AN INVESTIGATION ON THE RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY CONCEPTUALIZATION AND BANK PERFORMANCE

By:

MUASA MWANIA

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DECLARATION

This management Research Project is my original work and has not been presented for a degree in any other University.

Signed: .....Date: .....

MUASA MWANIA

This Management Research Project has been submitted for examination with my approval as University Supervisor.

Signed: .....Date: .....

Dr. NIXON MUGANDA

Lecturer, Department of Management Science.

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DEDICATION

I dedicate this thesis to my son Trevor. May God grant you the aspiration for further education just like your daddy.

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ABSTRACT

It has been a matter of concern for firms to make decisions to invest or not in Information Technology (IT) to provide improvements in productivity and business efficiency. There has no conclusive evidence that the high levels of spending on IT by businesses improved their productivity, leading to the coining of the term IT Productivity Paradox. The impact of Information Technology investments in Kenyan banking system is an important issue as this type of investment constitutes a substantial component of costs and exerts a strong influence on bank operations and strategy. The main objective of this study was to investigate the relationship between conceptualization of information technology (IT) and banks' performance.

A survey approach was deemed necessary in unearthing general views. This study adopted a simple random sampling technique to collect the data for the analysis of the relationship between conceptualizations of IT and bank performance. The study used primary data gathered from the respective banks through the use of questionnaires administered to the relevant departments of the various banks under study. The questionnaire was administered to at least 4 respondents comprising of managers at the same level of the organisation for each bank. This study will yield data that require both qualitative and quantitative analysis.

From the findings and discussions, the study concludes that organizations conceptualize IT as means to create impact in its performance. Organizations make decisions to adopt IT due to industrial pressure. It concludes that firms make decisions to invest in IT depending on its financial capabilities as well as its technical features. Organizational culture or value also influences firms decision making in IT investment. The survey also made conclusion that implementation of IT is done to optimize resources, reduce costs and enable firms satisfy its customers as well as to generally improve firm performance.

From the study it is recommended that organizations should invest in IT as it improves staff capabilities, provides choice of communication and provides quality products. This will make the organization to evaluate IT productivity capabilities and its impact in improving firms' performance. The study also recommends business to focus on specific strategies for firms to improve in profitability and eventually increase it revenue.

1.0 INTRODUCTION

1.1 Background

As the dependence of IS/IT has grown in modern organizations, IT investments have soared in the last couple of decades. Large amounts of money are spent with the hope that the investments will generate value for the business organizations using the systems (Gammelgård, 2007).An organization identifies how it wishes to compete in its environment and forms its strategy Strategic issues are often ill-structured and ambiguous but serve as a way to help the manager transform the daily chaos of events into framework for action (Porter, 2009). One of the many strategic decisions is the size and objectives of technology investments, particularly information technology (Davis and Olson, 1985).

A view of the organizational role of IT and how this fits the broad strategic concerns of the firm is required to align the IT artifact with the business strategy (Henderson, 1990). Firms can choose to apply IT at any point or points of the value chain to compete (Porter and Millar, 1985).

Firms in any one industry invest different amounts of their available capital to achieve different levels of information technology intensity (Harris and Katz, 1991). A stable and robust IT infrastructure with well-implemented software to support operations and excellent IT management practices is important in achieving improved firm performance (Marco, 2006).

1.1.1 IT Conceptualization

There are discernibly different patterns among conceptualizations of information, extending beyond hardware and software to include a range of contextual factors associated with its application within organizations (Markus and Robey 2004).

When making decision on IT adoption, organizations have different conceptions on the various impacts that this IT would have on them.

Conceptualization helps to determine the nature of IT in organizations. As a precise specification of what we mean by IT business value is dependent upon what we mean by IT. Understanding how IT has been conceptualized provides a firm foundation from which to derive a systematic and theoretically based definition of information technology. Five conceptualizations of the IT artifact have been adopted in IS research: (Orlikowski and Iacono 2001).

Tool View: In this conceptualization, IT is viewed as an engineered tool that does what its designers intended, for example, productivity enhancement and reshaping social relations. Such a view is frequently used within IT business value research, i.e., IT is assumed to be a tool whose intended purpose is to generate value

Proxy View: IT is conceptualized by its essential characteristics, which are defined by individual perceptions of its usefulness or value, the diffusion of a particular type of system within a specific context, and its investment or capital stock denominated in financial units. IT business value researchers often adopt this conceptualization in empirical studies using measures such as capital stock denominated in dollars

Ensemble View: This focuses on the interaction of people and technology in both the development and use of IT. Case studies examining IT business value within specific organizations often adopt the ensemble view (Kraemer et al. 2000; Williams and Frolick 2001).

Computational View: As the emphasis of the fourth view is on algorithm and systems development and testing as well as data modeling and simulation, it is less applicable to IT business value research. The following Representations

Nominal View: Studies adopting the nominal view invoke technology in name but not in fact. The nominal view articulates that Technology as absent and cannot be described, conceptualized or theorized.

1.1.2 Commercial Banks in Kenya

The banking sector comprises 43 commercial banks. The biggest in terms of total asset is Kenya Commercial Bank with 191 billion shillings ($2.51 billion) at the end of last year. For decades since independence from Britain in 1963, Kenyan banking was dominated by multinationals such as Barclays and Standard Chartered through local units. Home-grown institutions such as Equity Bank have challenged the big banks' dominance through new models that target the lower end of the market. The latest foreign bank to pitch its tent in Kenya is Nigeria's United Bank for Africa. There are about 6.3 million bank accounts in Kenya, out of a total population of more than 36 million people up from 2.6 million accounts at the end of 2005 (Reuters, 2009).

The banking sector has embraced changes occurring in Information Technology with most banks having already achieved branchless banking as a result of the adoption of IT. According to The Central Bank Annual Supervision report (2003), the increased utilization of modern information and communications technology has for example led to several banks acquiring ATMs as part of their branchless development strategy measures. Most bank offices have ATMs (cash machines), so you'll find an ATM in most cities and towns in Kenya. But not all ATMs accept all international cards. Visa cards are the most widely supported, with MasterCard, Cirrus and Point cards together occupying the second place.

According to the report, several banks have also entered into the Internet Banking and established websites. Internet banking however is still at its infancy and more in terms of utilization is expected in this sector.

The interest in IT conceptualizations in the banking industry comes from the intrinsic nature of banking activities: to process, manage, and strategically use information. Several consequences arise. First, IT has facilitated the development of new, more sophisticated financial products as well as the introduction of alternative delivery channels to the traditional branch network (White, 1998). Second, IT shapes the ways in which banks carry out their business, with the application of new and improved technologies expected to reduce bank costs over time. Third, the development of cost-saving technology, together with deregulation, has intensified financial sector competition. As a result, rationalization and cost management are salient bank strategic objectives (De Bandt and Davis, 2000), and IT is perceived as a necessity to pursue this strategy. Fourth, banks are increasingly recognizing the need to focus strategically on the improvement of quality through customer information management, multiple-products and multiple-channels approaches, and again IT is viewed as a necessity/opportunity to pursue this strategy. Finally, technological progress has been cited widely as one of the major sources of change in the financial services industry (Fusconi, 1996).

1.2 Statement of the Problem

It has been a matter of much debate whether or not investment in Information Technology (IT) provides improvements in productivity and business efficiency. For several years, scholars and policy makers lacked conclusive evidence that the high levels of spending on IT by businesses improved their productivity, leading to the coining of the term “IT Productivity Paradox”. The impact of Information Technology investments in Kenyan banking system is an important issue as this type of investment constitutes a substantial component of costs and exerts a strong influence on bank operations and strategy. Most financial products and services use IT at some point in the production and delivery process, and a bank's information system places strong constraints on the type of products offered, the degree of customization and the speed at which banks can respond to competitive opportunities or threats.

A handful of studies on the performance of IT show weak or non-existent links between IT spending and productivity as originally identified by Solow (1987). This is also related to the debate on the strategic role of IT, "should IT be seen as a strategic necessity or rather as a commodity and not as a source of strategic differentiation", as argued by Carr (2003), or "does IT represent a strategic opportunity, a source of sustainable competitive advantage" as counter-argued by Strassman (2003), Seely Brown and Hagel III (2003)?

How are investments in IT envisioned? Does an increase in IT investment conceived to improve performance?

1.3 Objective of the Study

1.3.1 General Objective

The objective of this study is to investigate the relationship between conceptualization of information technology (IT) and banks' performance?

1.3.2 Specific Objectives:

1. To investigate whether the IT artifact translates to reduction of costs in service provision, communication between various administrative units and cost savings per transaction
2. To determine whether the IT artifact presents a company with growth in market share
3. To establish whether revenue maximization and growth in profitability can be achieved from the IT artifact.

1.4 Research Questions

Arising from the above objectives, the primary research question would most suitably address how adoption of IT contributes to improved performance of banks. The above being the main question, it can be supported by the following secondary questions:

1. How do banks perceive their IT investments?
2. Does the IT artifact translate to improved competitive advantage in the market?
3. IS the IT artifact for efficiency (operational) or for effectiveness (strategic)?

2.0 LITERATURE REVIEW

2.1 Introduction

For over 30 years the IT industry has been the ultimate growth business producing a series of breakthroughs that have created new jobs, spawned new companies and changed the way the world did business. In the 50's, 60 and 70's, i.e. the early days of IT, it was used primary as a tactical tool locked away in a server room located in one place and control by a centrally organized IT unit (Brown , 2003).

IT business value scholars were motivated by a desire to understand how and to what extent the application of IT within firms leads to improved organizational performance. Researchers have adopted diverse conceptual, theoretical, and analytic approaches and employed various empirical methodologies at multiple levels of analysis (Dedrick et al. 2002).

IT scholars have adopted diverse conceptualizations of information technology, extending beyond hardware and software to include a range of contextual factors associated with its application within organizations (Markus and Robey 2004). Examining conceptualizations of IT by IT business value researchers reveals that prevailing assumptions have delimited accumulated knowledge in three principal respects.

First, IT is frequently operationalized using aggregate variables measured in dollars or counts of systems, limiting our understanding of the differential impacts of alternative types of IT as well as the role of usage (Devaraj and Kohli 2003). Furthermore, software is often treated implicitly via assumptive measures or sometimes omitted entirely from the analysis. Given evidence of its association with firm performance (Hitt et al. 2002), there is a need for to incorporate software when conceptualizing IT.

Second, IT is frequently assumed to lead to an outcome intended by managers, limiting our understanding of unintended consequences (Markus and Robey 2004).

Third, the treatment of the role of IT employees is unsystematic and often excluded from the analysis, hindering our understanding of the role of IT management and technical expertise in generating IT business value. When included, IT employees have been incorporated in an additive fashion with IT stock (Hitt and Brynjolfsson 1996), as a separate construct that is complementary to IT (Brynjolfsson et al. 2002), or conceptualized as being inextricably intertwined with IT within business processes (Kraemer, Dedrick, and Yamashiro, 2000).

IT business value research examines the organizational performance impacts of information technology (IT). Researchers have adopted myriad approaches to assessing the mechanisms by which IT business value is generated and to estimating its magnitude. Previous research has shown that information technology may indeed contribute to the improvement of organizational performance (Kohli and Devaraj 2003). Moreover, the dimensions and extent of IT business value depend on a variety of factors, including the type of IT, management practices, organizational structure, as well as the competitive and macro environment (Brynjolfsson et al. 2002).

2.2 The "Productivity Paradox" — A Clash of Expectations and Statistics

Over the past decade, both academics and the business press have periodically revisited the so called "productivity paradox" of computers. Despite the enormous promise of information technology (IT) to effect "the Biggest technological revolution men have known" [Snow, 1966], disillusionment and even frustration with the technology are evident in statements like "No, computers do not boost productivity, at least not most of the time" Economist, 1990] and headlines like "Computer Data Overload Limits Productivity Gains" [Zachary, 1991]. Interest in the "productivity paradox", as it has become known, has engendered a significant amount of research. Although researchers analyzed statistics extensively, they found little evidence that information technology significantly increased productivity in the 1970s and 1980s. The

results were aptly characterized by Robert Solow's quip that "you can see the computer age everywhere but in the productivity statistics.

The lack of integration has led to ambiguity and debate over basic principles, extending beyond the IS research community. The topic is vital to public policy makers, the IT industry, and IS practitioners, as exemplified by the recent debate over whether "IT matters" initiated in Harvard Business Review by Nicholas Carr arguing that firms have overestimated the strategic value of IT and overspent on the commodity that is IT (Carr 2003). Our analysis has illuminated these issues through the lens of a robust theoretical framework.
Interest in the "productivity paradox", as it has become known, has engendered a significant amount of research. Although researchers analyzed statistics extensively, they found little evidence that information technology significantly increased productivity in the 1970s and 1980s. The results were aptly characterized by Robert Solow's quip that "you can see the computer age everywhere but in the productivity statistics".

Previous studies used indicators such as IT spending or PCs per employee and other measures of IT investment as a proxy for the impact of IT and consequently failed to find a positive relationship between business performance and IT. This led to broad pronouncements on the dubious value of IT, most prominently Nicholas Carr's 2003 article titled "IT Doesn't Matter."

A growing number of academic studies also report positive effects of information technology on various measures of economic performance. As more research is conducted, a clearer picture is gradually being developed of the relationship between IT and productivity. However, productivity measurement isn't an exact science. While one study shows a negative correlation between total factor productivity and high share of high-tech capital formation during 1968-1986 period (Morrison and Berndt, 1995).

Hitt and Brynjolfsson (1994) report positive effects of IT based on output and consumer surplus measures. On the other hand, Landauer (1995) de-emphasizes the findings of recent studies and documents various cases of "the trouble with computers". At this stage, the academic research results are inconsistent on a number of dimensions, including measures of performance, methodologies, and data sources.

McKinsey Global Institute, (2001) studies show weak or non-existing links between IT and productivity in the US, this confirms the productivity paradox for the US banking industry. Brynjolfsson and Hitt (2000) found that, on average, IT increases productivity for most of the US industries: therefore, the IT productivity paradox has been resolved for most industries. However, the banking industry is one of the few exceptions, where the IT productivity paradox remains.

2.2.1 Does Investment in IT Count?

Research in relation to how much value IT provides a business has not been carried out extensively in comparison to research in relation to how IT improves productivity in the workplace. At the US Computerworlds's Premier, 100 IT leaders conference 2002, 68% of 150 IT executives said they rarely measured return on investment (ROI) six months after completion of projects and 65% said that they did not have the knowledge or tools needed even to calculate ROI (Bushell, 2002).

A survey carried out by a consulting firm had the following findings in relation to IT investments. Banks in North America indicate 46% of IT investments have unknown ROI, and in Australia, 53% say ROI for general technology investment is unknown. The CEO of the Commonwealth Bank of Australia branded IT as a "costly affair" at the World IT Congress in March 2002.

Brynjolfsson and Hitt (1996) found that the gross marginal product for computer capital is 81% and the return on IT investment exceeds that on non-IT capital investment. The basic structure of such results is preserved when

considering alternative econometric specifications, assumptions, data sets, and time frames. Morrison (1997) found mixed or inconclusive evidence concerning the relationship between the technological IT resource and organizational performance.

Many empirical studies using large-sample data sets find support for a positive association between aggregate measures of the technological IT resource and organizational performance (Bharadwaj et al. 1999).

In a study of roughly 400 U.S. firms spanning the years 1987 to 1991, Brynjolfsson and Hitt (1996) find that the gross marginal product for computer capital is 81% and the return on IT investment exceeds that on non-IT capital investment. Though fewer in number, some studies find mixed or inconclusive evidence concerning the relationship between the IT resource and organizational performance (Stiroh, 1998).

Surprisingly, the successful use of IT in the banking industry has not been confirmed by the existing empirical evidence (Council of Economic Advisers, 2001; McKinsey Global Institute, 2001). Some studies have attempted to examine correlations between IT spending and total shareholder return (Strassmann,2003), while others examined how IT influences intermediate variables of operational performance, which in turn drive profits (Barua, Kriebel and Mukhopadhyay, 1995). However, these studies show weak or non-existing links between IT and productivity in the US even in the period post 1995.

Neither earlier studies (Ahituv and Giladi, 1993) nor more recent analysis (Tam, 1998; Rai and Patnayakuni, 1997; Hitt and Brynjolfsson, 1996; Barua et al., 1995) find evidence of clear positive effects of IT on financial profitability: this seems to suggest the existence of an IT profitability paradox.

Brynjolfsson and Hitt, (2000); Jorgenson and Stiroh, (2000) found that, on average, IT increases productivity for most of the US industries post 1995: therefore, the IT productivity paradox has been resolved for most industries.

However, the banking industry is one of the few exceptions, where the IT productivity paradox remains confirmed (Council of Economic Advisors: 2001; McKinsey Global Institute, 2001). In contrast to undifferentiated factor inputs with well-defined property rights, resources are firm-specific, difficult to imitate, and often valuable, i.e., they enable the firm to improve efficiency (Teece et al. 1997).

2.3 Delivering value through IT Conceptualization

Information Systems (IS) scholars have adopted diverse conceptualizations of information technology, extending beyond hardware and software to include a range of contextual factors associated with its application within organizations (Kling 1980; Markus and Robey 2004). Five conceptualizations of the IT artifact have been adopted in IS research according to Orlikowski and Iacono (2001).

2.3.1 Tool View

In this conceptualization, IT is viewed as an engineered tool that does what its designers intended, for example, productivity enhancement and reshaping social relations. Such a view is frequently used within IT business value research, i.e., IT is assumed to be a tool whose intended purpose is to generate value. The following Representations exist:

Social Relations Tool: Information Technology provides opportunities for a business to convey social presence which enables it to alter its effectiveness and its communications behavior

Labor Substitution Tool: Information Technology is a tool that enables a business to serve customers more cheaply and efficiently.

Productivity Tool: Performance capabilities of any business system are designed in the technical features of the technology used during implementation.

Information Processing Tool: Information Technology alters and enhances the way that employees process information.

2.3.2 Proxy View

IT is conceptualized by its essential characteristics, which are defined by individual perceptions of its usefulness or value, the diffusion of a particular type of system within a specific context, and its investment or capital stock denominated in financial units. IT business value researchers often adopt this conceptualization in empirical studies using measures such as capital stock denominated in dollars. The following Representations exist:

Technology as perception: Information Technology is largely represented by measures of users' perceptions of the technologies that have been adopted.

Technology as Diffusion: Measures of diffusion and penetration of technologies such as e-mail, Internet, Intranets, Extranets, Mobile computing and Mobile telephony are indicative of Information Technology.

Technology as Capital: The impact that Information technology has on the productivity of a business is dependent on the monetary resources allocated to Information Technology resources.

2.3.3 Ensemble View

This focuses on the interaction of people and technology in both the development and use of IT. Case studies examining IT business value within specific organizations often adopt the ensemble view (Kraemer et al. 2000; Williams and Frolick 2001). In addition, as quantitative IT business value research has evolved beyond examining the productivity paradox – low aggregate productivity growth during a period of high IT spending – to explore how firms use IT to generate value, researchers have begun to incorporate the role of organizational co-innovations such as workplace practices (Brynjolfsson et al. 2002). The following Representations exist: (Orlikowski and Iacono, 2001).

Technology as Development Project: Information Technology is a social process that is largely determined by the roles of various stakeholders during its design, development and implementation.

Technology as Production Network: Information Technology is focused on building of systems of alliances which tie together various stakeholders who work together to develop new technologies for maintaining customer service delivery.

Technology as Embedded Systems: Conditions of use of the Information Technology within a particular social context determines its impact as a continuously evolving system embedded in a complex and dynamic social context.

Technology as Structure: Information Technology embodies social structures built into it by its designers during development which are then appropriated by the users as they interact with the technology.

2.3.4 Computational View

As the emphasis of the fourth view is on algorithm and systems development and testing as well as data modeling and simulation, it is less applicable to IT business value research. The following Representations exist: (Orlikowski and Iacono, 2001).

Technology as Algorithm: Information Technology is a set of rules and procedures that is used by organisations to build new or enhance systems that enhance their service delivery.

Technology as Model: Information Technology is regarded as an instrument used for representing government's processes, structures, events, knowledge as accessible database through the use of data modeling or simulation.

2.3.5 Nominal View

Studies adopting the nominal view invoke technology in name but not in fact. An example is the derivation of a two-stage game analyzing the impact of IT application on total factor productivity in the context of oligopolistic competition, which introduces IT solely via its posited impact on cost reduction and product differentiation (Belleflamme 2001). According to Orlikowski and

Iacono (2001) the nominal view articulates that Technology as absent and cannot be described, conceptualized or theorized.

Examining conceptualizations of IT by IT business value researchers reveals that prevailing assumptions have delimited accumulated knowledge in three principal respects;

First, IT is frequently operationalized using aggregate variables measured in dollars or counts of systems (proxy view), limiting our understanding of the differential impacts of alternative types of IT as well as the role of usage (Devaraj and Kohli 2003). Furthermore, software is often treated implicitly via assumptive measures or sometimes omitted entirely from the analysis. Given evidence of its association with firm performance (Hitt et al. 2002), there is a need for us to incorporate software when conceptualizing IT.

Second, IT is frequently assumed to lead to an outcome intended by managers (tool view), limiting our understanding of unintended consequences (Markus and Robey 2004).

Third, the treatment of the role of IT employees is unsystematic and often excluded from the analysis (ensemble view), hindering our understanding of the role of IT management and technical expertise in generating IT business value. When included, IS employees have been incorporated in an additive fashion with IT stock (Hitt and Brynjolfsson 1996), as a separate construct that is complementary to IT (Black and Lynch 2001), or conceptualized as being inextricably intertwined with IT within business processes (Kraemer et al. 2000). The problem is exacerbated by increasing adoption of networked systems spanning multiple organizations – and hence multiple IS stakeholder groups.

2.4 Defining IT Business Performance Variables

The term IT business Performance is commonly used to refer to the organizational performance impacts of IT, including productivity enhancement,

profitability improvement, cost reduction, competitive advantage, inventory reduction, and other measures of performance (Devaraj and Kohli 2003).

Table1. IT Investment Impacts (Weill Peter and Jeanne W. Ross, 2004)

Performance - Drivers	**Outcome**
Effective use of IT for Cost-effectiveness	Overall Cost Savings
Effective use of IT for Asset and Personnel utilisation	Optimization of business revenues; Organizational Efficiency
Effective use of IT for Growth in market share and profitability	Improved Business Environment; Improved Business Opportunities through quality products and services
Effective use of IT for Business flexibility and customer satisfaction	Increased User Value and Satisfaction through development of new products and services

How business performance is assessed continues to be an interesting research topic for researchers and practitioners. There are benefits and limitations for alternate data sources. Objective financial performance indicators are accessible and can offer a great deal of information about firm business operations (Hyondong Kim, 2006). However, objective financial data is not free from personal bias and managerial discretion (Barney, 2003).

Self-report measures can allow researchers to access data that are not easily accessible or, which often allow respondents to consider long-run firm value in answering the survey questions. However, personal bias, social desirability concerns, and other factors may contaminate the self-reported measures (Venkatraman and Ramanujam, 1986).

A typology developed by Venkatraman and Ramanujam (1986) categorizes performance measures by intersecting between types of performance indicators (financial versus operational performance measures) and data sources (primary versus archival data).

2.5 Previous research On the Relationship between IT and Performance

Dehning and Richardson (2002) in their review and synthesis of quantitative empirical IT business value research, identified three different formulations of IT: IT spending, IT strategy (type of IT), and IT management/capability. Likewise, Bharadwaj (2000) derives IT infrastructure, human IT resources, and IT-enabled intangibles such as customer orientation and knowledge as principal IT-based resources. Based on a survey of top IT executives at 50 firms, Ross, Beath and Goodhue (1996) identified three IT assets underlying a firm's IT capability: human, technology, and relationship. Weill (1992) identified four organization context variables that made up conversion effectiveness: top management commitment to the IT, organization experience with the IT, satisfaction with the IT, and the extent of political turbulence within the organization. He found that conversion effectiveness moderated the relationship between IT investment and firm performance in the valve manufacturing sector.

Several studies find a positive impact on cost reduction, whether in the context of a production data management system in the clothing industry (Tatsiopoulos Ponis, Hadzillias and Panayiotou 2002), supply chain management in the food industry (Hill and Scudder 2002), or the jewelry appraisal process (Newman and Kozar 1994). Enterprise resource planning systems are associated with higher financial market valuation, though short-term effectiveness is dampened after implementation (Hitt et al. 2002).

Many of the empirical IT business value studies finding a positive association between IT and performance use productivity or other measures of operational performance. A growing number use financial metrics and some also find positive impacts (Brynjolfsson et al. 2002). However, research also indicates that the former may not always lead to the latter: operational improvements

gained from applying IT within the organization may not translate to financial measures of performance (Hitt and Brynjolfsson 1996). One implication is that a firm is not able to capture all the value it generates from IT. Even if a firm is able to obtain financial performance improvements from its operational improvements, the question of competitive advantage via IT remains.

Cooper et al. (2000) describe how a shift in corporate strategy at First American Bank drives information requirements, necessitating a new IT infrastructure based on a data warehouse. The data warehousing application is examined through the lens of a shift in corporate strategy and it's complementarity with radical organizational transformation. The authors find that a change in organizational thinking accompanied by appropriate IT investment lead to improved and transformed business processes and competitive advantage.

When IT becomes ubiquitous (availability increased, and costs decreased), it becomes a commodity input. From a strategic standpoint, IT becomes invisible: it becomes essential to competition but inconsequential to strategy (Carr, 2003). Council of Economic Advisers (2001) and McKinsey Global Institute, (2001) studies, show weak or non-existing links between IT and productivity in the US.

These studies used measures such as labor productivity growth, expressed as the average annual percentage change in the value added per full time equivalent employee, to investigate productivity issues. Hitt and Brynjolfsson (1996) documented a positive impact of IT on output and consumer surplus, but they did not find a significant positive correlation between IT spending and financial/operating performance. Teece and Pisano (1997) in their study found that competitive advantage stems from various organizational dynamic capabilities, which can relate to the effective use of IT that results in such things as timely responsiveness, rapid and flexible product innovation, and enhanced management capabilities.

Francalanci and Galal (1998) proposed that managerial choices regarding the mix of clerical, managerial, and professional employees mediate the relationship between IT and firm performance. Dehning and Richardson (2002) in their review and synthesis of quantitative empirical IT business value research, identified three different formulations of IT: IT spending, IT strategy (type of IT), and IT management/capability. Likewise, Bharadwaj (2000) derives IT infrastructure, human IT resources, and IT-enabled intangibles such as customer orientation and knowledge as principal IT-based resources.

2.6 Business Driven IT – Why IT matters

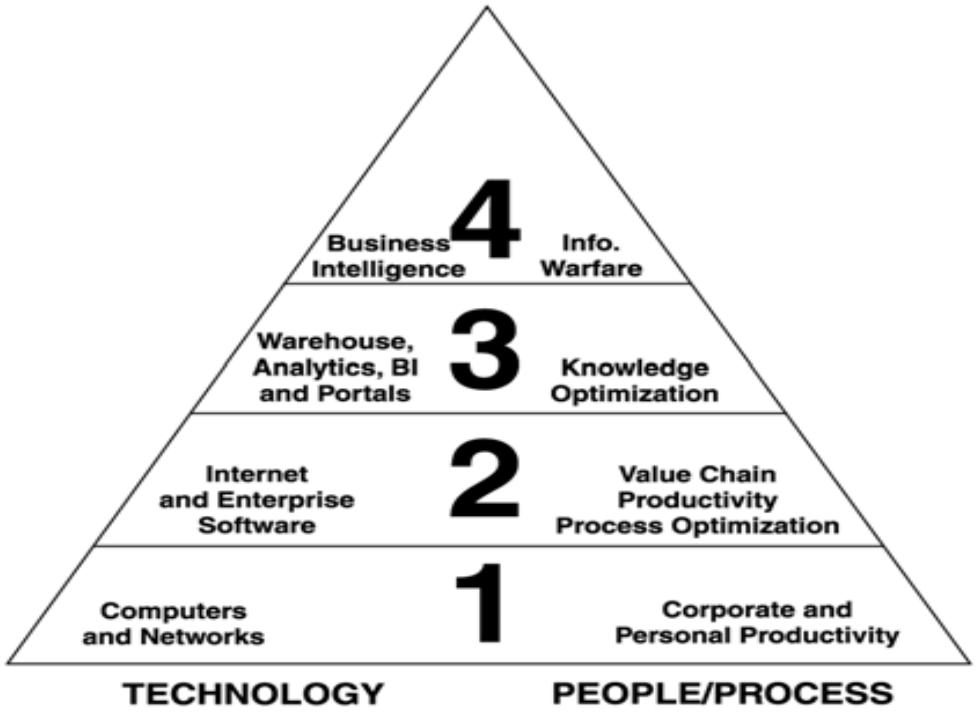
Regardless of overall random correlation between spending and returns, companies who invest wisely and manage these investments for maximum returns have indeed reaped the rewards that technology can deliver (Pisello and Strassmann 2003).

As the IT basics become commoditized the competitive playing field moves to a higher plane. IT can be viewed as a hierarchy of needs much like Maslow's hierarchy of needs model for human development. Competitive advantage has progressed from those who know how to implement the technology, to those who know how to apply technology to improve business processes, to those who know how to use it to share, manage and grow knowledge (Strassmann et. al. 2003). If one examines basic IT infrastructure, the marketplace of computers, printers and networks have become commodities with uniform products and little pricing power. It is certainly true that Wintel Desktops and IP networks have rapidly evolved into widespread use – clearly resembling a commodity. As well, personal productivity applications such as word processing e-mail and messaging could be considered commodities. Network servers, storage and printers have moved towards commoditization as well (Strassmann et. al. 2003), As such, since IT is a commodity, it does not matter as much too competitive advantage and bottom-line impact, right? Not exactly. As computing infrastructure has moved towards commoditization, clearly the

entire IT marketplace has not commoditized. IT solutions are evolving from basic infrastructure, through business process optimization and information management. After examining this progression, a model emerged that likened the IT marketplace to Maslow's hierarchy of needs. (Strassmann et. al. 2003)

If we match IT investments with Maslow's hierarchy of needs, a new understanding can be developed which proves that the basic levels of IT have been met, and indeed have commoditized. And the hierarchy clearly proves that IT has not commoditized and instead we have just moved the playing field to a higher plane where the investments are substantial, innovative, and crucial for competitive corporate success (Strassmann et. al. 2003).

Figure 1: The Alinean IT Hierarchy of Needs



Source: Strassmann et al, (*IT Value Chain Management* 2003, p. 14).

This hierarchy helps to illustrate that as each successive capability is met, the competitive advantage progresses from those who know how to implement the technology, to those who know how to apply the technology to improve

business processes, to those who know how to use it to share, manage, and grow knowledge.

Level 1 – Computing Infrastructure: The prior era of IT has been focused on fulfilling the basic lower end needs – the quick deployment of the assets and infrastructure needed for computerization. Investments were implemented to deliver individual and corporate productivity, helping users get their work done more efficiently, and helping to reduce overhead. This included trillions of dollars of investments to implement data centers, networks, personal computers and personal / business applications. With this infrastructure in place, the corporation was free to move to a higher need, and as a result, the marketplace now views these assets as commodities.

Level 2 – The Internet and Enterprise Software: With the advent of the Internet and enterprise software, the battlefield moved up-stream – delivering productivity improvements beyond the corporation and to the entire value-chain. These investments allowed customers and the supply chain to effectively integrate into corporate computerization, and helped to improve the efficiency and effectiveness of these relationships through business process optimization. Again, with these needs being met as companies implement process by process improvements, efforts are being applied upwards to even loftier needs within the hierarchy. As a result, although the need is not yet completely fulfilled, markets have begun to commoditize, evidenced by the recent consolidations in the ERP space.

Level 3 – Knowledge Capital Management: The newest battleground focuses on the "I" in IT – the information, not the technology. IT innovation is soon to be focused more on providing the primary means for maintaining and extending the value of a firm's "Knowledge Capital". IT investments are migrating from basic infrastructure, through transaction optimization, to being primarily focused on managing the rapidly exploding accumulation of scientific,

research, customer, engineering, property and intellectual assets. Computers are the repositories of intelligence about customers, suppliers and products, the most valuable knowledge assets of any firm. Emerging solutions include data warehouses, enterprise portals, analytics and business intelligence – which are moving towards mainstream adoption, but clearly have not reached commoditization. The company that is able to collect and apply such knowledge to effect bottom-line impact is the likely winner over the next decade.

Level 4 - Information Warfare: Once the basics of knowledge capital management is covered, the focus moves still higher from reactive analysis to information, to proactive control of the information as a competitive weapon, Level 4 is the futuristic era of information warfare for corporations. This battlefield is rather ambiguous at this point, and takes its lead from military research and application – but clearly a corporate analogy to the current military shift from conventional to information warfare will occur. The focus of information warfare will be the use of information distortion or denial, and the countermeasures to fight such attacks. Several expected components include: Hacker Warfare – where computer systems are attacked, Psychological Warfare – where information is used to change the minds of friends, neutrals and foes, and Economic Information warfare – blocking information or channeling to pursue economic dominance. Information command and control systems, strategy and counterstrategies and business intelligence are the tools not yet developed to meet level 4 needs.

The IT hierarchy of needs can help companies understand how to categorize various investments – and how to assess what is most important to solution decision making. As the hierarchy of needs clearly dictates, for the fundamental needs that have already been met, the markets have commoditized, and solutions with the lowest total cost of ownership win. As capability is met, investments naturally progress to the next level – where

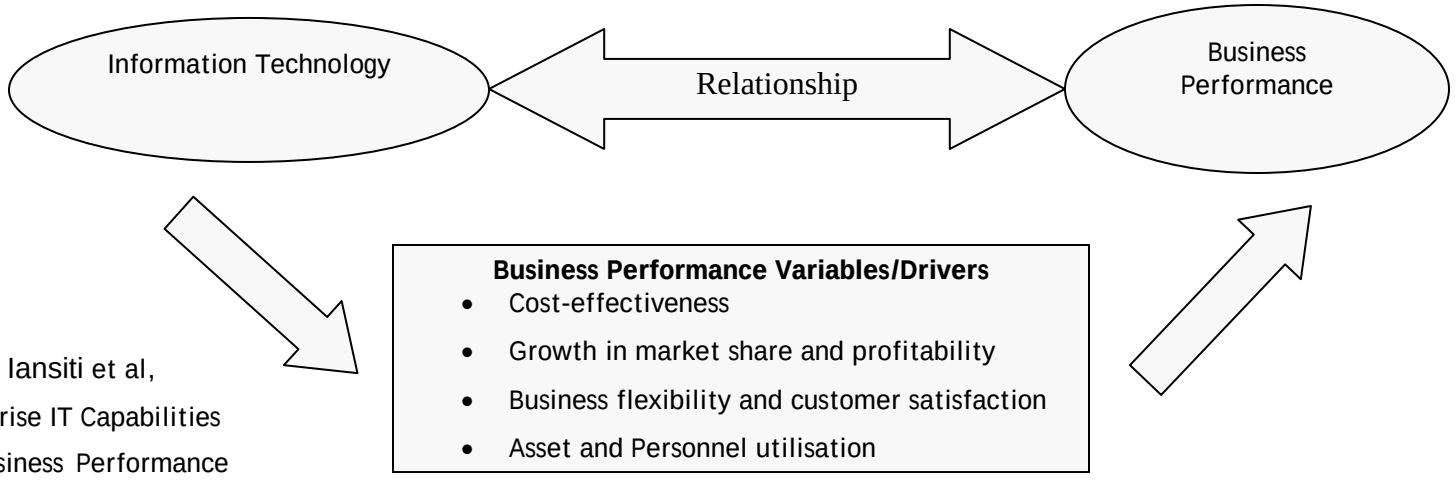
innovation still reigns, value versus costs matters most, and competitive differentiation can be gained with the right projects and spending plans.

2.7 The Conceptual Model

Spending in IT is assumed to influence organizational capability and basically how the organization works. The project has borrowed from a discussion of five generalized conceptualizations of Information and Communications Technology (Orlikowski and Iacono, 2001; Sawyer, 2004). This study will rely on these ICT conceptualizations and their representations as a guide to understanding the Information Technology conceptualization.

The research further attempts to explore the fundamental link between IT Spending/Investment and bank performance. The research further tests for the impact of this IT on key business drivers and show how those drivers relate to business performance. The resulting conceptual model that will guide our analysis is illustrated in Figure 1 and it seeks to establish how investment in IT (Independent Variable) impacts the business drivers (dependent variables).

Figure 2: Does IT Drive Business Performance?



Source: Iansiti et al, (Enterprise IT Capabilities and Business Performance 2006, p. 5).

2.8 Challenges Ahead

IT value research is gathering interest from academia and industry worldwide and should produce the necessary base for these tools and applications in operational, tactical, or strategic contexts. Challenges ahead that need to be met for IT value to become mainstream include: (IEEE Communications Magazine, October 2008)

• Developing models that capture IT-business linkage more realistically and comprehensively:

Business IT value, in its infancy, has mostly tackled business processes that depend solely on IT services, such as standalone ecommerce and email. Business processes requiring human intervention, however, appear to be more numerous in most companies. All of this should be done while keeping the cost of modeling to a minimum.

• Investigating the feasibility and options of spreading Business Driven IT investments applications to COBIT and ITIL management processes more extensively.

• Building Business Driven IT investments decision support tools: for human usage and fulfilling autonomic self-management needs.

3.0 RESEARCH METHODOLOGY

3.1 Overview

This chapter provides the procedures which will be followed in conducting the study. This study will use a variety of ways to specify the relationship between IT investments and performance in the short term, by regressing bank performance on the bank IT investments.

3.2 Research Design

The research strategy to be adopted will be a survey though various research approaches can be employed in exploring the relationship between IT investment and bank performance. A survey research strategy has been assumed since there are currently no reported studies that have captured the relationship between IT investment and bank performance in Kenya. A survey approach will be deemed necessary in unearthing general views. The conceptualizations of the IT artifact is theorized to be underpinned by five main views from a review of the literature: tool view (TV); proxy view (PV); ensemble view (EV); computational view (CV) and nominal view (NV). The hypothesized relationship assumes that the conceptualization of IT in the banking industry can be explained by the expected impacts envisaged.

3.3 The Study Population

This study will represent an attempt to measure the relationship between performance and IT investments in Kenyan banking industry. The sample of this study will be the entire population of all 43 commercial banks in Kenya where 4 respondents from each of the banks will be targeted.

3.4 Sampling

This study will adopt a simple random sampling technique to collect the data for the analysis of the relationship between conceptualizations of IT and bank performance. simple random sampling is that part of statistical practice concerned with the selection of individual observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inference. A self-weighting sample, also known as an EPSEM (Equal Probability of Selection Method) sample, is one in which every individual, or object, in the population of interest has an equal opportunity of being selected for the sample. Justification of using simple random sampling is that it is free of classification error, and it requires minimum advance knowledge of the population other than the frame. Its simplicity also makes it relatively easy to interpret data collected.This study will use information on banks IT adoption of the hardware, software and other IT services areas.

3.5 Data Collection

The study will use primary data gathered from the respective banks through the use of questionnaires administered to the relevant departments of the various banks under study. The questionnaire will be administered to at least 4 respondents comprising of managers at the same level of the organisation for each bank. Data will be collected from both business and IT managers to ensure both perspectives are represented and this also leads to greater confidence in the survey outcomes. This is partially identified through evidence of concurrence, convergence or conflict between multiple perspectives within each bank. Managers have will be found appropriate because managers at the high level have the knowledge and ability to provide answers to questions regarding the overall IT adoption decisions and other variables related to a firm's business.

To ensure high response rates, the enclosed cover letter will emphasize the importance of participation (Bendapudi, 1998). Telephonic follow-up will be done at least to ensure that the target response is achieved.

3. 6 Operationalisation of Variables

How business performance is assessed continues to be an interesting research topic for researchers and practitioners. There are benefits and limitations for alternate data sources. Objective financial performance indicators are accessible and can offer a great deal of information about firm business operations (Hyondong Kim, 2006). However, objective financial data is not free from personal bias and managerial discretion (Barney, 2003). Self-report measures can allow researchers to access data that are not easily accessible or, which often allow respondents to consider long-run firm value in answering the survey questions. However, personal bias, social desirability concerns, and other factors may contaminate the self-reported measures (Venkatraman and Ramanujam, 1986). A typology developed by Venkatraman and Ramanujam (1986) categorizes performance measures by intersecting between types of performance indicators (financial versus operational performance measures) and data sources (primary versus archival data). This study assesses operational performance from self-reported measures. For operational performance, perceptual measures of firm performance will be derived from the survey, as will be reported by the managers per firm. Perceptual measures of company performance will be adopted from Delaney and Huselid's (1996) study.

3.7 Data Analysis

The study aims at finding out the relationship between IT investment and bank performance. This study will yield data that require both qualitative and quantitative analysis. Qualitative analysis will entail making some inferences while the quantitative will involve inferential statistics, specifically using factor analysis. Factor analysis is a systematic, statistical procedure used to uncover relationships amongst several variables. This procedure enables

numerous correlated variables to be condensed into fewer dimensions known as factors. In the context of this research adoption factor analysis will result in classification and description of the various views of the IT artifact, as well as intended impacts of IT. The data collected from the questionnaire will be analyzed in how well IT investments (Independent Variable) relates to these dependent variables: **(1)** Cost-effectiveness **(2)** Asset and Personnel utilisation **(3)** Growth in market share and profitability**(4)** Business flexibility and customer satisfaction (Weill, Peter and Jeanne W. Ross, 2004).

Each item will be analyzed where the measures for the above objectives will be based on a 5-point Likert scale as with the following anchors: **(1)** Strongly disagree **(2)** Disagree **(3)** Neutral **(4)** Agree **(5)** Strongly agree.

4.0 DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the research. From the study population target of 172 respondents, 122 respondents responded and returned the questionnaire, constituting 71 % response rate

4.2 Bank Institutions

The study targeted respondents from the banking institutions. The respondents were from various banks which included Barclays, Equity, Kenya commercial, cooperative, Equatorial, Diamond Trust Bank, Fina Bank, K-Rep, Family, Post Bank, Southern Credit, Commercial Bank of Africa, Bank of Africa and CFC Stanbic among others.

4.3 Survey Results

The results from the survey are presented in five sections of this chapter. These sections represent the five sets of questions based on the research objectives as outline in the first chapter.

4.3.1. IT Conceptualization for decision making

4.3.1.1 Descriptive Analysis

Many IT adoption researches have been carried out to determine the importance of factors influencing adoption through the use of the mean and standard deviation. The first output from the analysis is a table of descriptive statistics for all the variables under investigation.

Descriptive Statistics

Table: 4.3.1 (a) IT Conceptualization for decision making

	Mean	Std. Deviation	Analysis N
IT is a tool enabling firms meet their objectives more cheaply and efficiently (IT_ENABLES)	4.48	.501	122
IT enhances the way that firms and employees process information (IT_ALTERS)	4.99	.091	122
IT is represented by measures of users' perceptions of the technologies (IT_REP)	3.52	.502	122
IT is a set of rules and procedures used by firms to build new services that enhance their service delivery (IT_SET)	3.52	.502	122

The Table 4.3.1 (a) indicates the various conceptualizations of the IT artifact and how they influence the decision that leads to IT adoption. Respondents were requested to indicate on a Likert scale whether they agree or disagree on what factors influence IT adoption decisions. A Likert scale of 1 to 5 where 1 indicated response for strongly disagree and 5 strongly agree was provided. From the findings, majority of the respondents strongly agreed that IT alters and enhances the way that organizations and their employees process information as indicated by a mean of 4.99 while others agreed that IT was represented by user perception on adoption of technology as given by a mean of 3.52 while other respondents indicated that IT enables organisations to meets objectives cheaply and effectively as indicated by a mean of 4.48.

The study further found out that the respondents conceptualize IT as a set of rules and procedures that is used by organizations to build new or enhanced services that enhance their service delivery means that alters and enhances the ways organisation and employees process information as indicated by a mean of 3.52. From the findings the latter two factors least influence the decision of IT adoption as indicated by means of 3.52 and 3.52 respectively.

4.3.1.2 Assenting Factor Analysis of IT Conceptualization for decision making

The component matrix shown in table 4.3.1 (b) was used for the factor analysis. Two factors were extracted as per the prior hypotheses. Table 4.3.1 (b) below is the component matrix which is the only matrix needed for the interpretation (Rummel, 1970). The table below shows the loadings of the four variables on the two factors extracted. The higher the absolute value of the loading, the more the factor contributes to the variable.

Factors extracted:
Factor 1: This factor was significantly loaded with the following variables:

- IT_ALTERS: IT enhances the way that firms and employees process information
- IT_REP: IT is represented by measures of users' perceptions of the technologies

Factor 2: This factor was significantly loaded with the following variables:

- IT_ENABLES: IT is a tool enabling firms meet their objectives more cheaply and efficiently
- IT_SET: IT is a set of rules and procedures used by firms to build new services that enhance their service delivery

Table: 4.3.2 (b) Component Matrix

	Component	
	1	2
IT_ENABLES	-.257	.831
IT_ALTERS	.688	-.281
IT_REP	.590	.263
IT_SET	-.546	.460

Extraction Method: Principal Component Analysis. 2 components extracted.

4.3.2 Determinants, Views and Impacts of Information Technology

4.3.2.1 Descriptive Analysis

The analysis table of descriptive statistics for all the variables under investigation were as follows.

Table: 4.3.2(a) Determinants, Views and Impacts of Information Technology	Mean	Std. Deviation	Analysis N
Competition is a factor in the decision to invest in Information technology (COMPE_FAC)	4.02	.692	122
Social factors are important in the decision to invest in Information technology (SOCIO_FAC)	4.09	.727	122
Interaction with firms that are already using Information Technology influences the decision to invest (INTR_FIRM)	3.01	.755	122
The industry pressure is critical in the decision to invest in information technology (IND_PRE)	3.90	.299	122
The decision to invest in IT is influenced by the compatibility of the technology with organizational culture/values (COMPA_TEC)	3.48	.964	122
The ease of learning how to implement, operate and maintain IT influences the decision to invest (EAS_LERN)	3.00	.680	122
The decision to invest is influenced by the perceived usefulness of IT to accomplish tasks more quickly (USEFU_IT)	4.51	.502	122
The perceived usefulness of IT in improving job performance of employees influences the decision to invest (JOB_PER)	4.11	.320	122
The perceived usefulness of IT in improving overall productivity in the organization influences the decision to invest (OV_PROD)	4.45	.500	122
The perceived usefulness of IT in enhancing overall effectiveness of the organization influences the decision to invest (OV_EFEC)	4.34	.611	122

In the table 4.3.3 (a), various determinants, view and impact on IT were given to the respondents so that they could indicated what are the determinants, views and impact on IT in the organisations .The study found that majority of the respondents in their view agreed that the perceived usefulness of IT in improving job performance of employees influences the decision to invest. This was indicated by a mean of 4.51. Others agreed that IT was view as useful in improving job performance by the employees which also influences decisions to invest in IT as indicated by a mean of 4.11. Majority of the respondents also perceived the usefulness of IT was to enhance overall effectiveness of the organisation as indicated by a mean of 4.34.

The study further found out that majority of the respondents agreed that Social factors and competition from other firms are important in the decision to

invest in Information technology as indicated by a means of 4.09 and 4.02 with standard deviations of 0.727 and 0.692 respectively. Interaction with firms that are already using Information Technology influences the decision to invest was still another determinant that majority of the respondents felt neutral to influence decision to adopt IT in the organization as indicated by a mean of 3.01.

Overall productivity improvement, overall effectiveness enhancement and job performance improvement were factors that respondents viewed to influence IT adoption with respective means of 4.45, 4.34 and 4.11. The study also found out that majority of the respondents agreed that the ease of learning how to implement, operate and maintain IT has a neutral influence in the decision to invest as indicated by a mean of 3.0. Compatibility of the technology with organizational culture/values with a mean of 3.48 seemed to impartially influence the decision to invest in IT.

4.3.2.2 Assenting Factor Analysis of Determinants, Views and Impacts of Information Technology

In this section, all the ten variables are assumed to have probable relationships. The pattern matrix depicted in table 4.3.2 (b) shows the following five significantly loaded factors:

Factor 1: This factor was significantly loaded with the following factors:

- COMPE_FAC: Competition is a factor in the decision to invest in Information technology

Factor 2: This factor was significantly loaded with the following factors:

- IND_PRE: The industry pressure is critical in the decision to invest in information technology
- EAS_LERN: The ease of learning how to implement, operate and maintain IT influences the decision to invest
- OV_PROD: The perceived usefulness of IT in improving overall productivity

in the organization influences the decision to invest

Factor 3: This factor was significantly loaded with the following factors:

- INTR_FIRM: Interaction with firms that are already using Information Technology influences the decision to invest

Factor 4: This factor was significantly loaded with the following factors:

- COMPA_TEC: The decision to invest in IT is influenced by the compatibility of the technology with organizational culture/values
- JOB_PER: The perceived usefulness of IT in improving job performance of employees influences the decision to invest
- OV_EFEC: The perceived usefulness of IT in enhancing overall effectiveness of the organization influences the decision to invest

Factor 5: This factor was significantly loaded with the following factors:

- SOCIO_FAC: Social factors are important in the decision to invest in Information technology
- USEFU_IT: The decision to invest is influenced by the perceived usefulness of IT to accomplish tasks more quickly

Table: 4.3.2 (b) Component Matrix

	Component				
	1	2	3	4	5
COMPE_FAC	.454	-.040	.003	.244	.309
SOCIO_FAC	.326	.106	.376	-.319	.593
INTR_FIRM	-.012	-.430	.651	-.253	-.130
IND_PRE	-.555	.362	-.133	.262	.303
COMPA_TEC	.036	.342	.390	.579	.304
EAS_LERN	-.405	.469	-.066	-.249	-.020
USEFU_IT	.100	-.353	-.646	-.202	.418
JOB_PER	.294	-.349	-.139	.615	-.182
OV_PROD	.462	.567	-.071	-.052	-.418
OV_EFEC	-.648	-.359	.142	.190	-.029

Extraction Method: Principal Component Analysis. 5 components extracted.

4.3.3. IT Conceptualization

4.3.3.1 Descriptive Analysis

The table 4.3 indicates the extent to which organization agree or disagree on conceptualization of IT with a Likert scale provided where 1 is for strongly Disagree and 5 for strongly Agree.

Table: 4.3.3 (a) IT Conceptualization	Mean	Std. Deviation	Analysis N
IT is a tool for substituting workers (TOL_WK)	1.45	.500	122
IT enhances the capabilities of workers (ENH_WK)	4.55	.500	122
IT is a tool that provides more variety in communications choices (VAR_COM)	4.08	.745	122
The performance capabilities achievable by IT are defined by the technical features (PER_CAP)	4.10	.299	122
IT alters and enhances how people and organizations process information (ALT_PRO)	4.50	.502	122
The perceived availability of resources influence the conceptualization of IT (AVL_RES)	3.61	.489	122
The intention to use services provided by IT influence its conceptualization (INT_USE)	3.52	.501	122
IT is repository of information that can be used for socio-economic gain (REP_INF)	4.56	.499	122
IT is absent and cannot be described, conceptualized or modelled. (IT_ABS)	1.05	.217	122
IT represents processes, structures, events and knowledge which is accessible through the use of integrated database technology (DB_TEC)	4.04	.732	122
IT Technology features; functions, models, measures and computational elements are difficult to define during implementation (DIF_IMP)	2.48	.501	122
The Ease of Use of IT determines its conceptualization (EAS_USE)	3.50	.502	122
IT is conceptualized in terms of the productivity impact of its technologies (PRD_IMP)	3.43	.498	122
IT is viewed in terms of the financial resources spent on its technologies (FIN_SPE)	2.95	.770	122
IT enables the Bank to serve the public more cheaply and efficiently (SEV_PUB)	3.47	.501	122
IT is a tool for restructuring of administrative processes of Banks (RES_ADM)	3.43	.498	122
The perception of the Usefulness of IT technology influence its conceptualization (USE_IT)	4.49	.502	122

Majority of the respondents conceptualizations agreed that IT enhances the capabilities of workers and enhances how people and organizations process information as indicated by means of 4.55 and 4.50. Other respondents conceptualize IT as a repository of information that can be used for socio-economic gain with a mean of 4.56 while most the respondents strongly agreed

that the perception of the Usefulness of IT technology influence its conceptualization with a mean of 4.49.

A greater part of the respondents also agreed that IT is described as process, structures, events and knowledge which is accessible through the use of database technology as indicated by a means of 4.04.This implies that most organisations conceptualized IT as an integration model that are put in place for it to perform its indented roles as required. Conceptualization of IT in terms of the productivity impact of its technologies was impartial where respondents indicated with a mean of 3.43.

The study also found that majority of respondents with a mean of 4.55 agreed that IT enhances the capabilities of workers. Most of the respondents agreed that organization performance capabilities were achievable depending on the technical features of the IT adopted as indicated by a mean of 4.10.This implies that most of the organizations conceptualize IT technical features as a determinant that influences it performance.

From the findings, respondents also agreed that IT alters and enhances how people and organizations process information as indicated by a mean of 4.50. The respondents with a mean of 3.52 agreed that the intention to use services provided by IT influences its conceptualization. This implied that most organizations may or may not tend to adopt IT depending with the services it offers.

The study found out that IT act as a repository of information that can be used for socio economic gain as majority of respondents agreed with a mean of 4.56. Some of the organizations consider availability of resources in conceptualizing IT as agreed by the respondents by a mean of 3.61. From the findings majority of the respondents agreed that IT features are difficult to define during implementation stage as indicated by a mean of 2.8.These features include among others functions, models, measures and computational elements. This implies that most organizations conceptualize IT as a feature to be learnt in the organization before it utilizes the benefits.

This meant that IT led to increase in earnings of the organisation and eventually its performance in the market. From the findings, majority of the respondents with a mean of 1.45 disagree that IT is a tool for substituting workers in the organizations.

They indicated that adoption of IT in organisation led to improve performance and quality service delivery. From the findings majority of the respondents disagreed that IT is not present and that then it cannot be described, conceptualized or modeled as indicated by a mean of 1.05.This clearly indicates that IT is available and organizations' can conceptualizations favor its adoption.

From the findings, majority of the respondents agreed that the ease to use of IT fairly influences its conceptualization in the organization as indicated by a mean of 3.5 This clearly indicated that the intention for which the organization wish to adopted IT for influences the kind of IT to be adopted. Most of the respondents agreed the IT is conceptualized in terms of it capability or productivity of its technology. Therefore organizations will focus on IT productivity ability when making decisions on IT adoption.

The study found out majority of the respondents agreeing that decisions on IT are also viewed in terms of the financial resources to be spent on its technology as indicated by a mean of 2.95.The low mean indicates therefore that organizations somewhat consider its financial capabilities when its intends to adopt IT technologies.

From the findings, majority of the respondents agreed that IT enables banks to serve the public more cheaply and efficiently as indicated by a mean of 3.47.This implied that IT technologies enables organizations to offer services at a low costs and time. It was also found that IT was to some extent conceptualized as a model for restructuring administrative process of the bank. This was due to the fact that the respondents agreed that IT is a tool used to restructuring administrative issues as indicated by 3.43.This implied that IT fairly eases management of the organizations.

On perception of the usefulness of the IT, it was found out that organizations conceptualize IT on it usefulness as indicated by majority of the respondents with a mean of 4.49 .They agreed that the usefulness IT technologies influences it conceptualization .This implied that decisions to adopt IT are also made depending how significant it will be to the organization.

4.3.3.2 Assenting Factor Analysis of IT Conceptualization

In this section, all the seventeen variables are assumed to have probable relationships. The pattern matrix depicted in table 4.3.3 (b) shows the following seven significantly loaded factors:

Factor 1: This factor was significantly loaded with the following factors:

- TOL_WK: IT is a tool for substituting workers
- AVL_RES: The perceived availability of resources influences the conceptualization of IT.
- DIF_IMP: IT Technology features; functions, models, measures and computational elements are difficult to define during implementation
- EAS_USE: The Ease of Use of IT determines its conceptualization

Factor 2: This factor was significantly loaded with the following factors:

- VAR_COM: IT is a tool that provides more variety in communications choices
- PER_CAP: The performance capabilities achievable by IT are defined by the technical features
- SEV_PUB: IT enables the Banks serve public more cheaply and efficiently
- USE_IT: The perception of the Usefulness of IT technology influence its conceptualization

Factor 3: This factor was significantly loaded with the following factors:

- ENH_WK: IT enhances the capabilities of workers
- DB_TEC: IT represents processes, structures, events and knowledge which is accessible through the use of integrated database technology

- FIN_SPE: IT is viewed in terms of the financial resources spent on its technologies

Factor 4: This factor was significantly loaded with the following factors:

- IT_ABS: IT is absent and cannot be described, conceptualized or modelled.

Factor 5: This factor was significantly loaded with the following factors:

- ALT_PRO: IT alters and enhances how people and organizations process information
- REP_INF: IT is repository of information that can be used for socio-economic gain
- PRD_IMP: IT is conceptualized in terms of the productivity impact of its technologies

Factor 6: This factor was significantly loaded with the following factors:

RES_ADM: IT is a tool for restructuring of administrative processes of Banks

Factor 7: This factor was significantly loaded with the following factors:

- INT_USE: The intention to use services provided by IT influence its conceptualization

Table: 4.3.3 (b) Component Matrix

	Component						
	1	2	3	4	5	6	7
TOL_WK	.554	.188	-.160	.223	-.211	.300	-.211
ENH_WK	.232	.486	.523	-.229	.073	-.248	-.081
VAR_COM	.009	.495	.454	.199	.122	.011	.207
PER_CAP	-.340	.259	-.338	-.052	-.178	.069	.147
ALT_PRO	-.260	.209	.293	-.315	.373	.306	-.443
AVL_RES	.600	-.052	-.119	-.144	-.229	.094	.292
INT_USE	.123	.136	.239	.193	.232	.414	.452
REP_INF	.305	.028	-.289	-.182	.388	.235	.166
IT_ABS	-.143	.193	-.130	.806	.066	-.098	-.137
DB_TEC	.268	-.293	.399	.167	-.226	-.205	.266
DIF_IMP	.423	.236	-.248	.096	.001	.218	-.465
EAS_USE	.574	-.168	.099	-.087	.403	-.148	-.077
PRD_IMP	-.112	.048	-.295	-.246	.533	-.192	.237
FIN_SPE	.134	-.448	.221	.159	.161	-.364	-.318
SEV_PUB	.056	.458	-.135	.391	.295	-.269	.104
RES_ADM	-.194	-.316	.412	.202	.041	.551	-.006
USE_IT	.015	.501	.139	-.309	-.458	-.109	-.044

Extraction Method: Principal Component Analysis. 7 components extracted.

4.3.4. Intended impacts of IT implementation

4.3.4.1 Descriptive Analysis

The table 4.3 indicates the extent to which organization agree or disagree on intended impacts of IT implementation with a Likert scale provided where 1 is for strongly Disagree and 5 for strongly Agree.

Descriptive Statistics

Table: 4.3.4 (a) Intended impacts of IT implementation	Mean	Std. Deviation	Analysis N
IT Implementation leads to cost savings per transaction within the business (COS_SAV)	4.52	.501	122
IT Implementation leads to the reduction of costs as a result of integration of the diverse distributed databases (RED_COS)	4.93	.249	122
IT Implementation results in an increase in the number of online supported services to customers (ONL_SUP)	4.49	.502	122
IT Implementation results in a general increase in online transactions ensuring resource utilisation (ONL_TRA)	4.47	.501	122
IT Implementation results in reduced administrative burden for businesses (ADM_BUD)	3.48	.502	122
IT Implementation leads to improved communication between various administrative units resulting in reduced inter-connectiveness costs (IMP_COM)	4.02	.733	122

From the table 4.3.4 (a), the study sought to find out if IT implementation has any impact in the organization performance. The study found that due to IT implementation, organization database is integrated in a diverse distribution network leading to reduction in costs as indicated by a mean of 4.93 with a standard deviation of 0.249.

The study also found out IT implementation leads to improve in communication in administrative units and reduces inter connectiveness costs with a mean of 4.02 and standard deviation of 0.733. From the findings IT implementation leads to cost saving in business transactions as indicated by majority of the respondents by a mean of 4.52 and a standard deviation of 0.501.

The respondents agreed that IT implementation reasonably leads to reduction of administrative burden for businesses with a mean of 3.48.The study also found out that IT implementation makes the organizations have an increase in online transactions that ensures resources utilization as agreed by a majority of respondents with a mean of 4.49. This implies the IT implementation has great impact in the organization as it is found to reduce cost per business transaction, increase market transaction online and reduction in administration costs as well as improve communication in the organizations.

4.3.4.2 Assenting Factor Analysis of the intended impacts of IT implementation

In this section, all the six variables are assumed to have probable relationships. The pattern matrix depicted in table 4.3.3 (b) shows the following three significantly loaded factors:

Factor 1: This factor was significantly loaded with the following variables:

- ONL_SUP: IT Implementation results in an increase in the number of online supported services to customers
- ONL_TRA: IT Implementation results in a general increase in online transactions ensuring resource utilisation
- IMP_COM: IT Implementation leads to improved communication between

various administrative units resulting in reduced inter-connectiveness costs

Factor 2: This factor was significantly loaded with the following variables:

- RED_COS: IT Implementation leads to the reduction of costs as a result of integration of the diverse distributed databases

Factor 3: This factor was significantly loaded with the following variables:

- COS_SAV: IT Implementation leads to cost savings per transaction within the business
- ADM_BUD: IT Implementation results in reduced administrative burden for businesses

Table: 4.3.4 (b) Component Matrix	Component		
	1	2	3
COS_SAV	.188	-.753	.236
RED_COS	-.427	.594	-.021
ONL_SUP	.833	.292	.175
ONL_TRA	.859	.227	-.058
ADM_BUD	-.146	.132	.955
IMP_COM	.094	-.255	-.103

Extraction Method: Principal Component Analysis. 3 components extracted.

4.3.5. Outcomes of IT

4.3.5.1 Descriptive Analysis

The table 4.3 indicates how significant various outcomes of IT are in the organization.

Descriptive Statistics

Table: 4.3.5 (a) Outcomes of IT	Mean	Std. Deviation	Analysis N
Effective use of IT resources for cost reduction (COS_RED)	4.57	.498	122
Effective use of IT for customer satisfaction (CUS_SAT)	4.40	.492	122
Effective use of IT for business flexibility (BUS_FLE)	4.48	.501	122
Effective use of IT for growth in market share (GRO_MAR)	4.52	.501	122
Effective use of IT for personnel and asset utilisation (PER_UTI)	4.48	.501	122
Effective use of IT Revenue Maximization and growth in profitability (REV_MAX)	4.53	.501	122

The table 4.3.5 (a) indicates the outcomes of IT in the organization. Respondents were to indicate their responses in a Likert scale where 1 depicted Not Significance and 5 Great Significance. The study found out that effective use of IT in the firm to maximize revenue and increase profitability is of great significance as indicated by 4.53. From the findings, IT is significant in making the organization market grow with a mean of 4.52. From the findings, IT technologies reduce costs as indicated by a mean of 4.57.This implies that IT is adopted by organizations to reduce cost of operations.

The study also found out that IT led to customer satisfaction. Majority of the respondents with a mean of 4.40 indicated that when effectively used, IT will make organization serve its customers adequately .It clearly indicates that IT enables organizations offer quality services effectively and efficiently meeting customer expectations. The study also found out that IT is significance as effective use of IT makes the organizations to become flexible as indicated by a mean 4.48.This implied that organizations on adoption of IT are able to offer different services, operate without geographical limitations, offer it services at a lower cost and thus be able to concentrate on it core activities.

The study also found out that effective use of IT led to effective utilisation of personnel and organizations assets. Majority of the respondents indicated that well use of IT technologies enable organization to utilize it personnel and assets as indicated by a mean of 4.48. This implied that proper use of IT will make organizations staff offer the best and maximize use of available organization assets for better yield.

4.3.5.2 Assenting Factor Analysis of IT Conceptualization

In this section, all the six variables are assumed to have probable relationships. The pattern matrix depicted in table 4.3.3 (b) shows the following three significantly loaded factors:

Factor 1: This factor was significantly loaded with the following variables:

- COS_RED: Effective use of IT resources for cost reduction

- GRO_MAR: Effective use of IT for growth in market share
- REV_MAX: Effective use of IT Revenue Maximization and growth in profitability

Factor 2: This factor was significantly loaded with the following variables:

- PER_UTI: Effective use of IT for personnel and asset utilisation

Factor 3: This factor was significantly loaded with the following variables:

- CUS_SAT: Effective use of IT for customer satisfaction
- BUS_FLE: Effective use of IT for business flexibility

Table: 4.3.5 (b) Component Matrix

	Component		
	1	2	3
COS_RED	.724	-.046	-.265
CUS_SAT	.247	-.401	.466
BUS_FLE	.207	-.003	.748
GRO_MAR	.564	.258	-.346
PER_UTI	-.367	.789	.141
REV_MAX	.549	.504	.308

Extraction Method: Principal Component Analysis. 3 components extracted.

4.3.6. Business strategy focus activities

4.3.6.1 Descriptive Analysis

The table 4.3 indicates to what extent a firms' overall business strategy focuses on the various business activities when making decision on IT adoption by the organization.

Descriptive Statistics

Table: 4.3.6 (a) Business strategy focus activities	Mean	Std. Deviation	Analysis N
Differentiating products or services from Competitors (DIF_PRO)	4.02	.655	122
Providing specialized products and services (SPE_PRO)	4.48	.502	122
Minimize costs for product/service provision (MIN_COS)	4.46	.500	122
Overall Cost reduction (OVE_RED)	4.57	.497	122
Developing/refining existing products (REF_PRO)	3.91	.692	122
Significant percentage of revenue increase resulting from products/services introduced (REV_INC)	4.52	.501	122

The table 4.3.6 (a) indicates various business strategies that firms focus on during decision making on IT adoption. A Likert scale was used where 1 indicated strongly disagreed and 5 strongly agreed. From the findings, differentiating products from competitors was indicated by majority of the respondents as a strategy organizations focus on as indicated by a mean 4.02. The other strategy that make firms adopt IT technologies is to reduce overall costs as indicated by a mean of 4.57.This implied that organizations make decisions to invest in IT as it leads in reduction of administrative costs, operations costs and other overheads.

The other business strategy that organizations focus on was specialization. The study found out that organisations invest in IT to be able to offer specialized products and services. This was due to popular responses that agreed organizations invest in IT to provide specialized products and services with a mean of 4.48. The study further found majority of the respondents agreeing that there was significant percentage of revenue increase resulting from products/services introduced by IT as indicated by a mean of 4.52.

This clearly indicates that IT leads to development of new product that enable firms fetch more profit as a result of increased revenue.

Majority of the respondents agreed that organizations invest in IT to minimize costs of products and service provision as indicated by a mean of 4.46.The study also found majority of the respondents agreeing that organizations make decisions to invest in IT to develop new products or to refine existing products as indicated by a mean of 3.91.

This implies that firms invest in IT to develop new products or improve the quality of the existing products or services. Organizations invest in IT focusing on differentiating their products from competitors represented by a mean of 4.02.

4.3.6.2 Assenting Factor Analysis of IT Conceptualization

In this section, all the six variables are assumed to have probable relationships. The pattern matrix depicted in table 4.3.3 (b) shows the following three significantly loaded factors:

Factor 1: This factor was significantly loaded with the following variables:

- DIF_PRO: Differentiating products or services from Competitors
- OVE_RED: Overall Cost reduction
- REF_PRO: Developing/refining existing products

Factor 2: This factor was significantly loaded with the following variables:

- MIN_COS: Minimize costs for product/service provision
- REV_INC: Significant percentage of revenue increase resulting from products/services introduced

Factor 3: This factor was significantly loaded with the following variables:

- SPE_PRO: Providing specialized products and services

Table: 4.3.6 (b) Component Matrix

	Component		
	1	2	3
DIF_PRO	.770	-.038	-.161
SPE_PRO	-.104	-.321	.902
MIN_COS	-.407	-.082	-.102
OVE_RED	.586	.455	.144
REF_PRO	.639	-.260	.228
REV_INC	-.167	.826	.325

Extraction Method: Principal Component Analysis. 3 components extracted.

5.0 DISCUSSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study that relates to the research questions set out at the beginning of the study, seeking to show these questions have been answered by the study. The chapters also draws conclusion made from the findings of the study for implementation or as a background document for further research.

A broad objective of the study was to investigate IT conceptualization in banks as a technology to increase efficiency and effectiveness as well as enabling new possibilities.

The specific objectives of the study were to:

1. To investigate whether the IT artifact translates to reduction of costs in service provision, communication between various administrative units and cost savings per transaction
2. To determine whether the IT artifact presents a company with growth in market share
3. To establish whether revenue maximization and growth in profitability can be achieved from the IT artifact.

5.2 Summary of the findings

The results of this research provide a detailed understanding of the dynamics of IT conceptualization as it applies to banks in Kenya. The findings show that the approach to IT conceptualization rests upon how business aspects of an organization are integrated with the IT artifact. Integration and shaping of IT perceptions determines how IT is conceptualized.

5.2.1 IT Conceptualization for decision making

Organizations view IT as a set of rules and procedures that enhances service delivery. The other factor that influence organizations in IT conceptualization was to make organizations meets it objectives cheaply and effectively and perception of the User on IT technology adopted and the least factor influencing IT conceptualization being to alter and enhances services delivery.

Generally, firms conceptualize IT as a means to enhance service delivery so as to meet its organizational goals cheaply and effectively so as to improve it performance especially in gaining it revenue.

When making decision on IT adoption, organizations have different conceptions on the various impacts that the IT would have on them. Conceptualization enables the institutions or organizations to determine the nature of IT to be adopted. Various factor influences decisions for organizations to invest in IT. Generally industrial pressure forces organization to make decisions in adoption of IT as majority of the respondents strongly agreed with this fact. Firms also seek to find ways and means by which they can improve job performance of the employees so that the firms offer better services and at a faster rate as well as offering quality services.

Organizations seek to offer products and services effectively. Management of the firms may then decide to invest in IT to be able to enhance overall effectiveness of the businesses. Social factors are important in the decision to invest in Information technology as indicated by the survey. This enable the organization to Interact with firms that are already using Information Technology .This makes the organization to transact business activities in the same mode and offer quality services.

IT is also conceptualized as a tool to improve interaction with other firms who have implemented the IT so that they can enhance network with other firms and enjoy economies of scale. As per the study firms interaction influences the

decision to invest was still another determinant that majority of the respondents agreed that it influence decision adopt IT in the organization.

A summary of the description and conceptualizations of these variables are shown in the table below:

Table 5.2.1 IT Conceptualizations for decision making

	Representation	Description
Tool View	• IT_ENABLES	IT is a tool enabling firms meet their objectives more cheaply and efficiently Loading of 0.831
Proxy View	• IT_REP	IT is represented by measures of users' perceptions of the technologies Loading of 0.590
Ensemble View	• IT_ALTERS	IT enhances the way that firms and employees process information Loading of 0.688
Computational View	• IT_SET	IT is a set of rules and procedures used by firms to build new services that enhance their service delivery Loading of 0.460

5.2.2 Determinants, Views and Impacts of Information Technology

Competition from other firms is yet another factor that firms considered in decision making to invest in Information technology. Organizations are able to continue existing and offering their products in the market if they are in a position to withstand the forces of competition. IT makes the firms to produce quality services and become competitive in the market. Ease of learning was also another factor that influences firms to make decision on investing in IT. The study found out that the ease of learning how to implement, operate and maintain IT influences the decision to invest even though some respondents didn't see this as a major factor for decision making. Decision to invest in IT was found to be influenced by the compatibility of the technology with organizational culture/values. Firms invest in IT only when It technologies will make the firm improve its values and maintain it cultures or value.

5.2.3 IT Conceptualization

From the findings, majority of the respondents with a mean of 1.45 disagree that IT is a tool for substituting workers in the organizations. Adoption of IT in organisation led to improve performance and quality service delivery and organizations do not invest in IT to eliminate staff from their position but to enhance the capabilities of workers who in turn leads to improve in staff performance improvement.

IT also improves and provides variety in communication choices and makes them improve in their performance. What feature IT will offer to the organization also influences decision to invest in It or not. As firms performance capabilities are achievable depending on the technical features of the IT adopted. This implies that most of the organizations conceptualize IT technical features as a determinant that influences it performance. Most organizations tends to adopt IT depending with the services it offer.

The study found out that IT act as a repository of information that can be used for socio economic gain as majority of respondents agreed with. This meant that IT led to increase in earnings of the organisation and eventually its performance in the market.

IT is described as process, structures, events and knowledge which are accessible through the use of database technology. Organisations conceptualized IT as an integration model that are put in place for it to perform its intended roles as required. IT technologies needs to be leant as its features are difficult to define during implementation stage as indicated from the study.

These features, functions, models, measures and computational elements must be learnt for their applications so that organizations can be able to experience the IT impact. This implies that most organizations conceptualize IT as a feature to be learnt in the organization before it utilizes it benefits.

A summary of the description and conceptualizations of these variables are shown in the table below:

Table 5.2.3 IT Conceptualizations

	Representation	Description
Tool View	• VAR_COM	IT is a tool that provides more variety in communications choices Loading of 0.495
	• PER_CAP	The performance capabilities achievable by IT are defined by the technical features Loading of 0.259
	• SEV_PUB	IT enables the Banks serve public more cheaply and efficiently Loading of 0.458
	• ENH_WK	IT enhances the capabilities of workers Loading of 0.523
Proxy View	• ALT_PRO	IT alters and enhances how people and organizations process information Loading of 0.373
Ensemble View	• DB_TEC	IT represents processes, structures, events and knowledge which is accessible through the use of integrated database technology Loading of 0.399
	• RES_ADM	IT is a tool for restructuring of administrative processes of Banks Loading of 0.551
Nominal View	• IT_ABS:	IT is absent and cannot be described, conceptualized or modelled. Loading of 0.806

5.2.4 Intended impacts of IT implementation

IT plays an important role when organizations invest in it. Ease of using IT influence it conceptualization in the organization. This Cleary indicated that the intention for which the organization wish to adopted IT for influences the kind of IT to be adopted. Also IT is conceptualized in terms of it capability or productivity of its technology. Most organizations will focus on IT by evaluating its productivity capability as it aims to offer more and quality services and further serve a large market. Firms must also consider their financial

capabilities when making decision to invest in IT. This is due to high cost incurred in when implementing IT.

IT enables firms to offer services with ease to the public at a lower cost and efficiently and lower administrative costs of the banks. This implied that IT eases Management of the organizations. On perception of the usefulness of the IT, organizations conceptualize IT on it usefulness as indicated by majority of the respondents from the survey.

A summary of the description and conceptualizations of these variables are shown in the table below:

Table 5.2.4 Intended impacts of IT implementation

	Representation	Description
Tool View	• IMP_COM	IT Implementation leads to improved communication between various administrative units resulting in reduced inter-connectiveness costs Loading of 0.094
	• RED_COS	IT Implementation leads to the reduction of costs as a result of integration of the diverse distributed databases Loading of 0.594
	• COS_SAV	IT Implementation leads to cost savings per transaction within the business Loading of 0.236
Ensemble View	• ADM_BUD	IT Implementation results in reduced administrative burden for businesses Loading of 0.955
	• ONL_TRA	IT Implementation results in a general increase in online transactions ensuring resource utilisation Loading of 0.859
	• ONL_SUP	IT Implementation results in an increase in the number of online supported services to customers Loading of 0,833

5.2.4 Outcomes of IT

Implementing IT has various impacts. IT implantation leads to cost saving in business transactions per the findings of the study. The other impact of IT implementation make organization to integrates database in a diverse distribution network leading to reduction in costs .Banks are also in a position to increase speed of transactions when it offers its services online and ensure utilisation of bank resources. Implementation of IT improves administration management, communication, inter connectivity in the organization.

This implies the IT implantation has great impact in the organization as it is found to reduce cost per business transaction, increase market transaction online and reduction in administration costs as well as improve communication in the organizations IT is adopted by organizations to reduce cost of operations. IT technologies reduce costs. With reduction in costs of operations, bank are able to concentrate on there core business offering better services and serve customers to their satisfaction. It clearly indicates that IT enables organizations offer quality services effectively and efficiently meeting customer expectations. Effective use of IT makes the organizations to be flexible. Banks on implementing IT are able to acquire trained personnel cheaply, offer quality services at a lower cost and able to concentrate on it core activities. This eventually makes the banks to gain more customers, expands it makes and in the long term command a large market.

The study also found out that effective use of IT led to utilisation of personnel and organizations assets. Bank performance improves and more revenue gained. Majority of the respondents indicated that well use of IT technologies enable organization to utilize it personnel and assets. This implied that proper use of IT will make organizations staff offer the best and maximize use of available organization assets for better output. Firm maximizes due to implementing revenue and increase profitability as great significance for the banks.

5.2.5 Business strategy focus activities

Organizations focus on various strategies when making decisions on IT investment. Most firms make decisions to invest in IT so that they can be able to differentiate their products and services. Majority of the respondents agreed that organizations make decisions on IT to be in a position of differentiating products from competitors. This implied that organizations make use of IT to be able to offer better products than it competitors. Organisations make decisions to invest in IT to be able to offer specialized products and services. This is because firms are able to produce high quality products and services. This mean that when bank invest in IT, they will be able to offer quality banking services to the customers. This will also makes banks offering services at a lower costs efficient production as a result of implementing IT which ease management costs

From the findings, majority of the respondents agreed that organizations invest in IT to minimize costs of production indicated. Adoption of IT enables the banks to offer services with a lot of ease. This is because IT leads to improved communication and inter-connectiveness in the bank transactions processes takes short periods to be completed. This enables the banks avoid unnecessary delays in offering of the services. IT technologies reduces management costs such as administrative costs, operations costs and other costs as banks become more flexible in its operations.

Banks also focus on developing new products and improving quality of existing products or services. This influence making of decisions to invest in IT so that it can develop new products or refining existing products as. This implies that firms invest in IT to develop new products or improve the quality of the existing products or services to able to satisfy their customer needs in terms of offering better services effectively and efficiently.

IT implementation has been found by the study as a tool of engineering production in the organizations. There is a great importance in implementing

decisions to invest in IT as it leads in improving firm revenue with a significant percentage. The study found that IT results in revenue increment which resulting from new products/services introduced and improvement of the existing ones. This clearly indicate that due to investing in IT organizations will leads adopting new innovation in developing new products that will make organizations fetch profit increasing revenue .Overall the performance of the firms improve greatly due to investing and implementing IT technologies in banks.

5.3 Conclusion

From the findings and discussions, the study concludes that organizations conceptualize IT as means to create impact in its performance. Organizations make decisions to conceptualize IT due to industrial pressure in offering quality products, enhancement of effectiveness of the firms and improve firm competitiveness in the market. The study also conclude that firm conceptualize IT as it lead to improvement of firm performance as a result of increasing firm staff capabilities, various choice of communications are developed and reduction in management costs. The study also concludes that firms make decisions to invest in IT depending on its financial capabilities as well as IT technical features. Organizational culture or value also influence firms decision making in investing in IT.

The study further concludes that Implementation of IT make organizations to save great resources and reduces costs of operations, reduce cost per transaction in organization operations and enable firms to satisfy their customer's needs. The study also concludes that implementing in IT makes the firms become more flexible in it operations as it leads to acquisition of qualified personnel in the firm, production of quality products and expand its market shares.

Finally ,the study concludes that firm make decisions to invest in IT so that they can differentiates their product production, develop new products in the market and improving quality of existing products, increase it specialization and division of labour.

5.4 Recommendations

From the findings and conclusions, the study makes the following some valuable recommendations:

When organizations wish to invest in IT, they should consider factors such as availability of resources at their disposal, social factors, and effectiveness of IT in production of products. Competition from other firms and compatibility of IT to the cultures or values to improve its performance is an important factor.
The study also recommends that organization should conceptualize IT as a mean to enhance staff capabilities, provides choice of communication and a determinant to provide quality products. This will make the organizations to evaluate IT productivity capabilities and its impact in improving firms' performance.

Finally firms should be focus on business strategies such as product differentiating, production costs reduction and improving firms' flexibility as this will enable firms performs well in its production and improving its profitability and eventually increase it revenues.

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APPENDIX A: Cover Letter and Questionnaire

Department of Management Science
School of Business
University of Nairobi
Box 30197, Nairobi, Kenya

October 14, 2009

Dear Sir/Madam,

RE: I.T CONCEPUALIZATIONAND BANK PERFOMANCE IN KENYA

I am a student in the School of Business and I am in my research year of my MBA studies focusing on I.T conceptualization and bank performance in Kenya. I am conducting a study to explore how firms effectively deal with dramatic changes in business through implementing I.T as a competitive strategy. My goal is to examine the effects of the firm's IT investment practices on business performance to understand how these investments fit the strategic demands of organization. Specifically:

1. To investigate the relationship between conceptualization of information technology (IT) and banks' performance?
2. To determine whether IT presents a company with growth in market share
3. To establish whether revenue maximization and growth in profitability can be achieved from IT.
4. To investigate whether IT translates to reduction of costs in service provision, communication between various administrative units and cost savings per transaction

If you are interested in the results from this study you are welcome to request a copy of the final report by supplying your name and email address. Any queries regarding the questionnaire or the overall study can be directed to the undersigned.

Please be assured that this information is sought for research purposes only and your responses will be strictly confidential. No individual's responses will be identified as such and the identity of persons responding will not be published or released to anyone. All information will be used for academic purposes only.

Please assist me in gathering enough information to present a representative finding on the current status of I.T implementation in banks by completing the attached questionnaire. Your participation is entirely voluntary and the questionnaire is completely anonymous. Thank you very much for helping with this important study.

Yours truly,

BENSON MUASA
MBA Candidate, University of Nairobi

Mobile: +254-722-661684 Email: muasa99@yahoo.com

SURVEY ON THE RELATIONSHIP BETWEEN I.T CONCEPUALIZATIONS AND BANK PERFOMANCE

Thank you for taking the time to complete this questionnaire. Your participation as a senior manager is crucial, valuable, and appreciated. Your participation is voluntary. All responses are strictly confidential. Also, you may refuse to answer any questions that you do not wish to answer; you may also refuse or withdraw from participation without penalty or repercussion.

Name of your Firm: _____

(1) How do the Decision Makers in your firm conceptualize Information Technology?
Circle one number for each statement

	Strongly Disagree	Disagree	Neutra	Agree	Strongly Agree
1. Information Technology is a tool that enables organizations to meet their objectives more cheaply and efficiently	1	2	3	4	5
2. Information Technology alters and enhances the way that organizations and their employees process information	1	2	3	4	5
3. Information Technology is largely represented by measures of users' perceptions of the technologies that have been adopted.	1	2	3	4	5
4. Information Technology is basically a set of rules and procedures that is used by organizations to build new or enhanced services that enhance their service delivery	1	2	3	4	5

(2) How well do you agree or disagree with the following determinants, Views and Impacts of Information Technology in your firm. *Circle one number for each statement*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Competition is a factor in the decision to invest in Information technology	1	2	3	4	5
2. Social factors are important in the decision to invest in Information technology	1	2	3	4	5
3. Interaction with firms that are already using Information Technology influences the decision to invest	1	2	3	4	5
4. The industry pressure is critical in the decision to invest in information technology	1	2	3	4	5
5. The decision to invest in IT is influenced by the compatibility of the technology with organizational culture/values	1	2	3	4	5
6. The ease of learning how to implement, operate and maintain IT influences the decision to invest	1	2	3	4	5
7. The decision to invest is influenced by the perceived usefulness of IT to accomplish tasks more quickly	1	2	3	4	5
8. The perceived usefulness of IT in improving job performance of employees influences the decision to invest	1	2	3	4	5
9. The perceived usefulness of IT in improving overall productivity in the organization influences the decision to invest	1	2	3	4	5
10. The perceived usefulness of IT in enhancing overall effectiveness of the organization influences the decision to invest	1	2	3	4	5

(3) Please indicate to what extent the views in your organization agree or disagree with each of the following statements on IT conceptualization. *Circle one number for each statement*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. IT is a tool for substituting workers	1	2	3	4	5
2. IT enhances the capabilities of workers	1	2	3	4	5
3. IT is a tool that provides more variety in communications choices	1	2	3	4	5
4. The performance capabilities achievable by IT are defined by the technical features	1	2	3	4	5
5. IT alters and enhances how people and organizations process information	1	2	3	4	5
6. The perceived availability of resources influence the conceptualization of IT	1	2	3	4	5
7. The intention to use services provided by IT influence its conceptualization	1	2	3	4	5
8. IT is repository of information that can be used for socio-economic gain	1	2	3	4	5
9. IT is absent and cannot be described, conceptualized or modelled.	1	2	3	4	5
10. IT represents processes, structures, events and knowledge which is accessible through the use of integrated database technology	1	2	3	4	5
11. IT Technology features; functions, models, measures and computational elements are difficult to define during implementation	1	2	3	4	5
12. The Ease of Use of IT determines its conceptualization	1	2	3	4	5
13. IT is conceptualized in terms of the productivity impact of its technologies	1	2	3	4	5
14. IT is viewed in terms of the financial resources spent on its technologies	1	2	3	4	5
15. IT enables the Bank to serve the public more cheaply and efficiently	1	2	3	4	5
16. IT is a tool for restructuring of administrative processes of Banks	1	2	3	4	5
17. The perception of the Usefulness of IT technology influence its conceptualization	1	2	3	4	5

(4)To what extent do you agree or disagree with the following intended impacts of IT implementation in your firm. *Circle one number for each statement*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. IT Implementation leads to cost savings per transaction within the business	1	2	3	4	5
2. IT Implementation leads to the reduction of costs as a result of integration of the diverse distributed databases	1	2	3	4	5
3. IT Implementation results in an increase in the number of online supported services to customers	1	2	3	4	5
4. IT Implementation results in a general increase in online transactions ensuring resource utilisation	1	2	3	4	5
5. IT Implementation results in reduced administrative burden for businesses	1	2	3	4	5
6. IT Implementation leads to improved communication between various administrative units resulting in reduced inter-connectiveness costs	1	2	3	4	5

(5) How significant are the following outcomes of your IT. *Circle one number for each statement*

	Not Significant	Slightly Significant	Neutral	Significant	Very Significant
1. Effective use of IT resources for cost reduction	1	2	3	4	5
2. Effective use of IT for customer satisfaction	1	2	3	4	5
3. Effective use of IT for business flexibility	1	2	3	4	5
4. Effective use of IT for growth in market share	1	2	3	4	5
5. Effective use of IT for personnel and asset utilisation	1	2	3	4	5
6. Effective use of IT Revenue Maximization and growth in profitability	1	2	3	4	5

(6) To what extent does your firms' overall business strategy focus on the following business activities when making decision on IT investments? *Circle one number for each statement*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Differentiating products or services from Competitors	1	2	3	4	5
2. Providing specialized products and services	1	2	3	4	5
3. Minimize costs for product/service provision	1	2	3	4	5
4. Overall Cost reduction	1	2	3	4	5
5. Developing/refining existing products	1	2	3	4	5
6. Significant percentage of revenue increase resulting from products/services introduced	1	2	3	4	5

Thank you again for your time and cooperation in responding

Please provide you e-mail address (For a full report)
(Optional)

.....

APPENDIX B: SPSS RESULTS

Factor Analysis

Q1

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
IT_ENABLES	4.48	.501	122
IT_ALTERS	4.99	.091	122
IT_REP	3.52	.502	122
IT_SET	3.52	.502	122

Communalities

	Initial	Extraction
IT_ENABLES	1.000	.756
IT_ALTERS	1.000	.553
IT_REP	1.000	.417
IT_SET	1.000	.510

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.186	29.648	29.648	1.186	29.648	29.648	1.150	28.744	28.744
2	1.050	26.254	55.902	1.050	26.254	55.902	1.086	27.158	55.902
3	.915	22.878	78.780						
4	.849	21.220	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component	
	1	2
IT_ENABLES	-.257	.831
IT_ALTERS	.688	-.281
IT_REP	.590	.263
IT_SET	-.546	-.460

Extraction Method: Principal Component Analysis. 2 components extracted.

Rotated Component Matrix(a)

	Component	
	1	2
IT_ENABLES	.209	.844
IT_ALTERS	.444	-.596
IT_REP	.641	-.079
IT_SET	-.706	-.112

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

Q2

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
COMPE_FAC	4.02	.692	122
SOCIO_FAC	4.09	.727	122
INTR_FIRM	3.01	.755	122
IND_PRE	3.90	.299	122
COMPA_TEC	3.48	.964	122
EAS_LERN	3.00	.680	122
USEFU_IT	4.51	.502	122
JOB_PER	4.11	.320	122
OV_PROD	4.45	.500	122
OV_EFEC	4.34	.611	122

Communalities

	Initial	Extraction
COMPE_FAC	1.000	.363
SOCIO_FAC	1.000	.712
INTR_FIRM	1.000	.689
IND_PRE	1.000	.617
COMPA_TEC	1.000	.699
EAS_LERN	1.000	.451
USEFU_IT	1.000	.768
JOB_PER	1.000	.639
OV_PROD	1.000	.717
OV_EFEC	1.000	.606

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.517	15.165	15.165	1.517	15.165	15.165	1.382	13.820	13.820
2	1.362	13.617	28.783	1.362	13.617	28.783	1.308	13.084	26.904
3	1.202	12.019	40.802	1.202	12.019	40.802	1.226	12.264	39.168
4	1.149	11.494	52.295	1.149	11.494	52.295	1.213	12.132	51.300
5	1.031	10.311	62.607	1.031	10.311	62.607	1.131	11.307	62.607
6	.929	9.286	71.892						
7	.827	8.272	80.164						
8	.720	7.204	87.368						
9	.646	6.455	93.823						
10	.618	6.177	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component				
	1	2	3	4	5
COMPE_FAC	.454	-.040	.003	.244	.309
SOCIO_FAC	.326	.106	.376	-.319	.593
INTR_FIRM	-.012	-.430	.651	-.253	-.130
IND_PRE	-.555	.362	-.133	.262	.303
COMPA_TEC	.036	.342	.390	.579	.304
EAS_LERN	-.405	.469	-.066	-.249	-.020
USEFU_IT	.100	-.353	-.646	-.202	.418
JOB_PER	.294	-.349	-.139	.615	-.182
OV_PROD	.462	.567	-.071	-.052	-.418
OV_EFEC	-.648	-.359	.142	.190	-.029

Extraction Method: Principal Component Analysis. 5 components extracted.

Rotated Component Matrix(a)

	Component				
	1	2	3	4	5
COMPE_FAC	-.141	.449	.102	-.014	.362
SOCIO_FAC	-.055	-.093	-.138	.009	.825
INTR_FIRM	.299	-.037	-.732	.213	.132
IND_PRE	.303	-.274	.648	.171	-.021
COMPA_TEC	.068	.235	.366	.636	.316
EAS_LERN	-.050	-.609	.256	.074	-.078
USEFU_IT	.110	.154	.198	-.819	.145
JOB_PER	.008	.750	.036	.052	-.270
OV_PROD	-.813	-.059	.019	.195	-.117
OV_EFEC	.705	-.073	-.013	.123	-.297

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 14 iterations.

Q3

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
TOL_WK	1.45	.500	122
ENH_WK	4.55	.500	122
VAR_COM	4.08	.745	122
PER_CAP	4.10	.299	122
ALT_PRO	4.50	.502	122
AVL_RES	3.61	.489	122
INT_USE	3.52	.501	122
REP_INF	4.56	.499	122
IT_ABS	1.05	.217	122
DB_TEC	4.04	.732	122
DIF_IMP	2.48	.501	122
EAS_USE	3.50	.502	122
PRD_IMP	3.43	.498	122
FIN_SPE	2.95	.770	122
SEV_PUB	3.47	.501	122
RES_ADM	3.43	.498	122
USE_IT	4.49	.502	122

Communalities

	Initial	Extraction
TOL_WK	1.000	.597
ENH_WK	1.000	.690
VAR_COM	1.000	.548
PER_CAP	1.000	.357
ALT_PRO	1.000	.725
AVL_RES	1.000	.544
INT_USE	1.000	.558
REP_INF	1.000	.444
IT_ABS	1.000	.757
DB_TEC	1.000	.508
DIF_IMP	1.000	.569
EAS_USE	1.000	.565
PRD_IMP	1.000	.539
FIN_SPE	1.000	.552
SEV_PUB	1.000	.555
RES_ADM	1.000	.653
USE_IT	1.000	.590

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.684	9.906	9.906	1.684	9.906	9.906	1.516	8.917	8.917
2	1.620	9.531	19.437	1.620	9.531	19.437	1.467	8.631	17.548
3	1.451	8.536	27.973	1.451	8.536	27.973	1.433	8.429	25.977
4	1.404	8.258	36.231	1.404	8.258	36.231	1.409	8.286	34.263
5	1.318	7.756	43.987	1.318	7.756	43.987	1.365	8.029	42.292
6	1.163	6.840	50.827	1.163	6.840	50.827	1.323	7.783	50.075
7	1.111	6.536	57.363	1.111	6.536	57.363	1.239	7.288	57.363
8	.974	5.731	63.094						
9	.961	5.651	68.745						
10	.903	5.311	74.056						
11	.857	5.039	79.095						
12	.760	4.472	83.567						
13	.714	4.197	87.764						
14	.681	4.003	91.768						
15	.532	3.132	94.900						
16	.451	2.655	97.554						
17	.416	2.446	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component						
	1	2	3	4	5	6	7
TOL_WK	.554	.188	-.160	.223	-.211	.300	-.211
ENH_WK	.232	.486	.523	-.229	.073	-.248	-.081
VAR_COM	.009	.495	.454	.199	.122	.011	.207
PER_CAP	-.340	.259	-.338	-.052	-.178	.069	.147
ALT_PRO	-.260	.209	.293	-.315	.373	.306	-.443
AVL_RES	.600	-.052	-.119	-.144	-.229	.094	.292
INT_USE	.123	.136	.239	.193	.232	.414	.452
REP_INF	.305	.028	-.289	-.182	.388	.235	.166
IT_ABS	-.143	.193	-.130	.806	.066	-.098	-.137
DB_TEC	.268	-.293	.399	.167	-.226	-.205	.266
DIF_IMP	.423	.236	-.248	.096	.001	.218	-.465
EAS_USE	.574	-.168	.099	-.087	.403	-.148	-.077
PRD_IMP	-.112	.048	-.295	-.246	.533	-.192	.237
FIN_SPE	.134	-.448	.221	.159	.161	-.364	-.318
SEV_PUB	.056	.458	-.135	.391	.295	-.269	.104
RES_ADM	-.194	-.316	.412	.202	.041	.551	-.006
USE_IT	.015	.501	.139	-.309	-.458	-.109	-.044

Extraction Method: Principal Component Analysis. 7 components extracted.

Rotated Component Matrix(a)

	Component						
	1	2	3	4	5	6	7
TOL_WK	.020	.010	.744	.053	-.064	.172	.079
ENH_WK	.802	.193	.016	-.001	.009	-.101	.006
VAR_COM	.531	-.033	-.069	.306	-.055	-.041	.402
PER_CAP	-.061	-.574	-.072	.076	.035	-.017	-.106
ALT_PRO	.203	.045	.028	-.175	.056	-.796	.120
AVL_RES	.078	.031	.333	-.286	.182	.552	.081
INT_USE	.083	-.047	.014	.081	.165	.097	.711
REP_INF	-.097	.008	.220	-.097	.593	.018	.159
IT_ABS	-.188	-.020	.122	.803	-.240	-.031	.051
DB_TEC	.106	.364	-.160	-.071	-.276	.480	.167
DIF_IMP	.011	.052	.720	.088	.063	-.140	-.125
EAS_USE	.102	.606	.189	-.056	.375	.092	.005
PRD_IMP	-.044	-.041	-.292	.089	.650	-.095	-.104
FIN_SPE	-.134	.668	-.111	.071	-.158	-.030	-.212
SEV_PUB	.209	-.045	.040	.669	.241	.048	-.002
RES_ADM	-.264	.125	-.060	-.167	-.339	-.246	.601
USE_IT	.577	-.354	.108	-.169	-.209	.054	-.213

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 11 iterations.

Q4

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
COS_SAV	4.52	.501	122
RED_COS	4.93	.249	122
ONL_SUP	4.49	.502	122
ONL_TRA	4.47	.501	122
ADM_BUD	3.48	.502	122
IMP_COM	4.02	.733	122

Communalities

	Initial	Extraction
COS_SAV	1.000	.658
RED_COS	1.000	.535
ONL_SUP	1.000	.809
ONL_TRA	1.000	.793
ADM_BUD	1.000	.951
IMP_COM	1.000	.084

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.679	27.979	27.979	1.679	27.979	27.979	1.612	26.859	26.859
2	1.140	18.993	46.972	1.140	18.993	46.972	1.198	19.965	46.824
3	1.013	16.887	63.859	1.013	16.887	63.859	1.022	17.035	63.859
4	.988	16.463	80.322						
5	.790	13.171	93.493						
6	.390	6.507	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component		
	1	2	3
COS_SAV	.188	-.753	.236
RED_COS	-.427	.594	-.021
ONL_SUP	.833	.292	.175
ONL_TRA	.859	.227	-.058
ADM_BUD	-.146	.132	.955
IMP_COM	.094	-.255	-.103

Extraction Method: Principal Component Analysis.
a 3 components extracted.

Rotated Component Matrix(a)

	Component		
	1	2	3
COS_SAV	-.065	.795	.151
RED_COS	-.197	-.701	.074
ONL_SUP	.893	.024	.106
ONL_TRA	.878	.068	-.133
ADM_BUD	-.020	-.063	.973
IMP_COM	-.007	.258	-.133

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 4 iterations.

Q5

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
COS_RED	4.57	.498	122
CUS_SAT	4.40	.492	122
BUS_FLE	4.48	.501	122
GRO_MAR	4.52	.501	122
PER_UTI	4.48	.501	122
REV_MAX	4.53	.501	122

Communalities

	Initial	Extraction
COS_RED	1.000	.596
CUS_SAT	1.000	.439
BUS_FLE	1.000	.602
GRO_MAR	1.000	.505
PER_UTI	1.000	.777
REV_MAX	1.000	.650

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.382	23.033	23.033	1.382	23.033	23.033	1.325	22.078	22.078
2	1.107	18.448	41.481	1.107	18.448	41.481	1.127	18.780	40.859
3	1.082	18.027	59.509	1.082	18.027	59.509	1.119	18.650	59.509
4	.974	16.228	75.736						
5	.802	13.364	89.100						
6	.654	10.900	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component		
	1	2	3
COS_RED	.724	-.046	-.265
CUS_SAT	.247	-.401	.466
BUS_FLE	.207	-.003	.748
GRO_MAR	.564	.258	-.346
PER_UTI	-.367	.789	.141
REV_MAX	.549	.504	.308

Extraction Method: Principal Component Analysis. 3 components extracted.

Rotated Component Matrix(a)

	Component		
	1	2	3
COS_RED	.717	-.287	.010
CUS_SAT	-.053	-.368	.549
BUS_FLE	-.051	.067	.771
GRO_MAR	.696	.031	-.141
PER_UTI	-.124	.871	-.049
REV_MAX	.553	.379	.448

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.

Q6

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
DIF_PRO	4.02	.655	122
SPE_PRO	4.48	.502	122
MIN_COS	4.46	.500	122
OVE_RED	4.57	.497	122
REF_PRO	3.91	.692	122
REV_INC	4.52	.501	122

Communalities

	Initial	Extraction
DIF_PRO	1.000	.620
SPE_PRO	1.000	.927
MIN_COS	1.000	.183
OVE_RED	1.000	.572
REF_PRO	1.000	.529
REV_INC	1.000	.815

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.550	25.831	25.831	1.550	25.831	25.831	1.537	25.618	25.618
2	1.068	17.800	43.631	1.068	17.800	43.631	1.071	17.850	43.468
3	1.028	17.135	60.766	1.028	17.135	60.766	1.038	17.297	60.766
4	.942	15.696	76.461						
5	.776	12.927	89.388						
6	.637	10.612	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component		
	1	2	3
DIF_PRO	.770	-.038	-.161
SPE_PRO	-.104	-.321	.902
MIN_COS	-.407	-.082	-.102
OVE_RED	.586	.455	.144
REF_PRO	.639	-.260	.228
REV_INC	-.167	.826	.325

Extraction Method: Principal Component Analysis. 3 components extracted.

Rotated Component Matrix(a)

	Component		
	1	2	3
DIF_PRO	.735	-.187	-.211
SPE_PRO	-.009	.018	.963
MIN_COS	-.423	-.060	-.027
OVE_RED	.637	.400	-.081
REF_PRO	.640	-.246	.242
REV_INC	-.052	.901	.030

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 4 iterations.