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SCHOOL OF GRADUATE STUDIES
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Information Technology Investment in Financial Sector of Ethiopia: Towards Qualitative Measurements of an IT ROI Conceptual Model

MISRAK YESHANEH KEBEDE

JUNE 2015

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COLLEGE OF NATURAL SCIENCES
SCHOOL OF INFORMATION SCIENCE**

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Sector of Ethiopia:
Towards Qualitative Measurements of an IT ROI
Conceptual Model**

A Thesis Submitted to the School of Graduate Studies of Addis
Ababa University in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Information Science

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DEDICATION

*Dedicated to my Beloved Husband Kassahun Bezabeh and
my children, Ruth, Bethlehem and Kaleb*

ACKNOLEGMENT

First and foremost, I would like to express my heartfelt thanks to God, who gave me the strength, determination, endurance and wisdom to bring this thesis to completion and made me who I am today. Oh God, I would be nowhere without you.

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Abstract

Information Technology is a major factor for changes in Financial Sector of Ethiopia. But identifying the proper qualitative metrics and measuring return on investment has not been given proper attention. The purpose of this study is to investigate the implication of IT investment on the business performance through identifying constructs, their relationship and influence on IT ROI. The final output of this research is a Conceptual Model and recommendations which enhance IT ROI in Financial Sector of Ethiopia. This work is limited on non-monetary ROI and only Banks and Insurances and it would be more fruitful if it includes Microfinance Institutions.

Qualitative and quantitative approaches are followed and it is more of behavioral science and adds few elements from design science. Purposive sampling technique is used in order to select Commercial Bank of Ethiopia, Ethiopian Insurance Industry, Awash Insurance Company and United Bank Share Company. Branch network, capital and technology exposure have been taken into consideration for sample selection. In-depth interview conducted with Top – Level IT Management members the result is analyzed using Directed Qualitative Content Analysis techniques with respective constructs and SPSS Version 20.0 is used for quantitative data analysis.

Good IT Governance leads to best strategic Alignment of IT and Business, and maximizes IT Business value in the organization. IT Governance in Banking Industry is relatively better than Insurance Industry. There is gap on both Industries on Strategic Alignment and IT Business Value optimization being severe in Insurance Industry especially in EIC. Their organizational structure of IT imposes a negative impact on the strategic alignment of IT with Business. As the result the value of IT is seen only as a cost and time reduction, not to achieve long term strategic goal. There is no standard IT Projects portfolio management trend in CBE, AIC and EIC which have a major share on Financial Sector of Ethiopian except in United Bank. Regarding Soft Value of IT, Human Resource Development is good in banking compared to Insurance Industry. Realization of Organizational learning and Growth and Knowledge sharing culture is not yet flourished in both Industries. IT assets especially software are not properly managed. Interruption of telecom service is becoming a major challenge for Financial Sector in Ethiopia. The proposed Conceptual Model helps to identify main constructs which influence optimal return of IT Investment and recommends how to address them.

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List of Acronyms

AIC	Awash Insurance Company
AIDB	Agricultural and Industrial Development Bank
ATM	Automated Teller Machine
BIV	IT Business value
BPR.....	Business Process Re-Engineering
CBB	Construction and Business Bank
CBE	Commercial Bank of Ethiopia
CEO	Chief Executive Officer
CFO	Chief Finance Officer
CIO	Chief Information Officer
CMM	Capability Maturity Model
COBIT	Control Objectives for Information and Related Technologies
COSO.....	Committee of Sponsoring Organizations of the Tread way Commission
CRM	Customer Relationship Management
CSFs.....	Critical Success Factors
EIC.....	Ethiopian Insurance Corporation
EPRDF	Ethiopian People’s Revolutionary
ICT.....	Information Communication Technology
IEC.....	International Electronics Commission
IS	Information Systems
ISACA	Information System Audit and Control Association
ISO.....	International Organization for Standardization
IT	Information Technology
ITG	IT Governance
ITIL.....	Information Technology Infrastructure Library
KPI.....	Key performance indicators
MICR	Magnetic Ink Character Reader
MIS	Management Information Systems

NBE National Bank of Ethiopia
POS Point of Sales
ROI Return on Investment
SA Strategic Alignment
SMS Short Message Service
SPSS Statistical Package for Social Science
SV Soft value
VPN Virtual Private Network

CHAPTER ONE

INTRODUCTION

1.1 *Background*

1.1.1. Financial Sector in Ethiopia

Evolution of modern institutionalized Financial System in Ethiopia started in 1905. The agreement that was reached between Emperor Minilik II and Mr.Ma Gillivray, representative of the British owned National Bank of Egypt marked the introduction of modern banking in Ethiopia. Following the agreement, the first bank called Bank of Abyssinia was inaugurated in Feb.16, 1906 by the Emperor. The Bank was totally managed by the Egyptian National Bank and the following rights and concessions were agreed upon the establishment of Bank of Abyssinia. The transfer of ownership took place very smoothly and the offices and personnel of the Bank of Abyssinia including its manager, Mr.Collier, being retained by the new Bank. Ethiopian Public owned 60 percent of the total shares of the Bank and all transactions were subject to scrutiny by the Ministry of Finance. On August 29, 1931 the new Bank, Bank of Ethiopia was established with a capital of £750,000 and it was a purely Ethiopian institution and was the first indigenous bank in Africa.

Bank of Ethiopia took over the commercial activities of the Bank of Abyssinia and was authorized to issue notes and coins. The State Bank of Ethiopia had established 21 branches by bank proclamation issued on December, 1963. Then the Ethiopian Monetary and Banking law that came into force in 1963 separated the function of commercial and central banking creating National Bank of Ethiopia and commercial Bank of Ethiopia.

The National Bank of Ethiopia with more power and duties started its operation in January 1964. Following the incorporation as a share company on December 16, 1963 as per proclamation No.207/1955 of October 1963, Commercial Bank of Ethiopia took over the commercial banking activities of the former State Bank of Ethiopia. It started operation on January 1, 1964 with a capital of Eth. Birr 20 million. In the new Commercial Bank of

Ethiopia, in contrast with the former State Bank of Ethiopia, all employees were Ethiopians.

On the other hand, modern forms of insurance services, which were introduced in Ethiopia by Europeans, trace their origin as far back as 1905 when the Bank of Abyssinia began to transact fire and marine insurance as an agent of a foreign insurance company. According to a survey made in 1954, there were 9 insurance companies that were providing insurance service in the country. Except Imperial Insurance Company that was established in 1951, the rest of the insurance companies were branches or agents of foreign companies. The first remarkable event that the Ethiopian Insurance market witnessed was the promulgation of proclamation No. 281/1970. This proclamation was issued to provide for the control & regulation of insurance business in Ethiopia. Proclamation No.99 of 1976 brought into existence the Agricultural and Industrial Bank (current name is Development Bank of Ethiopia). Construction and Business Bank is one of the biggest banks in Ethiopia. Its history goes back to 1975 when it was known as the Housing and Savings Bank. It was reconstituted as the Construction and Business Bank in 1994 and is Public owned. The following was the structure of the sector at the end of the era.

- The National Bank of Ethiopia (NBE)
- The Commercial Bank of Ethiopia (CBE)
- Agricultural and Industrial Development Bank (AIDB)
- Construction and Business Bank(CBB)

Following the demise of the Dergue regime in 1991, the EPRDF declared a liberal economic system. Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for the private sector investment in the banking sector. Consequently after the proclamation private banks, like Awash International Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, , Nib International Bank , Cooperative Bank of Oromia, Lion International Bank, Zemen Bank, Oromia International Bank, Buna International Bank, Birhan International Bank, Abay Bank S.C., Addis International Bank, Debub Global Bank and Enat Bank S.C came in to the industry.

Also Private Insurance Companies came to the economy after a liberal economy system was declared. Currently there are one public and fourteen Private Insurance companies working in Insurance business (History of Banking in Ethiopia; www.nbe.gov)

In addition to the Banking and Insurance business, Microfinance Institutes are under the umbrella of financial sector in Ethiopia. NBE monitors and regulates these institutes. Currently nine Microfinance Institutes are doing their job in the Financial Sector.

1.1.2. Information Technology in Financial Sector in Ethiopia

Information Technology (IT) (i.e. the hardware, software and network infrastructure) is becoming increasingly important to the financial sector. The Introduction of Information Technologies in to the financial sector is a major factor for changes in the sector. IT is changing the way of doing operation, delivery of service and is making considerable enrichment. Financial service is attractive sector in which to study the impact of information technology as the sector is going through dramatic change and highly dependent on IT. Financial service is confronted with declining customer bases due to the increased competition in the industry, have become locked into uneconomic cost structures. In addition, increased competition generates excess capacity, depresses margins and forces many banks to the “marginal edge of risk taking” and “tempt some towards failure by reducing margins and building riskier portfolios” (Llewellyn, cited be McConnell, 1997).

Currently World class financial service demands intensive use of IT and nowadays financial business can't run without IT. At the same time top and middle level Managers are increasingly required to justify Information technology investment in terms of its impact on increasing productivity by means of ensuring to meet company's qualitative and quantitative objective, creating conducive environment for employee and increase customer satisfaction.

Measurements on impact of information technology have narrowly focused on productivity impacts in monetary terms only. Parallel to investing a huge capital on IT, financial sectors should conduct a research on how to optimally use this investment to excel their business performance. This research investigates the implication of IT investment on Productivity specifically which are difficult to measure in monetary measurement and proposes a Conceptual Model which enhances ROI on IT.

1.2 *Statement of the Problem*

Information technology has a big role almost in all business sectors. Continuously a huge amount of money has been spent on IT since computer was introduced. Global banking industry is the biggest user of IT. In early 1970's there was a debate about the relationship between productivity and IT investment. "No, computers do not boost productivity, at least not most of the time" (Economist, 1990). Robert Solow, the Nobel Laureate economist, has aptly characterized the results: "we see computers everywhere except in the productivity statistics." and this controversy was wildly known as "productivity paradox". Investing on Information Technology can dramatically improve the business performance and productivity. But currently, Financial Sectors of Ethiopia, identifying the proper qualitative metrics and measuring return on investment have not been given much attention and proper consideration. All researchers agree on the importance of IT for the further developments of the financial industry, but some of them have found lack of proportionality between the increase in the scale of IT utilization and the increase in banks profitability (Thakor, 1999; Olazabal, 2002). In the Financial Sectors of Ethiopia, no research has been done on measuring ROI of IT investment especially on non monetary metrics

When we come to specific to the Financial Industry of Ethiopia, the Industry is aggressively investing on hardware, network infrastructure, and software. Parallel to this huge investment, organizations should:

- Know how to manage or govern their Information system (Technology, Human Resource, work process and the entire relationship)
- Align IT investment with Business strategy for optimal usage of the investment
- Identify key value of IT on business
- Know to how measure qualitative Return on IT Investment,

Failing to address the above issues will affect the intended productivity using IT. This research is being conducted to address these issues in Ethiopia specific to financial industry and deliver a Conceptual Model on Information Technology Business Alignment Maturity and the impact towards, Return on IT Investment.

1.3 *Objective of the Study*

1.3.1 *General Objective*

The General objective of this research is to investigate the implication of IT investment on business performance and identify the qualitative measurement and propose a conceptual model to enhance ROI on financial Sector of Ethiopia.

1.3.2 *Specific Objective*

To achieve the main goals, the study has the following specific objectives

- Identify constructs to measure IT ROI
- To identify the relationship between the construct and IT ROI
- Identify the impact of IT in restructuring Financial Sector of Ethiopia
- Propose a Conceptual Model that can enhance an IT ROI
- Provide recommendations and further research directions.

1.4 *Significance of the study*

Ethiopia is one of the least developed countries. There is a serious scarcity of capital. Information technology needs a huge capital investment. On the other hand currently financial sectors are intensively tied to Information technology(IT) and investing on IT is becoming an essential element for meeting their vision (Example: Commercial bank of Ethiopia Vision is to become a world-class commercial bank by the year 2025).Therefore, financial sectors should optimally use this expensive investment to meet their objective

This research may help financial sectors to identify factors which are positively or negatively affect maximization of benefits from its huge IT investment, and address them accordingly. In addition, this study identifies the roles of IT as both motivator and facilitator to get the opportunity of the market, stays competitive by using its Resource effectively and efficiently

1.5 *Scope and Limitations*

The impact of IT in Financial sector towards ROI is a wide area for research. However, the scope of this research is limited to assess ROI on the dimension of IT business Value, IT

Governance and Strategic Alignment of IT to Business and Soft Value of IT as overall organizational level. In IT business Value referred in this research only on non-financial IT business value. Financial sector in Ethiopia includes Banks, Insurances and Micro Financial Institutes but this study takes a sample from Banks and Insurance companies. That means, Microfinance Institutes are out of scope and the result of the research would be more fruitful if it includes Microfinance Institutes. However, due to time and labor constraints the study is limited to Banks and Insurance companies.

1.6 *Organization of the study*

This paper is organized into six chapters. The first chapter is about the background of the study, statement of the problem, objective of the study and scope and limitation of the study. The second chapter presents review of related literatures to the impact of IT in Financial sector towards ROI and discuss related works in that area. The third chapter discusses the methodologies and procedures followed for the data collection, analysis and interpretations. The fourth chapter deals with analysis and presentation of data, discussion, summary of findings and the proposed Conceptual Model for optimal ROI in Financial Sector of Ethiopia. The fifth chapter brings conclusion and suggest recommendations.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews literatures relevant to IT Investment towards ROI in the dimension of non qualitative measurements. IT ROI researchers were aggravated by a need to appreciate how and to what extent the application of IT within firm's 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).

Calculating accurate IT costs can be difficult. Calculating the ROI for an organization's technology investments especially since true ROI must now include a combination of quantitative and qualitative factors. Organizations often use quantitative data for ROI on IT investment measurements such as reduced personnel, fewer hours spent on specific tasks, increase production volume etc., but for the qualitative ones, it moves beyond numbers or figures because indirect costs and benefits can be hard to measure.

Qualitative or soft ROI is the term used to describe the benefits of technology which are hard to quantify, but still have a strong impact on the organization and in the industry and should be weighed in any technology decision. Some of such factors are productivity, effectiveness, customer satisfaction, work environment for knowledge sharing, service excellence, product diversification employee and customer satisfaction, getting competitive advantage, achieving strategic objective that leads to restructuring the industry and etc.

2.1. Productivity paradox

Huge investments in computer technologies are put in question by CEOs and line managers as Productivity, the fundamental measure of the contribution of technology, has to be evaluated. In relation to this measure success stories exist, so do equally impressive failures (Kemerer & Sosa, 1990). Decision makers, should therefore, carefully think about taking a decision on IT investment .They should follow the best fit rather than the best practice.

There is no way to measure the exact value created by IT especially qualitative values .This is a major challenge to justify IT investment. Even in academics and research areas a similar problem faced in measuring the contribution of IT. The result of this leads to extreme conclusion like Robert Solow, the Nobel Laureate economist, has aptly characterized the results: "we see computers everywhere except in the productivity statistics." "No, computers do not boost productivity, at least not most of the time" (Economist, 1990).

This is not to say that computers may not have significant effects in specific areas, such as transaction processing, or on other characteristics of the economy, such as employment shares, organizational structure or product variety (Erik Brynjolfsson, 1994). Rather it suggests that very large changes in capital stock are needed to measurably affect total output under conventional assumptions about typical rates of return (Erik Brynjolfsson, 1994). However, the growth in IT stock continues to be significant. At current growth rates, we should begin to notice changes at the level of aggregate GNP in the near future if computers are productive (Erik Brynjolfsson, 1994).

Some of the reasons why erroneous conclusions made on computers productivity Erik Brynjolfsson (1994) are summarized as follow:

- **Measurement Error:** Inputs and outputs of information-using industries are not being properly measured by conventional approach
- **Lags:** time lags in the pay-offs to IT makes analysis of current cost versus current benefit misleading
- **Redistribution:** information technology is especially like to be used in redistributive activities among firms, making it privately beneficial without adding to total output
- **Mismanagement:** The lack of explicit measurement of the value of information makes it particularly vulnerable to misallocation and over consumption by managers

2.2. IT Business value

Cronk and Fitzgerald (1997, p.410) suggest that the value resulting from investing in IT can be seen as IT-business-value. They provide a precise definition of IT business- value:

“The sustainable value added to the business by IT, either collectively or by individual systems, considered from an organizational perspective, relative to the resource expenditure required”.

Assurance of IT-business-value requires IT management (Farbey et al, 1993). From the literature, the author offers the following definition of IT management:

IT management is the management of IT expenditure to ensure quality IT assets, the appropriate (optimal) use of such quality IT assets and the organizational impacts resulting from the use of IT to improve the competitive positioning and welfare of the organization (Nel, 1997).

According to Sambamurthy and Zmud (1994), an organization achieves this intermediate state (positive IT-business-value) when IT has been incorporated into new products or services leading to a number of organizational performances. Business processes have been redesigned using IT in such a way that the processes are more efficient or effective, leading to organizational outcomes such as: employee satisfaction, increased customer satisfaction, Effective MIS (Management Information Systems), User satisfaction and Organizational growth and learning. This view is similar to Cronk and Fitzgerald’s (1997) “Soft value” dimension.

IT has enabled organizational decision makers to improve their understanding of resources, markets and customers, leading to a better product design, higher degree of integration between business and IT strategy, better fulfillment of Critical Success Factors (CSFs), competitive advantage and lowering Project and organizational risk. This directly relates with Cronk and Fitzgerald’s (1997) “Alignment with business strategy” dimension.

2.3. IT Governance

IT governance is the decision rights and accountability framework for encouraging desirable behaviors in the use of IT. IT governance reflects broader corporate governance principles while focusing on the management and use of IT to achieve corporate performance goals. Because IT outcomes are often hard to measure, firms must assign responsibility for desired outcomes and assess how well they achieve them. IT governance shouldn’t be considered in

isolation because IT is linked to other key enterprise assets (i.e. financial, human, intellectual property, physical and relationships). Thus, IT governance might share mechanisms (such as executive committees and budget processes) with other asset governance processes, thereby coordinating enterprise wide decision making processes (Peter and Jeanne, 2004).

In an early research on governance, IT governance mechanisms were categorized into three: decision making, alignment processes and communication approaches. Some ITG frameworks like COBIT (Control Objectives for Information and Related Technologies), COSO (Committee of Sponsoring Organizations of the Tread way Commission) and ITIL (Information Technology Infrastructure Library) provide guidance from micro level onwards. However, there is no single dominant approach for ITG (Anand 2012).

According to document ISO/IEC 17799, IT governance is integral part of organizational management and responsibility of managing and supervising boards and it consists of leadership, organizational structure and processes that ensure IT is used as enhancer of organizational strategy and goals. IT governance implies that IT processes are fully integrated into life cycle of business process and it influences the quality of service and business agility (Sprenić, 2009, pp. 906). Van Grembergen and De Haes (2005) defined IT Governance as the organizational capacity exercised by the Board, executive management and IT management to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT. The primary focus of IT governance is on the responsibility of the board and executive management to control formulation and the implementation of IT strategy, to ensure the alignment of IT and business, to identify metrics for measuring business value of IT and to manage IT risks in an effective way.

To evaluate and compare IT governance, Peter and Jeanne (2004) propose a matrix representing IT governance on one page mapping how key decisions are made. IT governance encompasses five major decisions related to the management and use of IT in a firm:

- **IT principles:** high-level decisions about the strategic role of IT in the business.
- **IT architecture:** an integrated set of technical choices to guide the organization in satisfying business needs.
- **IT infrastructure:** centrally coordinated, shared IT services providing the foundation for the enterprise's IT capability and typically created before precise usage needs are known.
- **Business application needs:** business requirements for purchased or internally developed IT applications.
- **Prioritization and investment:** decisions about how much and where to invest in IT, including project approval and justification techniques.

Each of these decisions can be made by corporate, business unit, or functional managers or some combination. And senior management can hold business unit or IT managers accountable for the related outcomes. Thus, the first step in designing IT governance is to determine who should make, and be held accountable for each decision area (Peter and Jeanne, 2004).

Enterprises use one of six decision making archetypes to make each decision. We list these archetypes roughly in order from more to less centralize:

1. Business monarchy: A senior business executive or a group of senior executives, sometimes including the CIO.
2. IT monarchy: Individual or groups of IT executives.
3. Federal: C-level executives and business representatives of all the operating groups may include IT involvement (equivalent of the central government and the states working together).
4. IT duopoly: Two party decisions making involving IT executives and one group of business leaders.
5. Feudal: Business unit or process leaders making separate decisions based on the needs of their entities.
6. Anarchy: Each individual user or small group.

The five decisions and six archetypes provide the columns and rows for a 5x6 matrix which allows management to specify, analyze and communicate where IT decisions are made. Peter and Jeanne (2004) refer to as “*IT governance on one page*”

Financial industry is becoming a highly IT driven business. To be successful in this business it demands huge IT investment, making a decision on this huge IT investment, managing IT project and managing its operation needs proper and best fit IT governance

From the above reviews we can infer that, companies make decisions to invest on IT so that they can reduce cost or increase revenue, increase market share, diversify products, improve quality of existing products, maximize customer satisfaction, increase employee satisfaction, increase specialization of qualified IT personnel and finally gain competitive advantage in the industry. Financial Industry is becoming highly technology driven and its tangible and intangible IT asset is increasing from time to time. In evaluating the output of IT, we should use both monetary (i.e. financial statement and financial ratio) and non monetary measurements. Monetary measurements only are not enough; for the result could be misleading. For example customer satisfaction, quality of service, improved working environment, employee satisfaction and qualified IT personnel, being competitive etc. can't be measured in monetary terms alone. To measure ROI on IT investment, we should include additional qualitative measurements.

2.4. Capability Maturity Modeling (CMM)

Capability Maturity Modeling (CMM) techniques (CMM created by the Software Engineering Institute with Carnegie Mellon) are increasingly being adopted by many organizations for assessing IT capability. This technique focuses on the IT management processes that control IT resources, and assessments usually reveal significant weaknesses and an IT capability (*IT Governance Developing a Successful Governance Strategy. 2005*).

In recent years, surveys and assessments carried out around the world have shown that in general IT capabilities have not kept pace with increasing IT complexities and the growing demands for reliable, secure and flexible services. Improving the maturity of IT capability both reduces risks and increases efficiency – cost saving is often a justification. Disproportionate to the high dependency organizations have on their IT service providers. A key to successful in

IT performance is the optimal investment, use and allocation of IT resources (people, applications, technology, facilities, data) in servicing the needs of the enterprise. Most enterprises fail to maximize the efficiency of their IT assets and optimize the costs relating to these assets (IT Governance Developing a successful governance strategy. 2005).

Boards need to address appropriate investments in infrastructure and capabilities by ensuring that:

- The responsibilities with respect to IT system and services procurement are understood and applied.
- Appropriate methods and adequate skills exist to manage and support IT projects and systems.
- Improved workforce planning and investment to ensure recruitment and more importantly, retention, of skilled IT staff.
- IT education, training and development needs are fully identified and addressed for all staff.
- Appropriate facilities are provided and time is available for staff to develop the skills they need.

IT assets are complex to manage and continually change due to the nature of technology, and changing business requirements. Effective management of the lifecycle of hardware, software licenses, service contracts, and permanent as well as contractual employees is a critical success factor not only optimizing the IT cost base, but also for managing changes, minimizing service incidents, and assuring a reliable quality of service.

To ensure that IT resources are managed effectively, IT capability should be assessed on a regular basis and whenever resources are critical to strategic IT decisions. The capability assessment should be based on alignment of IT goals with business goals and targeted at the IT processes critical to business success. This can be done by determining the required capability for business success then assess the current capability of IT processes. The next step is analyzing any gaps in capability and providing transparent visibility of the capability position. To fill the identified gap, define and justify the necessary improvement on projects or re-

adjusting the IT strategy by adjusting goals which can be attainable with current capability, improving the current capability or outsourcing.

The measurement of IT capability should be an objective assessment oriented towards business requirements. This will ensure that the current “as-is” and required “to-be” capabilities are realistic and measurable enabling any gaps to be identified and a plan to be drawn up to rectify any shortcomings. (IT Governance Developing a successful governance strategy. 2005)

2.5. Role of Information technology in financial sector

Information technologies are key factors that have changed the nature of financial services: the ways in which they are created, delivered, priced, received, and used. Relationships between and among users and providers of financial services are changing. In 2000, perhaps three-quarters of the world’s population left no digital footprint – no internet connectivity or cell phone or smart card. But today, with over 5.32 billion cell phone subscriptions for 6.7 billion humans, this ratio is probably reversed. Efficient use of information technology benefits all business area. All researchers agree on the importance of IT for the further developments of the financial industry, but some of them have found lack of proportionality between the increase in the scale of IT utilization and the increase in banks profitability (Thakor, 1999; Olazabal, 2002).

2.5.1. Banking industry

IT developments helped to increase efficiency of banks, improving profitability of their assets (Kozak and Kowalski, 2005). The advancement of IT affects the way the banks give their service for their customer. Another study has shown improvements of banks profits resulted from the increase of the number of operations due to utilization of modern technological banking equipment. Bigger capacities of information and telecommunication systems laid foundation for new services or quality improvement of existing one, increasing revenues at the same time. IT contributed to the growth of revenue by improving the risk assessment procedures applied in lending and investment processes. Banks benefited from lower potential

losses and higher rates of returns on investments (Berger et al.1996). New IT--related services can be distinguished into four main categories (Berger, 2003):

- **Internet Banking**

Most of the commercial banks allow customers to perform transactions through the web site. They may range from checking the account balance through transferring funds to loan applications (Eyadat et al.2005). In our case, Internet banking being introduced in both Private and Public Banks but not yet matured.

- **Electronic Payments**

The main new forms of electronic payment are: smart cards and software-based products making payment over the Internet or VPN (Arbussa 2001). They allow obtaining cost savings due to less work-intensive operations and paper-documentations. The growing importance of the Electronic payment services made with debit cards, primary used at ATMs and POS (Point of Sales). To serve a larger group of customers, banks are constantly shifting their location out of branches toward supermarkets and other commercial facilities (Eyadat et al.2005).

In our case, most of the Banks deliver payment service on ATM and POS (Point of Sales) but it is not in all type of service.

- **Security Investments**

The character of these securities is based on the idea of deriving the value from another underlying security or asset, such as: foreign currencies, interest rates, equities, commodities, and credits. The most common examples of derivative securities are: auctions, futures swaps, structured note. Banks have engaged in derivatives markets very substantially in recent years (Eyadat, et al.2005).

Security Investment is not yet introduced in Ethiopia even in Africa. But in the future it is going to be one of IT driven service in our country and Africa. In developed countries Security Investment is one of the best market mechanisms to increase profitability and reduce risk by using their idle money.

- **Information Exchanges**

They are institutions used by banks and other creditors to share data relevant to the creditworthiness of loan applicants. They collect available data from various financial institutions, trade creditors, any public records, and other sources and next aggregate them to provide credit reports and credit scores. They may operate as public or private entities. Information exchanges are extremely IT driven organizations, and running huge number of records may achieve economy of scale (Eyadat et al., 2005).

- **Automated Clearing Services**

There are interbank transactions which are effected between customers of different banks using cheque or cash. These transactions must pass through the Central Bank. Cheque based transactions involve the use of Magnetic Ink Character Reader (MICR). MICR is capable of encoding, reading and sorting cheques. Also, request for cheque books or purchase of draft can be made and granted via electronic devices that are web-enabled. In the case of cash there is a system which connect Banks through the Central Bank. To process these transactions the role of information technology is unthinkable. The participants of this transaction are the payee bank and the receiver bank and the Central bank. In our case this process is not yet fully automated and the National Bank of Ethiopia has been enforcing all banks to use core banking software and launching a project for check standardization.

2.5.2. Insurance Industry

The Insurance Business is being changed by information technology. Over the years, the business has lowered expenses by embracing new technologies in communications and automation. Over the past several decades, there have been two important IT innovations affecting insurance distribution. The first was the mainframe computer technology of the 1970s and early 1980s. Insurers adopting mainframe could place dedicated terminals with agents to transfer information from agent to insurer, thereby increasing the efficiency and accuracy of the transaction (Etgar 1977). The second IT investment affecting distribution was the internet. Investments in IT and, in particular,

Internet-related investments have been widely cited as one reason for the acceleration in productivity in services over our sample period (Triplett and Bosworth 2002).

Insurance has brought to the public the economic benefits of declining loss costs as other technologies brought better health, longer lives, fewer fires and safer factories and highways. In recent years, information technology has lowered the capital costs of insurance through the unbundling of insurance products and through the risk management movement. Over and over again, consumers benefited. Competitors who rode the changes gained over those who resisted or ignored them.

All Insurance Industry services can be delivered through the channel of information technology network. In addition to the use of transaction software insurers can easily reach to their customers through Internet portal and mobile. Before such technology emerged, Insurance Industry middle men like brokerage and agents were involved. Currently the internet and mobile technology facilitate direct interaction between the insurer and the customer. Because of the elimination of these middle men, the cost service delivery is decreasing.

In the case of our Insurance companies both internet and mobile services have not yet started.

2.6. Related works:

Some related studies are conducted by different researchers in different parts of the world. But in our country context, the researcher can't find studies which are directly related to these research themes which are done on Financial Sector in Ethiopia. But there are limited numbers of studies conducted in Ethiopia which are partially related with these research themes and international studies which are more related in our themes.

Specifically, the study on "IT Governance in Ethiopian Financial Sector" in the case of CBE by Senait(2011) is one of the related studies with this research theme of IT Governance. This study aims to examine the status of IT governance at the Commercial Bank of Ethiopia with regard to strategic alliance, risk management and IT resource management and performance measurement. The research was more of qualitative type.

Even if the title states the study to be on Financial Sectors of Ethiopia, the sampling of the institution was limited to a single public owned bank. Because of too small and none representative sampling, the research recommendation may not directly apply to all Financial Sectors of Ethiopia other than CBE. The data analysis part has been done in qualitative way rather quantitative statistical approach. The study tries to track the historical evolution of IT Governance in CBE i.e. before and after BPR implementation. Currently CBE has different organizational structure in related to IS process. CBE has implemented a Core Banking Software and the Infrastructure project ended up and the current CBE picture is different in IT dimension.

The recommendation part of (Senait, 2011) summarizes on:

Strategic Alliance of business and IT: - for better alignment, CBE should prepare an IT Strategic plan document, the IT Steering Committee should oversee not only currently IT projects but also the entire IT activities to make sure that they are going on as IT strategic plan document.

IT Resource Management: - System for IT asset management, ITIL framework for Service Management , for IT staff management CBE should implement BSC for performance measurement and to reduce IT staff turnover provide short and long term educational opportunities and apply different type of benefits.

Risk Management: Senait (2011) recommends: CBE to adopt the COBIT standards, which helps in proper management of risks.

Performance Measurement:- Key performance indicators (KPI) should be set for IT processes and Make use of the COBIT to measure IT performance and control of IT activities.

Senait (2011) concludes that IT Governance status at Commercial Bank of Ethiopia is very low, there are visible gaps of aligning IT with the business, managing IT resources and managing IT risks. As it is discussed in previous chapters, Commercial Bank of Ethiopia is investing a huge amount of money on Information Technology to get all the advantages of IT, but its success on effective utilization of IT is very low because it is not managing and governing IT to align it with the business as it was supposed to be. The bank will get full advantage of the IT governance standards by implementing standard IT governance frameworks parallel to the technology implementations. The very limitation of this paper is

the recommendation part suggested only best practices but not best fits for CBE. A study entitled “The Impacts of ICTs on Banks a Case study of the Nigerian Banking Industry” by Matthew & Ibikunle (2012) was also conducted. The research has used four parameters, namely: Productivity, Market Structure, Innovation and Value Chain for benchmarking. The study uses both qualitative and quantitative approach. Case studies of the IT platform employed by two Nigerian banks were included for a more informed inference. The aim of this research is to ascertain the level of use of ICT infrastructures and their impacts on customer service; which invariably determines growth of banks. Considering ICT as a growth enabler, the extent of deployment by banks and customers’ perception of its relevance are the basis of the Matthew & Ibikunle (2012) research.

The variables used to assess the Impacts of ICT on Productivity are ; Labor productivity and Improved service. The result on productivity parameter indicates the use of computers and peripherals increase casher productivity but ICT investment does not lead to productivity growth at firm-level by itself. It depends on how the technology actually is used in business processes, i.e. on a company's ability to innovate its work processes and business routines with support of ICT. Thus, banks need multiplex ICT investments with complementary investment in working practices, human capital, and firm restructuring to optimize its impact on productivity (Matthew & Ibikunle 2012).

To assess the Impact of ICT on Innovation, a technological change such as the massive diffusion of ICT represents an interesting case for an analysis with respect to firms’ innovation strategies. Entrepreneurial companies are more likely to exploit these opportunities. Entrants frequently introduce products or production processes based on a new technology, which can challenge incumbents or even drive them out of the market. This was the scenario that played out in the Nigerian banking industry with the emergence of new generation banks that introduced innovative products and services. Innovation in this context aims to reduce the cost of banking while making the process of transaction easier and more convenient (Matthew & Ibikunle 2012). The result indicates that banks didn’t play the expected role to come up with innovative products that will reduce the cost of banking operations. Modern Self service Banking technologies like ATM and Information update through like SMS and email alerts will enhance customer satisfaction, loyalty and confidence. Thus banks may encourage the use

of other ICT media such as internet and POS which enhances cashless banking (Matthew & Ibikunle 2012).

Innovations have a significant impact on the market structure in which companies operate. Radical changes in technology traditionally lead to emergence of new products or change the production processes of existing products. Technological change forces firms to adopt new modes of production and, consequently, to reorganize their assets. If a company fails to reorganize internally, it will probably disappear from the industry and its assets will be reorganized. The result indicates that the banks have improved the quality of service rendered which is necessary for the bank to retain its customer as well as attract potential ones (Matthew & Ibikunle 2012).

The impact on value chain reflects in re-shaping firm boundaries and changing the constellations of value chains are enormous. In this parameter the variables which are used are vague and too small, i.e. services/special accounts and number of branches. The study result on these two variables positively correlated to impact on value chain (Matthew & Ibikunle 2012).

Increased investment in ICT-Capital has accelerated growth in industry and enables banks to offer a broad variety of services to customers, coordinate branch activities, meet up with changes in government regulations and policies as well as adjust to market demands and competition. On the other hand according to the result of this study 70 % of the adult population in Nigeria is unbanked. One way of achieving this objective is to increase the geographical outreach of the financial system through the use of non-bank agents. Thus, banks need to employ ICT in such a way that meets the desired qualities of flexibility and scalability, providing them with a competitive advantage to stay ahead and provide new and improved products and services to delight their customers. It must however be noted that ICT investment does not lead to productivity growth at firm-level by itself. It depends on how the technology is actually used in business processes, i.e. on a company's ability to innovate its work processes and business routines with support of ICT. Thus, only if ICT investment is combined with complementary investment in working practices, human capital, and firm restructuring will have an impact on performance (Matthew & Ibikunle 2012).

The four parameters used to assess the impact of ICT on banking industry were relatively good parameters but the variables used to measure each parameter are too small and can't give the real pictures of the parameters. The research would have been better, if it had incorporated strategic alignment of Business and IT as an additional parameter. The data was collected only from Banks' customer but not from the employee of the bank. Because of this, the study could not incorporate the values ICT as perceived in the organization.

The other study by COVIELLO (2012) has tried to see the impact of ICT in Insurance Industry specific to Customer Relationship Management. Even if the study doesn't have a methodology, we can observe that it is a qualitative type of research. It stated that the industry of insurance services is one of the most deeply exposed areas to the effects of ICT (Information and Communication Technologies) for the fact that based on information and not requiring the physical transfer of goods, are structurally suitable for the digitization of processes and products. The aim of this paper is to discuss about theories and tools to interpret ICT-related changes and specifically how to recover (reuse) the insurer/insured relationship (COVIELLO, 2012).

While in the past it was thought that a technically sound insurance product would meet customer satisfaction, today we know that the satisfaction from the technical point of view is less important. Getting to know, anticipating and satisfying customers' need becomes a key factor to gain a sustainable competitive advantage over competitors. The gradual introduction of Information and Communication Technologies has significant changes in the insurance sector, changing the mode of operation and allowing a significant enrichment of the range of services to end users like using Internet as a real business generator (COVIELLO, 2012).

Implementation of a CRM system provides the companies with a logical step to manage their market one-to-one. The 5C model, Close to the customer, Clear vision, Consistency with that vision, Continuous improvement and Connected to the rest of the company is certainly useful to summarize the process of implementation of CRM in the insurance industry. New technologies have helped to create a real multi-channel communication between the management company and insured and have made possible a more effective and efficient

organization and management of customer information in the portfolio (G. Turchetti, 2004, (as cited in COVIELLO, 2012))

A dangerous paradox is proposed: CRM is both fundamental for the strategic objectives of companies and a high risk field of action. At this time when companies are struggling to find funds for new software projects the effectiveness of CRM systems in terms of ROI, returns on investment, should be demonstrated. More often, among strategies, processes and technology implementation of alignment lacks for CRM initiatives. CRM is primarily a cultural and organizational changeover of the company and the answer to a business problem that is increasing revenue and reducing costs by building long term relationships with its customers.

The insurance industry is fully immersed into the digital revolution and faces technological and organizational changes. These changes needed to be introduced to fully exploit new opportunities, by providing more flexible products increasing business efficiency, and profitability. Technological change is not just something inevitable in the market for financial services and insurance, but the availability of advanced technological infrastructure is a key factor of success and competition. Among the technologies that will help insurers to achieve the goals there are definitely products for managing marketing campaigns, *Data Mining* products, systems for rating and risk analysis Internet-based, solutions for the automation of sales force, for the automation of business processes (COVIELLO, 2012).

Related works summarized as follows:

Author	Area	Objective	Methodology	Finding	Remark
Senait Berihu Teferi (2011)	<i>IT Governance on Commercial Bank of Ethiopia</i>	<i>To examine the status of IT governance at the Commercial Bank of Ethiopia with regard to strategic alliance, risk management and IT resource management and performance measurement</i>	<i>Qualitative research</i>	<i>IT governance status very low, visible gaps of aligning IT with the business, managing IT resources and managing IT risks</i>	<i>Too small sampling and recommendation part only suggested best practices not best fits for CBE</i>
Matthew K. Luka & Ibikunle A. Frank (2012)	<i>The Impacts of ICTs on Banks A Case study of the Nigerian Banking Industry</i>	<i>To ascertain the level of use of ICT infrastructures and their impacts on customer service; which invariably determines growth of banks</i>	<i>Qualitative and Quantitative approach</i>	<i>ICT investment does not lead to productivity growth at firm-level by itself. It depends on how the technology is actually used with complementary</i>	<i>Because of the Data not collected from employees, study can't show values ICT in the organization. perceive</i>
COVIELLO (2012)	<i>The Impact of ICT in the insurance industry</i>	<i>Discuss about theories and tools to interpret ICT-related changes and specifically how to recover (reuse) the insurer/insured relationship</i>	<i>Qualitative</i>	<i>Insurers should use products which facilitate marketing campaigns, Data Mining for analysis and rating risk, Internet-based, solutions.</i>	<i>Mainly focus on CRM</i>

Table 2.1 summery of Related Works

2.7. Research Model

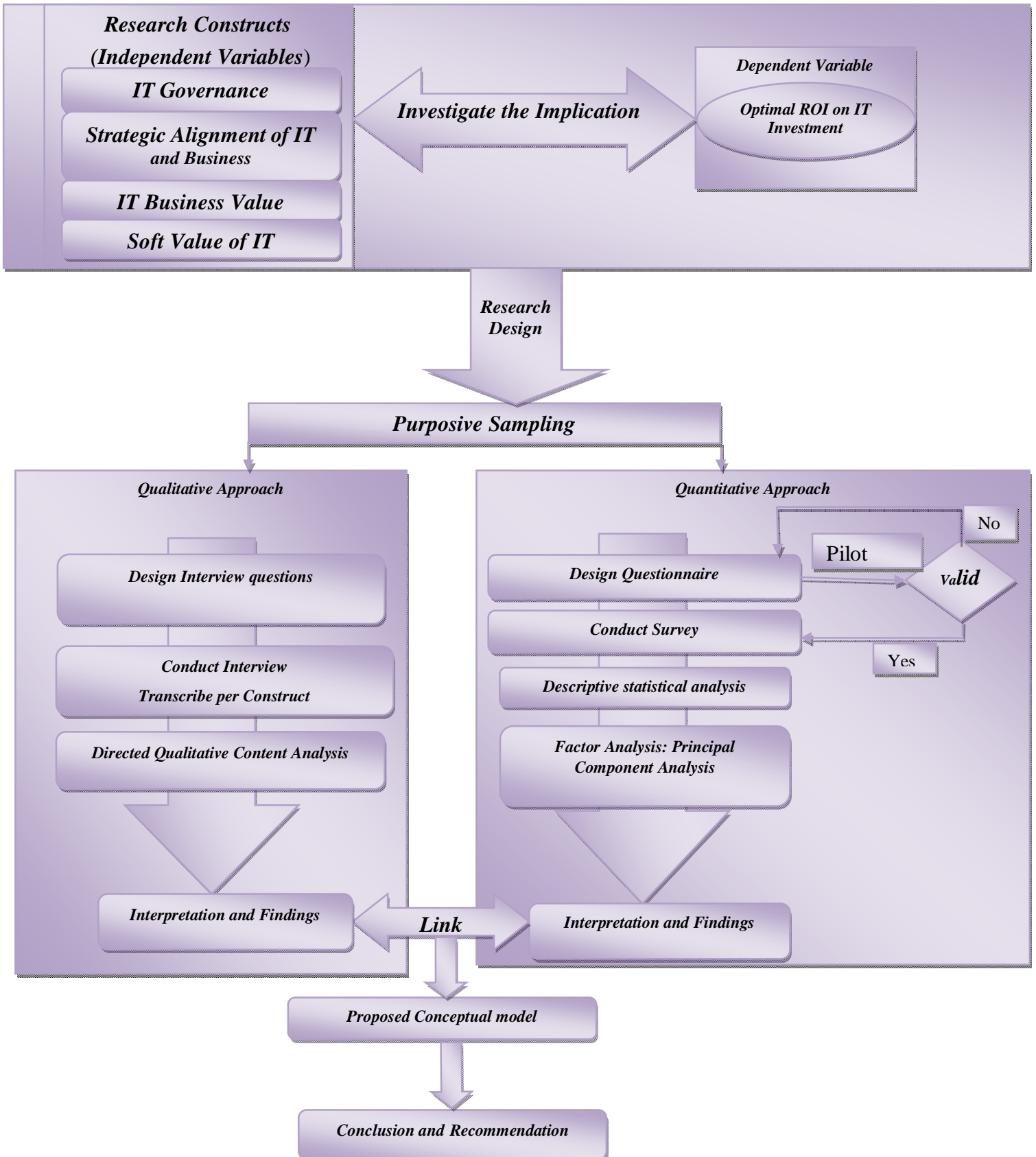


Figure 2.1 Research Model

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

The nature of any research problem should drive the methodology to be adopted. Before undertaking a research exercise an understanding of the underlying assumptions behind ‘valid research’ is essential in order to justify the methodologies and methods to be employed in the research design (Myers 1997). The methodology which is going to be used should be justifiable whether it is related to the research’s theoretical theme and philosophy (Myers 1997).

Two paradigms characterize much of the research in the Information Systems discipline: behavioral science and design science. The behavioral science paradigm seeks to develop and verify theories that explain or predict human or organizational behavior (Hevner et al 2004). The design-science paradigm seeks to extend the boundaries of human and organizational capabilities by creating new and innovative artifacts (Hevner et al 2004). Both paradigms are foundational to the IS discipline, positioned as it is at the confluence of people, organizations, and technology (Hevner et al 2004). IS researchers state that “IS research must be both proactive and reactive with respect to technology. It needs a complete research cycle where design science creates artifacts for specific information problems based on relevant behavioral science theory and Behavioral Science anticipates and engages the created technology artifacts” (Hevner et al, 2004)

This research is more of behavioral science and adds few elements from design science. Because some of our objectives like identifying Metrics to measure IT ROI, identifying the impact of the constructs (IT Governance, Strategic Alignment of IT and Business, IT Business Value and Soft value of IT) towards IT ROI and investigate how IT restructure Financial Sector of Ethiopia can be achieved through behavioral Science approach and the development of Conceptual Model through Design Science approach.

Research methods can be classified in various ways, one of the most common distinctions is between qualitative and quantitative research methods (Myers, 1997). Quantitative research is typically considered to be the more “scientific” approach to doing social science. Qualitative

research methods provide more emphasis on interpretation and providing consumers with complete views, looking at contexts, environmental immersions and a depth of understanding of concepts. Because of the differences in the data, how data is collected and analyzed, and what the data and analyses are able to tell us about our subjects of study, the knowledge gained through qualitative investigations is more informative, richer and offer enhanced understandings compared to that which can be obtained via quantitative research (Richard 2009). As the focus of information systems research shift form technological to managerial and organizational issues, qualitative research methods become increasingly useful. (Myers, 1997)

Both qualitative and quantitative Research methods are used in accomplishing the objectives of this research. The relationship of dependent and independent variables is investigated through questionnaires and in-depth interviews. The data collected through questionnaires are analyzed using SPSS Version20.0 using Descriptive statistical analysis techniques. Factor analysis is used for homogeneity analysis and dimension reduction. By studying a representative sample organizations, the survey seeks to discover relationships that are common across organizations and hence to provide general statements about the object of study.

3.2. Population of the Study and Sampling

This research is conducted on Financial Sectors of Ethiopia. Our sampling technique in selecting the organizations from the entire financial organizations in Ethiopia is Purposive Sampling. In Ethiopia, there are two broad categories in the financial sector, Banking and Insurance sectors. For our purpose we categorized these two sectors further in to two; Public and Private Banks and Public and Private Insurance companies. From each category one organization was selected, and a total of four organizations, are used as sample size. Commercial Bank of Ethiopia, the Ethiopian Insurance Corporation, the United Bank, and Awash Insurance Company from public and private owned companies respectively, were taken as sample organizations.

As mentioned earlier the sampling method is purposive. The reason of selecting CBE is it has 42.4% of Branch network and 34.2% of Capital from the entire banking industry which is the largest share in banking industry of Ethiopia (NBE Annual Report 2013-14) and currently CBE is aggressively investing on IT. The current situation of CBE is a good opportunity for

this research. Ethiopian Insurance Company is the only Public Insurance in Ethiopia and is the only choice. In the case of United Bank, the first Bank for implementing Core Banking technology from private Banks and currently the Bank has upgraded its Core banking Software by its own human resource. It is a great success for not only Ethiopian Banking industry but as a country related to skilled IT Professionals. Awash Insurance Company is the first Private Insurance Company and currently is a Market leader among Private Insurance Companies ranked next to EIC in Branch network and Capital (NBE Annual Report 2013-14). The issues raised in this research are relatively new concepts (not yet matured and well known) for most of the staff. So regarding the respondents, the researcher has tried to incorporate all the senior IT professionals and some Business professionals who are directly related to IT in each sample organization. But when there are not enough senior staff the ensuing gap is filled through awareness briefing to junior staffs.

National Bank of Ethiopia (NBE) is a Central bank in Ethiopia which controls and monitors all Banks and is the main stakeholder on financial Sectors in Ethiopia. It is a main source of directives, rules and procedures on regulating this Financial Sector. So NBE is used to be our major secondary data source

3.3. Data collection Instrument

For the purpose of the study, both primary and secondary data is used. Primary Data was collected through structured questionnaire and Interview. The secondary data are collected from the organizations business and IT strategy plan, directives and rules in investing and using IT, Organizational Structure related of Information System Management and IT Governance, IT professional's job description, NBE directive and rules which are related to investing and using NBE Published Statistical Reports, journals, Internet searches, and Bulletin.

3.4. Method of Data Collection

For survey questionnaire forty five factors has been used. From forty five factors in the survey thirty five were taken directly from ISACA (2003) without any manipulation and 10 questions formulated from literature review. A five point Likert scale is used and the respondents were required to state the extent to which they agreed or disagreed with the statements in the

questionnaire. Prior to final questioner distribution pilot test has been conducted on 20 respondents to check the questions whether they are good enough to meet the research objective or not. The reliability of the pilot test is ensured through reliability analysis with the help of Cronbach's Alpha, with the score 0.918.

Case Processing Summary -Reliability Statistics

		N	%	Cronbach's Alpha	N of Items
Cases	Valid	20	100.0	.918	45
	Excluded ^a	0	0.0		
	Total	20	100.0		

a. Listwise deletion based on all variables in the procedure.

Table 3.1 Pilot test Cronbach's Alpha result

The researcher personally administered hundred Questionnaires to the respondents and collected the responses. Among 100 questionnaires, forty were distributed to CBE and twenty for EIC, AIC and United Bank each. Regarding the Interview, fifteen open ended questions (See Anex II).which initiate the interviewee to explain more are used (See Anex III). In the Survey, most of the respondents are relatively new on this constructs (IT Governance, best IT/Business Strategy alignment, exploring the Value of IT on Business and maintain Soft values of IT) because of this the researcher has derived a short briefing on small group and one to one to make their response valuable .But in the case of the Interviewees, no such kind of problem was faced. They have proper .knowledge on constructs.

From Commercial Bank of Ethiopia top level IT executive (CIO), Manger – Application Management from Ethiopian Insurance Corporation, MIS Manager from Awash Insurance Share Company and Chief Information Security Officer from United Bank Share Company have been interviewed in-depth. For secondary data the researcher has collected a copy of relevant document.

3.5. Data Analysis Technique

According to the literature review, there are four distinct but interrelated themes discussed which are assumed to affect IT ROI (optimal usage of IT investment) in the organization. These themes are IT Governance, Strategic Alignment of IT, IT Business Value and Soft Value of IT. The data collection is structured based on these four constructs and each concepts represents in respective factors/variables.

The data analysis has two integrated parts, which are the qualitative and quantitative analysis. Descriptive analysis is used for Quantitative analysis to assess the impact of IT, using the variables (dependent variable Return on IT investment and independent variables; IT Governance, Strategic Alignment, IT Business Value and Soft value with forty five factors) by utilizing statistical tools SPSS Version 20.0

IT Governance Factors

Code	Factors
ITG01	There is regular communication between the CIO , CFO and CEO
ITG02	IT investment decisions aligned to business goals
ITG03	IT staffed adequately, with right skills and competencies
ITG04	CIO define and communicate the role of IT to the rest of the organization
ITG05	CIO & Management consider value delivery from IT systems to be important
ITG06	The organization have an IT steering committee
ITG07	Current IT investments are high quality, comprehensive and safe to deliver the intended goal
ITG08	IT projects have a clear budget and timeline
ITG09	The board obtain regular progress reports on major projects
ITG10	Organization takes a regular inventory of its IT resources
ITG11	Sufficient IT resources and infrastructure are available to meet required enterprise
ITG12	IT assets are being well-managed.
ITG13	The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks

Table 3.2 IT Governance Factors

Strategic Alignment Factors

Code	Factors
SA01	It is clear what IT is doing
SA02	IT strategy plan aligned to business strategic plan
SA03	IT projects deliver what they promised
SA04	IT core competencies are maintained at a level to meet required enterprise strategic objectives.
SA05	The making of major IT-decisions is time-efficient
SA06	The enterprise and IT align their objectives
SA07	The board articulates and communicates the business direction to which IT should be aligned
SA08	IT is a regular item on the agenda of the board and is addressed in a structured manner
SA09	The current capabilities are analyzed to identify gaps.
SA10	IT Playing a major role in Strategic Business Planning
SA11	The organization current IT Investment guaranteed to succeed its mission

Table 3.3 Strategic Alignment Factors

IT Business Value Factors

Code	Factors
BIV01	The management of IT investment agreements is evaluated
BIV02	End users are satisfied with the quality of the IT service
BIV03	IT projects do not often go over budget
BIV04	IT meets business expectations to create competitive advantages
BIV05	IT projects deliver what they promised
BIV06	The board provides well-articulated strategies for how IT-projects can prevent deliver failures.
BIV07	The board has a clear view on the major IT investments from a risk and return perspective
BIV08	IT investments formally are evaluated
BIV09	IT Investments helps the organization for product quality and diversification
BIV10	IT Investments restructuring Ethiopian Financial industry.

Table 3.4 IT Business Value Factors

Soft Value Factors

Goal	Factors
SV01	Competitive advantage which gets from IT investment evaluated
SV02	IT services are delivered on time and offers the quality expected
SV03	Management and support of IT systems is carried out by the staff with appropriate and adequate skill.
SV04	The workforce planning is improved to ensure maintenance of skilled staff.
SV05	The IT staff has access and is offered appropriate working tools to develop the needed skills.
SV06	Skilled IT resources are attracted to the organization successfully.
SV07	The board is aware of the latest developments in IT including human resource development.
SV08	Is user satisfaction assessed when evaluating IT investments?
SV09	Is client satisfaction assessed when evaluating IT investments?
SV10	Organizational learning and growth evaluated during IT investment evaluation?
SV11	The board is assured that suitable IT resources, infrastructures and skills to meet the required enterprise strategic objectives.

Table 3.5 Soft Value of IT Factors

For Qualitative data analysis, Qualitative Content Analysis technique was used. Qualitative Content Analysis involves a process designed to condense raw data into Categories or themes based on valid inference and interpretation (Hsieh and Shannon 2005). There are three approaches to qualitative content analysis, based on the degree of involvement of inductive reasoning. The first is Conventional Qualitative Content Analysis, in which coding categories are derived directly and inductively from the raw data. The second approach is Directed Content Analysis, in which initial coding starts with a theory or relevant research findings. The third approach is summative content analysis, which starts with the counting of words or manifest content, then extends the analysis to include latent meanings and themes (Zhang & Wildemuth 2009). This research has followed Directed Qualitative Content Analysis because the first approach used for the development grounded theory. There are constructs or concepts already derived from the literature review. The purpose of this research is to evaluate the derived constructs in the context of Financial Sector of Ethiopia and propose a Conceptual Model. The third one is simply based on word counting. This approach is highly dependent on respondents' language ability and it is prone to misinterpretation.

The final output of this research is proposing a Conceptual Model which enhances the optimal ROI in IT investment. The constructs of the proposed Conceptual Model are derived from the literature review and has been validated through empirical analysis of this study.

Factor analysis is used to analyze the collected data according to its construct and orderly simplification of a large number of inters correlated measures to a few representative constructs or factors (Robert, 2006). Factor analysis is based on the assumption that all variables are correlated to some degree. Therefore, those variables that share similar underlying dimensions should be highly correlated, and those variables that measure dissimilar dimensions should yield low correlations. The primary function of factor analysis is to identify these clusters of high inter correlations as independent factors. The principal components method is used for cluster factor extraction. These clustered factors are labeled by proper naming which represents the groups' concept.

3.6. Evaluation and validation

Validity is concerned with the extent that a scale accurately represents the construct of interest. Where possible this should be supported by past researches and consideration is given to the practical things that affect the research (Hair et al., 1998). For this study, about thirty five out of forty five factors are taken from ISACA (2003). Only 10 factors are taken from literature and adopted to collect the valid data which are used to meet our research objective. The data collected from interview have been validated in triangulation and the data from questionnaires have been validated with SPSS based on each sample organization.

The Conceptual Model is built and evaluated by taking some element from (Hevner et al 2004) guidelines for Design Science in Information Systems Research. The proposed Conceptual Model is validated by both business and IT Experts by delivering a half day presentation and constructive feedbacks was incorporated

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter deals with the analysis of data and presentation of results found. The data was collected from questionnaires and interview. Questionnaire respondents are employees from both IT and Business Professionals. Interview was conducted with IT top level managements. The chapter has separate sections for reliability test result of the questionnaire, data presentation and findings for each sample organization respectively, detail analysis discussion section each on each sample organization and aggregate analysis as financial sectors and summary of the findings .descriptive analysis has been done on Quantitative data collected through interview and qualitative analysis is presented as per constructs as support or against quantitative analysis for each sample organization.

4.1. Reliability Test Score of Questionnaire

The reliability test is conducted on final survey result. Reliability ranges lie from 0 to 1. It is preferred to have scales with reliability greater than 70. For this study all reliability test results are at accepted level.

Case Processing Summary - Reliability Statistics - CBE

		N	%	Cronbach's Alpha	N of Items
Cases	Valid	41	100.0	.944	45.000
	Excluded ^a	0	0.0		
	Total	40	100.0		

a. Listwise deletion based on all variables in the procedure.

Table 4.1 Reliability Statistics - CBE

Case Processing Summary - Reliability Statistics United Bank

		N	%	Cronbach's Alpha	N of Items
Cases	Valid	20	100.0	.896	45
	Excluded ^a	0	0.0		
	Total	20	100.0		

a. Listwise deletion based on all variables in the procedure.

Table 4.2 Reliability Statistics - United Bank

Case Processing Summary - Reliability Statistics - EIC

		N	%	Cronbach's Alpha	N of Items
Cases	Valid	20	100	.972	45.000
	Excluded ^a	0	0		
	Total	20	100		

a. Listwise deletion based on all variables in the procedure.

Table 4.3 Reliability Statistics - EIC

Case Processing Summary - Reliability Statistics - AIC

		N	%	Cronbach's Alpha	N of Items
Cases	Valid	20	100	.858	45.000
	Excluded ^a	0	0		
	Total	20	100		

a. Listwise deletion based on all variables in the procedure.

Table 4.4 Reliability Statistics - AIC

4.2. Findings from Commercial Bank of Ethiopia

4.2.1. Demographic distributions of respondents

The demographic variables used in this study are GENDER, AGE, EDUCATION, WORK EXPERIENCE and JOB POSITION of respondents. Based on the demographics and other personal background information obtained, the majority (85%) of the respondents were male. The highest number of respondents (65.0%) comprise of the age group of 31 to 40 years. Most of the respondents (70%) are Bachelor Degree holders and the rest (30%) are Masters Degree holders. Respondents with working experience of more than 10 years are 65% and those within the range of 1-5 years working experience are only 5% indicating very few turnover of employees of the CBE. Some of the factors for this very low turnover, as explained by the CIO, of the organization are, provision of relatively better benefits, introduction and exposure of up to date technology (Hardware and Software), and induction of employee satisfaction. Respondents from IT Professionals has the largest number (60%). In contrast to other organizations, CBE has more number of IT Professionals in managerial positions because of its large IT Resource. So 12.5% of respondent from CBE are IT Managers.

CBE - Respondents' Demographic Profile

		Frequency	Percent
GENDER	Female	6	15.0
	Male	34	85.0
	Total	40	100.0
AGE	25-30	7	17.5
	31-40	26	65.0
	40-50	1	2.5
	41-50	6	15.0
	Total	40	100.0
EDUCATION	BACHELER	28	70.0
	MASTERS	12	30.0
	Total	40	100.0
WORK EXPRIENCE	1-5	2	5.0
	5-10	12	30.0
	>10	26	65.0
	Total	40	100.0
JOB POSITION	IT PROFESSIONAL	24	60.0
	BUSINESS PROFESSIONAL	5	12.5
	IT MANAGER	10	25.0
	BUSINESS MANAGER	1	2.5
	Total	40	100.0

Table 4.5 CBE - Respondents' Demographic Profile

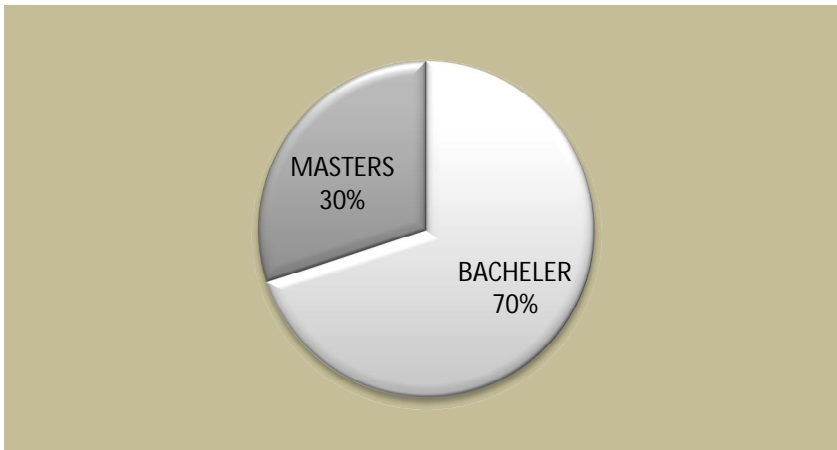


Figure 4.1 CBE - Respondents' Educational Background

4.2.2. IT Governance

IT Governance in CBE is assessed using questionnaires with thirteen factors and through interview. The Table below shows respondents' views on the IT Governance in CBE. On a

Likert's five point scale a value of 1 was assigned to 'Strongly agree', 2 'Agree', 3 'Neutral', 4 'Disagree', 5 'Strongly disagree'.

CBE - IT Governance Score Statistics

	ITG01	ITG02	ITG03	ITG04	ITG05	ITG06	ITG07	ITG08	ITG09	ITG10	ITG11	ITG12	ITG13
Valid	40	40	40	40	40	40	40	40	40	40	40	40	40
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	3.30	3.88	3.38	3.35	3.88	3.63	3.63	3.55	4.03	3.18	3.33	2.75	2.93
Median	3.50	4.00	4.00	3.50	4.00	4.00	4.00	4.00	4.00	3.00	3.00	3.00	3.00
Mode	4	4	4	4	4	4	4	4	4	3	3 ^a	2 ^a	3
Std. Deviation	1.285	.686	.952	.921	.686	.868	.838	.904	.620	1.010	.971	.899	1.118
Variance	1.651	.471	.907	.849	.471	.753	.702	.818	.384	1.020	.943	.808	1.251

a. Multiple modes exist. The smallest value is shown

Table 4.6 CBE - IT Governance Score Statistics

Table 4.6 illustrates data for factors affecting the IT governance in CBE. Factor ITG02, ITG05 and ITG09 (“*IT investment decisions aligned to business goals, CIO & Management consider value delivery from IT systems to be important and The board obtain regular progress reports on major projects*”) have the highest medians and mean values. Factor ITG09 (“*The board obtains regular progress reports on major projects*”) had relatively highest median and mean value with the lowest standard deviation and this indicates that the respondents have a consensus on this factor. Factor ITG01 (“*There is regular communication between the CIO, CFO and CEO*”) have the highest standard deviation which indicates that there is low consensus among all respondents, and Factors ITG12 and ITG13 (“*IT assets are being well-managed*” and “*The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks*”) had the least mode and mean value. This indicates that IT Assets are not managed properly and not getting proper independent assurance on IT Investment meeting its objective. Lack of proper mitigation of Risks related to this huge investment will severely affect CBE’s IT Governance. When we evaluate the mode of the factors nine out of thirteen score 4 which means “Agree” on the issue, the rest two factors score 3 which is “Neutral” on the issue and only one factors scores 2.

CIO of CBE responded on IT Governance related issues as follows,

“IT Governance has been dynamically changing after the BPR restructuring. After BPR restructuring, the Governance of IT turned from Director Level to Vice President Level, establishing Steering Committee and Process Counsel to follow up and oversee each IT projects. All strategic IT related decisions are made by both top level IT and Business executives. We have made some support to be decentralized at District Level whereas other major support teams have been done in centralized manner”

The result from the statistical data and interview on factors ITG12 and ITG13 indicates that CBE has a gap on these issues and it should address, IT Asset Management especially software management, mainly related to optimal usage of license and handling of service level agreements. As CIO of CBE mentioned that IT Governance related to risk and security issues:

“Previously IS Security and IS Audit were under IS CIO (Vice President) but Currently these sections are re-structured and IS Security is reporting to Chief Risk and Compliance and IS Audit reporting to Chief Audit. The reason of this restructuring, Pulling out this sections from IS process is to maintain Check and Balance”

4.2.3. Strategic Alignment

Strategic Alignment in CBE is assessed using questionnaires with eleven factors and through interview. The Table below shows respondents’ opinions on the Strategic Alignment of IT in CBE.

E – Strategic Alignment Score Statistics

	SA01	SA02	SA03	SA04	SA05	SA06	SA07	SA08	SA09	SA10	SA11
Valid	40	40	40	40	40	40	40	40	40	40	40
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	4.00	3.78	3.53	3.48	3.15	3.68	3.53	3.50	3.38	3.50	3.50
Median	4.00	4.00	4.00	4.00	3.00	4.00	3.00	4.00	4.00	4.00	4.00
Mode	4	4	4	4	3	4	3	4	4	4	4
Std. Deviation	.599	.832	.933	.751	.834	.730	.599	.816	.807	.987	1.013
Variance	.359	.692	.871	.563	.695	.533	.358	.667	.651	.974	1.026

Table 4.7 CBE - Strategic Alignment Score Statistics

Table 4.7 illustrates data for factors affecting the Strategic Alignment of IT. Factor SA01 (“*It is clear what IT is doing*”) has relatively highest mean, median and mode value with the lowest standard deviation of all factors indicating that the respondents have a consensus on this factor. SA02 (“*IT strategy plan aligned to business strategic plan*”) and SA06 (“*The enterprise and IT align their objectives*”) scores the next highest mean and median and moderate standard deviation. Except SA11 factor all other factors’ mean and Standard Deviation lie between 3.15 and 3.53 and 0.563 and 0.974 which indicates that the respondents’ response variance is moderate. SA11 (“*The organization current IT Investment guaranteed to succeed its mission*”) factor scores a relatively a highest Standard Deviation which manifest the respondents response on this issue scattered. The other indicator is mode of all factors except SA05 and SA07 (“*The organization current IT Investment guaranteed to succeed its mission*” and “*IT is a regular item on the agenda of the board and is addressed in a structured manner*”) is 3. this shows that most of the respondents are neutral on these issues. Against on the above data result the response of the CIO about how IT has getting proper attention on the organization as follows:

“IT and Human Resource Development have big emphasis on regular meeting. Steering Committees of IT Projects has leading by President and Vice President of the Bank and Process Counsel had leading by Board chair Person. However there is no post implementation assessment either separately or portfolio level on IT projects based on strategic objectives”

The result which has got from statistical data and interview indicates that CBE’s Strategic Alignment on IT to Business is relatively in good status. But it seems there is a communication gap between senior staff and top level management. This gap should be filled to get and materialize optimal benefit from IT Investment.

4.2.4. IT Business Value

The value of IT added to the business in CBE is assessed using questionnaires with ten factors and through interview. The Table below shows respondents’ views on the IT Business Value in CBE.

	BIV01	BIV02	BIV03	BIV04	BIV05	BIV06	BIV07	BIV08	BIV09	BIV10
Valid	40	40	40	40	40	40	40	40	40	40
Missing	0	0	0	0	0	0	0	0	0	0
Mean	3.13	3.15	2.33	3.68	3.48	3.15	3.38	3.20	3.88	3.65
Median	3.00	3.00	2.00	4.00	4.00	3.00	3.00	3.00	4.00	4.00
Mode	3	3	2	4	4	3	3	3	4	4
Std. Deviation	.723	.834	.888	.829	.960	.662	.740	.608	.686	.949
Variance	.522	.695	.789	.687	.922	.438	.548	.369	.471	.900

Table 4.8 CBE – IT Business value Score Statistics

Table 4.8 illustrates data for factors affecting IT Business Value in CBE. Factor BIV02 (“*IT projects do not often go over budget and time*”) had the least mean, median and mode value and this indicates that IT projects in CBE often face budget and time over run. The response of the CIO of CBE also agree on IT Business value related questions, she was agree on the survey respondent response specifically on IT projects budget as follows:

“Our IT Projects most of the time have time overrun but not cost overrun because we had signed a project contract agreement with fixed Cost but additional to this IS as a process and Project office share resources like staff and material. So it is difficult to separately compute the exact indirect cost of IT Projects”

But the project might not have a fixed cost overrun but there is always the indirect (overhead cost) incurred because of time overrun of projects. The respondents clearly disagree on this issue (“*IT projects do not often go over budget and time*”).

Unlike the previous two constructs (IT Governance and Strategic Alignment), IT Business Value factors have not scored 4 mean. BIV09 (“*IT Investments helps the organization for product quality and diversification*”) had the highest median and the least Standard Deviation. This indicates that the score of the median 3.88 is not much but the score of Standard Deviation is very low. This confirms that among the respondent, the value of IT on Product Quality and Diversification had consensus. On the interview session when the CIO addressed this issue:

“It is clearly seen our IT Investment has a major role on product diversity and product quality. Like Mobile Banking, Internet Banking, ATM, POS and Agent Banking are the product of this

IT investment. Regarding Service Quality, after the accomplishment of our projects (Card Banking, Infrastructure, Core Banking) our service is dynamically changing but on the other hand network connection interruption is our strong challenge and refrain our service to flourish. We are dealing the issue with Ethio telecom as a Business Partner”.

The next higher score of mean is BIV04 (“*IT meets business expectations to create competitive advantages*”) which is 3.68 with 0.687 Standard Deviation, which is moderate variation on the factor. This also indicates the role of IT investment on creation of competitive advantage clearly observed. Factor BIV10 (“*IT Investments restructuring Ethiopian Financial industry*”) scores 3.65 with 0.900 which is a moderate variation.

On IT Investments restructuring Ethiopian Financial Industry the CIO conforms as follows:

“We need banking service but not necessarily Banks especially for Customer Transactions Service (Deposit, withdrawals, Money Transfer, statement generation and the like). Which indicate that in the future because of the technology other business can deliver these services efficiently. The other thing is self service like ATM, POS Mobile and Internet banking will be the main channel to deliver banking service.”

Regards service accessibility through product diversification and quality of service, CIO said that:

” Starting from the last five years, CBE is pitting a big effort in branch expansion to increase its branch network and make its service accessible. For the future the strategy will change especially in the area where telecom service reaches, branch expansion will continues but in decreasing rate. We will concentrate to make our service accessible using technology (ATM, POS, Mobile and Internet banking, etc.). In card Banking we are being certified on Visa servicing and all the security issues has been addressed after the accomplishing of our Security enhancement Project in line with INSA”

The rest factors mean is around 3 and the respondents refrain to stand on the side of “Agree” or ‘Disagree” most of the respondents are “Neutral”.

4.2.5. *Soft Value of IT*

The Soft Value of IT added to the business in CBE is evaluated using questionnaires with eleven factors and through interview. The Table below shows respondents' views on the Soft Value of IT in CBE.

	SV01	SV02	SV03	SV04	SV05	SV06	SV07	SV08	SV09	SV10	SV11
Valid	40	40	40	40	40	40	40	40	40	40	40
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.33	3.23	3.50	3.28	3.20	3.23	3.53	3.10	3.00	3.20	3.50
Median	3.00	3.00	4.00	3.00	3.00	3.00	4.00	3.00	3.00	3.00	3.50
Mode	4	4	4	3	4	3	4	3	3	3	3
Std. Deviation	.888	.862	.751	.784	.939	.862	.751	.810	.816	.758	.784
Variance	.789	.743	.564	.615	.882	.743	.563	.656	.667	.574	.615
Sum	133	129	140	131	128	129	141	124	120	128	140

Table 4.9 CBE –Soft Value of IT Score Statistics

Table 4.9 illustrates that only two factor of Soft Value of IT, SV03and SV07 (“*Management and support of IT systems is carried out by the staff with appropriate and adequate skill*” and “*The board is aware of the latest developments in IT including human resource development*”), have scored 4 median with low Standard Deviation. These score indicates that, there is consensus among respondent on IT equipped with adequate and skilled staff and CBE’s board is giving an emphasis on human resource with regards to IT Development. SV11 (“*The board is assured IT resources, infrastructures and skills are available (including external resourcing) to meet the required enterprise strategic objectives.*”) factors has scored 3.5 median with relative low Standard Deviation. Even if the result is a little bit above from “Neutral” and not enough to conclude as best result, it is a good indicator that CBE’s IT investment has a positive impact on IT Human resource. On the other factors, SV01 (Competitive advantage), SV02 (Service Quality), SV08 (User Satisfaction), SV09 (Customer Satisfaction), SV10 (organizational level Learning and Growth), respondent are not certain to “Agree” or “Disagree”. Most of them are “Neutral” on these issues. But at interview session, CIO of the CBE confirmed that:

“After the accomplishment of three huge IT Projects (Infrastructure, Core Banking and Card Banking), CBE has been changing dynamically. Currently more than 800 branches are online with the benefit of CBE’s Core Banking System and this improves

service quality and user satisfaction and five Competitive advantages for CBE. The last survey which conducted by CBE's Business Development process, Customer Satisfaction reaches 80% which is a good achievement but we have planning to improve this satisfaction rate to above 95% ”

Related to Organizational Learning and Growth, the CIO admits that

“We didn't go through in realization of Organizational Learning and Growth but we have planned aggressively to go on Knowledge sharing and there is ongoing project entitled “Talent Management” application to promote and realize organizational Level Learning and Growth”

4.3. Findings from Ethiopian Insurance Corporation

4.3.1. Demographic distributions of respondents

As Table 4.10 shows that the demographic variables used in this study are GENDER, AGE, EDUCATION, WORK EXPERIENCE and JOB POSITION of respondents. Based on the demographics and other personal background information obtained, a majority of the respondents were male (65%). The highest number of respondents comprise of the age group of 25-30 (55.0%) and relatively young staff. Most of the respondents are Bachelor Degree holders (85%) and the rest are Masters Degree holders. Working experience of 1-5 years (55%) and this indicates that there is very high employees' turnover. Job Position of respondent IT Professionals has the largest number (75%) and one IT manager in contrast to CBE EIC has relatively small number of IT staff and managerial positions. Because of this, only 5% (only one person) of the respondents is IT Manager.

EIC - Respondents' Demographic Profile

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
<i>GENDER</i>	<i>F</i>	7	35.0	35.0	35.0
	<i>M</i>	13	65.0	65.0	100.0
	<i>Total</i>	20	100.0	100.0	
<i>AGE</i>	<i>>50</i>	1	5.0	5.0	5.0
	<i>25-30</i>	11	55.0	55.0	60.0
	<i>31-40</i>	7	35.0	35.0	95.0
	<i>41-50</i>	1	5.0	5.0	100.0
	<i>Total</i>	20	100.0	100.0	
<i>EDUCATION</i>	<i>BACHELER</i>	17	85.0	85.0	85.0
	<i>MASTERS</i>	3	15.0	15.0	100.0
	<i>Total</i>	20	100.0	100.0	
<i>WORK EXPERIENCE</i>	<i>>10</i>	5	25.0	25.0	25.0
	<i>1-5</i>	11	55.0	55.0	80.0
	<i>5-10</i>	4	20.0	20.0	100.0
	<i>Total</i>	20	100.0	100.0	
<i>JOB POSITION</i>	<i>BUSINESS PROFESSIONAL</i>	4	20.0	20.0	20.0
	<i>IT MANAGER</i>	1	5.0	5.0	25.0
	<i>IT PROFESSIONAL</i>	15	75.0	75.0	100.0
	<i>Total</i>	20	100.0	100.0	

Table 4.10 EIC - Respondents' Demographic Profile

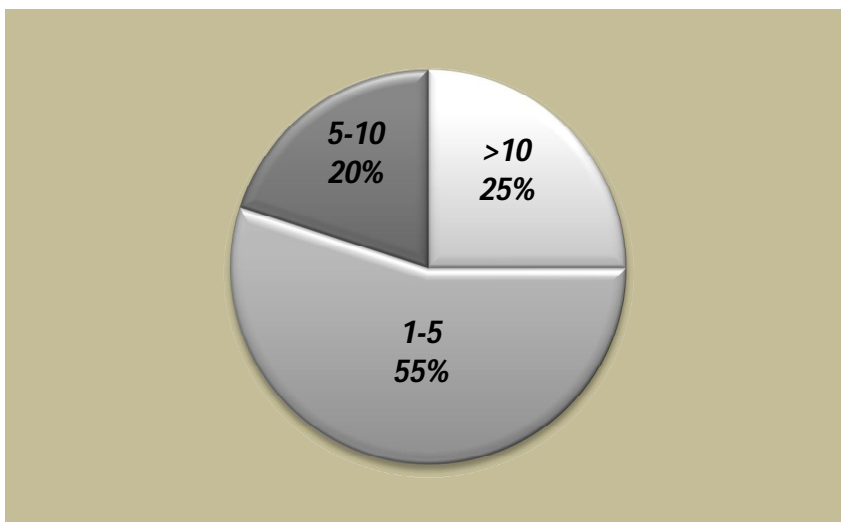


Figure 4.2 EIC - Respondents' Educational Background

4.3.2. IT Governance

IT Governance in EIC is assessed using questionnaires with thirteen factors and through interview.

EIC - IT Governance Score Statistics

	ITG01	ITG02	ITG03	ITG04	ITG05	ITG06	ITG07	ITG08	ITG09	ITG10	ITG11	ITG12	ITG13
Valid	20	20	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	3.60	3.90	3.55	3.50	3.70	3.00	3.45	3.40	3.35	3.65	3.25	3.45	2.80
Median	4.00	4.00	4.00	4.00	4.00	3.00	3.00	3.00	3.00	4.00	3.00	4.00	3.00
Mode	4	4	4	4	4	3	3	3	3	4	4	4	3
Std. Deviation	1.142	1.021	1.234	.889	.923	.973	1.050	.821	.875	.745	.910	.887	1.056
Variance	1.305	1.042	1.524	.789	.853	.947	1.103	.674	.766	.555	.829	.787	1.116

Table 4.11 EIC - IT Governance Score Statistics

Table 4.11 illustrates data for factors affecting the IT governance. Five factors ITG01, ITG02, ITG03, ITG05 and ITG10 (*"There is regular communication between the CIO, CFO and CEO", "IT investment decisions aligned to business goals", "IT staffed adequately with right skills and competencies", "CIO & Management consider value delivery from IT systems to be important" and "Organization takes a regular inventory of its IT resources"*) has scored above 3.5 mean and 4 median. Only ITG10 had low Standard Deviation which indicates most of the respondent had same stand on the issue. On the other hand the rest four factors had relatively high Standard Deviation which indicates wide range of opinions among respondents. ITG02 (*"IT investment decisions aligned to business goals"*) had relatively the highest mean 3.9 and 4 median but its Standard Deviation is relatively high. This implies that the respondents have not a consensus on the issue. Factor ITG03 (*"IT staffed adequately with right skills and competencies"*) has scored highest standard deviation which indicates that the consensus among the experts regarding this factor was the lowest compare to the rest factors. Factors ITG13 (*"The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks"*) had the least mean value with high Standard Deviation which implies most of respondent believe the achievement of IT objective is not getting independent assurance.

From organizational structure the placement of IT Management is still at middle level i.e. Director - Information Technology with relatively few junior staffs. This is a major challenge on the Governance of IT in EIC. From the interview with Manager - Application Management on IT Governance issues specifically on the placement of IT in the organizational structure and its impact:

“The top level management considers IT as incurring a large cost to the organization but not as potential investment. The placement of IT has an impact on how management is seeing IT and it should be drag up to Top management level. “

The mean in most of the factors is between 3 and 4 (between Neutral and Agree) this score represents a high uncertainty of the respondent the main reason for this is 55% of the respondents are relatively junior staff and the Governance of IT is new for them.

4.3.3. Strategic Alignment

Strategic Alignment in EIC is assessed using questionnaires with eleven factors and through interview. The Table below shows respondents’ views on the Strategic Alignment of IT in EIC.

EIC – Strategic Alignment Score Statistics

	SA01	SA02	SA03	SA04	SA05	SA06	SA07	SA08	SA09	SA10	SA11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.60	3.50	3.00	3.30	3.20	3.40	3.20	3.10	3.25	3.35	3.35
Median	4.00	4.00	3.00	3.50	3.50	3.50	3.00	3.00	3.00	3.50	3.50
Mode	4	4	3	4	4	4	3	3	3	4	4
Std. Deviation	1.142	1.100	.973	.801	1.152	.940	.523	.788	.639	.875	.988
Variance	1.305	1.211	.947	.642	1.326	.884	.274	.621	.408	.766	.976

Table 4.12 EIC - Strategic Alignment Score Statistics

Table 4.12 illustrates data for factors affecting the Strategic Alignment of IT. 3.6 is the largest mean scored on Strategic Alignment of IT in EIC. This indicates that the overall alignment is not good. From the interview on Strategic Alignment of IT, Manager– Application Management said explains that:

“Cost incurred for IT is considering for short term financial benefit not for long term Strategy Alignment. This should change because IT Investment should be tied with corporate strategy and the return also evaluate in as long term. But in our company, IT Projects primary objective mainly relates to efficiency or cost minimization not tied to corporate strategic objective.

.”

Factor SA01 (“It is clear what IT is doing”) has relatively highest median (3.6), mode and mean value among all factors but with the relatively highest Standard Deviation and this indicates that even if the mean favors this issue, the respondents have low consensus on this factor. SA02 (“IT strategy plan aligned to business strategic plan”) scores the next highest mean and median and high standard deviation. All other factors’ mean is under 3.5 and EIC IT strategic alignment is in question.

4.3.4. IT Business Value

The value of IT added to the business in EIC is assessed using questionnaires with ten factors and through interview. The Table below shows respondents’ views on the IT Business Value in EIC.

Statistics

	BIV01	BIV02	BIV03	BIV04	BIV05	BIV06	BIV07	BIV08	BIV09	BIV10
Valid	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0
Mean	3.30	2.85	3.10	3.25	3.25	2.95	3.35	3.70	3.60	3.90
Median	3.50	3.00	3.00	3.50	3.00	3.00	3.00	4.00	4.00	4.00
Mode	4	3	3	4	3	3	3	4	4	4
Std. Deviation	.865	1.040	.788	.851	.851	.887	.875	.865	1.095	.912
Variance	.747	1.082	.621	.724	.724	.787	.766	.747	1.200	.832

Table 4.13 EIC – IT Business Value Score Statistics

Table 4.13 illustrates data for factors affecting IT Business Value in EIC. Factor BIV8 (“IT investments formally are evaluated”) has scored highest mean, median and mode with moderate Standard Deviation which implies respondents agreed the role of IT on restructuring Ethiopian Financial. Factor BIV09 and BIV10 (“IT Investments help the organization for product quality and diversification” and “IT Investments restructuring Ethiopian Financial

industry ") respectively, also have scored high mean but BIV09 had the highest Standard Deviation among all factors which indicate low consensus about the impact of IT Investment on EIC's product quality and diversification. Factor BIV02 and BIV06 ("End users are satisfied with the quality of the IT service" and "The board provides well articulated strategies for how IT-projects can prevent deliver failures.") had the least mean, median and mode among all factors.

The interviewee also confirms that about how to measure the value of IT projects in Business

"IT projects evaluated at project execution time performance completion from the total percentage and after completion in terms of cost and time reduction of business process. The value of IT projects not evaluated according to long term strategic objective achievement".

It is not a good metrics to evaluate for IT Projects. The suitable metric should be based on the value added to the business like service excellence, customer and employee satisfaction, availability of diverse product after the end of the projects.

The Application Management – Manager states about major obstacle which affect the value of IT on Business:

"Even if we have 35 online branches, we face network problem mostly on outline (region) branches. This manly affects the value of IT on Business. There must be another way out for business continuity"

4.3.5. Soft Value of IT

The Soft Value of IT added to the business in EIC is evaluated using questionnaires with eleven factors and through interview. The Table 4.14 below shows respondents' views on the Soft Value of IT in EIC.

Statistics

	SV01	SV02	SV03	SV04	SV05	SV06	SV07	SV08	SV09	SV10	SV11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.20	2.85	3.15	2.85	3.20	3.00	3.15	3.30	3.05	3.00	3.20
Median	3.00	3.00	3.00	3.00	3.50	3.00	3.00	3.00	3.00	3.00	3.00
Mode	3	2	3	3	4	2 ^a	4	3	3	2 ^a	3
Std. Deviation	.951	1.137	.875	.813	1.105	.918	1.040	.865	.887	.858	.834
Variance	.905	1.292	.766	.661	1.221	.842	1.082	.747	.787	.737	.695

a. Multiple modes exist. The smallest value is shown

Table 4.14 EIC – Soft Value of IT Score Statistics

No factor on Soft Value of IT had more than 3.5 mean which favor to “Agree”. Both factor SV02 and SV04 (*"The workforce planning is improved to ensure maintenance of skilled staff"* and *"The workforce planning is improved to ensure maintenance of skilled staff"*) had 2.85 mean. Factor SV02 had the highest Standard Deviation which tells big score variance between respondents. In contrast factor SV04 had the least variance among all factors which tells consensus in issue between respondent. All the rest factors’ mean is between 3.2 and 3 which show that, the respondent can’t observe the factors’ impact either negatively or positively.

4.4. Findings from Awash Insurance Company

4.4.1. Demographic distributions of respondents

The demographic variables used in this study are GENDER, AGE, EDUCATION, WORK EXPERIENCE and JOB POSITION of respondents. Based on the demographics and other personal background information obtained, a majority of the respondents were male (90%). The highest number of respondents comprise of the age group of 25-30 (60%) and relatively young staff. Most of the respondents are Bachelor Degree holders (95%) and the rest are DEPLOMA holders. Working experience of 1-5 years (40%) and 5-10 (35%) this indicates that there is very moderate employees’ turnover. Job Position of respondent IT Professionals has a largest number (60%) and AIC has relatively small number of IT staff and managerial positions. Because of this, only 5% (only one) of respondent is IT Managers. The rest of the respondents are business Professional and Business Managers

AIC - Respondents' Demographic Profile

		<i>Frequenc y</i>	<i>Percen t</i>	<i>Valid Percen t</i>	<i>Cumulativ e Percent</i>
GENDER	<i>F</i>	2	10.0	10.0	10.0
	<i>M</i>	18	90.0	90.0	100.0
	<i>Total</i>	20	100.0	100.0	
AGE	<i>25-30</i>	12	60.0	60.0	60.0
	<i>31-40</i>	5	25.0	25.0	85.0
	<i>41-50</i>	3	15.0	15.0	100.0
	<i>Total</i>	20	100.0	100.0	
EDUCATION	<i>BACHELER</i>	19	95.0	95.0	95.0
	<i>DIPLOMA</i>	1	5.0	5.0	100.0
	<i>Total</i>	20	100.0	100.0	
WORK EXPIRIENCE	<i>>10</i>	5	25.0	25.0	25.0
	<i>1-5</i>	8	40.0	40.0	65.0
	<i>5-10</i>	7	35.0	35.0	100.0
	<i>Total</i>	20	100.0	100.0	
JOB POSITION	<i>BUSINESS MANAGER</i>	2	10.0	10.0	10.0
	<i>BUSINESS PROFESSIONAL</i>	5	25.0	25.0	35.0
	<i>IT MANAGER</i>	1	5.0	5.0	40.0
	<i>IT PROFESSIONAL</i>	12	60.0	60.0	100.0
	<i>Total</i>	20	100.0	100.0	

Table 4.15 AIC - Respondents' Demographic Profile

4.4.2. IT Governance

IT Governance in AIC is assessed using questionnaires with thirteen factors and through interview. The mean in most of the factors is between 3 and 4 (between Neutral and Agree)

AIC - IT Governance Score Statistics

	ITG01	ITG02	ITG03	ITG04	ITG05	ITG06	ITG07	ITG08	ITG09	ITG10	ITG11	ITG12	ITG13
Valid	20	20	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	3.70	4.25	3.80	3.45	3.80	3.00	4.00	3.65	3.75	3.60	2.95	2.85	2.35
Median	3.50	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	3.50	3.00	3.00	2.00
Mode	3	4	4	4	4	3	4	4	4	3	3	3	2
Std. Deviation	.923	.639	.834	.686	.523	1.076	.795	.875	.786	.821	.759	.671	.489
Variance	.853	.408	.695	.471	.274	1.158	.632	.766	.618	.674	.576	.450	.239

Table 4.16 AIC - IT Governance Score Statistics

Table 4.16 illustrates data for factors affecting the IT governance. Among all factors ITG02 and ITG07 (*“IT investment decisions aligned to business goals”* and *“Current IT investments are high quality, comprehensive and safe to deliver the intended goal”*) had the highest mean and median with relatively low and moderate Standard Deviation. This implies that there is a common agreement in AIC on IT investments aligned with business goal and capable of achieving the intended goal.

The interview session also support this result. MIS Manager of AIC states that

“There is a consensus among AIC Top Management IT should align with the company’s strategic Objective and working towards that”

The next high score mean and median belongs to ITG01, ITG03, ITG05, ITG08, ITG09 and ITG10 (*“There is regular communication between the CIO, CFO and CEO”, “IT staffed adequately with right skills and competencies”, “CIO & Management consider value delivery from IT systems to be important”, “IT projects have a clear budget and timeline”*, *“The board obtain regular progress reports on major projects”* and *“,“Organization takes a regular inventory of its IT resources”*). About their Standard Deviation, ITG05 had low score and shows that there is consensus among respondent. ITG01, ITG03, ITG08, ITG09 and ITG10 relatively high Standard Deviation and this indicates lack of common stand towards the issues between respondents. ITG11, ITG12 and ITG13 (*“Sufficient IT resources and infrastructure are available to meet required enterprise”, “IT assets are being well-managed”* and *“The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks ”*) had the least mean value with relatively low Standard Deviation which implies most of respondent believe these issues not addressed in AIC.

Regarding AIC organizational Structure, from the interview made with MIS Manager:

“Before 3 years back there was no IT department at all. MIS department became to picture after the implementation of General Insurance Information System (GIIS). With this 3 years we are doing well and IT structured centralized fashion”

Currently the placement of IT department is under Vice President Resource Management. But when we see irreplaceable role of IT on the operation, this might be a major obstacle IT Governance for AIC.

4.4.3. Strategic Alignment

Strategic Alignment in AIC is assessed using questionnaires with eleven factors and through interview. The Table below shows respondents' views on the Strategic Alignment of IT in AIC.

AIC - Strategic Alignment Score Statistics

	SA01	SA02	SA03	SA04	SA05	SA06	SA07	SA08	SA09	SA10	SA11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.65	3.85	2.95	3.45	3.30	3.60	3.50	3.65	3.15	3.35	3.85
Median	4.00	4.00	3.00	3.00	3.00	4.00	3.00	4.00	3.00	3.00	4.00
Mode	4	4	4	3	3 ^a	4	3	4	3	3	4
Std. Deviation	.933	.813	.999	.826	1.031	.754	.889	.875	.813	1.089	1.040
Variance	.871	.661	.997	.682	1.063	.568	.789	.766	.661	1.187	1.082

a. Multiple modes exist. The smallest value is shown

Table 4.17 AIC - Strategic Alignment Score Statistics

Table 4.17 illustrates data for factors affecting the Strategic Alignment of IT. Factor SA02 and SA11 ("IT strategy plan aligned to business strategic plan" and "The organization current IT Investment guaranteed to succeed its mission") has relatively highest median, mode and mean value among all factors but SA11 has the highest Standard Deviation and this indicate that even if the mean favors this issue, the respondent have low consensus on this factor. SA01, SA06, SA07 and SA08 ("It is clear what IT is doing", "The enterprise and IT align their objectives", "The board articulates and communicates the business direction to which IT should be aligned" and "IT is a regular item on the agenda of the board and is addressed in a structured manner") scores the next highest mean and median and moderate standard deviation. All other factors' mean is under 3.5. The overall pictures of this data show that ,even if the IT department in AIC is young, AIC IT strategic alignment to business not on bad condition but should be improved because no single factor had above 4 mean. The placement of IT in the organizational structure should be at higher level. As the result, IT as a department will be involved on the development of AIC strategic plan and helps to develop best of IT strategic alignment with corporate strategy.

4.4.4. IT Business Value

The value of IT added to the business in AIC is assessed using questionnaires with ten factors and through interview. The Table below shows respondents' views on the IT Business Value in AIC

AIC - IT Business Value Score Statistics

	BIV01	BIV02	BIV03	BIV04	BIV05	BIV06	BIV07	BIV08	BIV09	BIV10
Valid	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0
Mean	3.50	3.35	3.25	3.80	3.70	3.30	3.50	3.65	4.00	3.85
Median	4.00	3.00	3.00	4.00	4.00	3.00	3.50	4.00	4.00	4.00
Mode	4	3	3	4	4	3	3 ^a	4	4	4
Std. Deviation	.889	.587	.851	.616	.801	.657	.688	.875	.649	.813
Variance	.789	.345	.724	.379	.642	.432	.474	.766	.421	.661

a. Multiple modes exist. The smallest value is shown

Table 4.18 AIC - IT Business Value Score Statistics

Table 4.17 illustrates data for factors affecting IT Business Value in AIC. Factor BIV04, BIV09 and BIV10 ("IT meets business expectations to create competitive advantages", "IT Investments helps the organization for product quality and diversification" and "IT Investments restructuring Ethiopian Financial industry") had higher mean, median and mode. When we see the distribution of the score from the mean, Standard Deviation, BIV04 and BIV09 had the least score which indicates the row score not much far from the mean but BIV10 had relatively high Standard Deviation. BIV05 and BIV08 ("IT projects deliver what they promised" and "IT investments formally are evaluated") had high mean and median with moderate Standard Deviation which implies the respondents' opinion on the factor are not much varied.

Supporting this Statistical analysis result, MIS Manager has responded on IT Business value on AIC as follows:

"After the implementation of General GIIS, the company dramatically changed especially on product and service quality, customer satisfaction (from regular Customer visit), high quality decision because of timely information availability using dashboard for all management on their table. This make AIC is became a market leader on Private insurance of Ethiopia. The

other new challenge is telecom service interruption. We are trying E-video as a way out but not enough to continue the business smoothly”

4.4.5. *Soft Value of IT*

The Soft Value of IT added to the business in EIC is evaluated using questionnaires with eleven factors and through interview. The Table below shows respondents’ views on the Soft Value of IT in EIC.

Statistics

	SV01	SV02	SV03	SV04	SV05	SV06	SV07	SV08	SV09	SV10	SV11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.55	3.45	3.70	3.60	3.60	3.75	3.60	3.15	3.05	3.10	3.75
Median	4.00	4.00	4.00	4.00	4.00	4.00	3.00	3.00	3.00	3.00	4.00
Mode	4	4	4	4	4	4	3	4	3 ^a	3	4
Std. Deviation	.759	.826	.657	.754	.995	.851	.883	.933	.826	.641	.716
Variance	.576	.682	.432	.568	.989	.724	.779	.871	.682	.411	.513

a. Multiple modes exist. The smallest value is shown

Table 4.19 AIC – Soft Value of IT Score Statistics

SV03, SV06 and SV11 (*“Management and support of IT systems is carried out by staff with appropriate and adequate skill”, “Skilled IT resources are attracted to the organization successfully” and The board is assured that suitable IT resources, “Infrastructures and skills to meet the required enterprise strategic objectives”*) had relatively higher score of mean and median. SV03 & SV11 had relatively low moderate Standard Deviation which reflects normal distribution among row score. Even if it is not satisfactory SV01, SV04, SV05 and SV07 had the next high mean and median with moderate Standard Deviation. Overall result shows, the mean of the single factor not above 4 which indicates Soft value of IT in AIC is not at a satisfactory level and because of the absence of exaggerated Standard Deviation most of the respondent’s response agree with this conclusion.

From the interview, AIC is highly dependent on vender. Technical problem related to application is getting a solution only from vender. There is no knowledge sharing on this area. As the result poor Organizational Learning and Growth is observed. AIC should give a proper emphasis on this area. Having skilled employees is a best infrastructure for a company’s future optimal ROI on IT.

4.5. Findings from United Bank Share Company

4.5.1. Demographic distributions of respondents

The demographic variables used in this study are GENDER, AGE, EDUCATION, WORK EXPERIENCE and JOB POSITION of respondents. Based on the demographics and other personal background information obtained, a majority of the respondents were male (80%). The highest number of respondents comprise of the age group of 25-30 (55%) and relatively young staff. Most of the respondents are Bachelor Degree holders (80%) and the rest are MASTERS holders. Working experience of 5-10 years (55%) and >10 (30%) this indicates that there is very low employees' turnover. Job Position of respondent IT Professionals has a largest number (75%) and One IT MANAGER (5%). The rest of the respondents are business Professional and Business Managers

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
GENDER	<i>F</i>	4	20.0	20.0	20.0
	<i>M</i>	16	80.0	80.0	100.0
	Total	20	100.0	100.0	
AGE	25-30	11	55.0	55.0	55.0
	31-40	5	25.0	25.0	80.0
	41-50	4	20.0	20.0	100.0
	Total	20	100.0	100.0	
EDUCATION	BACHELER	16	80.0	80.0	80.0
	MASTERS	4	20.0	20.0	100.0
	Total	20	100.0	100.0	
WORK EXPERIENCE	>10	6	30.0	30.0	30.0
	1-5	3	15.0	15.0	45.0
	5-10	11	55.0	55.0	100.0
	Total	20	100.0	100.0	
JOB POSITION	BUSINESS MANAGER	1	5.0	5.0	5.0
	BUSINESS PROFESSIONAL	3	15.0	15.0	20.0
	IT MANAGER	1	5.0	5.0	25.0
	IT PROFESSIONAL	15	75.0	75.0	100.0
	Total	20	100.0	100.0	

Table 4.20 United Bank - Respondents' Demographic Profile

4.5.2. IT governance

IT Governance is assessed using questionnaires with thirteen factors and through interview. Unlike other sample organizations, has got relatively high score of mean, median and mode with no exaggerated Standard Deviation except factor ITG11.

Statistics

	ITG01	ITG02	ITG03	ITG04	ITG05	ITG06	ITG07	ITG08	ITG09	ITG10	ITG11	ITG12	ITG13
Valid	20	20	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	3.70	4.35	3.95	3.50	4.05	3.35		3.65	3.95	3.75	3.85	3.80	3.25
Median	4.00	4.00	4.00	3.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00
Mode	3	4	4	3	4	3	4 ^a	4	4	4	4	4	3
Std. Deviation	.865	.587	.945	.761	.510	.875	.968	.988	.887	.786	1.089	.768	.716
Variance	.747	.345	.892	.579	.261	.766	.937	.976	.787	.618	1.187	.589	.513

a. Multiple modes exist. The smallest value is shown

Table 4.21 United Bank –IT Governance Score Statistics

Table 4.21 illustrates data for factors affecting the IT governance. ITG02, ITG03, ITG05, ITG07 and ITG09 (*"IT investment decisions aligned to business goals", "IT staffed adequately with right skills and competencies", "CIO & Management consider value delivery from IT systems to be important", "Current IT investments are high quality, comprehensive and safe to deliver the intended goal" and "The board obtain regular progress reports on major projects"*) had the highest mean (3.95 - 4.35) and median. Standard Deviation of factor ITG02 and, ITG05 with relatively low which indicates respondent agreement on the issues. Factors ITG03, ITG07 and ITG09 have moderate Standard Deviation which shows not much disagreement on the issues. ITG01, ITG04, ITG08, ITG10, ITG11 and ITG12 (*"There is regular communication between the CIO, CFO and CEO ", "CIO defines and communicates the role of IT to the rest of the organization", "IT projects have a clear budget and timeline", "Organization takes a regular inventory of its IT resources", "Sufficient IT resources and infrastructure are available to meet required enterprise" and "IT assets are being well-managed."*) factors had relatively high mean from the rest of the factors. The Standard Deviation of these six factors except ITG11 is moderate which implies no exaggerated

variance among the response of the respondent. Whereas factor ITG11 had relatively highest Standard Deviation which indicates that, there is a considerable variance among the respondent response. ITG06 and ITG13 (" *The organization have an IT steering committee*" and "*The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks* ") had the least mean with moderate Standard Deviation which indicates that it has not yet addressed these issues.

From interview response Chief Information Security Officer on IT Governance:

“The role of IT has been recognized starting from the bank establishment and that is why 8 years back the company implemented and using Core Banking System called FLEXCUBE Version 7.1. The United Bank is pioneer for using Core Banking Application from private sector and it had given it a competitive advantage. IT is lead by Vice President. In addition to that, the Bank is adopting Best practice to enhance Governance of IT by establishing IT Security and Risk committee, Service Status Enterprise Architecture Committee, IT string Committee and IT Project and Portfolio management Committee. Any decisions related to IT has been done centrally”

From both survey and questionnaire we can conclude that the Governance of IT is at its best position and it will promise sustainable excellence for the Bank

4.5.3. Strategic Alignment

Strategic Alignment in United Bank is assessed using questionnaires with eleven factors and through interview. The Table below shows respondents’ views on the Strategic Alignment of IT in.

Statistics

	SA01	SA02	SA03	SA04	SA05	SA06	SA07	SA08	SA09	SA10	SA11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean		3.80	3.85	3.75	3.55	3.80	3.60	3.20	3.50	4.30	4.30
Median	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	3.00	4.00	4.00
Mode	4	4	4	4	4	4	4	3	3	5	4
Std. Deviation	.641	.894	.489	.444	.887	.834	.821	.894	.761	.733	.657
Variance	.411	.800	.239	.197	.787	.695	.674	.800	.579	.537	.432

Table 4.22 United Bank –Strategic Alignment Score Statistics

Table 4.22 illustrates data for factors affecting the Strategic Alignment of IT. Factor SA01, SA10 and SA11 (*" It is clear what IT is doing", "IT is Playing a major role in Strategic Business Planning" , "The organization's current IT Investment guaranteed to succeeds its mission"*) has highest mean, median and mode value among all factors but with least Standard Deviation and this indicates that the respondents have consensus on these factor. Factors SA10 (*IT is playing a major role in Strategic Business Planning"*) mode is 5 which indicates that considerable number of the respondent strongly agree on the issue. SA02, SA03, SA04 and SA06 (*"IT strategy plan aligned to business strategic plan", " IT projects deliver what they promised", " IT core competencies are maintained at a level to meet required enterprise strategic objectives" and "The enterprise and IT align their objectives")* scores the next higher value of mean and median. Factors SA03 and SA04 had the least Standard Deviation but SA02 and SA06 had moderate value of Standard Deviation. The interviewee state that:

"The ultimate goal of United Bank on IT Investment not only explores and uses the state of the art technologies rather strive to realize the best customer satisfaction which is stated in its Mission statement"

Related to security issues, the interviewee states that

"we are using "state of the art technology" which incorporates best security features."

From the establishment of United Bank Since now, the role of IT is seen as strategic partner to business. It intends to the optimal use of this IT ROI. The overall score of the survey in this Strategic Alignment IT at United Bank, is relatively better than the CBE, EIC and AIC.

4.5.4. IT Business Value

The value of IT added to the business is assessed using questionnaires with ten factors and through interview. The Table below shows respondents' views on the IT Business Value in. Unite Bank.

Statistics

	BIV01	BIV02	BIV03	BIV04	BIV05	BIV06	BIV07	BIV08	BIV09	BIV10
Valid	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0
Mean	3.60	3.75	3.20	4.20	3.80	3.30	3.70	3.90		3.85
Median	4.00	4.00	3.00	4.00	4.00	3.00	4.00	4.00	4.00	4.00
Mode	4	4	3	4	4	3	4	4	4	4
Std. Deviation	.754	.851	.894	.768	.768	.733	.733	.718	.718	.671
Variance	.568	.724	.800	.589	.589	.537	.537	.516	.516	.450

Table 4.23 United Bank –IT Business Value Score Statistics

Table 4.23 illustrates data for factors affecting IT Business Value in. Factor BIV04, and BIV09 (*" IT meets business expectations to create competitive advantages" and" IT Investments helps the organization for product quality and diversification"*) had higher mean, median and mode. When we see the distribution of the score from the mean, Standard Deviation, both had the least score which indicates the row score not much far from the mean. BIV01, BIV02 BIV05, BIV07, BIV08 and BIV10 (*"The management of IT investment agreements is evaluated", " End users are satisfied with the quality of the IT service", " IT projects deliver what they promised" , "The board has a clear view on the major IT investments from a risk and return perspective", " IT investments formally are evaluated" and "IT Investments restructuring Ethiopian Financial industry"*) had relatively high mean and median from remaining factors with moderate Standard Deviation which implies the respondents' opinion on the factor are not much varied. The rest two factors BIV03 and BIV06 (*" IT projects do not often go over budget" and "The board provides well-articulated strategies for how IT-projects can prevent deliver failures. "*) had the least mean, median and mode among all factors but no factor score under 3.

In addition to survey result the value of IT on business consistently evaluated by IT project and Portfolio Management committee. Form the interview the main barrier of optimal return on IT investment is network interruption which is problem with service provider (Ethio telecom). Currently they are trying to address this problem by signing a Service Level Agreement (SLA) and another connectivity strategy like V-Sat.

4.5.5. *Soft Value of IT*

The Soft Value of IT added to the business in EIC is evaluated using questionnaires with eleven factors and through interview. The Table below shows respondents' views on the Soft Value of IT in United Bank.

Statistics

	SV01	SV02	SV03	SV04	SV05	SV06	SV07	SV08	SV09	SV10	SV11
Valid	20	20	20	20	20	20	20	20	20	20	20
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	3.70	3.90	3.75	3.70	3.60	3.75	3.75	3.35	3.25	3.20	3.45
Median	3.50	4.00	4.00	4.00	4.00	4.00	3.50	3.00	3.00	3.00	3.50
Mode	3	4	4	4	4	4	3	3 ^a	3	3	3 ^a
Std. Deviation	.801	.788	1.118	.801	.995	.851	.851	.813	.786	.523	.945
Variance	.642	.621	1.250	.642	.989	.724	.724	.661	.618	.274	.892

a. Multiple modes exist. The smallest value is shown

Table 4.24 United Bank –Soft value of IT Score Statistics

Factor SV01, SV02, SV03, SV04, SV05, SV06 and SV07 ("*Competitive advantage which gets from IT investment evaluated*", "*IT services are delivered on time and offers the quality expected*", "*Management and support of IT systems is carried out by staff with appropriate and adequate skill*", "*The workforce planning is improved to ensure maintenance of skilled staff*", "*The IT staff has access and is offered appropriate working tools to develop the needed skills.*", "*Skilled IT resources are attracted to the organization successfully*" and "*The board is aware of the latest developments in IT including human resource development.*") had relatively higher score of mean and median.. SV03 had highest Standard Deviation among all factors which reflects no consensus between respondent on this specific issue. The rest six factors had moderate Standard Deviation which shows not much variance among respondent. The rest four factors, SV08, SV09, SV10 and SV11 had below 3.5 mean. Overall result shows, there is no single factor score above 4 mean which indicate Soft value of IT in like previously assessed organization.

This Soft value of IT construct mainly involve with Customer Satisfaction and Organizational Learning and Growth which depend on Skilled IT staff and give the bank a Competitive advantage. What we get from survey tell us this factors not at satisfactory level. On the other hand United Bank is the owner of very skilled IT staff who is done the upgrading of its Core Banking System. This is the paradox on survey result and the reality. From this we can

conclude that there is skilled IT staff but there is a knowledge sharing problem. Unless the knowledge sharing culture among IT staffs change, the indispensability is developed and the optimal return of IT Investment will affect. This required establishing a mechanism which encourages at the same time force these few skilled IT staffs of United Bank to share their knowledge and realize Organization Learning and Growth.

4.6. Factor Analysis

The major objective of factor analysis is, dimension reduction and generate few representative Components from original factors which are used to evaluate a construct. The principal researcher uses the factor analysis to simplify and present the main factors that affect IT ROI based on the previous constructs (IT Governance, Strategic Alignment of IT, IT Business Value and Soft value of IT) using 45 factors.

The total variance and number of common factors computed, the eigenvalues associated with these factors, the percentage of total variance accounted for by each factor, and the cumulative percentage of total variance accounted for by the factors. Although all factors have been computed, not all factors will be useful in representing the construct. In deciding how many factors/components to extract to represent each construct, it is helpful to examine the eigenvalues associated with the factors. Using the criterion of retaining only factors with eigenvalues of 1 or greater are considered as new component and retained for rotation. Factors which have inter-correlation coefficients greater than 0.475 are considered highly correlated to each other. Examination of the factor loadings presented in the Varimax rotated component matrix. Finally, it is the researcher's role to give appropriate empirical labeling which can represent the identified factors.

4.6.1. IT Governance Factor Analysis

Table 4.25 shows that the four clustered factors account for 36.66%, 10.49%, 8.64% and 7.78% of the total variance, respectively. That is, almost 63.57% of the total variance is attributable to these four factors. The remaining nine factors together account for only approximately 34.43% of the variance. Thus, these four factors are adequate to represent the data.

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.766	36.662	36.662	2.524	19.412	19.412
2	1.364	10.492	47.154	2.152	16.552	35.965
3	1.123	8.636	55.791	1.980	15.233	51.197
4	1.011	7.778	63.569	1.608	12.371	63.569
5	.881	6.776	70.345			
6	.739	5.685	76.030			
7	.662	5.091	81.121			
8	.533	4.099	85.220			
9	.491	3.775	88.995			
10	.430	3.305	92.299			
11	.405	3.117	95.417			
12	.355	2.732	98.148			
13	.241	1.852	100.000			

Extraction Method: Principal Component Analysis.

Table 4.25 Total Variance Explained for IT Governance Construct

Table 4.26 shows that the thirteen factors of IT Governance are loaded on the four factors. No variables are cross-loaded on .Once the factors are identified, it is the researcher's role to give appropriate label which can represent the identified factors. Thirteen factors are simplified to four main factors that affect IT Governance on Ethiopian financial sector.

	<i>Component</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>ITG01</i>	.866			
<i>ITG02</i>	.640			
<i>ITG03</i>	.526			
<i>ITG04</i>	.664			
<i>ITG05</i>	.566			
<i>ITG06</i>				.854
<i>ITG07</i>			.733	
<i>ITG08</i>			.752	
<i>ITG09</i>				.616
<i>ITG10</i>				
<i>ITG11</i>		.767		
<i>ITG12</i>		.606		
<i>ITG13</i>		.779		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 4.26 Rotated Component Matrix for IT Governance Construct

Thirteen factors are simplified to four main Labels that affect IT Governance on Ethiopian financial sector.

<i>Labeling for New component factor</i>	<i>Factors belongs to this Label</i>
Role in Strategic Development	<i>ITG01, ITG02, ITG03, ITG04 and ITG05</i>
Organizational Structure	<i>ITG06 and ITG09</i>
IT Investment Perspective of Top Management	<i>ITG07 and ITG08</i>
IT Resource Management	<i>ITG10, ITG11, ITG12 and ITG13</i>

Table 4.27 Labeling for new Components on IT Governance Construct

4.6.2. Strategic Alignment Factor Analysis

Table 4.28 shows that the three clustered factors account for 40.48%, 11.37% and 9.16% of the total variance, respectively. That is, almost 61.01% of the total variance is attributable to these three factors. The remaining eight factors together account for only approximately 38.99% of the variance. Thus, these three factors are adequate to represent the data.

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.453	40.479	40.479	2.706	24.598	24.598
2	1.250	11.367	51.846	2.484	22.578	47.176
3	1.008	9.160	61.006	1.522	13.830	61.006
4	.845	7.679	68.685			
5	.766	6.960	75.645			
6	.626	5.693	81.338			
7	.565	5.132	86.470			
8	.458	4.164	90.634			
9	.412	3.744	94.377			
10	.363	3.299	97.676			
11	.256	2.324	100.000			

Extraction Method: Principal Component Analysis.

Table 4.28 Total Variance Explained for Strategic Alignment Construct

Table 4.29 shows that the eleven factors of Strategic Alignment of IT are loaded on the three factors. No variables are cross-loaded on .Once the factors are identified, it is the researcher's role to give appropriate name which can represent the identified factors. Eleven factors are simplified to three main factors that affect Strategic Alignment of IT on Ethiopian financial sector

Rotated Component Matrix^a

	Component		
	1	2	3
SA01		.656	
SA02	.579		
SA03		.626	
SA04		.733	
SA05		.522	
SA06	.711		
SA07			.661
SA08			.883
SA09		.701	
SA10	.720		
SA11	.714		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Table 4.29 Rotated Component Matrix for Strategic Alignment Construct

Eleven factors are simplified to two main Labels that affect Strategic Alignment of IT on Ethiopian financial sector.

<i>Labeling for New component factor</i>	<i>Factors belongs to this Label</i>
Strategic Alignment of Business and IT	SA02, SA06, SA10 and SA11
Integration of Business and IT	SA01, SA03, SA04, SA05 and SA09
Business Perspective Towards IT	SA07 and SA08

Table 4.30 Labeling for new Components on Strategic Alignment Construct

4.6.3. IT Business Value Factor Analysis

Table 4.31 shows that the three clustered factors account for 39.07%, 11.61% and 10.39%, of the total variance, respectively. That is, almost 61.07% of the total variance is attributable to these three factors. The remaining seven factors together account for only approximately 38.93% of the variance. Thus, these three factors are adequate to represent the data.

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.907	39.066	39.066	2.768	27.680	27.680
2	1.161	11.612	50.677	1.675	16.746	44.426
3	1.039	10.391	61.068	1.664	16.642	61.068
4	.982	9.817	70.885			
5	.783	7.826	78.711			
6	.602	6.024	84.735			
7	.480	4.801	89.536			
8	.439	4.390	93.926			
9	.323	3.228	97.154			
10	.285	2.846	100.000			

Extraction Method: Principal Component Analysis.

Table 4.31 Total Variance Explained for IT Business Value Construct

Table 4.32 shows that the ten factors of IT Business Value are loaded on the three factors. No variables are cross-loaded on .Once the factors are identified, it is the researcher’s role to give appropriate name which can represent the identified factors. Ten factors are simplified to three main factors that affect IT Business Value on Ethiopian financial sector.

Rotated Component Matrix^a

	Component		
	1	2	3
BIV01		.721	
BIV02	.765		
BIV03		.786	
BIV04	.605		
BIV05	.594		
BIV06	.758		
BIV07	.730		
BIV08		.562	
BIV09			.679
BIV10			.846

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Table 4.32 Rotated Component Matrix for IT Business Value Construct

Ten factors are simplified to three main Labels that affect IT Business Value on Ethiopian financial sector.

<i>Labeling for New component factor</i>	<i>Factors belongs to this Label</i>
IT projects evaluation	<i>BIV1, BIV 3 and BIV08</i>
Business Expectation from IT Projects	<i>BIV02, BIV04, BIV05, BIV06 and BIV07</i>
Impact of IT on Business doing	<i>BIV09 and BIV10</i>

Table 4.33 Labeling for new Components on IT Business Value Construct

4.6.4. Soft value of IT Factor Analysis

Table 4.34 shows that the two clustered factors account for 40.79%, 12.71% and 9.37% of the total variance, respectively. That is, almost 62.93% of the total variance is attributable to these three factors. The remaining seven factors together account for only approximately 37.07% of the variance. Thus, these three factors are adequate to represent the data.

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.486	40.79	40.79	2.38	21.64	21.64
2	1.405	12.77	53.56	2.27	20.95	42.59
3	1.031	9.37	62.93	2.20	20.34	62.93
4	0.797	7.25	70.18			
5	0.759	6.90	77.08			
6	0.583	5.30	82.38			
7	0.507	4.61	86.99			
8	0.485	4.41	91.40			
9	0.441	4.01	95.41			
10	0.302	2.75	98.15			
11	0.203	1.85	100.00			

Table 4.34 Total Variance Explained for soft Value of IT Construct

Table 4.35 shows that the eleven factors of Soft Value of IT are loaded on the three factors. No variables are cross-loaded on .Once the factors are identified.

Rotated Component Matrix^a

	Component		
	1	2	3
SV01	.752		
SV02	.738		
SV03		.784	
SV04		.716	
SV05			.570
SV06		.609	
SV07		.612	
SV08	.865		
SV09	.849		
SV10			.588
SV11			.676

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 4.35 Rotated Component Matrix for soft Value of IT Construct

Eleven factors are simplified to three main Labels that affect Soft Value of IT on Ethiopian financial sector.

<i>Labeling for New component factor</i>	<i>Factors belongs to this Label</i>
Competitive Advantage , User and Customer satisfaction	<i>SV01, SV02, SV08 and SV09</i>
Human Resource Development on IT	<i>SV03, SV04, SV06 and SV07</i>
Organizational learning and growth	<i>SV05, SV10 and SV11</i>

Table 4.36 Labeling for new Components on Soft Value of IT Construct

4.7. Discussion

Factors affecting IT Governance, Strategic Alignment of IT, IT Business Value and Soft Value of IT have been measured. The main objective of the research is how organizations optimally get Return from their IT Investment assessing and surveying 100 IT and business staff and conducting interviews with top level managements based on four constructs (IT Governance, Strategic Alignment, IT Business Value and Soft Value of IT). The result was analyzed and presented in the previous section and in this section the findings will be discussed. The finding

has been analyzed by comparing and contrasting among Banks Vs Insurances, Private Vs Public owned organizations and overall financial sector.

4.7.1. Banks Vs Insurance

Banking Industry looks promising for optimal ROI on IT over Insurance Industry. On the IT Governance issue, the placement of IT tells how it is being seen on each Industry. IT is lead in both banks by Vice Presidents - IS (CIO which directly reports to CEO). In the case of Insurance in AIC IT is lead by MIS – Manager which reports to Vice President – Resource Management and in EIC IT is lead by Director – Information Technology Service Management. In addition to CIO, both CBE and United Bank have committees which are virtually, lead by Top Level executives to oversee IT Projects and performances. On Insurance Companies there is no such kind of practice. The statistical analysis results shows that Banking Industry IT Governance is relatively better than Insurance Industry.

Related Strategic Alignment and IT Business Value constructs, the statistical and interview data analysis shows that on both Industries there is gap but when we come to Insurance Industry the gap is bigger especially in EIC. The cost incurred for IT has been seen as expense not as long time investment. The main objective of investing on IT is seen only as a cost and time saving factor on doing business but not as tool to achieve a long term strategic goal. This mainly affects the non-monetary ROI on IT.

Soft value of IT mainly we map to Competitive Advantage, Human Resource Development on IT, and Organizational learning and growth. Starting demographic data Banking Industry has less employee turnover than Insurance Industry. Educational level of the employee in Banking Industry is better than that of Insurance Industry. This shows a greater tendency to relatively better Human Resource Development on IT in the Banking Industry. Human Resource Development of IT and realizing Organization Learning and Growth are basics for Competitive. Equipped with Hardware, software and network infrastructure is relatively easier than getting and retaining skilled IT staff. With Technology alone, Companies can't get a competitive advantage rather plus skilled IT Human resource which make the Technology functional. Even if the final result from statistical analysis is not satisfactory as expected on

both Banking and Insurance Industry, Banking Industry result is relatively promising over Insurance Industry.

Putting products online prompts another issue, security. It makes organization exposed external parties. In addressing this security issue, in CBE there was a Security enhancement project. CBE Security Section is restructured and fully equipped after IT project accomplishment. United Bank is addressing it by implementing “state of the art” technology. In Insurances there are gaps to deal with.

4.7.2. Public Vs Private owned

Banking Industry

The data results from statistical analysis and interview; on the impact of IT Investment towards ROI, the Private insurance sector looks promising over public sector. From public banking industry, CBE has a huge capital, human resource, huge IT investment (Infrastructure, hardware and Software) and large branch network. The impact of IT Investment on business in CBE is not seen as expected. The gap is clearly seen on making its service assessable through the technology, managing its IT Asset and realizing Organizational learning and Growth. The other main thing is since CBE is a public Bank; it has to put its influence on Ethio telecom to enhance its service uninterruptedly but no such kind of influence is exercised at present. Even if not fully practiced, CBE has implemented a kind of decentralization at district level to allow low level IT related decisions and tasks which is not observed in United Bank

United Bank is a young bank compare to CBE. Comparison is made based only on how these two banks optimally get the ROI on IT. From statistical data analysis and interview United Bank has relatively better optimal usage than CBE. About the Governance of IT in United bank in addition to CIO there are committees (IT Security and Risk committee, Service Status Enterprise Architecture Committee, IT string Committee and IT Project and Portfolio management Committee) to follow up, oversee, enhance the service and identify and mitigate technology related risks through adopting best Practices. CBE has dramatically changed the ways of doing business (one window service) after BPR implementations and then by accomplishing the three IT projects (Infrastructure, core banking and Card Banking).In implementing best practices CBE has to do more. For instance there is no IT Project portfolio

management and evaluating which can clearly assess and evaluate the impact of IT Investment on business. In United Bank IT Project portfolio Management and Evaluations system is implemented. Compared to Insurance industry the Banking Industry is doing good but not at optimal level. In IT asset Management especially license management, all of the sectors surveyed have not done exhaustive work. Core Business software licensing fee is very expensive but in return, it has a big capacity of enhancing services, product diversification, flexible to interface to other systems, major capability of self service transaction at far restructuring the industry. The central issue of software management is optimally using the systems by exploring its capacity to get maximum return on its investment. Good IT Asset management improves the value of IT in business. If IT Asset management fails, it will hurt the IT Business Value. At last investing on IT will be a source of frustration if only license fee of the software is considered without fully exploiting its capacity

Insurance Industry

On the previous section we have seen that IT Governance was not placed properly on both Public and Private Insurance Companies. In EIC IT is lead by a Director Level and in AIC it is lead on by Manager Level. This leadership has a significant impact on the alignment of IT with business strategy. Hence if IT is represented by Middle level management, it is clear that the participation on strategy development will be limited. It is less probable that IT issues will be a day to day agenda on Top Level Management. Because of this the role of IT on business will only be to maximize efficiency not to achieve long term strategy Goal. This is what is exactly seen in EIC.

AIC IT department is headed by Middle level Manger, but compared to EIC, the statistical analysis and interview result indicates that there is a relatively good strategic Alignment and achieve dramatically change on doing business. This needs further analysis to explore the conditions which lead to this result. EIC has an advantage by staying for a long time on the business and market penetration but the emphasis given to IT investment is not good enough. AIC is a relatively younger enterprise in the business and only three years in implementing Core Business System but it is doing well on Strategy alignment on IT and measurable impact on doing business. On both companies realizing organizational learning and growth and IT

Human resource development have not yet got a proper consideration. This will affect sustainable optimal ROI from IT investment.

4.7.3. External Challenge /Moderator variable

Financial sector is a service rendering business and almost all products can be delivered via IT channels. Telecom infrastructure is the backbone of this financial sector. According to the interview, in all financial organization the interruption of telecom service is becoming major challenge. To be competitive on the market and achieve its strategic objective, organizations are aggressively investing on IT. Telecom infrastructure expansion and interruption of ongoing service are being major external challenge for the Financial Industry in getting optimal ROI in their expensive IT Investment. This factor should be considered as additional factor as Moderator variable for optimal ROI in IT specific to our country. Interviewees have said that, they have been discussing the issue with NBE and Ethio telecom.

4.8. Discussion Findings against Related Works

The objective of this research is finding suitable metrics to evaluate ROI of IT Investment regarding non- monetary values. In Senait's(2011) work, the two constructs IT Governance and Strategic Alignment dependency are clearly seen. On this research the above finding is also clearly seen. Companies which have good governance have shown positive impact on their strategic Alignment and vice versa. Senite (2011) recommends best practice implementation for Good IT Governance but as to this research findings only best practice might not be enough, rather good IT Governance can be realized through converting best practice to best fit

The research done by (Matthew & Ibikunle 2012) on Nigerian Banking Industry, has been used four parameters; Productivity, Market Structure, Innovation and Value Chain. The findings on (Matthew & Ibikunle 2012) agree with the findings of this research. Investing huge capital on IT is not the only factor for optimal ROI in IT. Proper Governance of this IT, product diversification with innovation, and new way of doing business by exploring this new technology are the major factors for optimal ROI in IT. Thus, only if ICT investment is

combined with complementary investment in working practices, human capital, and firm restructuring will it have an impact on performance (Matthew & Ibikunle 2012).

The IT Business value construct is directly related to COVIELLO (2012) research main theme, CRM In related insurance industry, COVIELLO (2012) had tried to see the Impact of ICT in the insurance industry specific to Customer Relationship Management, It stated that the industry of insurance services is one of the most deeply exposed areas to the effects of ICT (Information and Communication Technologies)., But from previous analysis section, in Ethiopian Financial Industry compared to Banking industry, Insurance Industry is not yet fully exposed.

4.9. Summary of Findings

IT Governance:-

IT Governance could be evaluated in four dimensions. These are placement of IT at Organizational Structure, Role of IT in Strategic Development, IT Investment Perspective of Top Management and IT Resource Management. Good IT Governance is a foundation for good Strategic Alignment of IT and Business, optimal IT Business Value and Soft Value of IT. As the result Optimal ROI from IT Investment can be achieved. Findings on IT Governance is summarized as follows

- Organizational Structure of IT in Banking Industry is relatively better than the one in the Insurance Industry as observed in both CBE and United Bank IT is managed at CIO level and there is a trend in best practice adoption. But in Insurance Industry IT is lead by middle level Managers.
- The placement of IT imposes a negative impact on the role of IT in Strategy development in Insurance Industry.
- Top Management Perspective towards IT Investment is limited to cost and time reduction rather than a means to achieve Strategic objective in Insurance industries, especially in EIC.

- In most of the financial organizations with respect to Best Practice Adoption, the focus is best practice implementation without context evaluation and not changing them to best fit in to the respective organizations.
- IT Governance in IT Resource Management is not satisfactory in overall Financial Industries.

Strategic Alignment of IT

Strategic Alignment of IT is a product of Good IT Governance. It manifests inseparable integration of Business and IT and Business perspective towards IT. Findings on this construct are summarized as follows:

- Strategic Alignment of IT gap is seen on both Industries but when we come to Insurance Industry the gap is bigger especially in EIC.
- In EIC the value of IT is seen only as a cost and time reducing factor on doing business and the cost incurred for IT investment has been seen only as expense not as an investment to achieve long term strategic goal. This mainly affects the non-monetary ROI on IT.
- Business perspective towards IT Investments is also perceived only as a tool to enhance transaction efficiency not as a strategic partner. As a result investing in IT is becoming discouraging.

IT Business Value

The real Value of IT in doing Business is highly wired with the constructs, IT Governance and good Alignment of Business and IT.

- The implication of one of the findings mentioned in IT Governance section related to IT Resource management mainly affects the value of IT in Business., IT Asset especially software are not properly managed. The core business applications are not giving their optimal return in terms of product quality and diversification, service flexibility and excellence, product accessibility...etc in financial sectors of Ethiopia.

- Only United Bank is evaluating the overall Impact of its IT Projects on Business at a portfolio level. CBE and both AIC and EIC have not such kind of IT Project Portfolio management and evaluation trend.
- CBE is a public banking organization and it has a huge capital, human resource, huge IT investment (Infrastructure, hardware and Software) and large branch network. But impact of its IT Investment on its business is not as expected.
- CBE is public banking organization and it has a huge capital, human resource, huge IT investment (Infrastructure, hardware and Software) and large branch network. But impact of its IT Investment on its business is not seen as expected.

Soft Value of IT

- In relation to Human Resource Development on IT which align to Soft value of IT, Banking Industry has retained employees who have a good educational background and therefore less employee turnover compared to the Insurance Industry
- Realization of Organizational learning and Growth and Knowledge sharing culture, have not a proper emphasis in both Banking and Insurance Industries.
- Except in CBE, customer and user satisfaction survey is not conducted regularly and correlated to IT Investment.
- In addressing the security issue, Banks gave a proper emphasis but in Insurance companies there is not even a separate section which is responsible for the security issues.

- All Companies in Financial Industry are aggressively investing in Technology. As the result, having state-of-the-art technology alone does not grant Competitive advantage without skilled IT Human resource which makes the Technology functional.
- Ethiopian Financial Industry is being restructured because of the emerging of IT.

Telecom service

- As Financial Industries increase investment on IT, their service delivery will be absolutely dependent on telecom service. Interruption of Telecom service has become the major external challenge for Financial Industries. This challenge mainly affects the actual value of IT in Business service accessibility and as a result decreases the ROI from their expensive IT Investment. As the result Telecom service considered as moderator variable which affect the independent variables

4.10. Proposed Conceptual Model

A Conceptual Model is a set of guiding principles and good practices that are explicitly designed to be adapted by adopting organizations (De Haes et al .2013). According to inference from the previous Chapter of the data analysis, there are four distinct but interrelated themes discussed which affect IT ROI (optimal usage of IT investment) in organization. These themes/constructs are IT Governance, Strategic Alignment of IT and Business IT – Business Value, and Soft value of IT. These are building blocks or constructs used to develop a proposed Conceptual Model. This emerging Conceptual Model is developed from the structure of concepts which already exist in the literature in a scattered way. The impact of these constructs on IT ROI (optimal usage of IT investment) is assessed. The proposed Conceptual Model is explained as follows:

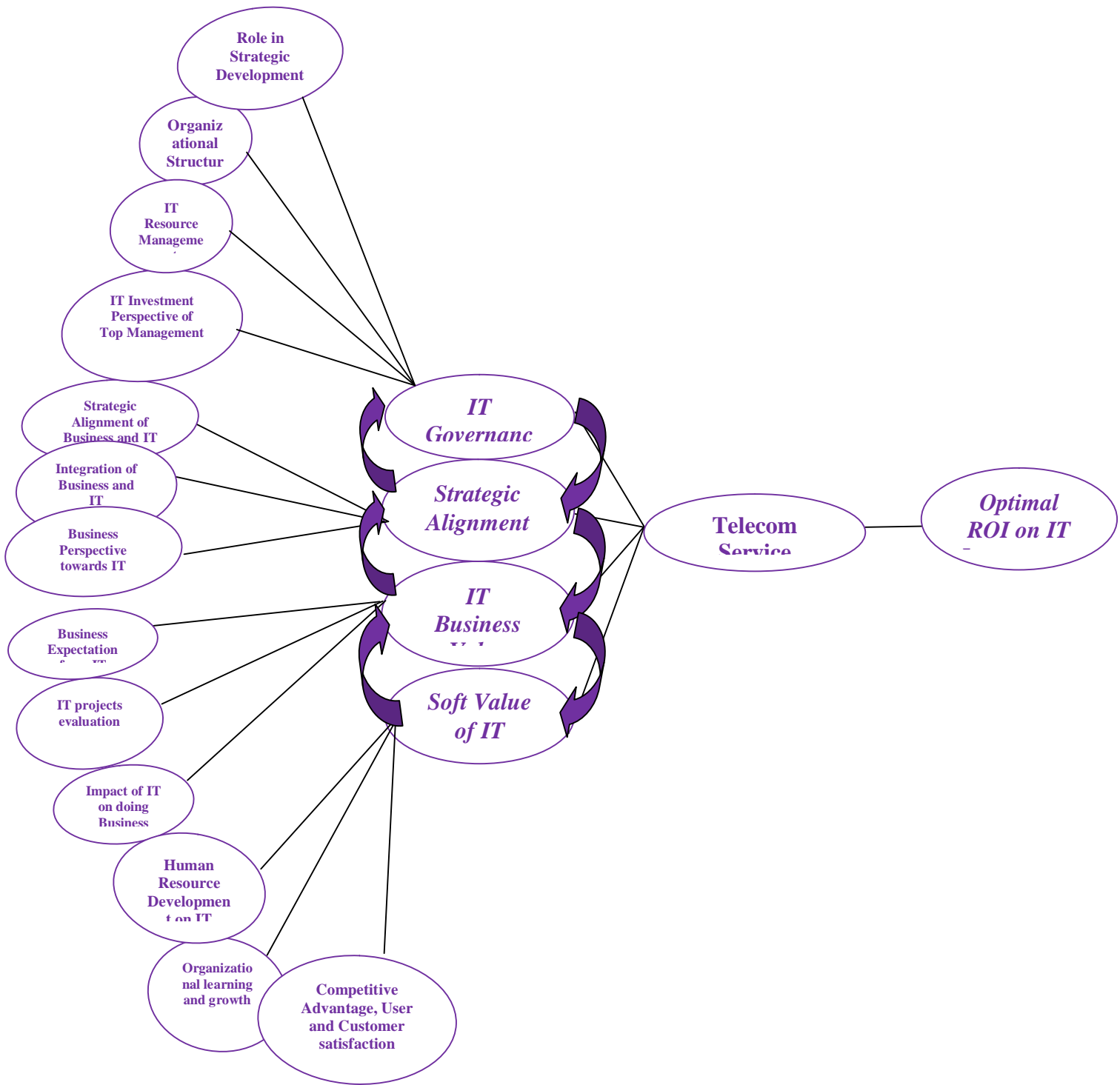


Figure 5-1 Proposed Conceptual Model

Optimal ROI on IT Investment: The main objective of any investment is maximizing benefit/ROI. This ROI can be financial or/and non financial. The term ROI in this proposed Conceptual Model represents the non financial one. IT Governance, Strategic Alignment, IT Business Value and Soft Value IT have been used as constructs to assess optimal ROI on IT investment in Ethiopian Financial Sector. The four constructs are assessed using forty five factors and fifteen open ended Interview questions in the first stage of the analysis. On second phase analysis, Factor analysis has been conducted for the purpose of homogeneity analysis and dimension reduction per each constructs. As per Factor analysis result, the four constructs are mapped to 16 factors. The constructs on the Conceptual Model used to evaluate Optimal ROI in IT Investment are interrelated. Good Governance of IT is the foundation of good Strategic Alignment. The first two constructs can be considered as infrastructure for the rest two (IT Business Value and Soft Value of IT). IT Business Value and Soft Value of IT are the observable products of IT Governance and Strategic Alignment. Even the sixteen factors are interrelated and affect each other. The goodness or badness of one factor will directly or indirectly affect the other factor. Each construct and respective factors are described as follows:

Telecom service: The independent variables/ constructs highly affected by Telecom service so it incorporated in the Conceptual model as moderator variable.

IT Governance: The way overall IT Resources are managed and IT related decisions are made. This construct is mapped to the following factors.

Organizational Structure: On this proposed Conceptual Model, it mainly refers to the placement of IT in the organizational structure of the company.

Role in Strategy Development: The level of participation of IT as a department or process in Business and IT Strategy plan Development.

IT Investment Perspective of Top Management: This factor represents the way Investment on IT is seen. Are Investments on IT considered only as means of increasing efficiency or investments to achieve strategic Objective of the organization?

IT Resource Management: Mainly refers how tangible and intangible asset of IT is managed in the organization. Especially major emphasis should be given to optimal utilization of hardware, Software and Network Infrastructure

Strategic Alignment: This construct refers to the level of alignment IT and Business strategy and it is mapped to three factors:

Strategic Alignment of Business and IT: The way IT strategy plan surge to Business strategy plan. Clear Understanding of IT role in achieving Corporate Strategy.

Business Perspective towards IT: This factor represents the way IT as a department or as process is seen from Business. Is it Strategic partner with Business or Supporter in doing routine tasks?

Integration of Business and IT: This factor tries to evaluate the level of integration in every dimension of business activity. Can Business smoothly continue without IT?

IT Business Value: this construct directly related to the impact of it in business and it is mapped to the following factors.

Impact of IT on Business doing: Clear and observable changes in business as the result of technology i.e. Product quality and diversity, Service flexibility, accessibility and excellence, new opportunity of doing business etc.

Business expectation from IT Projects: The main expectation of business from IT projects; as simply automation or new way of doing business.

IT Project Evaluation: How IT Projects are evaluated in both pre and post implementation. Form only efficiency perspective or achieving strategic Objective, individual project or portfolio level.

Soft Value IT: This construct mainly refers to indirect benefit which might not directly affect the impact of IT on business but very important for companies to realize sustainable growth as the result of Investing on IT. This construct is mapped as follows:

Competitive Advantage, Customer and User satisfaction: Is the evaluation of ROI on IT in the dimension of customer and user satisfaction? What competitive advantage has the company gained from Investing on IT.

Human Resource Development on IT: To what extent Companies give emphasis to skilled IT Human Resource to get the maximum ROI from their IT Investment. Or are they simply damping the technology without proper skilled IT staff and without assessing the positive of negative impact.

Organizational Learning and Growth: To what extent companies give attention to convert individual knowledge and skill to the organization knowledge and skill? How is the company's knowledge sharing practice?

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

Research in the field of Information Systems Management on ROI specific to IT investment is an impressive area. The term ROI has been strongly tied to monetary measurements. Evaluating IT investment on only monetary/financial metrics is very difficult; measuring the return still fires a debate. Starting from the introduction of computer, the ROI on the technology was a controversial issue. Lately, from the very nature of IT, there is a consensus among Information Systems Management researchers on the importance of developing qualitative/non-monetary metrics for assessing ROI in IT. No matured and standard metrics is developed across the industry. This is a very dynamic research field up to now. Most of the researches are empirical.

This research presents empirical investigation on the implication of IT investment on the business performance and proposes a Conceptual Model to enhance ROI specific to IT investment on Financial Sector of Ethiopia. As previously mentioned, there are no agreeable metrics to evaluate IT investment returns. From literature review, other different empirical researches and best practices, four major construct with their forty five factors have been used. These constructs are IT Governance, Strategic Alignment of IT and Business, IT Business Value and Soft value of IT.

Best IT Governance tends to best strategic alignment. IT issues are becoming a daily top management agenda; IT won't be seen as support only, but as a partner of the business and the only best way to achieve the corporate strategic goal. IT will be a strategic alliance with business. The statistical and qualitative data analysis result clearly indicates that, Banking Industry is promising on IT Governance. Specifically the United Bank has established best IT Governance in the organization by adopting best practice and implementing it through best fit to the Bank. CBE's IT Governance is not much behind United Bank but needs major

improvement especially on IT Project Portfolio Management and Evaluation and IT asset Management. In IT asset Management especially license management, millions of dollars is paid for license of software's but organizations are not giving enough emphasis on optimal usage of their license by exploring all capability of the software. Mismanaging of IT Asset mainly affects the overall impact of IT in the organization and all constructs. The assessment of the Insurance Industry regarding IT Governance, the placement of IT and its strategic role is questionable. It has been a major barrier for IT department to play its role on strategy development. It needs restructuring and upbrining of IT Management to the Top Level Management. The value of IT on business won't only measure cost reduction, transition time minimization but should be treated from the perspective of achieving the strategic objective of the organization. In addition to this, implementing best IT Governance practices needs converting to best fits. In strategic Alignment of IT and Business and IT Business value, Banking Industry has an upper hand over Insurance industry. In banking Industry, IT Governance has its own impact on strategic Alignment of IT and IT Business Value. We can conclude that good IT Governance leads to best strategic Alignment of IT and Business, and maximizes IT Business value in the organization.

The current national and international trend and the research analysis clearly indicate that the future of Financial Industry, especially the Banking Industry, will be restructured in the near future. Traditional banking will be changed to Self service (ATM, POS and Mobile Banking and e-banking (Internet Banking). The handheld devices will be the main medium of transactions. Traditional Branches expansion pace will be decreased. Beside this, using a state of the art Technology (Hardware, software and Infrastructure) and being certified on international banking service delivery is a must to stay in business. In addition to the technology, Skilled IT Professional is also a necessity and shall play a big role.

On the previous analysis section, Soft value of IT maps to Customer and User Satisfaction, Human Resource Development on IT and organizational Learning and Growth. In overall level of the Financial Industry, it is not satisfactory. In the United Bank there are highly skilled IT professionals but the statistical data result shows the knowledge sharing practice has not yet flourished.

Based on the analysis result, a knowledge gap has been observed on survey respondents who are at performer level, which is not observed on the CIO or Managers who are involved on interview. There should be intensive training and awareness creation on the strategic roll of IT in achieving strategic plan. Otherwise the main organizations can't realize the optimal ROI on their IT investment.

In Ethiopian context Ethio-telecom is a sole service provider and all financial companies are currently facing problem in service interruption. This situation is a major external challenge to optimal ROI on IT for Financial Sectors of Ethiopia.

5.2. Recommendations

The constructs (IT Governance, Strategic Alignment of IT, IT Business Value and Soft value of IT) are highly interrelated. Proper IT Governance is the foundation for the rest of constructs. The recommendation is presented in two sections, for practice and for knowledge. The practice section considers constructs with their respective factors depicted on the Conceptual Model. The knowledge section mainly tries to direct future possible related researches.

5.2.1. For Practice

Proper placement of IT in the Organizational Structure is the base for good IT Governance. Not only putting IT Executive at the top level but adoption of best practice and establishing different committees which facilitate the governance is necessary.

The implementation of best practices needs consideration of organization context, implementation of technology, and human resource capacity of the organization. Organizations should give enough emphasis to convert to best fit for a specific organization. CBE should improve the Governance of IT through implementation of best fits from best practice on IT Asset Management, IT Project Portfolio Management, IT Risk Management and service Excellency Management.

Related to Management of IT Asset, tangible IT Assets like Hardware and Network Infrastructure, there must be proper physical inventory of physical wellness and automated follow up of the system to

ensure proper utilization of this asset. Regarding software license management, there is under utilization of their license by not fully exploring their core business software for optimal return on IT Investment. Fully exploring this enterprise level software, it needs intensive training, and best knowledge sharing practice for human resource development skill. Promoting Best IT Governance in Ethiopian Banking and Insurance Industry will realize better ROI in IT Investment

AIC and EIC should restructure their Organizational Structure with respect to IT department which could enhance their IT Governance in organization level. At the same time, they should establish virtual committees (IT Project Steering Committee, Process Counsel, and other from best practice by contextualizing with organizations settings.) which shall be lead by Top Management and board members. As the result of this, the Top Management Perspective towards IT Investment will change. Integration of Business and IT should be recognized as inseparable partners. And finally the role of IT executive in Corporate Strategic Development will excel and can achieve best Strategic Alignment of IT and Business which guarantees success their mission.

Establishing good IT Governance and best Strategic Alignment are the standing points for maximization of IT Business value. The value of IT in business is beyond efficiency. Post implementation assessment and regular survey should be conducted to evaluate the real return on IT Investment. The assessment should include non-financial factors i.e. Service Excellency, Product Diversification, Competitive Advantage. In addition to this Soft value of IT i.e. Employee satisfaction, User Satisfaction, Customer Satisfaction, knowledge sharing practice and realization of Organizational Learning and Growth should be assessed. All assessment should align with the achievement of corporate strategic

To minimize the gap seen on Human Resource Development on IT both in Banking and Insurance industries should apply the following:-

- IT Projects contract agreement should incorporate vender obligation which can address proper knowledge sharing and transfer between Vender and Organization's employee at IT project life time.
- Proper skill training should deliver for employee with appropriate commitment which can consider as infrastructure to shoulder for upcoming technology in the organization

- There should be kind of reward system for senior staffs who take an imitative Knowledge sharing by incorporating in performance evaluation system

Regarding Telecom service, the stakeholders i.e. Banks, Insurances, Ethio telecom, National Bank of Ethiopia and proper government organs should work together and solve this problem. Without a proper telecom service the optimal return of IT investment won't be realized.

5.2.2.For Knowledge

Further research can be done as a continual of this research on empirical assessment of organization using the Proposed Conceptual Model.

Telecom service interruption is a major challenge for financial service of Ethiopia. As the base of this finding, further research can be conducted to deliver possible solutions.

In this research Security issues and their impact on ROI were not assessed sufficiently, so the impact of security issues in emerging technology and their ROI can be future research area.

References

- Anand Sinha 2012, “IT and Governance in Banks - Some thoughts” Reserve Bank of India at the Program for Independent Directors of Banks organized by IDRBT during
- Berger, A. N., Humphrey, D. B., and Pulley, L. B. 1996, "Do Consumers Pay for One-Stop Banking? Evidence from an Alternative Revenue Function", *Journal of Banking and Finance*, Vol. 20, 1601-21.
- COVIELLO, 2012, “The Impact of ICT in the insurance industry: The role of Customer Relationship Management”, Researcher in National Research Council, Institute for Service Industry Research and Professor of Insurance Marketing at Second University of Naples
- Cronk, M. C. and E. P. Fitzgerald, 1997, “A conceptual framework for furthering understanding of 'IT-business-value and its Dimensions”, Pacific Asia Conference on Information Systems, Brisbane, Australia, Information Systems Management Research Concentration.
- Dedrick, J., Gurbaxani, V., Kraemer, K.L. 2002, “Information Technology and Economic Performance: Firm and Country Evidence”, Working Paper August 2002, Center for Research on Information Technology and Organizations, University of California, Irvine
- De Haes, S., Van Grembergen, W., & Debreceny, R. S. 2013, “COBIT 5 and enterprise governance of information technology: Building blocks and research opportunities”, *Journal of Information Systems*, 27(1), 307-324.
- Etgar, Michael. 1977. “Cost Effectiveness in Insurance Distribution,” 44 *Journal of Risk and Insurance* 211–22.
- Eyadat, Mohammad, Kozak, Sylwester J, “The role of information technology in the profit and cost efficiency improvements of the banking sector”, *Journal of Academy of Business and Economics*.

- Hair, J.F.J., Anderson, R.E., Tatham, R.L., Black, W.C.1998, “Multivariate Data Analysis”, 5th (Qualitative analysis of content.Applicationed), Prentice Hall, Upper Saddle River, New Jersey
- Harris, L. 2001, “The IT productivity paradox – evidence from the UK retail banking industry New Technology”, Work and Employment vol 16 (1) p35-48
- Hevner, A., March, S. and Park, J. 2004, “Design Science in Information Systems research”, MIS Quarterly. 28, (1), 75-105.
- Hsieh, H.-F., & Shannon, S.E. 2005, “Three approaches to qualitative content analysis. Qualitative Health Research”, 15(9), 1277-1288.
- ISACA, 2003, “ISACA. Board Briefing on IT Governance”, Vol. 2nd Edition.
- IT Governance Developing a successful governance strategy 2005: “A Best Practice guide for decision makers in IT” , NATIONAL COMPUTING CENTRE
- Kemerer, C.F. and Sosa, G.L.1990, “Systems Development Risks in Strategic Information Systems”, CISR/Sloan Working Paper.
- Kozak, S. J. and Kowalski, K. X. 2005, "Effect of Technology on Consolidation Level and Efficiency of Banking System", Proceedings of the International Conference on Information and Communication Technology in Management ICTM-2005, May 23-25, Melaka, Malaysia.
- Matthew K. Luka & Ibikunle A. Frank 2012,” The Impacts of ICTs on Banks A Case study of the Nigerian Banking Industry”, International Journal of Advanced Computer Science and Applications (IJACSA) , Vol. 3, No.

- McConnell, Patrick 1997, “Risk Management Support Systems in International Banks”, HWP 9706
- Myers. M. 1997, "Qualitative Research in Information Systems," MIS Quarterly (21:2), pp. 241-242.
- Myers. M. 1997, “Interpretive Research in Information Systems”, Information Systems: An Emerging Discipline, McGraw-Hill, London,pp 239-266
- National Bank, 2013-14, Annual Report
- Olazabal, N. G. 2002, "Banking: The IT paradox: Despite much higher IT outlays by the retail-banking industry, its labor productivity growth rates have actually dropped. What went wrong?", The McKensey Quarterly, No. 1, , P47-51.
- Peter Weill and Jeanne W. Ross 2004, “IT Governance on One Page” CISR WP No. 349 and Sloan WP No. 4516-04
- Richard Tewksbury 2009, “Qualitative versus Quantitative Methods”, Journal of Theoretical and Philosophical Criminology, Vol 1
- Sambamurthy, V. and R. Zmud 1995, “Organizational competencies for managing investments in visionary applications of IT”, 16th International Conference on Information Systems, Amsterdam, Netherlands.
- Senait Berihu Teferi 2011, “IT Governance in Ethiopian Financial Sector: A Case Analysis of Commercial Bank of Ethiopia (CBE)” Global Information and Telecommunication Technology Program, School of innovation. 2011. vii, 54 Pages., KAIST
- Spremić, M. 2009. “IT Governance Mechanisms in Managing IT Business Value”, WSEAS Transactions on Information Science and Applications, 6(6), 906-915.

- Thakor, A. V. 1999, "Information technology and financial services consolidation", Journal of Banking and Finance, Vol. 23, 697-700.

- Triplett, Jack E., and Barry P. Bosworth. 200). ‘‘Baumol’s Disease Has Been Cured: IT and Multifactor Productivity in U.S. Services Industries’,’ Working Paper, The Brookings Institution

- Zhang, Y., & Wildemuth, B. M. 2009. ‘‘Qualitative analysis of content’’, Applications of social research methods to questions in Information and library science, 308-319.

Annex

Annex I Cooperation Letter

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የተፈጥሮ ሳይንስ ኮሌጅ
ኢንፎርሜሽን ሳይንስ ት/ቤት



Addis Ababa University
College of Natural Sciences
School of Information Science

Ref: SIS/64/15/07
Date:- March 16, 2015

To: Commercial Bank of Ethiopia
Awash Insurance
Ethiopian Insurance Corporation
United Bank share Co.

Addis Ababa

Subject: Request for Cooperation

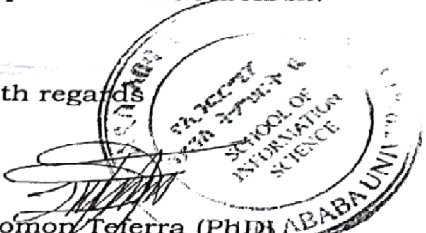
Dear Sir / Madam

Student Misrak Yeshaneh (ID:GSE/1037/05) is a graduate student in the Department of Information Science, Addis Ababa University.

She is currently conducting research on Information Technology Investment towards ROI.

This is therefore, to request for your assistance in providing data /information required for his research.

With regards


Solomon Teferra (PhD)
Head, School of Information Science

☒: 1176 ☎:251-(11)-122- 91-91 ☎:251- (11)-122- 92-00 FAX: 251-(11)-123-97-68

Annex II Questionnaire

Section A: Personal Information

Please put a “✓” in the provided box

1. What is your gender?

Male

Female

2. How old are you?

Less than 25 years

25 – 30 years

31 – 40 years

41 – 50 years

More than 50 years

3. What is your highest level of education?

College Diploma

Bachelor's Degree

Master's degree

Other

Other, Please specify _____

4. Years of experience in your profession?

Less than one year

Between 5 and 10 years

1 – 5 years

More than 10 years

5. What is your position in your organization?

IT executives

Business manager

IT Professional

IT manager

Business executives

Business Professional

Section B: IT Governance						
Goal	Factors	SD	D	N	A	SA
IT Governance	There is regular communication between the CIO (Chief Information Officer) , CFO (Chief Financial Officer) and CEO (Chief Executive Officer)					
	IT investment decisions aligned to business goals					
	IT staffed adequately, with right skills and competencies					
	Does the CIO define and communicate the role of IT to the rest of the organization					
	CIO & Management consider value delivery from IT systems to be important					
	The organization have an IT steering committee					
	IT investments are high quality, comprehensive and safe					
	IT projects have a clear budget and timeline					
	The board obtain regular progress reports on major projects					
	Organization takes a regular inventory of its IT resources					
	Sufficient IT resources and infrastructure are available to meet required enterprise					
	IT assets are being well-managed.					
	The organization is getting independent assurance on the achievement of IT objectives and the containment of IT risks					

Section C: Strategic Alignment						
Goal	Factors	SD	D	N	A	SA
Strategic Alignment	It is clear what IT is doing					
	IT strategy plan aligned to business strategic plan					
	IT projects deliver what they promised					
	IT core competencies are maintained at a level to meet required enterprise strategic objectives.					
	The making of major IT-decisions is time-efficient					
	The enterprise and IT align their objectives					
	The board articulates and communicates the business direction to which IT should be aligned					
	IT is a regular item on the agenda of the board and is addressed in a structured manner					
	The current capabilities are analyzed to identify gaps.					
	IT Playing a major role in Strategic Business Planning					
	The organization current IT Investment guaranteed to succeed its mission					

Section D: *IT Business value*

Goal	Factors	SD	D	N	A	SA
<i>IT Business value</i>	The management of IT investment agreements is evaluated					
	End users are satisfied with the quality of the IT service					
	IT projects do not often go over budget					
	IT meets business expectations to create competitive advantages					
	IT projects deliver what they promised					
	The board provides well-articulated strategies for how IT-projects can prevent deliver failures.					
	The board has a clear view on the major IT investments from a risk and return perspective					
	IT investments formally are evaluated					
	IT Investments helps the organization for product quality and diversification					
	IT Investments restructuring Ethiopian Financial industry					

Section E: Soft Value

Goal	Factors	SD	D	N	A	SA
Soft Value	Competitive advantage which gets from IT investment evaluated					
	IT services are delivered on time and offers the quality expected					
	Management and support of IT systems is carried out by staff with appropriate and adequate skill.					
	The workforce planning is improved to ensure maintenance of skilled staff.					
	The IT staff has access and is offered appropriate working tools to develop the needed skills.					
	Skilled IT resources are attracted to the organization successfully.					
	The board is aware of the latest developments in IT from a business perspective.					
	User satisfaction assessed when evaluating IT investments					
	Customer satisfaction assessed when evaluating IT investments					
	Organizational learning and growth evaluated during IT investment evaluation					
	The board is assured of the fact that suitable IT resources, infrastructures and skills are available (including external resourcing) to meet the required enterprise strategic objectives.					

Annex II Interview Questions

1. What are your responsibilities in the organization? IT related responsibilities?
2. Do you believe that there is clear and defined IT governance at your organization today?
3. How has IT governance changed at your organization since 3 years back?
4. Do you see any drawback how IT governance is managed related to risk and Security issues?
5. Do measure on customer and employee satisfaction regularly and the correlation with the organization IT investment?
6. How do you explain the impact of IT on organization's product diversification, competitive advantage and market share?
7. What is the primary objective of IT projects?
8. How do measure IT regular performance and IT projects?
9. Do you believe that there are clear responsibilities in IT process in your organization?
10. How is the integration IT and the rest of the business?
11. How well does the technical and business staff understand each other? Do they connect easily and frequently?
12. How does the organization communicate with consultants, vendors and partners related to IT?
13. After IT projects are completed, do they evaluate what went right and what went wrong and how does the feedback used?
14. How well does the technical staff understand business drivers and speak the language of the business?
15. How strategic architecture incorporated when evaluating IT investments?

Annex III: Covering Letter Accompanying Questionnaire

Dear Participants

You are invited to participate in a research study titled “Information Technology Investment in Financial Sector of Ethiopia: Towards an IT ROI Framework”. This study is being conducted by Misrak Yeshaneh for the fulfillment of Masters of Science in Information Science at Addis Ababa University. The purpose of this study is to investigate the implication on IT Investment on the Business Performance and propose a Framework which could lead optimal return from IT investment on Financial Sector of Ethiopia.

In this study, you will be asked to complete a survey questions. Your participation in this study is voluntary and you are free to withdraw your participation from this study at any time. The survey should take only 40 minutes to complete.

The survey collects no identifying information of any respondent. All of the response in the survey will be recorded anonymously. If you have any questions regarding the survey or this research in general, please contact Misrak Yeshaneh. By completing and submitting this survey, you are indicating your consent to participate in the study. Your participation is appreciated.

Misrak Yeshaneh Kebede

Mobile: +251-911-69-77-67

Email: misrak.yeshaneh@gmail.com

Annex IV: Declaration

I declare that the thesis is my original work and has not been presented for a degree in any other university.

Date

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

Advisor