table 3.4: Participants Demographic Data - Systems Analysts/Programmers

Interview Number	Interview Code	Gender	Position	Year of Service	Age
004	SAP1	Male	Systems Analyst/Programmer	>2	>30
012	SAP2	Male	Systems Analyst/Programmer	>2	>38
014	SAP3	Male	Systems Analyst/Programmer	>23	>43
015	SAP4	Male	Systems Analyst/Programmer	>2	>25
016	SAP5	Male	Systems Analyst/Programmer	>1	>26
017	SAP6	Female	Programmer	>21	>55
018	SAP7	Female	Systems Analyst/Programmer	>25	>50
028	SAP8	Male	Systems Analyst/Programmer	>2	>24

Table 3.5: Participants Demographic Data -Ordinary Users

Interview Number	Interview Code	Gender	Position	Year of Service	Age
011	USR1,USR2	Males	Assistant Lands Registrar & Senior Lands Registrar	>9	>32
020	USR3	Female	Assistant Immigration Officer	>2	>25
021	USR4	Male	Senior Accounts Assistant	>25	>45
022	USR5	Male	Accounts Assistant	>10	>38
023	USR6	Female	Accounts Assistant	>15	>35
026	USR7	Male	Assistant Registrar	>2	>26
029	USR8	Male	Male	>12	>30

Table 3.6: Participants Demographic Data - Department of E-Government

Interview Number	Interview Code	Gender	Position	Year of Service	Age
024	EG1	Male	Chief Systems Analyst	>13	>36
025	EG2	Male	Acting Deputy Director	>30	>50

3.7 Data Collection Process

This section covers the data collection process that was followed. It covers the data instruments that were used in conducting semi structured interviews, how the instruments were validated and the actual data collection.

3.7.1 Interview Questions Design

Semi-structured interviews were employed to collect data and this created a conducive environment which enabled participants to respond freely to the questions. This approach, allowed the researcher to collect data from the participant's work place which enabled the researcher to have the feel of practical experience.

These interviews were conducted in English and questions were grouped in five categories based on major areas that are considered in outsourcing information systems. The categories were that of strategic policy, stakeholders in outsourcing, agent and principal relationship, impact of outsourcing, and the mandate of the

Department of E-Government. (See Appendix B2) for semi structured interview questions.

3.7.2 Validation of Instruments

The interview questions were sent to the supervisor for validation. The researcher conducted ten (10) pilot interviews to test the questions before the actual interviews and this resulted in revision of some of the questions.

3.7.3 Data Collection

Primary data was collected through interviews. The researcher used semi structured interviews with predefined questions but was not restricted to adhere to them (Myers, 1997). During the interview, some follow up questions were asked depending on how the participant responded to the question and in certain situations, questions could be rephrased. The interview was face to face and was scheduled according to the availability of the participant. Prior to the interview, letters were sent to the participants asking them to participate in the study and also informing them about the objective of the study.

Thirty (30) interviews were conducted from December, 2015 to January, 2016. Out of these, twenty-nine interviews were one to one and one interview had two participants giving a total of 31 participants. Twenty-nine participants gave consent to be audio recorded using the lap top and a tablet as a backup. Where consent was denied, the researcher took notes. The questions had four dimensions of information systems outsourcing. The head of department and head of IT were asked the same questions (refer to Appendix B2 (A & C)). The procurement officers and project officers were asked same questions (refer to Appendix B2 (B&C)). Systems analysts/programmers and ordinary users were asked questions on (Appendix B2 (D)) and department of E-government had their own questions (see Appendix B2 (E)).

Each interview lasted for thirty (30) to fifty (50) minutes and participants were thanked for spending their time for the interview

The other method of data collection that was used is document analysis. Documents which were analysed included ICT policy statements, strategic plans, ICT standards and guideline, draft E-transaction bill and reports.

3.8 Data Analysis

There are a number of methods that are used in analysing qualitative data and the common ones are semiotic, hermeneutics, narrative and thematic analysis. This research employed thematic approach. According to Braun and Clarke (2006), thematic analysis approach is a qualitative analytic method for identifying, analyzing and reporting patterns (themes) within data. It describes data set in detail.

Each recorded interview was transcribed using Express Scribe software V.5.48 and this was the basis for textual analysis. Data was analysed by classifying it according to the major themes that were defined in the conceptual model. The research findings emerged from the transcribed data.

3.9 Research Validity

Semi structured interviews and document analysis (triangulation) were used in this research as different methods of data collection to ensure data consistency and reliability (Saunders et al., 2003). Interview questions were adapted from Adeleye (2002) cited by Demaria (2011) and this ensured that the tools that were used for data collection were well tested.

Ten (10) government ministries and departments participated in this research to ensure that data is collected from multiple cases and findings of the results are compared (Yin, 2003). Before the interview, the researcher established credibility with the intended participants (Saunders et al., 2003) by writing letters requesting them to participate in the study, explaining the purpose of the study, how it would help the government and also assured them of their confidentiality and anonymity (refer to Appendix B1)

The researcher has conducted interviews at different levels and the experience gained, helped the researcher in planning interviews by designing questions according to the major research themes and booking appointments with the participants. Each interview was starting with guiding questions and where necessary, rephrasing or asking supplementary questions.

The interviews were conducted at participant's premises and this created a friendly environment which allowed participants to contribute freely and provide all the required information.

3.10 Ethical Consideration

The research was a case study in government departments and ministries and the researcher is a civil servant working with department of E-Government which is under the Ministry of Information and Civic Education therefore had to seek approval to conduct research in government from the Principal Secretary refer to (Appendix A).

Before the Interviews, a consent letter was sent to the participants requesting them to participate in the study (see Appendix B1), explaining the objective and their rights as participants. During the interview, the purpose of the interview was clearly explained to the participants, their right not to respond to the question if they were not sure, their right to withdraw and the right to remain anonymous. They were assured that data that was collected will be secured and will not be revealed to a third party without consent.

To maintain confidentiality, codes were used to represent the participants as follows: -

- Heads of departments and heads of IT : HIT1, HIT2, HIT3, HIT4, HIT5, HIT6
- Procurement Officers /Project Officers : PO1, PO2, PO3, PO4 , PO5
- Systems Analysts and Programmers: SAP1, SAP2, SAP3, SAP4, SAP5, SAP6 , SAP7 , SAP8
- Ordinary users: USR1, USR2, USR3, USR4, USR5.

3.11 Summary

Qualitative methods and case study approach were used. Thirty one (31) participants from Ministries of Agriculture, Education, Land and Housing, Departments of Human Resources, Accountant General, Immigration, Road Traffic Directorate, Judiciary Services, Treasury Cashier and Departments of E-Government participated in the study.

CHAPTER 4

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter gives an analysis of the thirty (30) interviews conducted from ten ministries and departments and documents that were analysed. In some cases, direct replies from participants have been included in the findings and analysis. The interpretation of results was based on the main themes that were defined in the theoretical and conceptual framework. The themes helped the researcher to capture major responses from the participants. Recorded and transcribed interviews were cleaned and organised in the same format based on the main themes and the questions specific to those themes. The researcher then carried out a thorough analysis of transcribed data.

The main themes included outsourcing strategy, stakeholders in outsourcing, impact of outsourcing and principal and agent relationship focusing on goal differences, risk behaviour and information symmetry. In addition, other themes and sub themes emerged during data analysis and these include: mandate of E-Government department, ICT policy statement for IS, reasons for outsourcing IS, outsourcing process, critical factors for selecting a service provider, accountability and process for monitoring and managing relationship with the service provider and others

4.2 Outsourcing Strategy

The study found that all the ministries/departments interviewed have information systems that are used to support the core activities of their respective organisations. Table 4.1 gives a summary of information systems. Two (2) of the ministries/departments interviewed – the Treasury Cashier and E-Government have not been included in this table because they were sampled as user department for IFMIS and as department responsible for coordinating ICT issues in government respectively.

Table 4.1: Information Systems, Their Use and How They Were Acquired

Ministry/ Department	Information System & Description	Use	Acquisition	Supplier Type	Cost	No of Systems	ICT Strategy /Policy
Agriculture	Fleet Management Information System	Management of motor vehicles	Outsourced	Local	Disclosed	3	Not available
	Land Resource Management Information System	Analyse land surfaces for Agricultural use	Outsourced	Local	Disclosed		
	Agriculture Production Estimates Systems	Estimate produce	In- house	In- house	Undisclosed		
Education	Education Management Information System - a system developed using MS Access	Management of education statistics	Outsourced	External	Undisclosed	1	Not available
Lands	Plots, Titles and deeds registration system	Registers plots, titles and deeds.	Outsourced	Local	Disclosed		Not available
Accountant General	Integrated Financial Management System (IFMIS)	Financial management for government.	Outsourced	External	Undisclosed	1	In draft form & specific to IFMIS
DHRMD	Human Resource Management Information System	Management of employee's details.	Outsourced	Local	Disclosed	1	Not available

Immigration	Integrated Boarder Control System	Records people that are going in and out of the country	Outsourced	External	Disclosed	2	Policy available but old & not used
	Passport Issuance System	Processing of Passports	Outsourced	External	Undisclosed		
Judiciary	Case Management Information System	Management of cases.	Outsourced	External	Disclosed	1	Not available
Road Traffic	Malawi Traffic Information Systems (MALTIS)	Issuing of driving licences, , Certificate of fitness, Issuing of traffic registration cards, Registration of operators, process motor vehicle business payments	Outsourced	External	Disclosed	1	Not available

4.2.1 IS Acquisition: In-house Developed or Outsourced

The research found that out of the eleven (11) systems from the eight (8) ministries/departments where the study was conducted, ten (10) systems were outsourced and only one (1) system, as seen in Table 4.1 was developed in-house. This shows that there is little or no in house software development in most government ministries/departments. All major systems are being outsourced. Out of the ten (10) outsourced systems, six (6) were developed by external suppliers while four (4) were developed by local suppliers. See Table 4.1

4.2.2 ICT Policy Statement for Information Systems

ICT Policy articulates guidelines and describes critical areas for the development and application of ICT in an organisation. MDAs are supposed to have their own ICT policy linked to the government ICT policy. During the study, one (1) department out of the eight (8) ministries/departments indicated that they have got an old ICT policy that is not being used (see Table 4.1). Another department said it is in the process of developing the policy but it was noted that the policy is specific to a particular information system and may therefore not address all issues to do with ICT in their department. The other remaining six (6) ministries/departments responded that they do not have an ICT policy (see Table 4.1) but appreciated the importance of having one.

4.2.3 Outsourcing Strategy and Guidelines

There are currently no outsourcing strategies/guideline for all ministries and departments as shown in Table 4.1. All participants indicated that they use general procurement guidelines provided by Office of the Director of Public Procurement (ODPP). The general guidelines provided by ODPP do not provide all the stages that are supposed to be followed when outsourcing IS. They also do not clearly stipulate when to outsource, where to outsource, who is supposed to be responsible and how to manage the relationship with the Service Provider. However, participants unanimously agreed that outsourcing guidelines are very important if implementation of IS in government is to succeed. It was observed during the study that in the absence of IS outsourcing guidelines, systems are procured which do not meet user requirements, are expensive and are not properly supported by the service provider. In

one ministry, an example was given of three other systems (not included in Table 4.1) that were procured without following proper procedures and they ended up being abandoned although payment was made. This is what one of the participants said: -

“...These three systems were procured without following proper procedures as a result all of them are not functioning although payment was made.” HIT2.

One system was procured after some members from one section within the ministry came across a similar system being used to buy and sell produce during a study tour and they used their ministry's project funds to call for proposals without following proper consultations. The consultant they engaged developed a system that did not meet all the requirements. In the end, they realised that what was seen during their study tour was not what the developed system was doing. The system ended up being abandoned. In the second case, a developer was hand-picked without following procedures at the end, the developer could not deliver. The developer managed to produce prototypes and these have been hanging for more than one year now. The third system was sponsored by a donor and when their time for the project expired, the developers knew that the people who engaged them had closed down and since they had gotten their payment, they never completed the system.

One participant observed that while it is important to have outsourcing guidelines, such guidelines should not be specific to particular ministries or departments to ensure standardisation. The department of E-Government should develop guidelines that must be used by all government ministries and departments as observed by the participant below.

“It is important to have guidelines for ICT but those should not be specific to the ministry possibly the department responsible for ICT needs to develop them.” HIT4

4.2.4 Reason for outsourcing Information Systems

Ministries/departments mentioned the following as some of the reasons why information systems are outsourced. See Table 4.2

Table 4.2: Reasons for outsourcing Information systems

Reason for outsourcing	Ministry			Department				
	A	B	C	A	B	C	D	E
Capacity	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
Time	Disagree	Agree	Disagree	Agree	Disagree	Disagree	Agree	Agree
Complete System	Disagree	Agree	Disagree	Disagree	Disagree	Agree	Disagree	Disagree
Complexity	Disagree	Agree	Disagree	Disagree	Disagree	Agree	Agree	Agree
Security	Disagree	Agree	Disagree	Disagree	Disagree	Agree	Disagree	Disagree
Donor Condition	Disagree	Disagree	Agree	Disagree	Disagree	Disagree	Agree	Agree

one of the reasons which all participants mentioned for outsourcing information systems was capacity (see Table 4.2). Participants felt that government departments/ministries do not have enough capacity to develop their own information systems. The second most important reasons were time taken to develop the system and the complexity of the system. Participants were of the view that the systems are very complex such that they cannot be developed by the IT personnel within the ministries and departments and also argued that in house software development takes more time as compared to outsourcing. They further argued that outsourced systems are already mature systems on the market; they would have undergone rigorous testing and all other standards. The third most important consideration was donor conditions. Participants observed that if the system is being funded by donors, sometimes it may be their condition that the system has to be outsourced.

Another reason which was cited by one of the ministries is the need to make a complete system. One participant felt that people you may outsource from may generally have the knowledge of how to come up with a complete system. So if one is avoiding a system which is half way developed, they may buy one off the shelf or outsource from those whom have had a lot of experience in the development of similar systems. One department mentioned the issue of security as a very important factor in outsourcing systems. Some systems require a high level of security.

4.2.5 Outsourcing Process that the Ministries/Departments follow

All the seven (7) ministries/departments indicated that there is no specific process that is followed in outsourcing information systems. The process used is the same as the ones used in outsourcing any other services. The first step is to draw terms of reference. Once the terms of reference are drawn, an advertisement is placed in the newspapers and bidders respond. Once the bidders have responded, the evaluation team meets and selects the successful bidder. Thereafter a contract is signed, software is developed, tested and implemented. All participants indicated that they do not have specific service providers. They just follow the procurement procedures and the ones who qualify are the ones that are chosen.

4.3 Stakeholders in Outsourcing Project

In every ministry and department, there is a committee which is responsible for the procurement and it is referred to as Internal Procurement Committee (IPC). The membership of IPC can vary from MDA to MDA but mostly the committee is composed of members from ICT, Procurement, Administration, Accounts and members from user departments. The committee may also have a Project Officer who oversees the day to day running of the project. In some ministries, the Principal Secretary (PS) is the Chair of the Committee, with the role of facilitating the procurement process from tendering to awarding the contract.

4.3.1 Decision Makers in Outsourcing

Decision makers in outsourcing IS varies across ministries and departments. One ministry indicated that the Director of Administration who reports to the Controlling Officer is responsible for outsourcing decisions. In another Ministry, the committee as a whole with guidance from management makes the decision to outsource. While in two departments the decision emanates from their requirements as quoted by one of the participants: - *“I cannot say that there is one person who makes the decision because for us to come up with a decision to outsource, the decision emanates from our requirements. Because we did what we call a business reengineering process.”***PO1**. In some two departments, the user departments make decision to outsource as mentioned by one of the participants:- *“Mostly is the user departments which have got major say on whether to move on or not.”* **PO4**

4.3.2 E-Government Involvement in IS Outsourcing by other Departments

The study revealed that only four (4) out of eight (8) ministries/departments consult E-Government department when outsourcing IS. Those ministries and departments that understand the mandate of the Department of E-Government do consult it for strategic direction. In addition, consultations are done to ensure that proper government ICT standards and guidelines are followed, though not specific to IS outsourcing. Those who are not aware, carry out the outsourcing without consulting the department of E-Government.

4.3.3 User Involvement in the Acquisition Process

Seven (7) out of fourteen (14) participants who were asked this question, indicated that they were not involved in the outsourcing process while the other seven (7) said that they were partly involved. Users who participated in the acquisition process provided their views in terms of functionalities that a system is supposed to perform.

All participant unanimously agreed that user involvement is very important in IS outsourcing if the system is to meet user requirements. Some participants argued that users are the ones who use the system and if involved, they take ownership of the system. This is what one of the participants had to say:-

“They have to be involved, because they are the ones to use the system. Whenever the system is being developed whether it is outsourced or not, it has to meet user requirements so in system outsourcing users are also very critical.” SAP4

However, it was noted during the study that most of the users who are involved are the ones at top level and the ones at lower grades are ignored yet these are the ones who are at operational level and use the system in all their activities as quoted by one of the users: - *“The consultations should be from the most junior to top management. They should not just consult top management because top management may not know what happens down there so the consultations must start from the clerk up to the most senior user.” USR 7*

It was also noted that users are only involved at the beginning of the project and left out through the other stages. This has resulted in systems which do not meet user requirements hence users start asking for some functionality when the system has already been implemented as quoted by one of the participant *“We are having so*

many problems with reports. We are having different Principal Secretaries asking for certain reports which are not available in the system. It's now when we are trying to find out ways of having those reports put in place." **SAP6**

4.3.4 Role of Executive Management during Information Systems Outsourcing

During the study, it was noted that the role of the executive management varied across organizations. One department indicated that they have a Steering Committee that gives policy direction, approves plans and budgets. The committee also monitors progress of implementation and executive management is part of that committee.

Another department reported that management is part of the IPC and are involved in the outsourcing process. While another department said management is there to guide the process of outsourcing. Three ministries indicated that management is only involved at the beginning of the outsourcing process to approve the outsourcing initiative and budgeting.

The participants agreed that management is there to provide strategic direction, guidelines and make sure that the objectives are achieved. They also make approvals for the outsourcing to continue. They ensure that the best systems are put in place and also provide necessary support so that the implementation is to the benefit of the institution.

4.3.5 Role of Procurement Officers during IS Outsourcing

Procurement officers work hand in hand with other stakeholders throughout the process of outsourcing. They are responsible for drawing terms of reference, placing of advertisements in the newspapers, evaluating and selecting successful bidder, drafting and signing a contract with the service providers.

Eight (8) out of fourteen (14) participants interviewed express worry that the service providers are not given enough terms of reference and that they are not monitored to make sure that what was defined in the contract is adhered to. This has resulted in provision of poor services, hidden costs, hidden information and some of the functions spelled out in the contract not being implemented. This is what one of the

participants said: “*The main problem is the identification of suppliers. I do not know if the suppliers are given enough terms of reference.*”**SAP6**

4.4 Agent and Principal Relationship

This was aimed at finding out how the relationship of an agent and principal may affect the process of outsourcing information systems. An agent is the service provider while the principal is the client.

There are different factors that are considered when choosing an IS service provider. Fourteen (14) participants who responded to this question mentioned factors in Table 4.3 as what must be considered when selecting a service provider.

Table 4.3: Critical Factors for Selecting a Service Provider

Critical Factor	Number of Participants and their comments
Experience in undertaking a similar project	All fourteen (14) participants mentioned relevant experience in developing a similar system as the most important factor to be considered when outsourcing IS. The service provider must have undertaken a similar project somewhere.
Capacity to do the job and relevant expertise	All participants (14) mentioned capacity as the most critical factor. The service provider must have well qualified and skilled personnel who can ably handle the project within the timeframe.
Track record of the service provider	Twelve (12) participants mentioned reputation of the service provider as the most important factor to be considered. The service provider must have good track record from where they have done similar projects.
Transfer knowledge to customer	Nine (9) participants felt the service provider must demonstrate that they can train and transfer knowledge to the client.
Well established	Seven (7) participants argued that the service provider must be well recognized.

Provide support after implementation	Seven (7) participants mentioned that the service provider must be able to provide support after implementation.
Must have latest technology	Ten (10) participants felt the service provider must implement the system using the latest technology on the market.
Location of the service provider	Four (4) said the service provider must be a local provider to cut down on travel costs.
Cost	Three (3) were of the view that the system must be cost effective.
Security issues	Two (2) mentioned how the service provider handles the security issues as a factor to be considered.
Can work with others	Two (2) said if it is an external provider, must be able to partner with a local provider.
Meet all technical specifications	Nine (9) responded that the service provider must meet all the technical specifications that have been provided.
Delivery period	Four (4) mentioned time taken to deliver the system as a factor to be considered
Achieve certain threshold	One (1) mentioned that the provider must achieve a certain threshold.

Participants mentioned experience in undertaking a similar project and capacity to do the job (see Table 4.3) as the most critical factors that are considered when selecting a service provider. One participant had this to say: *“We need to look at the relevant expertise in developing the system. I am saying this because in one of our systems, the service provider was not conversant with land issues as a result, some modules were not properly developed.”* **PO4**

The second important factor that was mentioned by the participant was track record of the service provider. The service provider must have good reputation from where he carried a similar project. The third most important factor was technology; the service provider must implement the system using the latest technology on the market.

Although cost is considered as the most critical factor in IS outsourcing, only three participants (3) of the participant mentioned it.

4.4.1 Accountability and Process for Monitoring and Managing the Relationship with the Service Provider

Good communication between the service provider and the client is important to ensure that the service provided is of good quality. However, during the study, it was noted that all ministries/departments do not have specific communication channels that are used to monitor and manage the relationship between the two parties. One of the methods which was specified by all of them is a contract. A contract is signed between the supplier and the client. Within the contract, there is a work plan which government actually put across its expectations and the scope of work that the supplier should undertake. If the supplier fails to comply with the contract terms, remedial actions are taken. Another way of monitoring progress mentioned by participants is through weekly and monthly reports produced by the supplier.

One participant was concerned that a contract may be signed but monitoring the implementation of what was signed in the contract may be a challenge due to lack of expertise by the client. As such, the client may end up not benefiting from the contract. This is what he said:-

“We may sign a contract with the service provider but we may not have the right skills to do proper supervision for whatever is there in the contract. May be we need to ask some firms that have the expertise to do the supervision on the outcome, may be that can help.” PO4

4.4.2 Concerns, Challenges and Possible Conflicts

There are a number of concerns that were raised by participants during the interview. One participant argued that the biggest problem was transfer of knowledge. The service providers do not provide enough training. Users are just trained once and the training is short. Similarly, the administrators of the system are not given adequate information in as far as the operation of the system is concerned. Another participant revealed that some conflicts arise between the Procurement Sections and the ICT units. In the absence of the ICT procurement strategy, each section would want to be dealing with the service provider directly for their own interest. This problem can be

resolved by developing an ICT procurement strategy and guidelines. One of the participants observed:

*“There are cases where the service providers come direct to the ICT personnel because they know that we are the ones who understand their language for example if they want to do an update, backup or they want a report. However, the procurement officers want to be the link between the service provider and ICT staff so that we should not be dealing directly with the service provider for their own interest.”***HIT2**

Three (3) MDAs out of the eight (8) MDAs expressed concern over nonpayment of the services by the government. Most of payments are still outstanding and this has affected the delivery of the service. Some service providers have ended up not offering some of the required services and even holding back some access rights and privileges.

4.4.3 Objectives and Reliable Measures of Performance

Four (4) out of the eight (8) ministries/departments responded that the performance of the service provider is measured based on terms of reference specified in the contract. The contract stipulates the activities and expected outputs. The output is the measurement for success. If the outputs have been achieved then it means the system is successful but if not, then remedial actions may be taken. The other remaining three ministries/departments said that performance is determined by the uptime and down time of the installed system, and the output from the system like reports that the system is capable of producing.

4.4.4 Previous Trends in Outsourcing of Information Systems

Participants had different views on how previous IS outsourcing was done. Two (2) departments said it was their first time to outsource while the other two (2) departments said it was successful. Three (3) departments revealed that previous outsourcing was not successful. In one (1) department, the system was not able to produce the expected results and the system was discontinued.

In another department, when a consultant carried out an analysis of the system, it was revealed that a system could only store data but could not do any data analysis as such, the users stopped using it as the participant testifies below:-

“I think it was a failure because even the people that were intended to be using the system are no longer using it. The findings of the consultant that I was talking about have revealed that it is not a system. It is just like the platform where you can deposit data but cannot analyse it.” **PO4**

The last one said that out of the nine modules which the system has, only three modules are being used.

“The [...] has got nine modules, but out of those nine, only three are being used. People are not willing to use the other modules.” **HIT5**

4.4.5 Procedure for Measuring the Success/Failure of any Outsourced Information Systems

Participant said the success/failure of outsourced information system is measured based on what was agreed in the contract. If the service provider is able to deliver what was specified in the contract, then the system is successful and if it is not able to deliver according to the contract then we say it is a failure.

4.4.6 Mechanisms for Managing the Progress of Outsourced Information Systems

All the eight (8) participants who were asked this question indicated that the control mechanisms defined in the contract such as review meetings, management meetings and weekly or monthly reports are some of the mechanisms used to manage the progress of outsourced information systems.

4.5 Impact of Outsourcing

The Impact of IS outsourcing has been analysed through benefits and risks.

4.5.1 How Outsourcing Affects Departments

Participants realized that outsourcing has got both negative and positive effects. Fourteen participants (14) who were asked this question gave different potential benefits of IS outsourcing (See Table 4.4).

Table 4.4: Potential Benefits of IS Outsourcing

Potential Benefits	Number of Participants and their Comments (Out of 14)
Service Provider's Capacity	Nine (9) were of the view that the service provider may have enough skilled personnel who can ably handle big projects within the given time.
Access to Latest Technology	Seven (7) responded that service providers may bring in latest technologies which may not be locally available
Reduced Time in Development	Six (6) argued that since the service provider has enough capacity and experience, time taken to develop the system may be less as compared to in-house development.
Experience	Nine (9) argued that a chosen service provider would have worked on a similar project before and must have gotten enough experience.
Skills and Knowledge Transfer	Five (5) felt that through training, users and internal IT personnel may acquire new knowledge and skills from the service provider.
Reduced Cost	Three (3) were of the view that due to reduced development time, total cost of development is less.
Improved Security Features	Two (2) responded that the service provider may bring in better security features.
Readily Available System	One (1) commented that some systems would have already been implemented elsewhere and what is required is customization according to ministry's/department's requirements.

Participants gave service provider's capacity as the most important benefit that the organization may get by outsourcing IS. Participants argued that most departments/ministries are understaffed, and do not have well trained and skilled personnel who can competently handle systems of such magnitude. Access to latest technology was the second most important benefit that was given while readily available systems was the least benefit mentioned by participants (see Table 4.4).

4.5.2 Perceived Risks in Information Systems Outsourcing

Fourteen (14) participants who responded to this question gave factors in Table 4.5 as some of the risks in information systems outsourcing in government.

Table 4.5: Risks in Information Systems Outsourcing

Risks of Outsourcing	Number of participants (Out of 14)
Hidden Costs	Twelve (12) commented that clients are charged additional costs of upgrades and maintenance which are not clearly specified in the contract.
Hidden Information	Twelve (12) commented that some service providers may not disclose all important information and may also be unwilling to transfer skills to the client.
Inadequate Training	Nine (11) noticed that the level of training that is provided is not enough to enable users and technical personnel competently use or support the system as such they spend time learning the system on their own or not using certain parts of the system.
Underutilizing Available Talent	Seven (7) felt that the available human resource is underutilized and therefore killing existing talent
Lack of Ownership	Six (6) noticed that clients are not given full ownership of the system as such they may not be able to modify the system according to their requirements.
Delays in Solving problems	Five (9) noticed that it takes time to resolve a problem since some service providers have to travel a long distance.
Corrupt Practices	Four (4) noticed that due to bureaucratic tendencies in government, some members of staff may take advantage and engage themselves in corrupt practices with the service provider.
Inability to understand requirements	Six (6) argued that the service provider may not be able to fully understand the functional requirements of the system and end up developing a system not meeting user requirements.
Security of Information	Three (3) commented that the service provider may have control over the system therefore the security of client's information may be compromised and confidential information could be lost.
Expensive	Four (4) felt outsourcing is expensive due to maintenance costs and renewal of licenses for some systems.
Difficult to Monitor	Two (8) were of the view that the client may not have enough capacity to monitor performance of the service provider and the provider may take advantage of that.

The riskiest factors that participants cited were hidden costs and hidden information (see Table 4.5). Participants observed that there are certain charges which are not clearly specified in the contract but the client has to meet them whenever a particular service has been provided. It was also noticed that some service providers were unwilling to reveal some important information to the client. The second risky factor was training. Most participants felt that the level of training provided is not enough to allow users competently use the system or for ICT personnel to provide support. The least risky factor that was mentioned by participants was security of information.

Participants felt that security of client's information may be compromised and confidential information could be lost.

4.5.3 Outsourcing vs. In-house Software Development

All the fifteen (15) participants who were asked this question prefer in house software development to outsourcing. They argued among other things that internal developers understand business requirements much better unlike external developers who may sometimes have problems in understanding business requirements. They further argued that if internal developers are involved, it takes short time to fix problems unlike if you involve the third party who may sometimes be required to travel long distances and in process becoming expensive. They also noted that with in house software development, developers own the system. They feel honoured because it is something which they developed themselves. Participants also argued that in house software development improves the knowledge and skills of developers while outsourcing is killing the little knowledge that they had. However, participants realised that for in house development to be successful, there is need for technical expertise therefore government should empower its own local staff to acquire necessary skills required for software development.

4.5.4 Previous IS Outsourcing Implementation

Participants had mixed views on how previous IS was implemented. Two (2) out of the eight (8) ministries/departments indicated that systems were properly implemented while the other three (3) said they were not successful. Two (2) ministries said that the IS outsourcing was not successful because systems did not meet user requirements while one ministry said that three systems were abandoned before implementation because some guidelines were not followed. However, one common problem that was mentioned by all participants is to do with training. They suggested that due to high staff turnover, training should be on going. This is what one of the participants said:

“One of the problems is that in government, there is high staff turnover. Most of the staff that was trained at that time has moved to other departments and it has left a vacuum for the other staff to be trained as

well and because of poor training plan, it has left some staff untrained and incapable of using the system.” SAP 4

4.5.5 Ways of Improving the Outsourcing Process

Two (2) things that participants think if implemented can improve the process of outsourcing are terms of reference and involvement of all stakeholders in outsourcing process. The service providers must be given enough terms of reference and monitored to make sure that terms of reference defined in the contract are adhered to. All stakeholders must be involved throughout the process of outsourcing and these include among others, top management, procurement staff, IT staff and users at all levels.

4.5.6 Skills to Cope with the New Environment after Outsourcing

Four (4) out of fifteen (15) participants who were asked this question said they have got the necessary skills to cope with the new environment while the rest said they did not and needed more training. This is what some of the participants said.

“Some of us we do not know computer. We are illiterate somehow, we cannot go very far.”USR2.

4.5.7 Job Training Experience after Outsourcing

Four (4) out of fifteen (15) participants who were asked this question indicated that they had enough training but eleven (11) felt that the training was not enough and needed more time. Two (2) participants said they were trained on a number of things but they could not do them because they do not have rights.

4.5.8 Role or Working Task after Outsourcing

Six (6) out of the eight (8) systems Analysts/Programmers that were asked this question said that their roles have changed. For example most of Systems Analysts/Programmers are now doing systems support. All users said their roles have not changed except that they are now processing most of the transactions electronically. This is what some participants said:-

“Much of the work that I am doing is that of systems support other than programming and analysis.”SAP2

4.6 Mandate of Department Of E-Government

4.6.1 E-Government Mandate

The study revealed that four (4) out of the eight (8) ministries/departments are aware of the mandate of department of E-Government. This means the other four (4) outsource Information Systems without consulting department of E-Government and sometimes not even the ICT units within their ministries or departments. Much as some were aware of the mandate, they were not sure of its exact details except one department.

The participants at department of E-Government defined the mandate of the department of E-Government as follows:-

To lead, coordinate and manage ICT development at all levels be it in public sector or private sector. This includes the delivery of innovative and efficient government solutions and services as well as maximising the impact of ICT in the achievement of Malawi Growth and Development Strategy Goals (MGDS).

Two (2) participants from department of E-Government who were interviewed acknowledged that most of the ministries/departments are not aware of the mandate of the Department of E-Government and even those who are aware do not adhere to the mandate. The problem is that the department has not been proactive enough to sensitise the Ministries, Departments and Agencies (MDAs) of their mandate and also to enforce their power because the mandate has got no legal backing as such ministries will go and procure major ICT systems without the involvement of the department.

4.6.2 Reasons why the Department of E-Government is not Developing IS for MDAs

One (1) participant argued that ministries/departments outsource information systems because they are not aware of the Department of E-Government mandate. The department has got the development section that is supposed to be developing systems for the ministries. Before outsourcing, ministries are supposed to consult with the Department of E-Government and if the department does not have the capacity to develop the system, it may result in a decision to outsource.

Another participant said ministries/departments are outsourcing IS because it has become fashionable and they feel thus the better way of efficiently carrying out their tasks. Most of the systems that they need may not be readily available within the department and may not have the patience to wait for the programmes to be developed internally. Participants also observed that donors have influence on projects that are funded by them. They may dictate how the IS should be procured.

4.6.3 Why Ministries/Departments are Creating Parallel ICT Structures

Participants explained that those ministries/departments that are creating parallel structures are the ones with donor's projects. Sometimes it is the condition of the donor that they want their own ICT unit because they want to move fast and in the process they bypass the existing ICT unit. The challenge with parallel structures is duplication of effort. At times, donors may be doing similar projects without noticing

*"You find that one donor is doing a project and another donor comes in and is also doing a similar project. This is duplication of effort. The bottom line is that they are not aware of the departments mandate or they are deliberately ignoring it."*EG1

4.6.4 Department of E-Government Outsourcing Strategy/Guidelines

Participants noted that the department has IS policies/standards but most of ministries are not aware of them. The Department E-Government department has not sensitized ministries or departments as a result they procure systems without regard to the standards. The department is currently having problems enforcing the policies/standards because they do not have the legal backing. As part of restructuring, they would like to come up with legal framework. The participants further noted that although the department has guidelines, they do not clearly outline step by step procedures or guidelines on how decision should be made in terms of outsourcing.

This is what one of the participants said:-

"The public sector ICT guidelines just outline that the procurement process should go through the Department of E-Government and then the E-government will decide whether to outsource or not. The guidelines have not gone very far I would say clearly outlining step by step

procedures or guideline on how decision should be made in terms of outsourcing. Broadly, they just say that if the department does not have that capacity, then they should outsource.”EG1.

4.6.5 Do Ministries/Departments Consult E-Government when Outsourcing IS?

Participants observed that ministries may or may not consult the department of E-Government when outsourcing IS. Most of them do not consult the department because either they are not aware of the mandate of Department of E-Government or in the absence of legal backing, they know that even if they do not consult the department, they cannot be reprimanded. One participant observed that ministries/departments have lost trust over the years due to underperformance and lack of seriousness on the part of the Department of E-Government. The Department of E-Government has not been effective in the way it carries its duties hence its impact has not been felt among other government departments. Therefore, some MDAs do not see the need of consulting the Department of E-Government when carrying out ICT projects.

4.6.6 Department of E-Government ICT Policy Statement for Information Systems

Participants said that their department has an ICT policy statement. Previously it was called government ICT policy but it is now called standards and guidelines. Most ministries are not using these standards and guidelines because they are not aware of them.

4.6.7 How Outsourcing has Affected Department of E-Government mandate

Participants observed that outsourcing has really affected the Department of E-Government mandate. There are fears that the section that is responsible for development may be rendered redundant. There is also a problem with interoperability. Some systems are supposed to be talking to each other but since they are procured separately, they are not. The participant gave an example of MALTIS and National Registration System (NRS) which require same set of information for registration like finger prints and all biometrics information. If the same people are involved in accessing the services from these two departments, they are required to provide the same piece of information twice. The Road Traffic acquired the system

with their set of requirements in mind and National Registration Bureau (NRB) also acquired the system with their set of requirements in mind. If all this passed through the department of E-government, they would have looked at the holistic picture.

Another participant observed that earlier on, all the development work was done by the department of E-Government but now any ministry/department can decide to procure any system at any time without consulting the Department of E-Government. This may be due to the motivation of the institutions that sometimes when you outsource there are inducements. He further observed that outsourcing may be encouraging bribery and corruption. This is what one of the participants said:

“It is also something to do with motivation of the institutions. Sometimes when you outsource, maybe there are some financial gains with the officers involved so they say if we can outsource this, it will cost so much money but in between, it is possible that they get some inducements. While if it was done internally, it will be at minimum cost but there will be no financial gain for anybody. Outsourcing in a way is the breeding ground for bribes and corruption.”EG2.

CHAPTER 5

RESEARCH DISCUSSIONS

5.1 Introduction

The challenges and opportunities observed in this case study are discussed by following three concepts from Agency Theory: goal difference (the involvement of stakeholders and its impact); risk behaviour differences (the absence of outsourcing strategies or guidelines and its impact); and information asymmetry (the impact of hidden information about the agent).

5.2 Goal Differences

In Agency Theory, when the principal (client) is unable to observe and verify the actions of an agent (service provider), the agent may engage in hidden actions (Devos et al., 2008). The principal must therefore be fully involved in the outsourcing process if the agent opportunistic behaviour of the service provider is to be controlled (Logan, 2000). In this paper, the goal difference is discussed in relation to the involvement of stakeholders and its impact. The study found the following stakeholders as having greater impact on the success of IS outsourcing.

5.2.1 Executive Management

Executive management is very important in IS outsourcing. Executive management provides policy direction, approves outsourcing process from one stage to another and also approves the budget. The involvement of top management in outsourcing information systems is very critical because top management makes decisions on which IT innovations to invest in and any decision made by junior managers is likely to succeed if they have top management support (Badamas, 2014). The study found that while in some ministries/departments top management is involved, in most ministries/departments top management is only involved at the beginning of the process and left out throughout the process. This led to management not

understanding the process that is involved in IS outsourcing. It was also surprising to note that while top management is involved in the outsourcing process, they do not make efforts to involve the Department of E-Government that has the mandate to lead, Coordinate and manage ICT issues in GoM. Top management is the one that is supposed to understand better the need for technical advice from the Department of E-Government.

In some ministries, the service provider took advantage of lack of interest of top management and therefore manipulated the original agreement subsequently ignoring contracts and resulting in hidden costs and information. Eisenhardt (1989) argued that the agent is likely to behave in the interest of the principal when the principal is actively involved in the outsourcing process and has information about the agent. To avoid information hiding and different goals between the principal (top management) and the agent (service provider), top management must be fully involved and demonstrate leadership and commitment in the IS outsourcing process.

5.2.2 Users

Information systems success does not depend only on developing or acquiring the right system but the system being suitable to its users (Badamas, 2014). Suitability can be achieved if the users are involved in the outsourcing process. An outsourced information system must meet the needs of its users at all levels and this can only be possible if users are involved throughout the process. It was observed during the study that most of the users who were involved were from top management. Most of the users at lower levels were not involved and this led to outsourcing systems that did not meet users' requirements. Badamas (2014) argued that users must be involved in design, development and implementation of information systems to avoid implementing an information system that may not be used. To obtain users' full support, they should be involved throughout the process.

5.2.3 Procurement Officers

Procurement Officers are responsible for procurement of goods and services including information systems and they work in collaboration with other stakeholders throughout the process of outsourcing IS. Most participants expressed concern on

how selection of service providers is done and the terms of reference that they are given not being enough. One of the critical success factors in IS outsourcing defined by Gonzalez et al. (2010) is choosing the right provider. Selection of a capable service provider can guarantee outsourcing success. The choice of the service provider is very important as success or failure of outsourcing will mainly depend on it. A detailed evaluation and selection of potential service provider is necessary before a contract is signed. The service provider must also be given enough terms of reference. The contract must clearly stipulate what the service provider is expected to do and must be monitored to ensure compliance.

Several factors are considered when selecting a service provider. In this study the most mentioned important factor was experience of the service provider obtained in undertaking a similar project as Gonzalez et al. (2008) argued that a provider must have enough experience in a similar project to ensure better quality and timely completion of the project.

5.2.4 Department of E-Government

The Department of E-Government, by virtue of its mandate to lead, coordinate and manage ICT issues in government, is supposed to be one of the stakeholders of government ministries/departments that are outsourcing information systems. MDAs are required to consult the department of E-Government for technical guidance before any procuring process but at times this has not been the case. Most MDAs procure systems without the knowledge of the department. This has resulted in MDAs procuring systems that do not meet Government ICT Standards. The study has shown that most MDAs are not aware of the existence of department of E-Government and its mandate and most MDAs outsource systems without involving the department. Ignorance of the mandate of the Department of E-Government by MDAs combined with ineffectiveness of the department, has led to some donors creating their own ICT structures in the process bypassing existing ICT units. This has resulted in duplication of efforts where donors have ended up doing similar projects without noticing. If E-Government was proactive, such situations could have been avoided. Those who are aware of the existence of the Department of E-government either consult it or deliberately ignore it. It was noted during the study that some MDAs ignore the Department of E-Government because of their previous experience that

they encountered when they dealt with it. They argued that the department is ineffective and lacks seriousness on its part. It was also noted that in the absence of an enforcing law that empower the Department of E-Government to enforce its mandate, this promotes laxity in procurement processes. The Department of E-Government must ensure that its mandate is enforced throughout all government ministries/departments. It must also be proactive to take charge of all ICT issues in GoM and make sure that its mandate is adhered to.

According to Dibbern et al. (2004) cited by Pena (2012), there are five stages that a business must analyse when outsourcing IS. Department of E-Government as a custodian of ICT services is supposed to analyze these stages whenever MDAs are outsourcing IS. The first stage is to find out why a ministry/department wants to outsource IS. A thorough analysis is supposed to be carried out to ascertain whether there is need to outsource or not. Advantages and disadvantages of outsourcing are also supposed to be considered. The second stage looks at what is to be outsourced. After a decision is made to outsource, Department of E-Government is supposed to lead in analyzing different alternatives of outsourcing arrangements. A decision is supposed to be made as to whether to go for full or partial outsourcing depending on the functions that are to be outsourced. The third stage looks at the guidelines, procedures and stakeholders to be involved. The Department of E-Government must ensure that proper guidelines and procedures are being followed when outsourcing IS. In the absence of such guideline and procedure, it is supposed to develop them. It should also facilitate the process of identifying stake holders to be involved in the procurement process. The fourth and fifth stages are about implementation. Department of E-Government must provide guidance in the selection of the service providers, drafting contracts and making sure that the contracts are being followed.

5.3 Risk Behaviour Differences

Agency problem may arise when the principal has problems in measuring what the agent is doing (Eisenhardt, 1989). One way of avoiding such problems is by having an outsourcing strategy. The outsourcing strategy specifies the reason for outsourcing, analyses results of an agreement, defines outsourcing guidelines that are supposed to be followed and clearly states the roles and responsibilities of different stakeholders in

IS outsourcing. The risk behaviour difference is discussed in relation to the outsourcing strategy, guidelines and the impact that it may have on outsourcing.

5.3.1 Outsourcing Strategy/Guidelines

The IS outsourcing strategy is a plan that helps an organisation to assess IS that can be developed by the internal IT departments and which ones are to be outsourced, when to outsource, whether to use one vendor or multivendor approach, how to manage the relationship with the service provider, how outsourcing will help the organisation achieving its strategic goals and the benefits associated with it (Dibbern et al., 2004 cited by Pena, 2012). Outsourcing strategy/guidelines are very important and the absence of such guidelines, has led to ministries/departments outsourcing systems which do not meet user requirements and are eventually abandoned. Unavailability of guidelines has also created conflicts amongst stakeholders; for example, ICT and Procurement sections have at times been in conflict because roles and responsibilities for those involved in IS outsourcing are not clearly stated.

The Department of E-Government developed ICT policy, standards and guideline but they are general ICT guidelines not specific to IS outsourcing. A clearly defined outsourcing process would act as a standard for IS outsourcing and its absence has led to some ministries and departments missing important stages during outsourcing resulting in conflicts between the service provider and the client. The department of E-Government must therefore develop guidelines specifically for outsourcing.

5.3.2 Reason for Outsourcing Information Systems

Ministries/departments may have different reasons for outsourcing but during the study, one of the reasons that was given was capacity to develop systems in-house. The findings are consistent with Stanimirovic (2013) who in his study found out several factors that influence outsourcing in public sector and the leading one was lack of expertise, knowledge and skills within the organisation. It was observed during the study that most ministries/departments are understaffed in terms of ICT personnel and those few members of staff who are available do not have the necessary skills and experience to develop systems of such magnitude. It was also noted that staff turnover due to posting from one department to another is high as such it is difficult to build a software development team. Some ministries/departments are

being headed by junior staff that is not part of the management decision making team, making it difficult to contribute their suggestions/opinions for decision making.

Time taken to develop the system and complexity of the system were the second most important reasons why ministries/departments outsource information systems. The findings revealed that some systems are very complex such that they cannot be developed by the IT personnel within the ministries and departments and it was also noted that in house software development takes more time as compared to outsourced systems that are already mature on the market. Donor condition was the third most important reasons for outsourcing IS. Some donors demand that systems being funded by them must be outsourced because they would want them delivered within a certain period of time. Another reason for outsourcing is the need to have a system that is complete. Participants felt that the service provider may have the capacity to develop a system that meets all the required functionalities. Security is another reason why ministries/departments outsource information systems. It was noted during the study that some systems require high security features that cannot be developed internally hence the need to outsource the IS. Financial gain is another reason why ministries/departments outsource information systems. It was observed during the study that officers involved in the procurement process might be motivated to outsource IS due to some inducements from service providers. May be such inducement is done to secure contracts resulting in contracts being awarded to those who do not qualify who end up supplying substandard systems. Outsourcing has therefore become a conducive environment for bribery and corruption in some ministries/department.

5.4 Information Asymmetry

Agency problem may arise when an agent possesses hidden information about the real quality of his /her services and the principal is unable to find out that information (Devos et al., 2008). This situation may lead to poor quality of the service. A good service provider is, therefore, expected to make all important information available to its client for the success of the project.

5.4.1 Monitoring and Managing the Relationship with the Service Provider.

Monitoring and managing relationship with the service provider is vital for the success of IS outsourcing and one way of doing this is by a contract agreement as mentioned by most participants. Cox et al. (2012) emphasise that the contract management and trust have the largest impact on the success or failure of the outsourcing arrangement. They argue that to avoid risks, hidden costs and information, contracts must be detailed and must specify all the requirements that must be met by the provider during the life of the contract. It must stipulate the activities and the expected outputs and these may be used as a measurement of performance. The provider will only give what was specified in the contract and anything that is not in the contract may attract additional cost. A contract must also clearly define mechanisms for managing the progress of outsourced information system.

Hidden costs were one of the negative effects which most participants mentioned as affecting the outsourcing process. There are some costs which the provider charges after implementation especially when providing support to the systems and these costs are not included in the contract. In order to avoid hidden costs, ministries/departments must make sure that the contracts are properly expressed. They must understand all the requirements and all the aspects of the services that are to be provided before outsourcing and a contract must clearly provide all the details (Barthelemy, 2003a cited by Cox et al., 2012).

Cox et al. (2012) further argued that apart from the contract, the organisation also needs to develop internal capacity that must monitor the provider to make sure that the implementation is in line with what was specified in the contract. Ministries/departments therefore need to have a champion to follow the process through and ensure that all checks are done at the right time.

Cox et al. (2012) also noted that establishing trust between the service provider and client is very important. No matter how detailed a contract may be, it is not possible to include all the details in anticipation of changes in requirements owing to technological changes. Trust is therefore necessary to ensure the provider remains

flexible to changing needs because it becomes difficult to negotiate subsequent changes to the contract.

The study also showed that some providers had problems understanding how the organisation operates as such missed most important requirements. Some systems were developed which could only deposit data but could not analyse it. Systems support is another major problem that was cited by the users. Service Providers take a lot of time when contacted to provide support. Heeks (2002) argues that if an information system is not well supported, it may lead to sustainability failure. A project may fail during the operation phase. If users are not satisfied with the support that they are getting from the provider, they may end up not using or underutilising the system.

Training is another area where participants were not satisfied with because most of them felt that training was not enough and was done in a hurry as such, some users ended up having problems using the systems. Even Systems Analysts/Programmers (who participated in this study) felt that instead of improving their knowledge and skills, regrettably, IS outsourcing is killing the little skills which they have. They have suggested that GoM should build capacity within the public sector so that some systems are developed within other than outsourcing each and every system.

CHAPTER 6

CONCLUSION

6.1 Introduction

This chapter concludes the findings of the research. It presents the recommendations based on the research question and objectives. It further presents the limitations, contributions and further research that may be carried out related to this study.

6.2 Research Summary

The aim of this research was to explore challenges and opportunities of IS outsourcing information systems within the context of government ministries and departments in Malawi. The research question for this study was: *Why and how are IS outsourced and how does this practice impact the provision of government services?* In order to achieve the objective and answer the research question, the researcher carried out a literature review on different topics related to IS outsourcing, developed a theoretical and conceptual framework from the three main factors of the agency theory and outsourcing practices, selected participants, conducted interviews, transcribed the interview and analyzed data. The research shows that most government information systems are being outsourced and this trend is likely to continue into the foreseeable future.

6.3 Challenges

This research had some challenges.

The first one is change of the initial plan. Data collection was supposed to be conducted between September and October, 2015 but because the proposal got late approval than anticipated, dates for data collection had to be shifted to December, 2015 and January, 2016. This change coincided with end of the year festive holidays as such some of the participants who were proposed to be interviewed had gone for holidays. The second limitation was refusal by some of the targeted participants to be interviewed. The third limitation was distance, the researcher stays in Blantyre and most of the ministries/departments where the study took place are based in Lilongwe.

The researcher had therefore to travel and lodge in Lilongwe during the period of the interview. Because of distance, most of the verification of information was done through phones and e-mails and sometimes participants could not respond.

The data collection process was also impacted by issues to do with trust, privacy and bureaucracy.

6.4 Recommendations

As the outcome of this study, we recommend GoM to consider the following if it needs to minimise some of the challenges identified:-

- There is need for outsourcing strategy and guidelines
- All stakeholders must be involved at all stages of outsourcing
- Contracts must be well managed
- Users must be provided with enough training and regular capacity building for internal Systems Analyst and Programmers
- Department of E-Government must ensure that MDAs are aware of their mandate.

6.5 Contribution

- The results of the research may be used by other government ministries/departments when outsourcing information systems.
- This study will complement studies that have already been done on outsourcing IS and has the potential to stimulate further empirical studies and results may be compared or add knowledge to existing one. The study will also help academicians and researchers understand how outsourcing is done in government and may be used as reference in carrying out studies in a similar field.

6.6 Further Research

- The research has mainly focused on government ministries/departments. However, similar research may be carried out focusing on non-governmental and private institutions and results may be compared. This research has only focused on outsourcing information systems, further studies can look at other areas in ICT which are also being outsourced by government like hardware and networking services etc.
- The research mainly concentrated on the client side, further research may be done focusing on the service provider because the success or failure of IS outsourcing depends on both of them.

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APPENDICES

Appendix A: Permission Letter from Ministry Of Information And Civic Education

Telephone: (265) 67773858
Telegrams:
Fax : (265) 81 774568
E-mail: info@info.gov.mw



MINISTRY OF INFORMATION, TOURISM
AND CIVIC EDUCATION
PRIVATE BAG 510
CAPITAL CITY
LILONGWE 3
MALAWI

TO WHOM IT MAY CONCERN

Mrs Florence Matewere is an employee in the Ministry of Information, Tourism and Civic Education under the Department of E-Government and is currently studying Masters in Informatics at the University of Malawi, Chancellor College. She will be conducting a research on **"Outsourcing Government Information Systems: Challenges and Opportunities."**

The Ministry of Information, Tourism and Civic Education has granted her permission to conduct this research for Malawi Government. Therefore, I kindly request your office to assist her with an ICT and non ICT officers to participate in the research area. Attached is a list of the sample participants.

I will be looking forward to your favourable assistance on the request.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Justin A.K. Saidi'.

Justin A.K. Saidi

**SECRETARY FOR MINISTRY OF INFORMATION, TOURISM AND
CIVIC EDUCATION**

Appendix B1: Participant's Letter For Participation In A Research



University Of Malawi

Title of the Study:

Outsourcing of Government Information Systems: Challenges and Opportunities

Research Conducted by

Florence Matewere.

Dear Participant,

REQUEST TO PARTICIPATE IN A RESEARCH SURVEY

I am Florence Matewere, a student pursuing Masters of Science in Informatics at University of Malawi. I am conducting a research on outsourcing government information systems. The objective of this research is to analyse the challenges and opportunities of outsourced government information systems. The Findings of the research will assist government recognize and understand the cost benefits and risk factors that may affect outsourced Information systems and actions may be taken before the risks manifest themselves into problems that may lead to IS failure. The results are very pertinent to the government decision and actions may improve or strengthen their practices and policies in this area. The study will collect information through face to face interviews.

This is to request your participation in the interview survey. The information provided will be anonymous by not disclosing in any way details of the participant. The interview will be taking up to 45 minutes to finish.

You have the right not to answer any question that you feel not to respond to. I will gladly send you a copy of the final report.

Thank you for accepting to participate in this survey.

Yours Faithfully,

Florence Matewere.

Appendix B2: Semi-Structured Interviews.

Interview Code:

Ministry/Department:

Date of Interview:

1. INTRODUCTION

- Introduction and greetings
- Ask for permission to record the interview
- The purpose of the interview clearly explained.

The objective of this research is to analyse the challenges and opportunities of outsourced government information systems for the partial fulfilment of the requirements for the degree of Master of Science in Informatics. The Findings of the research will assist government recognize and understand the cost benefits and risk factors that may affect outsourced Information systems and actions may be taken before the risks manifest themselves into problems that may lead to IS failure. The results are very pertinent to the government decision and actions may improve or strengthen their practices and policies in this area.

The data gathered will be kept confidential and will be processed with secrecy. I will be glad if you kindly answer all questions.

2. PARTICIPANT BASIC INFORMATION

Occupation.....
Gender.....
Work experience (Number of Years)
Age.....
Highest.....
Qualification.....
E- Mail.....

3. INTERVIEW QUESTION - adapted from Adeleye (2002) cited by Demaria (2011)

A. OUTSOURCING STRATEGY

1. Does the department/ministry have Information Systems? If yes, how many?
What are they used for?
2. How did you acquire the IS? developed in-house (how many?) or bought off-the shelf (how many?) or outsourced (how many?)
3. Does the department/ministry have an ICT policy statement for Information Systems?
4. Why does the department/ministry outsource Information Systems?
5. Does the department/ministry have explicit outsourcing strategy/guidelines? If not, does the department intend to put in place outsourcing strategy/guidelines? Why?
6. What is the outsourcing process that the department follows?
7. Do you have specific service providers that you use when outsourcing? If yes, why?
8. To what extent is the department/ministry using the ICT policy in the outsourcing process?
9. What role does the executive management play during information systems outsourcing?

B. STAKEHOLDERS IN OUTSOURCING PROJECT

1. Who are the members of the Internal Procurement Committee and what role do they play when outsourcing Information systems
2. Who is/was the most important person in making the outsourcing decision?
3. Do you understand the mandate of the department of E-Government? If yes, what is their mandate
4. Does the department/ministry involve department of E-Government when outsourcing IS? If yes, what role does it play?
5. Does the department/ministry involve users in the acquisition process? If yes to what extent?
6. What is the role of top level management in the IS-related decision making?

C. AGENT AND PRINCIPAL RELATIONSHIP

1. What are the most critical factors that should be considered in choosing an Information Systems Service provider?
2. Do you think that effective accountability and process exists to monitor and manage the relationship with the service provider?
3. Does the department/ministry have any specific points of concern, perceived potential problems, or areas of possible conflict? If yes, how does the department/ministry resolve the problems?
4. Do you think that, the department/ministry has clear objectives and reliable measures of performance defined and operating to benchmark the service provider's performance and assess the quality and cost of the service delivered? If yes what are they?
5. What are the previous trends in outsourcing of information systems? Are they success/failure?
6. What is the procedure that the department/ministry follows to measure the success/failure of any outsourced information systems?
7. What are the mechanisms that the department/ministry follows to manage the progress of outsourced information systems?

D: IMPACT OF OUTSOURCING

1. Have you ever been involved in IS outsourcing and what was your role and experience like?
2. Do you think so far user involvement has noticeable influence on IS outsourcing? If yes/no why?
3. In which ways do you think outsourcing could affect the department?
4. What the potential benefits are of IS outsourcing?
5. What are the perceived risks in information systems outsourcing?
6. What would you prefer between outsourcing and in house software development and why?
7. What is your view and views of other users on how previous IS outsourcing were implemented?
8. Do you think the process can be improved? If yes, how?
9. Do you feel that you have necessary skills to cope with the new environment?
10. How is your experience of job training after outsourcing?
11. Please explain if you have got a new role or working task after outsourcing? If yes, how is it related to your knowledge?

E: MANDATE OF THE DEPARTMENT OF E-GOVERNMENT

1. What is the mandate of E- Government?
2. Are the departments/ministries aware of the mandate of E-Government?
3. Why do departments/ministries outsource Information Systems?
4. Why are ministries/departments creating parallel ICT structures?
5. Does E-Government department have explicit outsourcing strategy/guidelines? If yes, are ministries/departments aware of the guidelines and do they follow them when outsourcing?
6. Do ministries/departments consult E-Government when outsourcing IS? If not why?
7. Does E-Government department have an ICT policy statement for Information Systems? If yes, to what extent are the departments/ministries using this policy in the outsourcing process?
8. How has outsourcing affected the mandate of E-Government in the provision of e-Services?

4. CONCLUSION

Interview review, Comments and Questions

5. APPRECIATION

Thank the participant.

Appendix C: Comparison of Responses by Ministries and Departments

Outsourcing Strategy

Critical Aspects	Ministry 1	Ministry 2	Ministry 3	Department 1	Department 2	Department 3	Department 4	Department 5
No. of Information Systems	3	1	1	1	1	2	1	1
IS acquisition: In-house developed or outsourced	2 Outsourced & 1 developed in house	Outsourced	Outsourced	Outsourced	Outsourced	Outsources	Outsourced	Outsourced
ICT Policy Statement for IS	Does not have	Does not have	Does not have	In draft form	Does not have	Does not have	Does not have	Does not have
Reason for outsourcing IS	Capacity	Capacity, staff Postings, need to make complete systems, time taken to develop the system	Capacity , Limited resources in terms of financing development – depend on donors, cost	Faster to implement, mature systems on the market, capacity to develop systems	Capacity	Complexity of the system, capacity, need for high security	Donor requirement, Capacity	Complexity of the system, capacity to develop the system
Outsourcing strategy/guidelines	They use general procurement guidelines	They use general procurement guidelines provided by ODPP	They use procurements act.	They use general procurement guidelines	They use general procurement guidelines	They use general procurement guidelines	No guidelines, Developed According to A need	Use general procurement guidelines
Outsourcing process that the ministries/departments follow	Draft bid document, advertise, Evaluation	Draw terms of reference, advertise, evaluate, select appropriate company	Advertise, provider submit quotation or bids, IPC selects the right candidate	Business process reengineering, specification development, advertisement, Evaluation	Advertised, Evaluation, select best applicant, offer	Draft bid document, advertise, Evaluation	Consultations, Draw specification Tendering, and selection Process	Draw terms of reference, advertise, evaluate, select appropriate company
Use of ICT policy in outsourcing process	Does not use the policy	Does not use the policy	Does not use the policy	Does not use the policy	Does not use the policy	Does not use the policy	Does not use policy	No policy
Role of executive management	Outsourcing and budget approval	Outsourcing and budget approval	They are part of IPC	Approves plans, budget & monitoring	Make approvals	Guides the process	Policy direction,	Supervisory role, guide process

Appendix D: Comparison of Responses by Ministries and Departments

Stakeholders in Outsourcing Project

Critical Aspects	Ministry 1	Ministry 2	Ministry 3	Department 1	Department 2	Department 3	Department 4	Department 5
Members of Internal Procurement Committee	A steering committee comprising of members from Administration, I T Section, Procurement, Human Resource & Accounts	Members from ICT section, Administration, planning and some heads of sections within the ministry	Principal secretary as chairperson, Accounts section, Procurement, ICT and designated staff from departments.	Project Manager, a member from Finance department, IT section, IT Security and another Project Manager from EPICO	Members from Administration, I T Section, Procurement, Human Resource & Accounts	Procurement Officer, Project Manager, a member from passport section, permit Issuance, Accounts and Human resource.	No internal procurement committee	Principal secretary as chairperson, Accounts section, Procurement, ICT and designated staff from departments
Decision Makers in outsourcing	Director of Administration who reports to the controlling officer	Director of procurement	User department makes the decision	No single person makes the decision. The decision emanates from the requirements	Management makes the decision	Committee as a whole with guidance from management	Management	Management
E-Government Mandate	Do not Know	Do not Know	To provide guidelines on the procurement ICT goods and services in government.	To provide strategic direction in terms of ICT issues.	Do not Know	Oversees government ICT projects	Partly	To provide guidelines on ICT issues
E-Government involvement in IS outsourcing by other departments	Does not involve E-Government department	Does not involve E-Government department	To provide guidelines	To provide strategic direction in ICT Issues	Did not involve	To provide input to the project	Involved during the tendering process	Did not involve
User involvement In acquisition process	Users were involved	Users were not involved	Users were involved	Users were involved	Users were involved	Users were involve	Users were involved	Users partly involved
Role of top management	Grant approvals	to accept or reject the system	Ensures systems are put in place	To provide strategic direction	To provide strategic direction.	To provide guidance	Policy direction	To provide direction

Appendix E: Comparison of Responses by Ministries and Departments

Agent and Principal Relationship

Critical Aspects	Ministry 1	Ministry 2	Ministry 3	Department 1	Department 2	Department 3	Department 4	Department 5
Most critical factors to be considered in choosing an Information Systems Service provider	Experience in undertaking similar projects, capacity, track record, must be well established	Adherence to terms of reference, experience in undertaking similar projects, adequate qualification, history – where they have done similar projects, cost	Relevant experience in developing the system, Service provider support after system implementation, completion of similar tasks in past years, location of the service provider	Quality – must meet all technical specification that we have provided, experience, references where they have done similar assignments, project management issues, cost and capacity building strategies	History of the service provider, experience, size of company and their capability	Latest technology, Issue of transfer of knowledge, experience of supplier, how they have handles security issues before, delivery period, type of equipment, cost.	achieved certain threshold, working with others both in software and hardware , Demonstrate that they can train, capacity, experience and have done similar projects before	work done in past
Accountability and process for monitoring and managing the relationship with the service provider	There are currently no monitoring mechanisms put in place.	If there is an issue, we meet and resolve together	The contract signed with the service provider is used to monitor and manage relationship	A contract is signed between the supplier and the department. Within the contact, there is a work plan which government actually put across its expectations and the scope of work that the supplier should undertake. If the	Not specified.	The project managers from the supplier and the customer side always meet if there are issues to be resolved. Apart from that, review meeting are conducted once a month to monitor the progress.	After a month they give us an evaluation on how the system is performing or on our side, we provide the reports.	The contract signed with the service provider is used to monitor and manage relationship

				contact is not being followed, remedy actions are undertaken.				
Points of concern, perceived potential problems and areas of possible conflict	Procurement officers want to be the link between the service provider and ICT people so that ICT staff should not be dealing directly with the service provider for their own interest.	Failure by the ministry to honour payments.	The service provider did not deliver documentation. The ministry has at times been held at ransom sometimes because of delayed payments.	So far not conflicts. If there are any, then they are resolved during the review meetings	Not very much but sometimes the service provider is paid late due to due to funding problems.	The major problem is paying the service provider late. Another problem is transfer of knowledge. There wasn't enough training both to the users and systems administrators.	Failure by the department to honour payments	They may try to give us better quality services during those months that they need payments but for us we may think that everything is alright not knowing that something was going behind our backs.
Objectives and reliable measures of performance	Currently there are no benchmarks which may be used to take the service provider to task. As long the provider delivers according to the contract, thus all.	Terms of reference are used to benchmark the service provider's performance.	performance is determined by the uptime of the installed system	The outputs, scope or work which is terms of reference are specified in the contract. These are used to measure success	Performance is measured based on the output from the system. e.g. the reports that the system is capable of producing and also the failure rate	The contract clearly stipulates what to deliver in terms of the service so monitoring is done through implementation of what is in the contract.	Implementation of what is stipulated in the contract	The first thing is to get reports from the users. If 50% of the users use the system to the best of their capabilities according to their roles then we say that is a good mark.

Previous trends in outsourcing of information systems	Not around when the other systems were being outsourced	Successful	First time to outsource	Mix bag. Before the systems being implemented, was another outsourcing that came in and that system was not successful. It didn't produce the results that were wanted and it was discontinued. The current one had cash get issues,	Not very successful. The HRMIS has got nine modules, but out of those nine, only three are being used. People are not willing to use the other modules	It was successful	Not successful	No outsourced system before
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Procedure for measuring the success/failure of any outsourced information system	Users must be able to use the system without problems, the outputs from the system must be according to the specification	Adherence to terms of reference	what the system is capable of doing now and what it was planned to do	It is supposed to do everything that you want it to do.	If the system is doing what it was initially intended to be doing.	Lay down what the system is supposed to do.	It is supposed to do what it is expected to do	Not standardised
Mechanisms for managing the progress of outsourced information systems.	Monthly reports, Review meetings done quarterly or every six months	After the systems is implemented, local staff has to be trained, remain in touch with the developers for some time may be unique	appointed an operations manager to manage the process	Projects meetings are conducted from the site weekly or fortnightly where both sides meet to look at the deliverables.	Review meetings are conducted every month to check on the progress.	Project teams and review meetings. They are there to monitor progress because through the meetings, can track what is happening.	No mechanisms. Drafting them.	

Appendix F: Comparison of Responses by Ministries and Departments

Impact of Outsourcing

Critical Aspect	Ministry 1	Ministry 2	Ministry 3	Department 1	Department 2	Department 3	Department 4	Department 5
How outsourcing affects departments	Cost tends to be high. Whenever you have a problem that needs technical expertise, it is a cost.	It takes too long for problems to be resolved and sometimes you have to contact them several times before attending to the problem.	It is slow because whenever you have got a problem, you have to wait for someone from Blantyre to make such corrections	Positively, the team on the ground can benefit in terms of knowledge and latest technologies. The negative part is that the cost is too high; every service provided is a cost. Some service provider may also not give you full support and there is no total ownership.	Most systems being outsourced are not from within. When you have got a problem, you need to fly in the service provider and that is a cost.	The owners of the system do not want to transfer the full knowledge. They always hide something so that the contract should be extended. The system is managed by the providers and the department may be affected in terms of security	On the negative way I would say outsourcing would be detrimental to the development of skills of IT people. On the positive part may be I would say systems have deadlines and if you outsource they would make sure that they meet the deadlines unlike if is developed in house it may take some time.	On the positive part, there is improvement in the collection of revenue. There is also improvement in security. The old System could register a Vehicle several times. On the negative part, compromise on the part of security
Potential benefits of IS outsourcing	Capacity to develop the system, experience, time	New technologies, save development time	Cost, time taken to develop the system	New technologies, better skills, enhanced security, save time, mature systems	Systems are readily available	Better security and performance, knowledge transfer	New technologies, better skills, , save time	Time taken to develop the system. Improvement in security features, Improved revenue
Perceived risks in IS	Additional cost	Additional cost of	Contracts not	Not given full	Time slake between	Hidden	Developers not	Not enough

outsourcing	on maintenance and upgrades, Need for licence	maintenance.	terminating in a normal way, loss of confidential information, providers not fully understanding the functional requirements	ownership of the system, security of information is compromised, high maintenance costs	when we have a problem and that problem to be resolved	information, Not utilising available human resource and therefore killing talent, it is expensive	understanding the requirements	transparency Source code with provider Server at provider site Hence not secure. Total Control by provider. Renew licence every year
Outsourcing Vs. in house software development	In house development as long as there is technical expertise because we can make changes within a short period of time.	In house development	In house development as long as we have professionals because when we have got problems it is easy to communicate. Most of outsourced systems do not meet user's needs.	In house development as a Systems Analyst, it is very good and you feel good and honoured. You take it as something which you have at least built yourself and you feel honoured other than keep on supporting	In house development because outsourcing is expensive. Every flaw that you have you pay in US Dollars.	If we have got expertise, it is better to develop systems in house	In house software development because it will improve our skills in software development. Also you get exposure. If you do not have the skills, you may ask the developer for training. secondly people within they know the system better and there is simplicity of the system	In-house software Development because of Security, no need for Customisation to your Needs. Develop modules according to user needs .
Previous IS outsourcing implementation	Not successful some systems were abandoned	Not successful	Not successful, the system does not meet user	It was properly outsourced but the only	It was not successful	People are complaining about slowness and they	First time to outsource	Users not much involved

	before implementation		requirements	challenge is training. Training is supposed to be on going because you always have new members joining the organisation.		say it is tiresome.		
Ways of improving the outsourcing process	you have to go through necessary steps for example as an organisation you have to involve different departments like procurement, accounts and other departments so that you are given necessary advice and you don't go astray so that outsourcing is fruitful.	All stakeholders must be involved in the outsourcing process.	They need to involve IT staff, users and even management.	Need to have thorough contract documentation and that one should be able to be monitored that what have we done on this particular task and there should be evaluation on each and every step.	Proper selection of suppliers and must also be given enough terms of reference. What happens sometimes is that supplier who has already in the systems are given contracts without looking at those who are more able in the job	Involving the users throughout the project	Our involvement should be increased. We were not constantly consulted. The developers should have been dealing with the users directly other than getting their requirements through a third person.	Executive must believe in technical team and users must be fully involved. Must have someone who is an expert in the field of project management to manage the project.
Skills to cope with the new environment	Yes, but there is still need for more training	Still need for more training	Users are not given full access rights	Need for more training	Those at lower grade do not have enough rights	Yes but we need more training	We need more training	Yes but there is need for more training

Appendix G: Comparison of Responses by Ministries and Departments

Mandate of the Department of E-Government

Critical Aspects	Respondent 1	Respondent 2
Mandate of E-Government	The department is mandated to lead, coordinate and manage ICT development at all levels be it in public sector or private sector. This includes the delivery of innovated and efficient government solutions and services as well as maximising the impact of ICT in the achievement of Malawi Growth and Development Strategy Goals (MGDS). So I would say that we are supposed to lead all ICT issues whether in public or private sector.	The mandate of E-Government is to link, coordinate and manage ICT development in the public sector.
Awareness of the mandate of E-Government	I would say few are aware but even those few who are aware they disregard the mandate of E-government. They are aware but they would still not adhere to the mandate of E-government. The problem is also on our side as the department that we have not been proactive enough to sensitise the MDA's in terms of our mandate and also to enforce our power.	May be the head of IT are aware but I am not sure at the ministry level, at PS level if they are aware of the mandate and our relationships. I think with the liberalisation and with the new done of multiparty, I feel that there is a lot of development in the IT industry and each ministry may think that they are capable of outsourcing without finding out what would be the best interest for government for that particular department.
Why ministries/departments outsource Information Systems	I would say mainly the ministries outsource because they are not aware of the procedure in terms of procurement process what they are supposed to do and also they are not aware that the department has got that section that is supposed to be developing system for the ministries.	I guess maybe it has become fashionable. 2, its better way of efficiently carrying out their tasks and they may not be already available within the department such kind of system and may not have the patience to wait for example if a particular programme is to be developed internally. They wanted it yesterday and now the only solution for them is to go and outsource because if they ask the department it may take some time.

Why ministries/departments are creating parallel ICT structures	This problem is visible in areas where donors have got their projects for example, ministry of health has so many donors and so many projects which have ICT components in there they would even employ their own staff but in other ministries, they follow the same structure.	I suppose sometimes there are donors working with either planning section or whichever project. Then they will go about designing and procuring even to the extent of hiring IT people who are not part of this department. It could be either due to donor's conditionality that they want to move fast and in the course of that they bypass the IT Unit.
E-Government outsourcing strategy/guidelines	The public sector ICT guidelines outline that the procurement process should go through the department of E-government and then the E-government will decide whether to outsource but they have not gone very far I would say clearly outlining step by step procedures or guideline on how decision should be made in terms of outsourcing but broadly they just say that if the department does not have that capacity, then they should outsource. The guidelines were approved in 2013 and we noticed in 2014 that the guidelines were not clear. We came up with a small task force to review the guideline and Come up with more details but only met once because there were no financial resources	We have policies, we have standards but the problem is that we have not sensitised the ministries let alone the IT officers in the ministries as a result they go about procuring without regard to those standards. As part of restructuring we want to have some kind of legal framework so that when we say do this or don't do that, there is a legal backing. Currently we have difficulties to enforce our mandate. So we just say we have this mandate but who else know about it. What else can we do to enforce that mandate? So we are trying to come up with the framework.
Do ministries/ department consult E-Government when outsourcing IS	A few who are aware they disregard the mandate of E-government. They would not adhere to the mandate of E-government. The problem is also on our side as the department that we have not been proactive enough to sensitise the MDA's in terms of our mandate and also to enforce our power.	They may, they may not. It is the issue of mandate. Most of them are not aware of the mandate of this department.

Department of E-Government ICT policy statement for Information Systems.	Previously they were called government ICT policy but decision was made that they should be called standards but they are one and the same they are called public sector ICT standards and guideline. I must say that ministries are not using these standards because they are not aware of these guidelines. When they were approved, our Principal Secretary then wrote a circular to all the ministries but may be the controlling officers did not pass on the message to the relevant officers that these are the guidelines. but one of the issues that we also raised is that much as that communication was made, we were also supposed to go to the ministries to sensitise them why they have the guideline and why they should adhere but to my knowledge, that exercise was not done.	The policy is there but as I said may be as a department we have not been proactive. Some ministries may not be aware of the policy.
How outsourcing has affected E-Government mandate	It has really affected us because 1, as I pointed out earlier, we have got a section that is responsible for development and the ministries are going outside themselves, this section will be rendered useless 2. We have also realised that because the ministries themselves are going out on their own outsourcing, there is a problem with the interoperability of the systems.	Yes it has affected. Earlier on for example anything to do with payroll it was this department, anything to do with financial management it was this department and then the other systems were not in existence but now any one can just work up and say we can procure that , we can do that. It is also something to do with motivation of the institutions. sometimes when you outsource, May be there are some financial gains with the officers involved so they say if we can outsource this, It will cost so much money but in between you never know I am not saying that it happens but it is possible that they get some kick bags. While if it was done internally, it will be at minimum cost but there will be no financial gain for anybody. Outsourcing in a way is the breeding ground for bribes and corruption.