UNIVERSITY OF GHANA

THE EFFECTS OF POWER ON THE SELECTION AND IMPLEMENTATION OF ENTERPRISE SYSTEMS: EVIDENCE FROM GHANA

BY

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DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other university. All references used in the work have been fully acknowledged. I bear sole responsibility for any shortcomings.

CERTIFICATION

I hereby certify that this thesis was supervised in accordance with the procedures laid down by the University.

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Dr. John K. Effah Date

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Prof. Richard Boateng Date

(Co-Supervisor)

DEDICATION

I dedicate this work to **THE MOST HIGH GOD** for the tremendous victory after this long *walk*. Precious Lord, I owe it all to you. Amen.

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LIST OF ABBREVIATIONS

ES - Enterprise System

ERP - Enterprise Resource Planning

SCM - Supply Chain Management

CRM - Customer Relationship Management

COTS - Commercial-Off-The- Shelf

OTS - Off-The-Shell

MCDM - Multi Criteria Decision Making

SaaS - Software as a Service

OSS - Open Source Software

AHP - Analytical Hierarchical Processing

ANP - Analytic Network Processing

IT - Information Technology

IS - Information Systems

RFP - Request For Proposal

RFI - Request For Information

CSF - Critical Success Factors

EAM - Enterprise Asset Management

HR - Human Resource

HRMS - Human Resource Management System

CSF - Critical Success Factors

EBS - Electronic Business Suite

ABSTRACT

The purpose of this study is to understand the effects of power on the selection and implementation of enterprise systems (ES). Literature available on the enterprise systems research dealt more with ES implementation, critical success factors (CSF) for selection, implementation and post implementation management. Good number of studies also focused on ES selection. Very few studies combine selection and implementation in a single study. Though some IS researchers examine power and its role in IS institutionalization and implementation projects, virtually no study examine how power starts form the selection phase and moves into implementation phase of ES implementation in a single project.

This study adopts the Clegg's circuits of power framework as the theoretical lens to examine the effects of power during the selection and implementation of an ES solution in Ghana. The study examines how the exercise of power starts during the ES selection phase and how this power moves into the implementation phase and the consequences it brings. The findings show that organizational agents who have unlimited access to resources such as senior managers exercise power by virtue of their position in the organizational hierarchy. The thoughtful exercise of this power is very productive because it enables the organization to achieve results. The study also reveal that lack broad stakeholder consultation and user involvement from the very beginning would lead to conflicts and resistance. Again, how power is exercised during the ES selection phase would greatly determine implementation success. Thus, poor ES selection practices coupled with distractive haphazard exercise of power may create conditions for botched implementation.

This study also extends the limited scope of ES research to cover both the selection and implementation. The study finally recommends that future research should be extended to cover the other phases of the ES lifecycle in order to understand the fully the effects of power along the ES lifecycle.

CHAPTER ONE

INTRODUCTION

1.1 Research Background

Enterprise Systems (ESs) are configurable off-the-shelf (OTS) packages that are fast becoming ubiquitous in the world of business. They are commercial integrated information system (IS) (Stamelos et al., 2003) that integrates functions across an organization into a single system to support an institution's financial, human resources and students' services transactions and processes (King et al., 2002). Obtaining these systems require huge investments - both financial and nonfinancial - that take a great portion of the company's budget (Verville & Halingten, 2002). They also bring sweeping changes to the implementing organizations (Verville & Halingten, 2002). The rapid adoption of ESs may be explained by the several benefits they promise to bring to the implementing organizations. Such benefits are well documented in literature including achieving competitive advantage, end-to-end integration, process optimization, access to real time data, improved decision making and performance just to mention a few (Annamalai & Ramayah, 2011; Nwankpa, 2015; O'Leary, 2004; Sadrzadehrafiei, Chofreh, Hosseini, & Sulaiman, 2013; Spathis, 2006). The implementation of ESs mainly involve the adaption of the system to the business needs of the enterprise through system customization and re-engineering of the business processes to match the system specifications. It is also critical to acquire external expertise, including vendor support, in order to facilitate successful OTS package implementation (Coelho, Cunha, & de Souza Meirelles, 2015; Rosa, Packard, Krupanand, Bilbro, & Hodal, 2013).

Business organizations are able to integrate and coordinate their internal processes as well as achieve inter-organizational collaboration and integration when they implement ESs. For

example (Davenport & Brooks, 2004; Hendricks, Singhal, & Stratman, 2007) believes that using Supply Chain Management (SCM) systems can actually help business organizations to connect their systems to that of their suppliers in order to achieve industry-wide integration and collaboration. Bull (2003) also concur that the use of Customer Relationship Management (CRM) system helps in the effective management of customer relationships. Effective management of customer relationship leads to customer intimacy and improved profits (Laudon & Laudon, 2013). When implemented successfully, ESs streamline business operations and processes enabling the business organization to be both effective and efficient (Laudon & Laudon, 2013).

However, it is neither easy nor quick to implement and realize the full benefits and potential of enterprise systems. They are highly risky projects that also come with huge cost. Indeed Davenport (1998) noted that the cost of a failed enterprise system project is considerably frightening. There is therefore the need for organizations to approach the ES implementation and usage thoughtfully and advisably in order to reap the full benefits of enterprise systems (Bighrissen, Ettamiri, & Cherkaoui, 2013; Bradley, 2008; Dezdar & Ainin, 2011; Finney & Corbett, 2007; Markus & Tanis, 1999; Schniederjans & Yadav, 2013).

Existing literature on ES research show that dominant interest of researchers and practitioners in ES implementation grows from the need to understand the high rates of failures (Robey, Ross, & Boudreau, 2002; Silva & Fulk, 2012) that characterizes such cost-intensive projects. There is an ever-growing consensus that ES implementation failures have deep roots in selecting an inappropriate system (e.g. Bakås, Romsdal, & Alfnes, 2007; Kähkönen, Maglyas, & Smolander, 2014; Lall & Teyarachakul, 2006; Ratkevičius, Ratkevičius, & Skyrius, 2012; Verville & Halingten, 2003). There is therefore the need to combine the selection and

implementation phases in a single study in order to unravel the convoluted effects of one phase on the other. Very few studies have attempted this combination in a single study (e.g. Findik, Kusakci, Findik, & Kusakci, 2012; Forslund & Jonsson, 2010; Shakir, 2000). Extending studies on ES selection and implementation would help deepen understanding and knowledge about how these two phases interact and the consequences that follow. Also, Silva and Fulk (2012) and Ye, Marshall, and McKay (2012) both indicate that IS projects and for that matter ES implementation projects are common grounds for the exercise of power in many varying forms and degrees. This implies that the selection and implementation of an ES solution in any organization sets the stage for the exercise of some form of power. In fact, Babaei, Gholami, and Altafi (2015) noted that implementing an ERP solution in an organization affects the balance of power. There is therefore the need to also explore the effects of power on the selection and implementation of an ES solution.

1.2 Research Problem

Existing literature on ES research reveal that well over 50 percent of studies done is focused on implementation (e.g. Allen, 2008; Babaei et al., 2015; Chang, Kuo, Wu, & Tzeng, 2015; Dezdar & Ainin, 2011; Finney & Corbett, 2007; Forslund & Jonsson, 2010; Hendricks, Singhal, & Stratman, 2005; Kandananond, 2014; Markus, Tanis, & Fenema, 2000; Parr & Shanks, 2000b; Sadrzadehrafiei et al., 2013; Schniederjans & Yadav, 2013; Silva & Fulk, 2012; Suresh, Mohamed, & Krishnankutty, 2009). A closer look at the literature on ES implementation further discloses that authors approached the subject from different perspectives. One key interest of researchers involved in ES research is to understand why ES implementations fail and what factors contribute to a successful implementation. Some authors who were interested in unravelling factors that make ES implementation a success wrote on Critical Success Factors (CSF) that characterizes a successful ES implementation (e.g.

Abdelghaffar, 2012; Finney & Corbett, 2007; Schniederjans & Yadav, 2013). After a successful implementation there is the need to sustain the success for continued benefits to be realized over a long time. A good number of authors therefore studied post-implementation effectiveness and management of ES (e.g. Bighrissen et al., 2013; Bradley, 2008; Dezdar & Ainin, 2011; Finney & Corbett, 2007; Liu & Seddon, 2009; Markus & Tanis, 1999; Rateb, 2013; Schniederjans & Yadav, 2013; Sedera & Gable, 2010). Though ES implementations are very cost-intensive projects increasing number of such projects reportedly fail (Davenport, 1998). This perhaps inform the huge interest of both practitioners and researchers in this area of ES research.

Away from implementation, some studies exist on the users of ES software. Saatçioglu (2009) wrote on user satisfaction with the new ES software. Old users of ES are also beginning to attain the special role of being reference actors for new implementers (Pollock & Hyysalo, 2014). The expectation of users in the pre-adoption period also has the tendency to affect implementation (Veiga, Keupp, Floyd, & Kellermanns, 2013). Users therefore play an indispensable role in the successful selection, implementation and use of ES. It therefore behoves top management and implementers to increase support for users and get them involved from an early stage of ES acquisition. Their early involvement and participation is crucial for successful selection, implementation and use of ES software (Khoo, Chua, & Robey, 2011).

In addition, there are some studies about adoption of ES (e.g. Basoglu, Daim, & Kerimoglu, 2007; Kamhawi, 2008; Laukkanen, Sarpola, & Hallikainen, 2007; Markus & Tanis, 1999; Ramdani, Kawalek, & Lorenzo, 2009; Soja & Paliwoda-Pekosz, 2009; Themistocleous, Soja, & Da Cunha, 2011). Verville, Bernadas, and Halingten (2005) contributed to the discourse on adoption by looking at CSF for ES acquisition.

The selection of ES has also received quite an ample attention in literature. Many authors studied the process of ES selection in organizations however from different perspectives. Some authors viewed the ES selection as a process consisting of a set of well-defined activities (e.g. Hidalgo, Albors, & Gómez, 2011; Molnár, Szabó, & Benczúr, 2013; Stefanou, 2000; Yazgan, Boran, & Goztepe, 2009). Different authors represent and interpret the ES selection process uniquely. However, commonality exist between the various set of activities that characterizes the ES selection process. The number of suppliers of ES software are increasing over time. This makes the task of selecting a vendor a daunting one. A good number of studies propose and made use of various Multi-Criteria Decision Making strategies to arrive at the best software (Efe, 2016; Gürbüz, Alptekin, & Işıklar Alptekin, 2012; Jahanshahi, Farhadzareh, Fotuhi, Golpour, & Mokhtari, 2013; Karande & Chakraborty, 2012; Sarti, 2015). According to Bakås et al. (2007), selecting the right ES software is the first step towards successful implementation. This assertion underscores the crucial role ES selection plays in the successful implementation of ES software. Selecting the wrong system sets the tone for ES implementation failure.

Overall, the field of ES research has received an inspiring number of studies which provide good understanding of ES in general and its acquisition and use in organizations. However, review of the literature on ES brings to light the following gaps which informed this study:

- Literature on ES research is concentrated mainly on ES implementation. Issues of ES implementation may have roots in the selection phase of ES acquisition yet only a few authors combine these two phases in a single study to give a better and more holistic picture of the ES acquisition process (e.g. Findik et al., 2012; Forslund & Jonsson, 2010; Shakir, 2000).

- Also, power relations which exist in organizations inform and is impacted by ES selection and implementation. However very little attention is given to the effects of power in selecting and implementing enterprise systems (e.g. Silva & Fulk, 2012).
- Whiles reviewing past literature few studies were found (i.e. Abdelghaffar, 2012; Boltena & Gomez, 2012; Neves, Fenn, & Sulcas, 2004) that dealt with the context of sub-Saharan Africa. With eleven different ERP system installations in eight different sites Neves et al. (2004) investigated the ERP system selection process and found out that there is consistency in how organizations go through the process. The studies of both Abdelghaffar (2012) and Boltena and Gomez (2012) focused on ERP systems implementation. Boltena and Gomez (2012) examined important dimensions of ERP implementation and concluded that cultural, business and technical issues play a crucial role in successfully implementing ERP systems and must therefore be given careful consideration and attention. Abdelghaffar (2012) who also studied the effect of environmental and organizational factors on ERP system implementation and concluded that both national and organizational factors should be considered for successful implementation. Clearly, none of these studies combine ES selection with implementation. The studies also did not account for the effects of power on selection and implementation of ES software. This study however combines ES selection with implementation as well as examine the effects of power on the selection and implementation process. It also presents a comparative analysis between a public sector organization and a multinational subsidiary in a sub-Saharan African context.

1.3 Research Purpose

The purpose of this research is to understand how power shapes the selection and implementation of ERP systems. The effects of power on the selection and implementation processes, and how the effects of power during selection influences implementation are examined. This purpose is in direct response to the research problem stated above.

1.4 Research Questions

Based on the research purpose, the study addressed the following research questions:

1. What are the effects of power on Enterprise System selection?
2. What are the effects of power on Enterprise System implementation?
3. How do the effects of power on Enterprise System selection influence implementation?

1.5 Justification of the Study

This study is aimed at understanding the effects of power on the selection and implementation of ERPs. This study is deemed very important because it combines the selection and implementation phases of ES acquisition. This is crucial to understanding the how the two phases interact and influence each other (Bakås et al., 2007; Lall & Teyarachakul, 2006; Verville & Halingten, 2003). Also, this study unearths the effects of power on ES selection and implementation. This is so outstanding looking at the fact there is paucity of study on power in ES research (Howcroft & Light, 2006; Silva & Fulk, 2012). This study further spearheads subsequent works on issues of power in ES research. This study can be extended to cover other phases of the ES acquisition process in order to fully comprehend the end-to-end effects of power on ES acquisition, use and post-implementation management.

Decision makers, managers and IT staff of public sector institutions in developing countries as well as managers of multinational firms can depend on the results of this study to make well-informed decisions and choices regarding ES selection and implementation.

1.6 Chapter Outline

The whole study consists of eight chapters which are organized as follows:

Chapter one is the general introduction to the study which includes the research background, research problem, research purpose, research questions, justification of the study and research scope and limitations.

Chapter two contains a detailed review of literature on enterprise systems selection and implementation. A general review of literature on software selection and implementation was done before going further to look especially at enterprise systems selection and implementation. This enabled the author to properly situate this research in the existing body of knowledge and to unearth existing research gaps.

Chapter three presents the theoretical foundation for the study. In discussion is the Clegg's circuits of power framework. This framework and its main constructs have been discussed. The choice of this theory in guiding data collection and analysis so as to find answers to the research questions is presented and justified. Studies that employed this framework were examined and limitations of the framework was also discussed.

Chapter four presents the research methodology of the study. The three main research paradigms namely positivist, interpretive and critical theory were discussed. This is followed by the choice and justification of the interpretive, qualitative case study as the chosen research

method. The selection of cases and how the researcher gained and maintained access are presented as well as techniques of data collection and analysis.

Chapter five is focused on the presentation of findings from the two selected cases: a multinational subsidiary and a public sector organization. Both case organizations have gone through the process of selecting and implementing ES. The background of both case organizations is presented as well as data gathered on how each organization selected and implemented an ES.

Chapter six contains the analysis of the findings presented in chapter five. Each case was analysed separately before a comparative analysis was done to enrich understanding concerning how power shapes the ES selection and implementation processes. Data analysis is guided by the chosen framework – Clegg's circuits of power framework.

Chapter seven focuses on discussion of the analysis done in chapter six in relation to the reviewed literature in chapter two. This discussion helped to address the research questions the study seeks to find answers to.

Chapter eight is the last and contains a general summary and conclusion of the study. This includes the study's contribution to knowledge and its implications to theory, policy and practice. The chapter also contains recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The previous chapter presented a general introduction of this study. It discussed the research background, problem, purpose and questions as well as justification for the study. The current chapter is focused on review of past software and enterprise systems literature. An in-depth discussion of the literature is presented. This comprehensive discussion reveal research gaps which are plugged by this study as well as future research directions for further study. The summary comes in last to conclude discussions in this chapter.

2.2 Information systems and the concept of software

Information systems (IS) consist of hardware, software, data, people and processes that are interrelated and interact to produce information for decision-making (Boell & Cecez-Kecmanovic, 2015). IS transforms data into information which is stored and shared for business decision making. The use of IS in organizations offer wide range of benefits such as ensuring visibility across functional areas and processes, eliminates data inconsistencies, availability of real-time data for effective decision making and the avoidance of delays in business operations. As stated earlier, software is one of the main components of IS. The following subsections discusses this key component of IS.

2.3 Types of software

Software are broadly categorized as system software or application software based on what the software is designed to accomplish. The development of system software reveals the pinnacle

of programming. System software includes operating systems and utilities which are dedicated to managing the computer hardware resources together with applications and data. Application Software (simply referred to as applications) are end-user productivity programs which enable users to execute tasks using the computer. Packaged Software such as Commercial-Off-The-Shelf (COTS) Software, custom-built programs and application suites such as Microsoft Office suite are all examples of application software (Laudon & Laudon, 2013).

2.4 Software selection and implementation research – Issues and Evidence

According to Hedman and Andersson (2014), organizations historically developed their own Software in-house in response to their varying needs and requirements. With the development and use of these bespoke software systems organizations had no need of selecting from a variety of different Software. Software selection is a practice that became necessary with the arrival of pre-made or packaged software that is also commonly referred to as COTS software (Hedman & Andersson, 2014). Software selection is a task that appears simple and straightforward. However, it is a complex process which comes with sweeping changes businesses usually underestimate (Gerbel, 2012). The process of selecting a piece of software is neither structured nor well-defined (Efe, 2016) hence different organizations may go through different steps to complete the process.

Hedman and Andersson (2014) opined that the selection of a COTS system should go through the following phases: problem framing, requirements and appraisal, and the final selection of system. The first phase is concerned with the identification of the problem or business need. This acts as the driver or justification for the COTS system. In the absence of strong business need or driver the selection of a COTS system as a solution cannot be justified. The second phase is the requirements and appraisal and this includes defining the scope of what the software is expected to do. In this way tasks and processes which are not covered by the software are easily known. Appraisal is done to help the adopting organization select the

software that best meets their needs. The third phase is the actual selection of the COTS system based on the two preceding phases. At this point the selected COTS system is deemed the most appropriate solution to the business need in phase as evident from the requirements and appraisal phase.

Kutlu and Akpinar (2009) and Gerbel (2014) also wrote on selection and implementation and they both share the views of Hedman and Andersson (2014). They both agreed that there is the need to justify the business need for the software. In the absence of this justification there is no need for the selection and implementation of the software. Some other important activities that must characterized the software selection and implementation project include requirement gathering, reference checks, evaluation of offers and the final purchase decision (Gerbel, 2014; Hedman & Andersson, 2014; Kutlu & Akpinar, 2009).

2.5 Overview and Conceptualization of Enterprise Systems

Enterprise system is a relatively recent phenomenon in information systems. It has roots in MRP, MRP II and ERP systems (Soja & Paliwoda-Pękosz, 2013) and typically follows a lifecycle similar to that of the traditional software development life cycle which include Planning, analysis, design and development and implementation. Existing literature was therefore mapped to the appropriate phases. Away from the life cycle, much literature on enterprise systems also focused on the interaction between and enterprise systems and business activities (Al-Fawaeer, 2013; Al-Mudimigh, 2007; Davenport, Harris, & Cantrell, 2004; Grover, Jeong, Kettinger, & Teng, 1995; Hitt, Wu, & Zhou, 2002; Jeng & Dunk, 2013; Klčová, Šulová, & Sodomka, 2009; Liu & Seddon, 2009; Martin & Cheung, 2005; Suresh et al., 2009; Vathanophas, 2007; Yen, Idrus, & Yusof, 2011). Enterprise systems represent very huge business investment that takes a big proportion of the company's budget. Failure of the

enterprise systems to achieve expected results and benefits brings a damaging cost to the adopting organization. A good number of literature exist on critical success factors necessary for profitable adoption and implementation of enterprise systems(Abdelghaffar, 2012; Bradley, 2008; Finney & Corbett, 2007; Liu & Seddon, 2009; Nah, Lau, & Kuang, 2001; Verville et al., 2005).

2.5.1 Enterprise Systems – defined

The Gartner group is credited for coining the word ERP. Cf (Coelho et al., 2015). A single generally accepted definition of enterprise systems is non-existent in ES literature. This has led to a seemingly ad hoc definition of the term by different authors. Laudon and Laudon (2013) used ES as synonymous with ERP. To them both terms means the same thing and therefore used the terms interchangeably. Hendricks et al. (2007) however use the term *enterprise systems* to include Enterprise Resource Planning (ERP) systems, Supply Chain Management Systems (SCM) and Customer Relationship Management (CRM) systems. The extended capabilities of ES enable inter-organizational integration and collaboration.is possible through the incorporation of enterprise applications such as SCM and CRM. In fact, over the recent past industry came under intense pressure to integrate and collaborate with other businesses (Møller, 2005) – a need which traditional ERP systems could not satisfy. This necessitated the move further away from mere internal integration and collaboration using ERP (Schniederjans & Yadav, 2013) to inter-organizational collaboration and integration. ES systems were developed to satisfy this need by extending the capabilities of ERP to collaborate and integrate with third-party networks. It is therefore limiting to equate ERP systems with ES (Hendricks et al., 2007). Authors like Addo-Tenkorang and Helo (2011) and Møller (2005) used the term ERP II to denote ERP system with extended capabilities for inter-organizational collaboration and integration. With ERP II, companies are able to engage in e-commerce activities such as

B2B and B2C, as a result of their position in the supply and value chains. A more encompassing definition of ES was given by Soja and Paliwoda-Pękosz (2013) who defined ES as

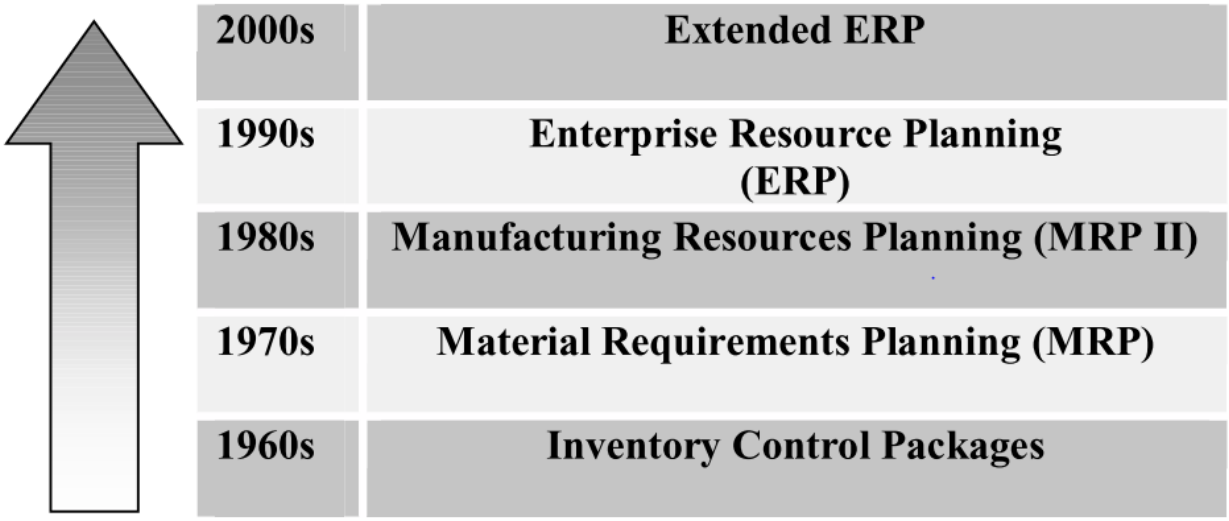
"...very complex systems that support the management and integration of the whole company and offer inter-organizational integration with company's clients and suppliers."

The above definition clearly captures both intra-organization integration using ERP and inter-organization integration and collaboration using enterprise applications such as SCM and CRM. This definition creates a comprehensive basis for discussions related to enterprise systems and hence, adopted as the operational definition for this study.

Figure 2: 1 - ERP system life-cycle

Source: Adopted from Feili, Mood, Youshanlouei, and Sarabi (2012)

Figure 2: 2 - The Evolution of Enterprise Systems



Source: Picked from Rashid, Hossain, and Patrick (2002).

2.5.2 On-Premise ERP versus Cloud ERP systems

Advancement in Internet and related technologies has enabled enterprise systems vendors to add SCM, CRM and Internet applications enabled for e-business to the core ERP system (Møller, 2005). This has extended the capabilities of core ERP (Møller, 2005) which according to Rashid et al. (2002), is responsible for the continuous existing and growth of the ERP market. The proliferation of the Internet and related applications also spawn what is known as "cloud computing" in the computing field. (Define cloud computing). ERPs are taking advantage of cloud computing to introduce ERP .

2.5.3 Proprietary ERP versus Open ERP

The Open ERP systems may provide an opportunity to solve both the shortage of IT skill and business management. In the past years utilizing the opportunities in IT, there was a proliferation of systems that can be considered as Open ERP systems (Feilmeier 2012). Copied from (Molnár et al., 2013)

2.6 ES Research – Issues and Evidence from literature

This section contains discussions on issues that are evident from the ES research literature. In discussion are business processes and strategy, ES induced changes, CSF and theoretical as well as methodological issues.

2.6.1 ES versus Business Process and Strategy

Broadly, a good number of authors accentuate the link between enterprise system selection and various aspects of businesses such as business processes (e.g. Verville & Halingten, 2003; Wei

& Wang, 2004), This is in line with the long realization of the interaction between enterprise systems and various facets of businesses such as business processes (e.g. Al-Mudimigh, 2007; Alsène, 2007; Arif, Kulonda, Jones, & Proctor, 2005; Chen & Popovich, 2003; Davenport et al., 2004); business continuity (e.g. Allen, 2008); business strategies (Andresen, Brockmann, & Roztocki, 2011; Gregor, Hart, & Martin, 2007; Yen et al., 2011); business process re-engineering (e.g. Martin & Cheung, 2005; Schniederjans & Kim, 2003; Suresh et al., 2009); enterprise systems and organizational fits (Wang, Chia-Lin Lin, Jiang, & Klein, 2007; Wu, Shin, & Heng, 2007; Yen et al., 2011) and business improvements, profitability and productivity (e.g. Al-Mudimigh, 2007; Bernroider, Wong, & Lai, 2013; Engelstätter, 2009; Hitt et al., 2002).

2.6.2 ES and Change

Change is unavoidable in ES implementations. Assuredly, ES implementation projects are characterized by enormous changes that affects every fibre of the implementing organization. This is because these systems are huge and come with their own in-built processes and design logic (Davenport, 1998). Change emerging from ES selection and implementation may manifest as organizational change, process change, change in culture or technical change just to mention a few (Al-Fawaeer, 2013; Avgerou, 2001; Davenport et al., 2004; Thomas, Babb, & Spillan, 2012). For instance Al-Fawaeer (2013) who wrote on cultural changes that are induced by ERP implementation argued that organizations must give serious considerations to the cultural environment in their total change management programme. This is due to the inseparable interrelationship which exists between ERP and the cultural environment. Davenport et al. (2004) wrote on the continuous mutual interaction between ES and changes in business processes. They argued that business organizations that have implemented ES have in place a *business change infrastructure* as a prerequisite to obtaining the benefits that come with

using the system. Effective change management program is therefore crucial to achieving success in implementation and obtaining the full benefits of the ES system.

2.6.3 Critical Success factors (CSF)

This subsection borders on the factors that are deemed critical to the success to the ES acquisition process. The pre-implementation, implementation and post-implementation phases of the ES acquisition all need crucial ingredients to be successful. Just as much attention is given to the implementation phase due to high rates of failures, much studies on CSFs focused on the implementation phase (e.g. Babaei et al., 2015; Finney & Corbett, 2007; Hasibuan & Dantes, 2012; Kandananond, 2014; Schniederjans & Yadav, 2013; Soja, 2006). Touching on critical factors for successful implementation Kandananond (2014) noted that definition of business case, ability to get back to normal operations, ability to prepare system and users and capacity to maintain and upgrade the new system are indispensable.

2.6.4 Theoretical and Conceptual Approaches

According to Miles and Huberman (1994), a conceptual framework "*explains either graphically, or in narrative form, the main things to be studied – the key factors, concepts or variables - and the presumed relationship among them*". Whether presented in the form of text description, diagram or visual image, conceptual frameworks provide lens and boundary, content and structure that inform and guide the whole study based on the literature review (Fisher, 2010; Miles & Huberman, 1994). In a study, Heeks and Bailur (2006) created a schema which suggests that a conceptual approach can be theoretically-based, framework-based, model-based, concept-based or category-based. Past research on enterprise systems in general made use of various conceptual approaches in their investigation of enterprise systems

phenomena. For example Schniederjans and Yadav (2013) used the Technology, Organization and Environment (TOE) framework to illustrate a new conceptual model that better defines and integrates critical success factors for successful ERP implementation. They argue that *trust with the vendor, system and consultant* is a critical factor for ERP implementation success but has been ignored by past research. The paper provides insight into the impact of trust on implementation success. The TOE framework is a socio-technical framework developed byTornatzky and Fleischer (1990) identifies the technology, organization and environment contexts of organizations and how these contexts inform and impact the adoption and implementation of technology (Oliveira & Martins, 2011).Calisir, Gumussoy, and Bayram (2009) considered the exploratory extensions of Technology Acceptance Model (TAM) which is an old, technology-deterministic model to predict the behavioural intention to use ERP systems.

The relatively recent reconceptualization of technology as technical as well as social construction gave recourse to the use of social theories in explaining technology phenomena. Increasing number of research in information systems in general use socio-technical theories to guide their research work and explain Information systems phenomena. Research works that make use of power and power relation theories and frameworks to explain information systems phenomena are ever-increasing (e.g. Azad & Faraj, 2011; Bayraktaroglu & Kutanis; Cavaye & Christiansen, 1995; Dhillon, 2004; Howcroft & Light, 2006; K.S.Horton; Markus, 1983; Silva & Backhouse, 2003; Silva & Fulk, 2012). This observation may perhaps be partly explained by the quite recent reconceptualization of technology as the outcome of both technical as well as social construction (Allen S. Lee, 2004; Howcroft & Light, 2010; Orlikowski, 1992). In the specific area of enterprise systems research, only two papers were found that used theories and frameworks on power and power relations to conduct their investigation. Howcroft and Light (2006) used the power framework developed by Markus and Bjørn-Andersen in 1987 to carry

out a longitudinal study on CRM adoption. Their study contributes to our understanding of issues of power in information system projects in general and packaged software selection and implementation in particular.Silva and Fulk (2012).

2.6.5 Methodological Issues

Methodology basically refers to the way knowledge about reality is sought (Guba & Lincoln, 1994; Walsham, 1995b). Three main methodologies exist for studying information systems phenomena namely qualitative, quantitative and mixed (Myers, 1997). Of all the papers gathered, only one employed a purely quantitative approach (Bernroider et al., 2013) and only one employed the qualitative approach(Chang, Yen, Huang, & Hung, 2008). Majority of the papers on enterprise systems did not have any discernible methodology (Berente, Gal, & Yoo, 2010; Damsgaard & Karlsbjerg, 2010; Jahanshahi et al., 2013; Kutlu & Akpinar, 2009; Subramaniam, Nandhakumar, & Baptista John, 2013; Tsai, Lee, Shen, & Lin, 2012). Majority of these papers just presented descriptive accounts of the enterprise systems phenomenon being studied and the context within which it exists. A good number of papers used the mixed methodology involving both qualitative and quantitative approaches (e.g. Ayağ & ÖzdemİR, 2007; Cebeci, 2009; Karaarslan & Gundogar, 2008; Lall & Teyarachakul, 2006). There is general lack of a purely qualitative or purely quantitative empirical study on enterprise systems in general and enterprise systems selection in particular.

The location spread of the papers gathered shows a strong bias towards Asia producing the highest number of research works on enterprise systems in general (Soja & Paliwoda-Pekosz, 2009; Themistocleous et al., 2011; Ziaee, Fathian, & Sadjadi, 2006). A few papers came from the advanced countries such as Thomas et al. (2012) from America and Bayraktaroglu and Kutanis from Britain. In all, only two papers were found to contain works done on enterprise

systems in Africa (Abdelghaffar, 2012; Boltena & Gomez, 2012). In the paper titled "*success factors for ERP implementation in large organizations*", Abdelghaffar (2012) used the mixed approach to gather data from I.T. managers in Egypt and concluded that environmental factors such as economic growth, government regulations and ICT infrastructure heavily impact the successful implementation of enterprise systems. He argued that both environmental and organizational factors must be considered when looking at critical success factors for ERP implementation. In Ethiopia, Boltena and Gomez (2012) published their work on enterprise systems in the same year as the work from Egypt. Boltena and Gomez (2012) examined the implementation of a ERP system by a mid-size company in Ethiopia. The paper employed the case study method and took an in-depth look at the process of ERP implementation focusing more on the business, technical and cultural issues associated with the implementation of the system. The finally concluded that it is best for similar companies to share their experiences of ERP implementation for mutual learning and knowledge transfer.

Notably, most of the present research in enterprise systems made use of case study as the method for data collection (Azevedo, Romão, & Rebelo, 2012; Baki & Cakar, 2005; Baxter & Jack, 2008; Bighrissen et al., 2013; Boltena & Gomez, 2012; Hustad & Olsen, 2013; Kutlu & Akpinar, 2009; Lai, Trueblood, & Wong, 1999; Maguire, Ojiako, & Said, 2010; Verville & Halingten, 2002). Moving away from the case study, Schoenherr, Hilpert, Soni, Venkataramanan, and Mabert (2010), Berente et al. (2010) and (Chang et al., 2008) in their studies on enterprise systems employed grounded theory as the method for data gathering. It is clear from the papers gathered that ethnography and action research as methods for data gathering are virtually absent in enterprise systems research.

2.7 Challenges associated with ES selection and implementation

Both the selection and implementation stages of ES acquisition are cladded with challenges. How these challenges are surmounted determines the overall success of the acquisition process. Naturally, organizations that fail to smoothly overcome challenges at the selection and implementation stages are in for acquisition nightmares. In their study Babaei et al. (2015) found out that organizational barriers especially lack of human resources, technological and individual factors including lack of senior management's involvement are the three most important challenges ES implementations face.

2.8 Benefits of ES systems

Enterprise systems are indeed very beneficial to organizations that successfully implemented them. Available in literature is an endless list of benefits associated with implementing ESs (Nwankpa, 2015; O'Leary, 2004; Sadrzadehrafiei et al., 2013; Schubert & Williams, 2011; Spathis, 2006). This unending list of benefits organizations stand to enjoy from implementing ESs may be the pull factor for most organizations opting for ESs. However, it is neither easy nor quick to realize the benefits of ESs. Indeed Davenport et al. (2004) argued that organizations must take responsibility for reaping benefits from the ES system. They must set a program in place such as standards to measure benefits and personnel to make sure priorities are set to realize benefits (Nwankpa, 2015). Realizing benefits from ES system is therefore not automatic as it requires conscious effort on the part of the implementing organization. Some of the benefits organizations expect to reap from the use of ES include reduction in cost, breakdown of functional borders (Nwankpa, 2015), improvement in cash and order management (Sadrzadehrafiei et al., 2013), automation, efficiency (Schubert & Williams, 2011), reduction in both workers and inventory, real-time delivery and increased profits (O'Leary, 2004). The list of benefits is indeed endless!

2.9 ES Selection

The selection of enterprise systems is part of an overall strategic decision making process of organizations. The selection and implementation of enterprise systems is significantly different from the selection of any other software: it involves more than just gathering and interviewing a few vendors (Hecht, 1997; Markus & Tanis, 1999). According the Baki and Cakar (2005), there is the need for the selected vendor to be a long-term partner. This would ensure that collaboration between the ES system vendor and the implementing organization continues for a long time. Molnár et al. (2013) argued the selection phase is the most critical in ES adoption because of the huge impact it has on future operation and cost-effectiveness. They also noted that selecting the right solution can be a very difficult and tiring exercise that can take up to about 14 months with about 20 employees. Feili et al. (2012) endorse this assertion and argued that ERP system selection is difficult by nature which makes it a critical decision-making issue for managers.

Selecting an enterprise systems software is a very important exercise for companies that procure ESs. The ability to select the right software at the pre-implementation stage of ES acquisition partly determines the success of the implementation and post-implementation stages (Hecht, 1997). Unlike traditional software selection, choosing the right ES could be very complex and time-consuming for companies. Kutlu and Akpinar (2009) stated that traditional software selection techniques fall short of the requirements for the selection of complexly integrated ES. They strongly asserted that organizations have unique processes which defines their power for success. These unique processes should be treated as critical requirements and vendors who fall short of these requirements should be rejected else fatal flaw await implementation (Kutlu & Akpinar, 2009). It is now quite evident that following traditional

software selection procedures to select an ES would most likely not yield the desired result. There is the need to develop techniques that are very relevant to selecting ESs.

2.9.1 The enterprise systems selection process

The process of selecting enterprise systems is fairly well documented in literature. Different authors propose different set of steps to be followed in the process. Based on review of literature, Feili et al. (2012) postulated that the selection process should include problem definition, identification of criteria, evaluation of criteria and selection in that order. In an earlier study by Stefanou (2000) a selection model with three phases has been proposed for ES selection. Phase one deals with the business vision. Requirements, desire to change and constraints defined and examined in phase two and the phase three deals with the actual selection. Karsak and Ozogul (2009) who approached the ERP systems selection from an integrated decision-making position listed eleven steps for determining the best ERP system alternative.

Careful examination of available literature reveals that no single selection process is ideal for all cases. Authors who wrote on the selection of ES proffer different selection procedures and practices though not without some commonalities. For example Stefanou (2000) proposed a three-phase framework for the selection of ERP systems. According to this framework, phase one is the crafting of business vision. In phase two requirements, desire to change and constraints are analysed. The result of this analysis is the consequent evaluation and selection of the ERP system in phase three. Similarly, Howcroft and Light (2010) also offered a three-step approach to the selection of packaged software. Their model was based on a broad consensus evident in literature. Investigating how the various authors shape the selection of packaged software, Howcroft and Light (2010) posited that the selection process goes through

three stages namely: identification and definition of user requirements, evaluation and final selection and purchase of the software. The close similarity between the process steps suggested by Stefanou (2000) and (Howcroft & Light, 2010) is self-evident. Stefanou (2000) argue that the selection of an ES should start with the vision of the business. The second and third steps found in Stefanou (2000) equates the three steps in (Howcroft & Light, 2010) who omitted the business vision and separated evaluation and selection into different phases of the selection process.

After a careful examination of sixteen studies published between 2004 and 2006, Bakås et al. (2007) presented what they referred to as a *"holistic ERP selection methodology"*. This selection methodology consists of four steps: preparation, analysis, evaluation and selection. In each stage, business and IT strategies are examined. Also scrutinised in each stage are organizational and IT skills, processes and infrastructure, and the ERP systems and vendors. The evaluation stage ends with a request for proposals (RFP) sent to the shortlisted ERP vendors. The successful vendor and system is selected in the last selection stage based on alignment with strategies; processes, skills and infrastructure; and requirement specifications. The selection methodology of Bakås et al. (2007) is much similar to the one proposed by Hidalgo et al. (2011) which has the following five steps: determine scope and requirements, criteria to be evaluated and RFP, compile questions and responses for the RFP, analysis of offers, costs involved and resources, and finally selection and procurement of licenses. Comparing the selection methodology by these two authors, all the four steps by Bakås et al. (2007) can be found in five steps by Hidalgo et al. (2011). Hidalgo et al. (2011) introduced a fifth step which they labelled as step three: compile questions and responses for the RFP. A closer look at the steps in Bakås et al. (2007) reveals that the compilation of questions and responses for RFP is part of the evaluation step.

2.9.2 Why selecting the right ES solution is important

The purchase of packaged ES software represents a very significant huge investment activity for organizations. These enterprise systems bring with them socio-technical challenges that unfortunately go unrecognized among user companies (Kenaroglu, 2004). The ES market is dominated by a few vendors such as SAP, Oracle, Baan and JDEdwards. This coupled with the fact that even national cultures have the potential to influence a true selection process, most user companies avoid investing in a thorough selection process (Franch, Illa, & Pastor, 2000; He, 2007; Karsak & Ozogul, 2009; Kenaroglu, 2004). Kenaroglu (2004) also noted that vendors discourage user companies from engaging in a true selection process by presenting their products as what he referred to as "one system fits-all perspective." There is however no single system that has all modules that best fit all organizations. Hence, a true selection process is necessary to settle on the system and modules that are most appropriate for the organization. Staaden and Lubbe (2006) captured the importance of selecting the right solution in the following statement: *"a hurried, uneducated choice could lead to various problems in the company"*. Some of these problems captured in literature include organizational misfit (Verville and Halingten2003). and failures in ERP implementation have been linked to the selection of ineffective ERP

2.9.3 Criteria for enterprise systems selection

Normally organizations evaluate and choose the most appropriate enterprise systems based on a predefined set of criteria. Setting the criteria for ERP system selection is very crucial to selecting the right system. It is of utmost importance that the system selection takes cognizance of budget, time, cost, deliverables and other factors related to the whole project (Asl, Khalilzadeh, Youshanlouei, & Mood, 2012). Different researchers postulated quite different criteria for selecting and evaluating enterprise systems. For example Sprott (2000) intimated

that the choice of an ERP system should be based on integration, upgradeability, adaptability and applicability. In Wei and Wang (2004), a comprehensive framework for the selection of ERP systems is presented. This framework includes vendor, product and software system factors as the three broad factors which are made up of many other sub-factors. These criteria are seemingly confirmed by Ziaee et al. (2006) after grouping a tall list of selection criteria into software system, vendor and project factors. In a very comprehensive study using manufacturing firms in Turkey, Baki and Cakar (2005) unveiled 17 selection criteria based on literature review and interview with managers. They found as most important cross-module integration, parent/allied organization systems, references of the vendor and compatibility of other systems. It is clear from the forth-going discussions that the criteria for enterprise systems selection is varies form general/broad to specific, technical to social/organizational and complex to simple. However, a long and windy list of selection criteria coupled with the growing of enterprise systems available can make complicate the selection decision for the user (Percin, 2008). It also somehow appears that various authors put forth their criteria for consideration by looking at particular areas of interest. For instance, in a study of Turkish clothing firms, Ünal and Güner (2009) explored the selection of the best ERP system using the AHP approach and a partial selection criteria. Upon review of literature they came out with nine criteria for selecting the best ERP vendor namely functionality, implementation approach, support, costs, organizational credibility, experience, flexibility, customer focused and future strategy. The selection criteria listed in this study is in line with one of the earliest studies in ERP system selection by Hecht (1997) in which six major criteria - functionality, technical architecture, cost, service and support, ability to execute and vision - are suggested for selecting and evaluating enterprise systems. The selection and evaluation of enterprise systems should be preceded by setting the criteria necessary for selection and evaluation. According to Asl et al. (2012) the selection of the enterprise system is deemed successful when *"intended needs*

and criteria of an organization are specified and the best choice which meets the needs of organization is selected."

2.9.4 Enterprise systems selection decision-making models

Perusing the literature on enterprise systems selection, it is evident that almost all the studies done in this area used model-based approaches to decision making regarding the selection and evaluation of enterprise systems. As noted by Percin (2008), quantitative techniques used for ERP system selection include mathematical optimization, ranking, scoring, Analytic Hierarchical Process (AHP) and Analytic Network Process (ANP) decision-making models. The ANP and AHP models are the most widely used models for ERP system selection (Ayağ & ÖzdemİR, 2007; Cebeci, 2009; Karaarslan & Gundogar, 2008; Percin, 2008; Ünal & Güner, 2009; Wei, Chien, & Wang, 2005). These two models are usually employed in multi-criteria decision analysis. The ANP model is a more general model of the AHP. In the AHP model, a decision problem is structured into a hierarchy with a goal, decision criteria, and alternatives. According to Karaarslan and Gundogar (2008), the AHP models the complicated problems in a hierarchy structure consisting of the main target, criteria, sub-criteria and alternatives, and the relationships among them. The ANP model on the other hand structures decision problem as a network. Both the AHP and the ANP measures the weight of components of the structure using a system of pairwise comparisons before ranking the alternatives in the decision. Percin (2008) used the Analytic Network Process (ANP) model - a more general form of the AHP model - to provide insight into selecting and benchmarking the best ERP system.

Despite the heavy reliance on the AHP and the ANP models, their usage is not without limitations and deficiencies. Ayağ and ÖzdemİR (2007) captured the problems associated with the ANP model this way: "*This method is mainly used for crisp decision making problems and*

creates and deals with a very unbalanced scale of judgement. In addition, the ANP method does not take into account the uncertainty associated with the mapping of one's judgement to a number, and its ranking is rather imprecise." They opined that the use of ANP in ERP system selection may lead to ambiguity and multiplicity of meaning. To capture the judgments of decision-makers more precisely, fuzzy logic is introduced to both conventional AHP and basic ANP to make up for the deficiencies in the use of these models (Ayağ & ÖzdemİR, 2007; Cebeci, 2009). Ayağ and ÖzdemİR (2007) suggested that for future research, a knowledge-based system or Expert system should be integrated with fuzzy logic to make pairwise calculations more precise.

Other Multi-Criteria Decision Making (MCDM) methods suggested and used by researchers and research groups in their quest to improve the enterprise system selection and evaluation process include Data Envelopment Analysis (DEA), Systematic Help ERP Acquisition (SHERPA), Priority Matrix (PM), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), Weighted Scoring Method (WSM), PROMETHEE and Decision Making Trial and Evaluation Laboratory (DEMATEL). Classification of literature based on the enterprise system selection models used is shown below.

Table 2: 1 - ERP selection evaluation models

WSM	AHP	FL	ANP	SHERPA	PM	PRO METHEE	TOPSIS	DEA
Haghighi	Karaarslan	Ayag	Ayag	Burqués	Dimitrova	Razmi	Razmi	Llal
Chiesa	Perera	Kahraman	Dimitrova	Pastor	Jadhav			
Muñiz	Kecek	Ya-Yueh	Fan					
Reuther	Nikoukaran	Cebeci	Yazgan					
Ahituv	Carvallo	Bueno						
Carvallo	Ya-Yueh							
Jadhav	Cebeci							
Bernroider								
Lv								
Neves								

Source: Picked from Pacheco-Comer and González-Castolo (2012).

Some authors combined two or more of the MCDM models in their investigation. For instance, Karsak and Ozogul (2009) who approach the ERP systems selection from an integrated decision-making position used ERP system selection decision model that is based on fuzzy linear regression, quality function deployment (QFD) and goal programming.

2.10 ES Implementation

As mentioned in chapter one, the implementation of ES is a very active area of research receiving an overwhelming attention in literature (e.g. Allen, 2008; Babaei et al., 2015; Boltena & Gomez, 2012; Chang et al., 2015; Coelho et al., 2015; Finney & Corbett, 2007; Kandananond, 2014; Klčová et al., 2009; Maguire et al., 2010; Matende & Ogao, 2013; Parr & Shanks, 2000a; Sadrzadehrafiei et al., 2013; Soja & Paliwoda-Pękosz, 2013; Stanisavljević-Petrović, Stanković, & Jevtić, 2015; Yusuf, Gunasekaran, & Abthorpe, 2004). ES implementation is a complex activity that with flaunt with many challenges (Babaei et al., 2015; Coelho et al., 2015). Implementing organizations stand to benefit immensely from a successful ES implementation. Among these benefits are increase in profits and process

enhancement (Coelho et al., 2015), binding suppliers to the ES which helps to improve their performance, insure financial discipline, better customer management (Sadrzadehrafiei et al., 2013) and improvement in business productivity (Nwankpa, 2015). ES implementation projects embrace many strategies and activities. In review are implementation strategies, role of consultants, training consultants play very critical role in the successful implementation of enterprise systems.

2.10.1 User Involvement and Participation

ES systems cut across all functional units and as a result affect the many different classes of users (Matende & Ogao, 2013). The implementation of ESs affects users at various levels of the organization. The involvement of users is therefore very crucial to the overall success of the ES selection and implementation. Matende and Ogao (2013) noted the actions and inactions of users or those who represent them in the ES selection and implementation as defining their level of participation and involvement. Many authors (Baroudi, Olson, & Ives, 1986; Ivancevich, Ivancevich, & Elikai, 2007; Markus & Bjørn-Andersen, 1987; Matende & Ogao, 2013; Saatçioglu, 2009; Veiga et al., 2013) underscored the need to get all users involved in the ES selection and implementation process for success. They argued that lack of user involvement is one major contributing factor to botched ES implementations. This may be expected because of the immense contribution users make to ES selection and implementation projects. For example users are better placed to generate relevant information in the functional units of their departments during the scope and requirement gathering stage of the selection and implementation process.

2.10.2 Enterprise systems Implementation process

ES implementation is a project that could last for a few months to several years. The set of activities that are performed from the commencement of the implementation project to the end constitute the implementation process (Matende & Ogao, 2013). Different authors have their own conceptions of what the implementation process entails. A close look at the set of activities each author define as part of the implementation process only show that processes are the same or similar and the difference may just lie in their diction.

According to Parr and Shanks (2000b), three types of ES implementation strategies exist namely comprehensive, middle-road and vanilla. This classification is based on such characteristics as resource allocation, BPR scope, physical and technical scope. The comprehensive implementation strategy involves wide physical scope such as exist in multisite implementations and those across national boundaries. This strategy is the most ambitious of the three and it is typically adopted by multinational companies implementing ES across many subsidiaries in different geographical locations (Bakås et al., 2007). The vanilla strategy is the least ambitious and easiest to implement. Scope is very limited and customization of the software is minimal if at all (Parr & Shanks, 2000b). As the name suggests the middle-road category lies midway between the other two approaches. Usually only the core modules of the ES is implemented in this category. Implementation time may be over five years for the comprehensive approach, three to five years for the middle-road and six months to one year for the vanilla strategy (Bakås et al., 2007; Parr & Shanks, 2000b).

2.11 The concept of Power in IS research

Power is a complex concept that is usually studied mainly by social and political researchers (Ye et al., 2012). Jasperson et al. (2002) captured the complexity of power in the following statement:

"power is a messy, elusive concept that not only has surface or visible characteristics, but also hidden characteristics that are difficult to define and grasp..."

In 2002, Jasperson et al. (2002) scrutinised 82 papers as they studied the relationship between power and IS and how power shapes the institutionalization process of IS. Sixty nine of those papers took a single perspective on power whiles the rest studied power from multiple perspectives.

The interest of IS researchers in power is well documented in literature. For example about 33 years ago, Markus (1983) studied how IS implementation efforts are influenced by power and politics. She contends that power is a powerful force that enable the institutionalization of IS. She also argued that being aware of the presence and effects of power would enable IS implementers to design effective strategies that would drive the implementation project to success. After 20 years down the line, Silva and Backhouse (2003) also studied how power shapes and enables the institutionalization of IS. They employed Clegg's (1989) circuits of power to unravel the complexity and multiple perspectives of power. The studied concluded that power is both the cause and outcome of the institutionalization of information systems.

Studies on power and power relations are principally the works of social and political researchers. Prominent among these studies are the works of Foucault, Giddens and Clegg. As Ye et al. (2012) noted, most IS research that borders on power and power relations draw from

the works of these three leading socio-political researchers. For example IS projects are typical grounds of power relations and struggles. It is estimated that over 75% of ERP implementations fail. Many IS researches seek to understand why these costly and resource-intensive projects flop. This is evident in the numerous studies that abound in the area of ERP implementation as pointed out chapter one. In contribution, Silva and Fulk (2012) mentioned power struggles - evident in confrontation and resistance - as one of the key reasons why ERP implementations fail. Ye et al. (2012) who critically reviewed IS literature on power relations in IS projects also seem to affirm this assertion when they said,

"*The fact that organisational politics, participation and corporate leadership issues are among the reasons for failure indicates that power relations could be an important element in IS project management.*"

The foregoing discussions show that power is a phenomenon that has long attracted the attention of IS researchers. Power is usually manifested in resistance and conflict, and as such it is most evident during IS project implementations.

2.12 ES selection and implementation

Though the selection and implementation phases of ES acquisition are two important and interlinked stages, they are hardly combined in a single. This combination would have enable us understand better the effect of selection on implementation. Review of the literature show about three works on ES that combined these two important phases (Findik et al., 2012; Forslund & Jonsson, 2010; Shakir, 2000). Findik et al. (2012) studied ERP implementation between Turkish and Bosnian companies and concluded that though differences exits, the similarities between the practices of the companies is prominent. Shakir (2000) studied ERP selection and implementation in a single and argued that his work would be valuable to the

academia due to paucity on research in this area. Noted that in their work that managing performance is key at both the implementation and use phases of the ERP lifecycle.

2.13 Summary

This chapter has unearthed many important issues and evidences that exist in literature on enterprise systems in general. The chapter began with the conceptualization of enterprise systems which was followed by discussion on issues and evidences in enterprise systems research. Conceptual approaches and methodological issues in enterprise systems research are examined before the chapter closed with research gaps and future research directions. This has set the stage and direction for the whole study. The next chapter follows with discussions on the theoretical foundation adopted for this study.

CHAPTER THREE

THEORETICAL FOUNDATION OF THE STUDY

3.1 Introduction

The previous chapter discussed past research on software selection and implementation. The specific case of enterprise system software selection and implementation was delved into. The discussion among other things unearthed theoretical gaps in the study of software and enterprise system selection and implementation. The current chapter presents Clegg's circuits of power framework as the theoretical foundation of this study. First, the concept of power and its application in IS research is discussed. The discussion advances with a closer look at the circuits of power and its main constructs. Justification for the choice of this theoretical foundation follows in the discussion. The chapter closes with a discussion of some limitations of the chosen theoretical lens.

3.2 Theoretical Foundation

The use of theory in research enable researchers to untangle issue that confront practitioners and to provide practically effective solutions that help solve real problems (Levy & Ellis, 2006). Levy and Ellis (2006) also noted that the use of theory in research provides a strong justification for the chosen research approach and methodology. According to Walsham (1995b), researchers always try to find roles for theories which they use in their work. Theory can be used as an initial guide to research design and data collection, or part of an iterative process of data collection and analysis or it can be a final product of research (Eisenhardt, 1989). These are the three dominant roles and uses of theory in research. The circuits of power framework as the theoretical foundation in this study is part of an iterative process of data collection and analysis.

3.3 The concept of Power from the IS perspective

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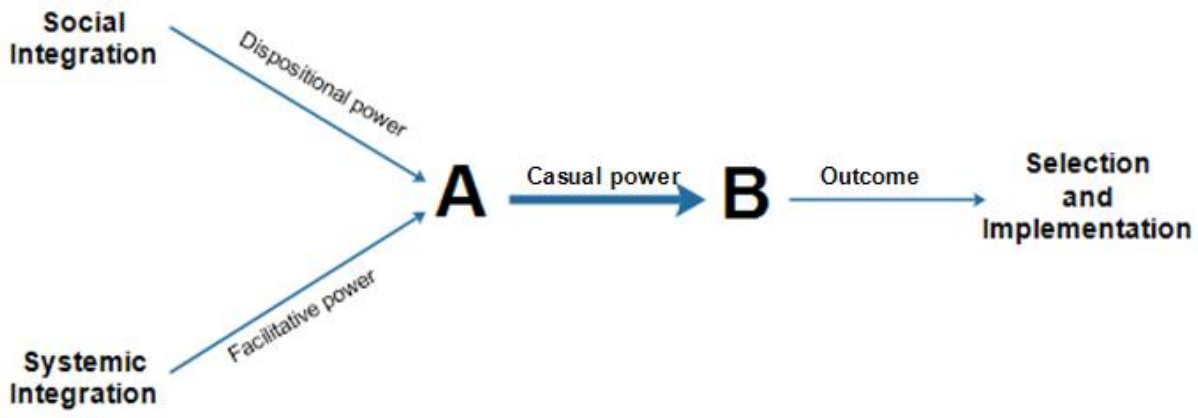
3.4 Clegg's Circuits of Power Framework

The circuits of power framework is the brainchild of Stewart Clegg (Clegg, 1989). Clegg (1989) likened the flow of power in organizations to how electric power flows invisibly and silently through an electric circuit. The framework consist of three circuits: episodic circuit, social circuit and systemic circuit. The episodic circuit represents casual power, the social circuit represents dispositional power and the systemic circuit represents facilitative power. Thus, each circuit represents a different type or form of power that are interlinked in an intricate manner.

Both Ye et al. (2012) and Silva and Fulk (2012) who used the circuits of power framework in their studies believed it offers a new and rich multiple insight to power.



The circuits of power and its outcome culled from Silva and Backhouse (2003).

The episodic circuit is considered a low-level circuit whiles the other two circuits are considered high-level circuits.

3.5 Fundamental concepts of the Circuits of Power Framework

The circuits of power framework is a potent tool that can be used to understand power and its related issues (Silva & Fulk, 2012). The framework consists of three main circuits namely the episodic, social and systemic circuits. These circuits are discussed in detail in the next subsections.

3.5.1 The Episodic Circuit

Episode as referred to in the episodic circuit include the situations and narratives that characterize the other two circuits of power. The episodic circuit of power is made up of

agencies, resources and outcomes. Consequently this circuit is shows the ability of agents to take control of resources and the ones that are successfully tend to have a stronger base of power (Silva, 2007). Episodic power refers to the power one agent has over another agent and it is referred to as 'power over' or casual power. This power makes the agent executing the power make the other agent do what he or she, given the opportunity, would not do. Action is thus the normal consequence or outcome of casual power (Howcroft & Light, 2006). The two agents must be related and the controlling agent must have access to resources. Casual power manifests in the presence of resistance without which it is not noticeable. For instance according to Ye et al. (2012) if users of an innovation or a new system are willing and happy to use the innovation or system, there is no exercise of casual power. The agent exercising casual power may be an individual or a group (As) and those over whom this power is exercised may be a group or individuals (Bs) (Dahl, 1957). Silva and Backhouse (2003) argued that the episodic is fully integrated into the normal practices of organizations when there is no conflict or resistance.

3.5.2 The Circuit of Social Integration

The social integration circuit is concerned with dispositional power. The relationship between rules of meaning and of membership are manifest in this circuit (Silva, 2007). What constitutes legitimate and illegitimate power within an organization is associated with this circuit (Silva, 2007). The conditions necessary for one agent to exercise power over another agent (i.e. standing conditions) are rooted in the social integration of the organization. Rules of meaning refers to the various interpretations organizational agents give to a phenomenon. For example top management may interpret a new system in terms of effectiveness and standardization but users may view that same system as needless, disruptive and a white elephant. The rules of membership include agents position of authority and associations which enables them to access

resources and legitimation to exercise power (Silva & Backhouse, 2003; Smith, Winchester, Bunker, & Jamieson, 2010). Agents that occupy top positions in the organizational hierarchy have higher authority tend to have more power. The episodic circuit emphasizes the exercise of casual power and action. Conflicts which arise as a result of actions may be manifest in this circuit but the source of the conflict may be hidden. The circuit of social integration aid the identification of the sources of power and conflict. Conflict result from divergent interpretation and different meanings agents assign to a phenomenon. The source of power thus known form this circuit.

3.5.3 The Circuit of Systemic Integration

The systemic circuit relates to the exercise of facilitative power. Facilitative power, also referred to as 'power to', connotes the positive notion of power where individual wills are bend in order to achieve organizational goals or collective objectives (Clegg, 1989; Ye et al., 2012). This power is productive because it enables the organization to achieve outcomes. The system integration circuit entails techniques of production and rules of discipline (Clegg, 1989; Clegg, Courpasson, & Phillips, 2006; Mingers & Willcocks, 2004). Techniques of production are the materials and the procedures that an organization employs to generate output in terms of goods and services. Rules of discipline defines what constitutes right or defiant behaviours as well as the reward for doing right and punishment for misconduct. The systemic circuit therefore ensures cohesiveness in organizations as asserted by Silva and Fulk (2012). Change and transformation emanates from this circuit and the nature of ICT as a potent source of transformation and tension is evident from this circuit (Silva, 2007). The precise course the As want the Bs to follow in order to achieve the desired results.

3.6 The Circuits of Power Framework in IS research

A good number of studies in IS have made use of the circuits of power framework (e.g. Backhouse, Hsu, & Silva, 2006; Davenport & Leitch, 2005; Silva, 2007; Silva & Backhouse, 2003; Silva & Fulk, 2012; Smith et al., 2010; Yang & Hsu, 2011; Ye et al., 2012). Smith et al. (2010) used the circuits of power framework to interpret power, cultural relationships, norms and resistance in the process of compliance to IS security standard using eighty nine agencies of a government organization in New South Wales (NSW) State Government, Australia. Their study found out, among other things, that cultural biases and group norms contributed strongly towards resisting compliance to IS security standard.

In an elaborate study Silva and Backhouse (2003) used the circuits of power framework to explain the role of power in the institutionalization of IS. They favoured this framework because it views power from three different perspectives represented by three different circuits. Many other theories and frameworks of power are one-dimensional. In the end, they argued that power is both the cause and outcome of institutionalization of IS. Silva and Fulk (2012) employed the circuits of power framework quite differently. Unlike the others, they used the framework as a tool to categorize other studies on power. Studies on ERP implementation were group by the three circuits based on which perspective the authors took in examining issues of power. Their studies provided a more comprehensive view on the issues of power.

3.7 Choice of the Circuits of Power Framework

The choice of the circuits of power framework as the theoretical foundation is based on the fact that this study if focused on power and the framework captures multiple perspectives of power. Most of the other frameworks of power capture one perspective of power and hence presents only a partial picture of the phenomenon of power. As mentioned earlier, Silva and Fulk (2012)

endorsed the circuits of power framework as an appropriate theoretical lens to study issues related to power in IS. In this light, they used the framework to group ES literature on power issues. This led them to provide a holistic view on power relations and power struggles in the implementation of ERP systems. Thus when a researcher seek to unravel the effects of power in an IS project the circuits of power framework is the most appropriate.

Silva and Backhouse (2003) also noted the circuits of power integrates different views of power and the circuits explain and enrich one another. Authors who used the circuits of power framework in their study (i.e.Backhouse et al., 2006; Davenport & Leitch, 2005; Smith et al., 2010; Vaara, Tienari, Piekkari, & Säntti, 2005; Yang & Hsu, 2011) favoured the framework because of its explanatory power. This study seek to deepen and broaden understanding about the effects of power in ES selection and implementation. The circuits of power framework best meets the goal of this study hence its adoption as the theoretical foundation.

3.8 Limitations of the Circuits of Power Framework

Though the circuits of power framework is a compelling tool for studying power in organizations, it has some limitations. It is worth noting that the distinction between the these circuits is to ease analysis but in reality they are intertwined and complexly interrelated aspects of power (Mingers & Willcocks, 2004). Ye et al. (2012) corroborated this assertion by arguing that the circuits of power framework is highly abstract in nature. This means that novice researcher may find very difficult to understand and properly apply this framework to their studies. Also, the framework has no strong link with data. This according to Silva and Backhouse (2003) is a limitation to researchers. The weak relation between the framework and data means that large volume of data must be collected in order to properly apply the

framework. Though very potent, the circuits of power framework is not an exhaustive tool in studying power.

3.9 Summary

This chapter presented the chosen theoretical foundation for this study. The main constructs of the framework were discussed as well as studies in the IS field that made use of this framework. Justification for the choice of this framework was also provided and finally limitations of the framework was presented. The next chapter discusses the methodology of this study.

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

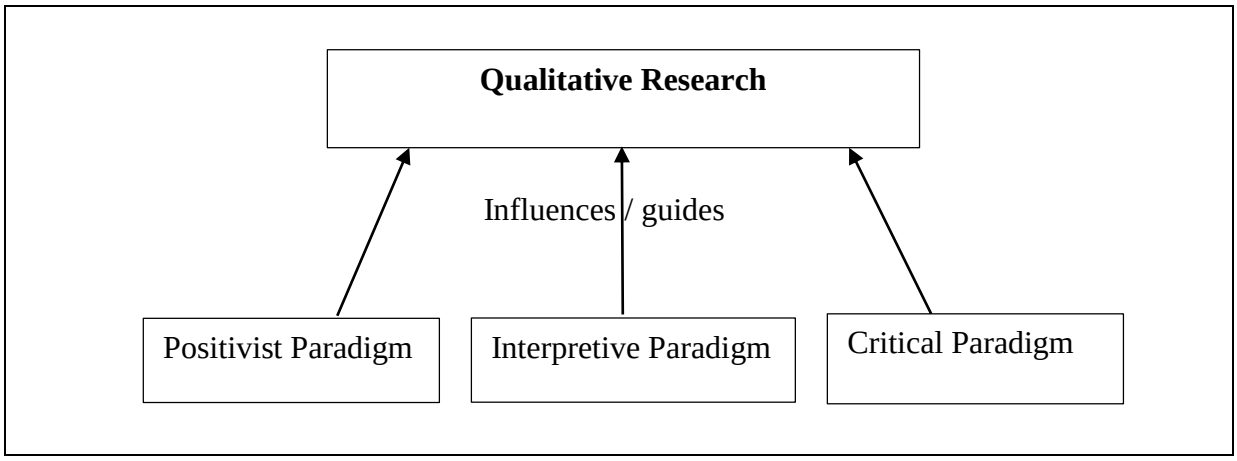
The previous chapter discussed Clegg's model of power as the theoretical framework for this study. This chapter focuses on a full discussion of the research methodology for this study. The chapter opens with a discussion on the main research paradigms commonly used in information systems research. Interpretivism is then discussed as the chosen paradigm. This is followed by discussion on qualitative case study as the chosen methodology for the study. The chapter further discusses the data collection and analysis methods used for this study.

4.2 Research Paradigms

Every research has a set of underpinning philosophical assumptions which are defined by the research paradigm adopted for that study. According to Kuhn (1996) a paradigm is "a set of beliefs, values and techniques which is shared by members of a scientific community, and which acts as a guide or map, dictating the kinds of problems scientists should address and the types of explanations that are acceptable to them" (p. 175). The ontology, epistemology and methodology of a given study are determined by the chosen research paradigm. It is therefore very important for researchers to always state explicitly the research paradigm chosen for a study. Ontology refers to the nature of reality whiles the nature of knowledge is referred to as epistemology and the ways and tools researchers employ to study knowledge about the reality is methodology (Guba & Lincoln, 1994; Myers, 1997; Orlikowski & Baroudi, 1991; Sedmak & Longhurst, 2010; Walsham, 2006b). Though many research paradigms exist three most widely used paradigms in Information Systems (IS) research are positivist, critical theory and interpretive paradigms (Myers, 1997; Orlikowski & Baroudi, 1991). Myers (1997) noted that

these three major research paradigms guide or influence qualitative research. The interpretive paradigm is relatively new in IS research but fast gaining popularity while the positivist paradigm is the oldest and most used paradigm in IS research (Walsham, 1995b).

Figure 4. 1 – Paradigms in qualitative IS research



Source: Myers (1997)

As depicted in the diagram above, Myers (1997) argued that qualitative research is underpinned by three main paradigms namely: positivist, interpretive and critical paradigms. These three main paradigms are now discussed in turn in the subsequent subsections.

4.2.1 The Positivist Paradigm

The positivist paradigm is the most popular of the three paradigms in IS research. Positivism posits that there is an objective reality which cannot altered. This objective reality can be studied empirically in a systematic and rational way. It is argued that throughout the study the researcher is insulated from the phenomenon being studied hence the researcher is neutral and objective. The independence of the researcher and the research instrument ensures validity with results that are generalizable. In positivist research objective reality is captured using predictions and control (Lee, 1991). The ontological stance of positivism is that there is an objective reality that is beyond the knowledge and altercation of humans and that this stable

reality can be investigated without bias (Lee, 1991). Epistemologically, this objective and stable reality can be investigated validly if researchers employ objective and independent methods of study (Orlikowski & Baroudi, 1991). Positivists believe that the same phenomenon studied by different researchers at different times should yield the same result. Thus, it is possible to replicate the results of s study at different times (Guba & Lincoln, 1994). With regards to methodology, positivists employ the scientific method from the natural sciences (Guba & Lincoln, 1994). Whiles good at prediction and generalization, the positivist paradigm is criticized because it does not regard human subjects who experienced the phenomenon under study neither does it considers complexities that exist in the social world (Orlikowski & Baroudi, 1991).

4.2.2 The Critical Paradigm

Critical theorists believe that people can make conscious effort to change to any undesirable circumstance they may find themselves in; being it social or economic. According to Orlikowski and Baroudi (1991), researchers who adopt critical realism are usually agents of change who challenge and change the existing state of affairs in order to improve upon the life of people. In their quest to liberate themselves and improve upon their circumstances, people face many impediments being it economic, political or social. What critical theorists seek to do is to investigate and bring to light these impediments for them to be dealt with so that positive change is brought into the lives of people (Klein & Myers, 1999; Orlikowski & Baroudi, 1991).

The epistemological stance of critical realism is that knowledge is grounded in social and historical practices. Thus a phenomenon under study cannot be insulated from the context and the political, historical, economic and social factors that influence the phenomenon (Orlikowski

& Baroudi, 1991). The methodological stance of this paradigm enable critical theorists to study complex phenomenon and unravel deep casual causal explanation of the phenomenon.

4.2.3 The Interpretive Paradigm

The interpretive research paradigm considers reality as subjective. Reality is interpreted by human subjects and therefore easy to understand. Walsham (1995b) goes further to explain that there are two types of reality in interpretive research. First, the subjective reality which is the reality constructed by individuals and groups. Second, the intersubjective reality which is the reality constructed between the researcher and the participants who experienced the phenomenon under study. The positivist paradigm is sharply opposed to this notion of multiple realties. The ontological position of positivism is that there is an objective reality that cannot be altered by human subjects (Lee, 1991). Because multiple realities exist in interpretive research, the researcher may be engulfed investigating how this multiple reality change over time, space and across culture and different contexts. Human subjects who experience or observe this reality cannot insulated in any way from the phenomenon being studied (Myers, 1997; Walsham, 1995b).

Epistemologically, interpretive paradigm argues that knowledge is actively and intentionally created between the researcher and the researched (Walsham, 1995a, 1995b). Unlike positivism that insulates facts from value, interpretive paradigm acknowledges knowledge as humanly composed due to the link between facts and values. The socially-constructed knowledge stems from how human subjects without - imposing their formal experience - assign meanings and values to phenomenon of interest in their own contexts (Myers, 1997; Walsham, 1995a, 1995b).

Methodologically, interpretive researchers fall on qualitative methods such as case study, ethnography and grounded theory to study a phenomenon of interest (Creswell, 2007; Myers, 1997).

4.3 The choice of the Interpretive Paradigm

The appropriateness of the research depends on a number of factors including the researcher's purpose of study. Each research paradigm is good in its own right and its usage and suitability for a particular study is depends on the researcher, the research objectives and the type of study (Walsham, 1995a, 1995b). In fact, Creswell (2007) noted that it is possible to carry out a study using a combination of research paradigms. He believes that the same phenomenon can be studied using different research paradigms. No one research paradigm is superior to the others.

The rationale for choosing the interpretive paradigm for this study stems from the fact that it offers rich insight into the phenomenon being studied and their interactions with real-life organizational and social contexts (Creswell, 2007; Effah & Abbeyquaye, 2014; Myers, 1997). As noted by Walsham (1995b), positivism is not suitable for studying social phenomenon that interacts with its context in a complex way. This is because positivism posits that knowledge is external and independent of human action or knowledge. It assumes fixed relationships within phenomena and normally employs structured instrument of measurement (Orlikowski & Baroudi, 1991). The positivist and critical realist paradigms are therefore unsuitable for this study.

4.4 Research Methodology

Myers (1997) confers that research data is either quantitative, qualitative or mixed. Numbers or numerical data are the building block of quantitative data. Conversely, qualitative comprise of words and group of words such as sentences. Other forms of data such as photos and images, audio and audio-visual data could be evaluated and analyzed to yield qualitative data. This research is principally a qualitative study hence data used is mainly qualitative in nature. A tiny amount of quantitative data has been gathered in the form of dates of selection and implementation of enterprise systems software, number of modules selected, duration of selection and implementation and number of participants interviewed. The qualitative data collected for this study was subjected to in-depth analysis and examination in order to understand the phenomenon under enquiry.

4.4.1 Quantitative methods

The quantitative method used numbers to represent values and the interpretation of these numbers give the scientific basis to explain how the phenomenon under study works (Creswell, 2007; Creswell, 2013). Because this method employ number statistical tools normally used to analyzed data gathered. This method is objective and that dissociates the researcher from the phenomenon under study. It follows a deductive process and not bounded by any content (Creswell, 2007; Creswell, 2013). It is impersonal and feature formal processes.

4.4.2 Qualitative methods

Qualitative methods are used to collect volumes of data about a phenomenon and its contexts (Myers & Liu, 2009). Data is therefore collected about the phenomenon as well as the context within which the phenomenon occurs. Unlike the quantitative method that deals with numbers

the qualitative method collect data in the form of words or text, images, video or audio. Data is gathered through observations, document and content analysis, and interviews using semi-structured questionnaire (Creswell, 2007; Myers & Newman, 2007). The researcher influences data gathered with the qualitative method and his or her interpretations influence the findings. This means that the qualitative researcher must be deeply involved in the data gathering.

4.5 Qualitative Research Methods

Research methods are very important in any research because they inform and impact data generation and analysis. How the researcher obtains data for the study and the choice of data analysis style is dependent upon the research method used for that study. Though many qualitative research methods exist in IS research, Myers (1997) identifies case study, grounded theory, ethnography and action research as the four main research methods popularly used in IS research.

Case study according to Yin (2003) case study is "an empirical enquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between phenomenon and context are not clearly evident". Orlikowski and Baroudi (1991) upheld this definition by suggesting that case study is good for studying interaction between technology and its context. Case study is a research method not limited to the interpretive paradigm. Both positivists and Critical Realists use case study as a research method. Case study is the most widely used research method in IS research (Gable, 1994). It offers the opportunity to ask deep, penetrating questions and to unearth organizational behavior but conclusions drawn are specific to the organization and may not be generalizable (Gable, 1994).

According to Creswell (2007), Ethnography is "a qualitative research design in which the researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs,

and language of a culture-sharing group". The ethnographer spends sometime on the field gathering data (Myers, 1997). This research method requires the researcher to immense himself deeply in the daily activities of the subjects being studied sharing in their experience (Creswell, 2007; Myers, 1997). The deep involvement gives the researcher a first-hand experience and enhances his or her understanding of phenomena being studied. Ethnography can take many different forms. According to Creswell (2007) the types of ethnography include confessional ethnography, life history, feminist ethnography, auto ethnography, ethnography novels, critical and visual ethnography.

Another research method is that is gaining popularity in IS research is grounded theory. Ground theory as a qualitative research method moves a step away from description to form or discover a theory (Creswell, 2007). Creswell (2007) defined grounded theory as "a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, action, or interaction shaped by the views of a large number of participants". The theory that is propounded gives opportunity for further research in order to test or extend the theory.

Altrichter, Kemmis, McTaggart, and Zuber-Skerritt (2002) gave a comprehensive and insightful definition of action research. They defined action research as

"a form of collective, self-reflective inquiry that participants in social situations undertake to improve: (1) the rationality and justice of their own social or educational practices; (2) the participants' understanding of these practices and the situations in which they carry out these practices. Groups of participants can be teachers, students, parents, workplace colleagues, social activists or any other community member. Thus, any group with a shared concern; and the motivation and will to address their shared concern. The approach is action research only when it is collaborative and achieved through the critically examined action of individual group members."

Action research de-emphasizes a mere contribution to knowledge and emphasizes the application of knowledge gained to practical social problems (Myers, 1997).

4.6 Choice of Interpretive Qualitative Case Study

This study seeks to understand the effects of power on the selection and implementation of ES software. The choice of interpretive case study is to enable the researcher gather rich data about the phenomenon and the context within which it occurred. It is also to help gain an in-depth understanding of the effects of power on ES selection and implementation as well as an insightful expatiation of the mutual relationship between the researcher and the participants (Keutel & Werner, 2011; Myers & Avison, 2002; Walsham, 2006a). The researcher employed multiple case study in order to increase understanding about the phenomenon under study.

Interpretive case study method uses induction techniques with quite an informal language (Creswell, 2007).

4.7 Selection of Cases and Fieldwork

Fieldwork involved multiple trips to the case organizations for collection of data that is relevant to the study. Fieldwork was divided into two major phases of data collection from both organizations using data collection methods that are consistent with the research paradigm and methodology chosen for this study. The first part of data collection spanned a period of about five months from October 2013 to February 2014. During this phase, author commuted several times between the two case organizations gathering relevant data through conducting face-to-face semi-structured interviews, website scanning and document analysis, observation and informal discussions.

4.7.1 Selection of cases

Purposive sampling and snowballing were the sampling methods used to arrive at the two cases picked for this study. When it became clear from literature review that the study would involve organizations that have selected and implemented modules of enterprise systems, the author contacted a number of friends and associates to find out if their organizations have selected and implemented enterprise systems. Some of these friends and associates also contacted other friends and ask them to participate in the study (snowballing). Feedback from all these contacts were screened and follow up calls to some potential organizations were made especially to IT managers and administrators in order to ascertain that they are using a software that is truly an enterprise system. Organizations with software systems that are classified as enterprise systems were dropped. Also, organizations that have selected some enterprise system software but are yet to begin with the implementation phase were also not considered for this study. In the end two organizations - that have selected and implemented enterprise systems - were selected as case organizations for this study.

Two cases were chosen for this study in order to compare and contrast the findings of the cases selected. Multiple case study according to Benbasat, Goldstein, and Mead (1987) allows for in-depth case analysis ad well as cross-case analysis where similarities and differences in the settings or contexts are unearthed. Multiple case study is an effective way to capture rich information about the phenomenon being studied and also builds the platform for collecting evidence from multiple sources to enhance our understanding of the findings (Myers, 1997).

4.7.2 Level of Entry and how the researcher maintain access

The level at which a researcher "enters" an organization is very important. For instance a researcher who "enters" an organization through a junior or senior staff may find it difficult or impossible to get access to top management for interview. For this study, entry to **Company1** was through a director who also introduced the author to another director in charge of the MIS department and a senior database administrator directly in charge of the enterprise system implementation. Entry to **Company2** was through the instrumentality of a senior staff who introduced the author to the Business Systems Specialist (BSS) of the organization. The BSS is directly in charge of the enterprise systems selection and implementation team.

Maintaining access to the case organization is also crucial for further data collection at a later date. If the researcher fails to maintain, his or her ability to obtain further data from the case organization if the need arises may prove rather difficult. Maintaining access guarantees continued collection of data until the study is completed. To maintain access the author uses phone calls, WhatsApp, email and Skype to keep in touch with key informants. Being in touch constantly makes it easier to get data through informal discussions and also through future calls.

4.8 Data Collection and Data Collection Methods

The discussion in this section is not exclusive to the methods, tools and techniques that was used for data collection but extends to cover data sources as well. Based on the research paradigm and methodology chosen for this study, data collection followed after the tradition laid down by interpretive researchers such as Klein and Myers (1999) and Walsham (2006a). In conformity with the interpretive qualitative case study tradition (Walsham, 2006a), data was collected from multiple sources. Accordingly, data collection methods used to gather or

generate data for this study include the following: document analysis, website content analysis, participant observation, and semi-structured interviews. Following is a brief description of each of the methods and how they were employed in gathering data.

4.8.1 Website analysis

Data gathering started with the author first visiting the websites of both companies in order to gather some general preliminary data. Whiles gathering some data through this means, informal discussions through email, Skype, WhatsApp and occasional phone calls ensued. This allow the author to lay hands on some preliminary data about the organizations and the enterprise systems they use. It was realized that **case one** uses *Oracle enterprise* whiles **case two** has selected and implemented *JDEdwards*. Both enterprise systems Software are owned by oracle Inc. The author therefore proceeded to the oracle website (i.e. www.oracle.com) to find out more about these enterprise systems Software before visiting the case organizations. Data gathered through website scanning and analysis include company's history and profile, organizational chart, locations of offices, area of business operation and business partners. From the enterprise systems software vendor's website, data on sales and forecasts, enterprise systems modules available and benefits of using enterprise systems software were some of the data collected.

4.8.2 Semi-structured interviews

During the numerous visits to the case organizations, semi-structured interviews were conducted with participants face-to-face. Questions on the interview protocol were asked. Follow-up questions that were not part of the questions prepared in advanced were also asked either to seek clarification or to elicit further information. Where participants were comfortable

- and with their permission – interviews were recorded using a voice recorder else note were taken with pen and paper. Before the start of each interview, participants were assured of confidentiality and the use of the data gathered for academic purposes only. In all about ten interviews were conducted in phase from both case organizations. Participants interviewed so far included Business Systems Specialist, Senior Oracle systems Administrator and users from different departments. The Senior Oracle Database Administrator at **Company1** and the Business Systems Specialist at **Company2** were deeply involved with the implementation efforts of their respective organizations. Total interview time with these two participants during the multiple visits is about ten (10) hours! Other participants were interviewed between 5 to 15 minutes.

Below is a tabular presentation of summary of interviews done in phase I.

Case	**Participant / Role**	**Number of Interviews**
Company1	Senior Oracle Database Administrator, Users from finance and MIS departments	23
Compnay2	Business Systems Specialist, Users from Finance, Survey and IT departments	19

Questions asked during the interview borders on the nature of business operations and the circumstances or business need that led to the decision to acquire enterprise systems. The various software systems that has ever been used or is been used were also found out. How the enterprise systems in use was selected and how the individual modules got selected was asked. The selection criteria and how it was established was also of interest to the author. Questions were also asked about how the implementation was constituted. When, where and how the actual implementation took place and the duration was quizzed. Users from other

departments were asked basically about their role and level of involvement in the selection and implementation of the enterprise system software currently in use.

Semi-structured interviews involves the use of an interview guide with questions that do not form a fully completed list of questions. This allows for improvisation during the interview (Myers & Newman, 2007). Questions not on the list of questions prepared in advance could pop up during interview. These pop-up questions together with follow-up questions allow the researcher to dig deep into the organization and phenomenon under study for deeper understanding of the phenomenon. For this study, an interview protocol with a few list of closed and open-ended questions was prepared and administered in a face-to-face semi-structured interview. According to Myers and Newman (2007), the use semi-structured interview to collect qualitative data is a very excellent process though not without challenges. The table below summarizes the various problems and pitfalls, and how they affect the use of semi-structured interview in qualitative study.

No	**Problem / Pitfall**	**Description**
1	Artificiality of the interview	The qualitative interview involves interrogating someone who is a complete stranger; it involves asking subjects to give or to create opinions under time pressure.
2	Lack of trust	As the interviewer is a complete stranger, there is likely to be a concern on the part of the interviewee with regard to how much the interviewer can be trusted. This means that the interviewee may choose not to divulge information that he or she considers to be ‘‘sensitive’’. If this is potentially important information for the research, the data gathering remains incomplete.
3	Lack of time	The lack of time for the interview may mean that the data gathering is incomplete. However, it can also lead to the opposite problem – of subjects creating opinions under time pressure (when these opinions were never really held strongly to start with). In this case more data are gathered but the data gathered are not entirely reliable.
4	Lack of entry	The level at which the researcher enters the organization is crucial (Buchanan, Boddy, &McCalman, 1988). For example, if a researcher enters at a lower level, it may prove difficult if not impossible to interview senior

		managers at a later date. In some organizations, talking to union members can bar access to management and vice versa. Additionally, gatekeepers may inhibit the researcher's ability to access a broader range of subjects.
5	Elite bias	A researcher may interview only certain people of high status (key informants) and therefore fail to gain an understanding of the broader situation. Miles and Huberman (1994) talk about the bias introduced in qualitative research by interviewing the ''stars'' in an organization. Elite bias concerns overweighting data from articulate, well-informed, usually high-status informants and, conversely, under-representing data from intractable, less articulate, lower-status ones (Heiskanen & Newman, 1997).
6	Hawthorne effect	Qualitative interviews are intrusive and can potentially change the situation. The interviewer is not an invisible, neutral entity; rather, the interviewer is part of the interactions they seek to study and influences those interactions (Fontana & Frey, 2000). The researcher may intrude upon the social setting and potentially interfere with peoples' behaviour.
7	Constructing knowledge	Naıve interviewers may think that they are like sponges, simply soaking up data that is already there. They may not realise that, as well as gathering data, they are also actively constructing knowledge (Fontana & Frey, 2000). In response to an interviewer, interviewees construct their stories – they are reflecting on issues that they may have never considered so explicitly before. Interviewees usually want to appear knowledgeable and rational, hence the need to construct a story that is logical and consistent.
8	Ambiguity of language	The meaning of our words is often ambiguous, and it is not always clear that subjects fully understand the questions. Fontana and Frey (2000) say that ''Asking questions and getting answers is a much harder task that it may seem at first. The spoken or written word has always a residue of ambiguity, no matter how carefully we word the questions or how carefully we report or code the answers'' (Fontana & Frey, 2000, p. 645).
9	Interviews can go wrong	Interviews are fraught with fears, problems and pitfalls. It is possible for an interviewer to offend or unintentionally insult an interviewee, in which case the interview might be abandoned altogether (Hermanns, 2004).

Source: culled from Myers and Newman (2007)

Great care was taken during data collection especially during the administration of the semi-structured face-to-face interview to at least minimize or where possible avoid these pitfalls and problems.

4.8.2.1 How problems and pitfalls were avoid during data collection with interviews

The author's numerous visits to the case organizations served many useful purposes. The first two visits were more like a "familiarization tour" which enable the author to get acquainted with potential participants. These visits to meet some school mates and get people informed about an oncoming data gathering activity. This exercise proved invaluable later when semi-structured interviews were conducted. Lack of trust and artificiality of the interview were avoided because at the time of interview, the author was no longer a complete stranger to the participants. The many site visits also enable the author to interview people only when they have some time to spare for the interview. This eliminated the pressure that could mount on participants due to lack of time. Though the Senior Oracle Database Administrator and Business Systems Specialist were identified as key informants in case one and case two respectively, many other participants were interviewed in order to avoid elite bias. The author's choice of words were carefully constructed and explanations from the author as well as clarifications were seek in order to prevent the interview from going wrong and also reduce the negative repercussions of language ambiguity. The author was careful to implore the support and involvement directors and senior management. This is to prevent the pitfall of lack of entry where a researcher who enters an organization from a lower level fails to secure interview with senior management.

4.8.3 Participant observation

Observation is one principal way of obtaining qualitative data. With this technique, the researcher observes the participants or the phenomenon under investigation in order to gather relevant data. Aside employing semi-structured face-to-face data to collect data, the author

during his numerous visits watched users use the enterprise systems in place at both organizations (participant observation). The author wanted to observe excitement and ease or otherwise with which users use the system. It was an opportunity to crosscheck which modules of the selected enterprise systems were set up for use. It was observed that problems with network connectivity and weak Internet connection affected easy access into the enterprise system by users.

4.9 Data Analysis

Data gathered from all sources was analyzed in accordance with the interpretive data analysis approach (Orlikowski & Baroudi, 1991; Walsham, 1995b). In interpretive data analysis clear distinction between data gathering and data analysis is not emphasized (Myers & Avison, 2002). Data gathering and analysis therefore went hand-in-hand with continuous and deep reflection on the data gathered. Initial data gathered was analyzed to identify emergent themes and concepts. Orlikowski and Baroudi (1991) and note that the findings of the initial data analysis shape the subsequent data collection and analysis. Themes and concepts were compared in a cross-case analysis to see whether they are the same or different. Themes were related to the research questions and the analytical lens used for the study. That is, the constructs in Clegg's circuits of power model which forms the research framework for this study were used as the basis of grouping and analyzing data. Data was also analyzed hermeneutically to generate answers to the proposed research questions in chapter one.

Hermeneutics is primarily concerned with the interpretation of text. It is thought of as originating from the interpretation (not the mere study) of the Bible (Lee & Dennis, 2012). A few studies in IS used hermeneutic approaches. As argued by Kinsella (2006), hermeneutics is most applicable to textual and interpretive works. It helps to understand the experience of

human subjects by generating meanings of a phenomenon. To understand a phenomenon or a particular text, hermeneutics make use many concepts including the following: hermeneutic circle, distanciation, historicity, prejudice, autonomization, appropriation and engagement. This study employed the hermeneutic circle and conversation in the analysis of data. Hermeneutic conversation refers to a "dialogue" between the researcher and the text gathered. Researcher's queries that were not answered by the data prompted further data gathering and analysis. This iteration helped to progressively obtain relevant understanding of the effects of power in the selection and implementation of ES. Hermeneutic circle is basically concerned with the following structure: pre-understanding, analysis and new understanding. As explained by Lee and Dennis (2012) and Kinsella (2006) we

"understand a complex whole from preconceptions about the meanings of its parts and their interrelationships."

Thus we move iteratively from the whole to the parts and the parts back to the whole to gain new and better understanding of a phenomenon. Each movement from the whole to the parts (that make up the whole) and back to the whole constitutes a spiral. After interview a drafted copy if the data gathered was emailed to three key informants who review the document and input their feedback. Their feedback was incorporated into the final write up to complete the hermeneutic circle.

4.10 Summary

This chapter discussed in detail the research paradigm and methodology as well as the methods used to collect and analyze data. Justification was provided for the choice of interpretive qualitative case study adopted for this study. The chapter also discussed the case selection process and fieldwork, data collection methods and analysis techniques used for the study. The

succeeding chapter would focus on the report of findings based on the methodology discussed in this chapter.

CHAPTER FIVE

CASE DESCRIPTION AND FINDINGS

5.1 Introduction

The previous chapter presented the research paradigm, methodology and methods used for this study. It also presented interpretive case study as the chosen research method as well as the process of case selection and fieldwork. This chapter presents findings from the two selected cases. For each case the background, previous IS in place before the selection and implementation of enterprise systems and the decision to acquire an enterprise system is presented. Further, the chapter presents the process each case organization went through to select and implement the chosen enterprise system. The chapter concludes with a presentation on the consequences of choosing and using the enterprise systems now in place.

5.2 Enterprise systems selection and implementation in Ghana

The use of computers and other Information and Communication Technology ICT tools in Ghanaian organizations was not ubiquitous until the 1990s. Companies that were early adopters of ICT managed to increase their market share, improve upon their operations and became more competitive in their respective industries. As the potency of ICT to improve business operations and service delivery became visible, many more companies and organizations invested in computer and related technologies to support critical business processes. With the establishment of the National Communications Authority (NCA) and the offerings and improvement in Internet and related technologies, companies are now able to link up with others and offer services through the Internet. For example the banks now rely heavily on the Internet to reach and manage their customers using CRM systems.

With the continuous and rapid deployment of computer-mediated technologies, Enterprise Information Systems finally got the attention of business organizations. Initially, very few business organizations dare implement ES due to the huge investment cost associated with such implementations. From the early 2000s up till today a good number of business organizations are especially the multinational subsidiaries are now implementing ES solutions. Most of these organizations can be found in the mining industry. Many organizations are now going for ES solutions and more may be on their way to implement these systems.

5.3 Company1 case study

This section focuses on the findings from Company1. The section begins with general background and business operations of Company1. It touches on company's history, mission and vision. The section then progresses with the presentation of findings on the business need that spawn the decision to acquire an enterprise system. Data gathered on how the enterprise system was selected and implemented is also presented. This section concludes with the consequences of choosing and using the Oracle E-Business Suite.

5.3.1 Background of Company1

Company1 is an organization that generates and sells electric power. It was establish in 1961 by an act of parliament as a major power generation company that combines hydro, thermal and solar plants to generate electricity for local consumption as well as for export. Company1's reach to its customers and neighbouring countries is made possible by the transmission system of Ghana Grid Company Limited (GRIDCo). The company generates and sells bulk electric power directly to the mining industries and the Electricity Company of Ghana (ECG). ECG, in turn, sells the electric power directly to domestic consumers in the Southern Sector. Company1

sells power directly to domestic consumers in the Northern Sector through a subsidiary known as the Northern Electricity Distribution Company (NEDCo).

The Company1 has a mission to power economies and raise the living standards of the people of Ghana and West Africa. The company's vision is to set the standard for public sector excellence in Africa. With total installed capacity of 2,104.5 megawatts, Company1 contributes about seventy-five percent of the total power generation in Ghana. Company1 has strong Corporate Social Responsibility (CSR) providing social enhancement projects such as classroom blocks and health facilities and community development programmes such as social infrastructure and youth training programmes.

5.3.2 IS at Company1 before Oracle E-Business Suite

Company1 has long recognized the indispensable role of IS in achieving performance excellence and as a result implemented various information systems to help manage its business processes. Apart from the purchase of a number of packaged OTS Software, Company1 also developed some in-house Software and applications in response to some challenges it faced over the years. These has led to the use of many disparate systems and applications at Company1 before a decision was reached to implement an ERP system.

Before the implementation of the Oracle EBS the accounting and finance department of company1 was using Computron Financial Systems to manage its business activities. The maintenance department was also using a system known as Maintenance Controller for its tasks. These two information systems could best be described as departmental or functional systems because they were limited to specific departments. The Human Resources department

was also using the two modules of the Oracle ERP system namely the HR and payroll modules. These two modules were implemented in the year 2000 and has been in use since then. All these systems were not connected to one another in anyway and that resulted in many challenges. Reporting and managerial decision-making was a very daunting task flaunt with delays and inaccuracies. This was because there was lack of visibility across functional areas and obtaining timely and accurate data from the different systems was a huge task. During the interview one Oracle database administrator noted that:

"*Because the two systems are disparate, we have to use an interface file. We would write a script to spool data in the format we wanted into the oracle application and the file would be copied over FTP onto the Computron system and we were having many challenges. We were therefore thinking of having one system instead of disparate systems."*

Other noted challenges include inability to track the total cost of equipment as well as the cost breakdown for various items, difficulties in obtaining timely and accurate data, delays and lack of visibility across functional areas.

The aforementioned systems were not the only systems Company1 was using before the decision to go for an ERP system was made. There were many other systems and custom-built applications developed in-house to solve many different problems faced by Company1 over the years. Among these systems include a billing system known as AMC and another system called SNT used for monitoring the Social Security and National Insurance Trust (SSNIT) contribution of employees.

Though the use of many different systems and applications posed many challenges to Company1, the Maintenance Controller IS used by the maintenance department was the main

trigger for the decision to go for an ERP system. Company1 now want to be cost-oriented than ever before due to the high and ever-increasing cost of equipment and items it employs in production. Company1 now wanted to know for example the total of using an equipment. This includes for instance the cost of purchase of the equipment and the rate of depreciation for that equipment up to the time the equipment is retired. Data on this cost breakdown and the total cost of usage for each equipment or item was not available from the existing systems. A lot of data manipulation and comparisons has to be made to obtain the required data that is not so reliable. Though data obtained is not so reliable, it takes a long time to obtain this data due to the lack of a centralized database and data format issues. In the end, reporting was neither effective nor timely. This was the major trigger for the decision to go for an ERP system.

5.3.3 Selection of Oracle E-Business Suite

Company1 made the decision to implement an enterprise system in 2010 and began the selection of the new system that same year. Before arriving at the final selection, senior managers at Company1 defined the scope and requirements for the new system, set the criteria to evaluate the ES vendors, sent RFPs and analysed the offers and costs before negotiation and final selection.

Determination of the requirements and scope of the ES project was the first step Company1 took to select the right system for implementation. Company1 had a lot of processes as well as numerous systems and applications running. It was therefore vital to determine which processes would be affected and how. The systems, applications, processes and all other resources of Company1 that would be affected by the new ES. All stakeholders had their hands on deck from this stage of the ES acquisition in order to get things moving right from the very

beginning. The requirement definition also include what is out of scope, standard and special requirements.

After the gathering of all requirements, senior management of Company1 came up with the following criteria to evaluate potential vendors based on their requirements, goals and objectives.

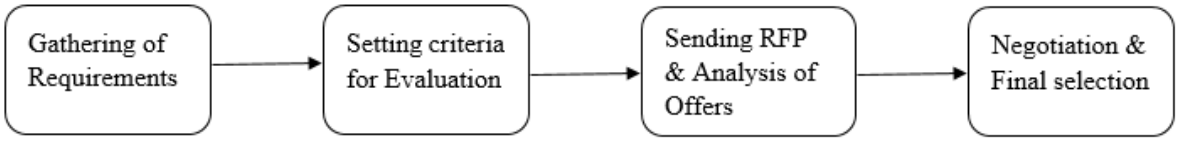
I. *Physical Geographical location and address of the Vendor*
II. *Number of years the Company has existed in the Software Industry*
III. *Proof of other Clients/Companies using the said product*
IV. *Ability of the Vendor to provide sustaining support and continuous training*
V. *Scalability and Portability of the software in question*
VI. *Cost of Software and Cost of yearly license fee*
VII. *Cost of software implementation*
VIII. *Ease of interfacing or compatibility with already existing Applications at Client's site*
IX. *Ease of software maintenance, patching, upgrades and migrations*

SAP and Oracle were the two main ES vendors contacted. Even at this initial stage Oracle was at a high advantage because two of its modules were already being used by Company1. A manager affirmed this during the interview by saying that "*Oracle HRMS was already in use so we just continue with Oracle.*" After sending out RFPs to both vendors Company1 analysed the offers it received and settled on Oracle as the vendor to supply the ERP system. The ESs supplied and implemented are Oracle E-Business Suite Applications R12.1.3 ERP, Oracle Business Intelligence Enterprise Edition (OBIEE) and Oracle Hyperion Planning.

RFP including all the criteria that must be evaluated was sent to Oracle Inc. and SAP. These two ES vendors responded to the RFP with their offerings. The offerings were scrutinized and analysed in detail looking at various aspects such as cost, resources involved and

duration of implementation. After the final negotiations, the contract was awarded to the vendor with Company1 following the sole sourcing procurement procedures according to the Laws of Ghana.

Figure 5. 1 - The selection process of Oracle EBS at Company1



5.3.4 Implementation of Oracle E-Business

The announcement of the ERP implementation project was met with mixed feelings. Many were excited with the project but a few others were quite apprehensive not knowing what the future holds for them. Employees at the Finance department have used the Computron for about 19 years at the time of the ERP implementation announcement. They are therefore very comfortable using the legacy system hence the new ERP systems was a source of major disruption. Also, many workers at the Maintenance department are green horns in the use of IT hence the change from the manual system to computer-based IS was a bother to them.

Admittedly, change is a difficult but necessary process that is characterized with fear and uncertainty. To calm down tension and resistance there was broad stakeholder consultations by senior management to implore the support and involvement of all stakeholders. A small change management team was formed to manage the process of change. So prior to the implementation workshops, seminars and staff durbars were organized at all locations to educate and explain things to stakeholders and assured them that they were not going to lose their jobs except that

the way of doing things would change. The change management team is still in place because change is not realized in a day. The actual implementation of the Oracle EBS was preceded by two main activities namely Business Process Reengineering (BPR) and Local Area Network (LAN)/Wide Area Network (WAN) rehabilitation. The actual implementation started with a meeting of all stakeholders at one of the office locations of the company.

To execute the BPR project, senior management contracted an international audit firm to analyse company1's existing processes and to redesign workflows so as to achieve end-to-end process optimization. The BPR was to help company1 revise its business processes to reflect best practices in the industry, become more efficient in its operations, meet the requirements of International Financial Reporting Standards (IFRS) that is mandatory for all organizations**.** The BPR is therefore a crucial activity for company1 in its effort to achieve an all-round operational excellence. The consulting firm at the end of its work presented a report or document which became the requirement document used for the Oracle EBS implementation. So when the actual implementation started the consultants that involved in the BPR also visited the implementation site from time to time to offer explanations and help resolve issues related to the BPR document and the new processes. As mentioned earlier, the HRMS and payroll modules were already in use but because of the BPR some things have to change so the two modules were migrated based on the requirement document. Now for the modules that were not in use, license was purchased for them and setups (well, we may call them configurations) were created so that they can be used to suite processes based on the BPR.

The LAN/WAN rehabilitation was yet another crucial project that basically sought to get Company1 ready in the area LAN/WAN infrastructure for the actual Oracle EBS

implementation. The LAN/WAN rehabilitation project involved cabling and trunking, and LAN optimization. The LANs are then connected together to create the WAN. This was necessary for the successful implementation of the chosen ES. Formerly, company1 had LANs installed at their various locations. These separate LANs were not linked together so the various local offices of the company could not share information or any online resource. The existing network infrastructure at the time limited the capabilities of applications to share information. In a wise crack, a member of the Oracle pre-sales team that visited Company1 said:

"*You have bought a very powerful concord but without a runway*"

The "no runway" comment refers to the limiting power of the disintegrated LANs. To get the LAN/WAN infrastructure ready for the ERP system, there was the need for the local networks at the various locations of the company to be optimized and linked to create a WAN. The LAN/WAN rehabilitation project was therefore very crucial to the successful company-wide deployment of the yet-to-be-implemented ERP system.

The implementation of the chosen ES started in November 2011 with a meeting of all stakeholders at one of the office locations of Company1. The meeting was basically to discuss and confirm the BPR report as the requirement document for the Oracle EBS implementation. Actually implementation on site started officially in January 2012.

There were two project managers on the implementation team. One was an internal staff and the other was an external consultant from a project consulting company in the United Kingdom. Commenting on the need to bring in an experienced external project manager a director of Company1 during the interview said:

"*Company1 wanted a good job done so an external project manager from UK was brought in to manage the whole ERP implementation*".

Next, the Management Information Systems (MIS) department wrote to director in charge of the various departments and business units to present their team members for the implementation. A new project site was acquired for use as the implementation site. It was at this site that the whole implementation team assembled to execute the project. The implementation team consist of the following sub-teams:

Table 5. 1 - ES implementation team at Company1

TEAM	**Number of members**
Project managers	2
Finance team	5
Procurement team	5
EAM team	5
Technical team	15
Change management team	5
Total	**37**

The change management team was not directly involved in the actual implementation. It was mainly concerned with making the change management process as trouble-free as possible for all stakeholders. The team organizes durbars to educate and to provide useful information about the implementation project to all stakeholders. Since change management is not a one-time job, the team is task with continuously updating all stakeholders with relevant information about the project in order to allay all misgivings they might have about the new system. The senior management of company1 contracted an external project management firm in the UK to help manage the implementation project. The firm was contracted because of its rich experience in

the management of ERP implementation projects. An internal project manager was also appointed by senior management to be part of the project management team. The technical team comprise the technical consultants who did the actual software implementation as well as local IT staff of company1. The local I.T. staff provided relevant technical information about company1 and its processes to the technical consultants whiles learning on the job. The consultants who were doing the technical jobs were from oracle consulting, India being part of Oracle's EMEA zone.

The technical team members configured the ERP software to conform to the processes as stipulated in the requirement document. The Oracle EBS is an integrated software so configuration of the modules were done concurrently. There was a test environment which is a clone of the production environment where everything is being done. There are milestones so when a milestone is reached where everything is successful then it is replicated on to production environment and then the configuration moves on. This went on until the completion of the setups for all the selected modules. Below is a table showing all the modules of the Oracle EBS selected and implemented for use by Company1.

Table 5. 2 - Modules of ES selected and installed at Company1

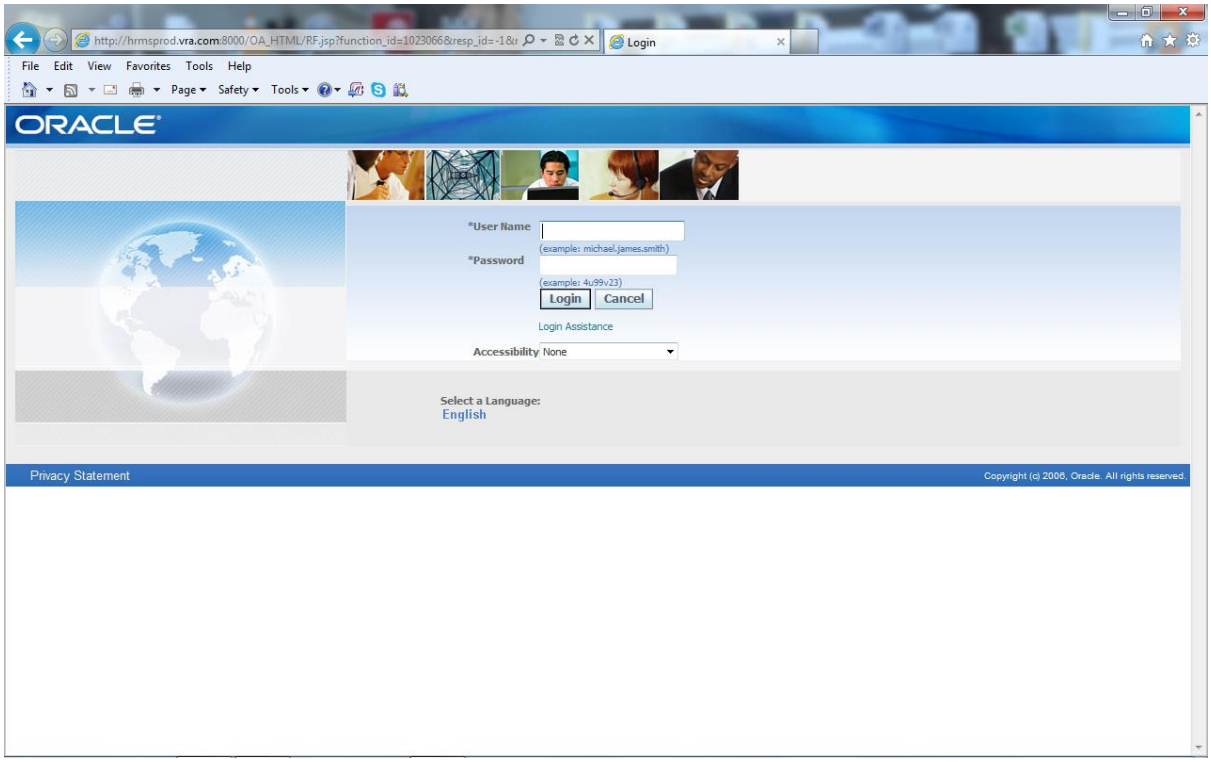
AREA	**MODULES INSTALLED**
Financials	General Ledger (GL), Account Receivable (AR) Account Payables (AP)

	Cash Management Fixed Assets Treasury
Procurement	iProcurement Sourcing Inventory Purchasing Contracts
Human Resource	Payroll HR Learning Management
EAM	Enterprise Asset Management
TOTAL NO. OF INSTALLED MODULES	**15**

As configuration began, members of the various teams learnt on-the-job. There was training organized at the beginning of the module configurations as well as at the end of the configurations. First team leads from the various teams were trained and they always went to train others. This training concept is known as train the trainer. There was also functional user training at when configurations were done. Training was organized at the implementation site where the various levels of users came for training. There was also conference room piloting

where the system was available for users to try it out three times. The figures below are screenshots of the Oracle EBS in use.

Figure 5. 2 - Screenshot of the Oracle EBS at Company1

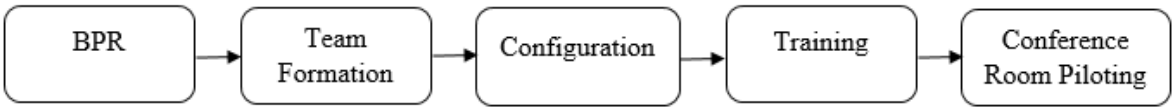


After major configurations were completed and the conference room piloting as well as users training were done, the implementation entered the go-live phase by January 2013 with all the financial and procurement modules available for use. Implementation ended officially by March 2014 with all the selected modules fully implemented for use by Company1. User acceptance tests were done for all the modules and then the project completion was signed off finally and officially. Thus Company1 took about 27months or 2years, 3 months to complete the full implementation of 16 modules of the Oracle EBS. Senior management of Company1

acted as the project sponsor and champion and this was crucial to the eventual success of the implementation project.

Company1 hopes the usage of Oracle E-Business Suite Applications R12.1.3 ERP would help the company manage data flow more effectively. It also hopes to overcome the challenges it hitherto face with the use of the old systems.

Figure 5. 3 - ES implementation process at Company1



5.3.5 Consequences of choosing and using Oracle E-Business

The choosing of the new system was not without consequences. First, the staff who were recruited to work on the implementation have to work extra hours during the period due to the increase in workload. Also, the company still pay rent for the site secured for the implementation project. This building is being considered for permanent because it still house some of the team members that are selected to be part of the support team. The support team now occupies the newly rented building.

5.4 Company2 case study

This subsection concentrates on Company2. It starts with a brief background of Company2 and its business operations. The IS in use at Company2 before the decision to acquire an ES, the

selection and implementation of the ES and the consequences of acquiring the ES are presented in that order. This is followed by the chapter summary which ends the whole chapter.

5.4.1 Background of Company2

Company2 is a mining establishment that was started by an Australian company. The company however moved to Canadian listing in April 2004. By September 17, 2010 in a US$ 7.1 billion takeover, Company2 was acquired as a multinational subsidiary with the parent company headquartered in Toronto, Canada. Currently, Company2's ownership by the parent company stands at 90% with the Government of Ghana holding a 10% carried interest. The company is very optimistic about future operations with 11 deposit sites along a 10 kilometre distance and a proven and probable reserves of about 924k oz at the end of December 2014. The company operates a mill with capacity of about 3.5 million tonnes per annum. With the takeover, Company2 is now became part of a global multi-national company with headquarters in Toronto, Canada.

5.4.2 IS at Company2 before JDEdwards

Before implementing JDEdwards, we used two main systems namely MAINPAC and Sun systems. MAINPAC was used for supply chain and maintenance but the maintenance part of the system was seldom used. SUN systems was for accounting and financials. JDEdwards replaces the two systems. We went for ERP because it is an enterprise thing; it gives an end to end solution. Secondly, the two old systems were not connected in any way and to connect them what we did was we moved data from MAINPAC into a flat file and sun would pick it up. It came with its own difficulties such as format issues. These gave Company2 many challenges. For example there were some processes that should be done in MAINPAC but some were not flexible enough. The numerous challenges associated with the old systems

coupled with the need to standardize the processes of Company2 gave birth to the decision to acquire the new system.

5.4.3 Selection of JDEdwards

The selection of JDEdwards at Company2 went through the following stages: requirement definition, building and sending RFP, holding of scripted demonstrations, site visits and then the final selection.

The requirement definition was done by the Company2 as the beginning of the selection process. There was the need to define requirements as per the need of the company. The managers at Company2 organized some of their staff to create this requirement document which was sent to the top management at the corporate headquarters. Right from the start the top management at the corporate headquarters handled all the major activities involved in the selection and implementation of the new system. An interviewer commenting on how they were not involved especially during the selection phase said,

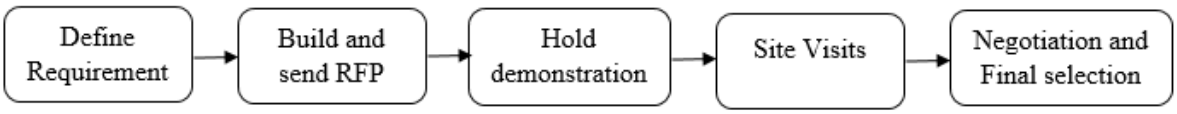
"The selection, I may not been able to tell how, the selection was done. We were just told that we are implementing ERP and we are going to implement JDEdwards. I don't know why we did not go for SAP or any of the other ones...so people were selected from here to the project. They were not to go and decide whether to go ERP or not to go. The decision was a go."

After putting the requirement document together, RFP was built and sent to ES vendors. After evaluating their response JDEdwards was chosen and the vendors of these ES software were called upon to hold scripted demonstrations for Company2.

After holding scripted demonstrations there were site visits to two other multinational subsidiaries that are using JDEdwards. All these activities were initiated and coordinated at the corporate headquarters. Few managers and the country head at company2 were involved as and

when they were needed at the corporate headquarters. After site visits were done, negotiations were completed and the final selection was done.

Figure 5. 4 - The ES selection process at Company2



5.4.4 Implementation of JDEdwards

The implementation of the JDEdwards enterprise software started in January 2012 and spanned 10 months to October 2012. The implementation took place in Las Palmas, Spain at Company2's regional office location. The implementation went through the following phases: the formation of the project team and travelling to the project implementation site, analysis of existing processes, coding, testing, training and go-live.

Company2 selected Subject Matter Experts (SMEs) from the various business units to form the team that travelled to Spain for the implementation. The table below shows the team composition from Company2.

Table 5. 3 - The ES implementation team at Company2

Business Unit	**Number of People selected**
Human Resources	2
Supply Chain	5
Engineering & Maintenance	1
Finance	3
Total	**11**

As indicated in the table above, 2 people were selected from supply chain, 2 from HR, 1 from Engineering and Maintenance and 3 from Finance. 2 of the 3 people selected from Finance were for the accounting part and the third SME was for the payroll part and there as 1 person that played the role of supporting IT person. These 11 SMEs from Company2's site travelled to Spain where they joined the project manager and the technical team from Deloitte Consulting, Netherlands in January 2012 for the JDEdwards implementation. Top management at the corporate head office in Canada supported all implementation efforts of JDEdwards for Company2. Spain was chosen by top management for the implementation because company2's regional office is there and Deloitte was coming from Netherlands which is much closer to the regional office. Company2 HR department collaborated with the HR department at the corporate office to provide all the resources needed to implement the ES system. There was also much cooperation between departments at company2 and their counterparts at the corporate head office during the implementation of the ES. Top management selected a project leader who is an insider (i.e. a company employee) to head the implementation team.

In Spain, the JDEdwards implementation started with the analysis of existing processes in Company2. During the ten months of implementation, the team from company2 commuted between Ghana and Spain for about three times. They went to represent company2 because they were thought of as very knowledgeable in company2's processes. A member of the team commenting on what they did in Spain said:

"*In Spain, we had the SMEs telling Deloitte that this is what we do, and then this is how this process fusses into that process. The project manager was an insider so he would say ok this is how you do it but globally, this is how it is done. A good balance is reached between what is*

done locally and what is done globally before the necessary programming is done to support that process."

Thus, there was a form of BPR to make sure the new processes which programmed into the ES meet global standards. The project manager being an insider is knowledgeable in the global processes of the multinational organization. He is therefore ale to fine-tune the processes of Company2 as they are presented by the SMEs form Company2 before any coding is done. This means that with the news system, some existing processes in Company2 will fade out, others would be altered whiles new processes may be introduced.

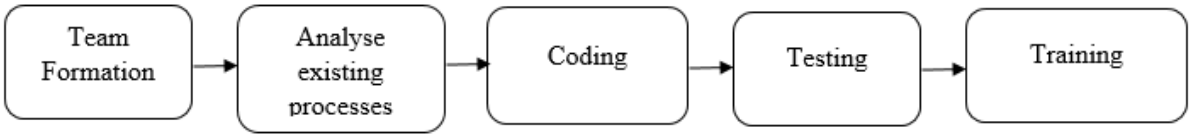
Coding was done only after existing processes are analysed and necessary changes are made if need be. Coding involves writing scripts or configuring the new ES to fully support the processes that has been adopted by the whole team as the way to go. Deloitte had the developers and the SMEs explain the various business processes and how for example supply chain fits into maintenance. Then the Deloitte consultants would implement either a similar or an enhanced process within the ERP.

After coding testing was done to make sure the new system is working as expecting. Members of the team received some short initial training to enable them test the system. Where it was realized that the system did not work as expected, the coding is revised to correct the errors. After everybody is satisfied that a particular process is working well, coding for that processes is finalized. This went on until coding and testing were done.

After testing followed training for the user. Training actually began at the implementation site where team members who are SMEs from Company2 were trained under the concept of train the trainer. After this training was done, the trainers came to Company2's site in Ghana with the technical team to begin training for the users. Members of the technical team who double

as SMEs are now part of the support team using their experience and training to help other users with the use of the system.

Figure 5. 5 - The ES implementation process at Company2



5.4.5 Consequences of choosing and using JDEdwards

The implementation also led to the creation of different levels of support. The first level has two types of support. One is I.T support and the other is BPO support. When the problem has to do with supporting the process itself, they BPO office comes in. The I.T aspect of support has to do with the application itself and its availability and accessibility to users. Technical issues are handled by I.T office and process issues are handled by the BPO office. When it goes up, there is an escalation to the corporate office in Canada where they also have a JDEdwards level called level two. After this level, it escalates to Deloitte but Deloitte hardly comes in. With every system, you do not expect to go for a short training and expects everything to go well. The support staff are always there to help. There are times some people try to beat the system but with this one, management got the buy in and its being driven from the top so there is little anybody could do to circumvent the processes.

5.5 Summary

This chapter presented the findings from both cases. It started with the presentation of findings for Company1. First is the background of the company followed by the IS in place before the decision was made to select and implement the ES systems is followed by the steps the

company followed to select and implement the new system. Findings for Company1 ends with the consequences of selecting the new system. Findings from Company2 was presented in a similar way. It started with background of company2 followed by the IS in place before the selection and implementation of the new system. The process of selection and implementation followed in the presented. Consequences for choosing the new system was presented before the chapter finally ended with the summary.

CHAPTER SIX

ANALYSIS OF CASE FINDINGS

6.1 Introduction

The past chapter reported the description of and findings from both cases. The current chapter follows with the analysis of case findings. Data is analysed using the circuits of power framework which is the adopted theoretical foundation of this study. The chapter begins with a general look at power relations during the ES selection and implementation. Data analysis follows the tenets of interpretive case study and draws on the various constructs in the chosen theoretical foundation. Thus evidence of each of the three forms of power during the selection and implementation phases was identified and analysed. Findings from the two cases are analysed in turn followed by cross-case analysis. The chapter ends with a summary which contains a gist of the next chapter.

6.2 Company1 case analysis

This subsection is focused on the Company1 case study. Evidence of the three circuits of power is identified and analysed in the selection and implementation phases. Afterwards the three circuits are combined to present a holistic picture of power relations during the selection and implementation of the ES. Finally, a trace of power from the ES selection phase to the implementation phase is presented and analysed.

6.2.1 Evidence of power during ES selection

The selection of ES is not without the exercise of power. Various power relations exist in Company1 before the advent of ES. These relations were disrupted by the selection and implementation of ES. To paint a rich, unified picture of manifestations and effects of power during the selection phase, the circuits are first analysed independently.

The episodic circuit

The As at Company1 are the senior management at the Company1 headquarters in Accra. The Bs are all the users of the system including employees in the various departments and at all locations of the company. Senior management wanted to make reporting and decision making more effective and efficient. They opted for the ES which is an integrated IS solution and expect all employees to comply with Company1 regulations implemented via the new ES. Employees on the other hand wanted to do their work without any inconvenience or interference. If senior management had not exercise casual through the new enterprise system, employees would not have changed their maverick style of executing work tasks. The unwillingness of some employees to use the new system is captured in the statement of an informant as follows:

"*Though the system is working well and everybody is now using it, some departmental heads still prefer to use the old ways of doing things. They would give approval on paper with the excuse that later it would be entered into the system. This does not happen often but now things are improving.* "

The reluctance of some employees especially some senior staff and line managers to use the system attests to the fact that the phenomenon is an issue of power. The rules and organizational

structure of Company1 defines the standing conditions of the As and Bs and their access to resources. In this regard, the Bs do not have any formal resources to oppose the Bs.

The social circuit

The primary task in this circuit is to identify the rules of meaning and membership that are related to the ES. The organizational structure of Company1 placed the As and Bs in their respective positions. The placement of the As in the organizational hierarchy gives them unlimited access to Company1's resources whiles the Bs have very limited access to resources. To the As, the new ES would improve reporting, decision making and ensure operational excellence. The As therefore interpreted the system in terms of operational effectiveness and efficiency. The Bs initially regarded the ES as a white elephant that is disruptive and unnecessary.

The Systemic circuit

Methods and techniques of production and disciplinary measures at Company1 were the source of facilitative power to the As. The As were able to select the ES for implementation because they were in a high positon of authority. Also, other stakeholders supported the new system because the thought it would bring sanity into the operations of company1. As have unlimited access to resources and the Bs cannot much resource without the control and approval of the As. This facilitated the ES selection and implementation.

6.2.2 Evidence of power during ES Implementation

The exercise of power by the As during the ES selection continued into the implementation phase. The As were unrelenting in their effort to achieve their goals and objectives. The

following subsections are focused on the three circuits of power and how each circuit unearth evidence of power.

The episodic circuit

The senior management at Company1 could not make the company's employees use the system. This is because the employees lack the requisite knowledge and skills to be able to use effectively use the system. Many of them were also reluctant to use the system. Employees of the company that were selected to form the various teams during implementation were therefore relied upon to use their training and experience to bring other employees up to speed. Members of the implementation team became trainers and change management officers who help to train and educate other users of the new ES. The change management team organised workshops, information sessions and durbars to educate, inform and solicit the opinions of users. This helped to address users' concerns and to dissolve any doubts and reservations they have about the new system. The training sessions organized for users also enabled them to use the system without difficulty.

The social circuit

The implementation of the ES disrupted social integration at Company1. Some of the staff of Company1 were permanently stationed at the implementation site whiles others were regarded as temporal members of the implementation team who come in as and when they are needed. The work tasks of many staff have therefore changed during the ES implementation. The users generally perceive the new system as a waste of their time. The work and role of the change management team and the training officers were therefore very instrumental in achieving social integration.

The systemic circuit

The implementation of the ES disrupted not just the episodic and social circuits but the systemic circuit as well. Techniques of production and discipline in both case organizations were interrupted during the implementation of the new system. ES comes with its own logic which it imposes on the business logic of the implementing organization (Davenport, 1998). The

This disruption in work practices of users has negative repercussions on work practices, production and discipline. According to an informant:

"The ES times a job and upon expiration routes it to the next level of authority. This means those who are neglectful are tracked and reported by the system."

The creation of the change management team and the role of the training officers helped achieved not just social integration but systemic integration as well. By the end of the implementation phase, the Bs were trained and educated enough on the use of the system and the processes involved. Executing work tasks is now very fast and smooth.

6.2.3 Combining the three circuits

As argued earlier, a major strength of the circuits of power framework lies in its ability to capture multiple views of power. Each circuit focuses on a particular view of power hence presenting just one or two circuits of power would render the account incomplete. It is therefore necessary to combine the three circuits in order to unravel the deep and intricate effects of power on the selection and implementation of ES.

The episodic circuit which captures events emphasize casual power and actions taken by organizational agents. The episodic circuit brings to light the decision by the As to select and implement an ES and the resistance and they faced from the Bs due to inexperience and lack of requisite skills. Despite this the new system was implemented successfully and accepted for use by all users. The other two circuits give a deeper and better understanding to the situation. The social integration circuit reveals that the misgivings associated with the new system stem from the different interpretations the As and Bs gave to the system. It is evident from this circuit that senior management, by virtue of their positon in the organization hierarchy of Company1, had unrestricted access to resources that enable them to prevail in their quest to implement the new system. The systemic integration circuit completes the picture giving illumination on the how the new system was successfully selected and implemented to give value to both the As and the Bs. Though the decision to select and implement an ES solution was received with mixed feelings doubt, senior management employed resources and personnel to manage change effectively, and to inform, educate and train users which finally resulted in the successful selection and implementation of the new system. In the absence of these intervention the new system make be resisted and finally abandon because it is seen by the Bs as a threat, disruption and source of discomfort to executing work tasks.

6.2.4 How power moved from ES selection to implementation

The exercise of power which started during the ES selection phase continued into the implementation phase. The As wanted to improve upon their decision making and reporting capabilities and also achieved operational excellence. The Bs were satisfied with their maverick way of doing work and would therefore not tolerate and interruptions or undue interference. To push their agenda through the As push for the involvement of the Bs in the selection of the appropriate ES solution. The Bs were not too happy with the situation but as the level of

awareness increases and the benefits the ES solution became evident, more and more people got convinced. As the project entered the implementation phase more staff were recruited to work as knowledgeable people on the implementation of the new system which caused fervour for the system to grow. The As continued to use their influence and authority in the organization to get the Bs to be involved and accept the new system. Because the As has limitless access to resources they were able to assemble all the needed human and capital resources needed to get the implementation done.

6.3 Company2 case analysis

This subsection is focused on the Company2 case study. Again, evidence of the three circuits or forms of power is identified and analysed in the selection and implementation phases. After this, the three circuits are combined to present a complete picture of power relations during the selection and implementation of the ES. Finally, a trace of power from the ES selection phase to the implementation phase is presented and analysed.

6.3.1 Evidence of power during ES selection

The episodic circuit

The As at Company2 are the top management at the Company2's corporate headquarters in Canada represented by the project manager and the technical team from Deloitte. The Bs are users of the system such as employees in the various departments of Company2. They include the country head, line managers, supervisors and junior staff. The project manager wants the employees to follow standard corporate practices through the use of the new system. A Business Systems Specialist stated during interview that:

"*The project manager was an insider [i.e. company employee] so he would say ok this is how you do it but globally, this is how it is done. A good balance is reached between what is done locally and what the company globally do before the necessary programming is done to support that process*."

The As believed the new ES would help streamline processes globally. The Bs thought everything was working just fine and that the new ES was bringing undue interference. The As therefore interpreted the new system in terms of standardization but the Bs at the start regarded the system as needless and obstreperous.

The social circuit

The primary task in this circuit is to identify the rules of meaning and membership that are related to the enterprise information system. The organizational structure of both organizations placed the As and Bs in their respective positions. At Company2, the project manager enjoyed a lot of support from his bosses at the headquarters. He enjoyed legitimate authority delegated by the top management at the headquarters. Because implementation at some other subsidiaries of the company were already completed successfully, the project manager built trust and confidence with his bosses at the headquarters. This made it easy for the project manager to obtain finance and needed resources for the implementation project for Company2 (Dong, 2008).

The systemic circuit

The techniques of production and discipline defines the facilitative power of the project manager. Before the implementation of the ES, employees in Company2 could do their work

almost at their own discretion. The new system had embedded processes and procedures that the project manager wanted the employees to follow. This means that by using the system the project manager is able to ensure users acquiescence to their objectives. The system has timelines for completion of tasks and records of past activities as a way of instilling discipline and monitoring performance. For example, an informant at Company1 mentioned that

"*The system has in-built supervisory hierarchy that enables superiors to check and approve the work of their subordinates. If for example a manager fails to approve a request within 48 hours, the request automatically escalates to the next higher level of authority for approval and this goes against that manager.*"

Company2 as a multinational subsidiary has limited access to power compared to the unlimited access top management had to resources at the corporate office. Some important decisions especially those that require high financial commitment are controlled by top management at the corporate head office.

6.3.2 Evidence of power during ES implementation

The episodic circuit

The As continued to exercised their power over the Bs by asking managers at Company2 to assemble SMEs for the implementation in Spain. Those who got selected were excited at the opportunity given them and that kindled their interest in the project. The Bs travelled between Ghana and Spain 3 times before the implementation project was completed. The Bs were not conversant with the use of the new system so the As organized training programs at the premises of Company2 to help them used the system with ease. There was a BPO office created as well as a change management officer who all worked to ensure Bs acceptance and success at using the new system.

The social circuit

The implementation of the ES disrupted social integration at Company2. The users regarded the ES system as technical and difficult to use. Company2 employed change management and training programs to achieve social integration. Company2 created the BPO office and the office of the change management officer in addition to training programs meant for all users of the new system. Training and change management officers are well resourced to act as the appropriate source of support for all system users. It was legitimate for them to organize training and change management programs for all users. Their role became enabled both organizations to attain social integration soon after the ES has been implemented.

The systemic circuit

As would be expected the implementation of the ES upset the systemic integration of Company2. The creation of the BPO and change management offices at Company2 and the creation of roles for training and change management officers ensured systemic integration was attained. The work of the trainers and change managers at Company2 helped softened all conflicts and distractions associated with the new system. Stable systemic integration means that processes embedded into the new system remained intact and system users can also now work without any distractions.

6.3.3 Combining the three circuits

Again, the combination of the three circuits presents an all-inclusive picture of the effects of power on the selection and implementation of the ES. Considering the circuits individually only gives a shallow insight to the full effects of power.

The episodic which deals with casual power and actions reveal that users at Company2 opposed the idea of a new system because they had no need for a highly technical system that is a white elephant and difficult to use. A senior staff at Company2 lamenting the decision to go for the new system said:

"*They [top management] are just throwing away money. We don't need this new system.*"

The episodic circuit explain that the users at Company2 were only superficially involved in the selection and that generated apathy. The social integration circuit explains that the project manager and the technical team were appointed by top management at the corporate headquarters in Canada. Though different meanings and interpretations were assigned to the system, top management employ resources to educate and train the users at Company2 and this led to the successful selection and implementation of the system. The systemic integration circuit adds to the explanation and understanding of the phenomenon by detailing how the As gallantly brought together needed resources to resolve all challenges associated with the new system. By the end of the implementation all issues relating to the new system were resolved and the social and systemic integration circuits were stabilized.

6.3.4 How power moved from ES selection to implementation

Before the decision to select and implement an ES solution, the three circuits were fully integrated and there was no disturbance in any of the circuits. The decision to select and

implement the ES was the beginning of disturbance in the circuits. The As at the corporate headquarters push for the selection of the system because Company2 is a multinational subsidiary. As a multinational subsidiary company2 relies on the corporate head for some major decisions such as the purchase of the procurement of an ES and other projects that involve huge financial commitments. The As at the corporate head therefore exercise a lot of power during the selection stage. For instance the As at the corporate head went through the whole process of selecting the right system. The Bs at Company2 were not too involved in the selection process.

The As deepened their exercise of power during the implementation of the ES. The As appointed a project manager who represented them in the implementation of the ES solution. The project manager had a good working relationship with top management at the corporate headquarters. The As instructed the Bs to organize teams of SMEs that would travel to the implementation site in Spain. The site for the implementation was chosen by the As and they provided all the needed resource for the success of the project. After the implementation the As also decided to keep the servers hosting the ES software at the corporate headquarters.

6.4 Comparative case analysis

The two case organizations have gone through similar processes and used similar strategies and methods to select and implement their respective ES. In this subsection a comparative analysis is done between the two to bring the similarities and differences in the processes and strategies used by both companies. This would enrich our analysis and understanding of the effects of power on the selection and implementation of ES in organizations.

6.4.1 Manifestations of power during ES selection

The episodic circuit

Similarly, the As at Company2 are the senior management at the Company2 headquarters represented by the project manager and the technical team from Deloitte. The Bs are users of the system such as employees in the various departments of the Company. They include line managers, supervisors and junior staffs. The project manager wants the employees to follow standard Company practices through the use of the new system. An informant stated that

"*The project manager was a Company2 person so he would say ok this is how you do it but Company2 globally, this is how it is done. A good balance is reached between what is done locally and what Company2 globally does before the necessary programming is done to support that process*."

At both Company1 and Company2 the decision to acquire the ES was made by senior management. They both used a top-down approach to acquire their respective ES. This made the projects very successful top management support and involvement was available at every stage of the acquisition process.

The social circuit

The primary task in this circuit is to identify the rules of meaning and membership that are related to the information system. The organizational structure of both organizations placed the As and Bs in their respective positions. At Company2, the project manager enjoyed a lot of support from his bosses at the headquarters. He enjoyed legitimate authority delegated by the senior management at the headquarters. Because implementation at some other subsidiaries o the Company were already completed successfully, the project manager built trust and confidence with his bosses at the headquarters. This made it easy for the project manager to obtain finance and needed resources for the project.

Unlike the project manager at Company2, the project manager at Company1 was an external consultant. He definitely did not enjoyed the advantages of being known face in the organization. He was however very instrumental in the selection and implementation of the ES. The project manager was a consultation that hold a position of high repute. The legitimate position he occupied gave him the capacity to exercise power that drove the project to success. The project manager also had cordial relations with the headquarters. Besides the new ES was deemed to help Company1 become effective and efficient which naturally induced senior management support.

The systemic circuit

The techniques of production and discipline defines the facilitative power of the project managers. Before the implementation of the ES, employees in the various departments (i.e. the Bs) at the two companies could do their work almost at their discretion. The new system however became the OPP for all employees who cannot execute their work tasks without the system. The new systems were embedded with procedures that the project managers wanted the employees to follow. This means that by using the system the project managers are able to ensure users acquiescence to their objectives. The system has timelines for completion of tasks and records of past activities as a way of instilling discipline and monitoring performance. For example, an informant at Company1 mentioned that

"*The system has in-built supervisory hierarchy that enables superiors to check and approve the work of their subordinates. If for example a manager fails to approve a request within 48 hours, the request automatically escalates to the next higher level of authority for approval and this goes against that manager*."

The Company-wide implementation of the ES means that every employees' work tasks are affected by the new system. They must now all work according to the dictates of the system consequently instilling discipline and promoting efficiency (doing the right thing) and effectiveness (doing it the right way). ES modules installed at Company1 include the following:

HR (Human Resources), Payroll, General Ledger, Receivables, Cash Management, Payables/Payments, Fixed Assets, Treasury, Purchasing, Inventory, iProcurement, Enterprise Asset Management (eAM), Order Management, Performance Management, Self-Service HR, Sourcing, Learning Management and Performance Scorecard.

At Company2 the following work tasks were directly affected by the new system namely HR, Payroll, Accounting, Maintenance, Operations and Supply Chain. Initially, the new system had a negative, disruptive effect on performance as users had to dedicate time to learn to use the system. With the enactment of ongoing education, training and change management programs, the users are becoming adept at using the new system. The change manager and the newly created Business Process Optimization (BPO) office have done well to avert possibility of users abandoning the system.

6.4.2 Manifestations of power during ES implementation

The episodic circuit

The exercise of casual power during the selection phase of the ES acquisition continued into the implementation phase in both organizations. At Company1, the project manager could not make the Company's employees use the system. The employees lack the requisite knowledge and skills to be able to use effectively use the system. Employees of the Company that were selected to be part of the implementation team were therefore relied upon to use their training

and experience to bring other employees up to speed. Members of the implementation team became trainers and change management officers who help to trained and educate other users of the new ES. Also, senior management and the project team at Company2 could not make employees use the ES because of lack of required skills and education. Senior management responded with the creation of the BPO and change management offices. These offices were occupied by SMEs who were part of the implementation team. Their responsibility was to train ES users and to provide them needed guidance, awareness and support in using the system.

At both organizations the efforts of the project managers and senior management (the As) to make the Bs use the new ES was successful. The Bs are getting very familiar with the ES. They have also become comfortable at using the ES and excited at the amazing capability of the ES to execute work tasks.

The social circuit

The implementation of the ES disrupted social integration at both organizations. Whiles the Bs at Company1 regarded the system as too technical their counterparts at Company2 considered the system as a white elephant. Both organizations used quite identical strategies to achieve social integration. Company1 as well as Company2 employed change management and training programs to achieve social integration. At Company1, roles were created for change management and training officers. These roles were filled by knowledge employees who have gained familiarity with the ES through their participation in implementation activities. Company2 created the BPO office and the office of the change management officer in addition to training programs meant for all users of the new system.

Training and change management officers are well known in both organizations. They are well resourced to act as the appropriate source of support for all system users. It was legitimate for them to organize training and change management programs for all users. Their role became enabled both organizations to attain social integration after the ES has been implemented.

The systemic circuit

The implementation of the ES disrupted not just the episodic and social circuits but the systemic circuit as well. Techniques of production and discipline in both case organizations were interrupted during the implementation of the new system. ES comes with its own logic which it imposes on the business logic of the implementing organization. The working practices of all users at both organizations were thus disrupted.

The project manager at Company2 was also known as the process owner of Company2 global. During implementation he altered the processes of the organization to match the standard template of Company2 global in order to achieve standardization. The new processes though not in direct conflict transformed the working practices of all users of the system thus disrupting systemic integration. With the implemented system, managers could work outside the Company's premises; Company iPads with VPN access were made available for use by managers. The story at Company1 is no different. Employees of the Company had to depart from their maverick ways of working to a more structured way imposed by the new system. This disruption in work practices of users has negative repercussions on work practices, production and discipline. According to an informant

"The ES times a job and upon expiration routes it to the next level of authority. This means those who are neglectful are tracked and reported by the system."

The creation of the BPO and change management offices at Company2 and the creation of roles for training and change management officers ensured systemic integration was attained. The work of the trainers and change managers at Company1 and Company2 helped dissolved all conflicts and distractions associated with the new system. Stable systemic integration means that processes embedded into the new system remained intact and system users can also now work without any distractions.

6.4.3 Combining the three circuits

The three circuits combined unravel the effects of power during the ES selection and implementation in a very unique way. The decision to go for a large system such as the ES is usually met with resistance, opposition and struggles. This is because such systems has the ability to completely revolutionize the way work tasks are previously performed. For both Company1 and Company2, the decision for ES selection and implementation was initially not a welcoming news to users who thought the new system was unnecessary and waste of money. The struggles and resistance that greets the move for an ES solution could lead to implementation failures and the system being abandon altogether if steps are not taken for timely intervention. Powerful organizational agents must put in place programs to sustain selection and implementation efforts. The involvement and participation of users is key as well as the support of top management. Top management occupies a high place in the organizational hierarchy and as such, they have access to resources and the authority to get things done. Continuous training and education for users is a critical way to get users feel comfortable to accept and use the new system. This is exactly what transpired in the two case organizations that led to selection and implementation success.

6.4.4 How power moved from selection to implementation

For both cases the exercise of power by the As started during the selection phase of the ES. This usually involved top management and project managers craving the indulgence of the Bs. Because the Bs interpret the new systems as unnecessary and disruptive to their work, they showed some resistance and reluctance initially. This compelled the As to exercise power by virtue of their access to resources and their legitimate position of authority in their respective organization. For example the internal project manager of Company1 said during the interview that:

"*When we decided to implement this system [the new ES system], some of them [users] resisted but what can they do? They have no option but to obey and follow. This project, you either follow or resigned from the company. We have rules and you can't do just what you like.*"

This exercise of power continued and intensify during the implementation phase in both organizations. Understandably so because most of the users were required to be part of the implementation team. For Company2 top management at the headquarters decided to take the implementation to a location very far away from the company's geographical location. A staff of Company2 commenting on the whole episode said:

"The selection, I may not been able to tell how the selection was done. We were just told that we are implementing ERP and we are going to implement JDEdwards. I don't know why we did not go for SAP or any of the other ones...So people were selected from here to the project. They were not to go and decide whether to go ERP or not to go. The decision was a go."

His reveal how users at Company2 were insulated from the selection process but selected to join the implementation team of the project. It took the work of the change management officer,

the BPO team and the training officers to stabilize users and get them involved during the implementation.

As the exercise of power increased for both companies during the implementation, user1 initially became resistant but senior managers and the project managers adeptly organize resources to train and inform users as well as to get them involved in the project. The exercise of power became fruitful in that it enabled senior management and the project managers to push their goals and objectives through. Their ability to access resources without limit also help to get users who are the Bs to soften their stance and go for the project. Even at the end of the implementation, trainers and change managers were put on standby to assist users to use the system well. This way, there is no excuse for users to dodge using the newly implemented system.

6.5 Summary

This chapter analysed role and effects of power during the selection and implementation of ES. Evidence of the three circuits or forms of power was identified and analysed. The three circuits were then combined in the selection as well as the implementation stages to present a holistic effect of power in both stages. Also, how power moved from the selection stage to the implementation stage was traced. This was followed by a cross-case analysis of the two case organizations. The next chapter follows with discussions of the analysis done in this chapter.

CHAPTER SEVEN

DISCUSSIONS

7.1 Introduction

The preceding chapter is focused on the analysis of the findings gathered from field. The analysis was done using the circuits of power framework to organize emergent themes and concepts. This current chapter discusses the analysis of findings in relation to the literature reviewed in order to address the research questions for this study. (Refer to chapter one for the research questions posed in this study). The chapter opens with a discussion of the rationale for ES software acquisition. This is followed by a discussion of the organizational and market perspectives of ES. The processes of ES selection and implementation are discussed each followed by an examination of the effects of power on both processes. Last but not the least both the intended and unintended consequences of the ES acquisition is discussed followed by reflections on the use of Clegg's circuits of power as the theoretical foundation of the study. The chapter ends with a summary which contains a bite of the next chapter.

7.2 Rationale for ES Purchase

Analysis of the findings from both the public company (i.e. Company1) and the multinational subsidiary (i.e. Company2) reveal that the reasons for the selection and implementation of an ES solution are not very different. Whiles Company1 was basically concerned with improving its decision making and reporting Company2 was basically concerned with standardization. Both companies were much interested in achieving operational excellence as well as standardization, integration and effective data management. The following subsections discusses in detail the rationale for ES selection and implementation.

7.2.1 Standardization

One main reason why companies especially those with global presence opt for ES solution is to achieve standardization (Efe, 2016). This allows global companies to streamline their operations and put up a common identity. Top management are then better able to manage globally and exert control over their subsidiaries. Connecting to subsidiaries and getting access to timely information becomes easy and fast. From the analysis of findings, it was clear that top management of Company2 at the headquarters after investing so much in some processes that work well for them, they would like their subsidiaries to adopt same trusted processes to be efficient.

7.2.2 Integration

Integration is a term that in so intimately associated with enterprise information systems. The term may have a different connotation in the field of IS as compared to other fields. According to Kähkönen et al. (2014),

"Integration is ambiguous and has different meanings. In the domain of IS, it is often considered as data exchange between two or more systems, standardization of business processes as well as cooperation and coordination between human actors."

Numerous authors who gave reasons why organizations adopt ES solution mentioned integration as a major reason (e.g. Kähkönen et al., 2014; Nah et al., 2001; Nwankpa, 2015; Rosa et al., 2013; Sammon & Adam, 2005; Teoh & Pan, 2008). Because enterprise systems have a centralized database that is shared by all applications, data is captured and stored only once and at on location for use by all applications. This allows companies to integrate their processes, data and applications. As seen from the findings, both Compnay1 and Company2 have adopted ES solution to replace their old disparate systems in order to achieve integration.

7.2.3 Effective data management

Findings from this study suggest that companies adopt ES solution in order to better manage their data. Effective data management is the bedrock for better decision-making. Companies that are not able to meet their data needs face serious challenges in making effective decisions (Efe, 2016; Sammon, Adam, & Carton, 2003). Senior management of Company1 were particularly not happy with the old way of data generation and management. It was difficult and sometimes impossible for them to get needed data for making some critical business decisions. Reporting was adversely affected because when it is even possible to get data on some the legacy systems, management has to wait for so long for the technical IT staff to write script to spool the needed data from the disparate systems. Really, timely and quality data was not always available for decision making. It was this lack of effective data generation ad management that pushed Company1 to procure an ES solution that promises quality data in real time. Company2 also had problems with data generation and management because the old systems were not connected together. This was part of the reasons why Company2 went for enterprise-wide information systems solution. The findings is consistent with literature which reveals that effective data management is among the top reasons why organizations go for ES solution (Babaei et al., 2015; Kamhawi, 2008; O'Leary, 2004; Sadrzadehrafiei et al., 2013).

7.2.4 Operational Excellence

Companies are always looking for ways to be effective and efficient. Business organizations that are not operating effectively and efficiently are bound to fold up sooner than later. Enterprise systems to the rescue! One important way business organizations try to be effective and efficient is to perform BPR as a way of dealing with needless and inefficient processes

(Suresh et al., 2009). Reengineering business processes is one crucial way to prepare the organization for the ES implementation. From the findings, both case organizations underwent some form of BPR. For Company1, a whole international consulting firm was contracted to perform before the actual ES implementation began. It was the BPR report which later became the requirement document used for the ES implementation. It is a normal practice for organizations to reengineer their processes prior to implementing ES in order to obtain success (Rajnoha, Kádárová, Sujová, & Kádár, 2015; Suresh et al., 2009; Vathanophas, 2007). Evidence from Company2 suggested that no formal BPR was done yet there was analysis and fine tuning of existing processes prior to actual coding. Thus, the project manager who oversaw the ES implementation at Company2 was very knowledgeable and held the master template of the global processes of the parent company. He was therefore instrumental in fine tuning the processes of Company2 to conform to the master template before any coding or programming is done to support the process in the ES. This way some form of BPR was done to bring the processes up to speed before implementing them in the ES.

Aside engineering business processes, the use of ES such as SCM, CRM or ERP enables business organizations to better manage their own internal processes and data, as well as their suppliers and customers (Adebanjo, Ojadi, Laosirihongthong, & Tickle, 2013; Hendricks et al., 2005, 2007). These enterprise systems thus enable implementing organizations to achieve operational excellence. With the selection and implementation of the ERPs in both case organizations achieving operational excellence is just a matter of time.

7.3 ES selection

The selection phase of ES acquisition is a very crucial activity that must not be taken lightly. Indeed Bakås et al. (2007) strongly asserted that the successfully implementation largely depends on an effective selection process. Analysis of empirical data gathered for this study reveal several activities that characterize the ES selection process. These activities include requirement gathering and scope definition, building and sending RFP to vendors, analysis of offerings, final negotiations and procurement of licence.

Hidalgo et al. (2011) noted that a firm that wants to select and implement an ES system must be clear on what it needs in terms of the new system, the systems that would be replaced as well as the people that would be affected. This, they argue, drives the firm to gather requirements and define the scope of the project. The findings ad analysis show that both Compnay1 and Company2 took time to gather requirements and set the scope of the project. This included definitions for standard and special requirements. For example Company1 at this stage indicated that the maintenance controller and the Computron systems are the two mains systems to be replaced. Also, the already existing HRMS and the Payroll modules of the Oracle EBS system would be migrated to get them line with the BPR report. Company2 on the other hand hinted that this stage that the MAINPAC and the SUN systems would be replaced.

Again, Hidalgo et al. (2011) and Pacheco-Comer and González-Castolo (2011) concur that there must be criteria set to evaluated potential vendors before sending out RFPs to all listed vendors. Going back to the findings, both came up with the criteria to evaluate vendors before sending RFPs to vendors. After vendors responded to the RFPs sent, offers were analysed before final negotiations were made to purchase the needed licence (Hidalgo et al., 2011; Pacheco-Comer & González-Castolo, 2011). Company2 visited sites of two other subsidiaries that have installed JDEdwards. This practice is not consistent with literature as site visits normally occur during the implementation phase (Pollock & Hyysalo, 2014; Rajnoha et al.,

2015; Schniederjans & Yadav, 2013). This practice may be explained by the fact that Company2 was bent to go the way of the other subsidiaries and was sure of implementing JDEdwards even before the selection began.

7.4 Effects of power on ES selection

The selection of ES solution is usually a major decision that is taken by top management before it gets communicated to other staff members. The selection process is not without the exercise of power. This is because users are general satisfied, or rather get used to their maverick way of working (Silva & Backhouse, 2003). Bringing in a new system that would bring major changes becomes a border and disruption to them. It is therefore not surprising that they offer resistance especially initially to the new system. For example when the news of going for a new ES solution emerged at Company2, many users were grumbling saying the company is just going to throw money away with some even writing to headquarters to question the rationale for the decision. A similar situation rose at Compnay1 when users where of the opinion that the new system was going to bring undue interference in their work practices. It was therefore necessary for top management to exercise casual power otherwise the system would never get selected (Dahl, 1957).

Because top management had unrestrained access to resources, they went ahead to form a change management team to solicit opinions of users and educate them on the need for the new system. Whiles this was going on, top management exercise they discretion and started the process to select the new system. The effect was that users were somehow left out at this initial stage of the process (Markus & Bjørn-Andersen, 1987) and individual users were only brought on board as and when their expertise was needed. Overall, the exercise of power by top

management enable the selection process to begin whiles users were somehow side-lined initially.

7.5 ES implementation

The implementation phase of ES acquisition is arguably the most important stage of the whole procurement process. Failure rates and associated costs are significantly high in this phase (Babaei et al., 2015). From the findings prominent activities that are evident in the implementation phase include the following: BPR, team formation, configuration, coding, testing and training.

Performing BPR before the implementation of an ES solution is a normal practice by firms (Suresh et al., 2009). For firms that omit this critical step, it worth noting that the ES comes with its own set of best practices in terms of business processes and logic (Davenport, 1998). Over configuration of the ES may lead to failure or reduction in performance and maintain the old practices may affect the benefits of the ES system (Babaei et al., 2015; Sadrzadehrafiei et al., 2013; Schniederjans & Yadav, 2013; Soja & Paliwoda-Pękosz, 2013).

The findings reveal that both companies put together potent teams of SMEs and experienced project managers to tackle the huge task of implementation. The team members were carefully selected and a project site was secured of the implementation outside of the premises of the companies. The staff and the consultants in the team shared knowledge and experience. At the end of the project, these staff member who were part of the team were recruited to form the support team because of their knowledge and experience (Coelho et al., 2015; Jayawickrama & Yapa, 2013; Wognum, Krabbendam, Buhl, Ma, & Kenett, 2004).

Configuration, coding testing and training were all vital activities that characterize the implementation efforts of both case organizations. These activities did not strictly follow each other. That occur in a more of an iterative manner. For example, company1 prepared setups by configuring the system to conform to the requirement documents. This was done by the technical consultants. The setups were first done in the test environment after which testing is done to see if the setup works as expected. If there are any errors, corrections are made and testing is repeated to make sure the setup works fine before it is replicated to the production environment. At this same time, there was short training organized for the team leads to be able to try out the system. Configuration and testing went on until all the selected modules were implemented. After this the team members were trained by the consultants after which the team members also trained the other users. A concept known as *train the trainer*.

Reviewed literature showed that the consultant as well as the users and top management occupy an invaluable place and play a very critical role in the selection of the new system (Coelho et al., 2015; Dong, 2008; Khoo et al., 2011; Matende & Ogao, 2013; Saatçioglu, 2009). It was clear for the findings that all these stakeholders were very instrumental in the implementation efforts of both companies. At both companies, top management acted as the sponsor and champion for the new system. Both cases also showed the indispensable role of the consultants in pushing the project through to a successful end. Users were also involved to avoid resistance and abandonment of the new system. Overall, the implementation strategy of Company1 could best be described as the middle-road method whiles that of Company2 follows after the vanilla technique (Bakås et al., 2007; Parr & Shanks, 2000b).

7.6 Effects of power on ES implementation

There is abundant evidence from the reviewed literature that IS implementation projects entails politics, conflicts, resistance and hence, the exercise of power (Dhillon, 2004; Howcroft & Light, 2006; Markus, 1983; Markus & Bjørn-Andersen, 1987; Silva & Fulk, 2012; Ye et al., 2012). Consistent with this evidence are the findings from the case organizations. Senior managers and project consultants at both companies exercise power in one form or the other. Until the work of change officers and trainers have gone far enough to dissolve any misgivings, reservations and incapacitations about the new systems, resistance and reluctance manifests on the part of the users. This again necessitated the exercise of power to achieve desired outcomes.

The exercise of power enabled senior managers and project consultants to overcome glitches that stand in the way of successful implementation. The project consultants and managers at both companies enjoyed good working relationship with senior managers so it was not difficult at all to obtain the needed resources for the implementation. Indeed many authors listed lack of top management support as one of the major reasons why ES implementations fail (Babaei et al., 2015; Boonstra, 2013; Coelho et al., 2015; Dong, 2008; Efe, 2016; Soja & Paliwoda-Pękosz, 2013). The exercise of power allow by top managers and project consultants at both companies allow them gather resources needed for the implementation. Users were finally brought on board to full participate in the implementation (Berente et al., 2010). At Company1, users got to know that they could check they payslips online and that caught on well with them.

7.7 How Selection influences Implementation and the effects of power

There is now a growing consensus that ES implementation failures have deep roots in selecting an inappropriate system (e.g. Bakås et al., 2007; Lall & Teyarachakul, 2006; Verville & Halingten, 2003). It is therefore needful to combine the selection and implementation phases

in a single study in order to unravel the convoluted effects of one phase on the other which only a few studies have done (e.g. Findik et al., 2012; Forslund & Jonsson, 2010; Shakir, 2000).

The implementation projects at both companies were deemed successful. Indeed both companies did the needful due diligence during the selection phase. They define requirements and set the project scope, set evaluated criteria and built RFPs which were sent to vendor. The offers from the vendor were analysed before the final negotiations and purchase of the licence for the needed modules. These main set of activities are confirmed in the reviewed literature as the necessary steps an organization need to follow to ensure that the right vendor get selected (Bakås et al., 2007; Hidalgo et al., 2011; Molnár et al., 2013; Pacheco-Comer & González-Castolo, 2011; Pacheco-Comer & González-Castolo, 2012). The judicious way both companies select the ES solution influenced the success of implementation. At both companies, top management supported the project from the selection phase and this continued into the implementation phase.

The exercise of power which started during selection continued into implementation. For example, senior managers and project consultants were responsible for making available necessary resources and creating conducive environment for the success of the project. For company2, top management decided to house the servers at the corporate headquarters and this is an exercise of power. On the whole, the exercise of power positively influenced the ES selection and implementation. At both companies there were no loss of jobs or nay other casualty due to the selection and implementation except that the way of doing things have changed.

7.8 Consequences of ES selection and implementation

The selection and implementation of the ES is not without consequences. The consequences of can broadly be divided into two namely intended and unintended consequences. The intended consequences are expected and planned for. The consequences that unintended are the unanticipated results of the ES acquisition which are not planned for. The two types of consequences are discussed in the following subsections.

7.8.1 Intended consequences

Intended consequences in this study are the expected consequences that came with the selection and implementation of the ES. Because they were expected preparations were made to handle them well. For example, Company1 had to acquire a new site for the implementation. This was because it was envisage that the project was too big to be handled at the premises of the company. Doing so will cause a lot of undue interferences. The new site was therefore acquired in preparation for the start of the implementation project. Also, staff who formed part of the implementation team had their workloads increased. Management saw this coming and made necessary and where very necessary hire one or two new people to join the staff. Increase in workloads also meant that some workers have to work odd hours such as late in the night and during the weekends. Changes in business processes were effective with the BPR and the LAN/WAN infrastructure was also rehabilitated and upgraded to ensure that the new system has a good *runway.*

At Company2, the LAN/WAN infrastructure was good for the new system but as inCompany1, management saw the need to put in place a vibrant change management team to deal with issues related to change. This is because management foresaw that three new system would bring changes that must be managed well to avoid any negative repercussions (Davenport et al., 2004; Thomas et al., 2012). Management also foresaw that users would have difficulties using

the new system so this led the creation of the BPO office to help users to effectively handle the system.

7.8.2 Unintended consequences

Unintended consequences are those consequence that are neither expected nor planned for. The selection and implementation of ES comes with structural changes that can be advantageous or a drawback (Davenport et al., 2004; Whiteley, 2013).

The implementation of ES in Company1 led to changes in the way work tasks are executed. Roles and privileges were created in the system that determines what one can or cannot do in the system. This appear to take away power from managers. It would also make people be on their toes. For example there something called self-service. If an employee want a loan or salary advance, all he or she need to do is go online and fill a form. If the immediate boss does not approve the form within 72 hours, it escalates to the next higher level such as from the supervisor, it goes to the manager and then to the director. So it makes people be on their toes. The rule is across board and that is what the business agreed upon. Users do not also have the luxury to do what they like because the system dictates and records almost everything that need to be done.

Similarly at Company2, the selection and implementation of the new system came with some unintended consequences. After implementation, top management at the headquarters decided that the centralized database be housed at the corporate headquarters. It support was also centralized in order to cut down cost but data capture is the responsibility of users at Company2. This arrangement has peeved the users at Company2 especially the IT staff who think that power is been taken away from them because they have to fall on the headquarters every now and then for some issues they can handle if the servers were housed locally at Company2's site.

7.9 Reflections on the use of the circuits of power framework

This section presents the reflections of the researcher on the use of the circuits of power framework as the theoretical lens for this study. The choice of the circuits of power framework as the theoretical foundation is based on the fact that this study if focused on power and the framework captures multiple perspectives of power.

Though the circuits of power framework is a compelling tool for studying power in organizations, it has some limitations. It is worth noting that the distinction between the these circuits is to ease analysis but in reality they are intertwined and complexly interrelated aspects of power (Mingers & Willcocks, 2004).Most of the other frameworks of power capture one perspective of power and hence presents only a partial picture of the phenomenon of power. This study seek to deepen and broaden understanding about the effects of power in ES selection and implementation. The circuits of power framework best meets the goal of this study hence its adoption as the theoretical foundation.

7.10 Summary

This chapter discussed the findings and analysis vis-à-vis the reviewed literature in order to answer the research questions posed in chapter one. The chapter started with a discussion of the rationale for purchasing an ES solution. It then went on to discuss ES selection and the effects of power on this process. This was followed by a discussion of the ES implementation process and the effects of power on this process. How the selection affects implementation as well as the effects of power was discussed. Consequences of selecting and implementing an ES solution was discussed before the researcher finally reflected on the adopted theoretical foundation of the study. The next chapter accrues the general summary and conclusion, and recommendations for future research.

CHAPTER EIGHT

SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

The previous chapter focused on discussions of the analysis of empirical findings vis-à-vis the reviewed literature in order to address the research questions posed in this study. (See chapter one for research questions). The current chapter is the eighth and last of all and it presents the overall summary, conclusion and recommendations for the whole study. It begins with reflections on the research purpose and questions and how the study addressed the research questions. This is followed by the study's contribution to knowledge and theory and the offering of rich insights to power issues in ES selection and implementation. Next, the chapter presents the implications of the study to research, policy and practice. The limitations of the study are discussed based on which recommendations for future research are made. The chapter then ends with an overall conclusion for the whole study.

8.2 Review of Research purpose and questions

The purpose of this study is to understand the effects of power on ES selection and implementation as stated in chapter one. Evident in chapter two, literature on ES research is concentrated mainly on ES implementation. Issues of ES implementation may have roots in the selection phase of ES acquisition yet only a few authors combine these two phases in a single study to give a better and more holistic picture of the ES acquisition process (e.g. Findik et al., 2012; Forslund & Jonsson, 2010; Shakir, 2000). Also, power relations which exist in organizations inform and is impacted by ES selection and implementation. However very little attention is given to the effects of power in selecting and implementing ES (e.g. Silva & Fulk, 2012).

Furtherance to the research purpose and the gaps identified in chapter one, this study addressed the following research questions:

4. What are the effects of power on Enterprise System selection?
5. What are the effects of power on Enterprise System implementation?
6. How do the effects of power on Enterprise System selection influence implementation?

The study addressed the research questions as follows:

i. Chapter two discussed relevant literature on software selection and implementation in general before looking particularly at ES selection and implementation. Also in review are the methodology and methods used in ES research as well as the theoretical and conceptual approaches, challenges and critical success factors for selecting and implementing ESs. The review of literature revealed that studies are focused on phases of the ES lifecycle with the implementation phase receiving the highest attention. Very few studies combine two or more phases to bring out a more inclusive representation and understanding of the ES acquisition process. This study therefore combines the selection and implementation phases not only to present a wider view of the acquisition process but also to unearth the mutual relationship that exist between these two important phases and how they impact each other. Also, theoretical and conceptual approaches used in ES research failed to account for the effects of power (on selection and implementation). This is very crucial because organizations that select and implement ESs are basically social systems with power relations. Power plays a pivotal role in the whole ES acquisition process and as such there is the need to study how power shapes this process. This necessitated the use of Clegg's circuit of power framework to study how power shapes the selection and implementation of ESs. Last

but not the least, very few studies on ES selection and implementation in sub-Saharan Africa were found.

ii. Chapter three presented the theoretical foundation for the study. The choice and justification for Clegg's circuits of power framework as the theoretical foundation for this study as well as the various canons of the theory have been discussed. Constructs in the chosen framework include the episodic, social and systemic circuits of power as well as the obligatory passage points. The circuits of power framework was chosen because of its exceptional ability to capture a multi-dimensional view of power. Thus the circuits of power framework is an excellent tool that unearths the full effects of power on ES selection and implementation.

iii. Chapter four discussed the methodology employed in this study. The three main research paradigms considered in IS research are positivist, interpretive and critical theory. These research paradigms were discussed based on their ontological, epistemological and methodological stance. Based on this discussion the choice and justification for the interpretive paradigm as most appropriate for this study was presented. This chapter also presented details of how fieldwork was conducted including how the researcher gained and maintained access to the case organizations and techniques and methods employed to collect and analysed data.

iv. Chapter five presented the findings from the two case organizations in Ghana that have selected and implemented ES software. Taking a case at a time, the chapter presented the background of each case organization with special emphasis on the acquisition and use of IS over time. The narration included the rationale for choosing ES as well as details of the various activities that characterized the selection and implementation of the chosen ES software. The findings show that both case organizations engage in

similar set of activities during the selection and implementation of their chosen ES software.

v. Chapter six presented the analysis of the empirical data gathered using the circuits of power framework which is the theoretical lens of this study. Data analysis was first completed separately for each case before a comparative case analysis was done so as to profoundly enrich understanding about the effects of power on the selection and implementation of ES software. The prevailing themes in each of the three main constructs of the circuits of power framework were combined to explain the full effects of power during the ES selection. The same was done for the effects of power on ES implementation. Finally how the effects of power on ES selection influenced implementation was also analysed.

vi. Chapter seven focused on discussions of the literature review and the theoretical foundation in chapters two and three respectively vis-à-vis the empirical findings and resulting analysis of case findings in chapters five and six respectively. The discussions helped to link the findings from the field to the reviewed literature in order to fully answer the research questions. The chapter also contains reflections of the researcher on the use of Clegg's circuits of power as the analytic lens for this study. It is argued in this chapter that power and power relations exist in organizations and that power influences the selection and implementation of ES software. Thus the acquisition of ES software is not without the exercise of power. It is also argued that power relations and the effects of power must be seriously considered during the selection and implementation of ES software especially in the face of high rate of botched ES implementation projects.

8.3 Contribution to Knowledge

According to Walsham (1995a) four types of generalizations from interpretive case studies exist, namely; generation of theory, development of concepts, contribution of rich insight and drawing of specific implications. These four types of generalizations represent the four main ways by which interpretive case studies contribute to knowledge. This study did not develop new concepts. It however did make contribution to theory, offered rich insight and drew specific implications. Details of these three contributions are discussed in the succeeding sections.

8.4 Contribution to Theory

Contribution to theory does not necessarily mean the building of new theories: applying a familiar theory in a novel way also represents contribution to theory (Myers, 1997). In this regard the study contributes to theory by drawing on the Clegg's circuit of power framework to examine how power influences the selection and implementation of ES software. A past study by Silva and Fulk (2012) also used circuit of power framework to categorize ERP literature and also theorize power in ERP implementation projects. Their study however failed to account for the presence and effects of power during ES selection and how this later influences implementation.

8.5 Offering of rich insights

The study offers deep insight into power relations and the effects of power in the selection and implementation of ES software. Whiles ES research is dominated by focus on implementation and factors that determine its success, this study combines selection with implementation to understand the effects of power in these two phases of ES acquisition. The dominant interest

of researchers and practitioners in ES implementation grows from the need to understand the high rates of failures (Robey et al., 2002; Silva & Fulk, 2012) that characterizes such cost-intensive projects. There is now a growing consensus that ES implementation failures have deep roots in selecting an inappropriate system (Bakås et al., 2007; Lall & Teyarachakul, 2006; Verville & Halingten, 2003). There is therefore the need to combine the selection and implementation phases in a single study in order to unravel the convoluted effects of one phase on the other. Very few studies have attempted this combination in a single study (e.g. Findik et al., 2012; Forslund & Jonsson, 2010; Shakir, 2000). For deeper understanding, this study did not just combine ES selection and implementation but also examine the power relations and the effects of power in these two phases. Thus this study unearthed the role of key stakeholders and their influence over the ES selection and implementation process.

Whiles reviewing past literature few studies were found (i.e. Abdelghaffar, 2012; Boltena & Gomez, 2012; Neves et al., 2004) that dealt with the context of sub-Saharan Africa. With eleven different ERP system installations in eight different sites Neves et al. (2004) investigated the ERP system selection process and found out that there is consistency in how organizations go through the process. The studies of both Abdelghaffar (2012) and Boltena and Gomez (2012) focused on ERP systems implementation. Boltena and Gomez (2012) examined important dimensions of ERP implementation and concluded that cultural, business and technical issues play a crucial role in successfully implementing ERP systems and must therefore be given careful consideration and attention. Abdelghaffar (2012) who also studied the effect of environmental and organizational factors on ERP system implementation and concluded that both national and organizational factors should be considered for successful implementation. Clearly, none of these studies combine ES selection with implementation. The studies also did not account for the effects of power on selection and implementation of ES Software. This study however combines ES selection with implementation as well as examine the effects of

power on the selection and implementation process. It also presents a comparative analysis between a public sector organization and a multinational subsidiary in a sub-Saharan African context.

8.6 Implications of the study

The study has implications for research, policy and practice. These implications are presented in the following subsections:

8.6.1 Implications for Research

With regards to research, this study accentuates the need to recognize and account for the effect of the ES selection phase on implementation. Past literature is heavily skewed towards the implementation phase to the neglect of the other phases. However, the phases that precede implementation (such as the selection phase) could actually define and shape implementation. Taking a more universal approach to studying ES acquisition would prove valuable to understanding the complex interrelation and interactions between the various phases of the ES lifecycle.

Also, this study focused on the presence and influence of power in the selection and implementation phases of ES software acquisition. This study can be extended to cover the other phases of the ES lifecycle in order to understand the full effect of power along the whole ES lifecycle.

According to Burgess, Kerr, and Houghton (2013) while the whole IS research domain records about 81% of the positivist research paradigm; about 96.6% of studies in ESs research used the

positivist paradigm. The adoption of interpretive case study in this study is therefore a classic paradigmatic contribution to ES research.

8.6.2 Implications for Policy

For policy, the results of this study would enlighten policymakers to formulate relevant policies that help create the enabling environment for acquiring and using IS resources in sub-Saharan Africa. At the organizational level, findings of this study could be relied upon to frame policies and strategies regarding the acquisition and management of IS resources.

8.6.3 Implications for Practice

The study has valuable implications for practice. First, ES implementers must understand the critical role and impact of selecting the appropriate ES software. This is because a rushed selection may lead to unsuccessful implementation in the long run. Selecting the right software sets the tone for successful implementation.

Second, ES implementers must understand the dynamics of power relations and the effects of power during ES selection and implementation. Disruptions, conflicts and struggles in ES selection and implementation projects are all the results of power. It is therefore crucial for ES implementers especially top management to understand the shaping effect of power in order to use it profitably. Erratic exercise of power may destabilize power relations and result in failed ES implementation.

Third, the involvement and training of users before, during and after ES selection and training is very essential for successful acquisition. Users' acceptance and use of the system without conflict depends on their level of involvement and training given to them. Lack of user

involvement may lead to reluctance to use the system and inadequate training may result in not reaping the full benefits of the system. As users struggle to use the system, precious time is wasted and hence, effectiveness and efficiency are undesirably affected.

8.7 Limitations of the Study

Even though the study is insightful and its findings can be related in pertinent ways to other studies in developing countries that share the similar characteristics some limitations abound. The circuits of power framework provides a comprehensive view of power in the specific context of ES selection and implementation. The results of this study may enlighten us about power relations and power issues in ES selection and implementation but this still falls short of the list of issues that surrounds ES acquisition. The use of other theories may yield different results which would further broaden our understanding of issues that characterize the full ES acquisition process. Another limitation lies in the use of case study as the research method because of lack of opportunity to solve practical problems. The use of action research may offer the researcher the opportunity to solve practical problems.

8.8 Recommendations for future research

This study uncover some possibilities for vibrant future research. Among these prospects for future research are the following:

i. This study focused on how power shapes the selection and implementation of ES software. This study can be extended to cover the other phases of the ES lifecycle in order to understand the shaping of power along the full ES lifecycle.

ii. Beyond the shaping of power during selection and implementation of ES software, future research should look at the role of power in the institutionalization of this information system.

iii. The ES software is a modular software that could be licenced and implemented on modular basis. Though the implementation of ES has received overwhelming attention, modular implementation of ES software has been virtually neglected. The relatively few studies on ES selection hardly paid any attention to how modular ES selection is done. Future studies can look at the modular selection and modular implementation of ES software. This would enhance our understanding of the modular ES selection and implementation.

iv. Future research should consider the use of other theoretical and conceptual approaches to the selection and implementation of ES Software. This would help unearth the many factors – apart from power – which influences the process of selecting and implementing ES software.

v. The case organizations are situated in the energy and mining sectors and are both located in the developing country context of Ghana. This study could be extended to other industries and contexts for greater generalizability of power relations and effects of power on ES selection and implementation.

8.9 Conclusion

This study was carried out in order to understand the effects of power on ES software selection and implementation and the consequences it brings. The research therefore examined the experiences of two organizations in Ghana. The study traced the background of both organizations with particular focus on how they acquire and use information systems and the need that spawn the selection and implementation of ES software.

Past research on ESs were focused on the phases of the ES lifecycle including adoption, selection, implementation and use. There were many studies that focused on many other aspects of ES such as CSF, BPR for ES implementation and ES post-implementation management. ES selection has profound impact on implementation yet only few studies combined both phases in a single study. Also, selecting and implementing ES is not without the exercise of power in organizations. Yet, virtually no study exist that examine the effects of power on the selection and implementation of ES software.

To plug the gap identified in literature, this study drew upon interpretive case study and Clegg's circuits of power as the analytic lens to understand the effects of power on the selection and implementation of ES software. To address the research questions, empirical data was collected, analysed and discussed with reviewed literature. The study contributes to knowledge and offers rich insight into the disturbances and reconstitution of power relations during ES selection and implementation. The study also offers rich insight into power relations and the effects of power on ES selection and implementation.

In summary, the study found out that power and power relations do play a very critical role in successfully selecting and implementing ES software. Top management and project managers must understand the effects of power so as to craft vibrant strategies for ES selection and implementation success.

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