CHIEF INFORMATION OFFICERS EVOLVING
ROLES AND RESPONSIBILITIES
-From Operational to Strategic-

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Abstract

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Introduction The Chief information officer (CIO) position has been seen as very important to every organization; this includes organizations that have either outsourced or Insourced their IT function. Various studies have shown that this role emerged as a critical executive position in most organization which helps to shape organizations strategy. CIO has a major responsibility of aligning IT with business strategy that leads to an organization achieving a higher competitive advantage. This research work will describe the various roles of the CIO in organizations with a special focus on IT-business strategy alignment.

Research Q What are the various roles/responsibilities of the Chief information officers as regards IT-business strategy alignment? What is the value created from such an alignment?

Purpose The purpose of this thesis is to describe and analyze the various roles/responsibilities of the CIOs in respect to IT-business strategy alignment and also to evaluate the value created from such an alignment.

Method The method used for this thesis is an exploratory research approach where data were collected from multiple sources. The different sources of collecting the data includes; Interviews with CIOs, case studies from Applegate et al, (2007) and previous research. These previous research were collected through the university online database which includes, ProQuest (ABI/INFORM), JSTOR, Elin@Mälardalen, Emerald and google scholar and also through the internet.
Conclusion  Based on our investigations from previous research, case studies and current interviews with CIOs, we were able to see that the CIO roles are shifting from operational to more strategic one. The CIO is seen to be the bridge between IT strategy and business strategy. As a result of this, they have close collaboration with the CEOs in order to be successful in aligning IT strategy to the business objectives. In view of this, the CIO plays the role of both the chief architect who designs future possibilities for business and the technology provocateur (Intelligent officer) that aligns IT with business.

Keywords  IT strategy, Business strategy, strategic alignment, IT-business strategic alignment, Chief information officers, Chief executive officers, IT outsourcing, IT insourcing, Balance score card, Strategic grid.
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List of Abbreviations

ASP ----- Application service provider
ATM ------- Automated Teller Machine
CEO ------- Chief Executive Officer
CFO ------- Chief Finance Officer
CIO ------- Chief Information Officer
CMO ------- Chief Marketing Officer
COO ------- Chief Operating Officer
CRS ------- Central reservation system
CTO ------- Chief Technical Officer
ERP ------- Enterprise Resource Planning
GSM ------- Global System for Mobile communication
IBRD ------ International Bank for Reconstruction and Development
IDA ------ International Development Association
IPO ------- Initial Public Offering
IT -------- Information Technology
JSTOR ----- Journal Storage
PC ------- Personal Computer
PDA ------ Personal Digital Assistant
PMS ------ Property management system
SAP ------ System Application & Products
SMS ------ Short Message Service
UCB ------ Union Chimique Blege
VD ------ Verkställande Direktor
VLT ------ Västmalans Läns Tidning
WAP ------ Wireless Application Protocol
Y2K ------ Year 2000 Compatible & PDAs------ Personal digital assistant
CHAPTER ONE

1.1 Introduction

Information technology (IT) is becoming an important part of today’s corporate activities. The evolution of Information technology has made the world a global village, what is seen as modern today might be considered outdated tomorrow. IT was used to support back office activities, but now there has been a great change in the way IT is used. It is now used in front office activities. As a result of these changes, IT can now be seen as a continuous changing organism which needs to be controlled or managed; this emergence has led organizations to create a new role that will manage IT in order to enhance business operations. This role as stated is the Chief information officers (CIO) role.

Jordan, 1993 claimed that the chief information officer (CIO) role emerged in the 1970s as a result of increased importance placed on IT. As a manager of people, the CIO faces the usual human resource roles of recruiting, staff training and retention, and the financial roles of budget determination, forecasting and authorization. As the provider of technological services to user departments, there remains a significant amount of work in publicity, promotion, and internal relations with user management. The CIO is thus concerned with a wider group of issues than are most managers (Jordan, 1993). Applegate et al, (2007, p. 450) stated that line activities can be outsourced but sustained CIO responsibilities must be retained even in organizations that have fully outsourced their IT functions. The reason is that CIO’s needs to be involved in partnership/contract management, architectural planning, assessing technological alternatives and continuous learning. The Chief information officer heads the IT department in every organization and is responsible for all the IT functions, this position is one of the highest in the hierarchy of every organization who is mostly responsible for the strategic IT development. The rapid pace of technological changes and innovation has given several opportunities for organizations to enhance their operational performance, reduce cost and improve service responsibilities to the public. In order for these to be achieved; the Chief information officer needs to radically restructure the way the IT function in the company is organized. According to (De Sutter, 2003) who claims that the CIO has been given the responsibility to make sure that IT strategy becomes aligned with the
overall business strategy, this is done for organizations to compete with IT e.g. as a resource for better decision making and increased business process performance.

Various studies have shown that misalignment or a lack of alignment, between business and IT strategies is one of the main reasons why enterprises fail to exploit the full potential of their IT investments. Some organizations that have accomplished a high degree of alignment are often associated with better business efficiency and IT Service effectiveness performance (Ali, A.Y & Qing Hu, 2008). It is well to note that the fit between IT strategy and business strategy is changing and one key question is how to achieve a new fit. Basu, et al. (2002 p. 514) stated that an organization either follows one of many similar, well-defined and documented methodologies for integrating IT strategy with business strategy or it customizes its own. In the same vein, Galliers and Baets (1998) stated that linking IT to business and business to IT is now a necessity and not just an objective. They stated that the components of competition are quality, price and time which require effective control. The price needs to be competitive, quality has to be very high and delivery time very short. All this means that integrating IT strategy to business strategy is possible only through the considerable involvement of all parties in thinking about the role of IT in the organization (Earl, 1990; Allen and Scott Morton, 1994).

1.2 Problem Statement

Strategic alignment or the alignment of IT strategy with business strategy have been seen by many researchers as one of the most crucial issues facing most organizations in recent years. In order for organizations to achieve a better competitive advantage through the use of IT, there comes a need to strategically align it with the organization business objectives, this has been a major concern to both the top management and IT executives. To this view, we find it interesting to conduct the research on organizations that have both outsourced and in-sourced their IT functions to see the current views of the CIO as regards IT-business strategy alignment. Outsourcing and in-sourcing are two popular approaches organizations use in maintaining their IT functions, outsourcing is when an organization seeks the help of an external vendor or third party to handle their IT functions, this might be a part or the overall IT functions, while in-sourcing on the other hand is the process whereby the IT function is
handled internally by the organization without the help of an external vendor. Applegate et al, 2007 claims that whether an organization outsources or in-sources their IT function, there is still a need to retain the CIO position. This research is aimed at answering the questions as follows;

I. What are the various roles of the CIOs and what responsibilities do they have in aligning IT strategy to business strategy?

II. What are the values created from such alignment?

1.3 Purpose
The purpose of this thesis is to describe and analyze the various roles/responsibilities of the Chief information officers in respect to IT-business strategy alignment and also to evaluate the value created from such an alignment.

1.4 Delimitation
This research will only focus on the CIO roles in organizations that have IT department but not CIO responsibilities in IT organizations.

1.5 Targeted audience
The focused groups for this thesis are students studying IT management program or related fields with ambitions to be future CIO’s, IT managers or IT directors. Other target groups are CIO’s, IT managers and directors. This will assist them in playing their roles on how to manage IT in order to enhance their business operations.
1.6 Definitions

**IT**
Information technology in the broadest sense refers to both the computer hardware and software that are used for the production, storage, retrieval, manipulation and communication of information using computer and electronic technology.

**IT Outsourcing**
Outsourcing of IT means handling other parts or the overall organization’s IT service to one or more external service providers who in turn deliver these services to the company based on contract.

**IT Insourcing**
Insourcing of IT means the delegation of IT operations in house, it is the opposite of outsourcing whereby the internal IT expert takes the responsibility of managing all the IT functions. In this case, no third party is required.

**IT function**
IT function is the department or organization for handling IT issues within a company.

**CIO**
Chief Information Officers are those executive officers who are in charge of information processing and managing the IT functions in an organization. They are considered the highest hierarchal IT manager controlling the information flow throughout the organization with help of information technology as an investment. Aiming to aid the business and create competitive advantage with the alignment of IT department strategies.
CHAPTER TWO – Methodology and Methods

2.1 Methodology
This section presents the practical procedure of the study and the processes of data collection and analysis. The different choices are evaluated with the purpose of the study in mind. The aim of this section is to enable the study to be repeated and also to be a part of the evaluation of the final product.

2.2 Research Methods
This thesis is of exploratory research approach, this is because from our literature review, there have been limited work that have been carried out on the changing roles and responsibilities of the CIOs. Our data was collected from multiple source of information such as past research (case studies), Internet, interviews and questionnaires providing information for us to create knowledge about what a Chief Information Officer can do and whether there are differences in tasks performed in organizations that are studied in this paper. Ghauri & Gronhang, (2005) claims that exploratory research approach is used in situations when the problem to be solved is not well understood or clear. Exploratory research method involves the use of a battery of research methods which includes interviews, observation, questionnaires and so on (Fisher, 2007, p. 166). Interviewing is the most commonly used method in a master’s level research into business and organization and it will be used to provide examples of good practice in open and semi-structured research (Fisher, 2007, p. 166). In the case of this thesis, the researchers will use the semi-structured interviews and questionnaires as the primary source of collecting reliable and validated information from the respondents. The secondary sources of data collection will be from the internet and past research.

2.3 Data collection process
In order to collect high quality data, the researchers searched for articles and journals through the use of Mälardalen University Library’s online databases such as ProQuest (ABI/INFORM), Elin@Mälardalen, Emerald and google scholar, JSTOR etc. These sources contained articles, academic journals, and reference dissertations. Notable keywords used for this search includes IT outsourcing, IT functions, CIO responsibilities, CEO, IT manager,
Strategic alignment, IT-business strategy alignment, IT organizations, Information technology management, strategic grid, IT strategy and business strategy.

The results collected were rated mainly after their relevance regarding when they were written. The researchers used the information to build an understanding on the topic, but also to compare past literatures that have been written about the CIO and their responsibilities in different organization and their IT functions. This will be compared with the results from current interviews with the CIO’s. The interviews will be conducted with some organizations that have either outsourced or insourced their IT functions. The researchers needed to understand and somehow define terms like IT functions, CIO’s responsibilities, Outsourcing, insourcing before collecting any primary data. This was done mainly in order for the researcher to gain understanding of the big picture and also to help readers understand the concepts discussed.

2.4 Sources of Information

As stated earlier, the two sources of gathering information was through primary source and secondary source. The primary source of collecting data came from the interviews conducted with the CIO’s and IT managers and the questionnaires that were also sent to the organizations, this process showed the researcher the current state of the CIOs internal responsibilities in some organizations and how they strategically align IT with business to create value. The secondary source of information came from past research and case studies; these are already written articles in journals on the chosen topic. Another source of collecting the secondary data was through the internet which also shows some recent information about the researchers chosen topic.

2.4.1 Questionnaires

In order to get more information about different organizations, the researchers prepared a pre-coded and an open ended questionnaire which was sent to twenty organizations that have IT departments. Six out of the twenty organizations responded while other did not. The questionnaire is shown in appendix A, below.
2.4.2 Interviews

The researchers decided on using the qualitative method with in-depth interviews in order to get perceived beliefs and opinions from the respondents. In-depth interview is a face-to-face conversation to explore issues; conducted without using a structured questionnaire. The reason for using the qualitative method was due to the fact that an in-depth interview will enable the researcher to use open ended questions and alternatively get in-depth answers from which the researcher can draw conclusions to base its findings upon. Fisher, (2007) stated that conducting a research interview successfully requires as much planning and organizing than any other form of interview. Due to this fact, the researchers constructed an interview guide with a checklist of questions for all meetings. In order to follow the due procedure of an in-depth interview, the researcher roughly sorted and listed the areas of questioning, these questions were edited and put in sequence and were checked to see whether they were relevant to the chosen topic. This interview method has many benefits such as having ample time to work with the right and concrete questions, and to compare them for getting the problems answered (Fisher, 2007). The researcher also used an interview guide; this is a checklist of questions the researchers has compiled. The questions are compiled from the perspective of the research and the problem specified. The reason for using an interview guide is due to the fact that the researcher would like to ask the same questions in the number of interviews that will be conducted so as to understand the CIO’s view from the outsourcing and insourcing perspective. Appendix B shows the interview questions.

2.5 The quality of the study

In designing a case study, different tests have been used commonly to establish the quality of such research. This is applicable to this case study since it is an example of one form of empirical social research (Yin, 1994). These tests as stated by Yin, (1994) are common to all social science methods, they include; validity, reliability and generalization. Validity can further be subdivided into three categories which include; construct validity, external and internal validity. Verifying knowledge within the sphere of social science is normally put in relation to these terms. During the process of collecting useful information in our case study research, it was wise for us to have an idea of how well to measure what the respondent will actually claim. To this end, validity and reliability was used to describe how this process is
carried out. On one hand, validity can be measured in terms of how good the various sources of information are, in order to answer the research question. On the other hand, reliability directly means the actual gathering of the information and how this information can be depended upon. Validity and reliability can be viewed as a constant process when undergoing studies with quantitative approach. Good reliability and validity helps the researchers to be able to generalize the result obtain in a study.

2.5.1 Validity
According to (Yin, 1994), the concept of validity can further be divided into three groups which include; Construct validity, internal validity and external validity. In the course of this study, construct validity will be most referred to since it is most applicable in a case study with multiple sources. Using multiple sources of information in the theoretical and empirical part of this thesis is a good example of construct validity. In gathering data for the theoretical part, the researcher used different sources like previous research papers, articles, journals and scientific books from Malardalen University’s online database. On the other hand, the collections of the empirical data were particularly based on interviews and questionnaires that were sent to our different respondents. The interview and questionnaire was based on the theoretical framework which shows the construct validity of the empirical information in which the analysis is ensured.

2.5.2 Reliability
The goal of reliability is to minimize the errors and mistakes in a study; in this case data collection procedure can be repeated with the same result (Yin, 1994). Since our thesis both comprises of theoretical and empirical information, the reliability is reflecting on the quality of the researchers. In order to avoid the errors in carrying out the study and to gain high reliability, the researchers thoroughly conducted and documented the interview and case studies results in a proper way. Since some of the interviews were conducted through telephone conversation with the respondents, complementary questions were sent in for clarifications.
CHAPTER THREE – Basic concepts and theoretical Analysis

3.1 Introduction
In order to get results from our findings (in proceeding chapter), there has to be a framework on which to use to analyze information gathered. This chapter gives a description of relevant theories and concepts surrounding the topic and how they are related to each other as they constitute the general interrelated terms of this thesis. As part of the definitions, a model will be displayed which shows how they relate with each other.

3.2 Chief Information Officer
The Chief Information Officer or CIO is a job title for a person responsible for information technology within an organization, such as a listed company or an educational institution. Since our research questions mainly concern the job position of the Chief Information Officer, we see the definition as very significant and relevant for our continuing research. This is to gain a shared view of what the CIO roles implies. The title Chief Information Officer will be referred to as CIO in this thesis. While our research questions aim at describing the roles of the CIO, this working definition will provide insights regarding the position and how it is described in the literature.

Various authors like Jones & Arnett 1994, Earl & Feeny 1995, Andrews and Carlson, 1997 and others have written about the different role/responsibilities of the CIOs, most of the authors were on the same track. The responsibility of the CIO in present day was first handled by the IT manager years back. The CIO is recognized as the top manager of the IT function, this is confirmed with the various researches on the CIOs and IT leaders changing roles which shows an evolution of responsibilities; according to Jones & Arnett (1994) who claimed that the role of CIOs was established to assign accountability to one executive to be responsible for an organization’s information processing needs. Another reason given for creating the CIO position was that it closed the gap between the organization business and IT strategies.

Earl & Feeny (1995), also defines the CIO position as a specialist functional manager who is valued as a contributor to business thinking and business operation. They further stated that the position as an alignment process between IT and business cannot be over-estimated. This means that the CIO adds value by building informed relationships with key
executives in order to make sure that IT requirements become an integral part of the organizations business strategy.

Andrews and Carlson (1997) in their views also claimed that the CIOs roles are now in the 4th wave of change. He stated that the first wave saw CIOs as glorified data processing managers, the second wave as technocrats, the third wave as business executives and the fourth wave now characterizes CIOs as both technocrats and business executives.

According to Jeanne & David, (1999) who stated that the role of the CIO was established as a critical executive position in most organizations and their responsibilities was to help shape up the organization’s IT strategy. They further stated that the changing technology has led to some major changes in the responsibilities of the CIOs; they argued that the effect of technology on the CIO roles is seen to be indirect. The figure by Jeane & David, (1999) below shows the forces that influence the role of the CIO in an organization

As shown in the figure above, it can be seen that an application portfolio influences the role of CIO by establishing the extent to which the organization’s strategy and operations are dependent on IT and also the various people within the business environment that IT has impact on. On the other hand, business executives that are made up of the CEOs and other top management teams have an attitude which influences the role of the CIO, this is by
defining the level of investment that will be available for IT and how it can be applied strategically. Finally, the Dominant IT suppliers influence the role of the CIO by determining the range of technological architectures and solutions that are available within the organization (Jeanne & David, 1999).

The emergence of the CIO roles suggests that organizations are seeing the relevance of information technology. Pripp, (2000) in his article “Managing beyond the matrix: the new CIO” stated that most CIOs operate in a matrix shared services framework with the core of IT viewed as a corporate utility and IT delivery aligned by business. He claimed that the newly defined structure puts much pressure on the CIO to ensure that IT function contributes sufficient business value with increased efficiency and lowering cost. According to Pripp, (2000) who claimed that CIO must master ten leadership challenges in order to manage beyond the matrix successfully; these leadership challenges are as follows;

a. Understanding and jointly delivering on true business needs  
b. Aligning the IT function and sourcing partners with the internal organization  
c. Managing the top talent through uncertainty  
d. Comprehensively managing suppliers  
e. Negotiating and re-negotiating large-scale contracts  
f. Managing across disparate geographies and cultures  
g. Collaborating internally and externally  
h. Managing the bottom line  
i. Governing an effective IT function  
j. Communicating and managing change

He further stated that organizations that fail to attract and retain CIOs that have the skills required to lead and manage effectively within a partially or totally outsourced IT operation will face difficulty.

A research by Gottschalk (2001) research found nine of the CIO leadership roles to be the following;

a. The chief architect who designs future possibilities for the business  
b. The chief operating strategist who invents the future with senior management
c. The coach who teaches people how to acquire the skill they will need for the future
d. The technology provocateur who aligns IT into the business strategy
e. The change leader who orchestrates resources to achieve optimal implementation of the future
f. The product developer who helps to define the organization’s place in the emerging economy

In another development, Agarwal & Sambamurthy, (2002) argued that the CIOs expectation is to be leaders of IT functions that designs appropriate firm’s structure and human skills in order to position IT as a strategic differentiator.

In another research by Byrnes, (2005) who claimed that today’s CIO must fundamentally shift from managing activities within the IT department to managing change throughout the rest of the organizations. He further stated that the CIO must be conversant with the strategic goals of the business and other ways that the organization can meet those strategic goals.

Hunter, (2007) stated that the chief information officers (CIO) were recognized in the late 1980’s, he further stated that this position was created to provide a link between the organization’s senior management and the data processing department and made it possible for one senior executive to be assigned to the overall corporate IT responsibilities for an organization’s information processing needs, this is also inline with Jones & Arnett (1994) research about the CIO roles. The CIO responsibilities are now emphasizing more of the management aspect than the technological aspects (Nolan Norton Institute (2001). Broadbent & Kitzis, (2004 p. 6) defines the CIO role as the most senior executive that is responsible for identifying IT needs and then delivering services to meet those needs, he further describes some aspect which the CIO needs to focus on which includes the ability to lead, knowing the enterprise and the competitive environment and also having a vision of how IT support can lead to business growth. In the same vein, one of the CIO roles is to have knowledge about technology. But more often, the CIO is seen as a leader from a business aspect in the appropriate application of Information technology (Hunter, 2007)).

The responsibilities of the CIO is to ensure that appropriate IT activities are carried out and also considered relevant both for survival and to attain competitive advantage that the
business goals are reflected in the actions of the IT function (Hunter, 2007). Applegate et al, (2007, p.450), referred to the heart of the CIO job to be planning and ensuring that IT resources at the right level are appropriately distributed.

3.3 Chief executive officer (CEO)

The position of the chief Executive officer (CEO) is known to be the highest-ranking corporate administrator who is in charge of the total management of an organization. Some of the subordinate executives who report directly to CEO includes the Chief operating officer (COO), the chief financial officer (CFO), the chief technical officer (CTO), chief marketing officer (CMO) and the chief information officer (CIO). For the purpose of this thesis, we will be shedding more light on the CIO and their relationship with the CEOs in order to align IT strategy with the business strategy.

Laurie, (2000) refers to the CEO as the highest problem solver in an organization whose responsibilities are to identify problems and find solutions to such problems; he further stated that the CEO is also responsible for the organizations Business strategy and profit. Earl & Feeny (1995, p. 153) stated that the CEO must have a strong relationship with the CIO for an organization to achieve a competitive advantage, CEO helps to enable the relationship by making the CIO a member of the management team, this action helps to increase both the number and the quality of relationship building available to the CIOs. They further stated that the CEO can set powerful examples through their own two way relationship with the CIOs.

3.4 IT managers

Holtsnider & Jaffe, (2001) defined the IT manager’s role as the one which responsibilities are focused on the usual IT fields such as IS development, security and IT-support. They also stated that IT managers can also be a part of almost any other department, such as accounting, marketing and sales, in this case, they are scattered around the various department in an organization. The IT manager is someone responsible for a pre decided area but not as high in the hierarchy of the organization as a CIO. The IT manager in large enterprises becomes part of the middle management (Bengtsson et al 2006). The IT manager is mentioned in this thesis due to their relationship with the CIO. They are responsible for
the technical IT work and in many organisations they see the CIO as their superior and report directly to him or her.

3.5 CEO/CIO Relationship

Research by David et al, (1992) argued that good CIO/CEO relationship contributes to successful IS Strategic planning, IT-business partnership and CEO involvement in IT management. Gartner, (2004) also claimed that CEO/CIO relationship influences the CIO effectiveness and success as a business leader and the value gain from IT. In order for a CIO to add value to business, the CEO must be very supportive. Earl & Feeny (1995) stated that CEO attitude and vision for IT can influence the organizations strategic orientation, they further stated that a CEO who promotes the idea that IT is an enabler of business transformation is supporting the CIOs effort to target IT investment. In order to see how we place the CIO in the context of IT-business strategy alignment, we have adopted a model (figure 3.2), which is a graphical representation of an organizations business and IT strategy aims at placing a CIO in relation to these strategies as well as the CEO. According to (Carey & Ogden, 2000) who stated that the Chief Executive Officer or CEO is the person responsible to the board of directors over the business strategy and stock performance, this gives the meaning that the CEO is overall responsible for an organizations well being. For CIO to close the IT-business integration gap and to leverage IT for competitive advantage, CEOs and other top management team should be very supportive. On the other hand, Sambamurthy et al, (2003) claims that CIOs are expected to be business strategists that collaborate with the CEOs and other senior business executives in order to shape IT-enabled competitive moves. Shown below is the model which shows the relationship;
As shown in figure 3.2 above, the CIO is the head of the IT department and he takes the responsibility of managing the IT functions, in that case, they are responsible for managing the IT strategy. Rapp (2002), in his research claimed that organizations that want to gain competitive advantage by using IT should endeavour to integrate IT strategy with the overall business strategy. This is also shown in the figure 3-2 above; the CIO is placed in between the IT strategy and business strategy since they are mainly responsible for the IT-business alignment which is considered to be their main function. In the same vein, the CEO is the head of the entire organization and then takes responsibility of the organization’s business. As shown above, the CEO is said to be in charge of the business strategy, although the CEO might have some kind of overall strategic responsibility over the IT department, we will not be engrossed in that subject. The IT strategy is the strategy that covers IT related issues. The overall responsible person for the IT strategy is the CIO. The above figure shows the views that the link between IT-business strategies is the CIO.

IT managers on the other hand are found in different department throughout the organizations, this is because they have some responsibilities outside the IT departments. Their responsibilities are to make sure that all the IT infrastructures within and outside the organizations are in good shape. The arrows in figure 3.2 shows that the IT managers are seen everywhere in the organization but not only in the IT department, in that way, they can be seen as contributing to both the IT strategy and business strategy.

The top management team indicated in the model above include other chief executives that also contribute to the organization’s business growth, the top management team may
include, the Chief operating officer (COO), the chief financial officer (CFO), the chief technical officer (CTO) and the chief marketing officer (CMO). Their assistance is also needed in the alignment process since they are partially responsible for the business strategy.

3.6 Strategies theories (Business Strategy)

Strategy is a term that comes from the Greek word strategia, meaning "generalship." In the military, strategy often refers to maneuvering troops into position before the enemy is actually engaged. In this sense, strategy refers to the deployment of troops. Once the enemy has been engaged, attention shifts to tactics. Here, the employment of troops is central. Substitute "resources" for troops and the transfer of the concept to the business world begins to take form (Nickols, 2000). Strategy theory is relatively young (Hedman & Kalling, 2002, p. 43). However, the concept of strategy is overreaching and covers a broad terrain with multiple meanings, definitions, and conceptualizations. Nevertheless, most discussions deal with three central questions (Henderson et al, 1992):


2. Distinctive competencies. Those attributes of strategy (e.g. pricing, quality value-added service, superior distribution channel) that contribute to a distinctive comparative advantage over other competitors.

3. Business governance: choices of structural mechanisms to organize the business operations (e.g. strategic alliances, joint ventures, and licensing) that recognizes the continuum between markets and hierarchy.

A strategy is the pattern or plan that integrates organizations major goals, policies and action sequences into a cohesive whole. A well formulated strategy helps to marshal and allocate an organization’s resources into a unique and viable posture based on its relative internal competences and shortcomings, anticipated changes in the environment and contingent moves by intelligent opponents (Mintzberg et al, 1999 p. 5). It is proposed that it includes those subjects of primary concern to senior management, or to anyone seeking reasons for success or failure among organizations. Competition is the crucial theme of
strategy theory of which organizations have to make a number of choices, which are strategic. These are:

- The selection of goals,
- The choice of products and service to offer,
- The design and configuration policies determining how the firm positions itself to compete,
- The level of scope and diversity
- The organization structure, administrative systems and policies used to define and coordinate work. (Hedman and Kalling, 2002, p. 43)

Strategy defines the revenue and growth potential of an organization. It focuses attention and resources on a specific set of goals and the projects required to achieve them. (Applegate et al, 2007, p. 26). It can also be simply defined as the direction and scope of an organization over the long term, which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfill stakeholders’ expectations. Strategy is about the direction of organization (Hedman and Kalling, 2002, p. 43) or where the business is trying to get in the long-term. According to Applegate et al, 2007, Michael Porter stresses that successful strategies define how a company plans to achieve a distinctive and unique position that “woos customers from established players or draws new customers into the market.” As mentioned in the preceding section, strategy in or the business strategy is made by the CEO who forms an integral part of this thesis.

### 3.7 IT Strategy

IT refers to a wide variety of items and abilities used in the creation, storage and dispersal of data and information as well as in the creation of knowledge (Shamekh, 2008, p. 18). IT strategy is therefore concerned mainly with technology policies, and outlining the vision of how the organization’s demand for information and systems will be supported by technology. It addresses the provision of IT capabilities and resources (including hardware, software and telecommunications) and services such as IT operations, systems development
and user support (Shamekh, 2008, p. 23). IT strategy is a complex management process that generates the organization's plans and activities in several major areas (Glaser 2004):

- System identification. The process identifies those application systems that will be funded and implemented. The inventory of applications might include computerized physician order entry, outpatient scheduling applications, and systems to support pharmacy and radiology services. (Glaser, 2004)

- Infrastructure investment. The IT planning process also identifies major investments in infrastructure, such as upgrades to the network or implementation of a new database management system. These investments can be necessary to prevent current infrastructure from becoming unsupportable or to improve the infrastructure's attributes, such as security or reliability (Glaser, 2004).

- Departmental assessment. The process also might identify changes needed in the IT department, its staff, or how it functions. IT staff may need to acquire new skills. IT project management processes may need strengthening. The performance of the help desk may need elevation (Glaser, 2004).

- Organizational approach. At times, it may be necessary to consider the organization's approach to IT governance. For example, the roles of IT and its users may need to be clarified. If IT has too much control, users may feel they have lost control of their IT destiny. Conversely, too much user control can lead to expensive and difficult-to-support application heterogeneity (Glaser, 2004).

- IT operational concerns. The IT planning process may need to address critical IT questions that can change from year to year. Typical questions may include:
  - Should we outsource?
  - What steps should we take to increase physician involvement in IT activities?
  - Should we alter the way we allocate IT costs to departments and the consumers of IT services?

The IT strategic plan is more than an inventory of funded applications. IT should also address steps to improve the technical infrastructure and possible steps to improve the organization's overall ability to govern IT and perform IT initiatives.
IT was long considered a tool to automat back office activities (e.g. payroll and accounts payable) (Applegate et al, 2007, p. 35) but recently it has become an important tool for defining new strategic opportunities and building the capabilities needed to execute them. This makes it imperative to take a look at aligning business strategy with that of IT in the proceeding topic, which is one of the main area of focus of this thesis.

In order to describe the roles of the CIO regarding IT-business alignment, two frameworks would be discussed. This includes the Strategic grid framework by Warren McFarlan and strategic alignment model by John Henderson and N. Venkatraman, (1993). The strategic grid was developed to help Executives (CIOs) with the analysis of their organizations’ portfolio of IT projects while the strategic alignment was developed to help Executives (CIOs) with the ongoing alignment of IT and business strategy and operations. The analysis of the framework will be seen in subsequent chapters.

3.8 The Strategic Grid

The strategic grid framework developed by McFarlan et al. (1983) is a tool which executives, mostly the CIOs, use to access the current strategic impact of organization’s IT, and the potential strategic impact of IT. The CIO’s role comprises of knowing the position of his organization on the strategic grid in order to know how to plan alongside with IT. McFarlan developed this framework not only to understand the strategic intent of the firm but also to help CIOs in organizing the Firm’s IT function and bringing it in line with the organization corporate strategy. The relevance of strategic planning within organization varies depending on how important IT applications are in achieving its overall strategic goals. Shown below is McFarlan et al., strategic grid framework;
As shown in the figure 3.3 above, the strategic grid evaluates the impact of IT on business operation which is reflected on the Y-axis, this shows the current strategic importance of IT to a particular firm, and the impact of IT on strategy which is represented on the X-axis which indicates the future impact of IT to such organization. Applegate et al., 2007 claimed that the current impact of IT on business operation can be related to the case of NASDAQ stock exchange and PSA, where reliable zero-defect operation of IT was essential for performing critical activities inside each firm. Also, there are firms where the impact of IT is not felt, an example is the law firms where the majority of investment is related to expanding the number of legal professionals. IT in these firms can be used to support their strategic initiatives. On the other hand, the strategic grid also evaluates the impact of IT on strategy of the firm; this is represented on the X-axis. Applegate et al., (2007) also gave an example with Charles Schwab, a discount brokerage firm with steady stream of technology, innovation drove strategy evolution through much of the firm’s existence. IT development activities in this firm are inextricably linked to the firm strategy and IT investment decision are made in boardroom by those responsible with assuring business success (Applegate et al., 2007).

When assessing how important IT application is to a particular organization business, there might be some complications which may arise due to the changing nature of the competitive
environment. According to Applegate et al, (2007), the relevance of a particular element to the strategic direction of the firms strategic planning of IT is very important to every organization. As shown in figure 3.3 above, four quadrants are identified namely, Factory, strategic, turnaround and support.

Organizations’ classified in the Strategic quadrant see IT to be very important. The role played by IT in the formulation of the overall business strategy cannot be overemphasized. CIOs in these organizations need to align IT strategy with the organization business objective. IT is seen as very important today and will still be very important in years to come. Strong IT planning is essential and should be integrated with corporate organizational planning. Organizations that are positioned in this quadrant see the impact of IT on their performance as such that there should be significant top management involvement and guidance in the IT planning process (Mcfarlan et al, 1988).

Firms in the Turnaround quadrant of the grid see IT as their future strategic planning, they are not critically dependent on IT applications for its current operations, but applications under development are expected to play a vital role in the firm’s future operation (Mcfarlan et al, 1988). Turnaround firms need top management involvement and guidance in the IT planning process. Organizations in the Factory quadrant of the grid see IT to be very important to their everyday business operation and as such depend critically on existing IT support systems. IT applications under development are not so important to the firm’s ability to compete successfully. Applegate et al (2007 p. 36) stated that IT projects that falls within this quadrant are designed to reduce cost and improve the performance of the core operation of the organization. Strategic planning of IT and linkage to long-term corporate organizational plans are not nearly as critical in this situation. Mcfarlan et al, (1988) claims that planning of IT should continue to take place with guidance as to where the organization is going, but Top management involvement in the planning process is appropriately much less.

Organizations that fall in the support quadrant see IT to have little relevance in their day to day business operation and also less important in years to come, this is also seen in the low-low quadrant of the grid which suggests that such organization would place the least
amount of emphasis on IT planning in terms of top management involvement. Projects and initiatives that fall under this cell of the grid have little impact on the organizations core strategy and operation (Mcfarlan et al, 1988).

The four quadrants shown by the strategic grid framework suggest that each quadrant does require a different IT management approach. IT is seen as an important strategic tool in some firms that falls in the strategic and turnaround cells, while it has minimal importance in firms that fall within Support and factory cells. To this regard, it can be seen that both types of firm cannot place the same amount of emphasis on IT strategic planning.

3.9 Strategic Alignment
Across a wide spectrum of markets and countries, IT is transcending its traditional "back office" role and is evolving toward a "strategic" role with the potential not only to support chosen business strategies, but also to shape new business strategies (Henderson and Venkatraman, 1993). Luftman & Brier (1999) stated that the alignment of IT strategy with the business strategy has been one of the top concerns of CIOs and business executive, whiles Henderson and Venkatraman, (1993) states that misalignment, or a lack of alignment, between business and IT strategies is one of the main reasons why enterprises fail to exploit the full potential of their IT investments. Some organizations that have accomplished a high degree of alignment are often associated with better business efficiency and IT service effectiveness performance (Silva and Chaix, 2008, p. 1). Since this thesis emphasizes more on the roles of the CIO in aligning IT strategy with business strategy, it is imperative for readers to understand the Strategic alignment model. This model will also help us to assess business and IT alignment across all components of the business model (Applegate et al, 2007, p.38), of all organisations empirically studied in this thesis.

3.9.1 Using the Strategic Alignment Model
The strategic alignment model has four domains. That is two internal and two external domains. The former is refered to as the strategy domain and the later infrastructure domain (see figure 3.6). The first, termed strategic domain is the link between business strategy and IT strategy reflecting the external components. More specifically, it deals with the capability of IT functionality to both shape and support business strategy. This capability
is particularly important as IT has emerged as an important source of strategic advantage to firms (Venkatraman & Henderson, 1993). The second type, termed operational integration, deals with the corresponding infrastructure domains, namely, the link between organizational infrastructure and processes and IS infrastructure and processes. (Venkatraman & Henderson, 1993).

Visiting again the business and IT strategy concepts explained earlier in this chapter, they would be applied to the strategic alignment model. These two concepts are found in the strategy domain, already mentioned, in the strategic alignment model. For example, in a typical business one can ask her or himself questions in relation to business and IT as expressed in the figure 3.4:

Figure 3.4: Strategy domains (internal) of the Strategic Alignment.

Source: (Venkatraman & Henderson, 1993).

On the other hand, figure 3.5 demonstrates key questions that could be asked in a typical business regarding infrastructure.
3.9.2 The CIO’s and Top Management Role(s) in the Strategic Alignment

Using figure 3.5, Venkatraman & Henderson, (1993) explains the roles of top management and IT manager, but in our case we are using the term CIO to replace that of IT manager.

1. Strategy Execution (IT is an expense) – This perspective views the business as the driver of both organization design choices and the logic of the infrastructure. Top management
formulates the strategy; IT management is strategy implementer (Venkartraman et al, 1993). (See arrow 1, figure 3.6). Here, priority is to improve business processes, which places focus on changing business infrastructure. IT focus is on application development, driven by need to support business infrastructure (See arrow 1, figure 3.6).

2. Technology Potential (Business strategy drives need to develop IT strategy) - This perspective also views the business as the driver. However it involves the formulation of an IT strategy to support the chosen business strategy and the corresponding specification of the required IT infrastructure and processes. The top management should provide the technology vision to articulate the logic and choices pertaining to IT strategy. In this case the CIO’s role is relevant here. The role of the IT manager should be that of the technology architect. He designs and implements effectively the required IT infrastructure that is consistent with the external component of IT strategy (scope, competences and governance) (Venkartraman et al, 1993). (See figure 3.6, Arrow 2)

3. Competitive potential. This alignment perspective is concerned with the exploitation of emerging IT capabilities to:

- Impact new products and services (i.e. the business scope),
- Influence the key attributes of strategy (i.e. distinctive competences), as well as
- Develop new forms of relationships (i.e. business governance).

Unlike the two previous perspectives, which considered business strategy as given (or as a constraint for organizational transformation), this perspective allows the modification of business strategy via emerging IT capabilities. The specific role of the top management is to help this perspective succeed is that of the business visionary (CIO) who articulates how the emerging IT competences and functionality as well as changing governance patterns in the IT market place would impact the business strategy. The role of the IT manager is to act as a catalyst. He identifies and interprets the trends in the IT environment. In doing so he assists the business managers to understand the potential opportunities and threats from an IT perspective. (Venkartraman et al, 1993). (See figure 3.6, arrow 3)

4. Service level (IT enables strategic opportunities). This alignment perspective focuses on how to build world class IT organization within an organization. In this perspective, the role
of business strategy is indirect. This perspective is often viewed as being necessary, but not being sufficient, to ensure the effective use of IT resources and to be responsive to the growing and fast-changing demands of the end-user population. The specific role of the top management to make this perspective succeed is that of the prioritizer. They decide how the scarce resources should be allocated, both within the organization as well as in the IT marketplace (in terms of joint ventures, licensing, minority equity investments, and etc.). The role of the CIO is one of business leadership, with the specific tasks of ensuring that the internal business succeeds within the operating guidelines from the top management. Yellow Arrow (Venkatarman et al, 1993) (see figure 3.6, arrow 4).

Strategic alignment have taken notice of the potential benefits of using the balance scorecard as a tool for implementing the strategic alignment between IT and business strategy (Huang & Hu, 2005). This is described in the proceeding section;

**3.9.3 Balance Scorecard**

The balance scorecard is an essential tool that is used by top executives to measure an organization’s IT performance. Effective measurement in this case must be an integral part of the management process. According to Kaplan & Norton, (1996) who described the balance scorecard as a management system that can translate a company’s strategy into a comprehensive set of performance measures that provides the framework for strategic measurement and management system.

This management system summarizes a firm’s vision and measures its performance based on four different perspectives which includes; customer indicator, business indicator, financial indicator and learning indicator. Kaplan & Norton (1996) claims that the Balance scorecard allows financial and non-financial measures to be provided to employers at all levels within the firm and this is required by the firm’s top management to know the consequence of their decision. This invariably will make them understand the long-term driver of performance outcome. The balance scorecard is also seen to contribute to an organization's market and product development. In recent years, the balance scorecard has been applied to information technology and it is seen to be useful to the CIOs to measure the performance of IT.
Grembergen & Saull, (2001) developed a standard IT balance scorecard which indicates user’s orientation, operational excellence, future orientation and business contribution. According to him, the user’s orientation perspective shows the users evaluation of IT; this is measured in sense of user’s satisfaction. Operational excellence on the other hand represents IT processes employed to develop and deliver IT application. In the same vein, future orientation perspective represents the human and technological resources needed by IT to deliver service while the business contribution perspective indicates the business value gained from IT investment.

3.10 Theoretical Summary

In this chapter we have been able to provide different models to explain CIO roles and responsibilities. Among these models is the one that shows the relationship between the different concepts which includes the CEO, CIO, TMT, and IT managers. This was explained during the course of our theoretical analysis. The CIO is the bridge between IT strategy and business strategy; this is shown in the figure 3.2 above. The CIO according to different researchers heads the IT function in organizations; the mission of the IT function is to execute the IT strategy in a way to support the overall business strategy.

In order to gain a better understanding about the strategic importance of IT to the organizations and how CIO’s play their roles based on the type of organization they operate, we presented the strategic grid framework; this was originally developed by McFarlan et al. This framework explains the roles of the CIOs in the various organizations, it also indicates the quadrant which each organization belongs to; as a result of IT impact on business strategy and operations; this is shown in figure 3.3. It is important for CIOs to measure the performance of IT in order to know its relevance and how it affects the organization in both positive and negative ways. The balance scorecard is mostly used in this case to measure the IT performance.

Finally, the theoretical section shows the strategic alignment model which describes how IT strategy, business strategy, organizational infrastructure and information system infrastructure and processes are related and which decisions the CIOs should consider before any necessary alignment. These questions or decisions presented in figures 3.4 and
3.5 are very important as it makes a CIO more focused for a successful implementation of IT and business strategies. Further, figure 3.6 shows the IT and business strategy alignment processes.
CHAPTER FOUR- Empirical Findings

4.1 Introduction
In order to know the current views of the CIOs regarding their roles/responsibilities and also to answer our research questions, we conducted three interviews and studied three cases. These three cases were adapted from Applegate et al. (2007). The three interviews were carried out in three companies namely Prolog KB, a Swedish newspaper distributing company, Fidelity bank Plc a first generation bank in Nigeria and Kron Finance and investment limited, Ghana. The reason for using these Companies is to see the roles of the CIOs from different perspectives as regards different industries which comprise of banking, logistics and investment firms. These companies are also located at different geographical zones around the globe. The interview questions can be seen in Appendix B and the questionnaires in Appendix A below, since the interviews were conducted as conversational rather than structured questions, the information given will be presented as a draft which will not contain the original questions which the respondent answered.

Also in this chapter, the researchers begin with the introduction of these companies, and then proceed to define the CIO roles regarding IT function, i.e. how they use IT to support their business operations.

4.2 Prolog kb
The first interview was conducted at Prolog KB with the IT director Mr. Ronney Gustafsson, whom we would refer as the CIO since he heads the IT department in this organization. This interview that lasted for about two hours gave us much more than we expected. A deeper knowledge about our research questions was gained since the respondent whom we would regard as respondent “A” was well aware of our topic, his awareness helped a lot during our discussion.

4.2.1 Prolog Kb- Company Background
Prolog KB is a company that is in the business of distribution of newspapers, magazines and other printed goods to companies and households in Mälardalen area which includes Eskilstuna and Västeras. This company has approximately 1000 employees, the company turnover for the year 2008 was 310MSek. This company is owned by two different
companies, Premedia and Eskilstuna Kuriren. Premedia own 60% of the shares while the remaining 40% is owned by Eskilstuna Kuriren.

The Business activities are carried out in four areas, these business areas include;

- Prolog Tidnings distribution
- Prolog effect (distribution of ad product-DR)
- Prolog Optimum, consultant activity within the company
- Prolog Påväg (transport service)

This company (Prolog KB) has personnel in four regional areas; the regional zones include Norrtälje, Södermanland, Västmanland and Örebro. These different regions have their own IT managers who are in charge of their IT functions. At Prolog KB, the CIO works very close to the CEO who makes major decisions for the company. The CEO comes up with a business idea while the CIO also comes up with a strategic IT idea that would effectively and efficiently support the business idea proposed by the CEO. Also, the CEO normally comes with business idea but the CIO, knowing very well the business operations of the company also suggests some ideas regarding IT strategies to the CEO. The CIO also specified that he has a close collaboration also with the Chief Financial Officer in IT budgetary matters.

The CIO minor functions include the management of the telephone system and IS within the company whiles his major functions is that of IT strategy.

4.2.2 The CIO responsibilities in Prolog KB

The CIO who has worked with the company for the past seven months, realized that, the current IT/IS systems at Prolog did not support some of the company’s businesses. That is it did not support transportation and advertisement business. These two businesses are currently being managed in excel. His vision as a CIO, in collaboration with the CEO is to look for the appropriate system support for these two new businesses, which will support the entire organization’s activities as well.

Their distribution system is outsourced to Kanal Dator, an IT company. This company provides the system support whiles minor technical issues are attended by technicians from
Västmalan Läns Tidning (VLT), a media company, who are Prolog’s business partners. This system does not support transportation, customer service as well as other commercial services. The problem here is that there is a different system for the various distribution areas. In this case one has to open various windows on the computer, instead of one, to access customer information.

4.2.3 IT-Business strategy alignment at Prolog KB
In order to use IT to meet the organization’s business needs, a project has currently been implemented. This is the use of PDAs for the distribution of newspapers, PDAs stands for (Personal digital assistant). This handy device combines telephone/fax, computing, Internet and other networking features. A typical PDA can both function as a cellular phone, fax sender, Web browser and personal organizer. This is a welcome development since it will increase the efficiency and effectiveness of distribution; this will also increase the organization’s business value. The diagram in figure 4.1 below shows the organizational chart of Prolog KB, it can be seen that Gusstafsson (respondent A), is responsible for all IT related issues and he reports directly to the VD Johan Lundin who is in charge of the business.
4.3 Fidelity Bank Plc

Here we present the empirical information received from Mr. Goddey Omonenye, CIO Fidelity Bank Plc, during a telephone interview that lasted for about one hour. He will be regarded as respondent B in this study.

As the CIO of Fidelity bank, he is seen as the highest hierarchy person in the IT department and as such represents the IT department during board meetings, he is recognized as one of the top members of the management team. He has been involved with IT related responsibilities for 15 years, but started working under Fidelity bank as CIO for 10 years. He is an experience staff that has worked in several other places as IT manager before becoming the CIO of fidelity bank.

4.3.1 Background

Fidelity Bank Plc is one of the first generation banks in Nigeria that began operations in 1988 as a merchant bank and changed to commercial bank in 1999 and then became a universal bank in the year 2001. This bank is located in strategic places especially in major cities and in commercial centers of Nigeria. The CBN recapitalization process in Nigeria in the year 2005 saw Fidelity bank merging with two other banks namely FSB International Bank Plc and Manny Bank Plc under the Fidelity brand name. The recapitalization process was a reform programme for the nation banking industry where all banks were asked to raise their capital base to a minimum of 25 billion naira (about USD197 million), either through injection of fresh capital, acquisition or Merger. Today, Fidelity Bank is rated amongst the top 10 banks in the Nigerian banking industry. Over the years, the bank has been reputed for integrity and professionalism and also respected for the quality and stability of its management.

Fidelity Bank also enjoys the respect and partnership of a network of off-shore institutions with which it has correspondent banking, confirmation lines, credit and other relationships. These include, ANZ London, Afr-eximbank, Cairo Egypt, ABSA South Africa, Commerce Bank, Frankfurt, Citibank, N.A. London and New York, FBN Bank, UK Ltd, SCB, London, HSBC, US Ex-im Bank, USAID, etc (www.fidelitybankplc.com).

The IT department in Fidelity Bank Plc. assists the organizations business by providing solutions and helping the organization to achieve their business goals. The CIO is the highest
hierarchal manager at Fidelity bank as regards IT department. The IT department at fidelity bank has above 100 employees who are responsible for the maintenance and upgrading of IT infrastructure under the CIO supervision (Source: Interview with Mr. Goddey Omonenye).

4.3.2 The CIO responsibilities
The CIO responsibility at Fidelity bank plc. varies from operational to strategic roles of IT functions. The importance of IT in the banking sector cannot be under-estimated and as such, the CIO is seen to be involved in many IT related issues. According to our respondent Mr. Goddey Omonenye during an interview session that lasted for about 2hours, he confirmed his major responsibility to be more on information technology operations, these IT operations responsibilities were see as to develop, manage, operate and support information technology infrastructure which includes communication networks in the bank, central database in the bank (central help desk), computer hardware and software. He said as CIO with strategic responsibilities, he has direct contact with the CEO which he reports IT related issues to. He also said that some of the IT functions have been outsourced to a third party and he is responsible for the management of vendors since he searches for them (vendors) and also responsible for negotiating IT contracts and service level agreement.

4.3.3 IT-business strategy alignment at Fidelity bank plc
The integration of IT strategy with business has been a welcome development at Fidelity bank, this has been the major task of the past CIOs said our respondent. When asked how the organization is able to measure the value obtained from IT-business strategy alignment, the CIO responded that the bank has a balance scorecard which is used to measure the performance that is created by IT to the organization. He stated that this balance scorecard fuses business and IT with the aim of supporting the organizations business objectives. In order for IT to help enhance the business growth and to achieve competitive advantage, the bank has undertaken various IT initiatives such as Internet banking, mobile banking and ATM technology (Source: Interview with Mr. Goddey Omonenye).

4.3.4 Fidelity Mobile banking
In order for Fidelity bank to remain competitive and provide better service for their customers, they initiated the mobile banking service which is aimed to assist customers perform any banking related task wherever they are. With this service, you can assess your
account whenever and wherever you are using your mobile phone. The following task can be performed by using the Fidelity mobile technology;

- Check account balance
- Requesting for cheque book
- Stop cheque
- Print mini statement
- Confirm cheque
- View cheque in clearing

This mobile technology according to our respondent also supports SMS, Java and Wap technology; this allows compatibility for all models of GSM phones (Source: Interview with Mr. Goddey Omonenye).

4.3.5 Internet banking at Fidelity bank
The internet banking is a way of carrying out banking transaction through the internet. Fidelity bank with IT have a secure and a convenient way of carrying out the banking transaction from anywhere in the world in real-time through the internet. The successful implementation of internet banking at Fidelity bank has made it possible for customers to view their account balances in real-time, transfer funds between their accounts and other accounts, make order for cheques and bank draft, view their account statement online, pay their bills online, make bulk payments online, pay employees’ salaries online and be able to download account statements to their computer’s. According to the CIO IT-business strategy alignment at Fidelity bank is more about creating better service delivery through the alignment of IT area, business area and the third parties (Vendors). He also stated that the relationship between him and the CEO of the bank is seen to be very cordial; this is so in order to achieve their business goals (Mr. Goddey Omonenye).

4.4 KRON Finance and Investment Limited, Ghana
KRON Finance & Investments Limited was incorporated in June 1999 as a consultancy company to drive the vision of its founder, to provide a complete and comprehensive specialized advisory services in project/business development, project/business finance
arrangement, environmental and social assessment services and complete human capital sourcing and management, for the benefit of its clients in the public and private sectors of Ghana and the other West African countries.

The Company has its headquarters based in Accra, Ghana with two representative offices in London, the United Kingdom and Johannesburg, South Africa with a satellite office in Freetown, Sierra Leone. (KRON website) The goal of this company is to provide quality services that are available on an international standard to our clients while seeking to establish a durable partnership that will encourage the greater exchange of our values (www.krongh.com)

4.4.1 The CIO of Kron Financial and Investment Limited, Ghana

When this company was contacted, we were referred to the project manager, Jojo Wudu Benin, who also serves as the CIO of the company (see figure 4.2).

In a telephone interview with CIO (Project manager), we were told that he works very closely with CEO who is the chief decision maker of the organisation. He said that because of his closer relationship with the organisation they both share ideas regarding IT decisions for the benefit of the organisation.

He also stated that his role as a CIO is more strategic rather operational. Operational IT functions are handled by the IT manager who (see figure 4.2) ensures that any IT system implemented is functioning according to plan. He (CIO) also represents the IT departments at board meetings.

4.4.2 IT - Business Strategy in Kron

KRON is a consulting company specialized in eight main areas of business (see figure 4.3). This is supported by their in-house management team and associated consultants and companies with the requisite skills and expertise. In order to operate effectively and efficiently, they have high speed WAN linking all departments as well as all clients. The CIO has also proposed to create a knowledge bank where all ideas regarding consultations would be put there for future reference.
Figure 4.2: Position of the CIO (Project Manager) at KRON International

Source: CIO KRON International

Figure 4.3: Eight business operations at KRON International

Source: KRON website (www.krongh.com)
4.5 Adopted Case Studies from Applegate et al. (2007)
The following case studies have been adapted from Applegate et al. (2007) to support the empirical information. These cases are UCB group case, World Bank case and Wyndham International Corporation case.

4.5.1 UCB Group
UCB group was formed under the name Union Chimique Belge in January 1928 by Emmanuel Janssen who was a Belgian businessman with the corporate headquarters located at Brussels Belgium. This company has since grown by acquiring other smaller companies.

In the early 1950s, UCB set up a research where new medicines such as Atarax (hydroxyzine) were developed. The sales of this product enabled the pharmaceutical division to expand and this lead to the discovery of another important compound called Piracetam, this product was marketed in the 1970s as Nootropil and was used to treat memory and balance problems, this product remained UCB key product. During this time, UCB focused on three core areas namely, the UCB films, UCB chemicals and UCB pharma.

The UCB films was dedicated in developing high performance films for selected markets including food and beverages, labels, security products, industrial membranes and health facilities. UCB chemicals on the other hand developed manufactured and marketed specialty chemicals with high added value. This sector generated over 40% of sales from resin at that time. UCB Pharma concentrated on products and research on respiratory and neurological areas, their principle product included Zyrtec.

Vincent Damien, CIO and IT director of UCB group assumed the position in 1996 and was faced with the challenges of bringing the IT/IS plan in line with the overall business plan. Before he became the CIO, IT/IS activities were independently initiated from within the three main business areas, the IT planning function was decentralized and there were no standards between any of UCB’s three operating sectors, this Damien felt lead to tremendous inefficiency, redundancy and inconsistency in the company. Damien during his time focused on developing, managing and supporting the information technology infrastructure including communication networks, computer hardware and software in order to establish an efficient, robust and strong motorway of information that would help support
the business processes, improve end user productivity and facilitate management decision with a view of transforming the business. Information technology in UCB was a strategic resource which Damien used in achieving a sustainable competitive advantage.

Before Damien assumed the responsibility of being the CIO, the IT/IS activities in the company was decentralized whereby activities were independently initiated from within the three business sectors. Damien’s arrival saw a consistent move towards coordinated and centralized IT planning function. After assuming the position of the CIO and group IT director of UCB, he was tasked with the responsibilities for central service across Belgium including coordination of human resources matters common to various Belgian sites, responsibility for the IT infrastructure at the corporate level and the successful finalization of UCB’s headquarters in Belgium. In order to achieve his aims regarding the use of IT to support the company’s business objectives, he performed the following operations:

- Implementation of a single email system.
- Standardization of the desktop environment
- Contract saving
- Construction of a new data center
- Help desk support
- Implementation of PeopleSoft
- Ensured Security
As shown in the IT/IS milestone above, 1997-2004 saw a great change in the company’s business, this was as a result of the use of IT to support the organization’s business objectives. In 1997-1998, there was PC standardization where Damien carried out the implementation of a single email system and the installation of exchange mail at every UCB location. During 1999-2000, there was IT infrastructure consolidation where he carried out Data center consolidation and implementation of PeopleSoft. By 2001-2002, Damien performed business process standardization and 2003 -2004 saw information integration (Applegate et al. 2007).

Damien as the administrator and group IT/IS director of UCB had a cordial relationship with the Chairman of the executive committee Georges Jacobs. He reported directly to him as CEO and his superior. With the support of CEO, Damien was able to focus on the implementation of companywide standard hardware and software systems. Funds were budgeted to the different sectors to upgrade the hardware and other systems to meet standard across the company. Consequently, IT managers across the company reported directly to Damien. Shown below is the IT organizational structure of UCB adapted from Applegate et al. (2007).
As shown in UCB IT structure above, Damien is seen as the head of IT department responsible for all IT related issues. The UCB’s IT department is divided into various segments which include IT operations, IT global contract/SLA, IT security, IS development and IT/IS auditing. These different sectors are headed by different IT managers that report directly to Damien as the CIO.

4.6.2 World Bank Case Study

The World Bank is a vital source of financial and technical assistance to developing countries around the world. It is not a bank in the common sense. The organization is made up of two unique development institutions owned by 185 member countries—the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA).
Each institution plays a different but supportive role for the organization’s mission of global poverty reduction and the improvement of living standards. The IBRD focuses on middle income and creditworthy poor countries, while IDA focuses on the poorest countries in the world. Together they provide low-interest loans, interest-free credit and grants to developing countries for education, health, infrastructure, communications and many other purposes.

The then World Bank’s president, James D. Wolfensohn, within two years after he assumed office, made a strategic compact with his board of directors to implement broad reforms based on what he observed to be two powerful trends:

- “The development business is undergoing dramatic change: surging private capital flows and declining support for official aid; greatly diversified sources of advice and technical assistance; and recognition of a broader development paradigm—with greater emphasis on local capacity and social, environment, and governance dimensions.”

- “A powerful technological revolution is facilitating access to knowledge, a crucial factor for development. It is also having profound effects on how all organizations do business: more competition, faster, flatter in their structures; more networked and eager to partner; and more learning-oriented, with knowledge recognized as a key driver of effectiveness.”

Two fundamental shifts in business strategy took place:

1. Decentralization. Moving the Bank’s business operations closer to the clients by decentralizing staff and decision making to local offices in more than 100 client countries.

2. Creation of a knowledge bank. Delivering more comprehensive and integrated (and therefore effective) development solutions by increasing collaboration, consultation, and knowledge sharing both within the organization and with partners and stakeholders at all points in the development process – especially in the design stages to ensure buy-in and capacity for successful implementation.
Wolfensohn turned to his newly appointed CIO, Mushin and told him to revamp the information systems and build a global network. IT staff from around the world were consolidated into Mushin’s group. Their goal was to achieve two competing objectives:

1. To enable a global decentralized organization close to the customer.

2. Provide the collaborative tools and global development knowledge that would help the far-flung Bank staff and stakeholders work more closely and effectively than ever before to scale up the impact of the Bank’s work.

Mushin’s (CIO) responsibilities spanned the globe (figure 4.6). His (Mushin’s) organization was named the Information Solutions Group (ISG). By 2003, ISG had a staff of 415 individuals. Mushin worked closely with individuals throughout the World Bank (See figure 4.6)

In March 1997, the Bank’s executive board voted in favor of the strategic compact – “to lower the institution’s costs, raise productivity, and improve the quality of the projects and programmes it supports.” Part of this initiative included a major information systems-renewal effort to streamline administrative and operational processes including Y2K compatibility. Key objectives of the strategic compact included decentralization, creation of the knowledge bank, and a matrix of regions and networks.

With strong support from senior management, ISG established a “a Five-Point Programme” as the Bank’s IT strategy. As the foundation of this strategy, global connectivity – built on standards – would provide a global customer base a high degree of reliability and service. To provide a reliable and cost effective foundation, Mushin’s team standardized and integrated the IT infrastructure, including desktop and laptop computers and software, along with workgroup, storage, and database servers. Robust information management architecture was created to provide a solid foundation for the next generation of Web services and portal applications.

By 2003, the basic IT foundation was in place to support 7000 staff members in Washington and 3000 more staff members in country offices, including 16000 desktops and laptop PCs. Managers throughout the Bank could look at the same data- whether from Washington headquarters or as a country director in South Africa. In planning for the future, Mushin and
his staff consulted with various stakeholders throughout the areas of operations, regions and networks. The consensus was that over the next three to four years, the IT function needed to leverage the investments in the technology and systems platforms described in the 2002-2006 plan to enable key Bank business strategies.

When Mushin became CIO, high-priority IT issues included Y2K, delivering round-the-clock global support, and building a foundation for global knowledge sharing. To meet a temporary increase in budgetary needs, additional funds were provided during a five-year period. Three main categories of IT services were now available to the Bank:

1. Basic-Service package. These were fixed cost, standard underlying network infrastructure services that provided the platform all users needed to access information – enterprise desktop software, e-mail, workgroup file storage, all local and global network connectivity, as well as the standard intranet platform and the global support centre.

2. Corporate information services. These services provided systems and applications infrastructure to support enterprise functions such as financial and human resource management, frontline operations, and back-office administration.

3. Optional IT services. These included the purchase of desktop and notebook PC’s, videoconferencing activity, remote access, wireless devices, and long distance telephone calls. (Point-to-point calls within the World Bank were carried on its private network over the internet protocol; external calls were handled by common carriers.)
4.7.3 Wyndham International Corporation

Wyndham international Corporation is one of the leading lodging industries with three branded products namely Wyndham hotels & resort, Wyndham luxury & Resort and Summerfield suites.

Wyndham hotels came into existence in 1981 when Trammel Crowl who was the President of Trammel Crowl Company founded Wyndham hotels with the purpose of managing and franchising the Wyndham brand. In 1982, the company opened its doors to guests in Dallas and Texas and by 1985; the company had already gained 14 upscale properties in its
Portfolio. With its continuous growth by 1996, they had a total of 66 hotels and resort in 22 states of USA, this was the time the firm filed their initial public offering IPO (Applegate et al. (2007).

In the year 1997, Wyndham hotels entered into an agreement to be acquired by Patriot American Hospitality for $1.10 billion in cash, stock and assumption of debt. With this continuous growth, Wyndham hotels started to run the assets with 52 properties of Patriot American Hospitality under the definitive agreement together forming the largest hotel REIT in the US. By 1998, PAH had achieved a pair-shared REIT status with market capitalization of $7 billion including debts, but with the repealing of the tax benefit enjoyed by pair-share REIT in 1999, PAH stock price began to fall, this decline in their stock contributed to its deteriorating financial situation. In order to survive this declining financial situation, PAH dropped it REIT status and converted to a C-corporation with the name Wyndham International Corporation. At the same time, all their non-strategic assets were sold and resources were focused on running premier-brand full service hotels and resort.

The organizational structure of Wyndham comprises of the Chief Executive Officer, Fred Kleisner, Chief operating officer, Ted Teng, Chief investment officer, Joe Champ, Chief financial officer, Rick Smith and the Chief information officer, Mark Hedley. The Chief information officer takes the responsibility of managing IT related issues and reports directly to the Chief Operation officer who is higher in hierarchy. Shown below is Wyndham organizational structure adapted from Applegate et al. 2007.
In Wyndham International Corporation, IT was a strategic tool for supporting day-to-day business operations of the hotel properties, providing management with relevant information and assisting the management in decision making. The purchase of IT was traditionally regarded as physical asset purchases or capital expenditures and as such fell within the owner’s responsibility that performed periodic need assessment.

The property management system (PMS) was the brain of the hotel operations and this software was used in maintaining the current room inventory, checking guest in and out, consolidating charges from various systems and producing guest folio. There was lack of standardization of IT infrastructure and operations and this was due to complex structure of the lodging industry with its high degree of fragmentation.

Wyndham International Corp. went through various changes both in strategic and operational level as a result of developing a new IT strategy to support the organizations business objectives. In achieving this, a new CIO named Mark Hedley was hired and tasked...
with insourcing IT and to integrate and centralize all IT operation and to support the Company new “strategic cornerstone” Byrequest, a customer loyalty programme.

In order for IT to be aligned with the organizations business strategy, CIO Mark Hedley was tasked with in sourcing and centralization of IT operational systems. The reason for this was to integrate the PMS to the CRS and with the Byrequest to provide a hotel-oriented IT function. This was done when the PMS was centralized and integrated with CRS and Byrequest. Custom software was developed to extract data of each customer directly from each property management system. The use of ASP to develop the software application was a welcome development.

Wyndham’s way of exploiting IT and its development of hotel oriented IT benefited them in many aspects over its competitor. Some of the benefits attributed to the CIO successful alignment of IT with business were;

- communication with data center in Dallas from any individual property
- Minimum numbers of disparate systems in the field
- Core set of technological people
- Capability of overnight installations over manual remote installations which helped them to consistently implement the brand standards.
- Application software upgrade was done effectively and accurately since new versions of software could be sent online, there was no need sending someone to every single site for installation and this invariably reduce the cost of upgrading.
- Consolidation of guest-stay information

Wyndham received early results from its Byrequest initiative by winning a CIO 100 award for successful fast track development of wireless access to Wyndham Byrequest.
CHAPTER FIVE - Analysis

5.1 Introduction
In this chapter, the empirical information obtained from the various respondents and the case studies will be compared and analyzed. It will be interesting since the respondents work in different organizations. The starting point of the comparison will be from the departure of the strategic grid framework by McFarlan et al, (1983) in order to see the impact of IT on the organizations business strategies and operations. From the strategic grid analysis, we will proceed by analyzing the various responsibilities of the CIO in the different organizations by viewing the benefits such organizations achieve by appointing the CIO and further analyzing the involvement of the CIO in IT-business strategy alignment.

The various organizations investigated were seen to be involved in IT outsourcing, most of the functions outsourced were part of their IT function, the reasons for this was mainly for them to focus on their core activities and to reduce cost of operation. As these organizations were involved in IT outsourcing, the CIO roles were seen to be very important in the various companies investigated. This is in line with Applegate et al, (2007) views which claim that even though organizations outsource their IT functions there could still be the need to retain the CIO position.

In order to understand the CIO responsibilities regarding each company, we hereby present the strategic grid framework showing the position of the various organizations investigated. This will be a departure to know the relevance of IT in the various organizations. The strategic grid according to our own view stands as a well accepted strategic planning tool for CIOs in evaluating the relevance of a particular organizational element to the strategic direction of the firm.
5.2 Position of Organizations on the strategic grid

This section of our analysis focuses on the position of each organization empirically studied in this thesis work.

From the above diagram those organizations that fall on the support quadrant see less impact of IT on both their business operations and business strategy. IT is mainly for back office support or activities. The disruption of their IT infrastructure would not affect their daily business. From analysis of our empirical data, KRON as a consulting firm is found in this quadrant. They do not have a separate CIO role. Hence, CIO functions are carried out by their Project Manager. They do not also have IT support strategy for their business operations; this is shown in figure 4.3(In chapter four). Their IT projects or initiatives have very little to do with their business operations and strategy. Their alignment strategy is the service level as depicted with arrow 4 in figure 3.6.
Organizations that are positioned in the factory quadrant should have IT projects initiated to reduce costs and improve performance of their core operations (Applegate et al, 2007, pp.36-37). In our data analysis UCB is positioned in this quadrant. All projects initiated are geared towards the improvement of their core operations and to reduce cost, an example is the implementation of people soft at UCB. Empirical data on these organizations also reveals that they have an independent position for a CIO and also, the impact of IT projects are reviewed by the top executives of the company (including CEO) and conjunction with the CIO and IT managers (that is depicted with arrow 1 in figure 3.6).

The World bank, Fidelity bank and Wyndham International hotel are positioned in the strategic quadrant. In this quadrant, IT is seen as a strategic tool which is used by the organization to achieve business value today and in years to come. IT projects are devoted to support both business operations and strategy (Applegate et al 2007, p.37). Wyndham international with centralization of IT was able to implement the Byrequest program which was seen as the organization new strategic cornerstone. Also, facts from the World Bank case show that projects that were initiated by the then president, Wolfenson, were geared towards their core business operations and strategy. At Fidelity bank, they also initiated internet and mobile banking projects. IT initiatives of firms in this quadrant are often defined, implemented, and managed at top levels of the corporation (Applegate et al, 2007, p.37). Organizations in this category are technology potential hence their business strategy drives them to develop an IT strategy (that is the arrow 2 on figure 3.6).

Prolog KB fits in the turnaround quadrant of the grid since the impact of IT on strategy is high in this organization and the impact of IT on business operation is low. Organisations in this category exploit emerging IT capabilities to impact new products and services or influence the key attributes of strategy (distinctive competences) and to also develop new forms of relationship. In the case of Prolog KB the initiations of PDAs for newspaper distribution at Prolog KB exemplify this. When implemented, it would show that the kind of competence they have to potential customers for newspaper distribution or even advertisement. Not only would it show distinctive distribution competence but would also improve relationships between them and current customers. (See arrow 3 in figure 3.6)
It is important also to note that some organizations did not immediately start in a particular quadrant. They basically started from the support quadrant and move upwards either towards the factory or turnaround quadrant to reach the strategic quadrant, which is the ultimate. For example, Prolog KB, UCB and Wyndham had move from the support quadrant to the factory or strategic quadrant respectively. In the course of time, their IT decisions may change for the better where they would make a commitment of initiating IT projects for both core operations and strategy. One should also realize that neither companies nor IT products can stay forever in the Strategy quadrant. For example in Europe, the use of ATM machines by banks is no more a differentiating factor to stay competitive. It is now an operational facility. In this case the ATM moves back to the factory quadrant.

Upgrade of one organization from a current quadrant to another greatly depends on collaboration of both business executives and IT executives. This is where the IT alignment model comes in. As it has already been said in chapter three, misalignment of both business and IT strategy will render an organization not fully realizing the potential of IT, in this case it will be difficult for an organization to move upward on the grid. In the subsequent analysis, we will look at how business executives and IT executives interact to align IT to business strategy.

5.3 Analysis of CIO task and responsibilities in the various organizations

Various researches have been conducted on the CIO current responsibilities, Broadbent and Kitzis (2004) outlined some guidelines that CIO should follow; this includes the ability of the CIO to lead and know the enterprise he or she is leading and in addition with the competitive environment. He stated that the CIO should have a vision of how IT contributes to business value in respect of identifying the organization’s business needs and strategies and also to develop a high quality team which will manage IT related risk throughout the organization.

In 1997, Andrew and Carlson stated that the CIO roles was in the fourth wave of change were they are seen as both the technocrats and business executives, but today, these roles as mentioned by the researchers have changed to a more strategic role. The CIOs of today are more concerned about how to use IT to improve their business operations. In the same vein, Gottschalk, (2001) outlined nine of the CIO leadership roles to include; the chief architect who designs future possibilities for the business, the chief operating strategist who
invents the future with senior management, the chief coach who teaches people how to acquire the skills they need for the future, the technology provocateur who aligns IT into business strategy, the change leader who orchestrates resources to achieve optimal implementation of the future and the product developer who helps to define the organization’s place in the emerging economy. These leadership roles as mentioned by Gottschalk, (2001) are going to be compared with the responsibilities of the CIO in the organizations investigated

The CIOs in the six organizations investigated have some tasks and responsibilities in common, although some tasks and responsibilities seem to be different. Here is a brief analysis of the CIO task in the various organizations. Respondent A, CIO of Prolog AB was seen to be more focused on the strategic roles than the operational responsibilities. The operational responsibilities in this organization are performed by IT managers and technicians from VLT, a media company who are prolog’s business partner, but these IT managers are being supervised by the CIO and they also take orders from him since he heads the IT function in the organization. The CIO is seen to be more focused on strategic IT matters where he works in collaboration with the business executives with a view of using IT to bring value to the business. This is why this organization is placed in the turnaround quadrant of the strategic grid because IT matters are very important in top management meetings. Other responsibilities of the CIO in this organization are Vendor management and service level agreement. In order to see the value of IT in promoting the business, the CIO constantly uses the balance scorecard to measure the performance of IT in the organization.

Respondent B from Fidelity bank is seen to be very active in both strategic and operational issues. The importance of IT to the banking industry cannot be over-estimated; the banks need IT to survive because it is used in their daily business operations. One of the roles of the CIO outlined by Gottschalk, (2001) is that the CIO is seen as the technology provocateur that align IT into the business strategy, this is in line with the CIO function at Fidelity bank where he is seen as the bridge between IT strategy and business strategy. Respondent B constantly measures and monitors IT within the organization through a balance Scorecard; this makes the benefit of IT to be seen in the organization.
The CIO of UCB organization had the responsibilities of bringing IT/IS plan in line with the overall business plan; this is also in line with Gottschalk’s, (2001) views about the CIO responsibilities. Jones & Arnett (1994) stated that the role of the CIO was established to assign accountability to one executive to be responsible for an organization information processing needs. This is in line with the CIO roles in UCB organization where Damien as the CIO of UCB focused on developing, managing and supporting the information technology infrastructure which includes computer hardware and software in order to establish an efficient and strong motorway of information that would support the business processes, improve end users productivity and also facilitate management decision with a view of transforming the business. The decentralized IT/IS activities in the company were moved towards a coordinated and a centralized IT function where the company saw the implementation of a single email system, the standardization of the desktop environment, the construction of a new data center and the implementation of the PeopleSoft. All these were done with a view to promote the organization’s business with the support of IT.

In the case of the World Bank, the CIO was seen performing both the operational and strategic role but was more focused on the strategic roles. Due to the fundamental shift in the organization business strategy that lead to the decentralization of the business operation and the creation of a knowledge bank, the CIO was then tasked with revamping the information system and building a global network which will enable the global decentralized organization to be close to their customers and also to provide the collaborative tools and global development knowledge that would help the bank staff that are very far away to work closely and effectively in order to scale up the bank work.

Wyndham international Cooperation on the other hand, emerged from using a decentralized IT system to a centralized IT system. This was the major task of the CIO; this was done in order for the organization to successfully implement the Byrequest program which was the organization’s strategic cornerstone. This was a strategic initiative which brought value to the organization’s business. The CIO, Mushin was seen to be more focused on strategic IT matters, this brought him in close collaboration with the CEO. De Sutter, (2003) claims that the CIO has been given the responsibility of making sure that IT strategy becomes aligned with the overall business strategy. This was in line with what Mushin did as the CIO of
Wyndham international whereby he was able to use IT to support the organization’s business operation. The implementation of the Byrequest program gave Wyndham international an edge over its competitors and made them achieve a higher competitive position in the hotel industry in the United States. The performance made the CIO achieve an award for successful fast track development of wireless access to Wyndham Byrequest.

5.4 Analysis of the CIO functions based on IT-business strategy alignment

Sambamurthy et al, (2003) claims that CIOs are expected to be business strategists that collaborate with the CEOs and other senior business executives to shape IT-enabled competitive moves. Posner et al, (2002) in Bengtsson et al, (2006) stated that the alignment between IT and business objectives is the primary responsibilities of the CIO. In the same vein, De Sutter, (2003) also stated that the CIO has been given the responsibility of making sure that IT strategy becomes aligned with the overall business strategy. To achieve IT-business alignment, organization should endeavor to integrate their management teams closely in order to build trust as time goes on. Over the last few years, various researches has shown that the greatest problems facing the CIOs throughout the world today are inadequacies in aligning their IT strategy with business objectives so the CIOs face the challenge to ensure that the priorities of their information technology organization are in line with the business strategy of their Corporation. When Venkartraman, (1993) explained the roles of the top management and CIOs in strategic alignment process in order to make the strategic alignment model closer to the operational framework of practitioners, he suggested four perspective with each one focusing on each block of the alignment model, these include; strategy execution perspectives where IT is an expense, technology potential perspective where business strategy drives need to develop IT strategy, competitive potential perspective which explains the exploitation of the emerging IT capabilities, and service level perspective which explains how IT enables strategic opportunities. In this section, the empirical findings obtained will be analyzed and compared based on this past research.

Respondent A is seen as the highest hierarchy person in the IT department and he stands as the bridge between IT strategy and business strategy. He represents the IT department in top management meetings and he is a member of the top management team. His
relationship with the CEO/VD is seen to be very close and this has helped a lot in creating value to the organization business. In order to use IT to support the organizations business objectives, respondent A has been able to implement a project whereby PDA phones are used for newspaper distribution; this is done in order to improve the effectiveness and efficiency in newspaper distribution. The role of the CIO in strategic alignment in this organization is that of the Competitive potential where he exploits the emerging IT capabilities to influence the attributes of strategy and also to develop new forms of relationships in business governance. The diagram below shows respondent A and his position in IT-business strategy alignment process.

**Figure 5.2: IT/IS Development at Prolog**

As shown in figure 5.2 above, Prolog has a clear role for the CIO, he is seen to be responsible for the organizations IT strategy. He also works in collaboration with the CEO and other Top management teams during the IT/IS strategy development, where he represents the IT department in the Group executive board meetings. His role in the IT-business strategy alignment process cannot be over-estimated.
On the other hand, IT matters in Fidelity bank are taken very seriously. The CIO, Mr. Goddey Omonenye (respondent B) is responsible for the IT strategy and heads the IT department in that organization. The major IT function outsourced in this organization is the internet service and the CIO is responsible for searching and managing the vendor. Respondent B has a strong relationship with the CEO, the CEO as the head of the business department sets business priorities and drive project requirement, in view of this, the CIO listens to any feedback from the business department. The CEO has a good understanding of IT and investing on IT is to him, a way of transforming the business. To know how high the impact of IT is in this organization business strategy and operation, the group executive board including the CEO and the CIO hold frequent meetings to discuss how IT can further enhance their business operations in order to achieve a higher competitive advantage.

As shown in diagram 5.3 above, it can be seen that the IT strategy development emerged after cooperation between the IT department which is represented by the CIO, the business department represented by the CEO and the Group executive board (GEB) which comprises of executives from other departments. The CIO strategic role in this organization is that of
the technology potential, this perspective describe how the business strategy drives need to develop the IT strategy.

The case study of Wyndham international, World Bank and UCB shows that the CIO focused more on their strategic roles than the operational roles. In the case of the World Bank, the CIO by leveraging its global real time infrastructure made the bank to be able to decentralize its business processes in country offices, also computing infrastructure provided benchmarked standardization and competitive cost. All projects were standardized across the group and due to immediate contact of team leaders with the staff members and project leaders; the project handling was quicker which reduced the time for completion of bank’s project in country offices (which was supposed to take about a decade). Also, the creation of knowledge bank helped quick decision making. Web portals were created for quick access to client’s portfolio, learning centers were also created. The basic infrastructure provided the strong foundation to integrate knowledge and share experience. This was a sure way which the CIO used in supporting the business with IT and this lead to the creation of e-banking system which was a step for customer satisfaction. This strategic role by the CIO can be described under the service level perspective, where IT enables strategic business opportunities. Shown below is the position of the CIO in IT-business strategy alignment process

![Figure 5.4: IT/IS Strategy development at World Bank](image-url)
As shown in figure 5.4, the CIO is seen as the bridge between IT strategy and the business strategy and his relationship with the CEO is very cordial and this has influenced IT budget in the organization. The CIO in collaboration with other IT executives takes the responsibilities of developing and managing the corporate information service, Global communication service, enterprise computing and e-development. The CIO in conjunction with the IT vendor helps build the IT strategy; being the head of the IT department he takes the responsibility of managing the vendor. This is done by supervising every project executed by the third party to see whether it is in line with what the organization wants.
CHAPTER SIX - Conclusion

CIOs have in recent years shifted from their operational responsibilities to a more strategic one. This is evident in the various researches that have recently been conducted on the CIO’s present functions. Our own investigations also show that the CIO of today tends to focus more on the future oriented questions than the everyday problems. One of the CIO’s main responsibilities is trying to enhance top management involvement and understanding of IT, this can be seen as one of the reasons why CEO/CIO relationship is considered to be very important. This is better explained with the strategic grid framework where most of the organizations fell on the strategic and turnaround quadrant respectively. The CIOs in Organizations that fell on strategic and turnaround quadrant were seen to be more focused on how to use IT as a strategic tool for future development. As a result of this, they hold frequent meetings with the top management teams including the CEO to discuss IT matters with the aim of adding value to the business. Some of the other roles of the CIOs as investigated are meeting strategy and business needs, managing IT risk, sharing business risk and enhancing sales and market shares.

As perceived in the IT-business strategy alignment model, the CIO is seen as the chief architect who designs future possibilities for the business and a technology provocateur who aligns IT into the business strategy. The most important contributions of the CIO to business strategy can be seen in how he uses IT infrastructure to exploit opportunities, most of the CIOs believe that the improvement in business process by the use of strategic business intelligence tools like the ERP/SAP will be most important in delivering IT contribution to business growth.

Based on our own investigations, the CIOs in the alignment process act as a senior technology executive who is in charge of leading IT/IS organization, he is also seen as one of the top management team who needs to develop both business and technology, and as a technological leader who is responsible for applying technology to enterprise challenges. Our investigations also shows the various CIOs believing that having a close collaboration with the CEOs and also having a clear understanding of the business makes it easier for them to succeed in the alignment process. The alignment of IT strategy with business strategy in
the various organizations was seen to contribute positively in transforming the business. The case of Wyndham international shows how the alignment process of IT strategy with business lead to the implementation of the Byrequest program which was a strategic initiative of achieving a higher competitive advantage in the hotel business in the United states. On the other hand, the implementation of SAP/ERP systems in UCB made it possible for sales representatives in the organization to work from their home allowing UCB to redefine the size of its regional sales offices.

Finally, IT-business strategy alignment cannot be successful without the contribution of business leaders (CEOs), the IT leader (CIO) and other top management team which comprises of the Chief financial officer, Chief operating officer, e.t.c. To this end; it will be advisable for the CIOs to have good collaboration with the CEOs and other top management teams in order to have a perfect alignment of IT strategy to the business objectives.

6.1 Further Investigation
Our research mainly focused on the responsibilities of the CIO in six different organizations. Further research that would be done on this topic should be extended to CIOs in IT organizations (IT vendors). IT organizations are those firms that provide IT services, these are popularly known as IT vendors.
Reference list


Weblinks

http://www.cio.co.uk/concern/, viewed 1st November, 2008


The executive fast track,

Tutor to you, http://tutor2u.net/business/strategy/what_is_strategy.htm, viewed 25th August 2008

World Bank,
## Appendix A - Questionnaire

1. **General Questions about the organization**

<table>
<thead>
<tr>
<th>General Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Company/R&amp;D institute</td>
<td></td>
</tr>
<tr>
<td>Company/institute</td>
<td></td>
</tr>
<tr>
<td>Street/town</td>
<td></td>
</tr>
<tr>
<td>Zipcode</td>
<td></td>
</tr>
<tr>
<td>country</td>
<td></td>
</tr>
<tr>
<td>Email address</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact person</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname</td>
<td></td>
</tr>
<tr>
<td>First name</td>
<td></td>
</tr>
</tbody>
</table>

2. How many numbers of employees do you have in your entire company?

<table>
<thead>
<tr>
<th>Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td></td>
</tr>
<tr>
<td>50-100</td>
<td></td>
</tr>
<tr>
<td>100-500</td>
<td></td>
</tr>
<tr>
<td>500-1000</td>
<td></td>
</tr>
<tr>
<td>1000 and above</td>
<td></td>
</tr>
</tbody>
</table>
3. Is your company engaged in IT outsourcing?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

4. For how long has your company been practicing IT outsourcing?

<table>
<thead>
<tr>
<th>Duration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td></td>
</tr>
<tr>
<td>1 to 2 years</td>
<td></td>
</tr>
<tr>
<td>2 to 5 years</td>
<td></td>
</tr>
<tr>
<td>5 to 10 years</td>
<td></td>
</tr>
<tr>
<td>Above 10 years</td>
<td></td>
</tr>
</tbody>
</table>

5. What IT activities do your company outsource? If a or b below, briefly state the activities been outsourced.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Some IT functions</td>
<td></td>
</tr>
<tr>
<td>b. The entire IT functions</td>
<td></td>
</tr>
</tbody>
</table>

6. How many employees do you have within the IT department before? State the exact numbers if possible.

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td></td>
</tr>
<tr>
<td>10-50</td>
<td></td>
</tr>
<tr>
<td>50-100</td>
<td></td>
</tr>
<tr>
<td>Above 100</td>
<td></td>
</tr>
</tbody>
</table>

7. How many employees do you have within the IT department today? State the exact numbers if possible.

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td></td>
</tr>
<tr>
<td>10-50</td>
<td></td>
</tr>
<tr>
<td>50-100</td>
<td></td>
</tr>
<tr>
<td>Above 100</td>
<td></td>
</tr>
</tbody>
</table>

8. How many different vendors are you using?
9. Where are the vendors located geographically? state the specific country

<table>
<thead>
<tr>
<th>Country</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
</tr>
</tbody>
</table>

10. Have you changed the vendor during this time?

<table>
<thead>
<tr>
<th>Option</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

11. If yes above, state the reasons why you changed the vendor.

12. Who initiated the IT outsourcing?

13. What primary reasons made you to outsource IT?

<table>
<thead>
<tr>
<th>Reason</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>To reduce cost</td>
<td></td>
</tr>
<tr>
<td>To focus on core activities</td>
<td></td>
</tr>
<tr>
<td>Lack of particular technology</td>
<td></td>
</tr>
<tr>
<td>Lack of IT expertise</td>
<td></td>
</tr>
</tbody>
</table>
14. What basic criteria do you use in selecting a vendor?

15. Does IT outsourcing fulfill your company's expected goals? If yes, state how.

| Yes |  
| No |  

16. What problems does your company face in IT outsourcing?

17. What will be the future effect of IT outsourcing on your company?

| Risk sharing |  
| Control cost |  
| Increase efficiency |  
| Reduce labor cost |  
| Others |  

Appendix B: Interview questions
This is a sketch of questions that were conducted with the CIO of some organizations

Personal CIO questions

- What kind of relationship do you have with the CEO, and how does this affect the entire organization?
- How does the cooperation work between IT department and the business for reaching the organizational expected goals?
- Does the alignment of IT strategy with business strategy yields competitive advantage in your organization?
- As the CIO, we are aware that you have various roles/responsibilities. Can you specify these roles? Which of these roles is of the highest concern?
- What does your role consist of as regards operational versus strategic?
- How and when will the IT strategy be affected with an adjustment in the business strategy?

Questions for CIOs whose organization are involved in IT outsourcing

- If your organization is involved in IT outsourcing, how does this affect your roles as the CIO?
- If your organization is involved in IT outsourcing, what are the major differences in the organizational set-up today compared to before when IT was kept in-house? And how does this affect your roles.
- What organizational changes were required in the new set-up and how does this affect your work?
- Have you experienced a need for more standardization due to outsourcing?
- Describe the interface towards the vendor in terms of roles and process
- As the CIO, how do you control the vendor and its operation?
- How do you secure that business when IT strategy is aligned?
- How does the IT department support the organizations strategy?
- Do you or the vendor provide technology? If vendor, how do they secure that they do the job correctly?

Questions about Roles and competences within the IT function
What are the responsibilities and right of the CIO and what are the CIO role in IT department and the organization as a whole?

After IT outsourcing, how has the competence need changed?

Which competences existed before, and which competences existed now?

Which competences are relevant for the new situation?

Have the personnel had any form of training in this matter?

How has the composition of roles changed?

Have new roles been allocated? If yes, briefly state the role.

What roles are less important now in this new set-up?

What roles have become increasingly important?

Who is responsible for SLA, including follow-up?