Addis Ababa University

College of Natural and Computational Sciences

School of Information Science

Department of Information System

Information System Strategy Development Framework for Commercial Bank of Ethiopia.

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Addis Ababa, Ethiopia

Information System Strategy Development Framework for Commercial Bank of Ethiopia.

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

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Key Words: Strategy, IS Strategy, Strategy framework, ISS framework, ISS development framework, Identity and Access Management, IS/IT Service management, Change Management, IS/IT governance, Competitive Advantage.

Acknowledgment

Thanks to God and his mother “ማርያም” for all the immeasurable handouts you have offered to me to accomplish this sympathetic study.

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Key Words: Strategy, IS Strategy, Strategy framework, ISS framework, ISS development framework, Identity and Access Management, IS/IT Service management, Change Management, IS/IT governance, Competitive Advantage.

Declaration

I, the signatory, to my best of knowledge, declared that this kind thesis is my original work, has not been submitted as a partial requirement for a degree in any university, all source of materials used for the study has been duly acknowledged and submitted to school of information science, Addis Ababa University with the endless supervision of my adored advisor Dr. Getachew Hailemariam.

Dereje Mulat

Addis Ababa University, Signature

School of Information Science June, 2020

Authorization

The thesis has been submitted for examination with my approval as a university advisor at School of Information Science, Department of Information System, Addis Ababa University.

Getachew Hailemariam (Ph.D.)

Advisor Signature

Addis Ababa University, June, 2020

School of Information Science

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Dedication

- To all human beings who have been infected and died by the paradox pandemic named "COVID-19" throughout the world.
- To all Doctors, Nurses, and all contributors who have tried to fight and control COVID-19.
- To all my beloved friends, families, and instructors who have shaped me to stand and present here.

Key Words: Strategy, IS Strategy, Strategy framework, ISS framework, ISS development framework, Identity and Access Management, IS/IT Service management, Change Management, IS/IT governance, Competitive Advantage.

Acronym

AAU- Addis Ababa University

BISA-Business Information System Alignment

BISSA-Business Information System Strategy Alignment

BITA-Business Information Technology Alignment

CBE-Commercial Bank of Ethiopia

CEO-Chief Executive Officer

CIO-Chief Information Officer

DP – Data Processing

FDI- Foreign Directory Investment

GDP – Gross Domestic Product

IAM- Identity and Access Management

IS- Information System

ISS-Information System Strategy

IT- Information Technology

MIS – Management Information System

NBE- National Bank of Ethiopia

OFF-Organizational Fit Framework

PEST – Political, Economic, Social, Technology

SIS – Strategic Information System

SLA – Service Level Agreement

SWOT – Strength, Weakness, Opportunity, Threat

ST – Strength-Threat

SO – Strength-Opportunity

WT – Weakness-Threat

WO – Weakness-Opportunity

Key Words: Strategy, IS Strategy, Strategy framework, ISS framework, ISS development framework, Identity and Access Management, IS/IT Service management, Change Management, IS/IT governance, Competitive Advantage.

Abstract

ISS benefits firms to advance and grow their universal strategies in order to accomplish modest advantages. ISS discourses the delivery of IS competences, capitals and amenities such as systems expansion, IT procedures and user care. It is an iterative route to align IS/IT competence with corporate desires. However, strategy gap has seemed to be an anxiety for researchers and practitioners due to business changing aspects and complexities both in developed and developing countries over the latter era. The incapability to understand value from IS venture and incapability of IS funds to deliver the planned business value is due to strategy gap of organizations. Specifically, in the case of Ethiopia the banking sector has visible strategy gap.

The objective of the study is to propose a robust ISS development framework by discovering CBE's current practice for the success of the bank. To this end, qualitative exploratory case study has been adopted as a research approach. Interview and document analysis have been used as a data collection method. The collected data have been analyzed using different strategy analysis tools like 7S McKinsey, PEST, and SWOT. Based on internal and external environment analysis factors like strength, weakness, opportunity, and threat for the bank have been clearly indicated as a finding of the research. Additionally, internal and external challenges for CBE IS/IT practice have been discovered in this study. The findings of the study revealed that the current ISS practice of CBE is not clear and formal. The study showed that governance problem, existence of business driver and IS/IT support strategy, and the view of the business and top management about IS/IT value are key factors for not having formal and clear ISS for CBE. This study proposed a refined ISS development framework and the framework has been evaluated using questionnaire; consequently, it acquires 87% recognition by the respondents.

The proposed ISS development framework can be used by CBE as a lens to formulate and implement its ISS and to take competitive advantage on technology. Additionally, the proposed ISS development framework brings theoretical contribution to the world since it refines the existing framework by adding new dimensions like IS/IT governance, IS service management, change management, identity and access management, ISS periodic assessment, and competitive advantage. The researchers concluded that CBE faced with ISS deficiency. Finally, the researchers recommended CBE to formulate and implement ISS using the proposed solution framework in order to fix the strategy gap and to get competitive advantage on technology.

Key Words: Strategy, IS Strategy, Strategy framework, ISS framework, ISS development framework, Identity and Access Management, IS/IT Service management, Change Management, IS/IT governance, Competitive Advantage.

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Chapter One

Introduction

Nowadays many business companies have created an isolated information system department in their organization structure responsible for developing, building and maintaining the new technology as well as supporting information systems resources across the enterprise. Alignment between business and information systems strategy has long been one of the core issues in the information systems discipline (Henderson & Venkatraman, 1993; Chan & Reich, 2007). Both information system and business leaders are continually looking for management practices to help them align their IT and business strategies (Luftman & Sledgianowski, 2005). Unluckily, aligning the business and IT come to be a major challenge for both business and IT managers. Therefore, fixing the hole between ISS and business strategy is key for the success of firms.

Aligning IS/IT strategy to the business strategy objectives and goals has seemed to be an anxiety for researchers and practitioners due to business changing aspects and complexities both in developed and developing countries over the latter era. The encounter of achieving this alignment becomes even more severe and demanding day after day specially in developing countries like Ethiopia. Henderson and Venkatraman (1993) discussed that the incapability to understand value from information systems (IS) venture is due to the ISS and business strategy gap of organizations.

Information system strategy is an iterative route to align IS/IT competence with corporate desires. Information system enables and drives the business if it is aligned with the business strategy (Alaceva & Rusu, 2015). It has become problematic to distinct features of information system strategy from business strategy. Strategic placement is one of the main pursuits in information system research, alongside the quests for integration and sustained competitive advantage (Ward & Peppard, 2002). The perspectives on BITA have changed over time, from the traditional meaning of joining the business strategy and the IS/IT strategy to the more recent idea of warranting congruence between the business strategy and the IS/IT strategy (Chan & Reich, 2007). So, to have analogy between the ISS and business strategy firms have to measure and enhance their ISS. In summary, this research aims to explore CBE's ISS current practice, to investigate the adopted ISS by CBE, and to propose a robust ISS development framework for CBE.

1.1 Motivation

One of the benchmark while doing a research is the issue that motivates the researchers to accomplish a research. Most of published and unpublished researches indicated that attaining business-IS alignment is challenging for companies and to fix this gap ISS play great role to support IS ability with business desires. There are several strategy researches (Menelik, 2019; Elsa, 2019; King, 2018; Girma, 2013; Cerpa & Verner, 1998; Earl, 1993; Porter, 1985) which discoursed problems to support different organizations. Still, known the growing spread of information system/technology all over the economy, the resulting welfares from information system/technology funds are not satisfactory.

Businesses are not pleased with the information system strategy they have (Ward & Peppard, 2002). Lack of clear strategy implementation experience and lack of clear policy and procedures are some of the key internal and external BITA hindering factors in the banking industry (Menelik, 2019). Girma (2013) pointed, out of nine commercial banks, three banks are in committed, three are in established and three are in improved strategic alignment level. Absence of IS outsourcing strategy, lack of formal ISS, and poor communication with vendors are challenges for NBE while outsourcing IS development functions (Iyasu, 2017). Specifically, Elshalom (2016) suggested that CBE should develop IS strategy along with corporate business strategy in order to gain strategic benefits from IS; Likewise, Tagel (2016) found IT Governance issues were recognized but practiced in an informal and ad hoc foundation with no indication of adjustment and standardization. Based on (Elshalom, 2016; Tagel, 2016; Abdlselam, 2017), it is possible to infer that the cause for all difficulties stated above as a finding by different researchers is the gap that exist in CBE's ISS. In line with the above hot issues, this research becomes motivated and inspired to embrace the hole by proposing an information system strategy development framework to CBE for the success of the business.

1.2 Statement of the problem

Successfully leading a company is becoming impossible without leveraging information system and information system strategy. Information system strategy benefits firms to advance and grow their universal strategies in order to accomplish modest advantages (Altaf & Khalil, 2016). The advancement of IS/IT in a commercial and organizational situation has been fitful, but, without hesitation, information system has inevitably increased its significance as money matters and competence have allowed more to be realized. Progressively, modest business atmospheres have delivered an inspiration to invest in supplementary efficient and effective habits of carrying out business developments and handling the business (Ward & Peppard, 2002). Because of the growing prominence of information system to the business, accepting the strategic value of information systems have not only been the top goal of many information system practitioners but also has strained the interest of information system researchers who have developed numerous studies over the past two decades (Galliers, 1993; Watson et al., 1997).

Researchers argued that IS drives and allows the corporate if it is united with the corporate plan (Alaceva & Rusu, 2015). Through the speedy spread of information system and the growing interconnection and connectivity in the modern world, having ISS is no longer a luxury for firms and definitely, it has become the very requirement for existence. This means that for companies to connect the power of information system, influence the collaborations between their occupational practices, and capitalize on the effectiveness of the economies of measure, they need a robust, clear, smart, and upbeat information system strategy. In other terms, to benefit from the potential of technology in highly dynamic business environment ISS is critical success factor.

ISS is concerned with charting the vision of how firms request for information and systems will be reinforced by technology-essentially. It discourses the delivery of IS competences, capitals and amenities such as systems expansion, IT procedures and user care (Ward & Peppard, 2002). Researchers viewed business and information system alignment as a pervasive and persistent problem in today's business world (Alaceva & Rusu, 2015; Chan et al., 2006). And one of the best ways to align the business with information system is having a robust ISS (Alaceva & Rusu, 2015).

Based on literature review it is noted that the business-information system strategy alignment maturity level of firms in Ethiopia needs improvement. Due to this, information system funds are incapable to deliver the planned business value. Strategy alignment has effect on the

performance of the organization by increasing the ROI (return on IT investment), by assisting to attain competitive advantage through IS/IT, and by providing way and flexibility to respond to new opportunities and chances (Avison et al., 2004). Studies have indicated that alignment has a positive impact on the whole organizational performance (Girma, 2013; Luftman, 2017). So, to enhance strategy alignment companies has to formulate a sound information system strategy development framework independently which guides the formulation and implementation of ISS.

In the case of Ethiopia, the banking sector has visible BITA strategy gap and due to this, organizations are struggling with challenges hindering business-IT alignment (King, 2018). Due to economic, social, and technological reasons, the level of information system operation for strategic purposes could be quite different in developing countries as compared to developed countries (Ali & Qing, 2012). However, factors influencing business-IT alignment in organizations and BITA assessments have been widely studied, ISS development framework formulation of the banking sector of a developing country remains largely unexplored and it has been given little emphasis.

Lack of strategies in both business and IT department influence the BITA within the selected private bank (King, 2018). The BITA level of CBE is grouped under level 3 (established level) and banks in better strategic alignment have better performance on the evaluation of IT impact and business strategy alignment (Girma, 2013).

Biru (2008) explored the possibility of using context sensitive methodical approaches to address the software development challenges in Ethiopia. Unrealized benefits, unsatisfied users, oversize gap between demand, inexperienced and small; follow ad hoc processes and methods, lack competence in project management and soft-skills, very high staff turnovers, inadequate educational and training support infrastructure, substantial budget and time overruns far beyond expected and frustrated developers are causes for software development failure (Biru, 2008).

Iyasu (2017) piloted a qualitative case study to identify benefits and major challenges of outsourcing IS development function at NBE. The central bank faced with deficiency of formal IS outsourcing strategy since the CIO spent most of his time by writing a letter to vendors rather than thinking strategically.

Elsa (2019) conducted a case study to address IT-business alignment in the context of airline industry by exploring new constructs with main objective of assessing BITA maturity in Ethiopia

airline. BITA preliminary assessment and literature review of Ethiopia airline is under level 2 (Committed level) as there is no defined measurement metrics (Elsa, 2019). Vendor dependency, lack of proper system evaluation, lack of clear national regulation, external changes, lack of expertize on new technology, lack of clear strategy and strategy implementation experience, customer perception on new technology and lack of clear policy and procedures are key internal and external BITA hindering factors in the case of bank of Abyssinia (Menelik, 2019). However, none of them have in depth know-how about CBE's current practice. Mostly, the current state of researches in developing countries offers little attention and actionable direction on way of developing ISS in the banking industry. It shows significantly less focus has been given to ISS development framework.

Elshalom (2016) recommended that proper placement of IS in organizational structure is a base for good IT governance not just putting IT executive on top in order to gain strategic benefits from IS and IS/IT strategic roadmap which guides CBE toward attaining long term result should be established; Likewise, Tagel (2016) found that the actual IT Governance maturity was rated 1.2 (level 1) that shows the IS/IT governance accomplished in an informal and ad hoc foundation. Relatively, privately owned financial institutions (1.3) reached better level of IT governance maturity than that of publicly owned like CBE (0.94).

On the other hand, Abdlselam (2017) found that the overall average maturity of CBE IT-business alignment is at level 2 (committed process). The average maturity of BITA in the private banks are 2.49 while publicly owned bank is 2.46 based on the strategic alignment maturity model (SAMM) scale of level 1 (initial/Ad hoc process) to level 5 (optimized process). The difference between the two categories of banks are factors in 'governance', 'scope & architecture' and 'skills' were statistically significant and recommended that IT strategic roadmap which guides the bank toward achieving long term result should be developed; and Lewam (2018) found that IS changes are not being managed and defined in the bank, IS changes are not tested before implementation, and recommended that as CBE should implement a tool to support the change management support. Grounded on (Elshalom, 2016; Tagel, 2016; Abdlselam, 2017; Lewam, 2018) findings, conclusions, and recommendations it is possible to deduce that the cause for all troubles is the gap that exist in CBE's information system strategy. It illustrates that misalignments are observed in the bank because of the absence of formal ISS. Therefore, this research focuses on the research gap stated above in an attempt to develop sound information

system strategy development framework by exploring the bank's ISS current practice and the adopted ISS of CBE.

In summary, there is a necessity for improved understanding of information system strategy independently to propose ISS development framework and to ensure the success of the business. More specifically, the following research questions have been addressed to achieve the objective of the research.

1. What IS strategy is being adopted by CBE?
2. What framework is suitable to develop ISS for CBE?

1.3 Research Objective

1.3.1 General Objective

The general objective of the study is to propose information system strategy development framework for the success of the bank.

1.3.2 Specific objectives

The following specific objectives have been identified to achieve the general objective of the study.

- To explore the adopted ISS by CBE
- To discover challenges for CBE ISS practice
- To travel ISS factors of the bank
- To assess the macro-environment
- To explore existing ISS models and frameworks
- To propose ISS development framework for CBE
- To find out the awareness and improvement of ISS
- To recommend solution on ISS

1.4 Significance of the study

The significance of this research is to increase business success by proposing information system strategy development framework, to explore CBE's ISS current practice and the adopted ISS by CBE, to deliver awareness and recommendations for CBE employees and administrators about information system strategy.

As well the above welfares, it will open the door for future researchers and upcoming scholars will use this research work as a literature article to refine the proposed ISS development framework and to explore undiscovered constructs in order to increase validity and reliability of the study.

1.5 Scope and limitation of the study

The scope of this very interesting research entitled "Information System Strategy Development Framework Development for CBE" is limited to propose ISS development framework by exploring CBE's ISS current practice and the adopted ISS by the bank. The environmental analysis conducted for this kind research is only limited to internal environment and macro-environment not including industry environment analysis due to eventful nature of the banking industries, banks unwillingness to cooperate for the research and COVID-19 pandemic. Based on the limitation of this research, future researches are expected to be done by adding unexplored constructs on the proposed framework to increase validity and reliability of the study and doing the same research on different business sectors to refine the proposed framework.

1.6 Ethical consideration

To undertake this research, ethical issues are very important. In this study all the ethical issues have been considered in all stages of the research process; firstly asking willingness of the respondents to answer the questionnaire and secondly explanation of the objective and significance of the study have been given to the respondents and confidentiality of the respondents have been taken into consideration by avoiding names and other personal identification information.

1.7 Structure of the thesis

This study is organized into six chapters. The first chapter includes an introduction about the research topic, statement of the problem, motivations why this research area selected, general and specific objectives, scope and limitation of the study, ethical consideration, and a brief description on the significance of the study.

The second chapter briefly discusses the research topic from various resources. Here, prominent models, definitions, strategy dimensions, and theoretical concepts have been discussed. Finally, the research gap in the literature has been discussed.

The third chapter discourses the theoretical framework selected by the researchers as a foundation to develop the proposed ISS development framework for CBE and the reason why it has been selected for the study.

The fourth chapter describes the methodology part of the study. In this chapter, research design, research paradigm, research approach, case study, data collection techniques, validity and reliability have been briefly discussed.

The fifth chapter reports the key findings of the collected data. The chapter contains analysis and discussion of the collected data. In addition, it comprises the proposed framework and its brief description.

The last but not the least chapter concludes the overall research contribution and provides conclusions and recommendations based on the findings and also points out future research areas for those who are interested the same or similar research.

Chapter Two

Literature Review

2.0 Impression

Literature review is an instrument for the initial research required to identify a research gap, to formulate a research problem and topic, to provide a knowledge base for the analysis and findings of the study (Saunders et al., 2009). Based on the above fact, this study has tried to review a plenty of literatures from various sources in order to have understanding on issues related to information system strategy. Besides, ISS frameworks and models, factors for ISS, strategy definitions and concepts have been debated which are proposed by different scholars from different perspectives.

2.1 Literature Review Resource and Process

Any type of research bases a literature, conference paper, seminar, or real world environment to have a research problem and agenda. And these identified problems and gaps have to be reviewed in a scientific way based on the previous studies. In line with this, the researchers have explored numerous scientific journal articles, thesis works, conference papers, different books and reports from different sources using different searching keywords. The following table shows search keywords and sources of literatures that the investigators used during probing process.

Database, Social Network, and Search Engines	AAU Digital Library Repository
	Google Scholar
	Science Direct
	Semantic Scholar
	ACM Digital Library
Search Keywords	CBE, NBE, Dashen bank
	Strategy
	Information System
	Information Technology
	Information System strategy

	Information strategy
	Information Technology strategy

Table 1: Search keywords and literature resources

The following diagram shows the literature reviewing process.

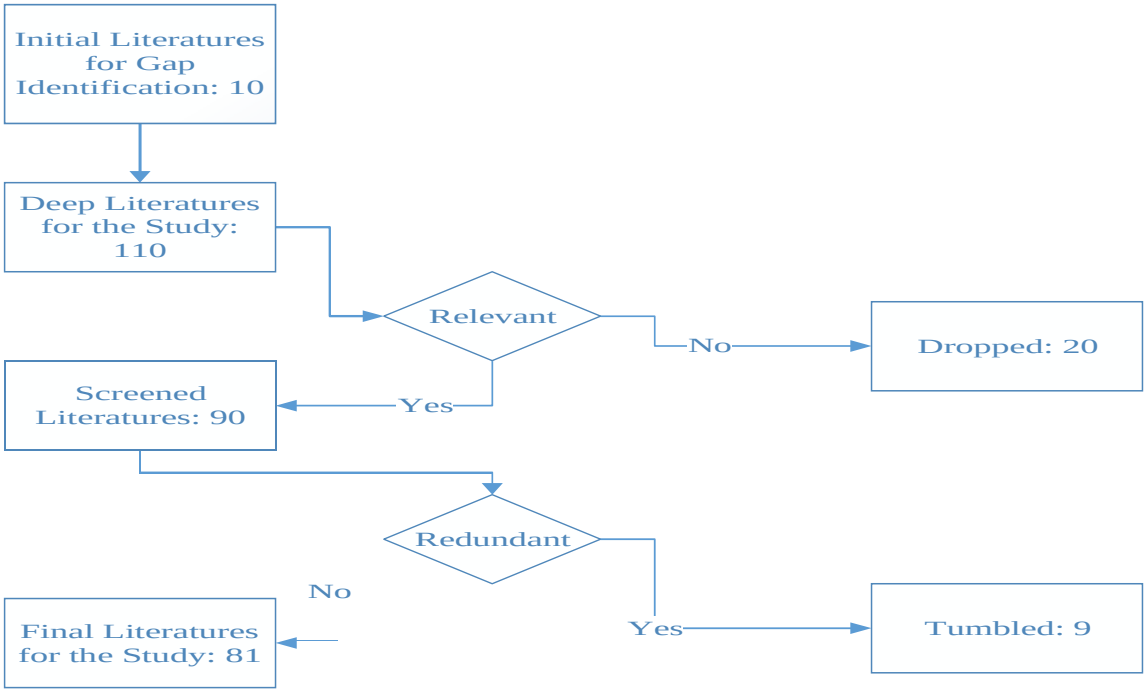

Figure 1: Literature review process

2.2 Strategy

Entirely organizations have certain form of strategy, whether hidden or clear, and the heart of business strategy lies in making future competitive benefits quicker than competitors (Ward & Peppard, 2002). Strategy is a method of formulating, discovering, and evolving a guideline that will confirm long-term achievement if monitored realistically (Kvint, 2009). Strategy is the formation of an odd and appreciable situation concerning a different set of actions (Porter, 1996). Porter (1996) claimed that competitive strategy is about being different and diverse. In short, Porter said that strategy is about modest position, about distinguishing one firm in the senses of the client, about toting value through a combination of actions different from those used by challengers. In his book, Porter described competitive strategy as a mixture of the ends (goals) for which the company is struggling and the means (policies) by which it is looking for to get

nearby. Porter appearances to embrace strategy as both plan and position. Strategy is the set of objectives, goals, procedures and policies in order to monitor the business as a whole to successfully participate in its market ground.

A number of strategies are constructed on particular principles about the forthcoming. Inappropriately, the upcoming is extremely unpredictable and changeable (Raynor & Michael, 2007). A strategy is not one time affair moderately it must be continuously revised, enhanced, and changed process (Ward & Peppard, 2002).

A strategy arises over time as purposes strike with and lodge a changing genuineness (Mintzberg, 1994). Therefore, individual might start with a viewpoint and settle that it calls for a certain situation, which is to be attained by way of a wisely shaped plan, with the ultimate consequence and strategy echoed in a pattern plain in conclusions and actions over time. Mintzberg (1994) explained strategy in the following key arguments.

- Strategy is a plan, a "how", and a means of getting from here to there.
- It is a pattern in actions over time.
- It is position; that is, it redirects decisions to bargain specific products or services in specific markets.
- It is perception, that is, vision and direction.

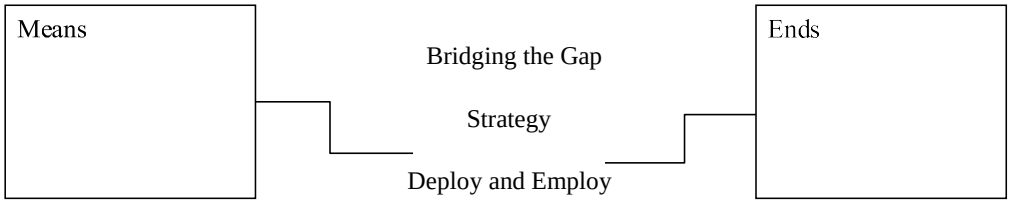

Figure 2: Strategy & Tactics: Adapted from (Nickols, 2012)

Strategy bridges the gap between policy and tactics. Strategy link the hole between ends and means (Nockols, 2012). Therefore, to bridge the gap between means and ends (where CBE is and where CBE needs to go) the bank has to explore the strategy formulation means and advance its strategy.

2.3 Strategy and Strategy Planning Evolution

Gluck et al. (1980) labeled the strategic planning and management maturity. The authors define how the essential matters have evolved, sideways with the want for new methods to rising and executing strategies into four phases.

Phase 1: Financial Planning - This phase focuses on cash flow and annual financial planning, and involves relatively simple techniques to develop medium-term budgets and meeting budget. It is carried out internally, department by department, and united.

Phase 2: Forecast-based planning - This phase focuses on annoying to guess, or forecast, what is likely to happen within a specific time planning horizon by reference to past routine, examined and projected into the future using internal styles and external factors.

Phase 3: Externally-oriented planning - In this phase the institute reflects the outside environment to advance a detailed understanding of the nature of competition in its business, in order to measure and reflect possible fears and place itself to increase benefit.

Phase 4: Strategic management - In this phase the organization is determined by innovation and becomes talented of creating its own business environment. This phase suggests that, though goods and competitive placing are clearly important, they are only so at a given point in time.

In today's vigorous business atmosphere, products speedily become outdated and the only actual basis of competitive advantage is the ability to respond regularly to moving markets with new products and ever-improved competitiveness (Ward & Peppard, 2002).

2.4 Information System and its dimensions

Information system is the entire employees, infrastructure, business, and modules that gather, process, store, spread, show, propagate, and turn on evidence. It refers to the administration of the administrative function in charge of planning, designing, developing, implementing, and operating the systems and providing amenities. It comprises of the IS/IT infrastructure, application systems, records, and staffs that hire IS/IT to provide IS/IT services in the company (Davis, 2000). The notion of IS cartels both the technical modules and human actions within the business and defines the practice of handling the life cycle of organizational information system rehearses (Avgerou & McGrath, 2007).

Information system has sustained to propagate in importance for the last two decades. Technology-based information systems are crucial in business to manage information systems and information technology strategically (Warred & Peppard, 2002). Because of the growing

significance of information system to the business, understanding the strategic value of information systems has not only been the topmost aim of numerous information system practitioners (Galliers, 1993; Watson et al., 1997), but also has strained the interest of information system researchers who have industrialized numerous investigations in information system research areas.

Information system embodies a key investment for any business in today's commercial atmosphere and unwell information system can become a problem to attaining business goals and objectives (Pearlson & Saunders, 2010). They stated that clients will be disappointed, manufacturing prices may be extreme and management may not be able to hunt preferred business directions that are blocked by inappropriate IS if information systems do not let the institute to understand its objectives.

The five key reasons for business managers' involvement during information system decisions (Pearlson & Saunders, 2010).

- Information System enables change in the way people work together.
- Information system must be managed as critical resource.
- Information system is the part of almost every aspect of business.
- Information system can be used to combat business challenges from competitors.
- Information system enables business opportunities and new strategies.

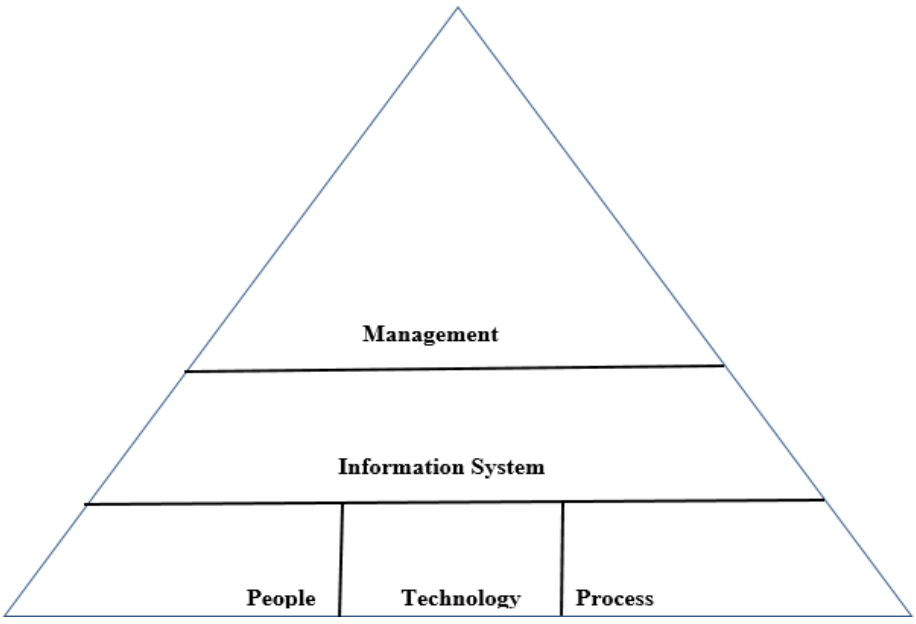

Figure 3: Information system hierarchy: Reprinted from (Pearlson & Saunders, 2010)

Pearlson and Saunders (2010) elaborated that information system is the mixture of the what (technology), the who (people), and the how (process) that a business uses to yield and accomplish facts. Based on the above figure (information system hierarchy) above the key elements of IS we found information system and above IS we found management. Here the management supervises the scheme and organization of the system and observers the whole performance of the system. From IS hierarchy the management cultivates the commercial requirements and the business strategy that the information system is intended to fulfill.

Information system must support organizational systems (signify the vital elements of a business its people, work processes, and structure and the plan that enables them to work efficiently to achieve business aims). A misalignment of the capitals needed to achieve its goals will occur if the company's information system fails to support its organizational systems (Pearlson & Saunders, 2010). Based on the above facts, to have a successful business, and to be beneficial from information system, firms like CBE has to advance their information system know-how.

Different scholars have discussed the dimension of information systems in diverse ways. Some of the crucial dimensions of information system are listed below (see table 2).

Author/s	IS dimension
(Davis, 2000)	✓ Context ✓ People ✓ Processes (procedures) ✓ IT (hardware, software) ✓ Information/Data
(Kroenke, 2008)	✓ People ✓ Processes (procedures) ✓ IT (hardware, programs) ✓ Information/Data
(Huber et al., 2007)	✓ People ✓ Processes ✓ IT ✓ Information/Data
(Watson , 2008)	✓ Context ✓ People ✓ IT

(Barata & Cunha, 2013)	✓ Context ✓ People ✓ Process ✓ IT and Information/Data.

Table 2: Summary of IS dimension: Adapted from (Barata & Cunha, 2013)

2.5 IS/IT Era's

The development of information system/information technology in an organization has passed through different eras. IS/IT has passed through three eras (data processing, management information system, and strategic information system) in firms. The data processing era mainly focused on increasing operational competence by automating information based practices. The second IS/IT era which is management information systems aimed at aggregating management usefulness for decision making by satisfying their information desires. And the third era is strategic information systems era which emphasized on improving competitiveness by changing the nature of the industry in order to make and use information system funds as a foundation of competitive advantage (Galliers & Somogyi, 1987). So, to use IS/IT as a competitive advantage firms have to see and realize their IS/IT strategically using robust ISS development framework.

Aspects	Era		
	DP	MIS	SIS
Nature of technology	Computers Fragmented Hardware limitation	distributed process interconnected software limitation	Network Integrated people/vision limitation
Nature of operation	Remote from users Controlled by DP	regulated by management services	available and supportive to users
Issues in system development	Technical issues	support business User needs	relate to business strategy
Reasons for using the technology	Reducing cost	supporting the business	enabling the business
Characteristics of system	Regimented/ operational	accommodated/ control	flexible/ strategic

Table 3: Trends in the evolution of business IS/IT: Adopted from (Galliers & Somogyi, 1987)

Later on, IS capability emerged as the fourth IS/IT era which is the current SIS development phase. The fourth era goes beyond further than pursuing alignment or probing out for competitive chances from information system. The capability of IS/IT is expressed in three measurements namely being flexible and reusable IS/IT platform, working in harmony, and an operational use procedure and combining IT/IS and business knowledge (Harun & Hashim, 2017; Ward & Peppard, 2002).

2.6 Information System Strategy

Strategic information system is a concept emerged during the 1980s due to the introduction of information technology/system in different firms. Technology is utilized in daily operations in the form of information system to enhance firm's profitability and performance (Ward & Griffiths, 1996). Strategic information system helps to confirm information system development and alignment with the policies, aims and strategic planning. The concept of SIS is to deliver technology to care firm's business strategy and leveraging the current infrastructure to guide future attainments and for effective placement (Harun & Hashim, 2017; Karpovsky & Galliers, 2015).

Information system strategy outlines the organization's requirement to support the overall strategy of the business and it is grounded in the business, taking into consideration both the competitive influence and alignment desires of information system. It is an iterative way to align information system capability with business needs (Ward & Peppard, 2002). Information system strategy is the plan in which a business uses to provide figure facilities and allow a company to implement its business strategy (Pearlson & Saunders, 2010). The four IS infrastructure components (hardware, software, network, and data) and other resources consideration are key to give the manager a high-level view while performing information system strategy (Pearlson & Saunders, 2010).

	What	Who	Where
Hardware	List of physical components of the system	System users and Managers	Physical location
Software	List of programs,	System users and	What hardware

	applications, and utilities	Managers	it resides on and physical location of hardware
Networking	Diagram of how hardware and software components are connected	Systems users and managers; company that provides the service	Where the nodes are located, and where the wires and other transport media are located
Data	Bits of information stored in the system	Owners of data; data administrators	Where the information Resides

Table 4: Information Systems Strategy Matrix: Reprinted from (Pearlson & Saunders, 2010)

The matrix in table 4 shows the four IS Infrastructure components (dimensions) embraces hardware like desktop and servers. The second component of IS infrastructure is software that includes the programs used to do business, to manage the computer itself, and to converse between systems. The third module of information system infrastructure is the network that is the physical means by which information is exchanged among hardware components, such as through a modem and dial-up network. The last but not the least component of IS infrastructure is the data which contains the bits and bytes stored in the system.

Information system strategy explanations and perspectives vary, and key concepts about ISS are summarized in table 5.

Key Concepts	Sources
A support function to business	(Earl, 1993)
To competitive advantage	(Porter, 1985; Ward & Peppard, 2002)
An emphasis on vision	(Wilson, 1989)
A strategic alignment with business	(Segars & Grover, 1999)
Businesses learn from their ISS	(Teo & Ang, 2001)

Table 5: Information system strategy key concepts

Numerous scholars have identified the important of ISS in diverse approach. The use of ISS is to gain competitiveness formed by information manipulation and to get benefits from information system strategy, the strategy has to be successful. Attainment and success in managing information system comprises both exploiting the return on investment (ROI) of the money devoted in information processing within the business (Brynjolfsson & Hitt, 1996) and permitting the strategic use of information either to gain competitive advantage (Porter & Miler, 1985).

2.6.1 ISS Perceptions and Practices

Information system strategy conceptions have been explained by many scholars in different time using different name. Some researchers express it as "IS strategy" (Galliers, 1991), "IT/IS strategy" (Henderson & Venkatraman, 1993), "information strategy" (Smits et al., 1997).

Conferring to (Teubner & Mocker, 2008; Chen et al., 2010; Teubner, 2013), the four basic idea of information system strategy are listed below.

1. ISS as basic disposition towards IS/IT- in this conception information system strategy is self-contained and different from the business strategy.
2. ISS as departmental plan- in this conception information system strategy is an operationalization of the business strategy on the organizational level of the IS/IT function and role.
3. ISS as extended form of business strategy- Here information system strategy is secondary to the business strategy and it is an addition of the business strategy rather than a strategy in its own right.
4. ISS as a master plan – In this conception information system strategy is a strategy in its own right and it is deployed and organized in alignment with the business strategy.

Practitioners treat ISS with great devotion unlike the academic interest of ISS that has significantly declined (Luftman & Ben-Zvi 2011). The academics world mostly discuss and argue way of creating competitive advantage and to plan IS/IT application expansion projects and tasks. Whereas, practitioners concerned and worried with technology expansion and standards (Teubner, 2013). The following figure shows ISS contents in the view of practitioners and academia.

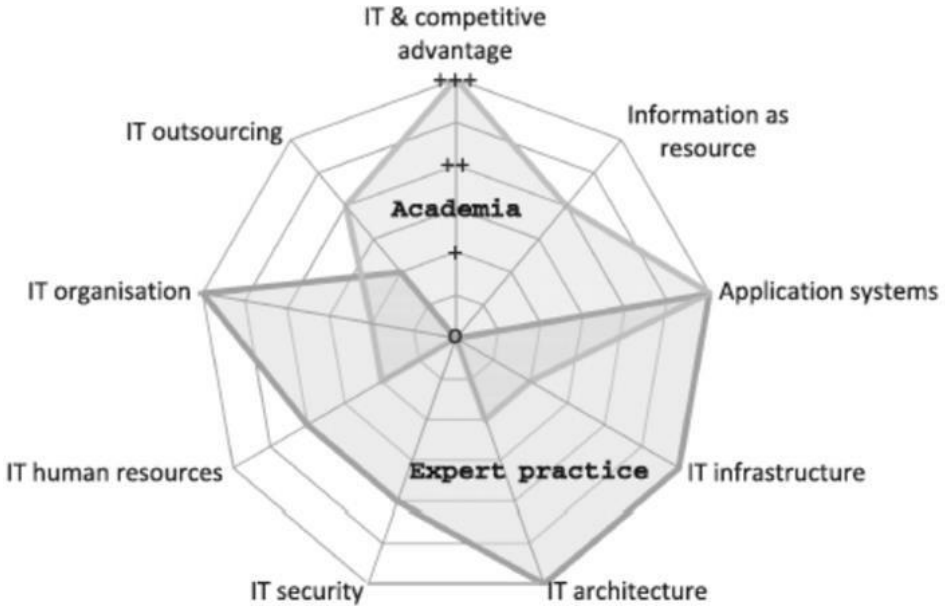

Figure 4: ISS contents: Adopted from (Teubner, 2013)

Practitioners interpret information system strategy as a:

1. Binding guideline – It has core contents like IS/IT platform selection due to merger situation or because current platform not sufficient anymore. It aims to mitigate the risk of locking the company into a wrong technological direction and Ensure reliable delivery of IT/IS services.
2. Departmental plan – consists of core contents like objectives, task assignments and resource assignments. The purpose is to ensure that the aims, tasks and resources of the IS/IT department are in line with the business strategy.
3. Change agenda – consists of core contents like relevant technology developments, technical standards, and innovation projects. It aims to change the way of how IS/IT is currently conducted basically.
4. Marketing strategy of the IS/IT department – has main contents like mission and vision of the IS/IT department. It aims to shaping the profile of the internal IS/IT organization.

2.6.2 SIS Development

Cassidy (2005) mentioned three key components of strategic information system in the process of planning. Situation analysis, strategy formulation and strategy implementation are key components of SIS.

1. Situation Analysis: this component mainly focuses on the identification and description of where the firm is today. It assesses the internal and external environment both IS and business in order to answer the question "where is the firm now?" The external environment assessment helps to get possible opportunities, best practices, and threats.
2. Strategy Formulation: it focuses on the identification and description of where the firm needs to be in the future for both the IS and business. Vision and strategy has to be developed to answer the question "where the firm needs to be?"
3. Strategy Implementation: the third component which shows the plans how the firm is going to be there by identifying of the IS gap between where the firm is and where the firm needs to be in the future. A plan has to be developed to answer the question "How will the firm get there?"

The best practice to be taken as a foundation while strategizing firms is the business direction and requirements. It doesn't mean strategizing firms is impossible without the business strategy. Strategizing firms without business strategy needs a little more work and more time, but it is likely and more compulsory than ever. IS/IT is used ineffectively due to lack of SIS and existence of informal processes resulting in managers' failure to attain long term sustainability and strategize IS (Kitsios & Kamariotou, 2019). According to Kitsios & Kamariotou (2019) the phases to strategize firms with IS are key issue identification, internal and external environment analysis, strategic alternatives analysis, SIS formulation and the implementation. Plenty of companies begin to have formal business plan process due to lack of concise and clear business directions. And the cause for doing so is the SIS development process (Cassidy, 2005). According to Cassidy (2005), to strategize and to develop SIS firms have to follow four main phases (see figure 4).

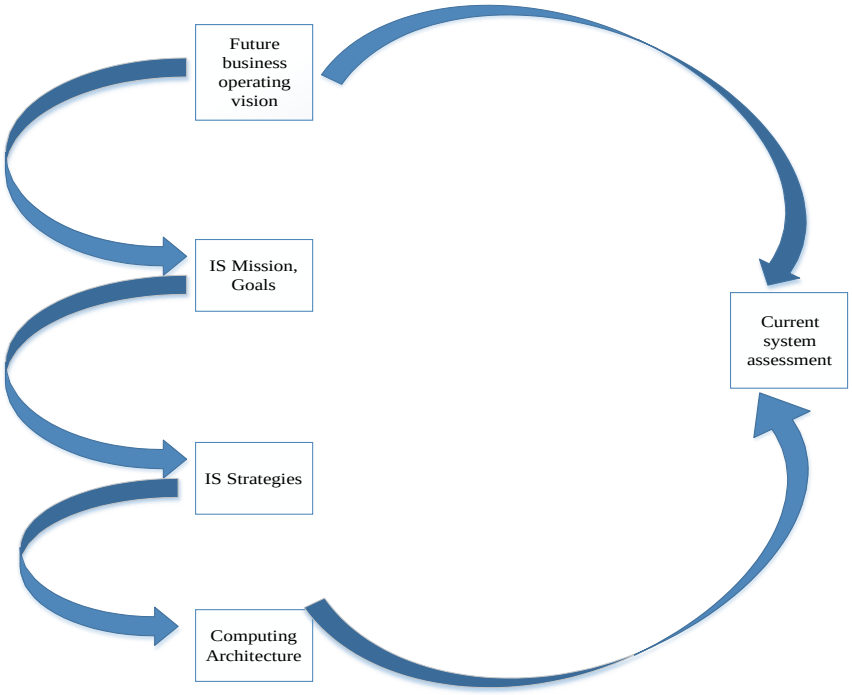

Figure 5: SIS development process: Adopted from (Cassidy, 2005)

According to Cassidy (2005), the strategizing process starts with future business operating vision understanding. This business operating vision come to be the basis for the IS/IT objectives, mission, technical computing architecture and strategies. Current system assessment is essential by matching future business operating vision systems and the preferred IS/IT computing architecture.

Conferring to Cassidy (2005), the following are best practice that firms have to follow while developing SIS.

1. Identify the SIS process and steps firms will use to complete the plan. Tailor the planning process so that it meets the needs of the organization and the purpose for completing strategizing.
2. Give strategizing the proper priority and attention so that it is completed in a timely fashion.
3. Obtain involvement from the organization throughout the strategizing process.
4. Communicate, communicate, and communicate.

According to Amrollahi et al. (2014), there are seven phases firms have to follow as s framework in the process of SIS. These development phases are initiation, business analysis, IT/IS analysis, strategy formulation, portfolio planning, implementation and evaluation.

2.7 Strategy Dimensions

Researchers have established diverse types of information system strategy and strategy alignment dimensions. Henderson and Venkatramen (1993) labeled IS/IT strategy into three dimensions. They have conceptualized IS/IT strategy based on the three dimensions. The three dimensions are IS/IT Scope, systemic competency, and IT/IS governance.

- IT/IS scope – It is one of the IS/IT strategy dimension which exemplifies the kinds and variety of IS/IT systems and capabilities possibly available to the business like electronic imaging systems, local and wide-area networks, expert systems, and robotics.
- Systemic competencies – It is the second dimension of IS/IT strategy that shows the unique attributes of IS/IT abilities that donate positively to the formation of new business strategies or better support existing business strategy (for example: higher system reliability, interconnectivity, flexibility).
- IT/IS governance – the last but not the least dimension of IS/IT strategy which spectacles the selections of structural mechanisms to get the required IS/IT competences. For example: joint ventures, long-term contracts, and equity partnerships.

Strategy alignment dimensions have been identified and established by many scholars. Strategic and intellectual dimension, structural dimension, social and cultural dimension are the most known business-IT/IS strategic alignment dimensions (Chan & Reich, 2007).

- Strategic and intellectual dimensions – Chan and Reich (2007), defined strategic alignment as the degree of corresponding between the IS/IT strategy and plan, and the business strategy and plans with each other. It is ‘the link between business strategy and I/T strategy reflecting the external components’ (Henderson & Venkatraman, 1999). Whereas intellectual alignment is the state in which a great value set of harmonized IS/IT and business strategies happen (Reich & Benbasat, 2000).
- Structural dimensions – It is the second dimension of BITA. Structural dimension is ‘the corresponding internal domains, namely, the link between organizational infrastructure and processes and IS infrastructure and processes’ (Henderson & Venkatraman, 1999).

- Social dimension – It is the third dimension of BITA which worried about common considerate between the business and IS/IT administrators concerning objective and plane. Reich and Benbasat (2000) demarcated social dimension as: the state in which IS/IT and business directors in an administrative component recognize and are dedicated to the IS/IT and business plans, objectives, and mission.
- Cultural Dimension – is the fourth dimension of BITA that focuses on elegances, conduct, values and opinions (Marcos et al., 2016). Culture is recognized as a possibility causes in business information technology strategy alignment maturity of businesses and bearing in mind the culture help organization to attain strategic alignment by modifying BITA processes and structure (Siliva, 2008). Robust business culture is a requirement to the type of informal structure that nurtures strategy alignment (Chan, 2002).

2.8 Strategy factors

Different scholars have mentioned factors (success and failure) of information system strategy and strategy alignment in different way. External not internal focus (customers, competitors, suppliers, even other industries and the business's relationship), adding value not cost reduction, sharing the benefits, understanding customers and what they do with the product or service, business-driven innovation, not technology-driven, incremental development, not the total application vision turned into reality, and using the information gained from the systems to develop the business are key success factors in ISS. And technology is key enabler for ISS (Ward & Peppard, 2002).

Sullivan (1985) has suggested a simple matrix to clarify how the ISS environment is being affected by powers outside the control of any business. He described two axes (infusion and diffusion) within which an institute can consider the implications of the power that affect ISS (see figure 4).

1. Infusion is the degree to which an organization becomes dependent on IS/IT to carry out its core operations and manage the business.
2. Diffusion is the degree to which IT has become dispersed throughout the organization and decisions concerning its use are decentralized. These axes not only reflect the increasingly strategic nature of IS/IT but also the changing economics of the technology and the ability to use it without the need for highly-skilled technical staff.

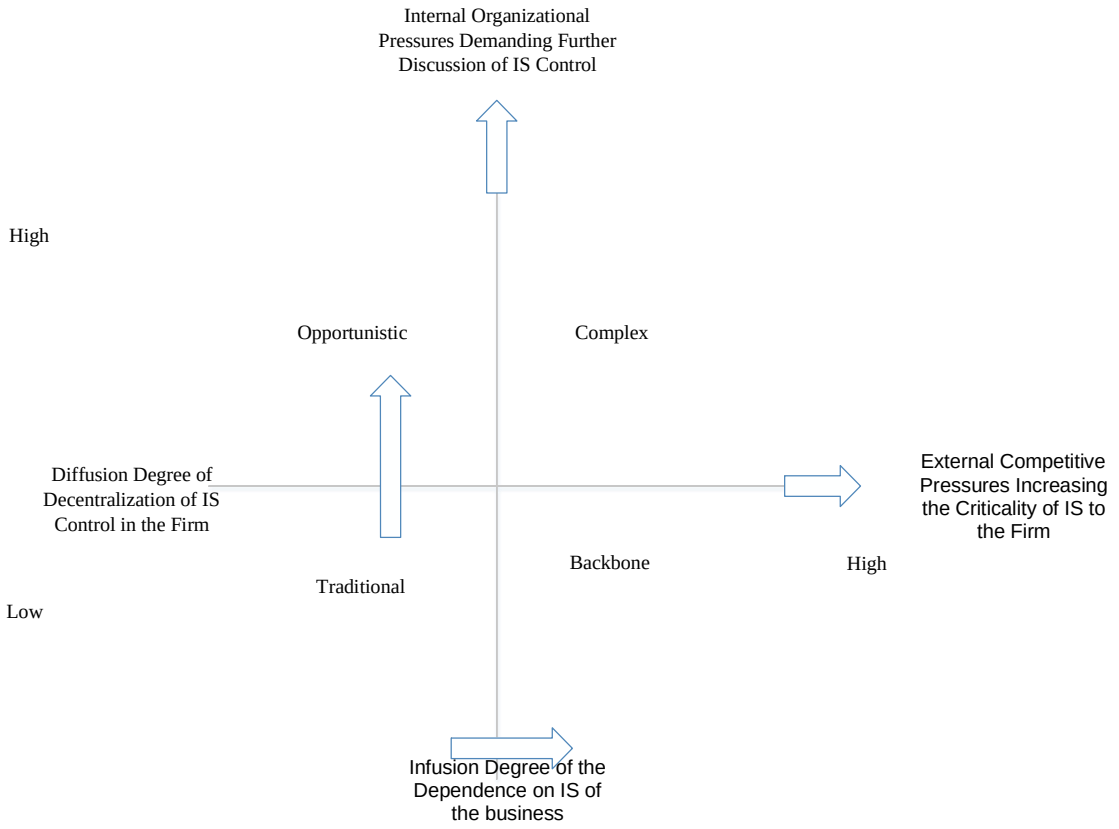

Figure 6: Environments of IS strategy: Adopted from (Sullivan, 1985)

Sullivan's framework (see figure 4) established four essentially different environments by plotting high and low degrees of infusion and diffusion. He has illustrated the framework as follow.

1. Low diffusion/low infusion: highly-centralized control of information technology resources and information system is not critical to the business. This, Sullivan labels as a 'traditional' environment usual of businesses using IT only to improve competence on a system-by-system foundation.
2. Low diffusion/high infusion: highly-centralized control, and information system is critical to business processes and control. The commercial could be seriously underprivileged if systems be unsuccessful. Consequently, high-quality systems are needed with, normally, a high degree of integration. The systems have become part of the 'backbone' of the organization, in Sullivan's rapports.
3. High diffusion/low infusion: largely-decentralized control, giving commercial directors the ability to fulfill their local priorities. Any integration of systems occurs due to user to user cooperation (a 'federation' of interests), not by overall business or IT design. The

administration methodology is essentially ‘opportunistic’, driven by short-term priorities that may generate business advantage in some extents.

4. High diffusion/high infusion: largely-decentralized control but the industry depends on the systems for success, both in avoiding dis- advantage and in achieving its overall business objectives. Sullivan describes this as a ‘complex’ environment that is hard to accomplish. Too much central control to avoid poor investments will limit innovation, hence new strategic opportunities may be missed; too little control and the core systems might fragment.

Numerous researches emphasized on different IS strategy constructs and essentially rotate around the success of information system strategy. Based on literatures, a number of factors are considered as a critical concern for the success of ISS. Senior management commitment, senior management involvement, senior and middle management involvement, increased management understanding of IS/IT, assessment/evaluation of ISS, ISS supported by IS management function, business plans a basis for ISS, ISS outcomes/process debated by management, middle management involvement, and ISS outcome: priorities applications portfolio are key success factors for information system strategy (Galliers, 1991). Alignment between business objectives and ISS, underlining motivation for the initialization for the ISS process, level of the maturity of the firm, methodology used in developing ISS, framework used for setting IS/IT investment priorities, and measurement of effectiveness used for the IS/IT department are key success factors for information system strategy (Ang et al., 1995).

The main problems in information system strategy are resource constrains, not fully implemented, lack of top management support, length of time involved, poor user-IS/IT relationships, and the problems of describing business process for transfer to IS/IT inappropriate automation (Earl, 1989).

Wilson (1989) measured the times 500 businesses and 47 financial services, and invented a list of eleven barriers, ranked in significance from one to eleven. For the purpose of comparability his findings are re-ranked from ‘not important’ to crucial (see table 6).

Table 6: Barriers to IS strategy Success: Adapted from (Wilson, 1989)

Barriers	Formulation	Implementation
Nature of business	Crucial	Crucial
Measuring benefits	Crucial	Very important
Difficulty in recruiting	Very important	Crucial
Political conflicts	Very important	Important
Existing IT investment	Important	Important
User education resources	Important	Very important
Doubts about benefits	Some importance	No importance
Telecommunications issues	Some importance	Some importance
Middle management attitudes	Some importance	Some importance
Senior management attitudes	No importance	Some importance

Luftman and Brier (1999) identified six important enablers and inhibitors of strategic alignment which are acquired from a survey on executives from over 500 firms representing 15 industries interviews and the observations from consulting activities (see table 7).

Table 7: Enablers and inhibitors of strategic alignment: Adapted from (Luftman & Brier, 1999)

Enablers	Inhibitors
✓ Senior executive support for IT ✓ IT involved in strategy development ✓ IT understands the business ✓ Business–IT partnership ✓ Well-prioritized IT projects ✓ IT demonstrates leadership	✓ IT/business lacks close relationships ✓ IT does not prioritize well ✓ IT fails to meet commitments ✓ IT does not understand business ✓ Senior executives do not support IT ✓ IT management lacks leadership

2.9 Business Strategy

Business strategy is a blueprint that articulates where a business pursues to go and how it imagines getting there and is the means by which a commercial communicates its aims (Pearlson & Saunders, 2010). It is a purpose of race (what does the client need and what does the opposition do?), placing (in what way does the business need to race?), and capabilities (what can the organization do?). Business strategy is the set of enterprise's route base on capitals,

challengers' positioning, and market necessities (Luftman, 1996). The foremost objective of business strategy lies in generating upcoming competitive advantages faster than opponents (Ward & Peppard, 2002).

Understanding the business strategy means clearly knowing the business objective or goal, knowing the way of achieving the plan, knowing the role of IS in the plan, knowing crucial competitors and partners, and identifying the required things of a successful player in the value net (Pearlson & Saunders, 2010).

2.10 Organizational Strategy

Organizational strategy comprises the organization's scheme, the adoptions the organization makes to describe, set up, harmonize, and regulate its work manners. It is a plan that response the query: in what way the business systematizes to attain its objectives and implement its corporate strategy (Pearlson & Saunders, 2010).

An organizational strategy framework entitled managerial levers proposed by Cash et al. (1994) (see Figure 5) advocated that the fruitful implementation of a company's organizational strategy includes the best combination of control, organizational, and cultural variables. Control variables comprise the accessibility of data, the nature and quality of planning, and the effectiveness of performance measurement and evaluation systems, and incentives to do good work. Organizational variables embrace informal networks, decision rights, formal reporting relationships, and business processes. Cultural variables comprise the values of the business. All the variables (organizational, control, and cultural variables) are managerial levers used by decision makers to effect changes in their administrations.

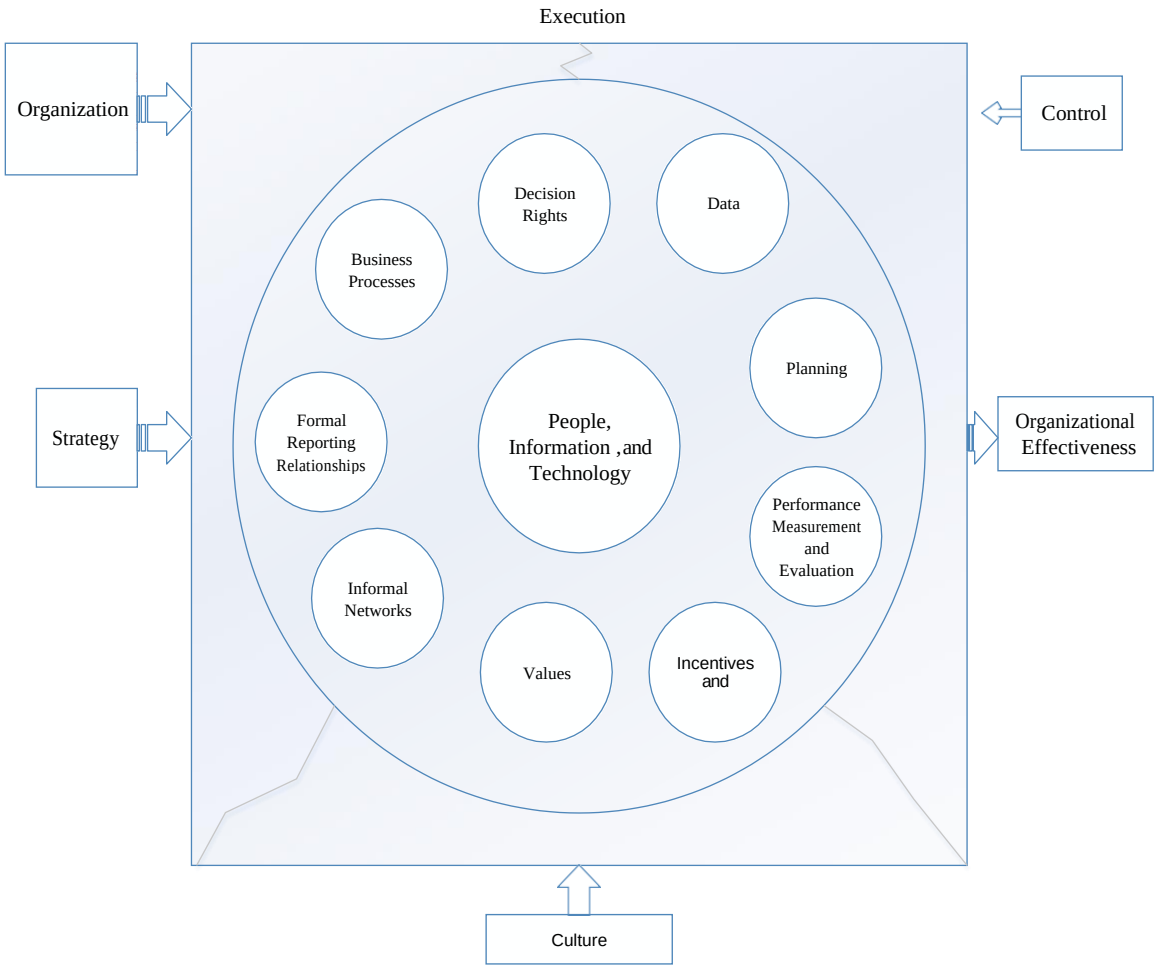

Figure 7: Managerial levers framework: Adopted from (Cash et al., 1994).

2.11 Strategy Models and Frameworks

2.11.1 The Evolution of ISS models and frameworks

Information system strategy researchers and scholars have established a variety of frameworks and models to use the value of information system for successful business operations in different firms in altered time. Day after day, scholars of information system strategy have adapted and altered old frameworks and models as new technologies emerge to have a competitive advantage. Some of the models and frameworks of ISS developed by different scholars are specified in table 8 below.

Author	Model/Framework	Year
Earl	Triangle Model	1989
Galliers	Components of ISS: A socio-technical Perspective	1991
Ward & Peppard	IS/IT Strategic Model	2002
Galliers	Strategizing Framework	2006
Pearlson & Saunders	ISS Triangle	2010

Table 8: Genealogy of strategy model: Adapted from (Teubner, 2013)

From the above descent of strategy model, Earl has developed an information system strategy model named "Triangle Model" in 1989. The scholar named the model "Triangle Model" because he has formed three dimensions (systems strategy, technology strategy, and management strategy). All in all, some of the ISS models and frameworks which has been developed by scholars include Earl (1989), Triangle model; Henderson and Venkatraman (1993), Strategic Alignment Model; Galliers (1991), Components of ISS: A socio-technical perspective; Ward and Peppard (2002), IS/IT strategic model; and Galliers (2006), Strategizing framework. So, this research aims to contribute new theory in the form of framework to the world by taking different ISS frameworks and the analysis result of this study into consideration.

2.11.2 Information Systems Strategy Triangle

Information systems strategy triangle is one of the frameworks in ISS which allow business strategies, organizational strategies, and information strategies linked and interconnected each other. Failing to understand this relationship is disadvantageous to a business. Deteriorating to plan for the consequences in all three areas (business strategies, organizational strategies, and information strategies) can cost directors job (Pearlson & Saunders, 2010).

Directors or managers who leave information system judgments exclusively to information system specialists often put their businesses and themselves at a difficulty. Even if information system can enable the drive and interchange of information, an information system that is incorrect for a given working atmosphere can actually hinder and confuse that same argument (Pearlson & Saunders, 2010).

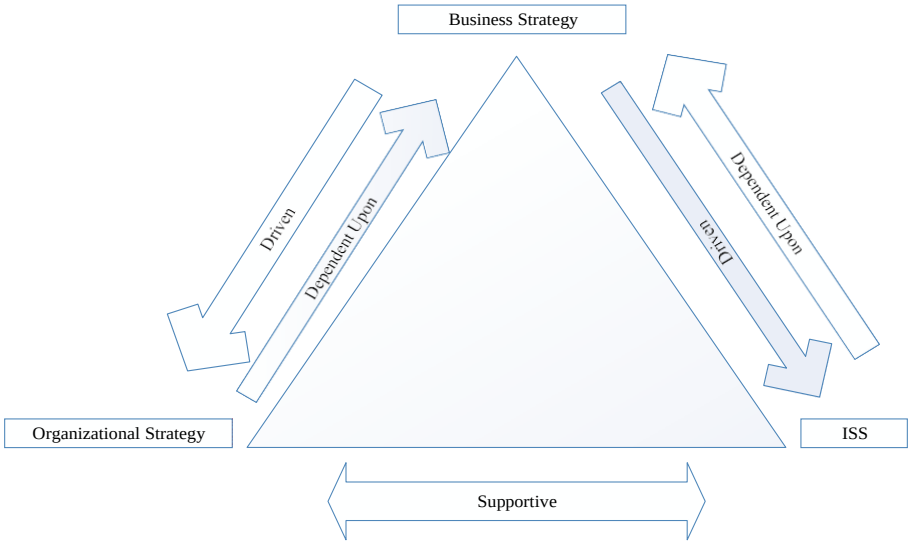

Figure 8: Information System Strategy Triangle: Adopted from (Pearlson & Saunders, 2010)

Pearlson and Saunders (2010) claimed fruitful companies have an overriding business strategy that pushes both organizational strategy and information system strategy. As you can see from figure 6, Successful firms carefully balance three strategies (business, information, and organizational strategies) they deliberately scheme their organization and information system strategies to match their business strategy.

Information system strategy can itself distress and is affected by modifications in a company's organizational and business strategies. The business strategy pushes organizational strategy and ISS. The organizational strategy must match business strategy and ISS must balance business strategy. When IS support business goals the industry seems to be functioning well. Therefore, to propagate the equilibrium needed for successful tasks, alterations in the information system strategy must be go along with the organizational strategy and business strategy. Unless a misalignment will occur between the three strategies which leads the company to be fruitless in business success.

2.11.3 Earl's IS strategy model

Earl is one of a well-known scholar who has significantly contributed a lot to have a supplementary organized understanding of ISS in run through. Earl (as cited in Shamekh, 2008, P. 66) has distinguished the three distinct partial of ISS (systems, technology, and management strategy) on the model called "Triangle Model" as shown in figure 7.

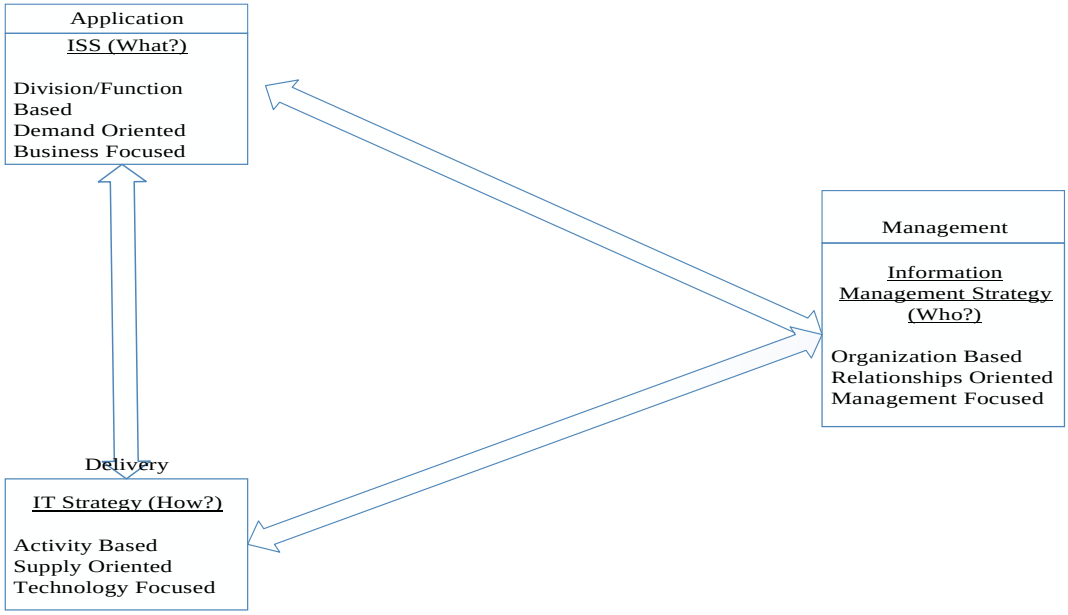

Figure 9: Triangle Model: (Earl, as cited in Shamekh, 2008, P. 66)

- The Information systems strategy – It is the first dimension of Earl's ISS model which debates the industry degrees that are to be aided by information system and responses the "what?" question. This element as oriented towards business goals and demand. The system strategy contains of the application portfolio and the planned IS/IT projects.
- The Information technology strategy – It describes the key administrative philosophies and technologies that answer the 'how' question and supervise the accomplishment of the applications. It as technology-focused and implementation oriented.
- The Information management strategy – It is the third element of the model that responses the 'who' question and deals with the responsibility of the IS drive in the industry. The management strategy expresses the necessary human resources, responsibilities and illuminates the purposes of IS/IT usage.

2.11.4 Galliers' ISS framework

Based on the family of Earl's strategy model, Galliers has offered an ISS model in 1991 and 2006. This scholar stated that ISS is made up of three main dimensions: a technology strategy (which answers the "how?" question), an information strategy (which answers the "what?" question), and a service strategy (which answers the "who?" question), and the associations present among them. As figure 8 illustrates these three strategies ("what?", "who?", "how?") are supplemented by an implementation strategy called "Change Management Implementation Strategy" that organizes the understanding of the three strategies ("what?", "who?", "how?").

Galliers (1991) particularized that the business strategy is an outdoor unit which is connected to and aligned strongly with the ISS through the information strategy.

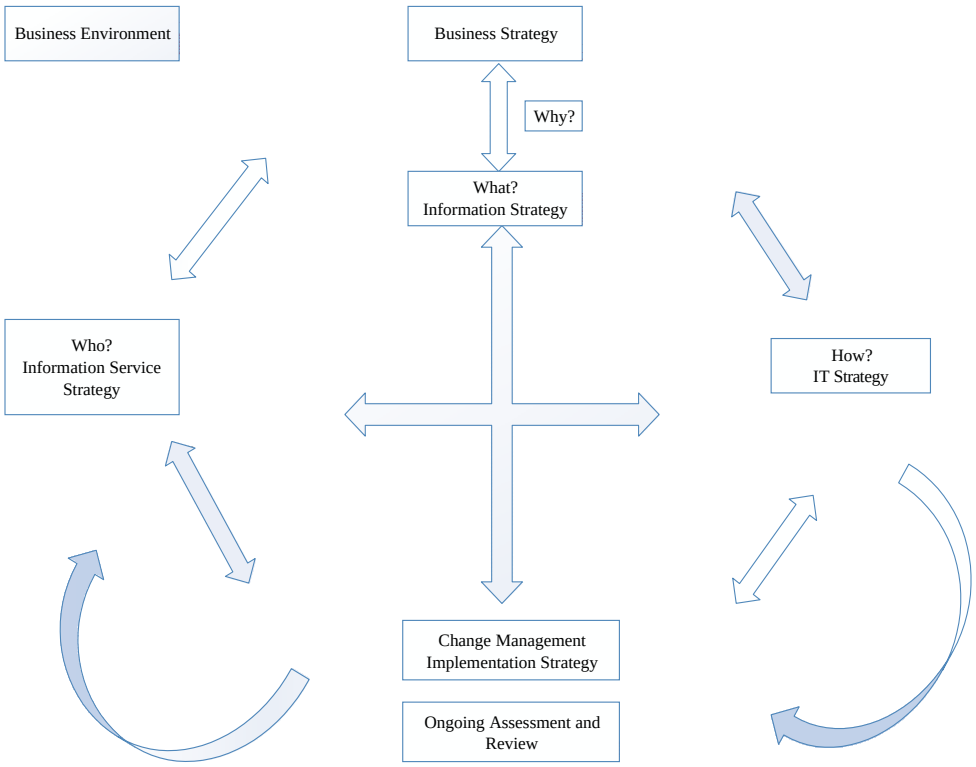

Figure 10: ISS framework of Galliers: Components of ISS: A socio-technical Perspective: Adapted from (Galliers, 1991)

2.11.5 Galliers' new problem-oriented strategizing framework

The second framework developed by Galliers is "strategizing framework" in 2006. ISS is no longer self-governing from the business strategy and it can be planned independently. And the need for a strategic alignment is eradicated because ISS become an integral part and prerequisite of the business strategy (Galliers, 2006). Galliers' new framework similarly eliminates the clear separation between information, technology, and service strategy.

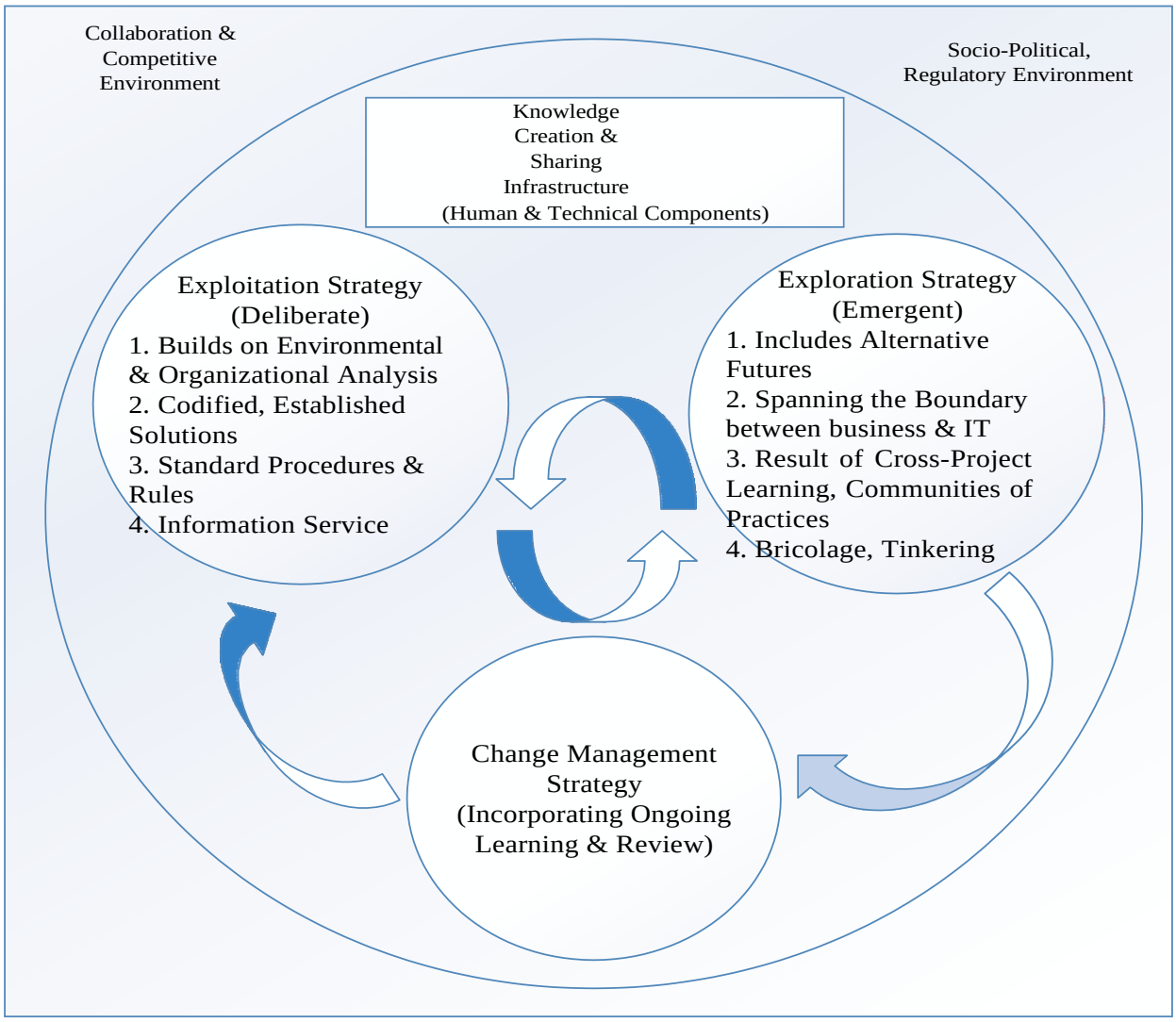

Figure 11: Galliers' ISS strategizing framework: Adapted from (Galliers, 2006; 2011)

This framework differentiated three main problem extents of strategy namely exploitation, exploration, and change management strategy (see figure 9).

- The exploitation strategy (Deliberate) – It is the first problem area that needs to be addressed that compacts with the request of IS/IT for predetermined operational purposes in order to enable efficient business operations.
- The exploration strategy (Emergent) - This problem area is charged with discovering new business capacities to use IS/IT competitively.
- The change management strategy – It is the last problem area of the framework that partially equivalent to the "Change Management Implementation Strategy" in the original framework of Galliers. However, at this framework change management strategy sets less

weight on the technical employment of IS/IT and focus on the firms modification brought by IS/IT.

In line with the above three core problem areas, Galliers also argued that human and technical component ("knowledge creation and sharing infrastructure") is important to support strategy-related announcement, teamwork and learning routes.

2.11.6 PEST Analysis

PEST (political, economic, social, and technological) analysis is a widely used framework in strategy formulation and created by the well-known Harvard professor Francis Aguilar in 1967. The framework is formed with a name of ETPS (economic, technological, political, and social) and the name was later squeezed to create the current acronym called PEST analysis. It mainly designated macro-environmental factors and is a part of an external analysis when conducting a strategic analysis in the business environment. It is a strategic framework is to measure political, economic, social, and technological factors in relation to the business state of affairs (Healey, 1994).

PEST (political, economic, social, and technological) analysis framework has mainly four dimensions as shown in figure 10. The four dimensions are illustrated below.

1. Political factor - It is one of the dimensions of PEST analysis framework which narrates how the government specifically the political factor arbitrates in the economy. It comprises goods and services like merit and demerit goods which the government aims to provide or not provide. It also defines how satisfactory a firm is to do commercial in the interior and is a key factor while formulating a strategy. Political factors include government regulations (like employment laws, environmental regulations and tax policy), political stability, government intervention, and trade restrictions/policy (Ho, 2014; Sammut-Bonnici & Galea, 2015; Downey, 2005).
2. Economic factor – It is another dimension of the framework and embraces terms like economic growth, exchange rates, inflation rate, and interest rates while formulating a strategy in an organization. It can also include weather considerations (Ho, 2014). This measurement worries about understanding of the economic prospects of the country. This strategic formulation factor significantly affects how businesses function and make judgments. For instance, interest rates have emotional impact on a business's cost of capital and hence to what degree a business matures and increases. Downey (2005) and

Sammut-Bonnici and Galea (2015) mentioned interest rates, economic growth, inflation and currency exchange rates as economic factors which affect the cost of capital and purchasing power of firms.

3. Social factor – It includes factors that are social or cultural like the cultural aspects and health consciousness, educational level, population growth rate, age distribution, career attitudes and emphasis on safety within a particular area. This dimension is the most difficult to predict and interpret. Social factors that affect the potential market size of organizations include age demographics, attitude towards work & health, education standard, and population growth (Sammut-Bonnici & Galea, 2015; Downey, 2005).

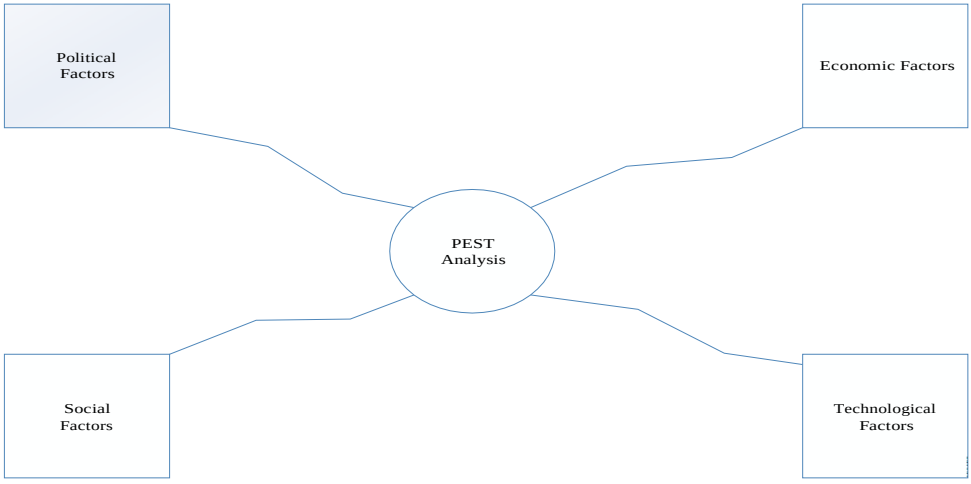

Figure 12: PEST Analysis framework

4. Technological factor – This dimension is the last but not the least factor of the framework which includes technological aspects like automation, technology incentives and the rate of technological change. It mostly emphasis on macroeconomic technology shifts. Rapid technological revolution has crushed many businesses since the industrial revolution and technological factors can influence how you bring your product or service to the market. It affects both on consumers and the company itself. Technological change is vital to staying competitive and it has been a driving force from the industrial revolution to the present day. Investment in innovation, automation/robotics, technology incentive, and rate of technological change are key factors for making decisions in firms (Sammut-Bonnici & Galea, 2015; Ho, 2014; Downey, 2005). In summary, technological shifts would affect costs, quality, and lead to innovation.

2.11.7 SWOT Analysis

A Strength, weakness, opportunity, and threat (SWOT) analysis is a high level model used at the establishment of an organization's strategic planning. SWOT analysis is a framework for measuring a company's internal and external factors (Dag, 2016). Strengths and weaknesses are considered internal factors, and opportunities and threats are considered external factors (see table 9). SWOT analysis or matrix is one of the utmost widely used strategy tools amongst directors (Abdi et al., 2011; Helms & Nixon, 2010). The level to which the internal environment of the business ties with the external environment is articulated by the notion of strategic fit. SWOT analysis "may well be used more than other management techniques in the process of decision making" (Panagiotou, 2003, p. 8).

Dyson (2004) itemized SWOT analysis as an established tool for supporting and helping the formulation of strategy in firms. He clarified that SWOT aims to identify the organizations strength and weakness and its environment opportunities and threats. Dayson (2004) stated that after identifying the factors both internal and external strategies can be formed by building the strength, eliminate the weakness, exploit the opportunities, and counter the threats.

SWOT Analysis	POSITIVE helpful to achieving the goal	NEGATIVE harmful to achieving the goal
INTERNAL Origin factors of the organization	Strengths Things that are good now, maintain them, build on them and use as leverage	Weaknesses Things that are bad now, remedy, change or stop them.
EXTERNAL Origin factors of the environment in which the organization operates	Opportunities Things that are good for the future, prioritize them, capture them, build on them and optimize	Threats Things that are bad for the future, put in plans to manage them or counter them

Table 9: SWOT Analysis/Matrix

Based on SWOT Analysis/Matrix, Strengths and weakness are commonly internal factors of the organization, whereas opportunities and threats are regularly external factors of the organization. Strengths and opportunities are positive factors which are helpful to achieve the objective of

firms. While weaknesses and threats are negative factors which are harmful to achieve the goal of companies. The four parameters of SWOT analysis/matrix are listed below:

- Strength: This parameter focus on the features of the corporate/project that give it a benefit over others.
- Weakness: This is another parameter which emphasis on the characteristics of the industry that lead firms or projects at a difficulty comparative to others.
- Opportunity: It is the third type of parameter which shows the components in the atmosphere that projects and firms could exploit to be advantageous.
- Threat: It is the last but not the least parameter of SWOT analysis/matrix which directs features in the environment that could cause trouble and anxiety for projects and firms.

New strategies can be formed from SWOT matrix model by connecting internal and external factors (strength-opportunity strategies called maxi-maxi, strength-threats strategies called maxi-mini, weakness-opportunity strategies called mini-maxi, and weakness-threat strategies called mini-mini) (Weihrich, 1982). SWOT supports directors to develop four types of strategies (Weihrich, 1982).

1. Strength-Opportunities (SO) strategies – the use of firm's internal strengths to take advantage of external opportunities.
2. Weakness-Opportunities (WO) strategies – improve internal weakness by taking advantage of external opportunities.
3. Strength- Threats (ST) strategies - use of firm's strength to avoid or reduce the impact of external threats.
4. Weakness- Threats (WT) strategies – these strategies are the last strategy of SWOT matrix and stand self-justifying strategies focused at dropping internal weakness and circumventing external threats (Weihrich, 1982).

2.11.8 McKinsey 7-S Framework

McKinsey 7-S framework is developed by Tom Peter and Robert Waterman in the late 1970s to formulate strategy of firms with seven key elements. The two consultants are working at the McKinsey and company consulting firm and has been used to analyze huge companies using their framework (Alshaher, 2013). The framework labels the seven elements as hard and soft elements. The hard elements are relatively easy for managers to manage and identify. These

elements are structure, strategy, and systems. Whereas the soft elements are hard to describe and less tangible. These elements are skills, style, shared values (superordinate goals), and staff.

- Strategy – It is one of the key elements of McKinsey 7-S framework that shows firm's plan and blueprint in order to maintain and build a competitive advantage in excess of entrants and competitors. It is the plan of the company in reply to alterations in its external environment.
- Structure – This element focus on how organizations are organized, how teams and departments are structured, and who reports to whom.
- System – It is the third element of the framework that mainly elaborates the daily procedures and activities in which the workforce/staff use to come to be the occupation completed.
- Staff – Staff is the fourth element of the framework which shows the personnel, human resource related issues, and their capabilities.
- Style – It is mainly concern about the leadership style adopted by the company and communication among employees.
- Skills – This element measures the employee's competencies and actual skill (both IS/IT and business) in the organization.
- Shared Values/Superordinate Goals – It is the last but not the least element of the framework that indicates the core values of firms, company's culture and general work ethic. This element was named as superordinate goal during first development of the framework and later on called Shared values. It acts as central to other six elements of the framework (Tracey & Blood, 2012).

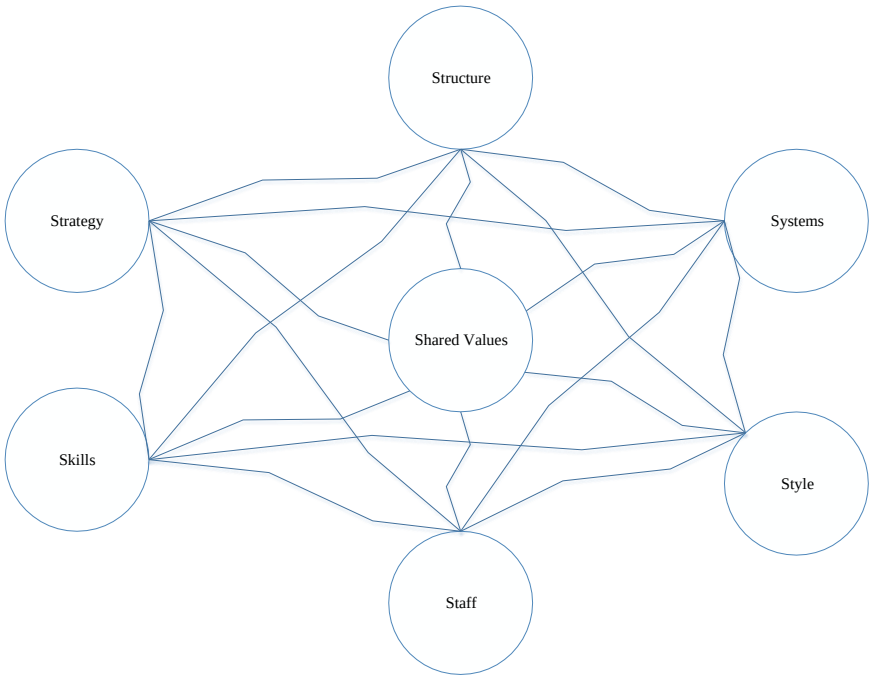

Figure 13: McKinsey 7-S Framework: Source: (McKinsey & Company, 2020: www.mckinsey.com)

2.11.9 Porter's Five Forces Framework

Porter's five forces framework is a simple framework developed by Michael E Porter in 1979 and used for conducting industry analysis of any firm about the competitive intensity, factors affecting profitability, competitive strategies development and its position. Porter (2008) indicated that the key five forces needed while analyzing an industry competitive strength are supplier power, buyer power, competitive rivalry, threat of substitution, and threat of new entry and he named those five forces as the microenvironment. Porter has grouped the five forces into two dimensions as horizontal forces and vertical forces. The horizontal force includes threat of substitutes, threat of new entrants, and competitive rivalry. And the vertical force comprises bargaining power of buyers and bargaining power of customers.

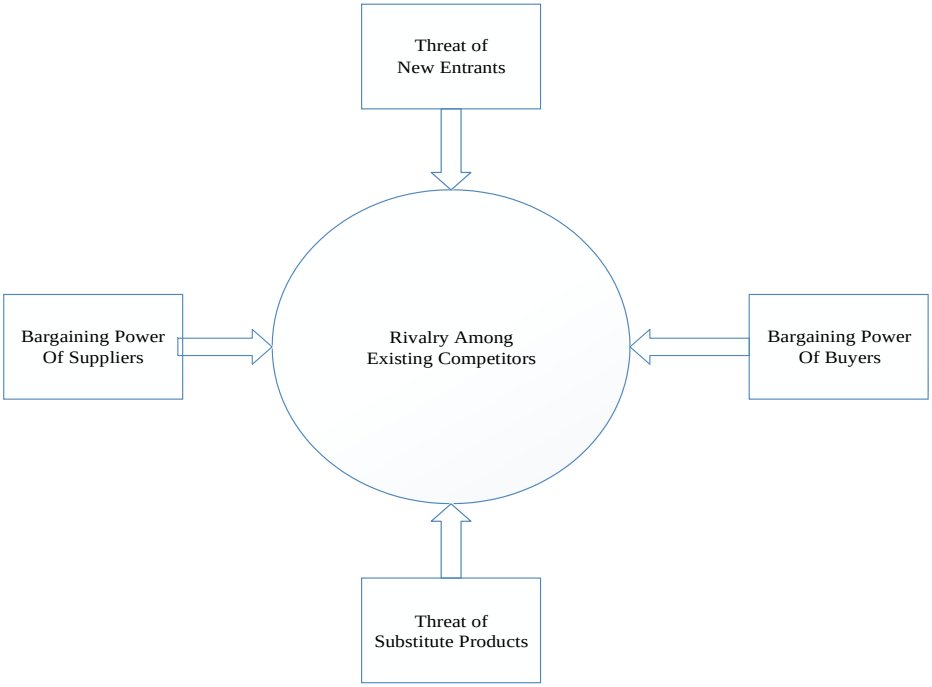

Figure 14: Porter's Five Force Framework: Source (Porter, 2008)

As shown in figure 12 the five forces of Porter's framework are discussed below.

1. Bargaining power of suppliers - is one of the essential components of Porter's five force framework. It shows how amount of suppliers of each vital input, price of swapping from one supplier to another, individuality of their service, comparative scope and power of the supplier can easily drive up prices from the supplier's side. There is a necessity to keep strong stable associations with supplier since suppliers deliver the raw material wanted to provide a service for customers.
2. Bargaining power of buyers – It is another essential component of Porter's framework that shows how easily the number of buyers in the market, significance of each individual buyer to the business, and price to the buyer of swapping from one supplier to another drive prices down from buyer's side. According to the scholar it is necessary to consider buyer's power in the company when buyers have the power to touch prices in the business.
3. Rivalry among existing competitors – this component defines the amount of rivalry between current businesses in the marketplace. According to Porter the profits and strategy will be energetic if there are supplementary competitors in the market. Additionally, market attractiveness will be reduced when many competitors offer homogenous products and services.

4. Threat of substitute products – Based on Porter's framework illustration substitute products/services are those that happen in a different business but used to achieve similar requirement. Business's ability to set prices will be affected by a high threat of substitutes. The greater the firm's modest atmosphere and the lower the possible for turnover then the more substitutes that happen for a product in that company.
5. Threat of new entrants – It is the last but not the least component of Porter's framework which displays how new entrants in the market place likely are a competitive threat to a company's trade. Affording to Porter, if a business is eye-catching in a long period strategic routine, then it will be good-looking to new firms. New firms may simply go in the marketplace and modify the changing aspects of the business unless there are ways to detect them like blocks to entrance.

2.12 Summary of Strategy Models and frameworks

Different researchers have tried to explore and propose strategy models and frameworks in diverse period. Some of the strategy models and frameworks are listed below in the form of table to show their strength and weakness.

Model/Framework	Strength	Weakness
PEST Analysis	• It deeply analyze the external factors • It is cost effective • It exploits opportunities	• It doesn't consider the internal factors of the organization.
SWOT Analysis	• It considered both the internal and external factors • It is very simple and powerful • It has little or no cost	• It doesn't show how to achieve competitive advantage by itself.
Porter's Five Force Framework	• It Illustrated five forces for industry competitive analysis • Used to analyze and assess competitive power and its position.	• Needs more than Two competitor firms
McKinsey 7-S Framework	• Simple and easy key	• Ignores

	measurements used to analysis internal environment while formulating ISS.	microenvironment and macro environment.
IS/IT Strategic Model (Ward & Peppard, 2002)	• It clarified a nice ISS framework by taking inputs, outputs and essential activities as a building block • It considered current and future IS/IT portfolio	• Lacks deep investigation of macro environmental factors
Triangle Model (Earl, 1989)	• It differentiated the three dimension of strategy(IS strategy, IM strategy, IT strategy)	• Doesn't illustrate where the value is added
Strategizing Framework (Galliers,2006)	• It differentiated three main problem extents of strategy(exploitation, exploration, and change management) • It considered ISS as an integral part of business strategy and eradicate the need for alignment • It eliminated the clear separation between information, technology, and service strategy.	• It doesn't consider cultural and economic factors

Table 10: Summary of Strategy Models and Frameworks

2.13 Summary of Related Works

Numerous studies have been conducted in the area of information system strategy and strategy alignment. Some of the studies are offered hereunder in the form of table.

Authors	Title	Objective	Method Used	Key Findings	Remarks
Obeidat et al. (2017)	Factors affecting strategy implementation: A case study of Pharmaceutical company in the middle east.	Identifying factors for strategy implementation.	Five operational process factors were studied (resource availability, communication, operational planning, people, control & feedback)	1. Strategy implementation process is not affected by people. 2. Strategy implementation process is affected by resource availability, communication, operational planning, control & feedback.	✓ It is not conducted on banking industry. ✓ Pay no attention to ISS framework
Kwamanga (2016)	The influence of SIS on the performance of microfinance institutions in Nairobi, Kenya.	Discovering the impact of SIS on microfinance performance.	Descriptive, Quantitative Research	1. SIS influence the performance of microfinance performance. 2. Customer's awareness is a challenge on how to use electronic service.	✓ It is not conducted on banks.
Gupta and Collins (1997)	The impact of IS on the efficiency of banks:	Evaluating the contribution of IS to various	Empirical, Survey study	1. Lack of rigorous analysis & theoretical framework that	✓ It is gives less attention to ISS.

	An empirical investigation.	productivity & efficiency measures in Florida banks.		explores the link between IS investment, & a bank's efficiency. 2. Traditional measures of productivity continue to be the most popular measures of efficiency & return on investment.	
Buruncuk and Gulsor (2011)	Factors affecting implementation of IS success and failure.	Investigating factors for the success and failure of IS.	Survey	Recommend a model for determining factors of IS success & failure	✓ It is not conducted on banks.
Labidi and Lazar (2016)	Factors hindering BITA in the banking sector of a developing country.	Exploring the factors that hinder BITA in the banking sector of developing countries	Case study (4 commercial banks of Burkina Faso)	Find BITA factors 1.Delay in task execution 2.Insufficiency of cross-sectional trainings 3.Heavy workload of	✓ It gives less emphasis to ISS. ✓ Biased to alignment

				banking staff	
Ward and Peppard (2002)	Strategic Planning for Information Systems	1.Describing tools, techniques and management frameworks to both align strategies for IS and IT with business strategy 2.Demonstrating information system strategic planning is essential to organizational success		Propose an ISS framework with three elements 1.Input (internal IS & business environment, External IS & business environment) 2.Process (IS/IT strategy process) 3.Output (Business IS strategy, IS management strategy, IT strategy, future application service)	✓ The case is not developing countries.
Girma (2013)	IT and Business Strategy Alignment, & its impact on the performan	Identifying the impact of IT & Business strategy alignment on the performanc	Quantitative Method	Measure the level of IT and business strategic alignment Compare the intention of capital investment for	1.Biased to Alignment

	ce of CBE.	e of CBE.		IT	
Iyasu (2017)	Information system outsourcing challenges and benefits	Exploring the challenges and benefits of IS outsourcing	Qualitative case study	Lack of formal ISS, lack of IS outsourcing strategy, lack of IS project management, poor contract and SLA are key challenges for outsourcing IS development function.	✓ It is not conducted on commercial banks. ✓ Biased on IS outsourcing
King (2018)	Bridging the gap between IT strategy and Business strategy. Exploring strategic alignment gap.	Investigating & Bridging the gap between business & IT strategy.	Qualitative case study	Identifying the gap between Business and IT using Luftman's SAMM 1.Factor Influencing alignment 2.IS/IT and Business strategy gap	✓ Biased to Alignment
Menelik (2019)	Business-IT strategic alignment improvement framework : A case study on Bank of Abyssinia.	Finding internal and external challenges that hinders BITA.	Qualitative case study.	1. Refined BITA model. 2.IS/IT strategy gap	1.Biased to Alignment
Elsa (2019)	IT-	Measuring	Combinatio	The maturity	1.Biased to

	Business Alignment : The case of Ethiopian Airline.	the level of BITA	n of qualitative and quantitative method.	level of BITA.	Alignment 2.The case is not Banking Industry

Table 11: Summary of Related Works

As table 11 illustrates different researches have been conducted in the area of information system strategy. Among those researches some of them are enumerated below.

Obeidat et al. (2017) found that Strategy implementation process is not affected by people and strategy implementation process is affected by resource availability, communication, operational planning, control & feedback. Kwamanga (2016) illustrated that SIS influence the performance of microfinances, and customer's awareness is a challenge on how to use electronic service in Kenya's microfinance. Labidi and Lazar (2016) clarified that delay in task execution, insufficiency of cross-sectional trainings, and heavy workload of banking staff are key factors of business information technology alignment using case study. However, those studies are not conducted at the banking industry.

Menelik (2019) state that lack of clear strategy and strategy implementation experience is one of the key BITA hindering factors in the bank. Particularly, Tagel (2016) indicated that the actual IT/IS governance maturity of CBE is under level 1 (1.2) which shows IS/IT governance gap exists in the bank; and Lewam (2018) found that IS/IT changes are not being accomplished and demarcated clearly in the bank and recommended CBE to implement an instrument to support the change management. But, none of the studies have in depth know-how about CBE's current ISS practice and ISS development framework used by the bank. As a result, this kind research is intended to explore the adopted ISS of CBE, investigate CBE's current practice of ISS, and propose a robust ISS development framework for the bank.

Chapter Three

3.1 Theoretical Framework

This chapter illustrates the underpinning theory used in order to guide this study. Theories in qualitative research function as a lens for the investigation or they may be produced throughout the investigation (Creswell, 2009). The theoretical framework acts as a backbone and a foundation for a study. The researchers followed the following steps to come up with the theoretical framework of this kind research.

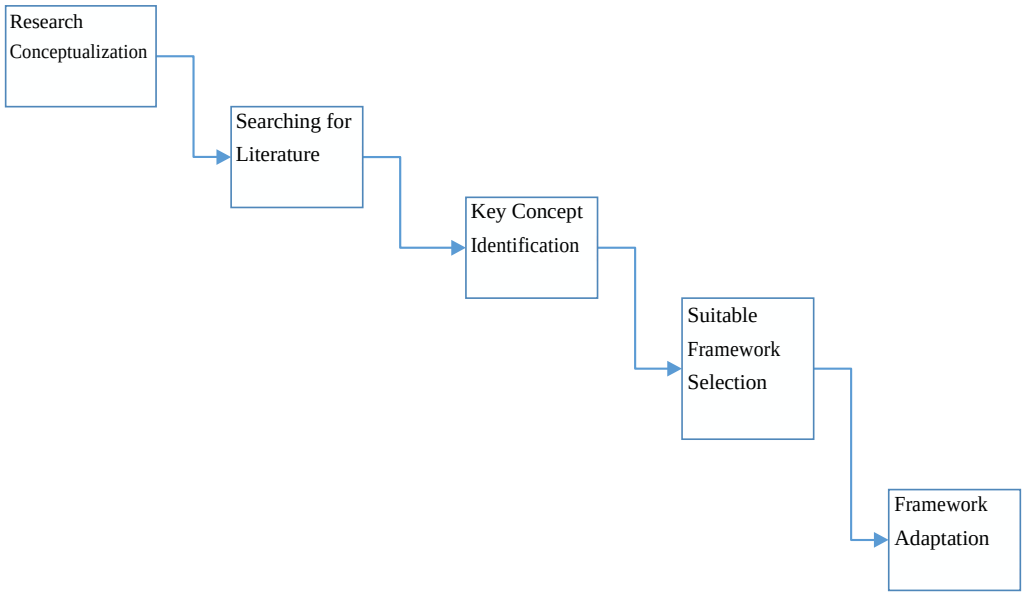

Figure 15: Steps to develop theoretical framework. Source: The researchers

An information system strategy helps to define the organization's direction and shows how information systems can support the business goals and objectives. Information systems strategy mostly focus on bring into line the expansion of information system with the business needs (Ward & Peppard, 2002).

Several frameworks and models have been proposed and developed by scholars. For instance the triangle model (Earl, 1989), components of ISS: A socio-technical perspective (Galliers, 1991), strategizing framework (Galliers, 2006), ISS triangle (Pearlson & Saunders, 2010), IS/IT strategic model (Ward & Peppard, 2002) which showed the association between the business and

IS/IT strategies in an organization. This study has adapted a strategic process model proposed by Ward and Peppard (2002) as a theoretical lens.

The information systems strategy process model has basic building blocks like the inputs, outputs, and essential activities needed to formulate and implement a strategy. The input components of the framework are the internal business environment, internal IS/IT environment, external business environment, and external IS/IT environment. The output components of the framework are IS/IT management strategy, business-IS/IT strategy, IS/IT strategy and future application services (see figure 14).

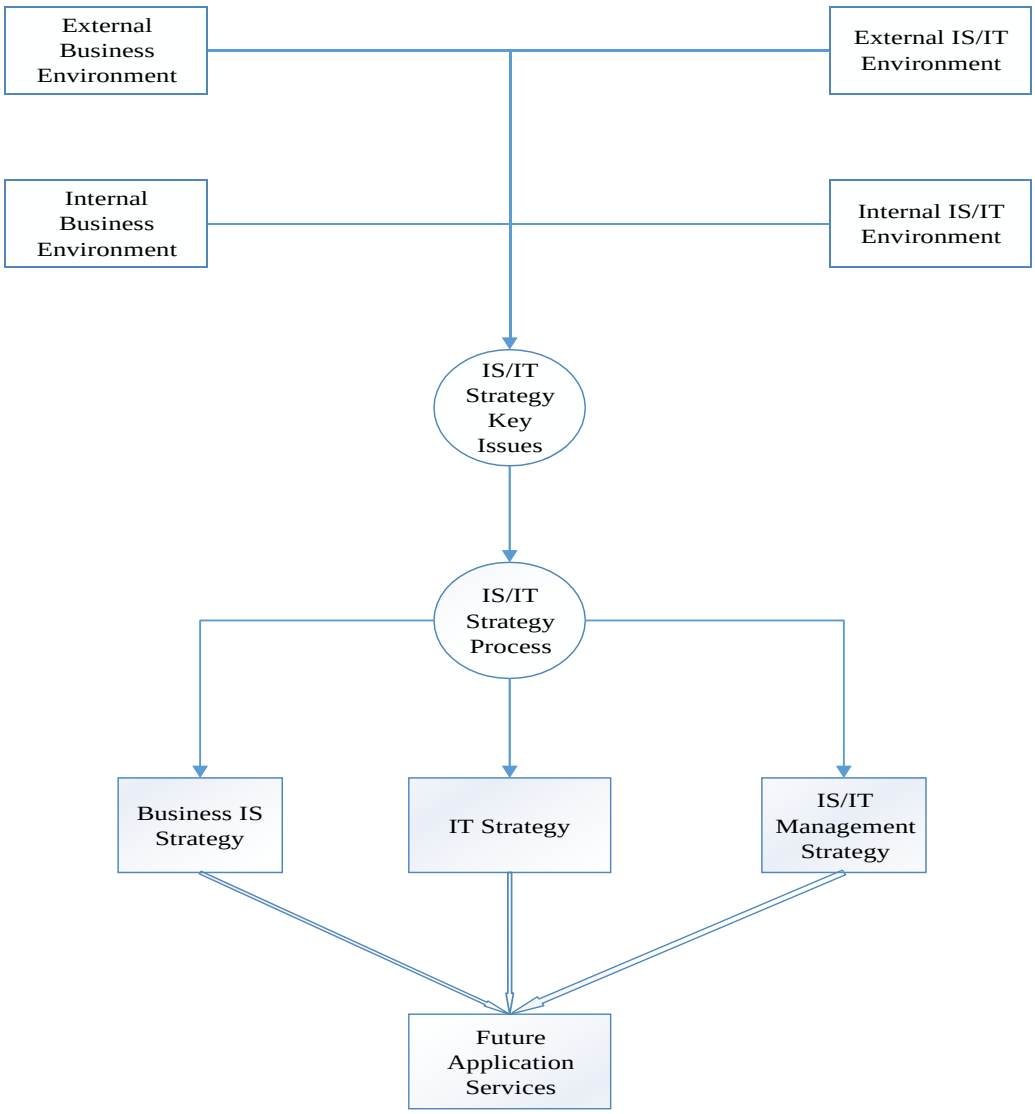

Figure 16: ISS model: Adapted from (Ward & Peppard, 2002)

Ward and Peppard (2002) pointed out IS/IT strategy process is one component of the model that ensures the IS/IT strategy process is linked effectively to business strategy formulation activities and existing business strategies and plans. IS/IT strategy key issue is another essential component added to the process model of Ward and Peppard by the researchers. This component mainly elaborates issues that emerge while the macroeconomic, the industry, and internal environment of the company are assessed.

The internal business environment is the input element of the framework which shows the current business strategy, objectives, resources, processes, and the culture and values of the business (Ward & Peppard, 2002). The second dimension of the model is the external business environment that expresses the economic, industrial and competitive climate in which the business functions. They have revealed the third dimension of the framework as the internal IS/IT environment which illustrates the current IS/IT perspective in the business, its maturity, business coverage and contribution, skills, resources, technological infrastructure and current applications like existing systems and systems under development, or budgeted. The last but not the least input component of the model that shows the technology trends, chances and the use made of IS/IT by customers, competitors, suppliers and others is termed as the external IS/IT environment. The researchers stated that ISS process has to be connected successfully to business strategy formulation actions and current business strategies.

The process model developed by Ward and Peppard (2002) has mentioned IS/IT management strategy, business IS/IT strategy, and IS/IT strategy as an output components. IS/IT management strategy is the output component that displays the common elements of the strategy that apply throughout the organization, confirming reliable policies where desired. Business IS/IT strategy clarifies how every unit will install IS/IT in attaining its business objectives. And another output component of the model is IS/IT strategy which articulates the policies and strategies for the administration of technology and professional wealth. Future application service clarifies about the suggested application that will be used in the nearby future.

Ward and Peppard (2002) gave details the tactic chosen while formulating any strategy framework should have key characteristics like emphasis on deliverables, clear checkpoints, simple diagramming tools, recognition of the importance of the human side of the process, flexible, modular and able to pick up deliverables from earlier or parallel activities and used as

an evidence for choosing Ward and Peppard's ISS model as an underpinning theory of this kind study.

This kind process model of Ward and Peppard is a candidate model and has covered many dimensions and strategy elements which are key while analyzing and formulating strategy using different tools like SWOT analysis, Porter's Five Force Framework, and PEST analysis.

In addition to the above evidences, the model is developed by the two well-known and dominant scholars in strategy and related works (John Ward – a professor of Strategic Information System and Director of the information systems research center at Cranfield University, school of management and Dr. Joe Peppard a senior research fellow at Cranfield school of management where he researches and teaches in the area of IS and technology strategy and management for long years). And their work has been cited by different scholars more than 3073 at ACM Digital library and 617 at researchgate (Retrieved on: December, 2019). Due to the above confirmations, this research has carefully chosen Ward's and Peppard's IS/IT strategy process model as underpinning theory to conduct the study.

Chapter Four

Research Methodology

Research methodology is a wide-ranging concept that incorporates research philosophy, approaches, strategies, choices, time horizons, and data collection and analysis techniques and procedures (Saunders et al., 2009). A research methodology discourses the question of 'how' the study is accompanied and administered by the research questions (Williamson, 2002). Design activities can be putted into an intellectual level either natural science or design science. Design science (a science of the artificial) is a body of knowledge about the design of artificial objects and phenomena artifacts designed to meet certain desired goals. Whereas a natural science is a body of knowledge about some class of things objects in the world that describes and explains how they behave and interact with each other (Simon, 1996). Based on the above fact, the researchers proposed a motivating information system strategy development framework, explored the adopted ISS of CBE and the current ISS practice of CBE to enhance business success using qualitative research approach.

4.1 Research Design

Yin (2011) stated that research design is a strategy that guides the researcher in the development of gathering, examining, and inferring opinions. Research design is the logical and philosophical rulebooks the investigator carries to the study and processes of reviewing research methods of data collection, data analysis, and data interpretation (Creswell, 2014).

Research design is a plan to conduct a study, and it includes significant elements like strategies of investigation, philosophical assumptions, and specific research methods (Creswell, 2009). Qualitative methodology more specifically exploratory case study research process has been applied to pursue deep understanding about information system strategy. The overall research design process putted as follow using research onion proposed by (Saunders et al., 2009).

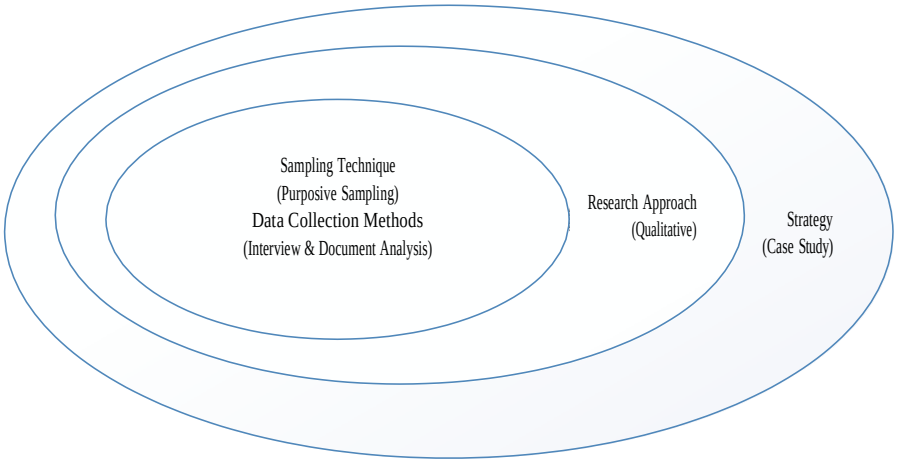

Figure 17: Research Onion: Source: The Researchers based on (Saunders et al., 2009)

4.1.1 Research Approach

Research approach is the blueprint which involves numerous decisions for a research that distance the stages and steps from comprehensive expectations to thorough means of data gathering, data analysis, and data interpretation (Creswell, 2014). This scholar stated the research approaches in three sights specifically qualitative, quantitative, and mixed approach. Qualitative or qualitative research is a method for discovering, understanding, and exploring the sense groups or individuals give credit to a tricky or a problem. Deductive/quantitative research is a method for testing theories and models by investigating the association between variables. The third approach which is mixed method that involves gathering both qualitative and quantitative data, mixing the two forms of data, and spending separate plans which involve theoretical frameworks (Creswell, 2014).

Qualitative approach allows the researcher to collect data and develop theory from data analysis results and findings (Saunders et al., 2009). Qualitative research is an occurrence for growing new ideas (Yin, 2009). Qualitative research is an effort to recognize situations in their inimitability as part of a specific context and the interactions there (Patton, 2002). The key anxiety in qualitative research understands the marvel of notice from the members' viewpoints (Merriam et al., 2015). The selection of a research approach is based on the matter being addressed, nature of the study problem, the audiences for the study, and the investigators' personal skills (Creswell, 2014).

Therefore, in line with the above hot evidences qualitative approach fit with this kind research. In this sympathetic research entitled ISS development framework, the participant (IS and business staff of the bank) standpoint on ISS is vital. In addition to this, discovering phenomena is one features of qualitative research. Qualitative research approach is suitable to discourse a research problem in which slight is yet recognized and essential further investigation (Creswell, 2012).

Pamela and Susan (2008) indicated that qualitative research approach simplifies exploration of a phenomenon within its context using a variety of data sources. In this study the researchers have discovered numerous ISS frameworks and models by different scholar with different lens to come up with appropriate ISS development framework for CBE. Qualitative research is the best approach when the investigation is concerned with understanding the situation at hand in detail rather than generating findings of statistical significance which proves or disproves causal relationships. As the purpose of this study is to propose ISS development framework for the CBE, to explore ISS formulation way and to identify factors for ISS, qualitative research approach is appropriate to commence this study.

When little is known about the situation at hand and the goal is to have a deeper understanding, qualitative approach is the best selection (Hancock & Algozzine, 2006). Qualitative research is real to collect data related to attitudes, motivations and opinions (Yin, 2003). For this study a qualitative approach has been followed because the estimated responses are mainly belief based that require some clarification.

In addition to the above intention, since the aim of this study is exploring the adopted ISS of the bank, and investigating the current practice of CBE ISS to propose ISS development framework. As a result, qualitative research approach is suitable and has been used in this sympathetic study.

4.1.2 Research Strategy

A research strategy supports the researcher to design the research, by demonstrating who is involved, what is involved, where the study would take place, and when the study should take place (Plooy, 2001). This study has examined single case to deeply apprehend the up-to-date situation in the bank under the study has putted the results clearly and has developed the proposed ISS development framework. A case study is taken as the central strategy for data collection when qualitative methodology is used since the aim of a case study is to fold detailed information about a case or group of cases which are related to each other.

Creswell (2014) stated that a case study as a strategy of analysis originates in numerous fields in which the investigator advances an in-depth analysis of a case. In a case study, a case or a situation is chosen for the study. The interest comes from processes, and individual cases are studied in relation to the context in which they exist. Several methods like reviewing documents, observation and interviews can be used to gather data for case studies. Describing and understanding a phenomenon is the core of a case study.

An exploratory research is conducted, if the researcher has no intention or ability to control the environment that is to be studied or control certain variables during the data collection and manipulate the scene, a case study is considered suitable as the chosen strategy for conducting the data and a study should track an exploratory approach if it is worried with questions who and why (Yin, 2003). Based on the above fact, the chosen strategy for this research is an exploratory case study.

A case study is a type of qualitative research method where a single event is deeply examined, rather than relying on large examples and stick to a rigid protocol to examine a limited number of variables. A case study can be defined as an empirical examination of a contemporary miracle within its normal situation using numerous bases of confirmation (Yin, 2003). It consents the scholar to search individuals or organizations, humble through multifaceted involvements, associations, communities, or agendas. A case study focuses on subjects that are very important and representative. To have a sound research finding and result a Single-case (embedded) design (a case study containing more than one unit of analysis) has been used for this study as a case study design and the case has been examined in a thorough and in-depth manner.

4.1.2.1 Unit of Analysis

The unit of analysis is foundation for a situation and it defines what a “case” is in a case study. It may be an individual person, or an event or an organization or team or department within the organization (Yin, 2009). Unit of analysis affect the data collection method, sample size and the number of variables. Miles and Huberman (1994) defined a case as, “a phenomenon of some sort occurring in a bounded context. The case is, in effect, your unit of analysis” (p. 25).

There are four types of design in case study: single-case (holistic) design (It is a case study containing only one unit of analysis), single-case (embedded) design (It is a case study containing more than one sub-unit of analysis), multiple-case (holistic) design (A case study

containing more than one cases and one unit of analysis), and multiple-case (embedded) design is a case study containing more than one cases and unit of analysis (Yin, 2003). Based on the above clarification, CBE is the case and organizations of target investigation (CBE, NBE, and Dashen bank) are taken as a unit of analysis.

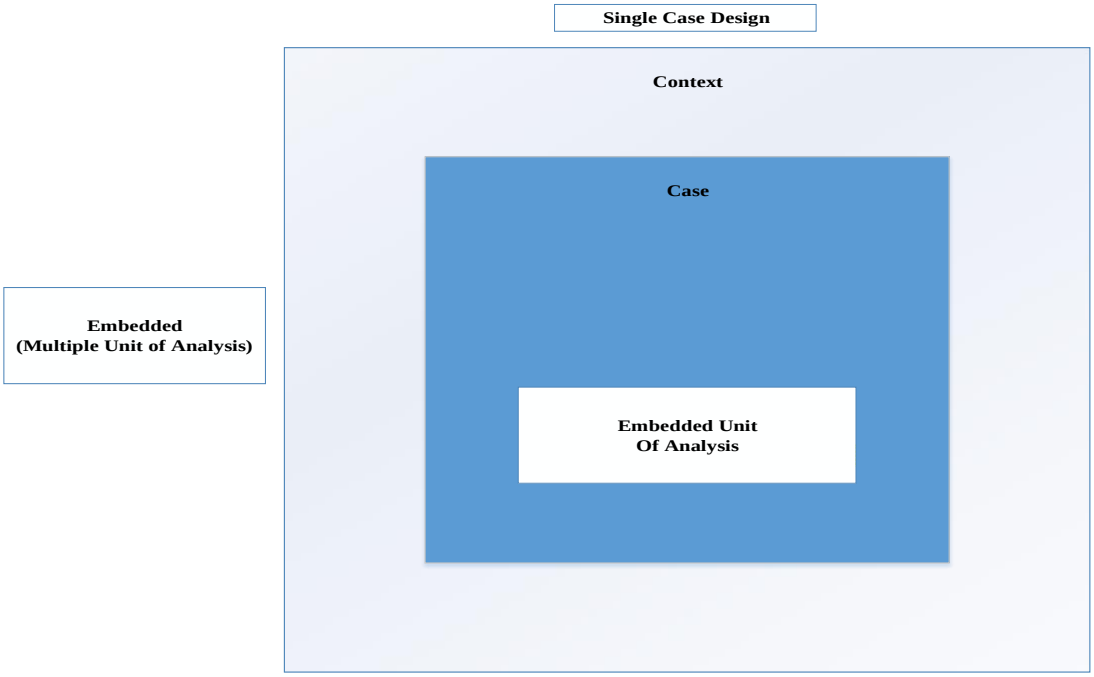

Figure 18: Single-Case Design for Case Study: Source (Yin, 2009)

4.1.3 Research Plan

A complete design is settled to control and guide the study process. It is decided that the study broadly based on the ideals of interpretivist and such should be of a qualitative nature where data collection done through interview and document analysis. Accordingly, the overall research plan for the research process looks like the following.

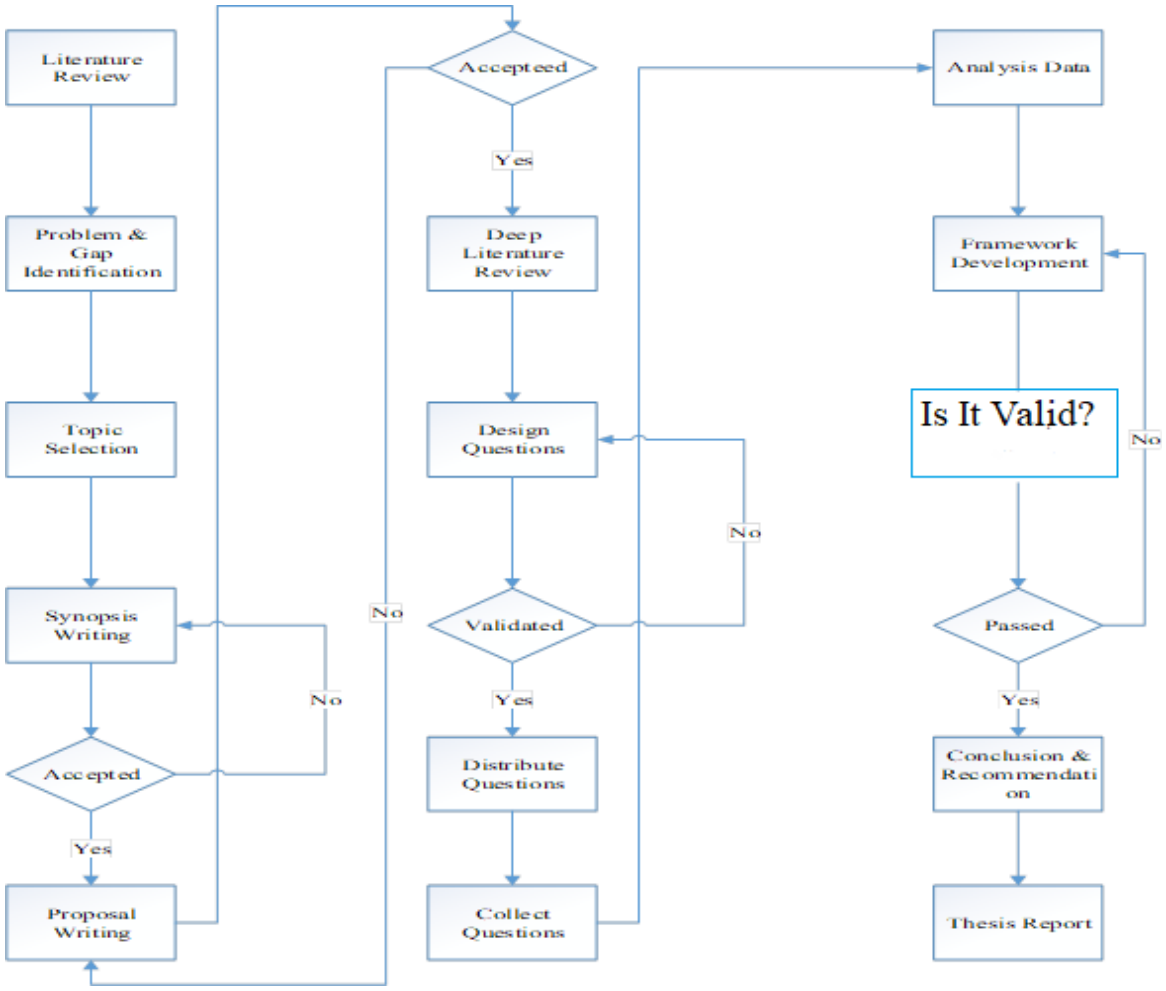

Figure 19: Research process plan: Source (The Researchers, 2020)

4.2 Data source

To conduct this study both primary and secondary data have been collected. Secondary data has been gathered from existing literatures in the area of the study, data from CBE and selected external companies. Primary data has been gathered from employees of selected firms using different data collection techniques.

4.3 Data Collection

The solicitation of diverse data collection methods can improve the asset of the research results through the cross-validation of data gathered using different methods. Qualitative research data sources can be collected via, interviews and documents and texts, and the researcher's impressions and reactions (Myers, 2009). Therefore, to have quality data and quality research findings the researchers have used interview and document analysis by including redundancy of

data gathering which leads to triangulation of data collection method. Microsoft Visio 2013 and Endraw Max have been used as drawing tools throughout the research process.

4.3.1 Interview

One way of collecting primary data is using interviews. Among different forms of interviews the researchers used Semi-structured interview which allow accessing the understandings and situations of the participants in depth with respect to the activities and events that are happening based on the respondents experience and tacit knowledge using purposive sampling technique.
These semi structured interview questions are prepared to be answered by both IS/IT and business managers because now a day managers at any level are well versed about the technology and related issues.

The researchers used the most widely accepted analysis tool named SWOT to frame the semi structured interview questions in teams. SWOT is used by different scholars, business managers and directors to formulate strategy (Abdi et al., 2011; Helms & Nixon, 2010; Knott, 2008; Panagiotou, 2003; Stenfors et al., 2004). SWOT is the most widely used strategy formulation tool (Dayson, 2002; Weihrich, 1982).
Cartinescu (as cited in Gasparotti, 2009) itemized that the achievement and practice use of SWOT analysis is great and it requires the three steps (first identifying strength, weakness, opportunity, and threats; second identifying second quadrant; and lastly formulating the strategy).
In addition to the above key points, the reason why the researchers have made a favor and have selected the most widely used method named SWOT analysis is to investigate internal and external factors deeply and to formulate ISS development framework for CBE.

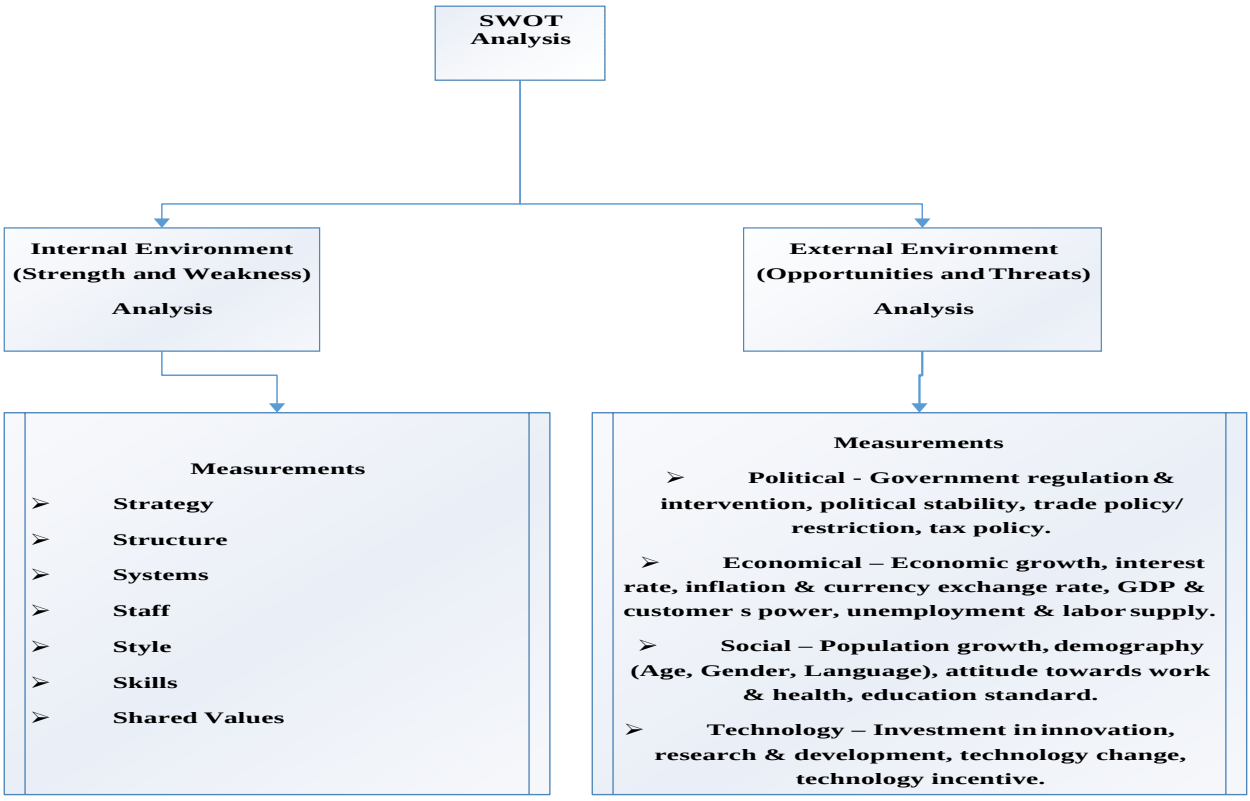

Figure 20: The researchers' basis to develop interview questions: Adapted from (Samuel-Bonnici & Galea, 2015; Ho, 2014; Downey, 2005)

The semi structure interview questions have been prepared based on Ward and Peppard (2002) (see figure 14), candidate model and framed using SWOT analysis tool which is adapted from different scholars, as shown in figure 18. Additionally, the interview questions have been checked and approved by the research advisor. So, the interview questions are usable and valid to carry out the research.

The internal environment analysis interview questions have been prepared based on the theoretical framework using the measurements of McKinsey 7-S context (see figure 11). The measurements are strategy, structure, system, staff, style, skill, and shared values. Whereas the external (macro) environment analysis interview questions have been prepared based on the theoretical framework using PEST analysis (see figure 10). The researchers have adapted key measurements to perform PEST analysis from different scholars like (Samuel-Bonnici & Galea, 2015; Ho, 2014; Downey, 2005) basing theoretical lens of this research.

4.3.1.1 Interviewees Data and Description

This kind research has included ten interviewee's which are selected purposively by the researchers to reach the ultimate objective of the study. Among the ten interviewees six of them are from CBE and the remaining four are from external environment.

Those interviewees are key specialists and directly have contribution while formulating strategies and policies in the banking industry. CIO (20%), directors (50%), managers (20%), and senior employees (10%) from both the business (30%) and IS/IT (70%) have been included in the interview process. The researchers used different tools and apparatuses to deliver the interview process with interviewee's due to the pandemic COVID-19. The tools include direct contact/ face to face communication, via phone call, and via Zoom.

The detail of interviewees information including code and the time taken to deliver the interview putted as follow (see table 12).

Industry	Staff	Code	Time taken for the Interview (hh/mm/ss)
Internal Environment	IS/IT	IE1	Partially recorded interview
Internal Environment	IS/IT	IE2	00:44:22
Internal Environment	IS/IT	IE3	01:04:48
Internal Environment	IS/IT	IE4	00:56:30
Internal Environment	IS/IT	IE5	00:52:10
Internal Environment	Business	IE6	00:39:52
External Environment	Business	EE1	Unrecorded interview
External Environment	IS/IT	EE2	01:26:42
External Environment	IS/IT	EE3	01:45:08
External Environment	Business	EE4	01:27:44
Total time taken to deliver the interview (excluding unrecorded interview)			09:16:32

Table 12: Interviewees information with code

4.3.2 Document Analysis

The second data collection technique for this study is document analysis which emphases on understanding the phenomenon under investigation using hardcopy and softcopy documents like annual reports and strategy documents of selected firms and different literatures. This data collection technique used to build thick description about the study by triangulating the data which have been collected by interview and not covered by the first data collection techniques to have quality data and quality findings by increasing reliability and validity.

4.4 Study population and sampling

CBE Employees specifically information system and business department staffs are the study population for this thesis work. Currently, the banking industry reaches a total number of 19 commercial banks. From 19 commercial banks, 16 are private banks and 3 of them are government-owned banks (National Bank of Ethiopia [NBE], 2019). However, Due to time constraint, COVID-19, unwillingness of banks, eventful nature of the financial industries and to have quality research findings, the researchers have focused on only one commercial bank named CBE as a case and 2 banks to conduct the external environment analysis.

The case of this study “CBE” history dates back to the establishment of the state bank of Ethiopia in 1942 and currently the bank has more than 22 million account holders, 2.5 million mobile banking users, more than 2.5 internet banking users, and more than 8 million active ATM card holders. The bank is pioneer to introduce modern banking to the country, has more than 1,456 branches stretched across the country, is leading African bank with assets of 711.96 billion Birr, and has opened four branches in South Sudan. The bank is working with the vision “To become a world-class commercial bank by the year 2025” (Commercial Bank of Ethiopia [CBE], 2019). This shows that the selected case is appropriate to conduct this kind research.

From these 19 banks we have purposively selected Dashen bank and NBE from external environment to conduct macro environment analysis of this kind research. Being a regulatory and mandate holder to centrally control commercial banks, being pioneer in business success and profitable by achieving competitive advantage and being innovator in introducing new technologies in the banking industry are the key reasons and criteria’s for selecting industries for assessing the macro-environment. In addition to the above evidence, the two selected banks

know the banking industry very well since they have been established long time ago.

A sample is a subsection of the population and sampling is a way of taking or selecting a representative sample from the more population when it is impossible to study the entire population. Sampling may be probably sampling which lets the researcher to generalize the findings of the sample to the target population (it includes Simple random sampling, Systematic random sampling, Stratified random sampling, Cluster sampling, etc.) or non-probably sampling (includes Convenience sampling, purposive sampling, Quota sampling, Snow ball sampling, etc.) (Acharya et al., 2013).

From various kinds of sampling techniques purposive sampling has been used for selecting interviewees to have a saturated data. The researchers have picked experts purposely to have deep and thick description about the study.

Patton (2002) clarified that purposive sampling is widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. In qualitative investigation purposive sampling is one of the core distinctive elements to illuminate the question under the study. Purposive or judgment sampling used when the investigator needs to have in depth understanding and insights about the study by selecting information-rich circumstances (Patton, 2002).

Judgment or purposive sampling is a non-probability sampling technique conducted with knowledgeable professionals to study a certain cultural domain (Tongco, 2007). Purposive sampling is valuable when the population is very huge (i.e. when randomization is unmanageable), when the investigation doesn't target to generate results (creating generalizations), when the investigators have limited time, workforce, and resources (Etikan et al., 2016). In line with the above evidence, CIO, Directors of IS and business are a part of purposive sample because they are key experts and they involve directly in strategy formulation and policy making. Therefore, purposive sampling technique has been applied for this kind research to get the right and rich information from the representative sample.

4.5 Validity and Reliability

Validity and reliability of data during investigation is vital in order to implement the yield of the research in the real world environment since they measure quality of the research. Reliability is used to measure the consistency of the investigation, while validity is used to measure the degree to which a scale or set of measures accurately represents the construct (Hair et al., 2009).

In order to increase validity and reliability of the study, and to decrease the possible biases in the research the following key things have been performed:

- The interview questions have been developed based on existing theories to ensure validity.
- Similarity of this kind research result and others research result have been cross checked to assure reliability of the study.
- Different source of data like interview and document analysis used to confirm findings. This supports the researchers to apply triangulation and to increase the robustness of the study result.
- As much detail as possible on the settings and the data collected researchers made rich and thick description.
- Member checking has been conducted by allowing research participants to evaluate the proposed ISS development framework.

Chapter Five

Research Findings, Analysis, and Discussion

5.1 Overview

This chapter mainly reports the key findings which have been collected via semi structured interview and document analysis. It also encompasses analysis and discussion of the collected data. In addition, it comprises the proposed framework and its brief description.

In this kind research, the researchers followed an interesting step (see figure 19) both in interview process and document analysis process to come up with novel research findings.

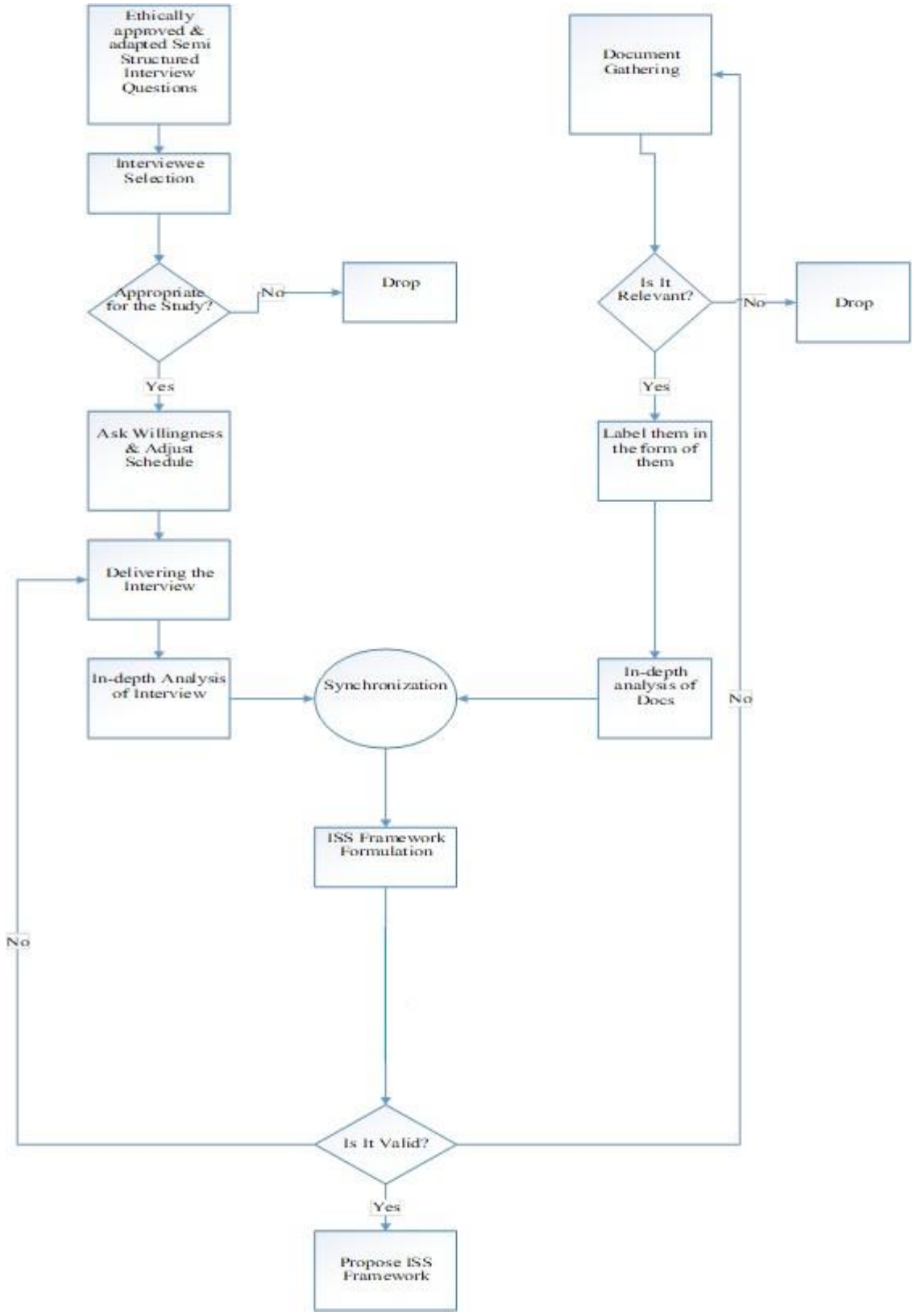

Figure 21: The researchers' interview and document analysis process.

5.2 Challenges in the Research Process

The researchers have faced with problems while passing through this kind investigation. Some of the key challenges that the researchers encountered are unavailability of the interviewees due to eventful nature of the working environment, research time plane and actual work mismatch since the researchers are not able to conduct the interview on time due to COVID-19 pandemic, working environment variation between the interviewers (researchers) and the interviewees which lead to delay in data collection, unwillingness of some banks to deliver the research, interviewees' unwillingness to be recorded, and lack of recording instrument. However, the researchers came up with a novel research findings by fleeting the challenges occurred throughout the research development.

5.3 Case Study Analysis and Findings

This section mainly discusses the case analysis in detail about ISS practice and related issues of CBE which are clichéd from the interview and document analysis in order to come up with novel research findings and to have a refined ISS development framework for CBE. The case analysis has been done using case analysis technique named narrative based on themes and it follows the objective of the study and the research questions.

Consequently, the research questions and specific objectives of this kind research are analyzed based on the facts gotten from interview and document analysis in the form of the following table.

Number	Research Question and Specific Objectives
1	What ISS is being adopted by CBE? ➢ Internal Environment analysis has been made based on 3 main dimensions (strategy, structure, and system). ➢ No clear and formal ISS
2	CBE's ISS current practice and environment analysis ➢ Internal Environment Analysis (Strength & Opportunity) and ➢ External Environment Analysis (Opportunity & Threat) have been made.
3	Challenges: 1. Internal challenges ➢ Being huge bank

	➢ Lack of clear and formal ISS ➢ Being vendor dependency ➢ IS/IT team encounters (too long time to transfer knowledge from project team to operation team) ➢ Business team encounters (business wing scope to see the system during test phase and implementation phase) ➢ Poor integration and coordination ➢ Complexity of systems ➢ Too much time to adopt new technology ➢ Existence of services without owner ➢ Existence of teams in incorrect place ➢ Delay of projects and trainings ➢ Very tiring product integration process ➢ Work-life imbalance ➢ Existence of redundant systems ➢ Poor IS-business correlation ➢ Way of project management and maturity assessment ➢ Governance gap ➢ Fear of change and resistance to change ➢ Gap to build local capacity ➢ Inability to upgrade system on time ➢ Not keeping time line ➢ Too long procurement process ➢ Inability to build skill of employees based on the expectation ➢ Service demand and supply inharmoniousness ➢ System performance downgrade (slow systems) ➢ System non functionality ➢ COVID 19 makes low manpower availabity in the office ➢ Undocumented system problem and solution ➢ Untrusting systems developed by local capacity ➢ Low local capacity ➢ Less credit for ISS

	2. External Challenges ➢ Technology dynamism ➢ Lack of support from vendors due to COVID 19 ➢ Level of awareness to use bank's products and service ➢ Emerging of new banks ➢ Competition from existing commercial bank ➢ Payment systems under being out of the banking system ➢ Software vendors ➢ Customer's technology awareness and tolerance level ➢ Economy Instability ➢ Natural challenges like COVID 19 ➢ Political instability leads to unavailability of support from vendors ➢ Power fluctuation / unstable power ➢ Internet Connectivity (ISP) ➢ Government policy
4	Factors for not having formal ISS ➢ Governance problem i.e. low technology background of front-runners ➢ Existence of business driver and IS/IT support strategy ➢ The view of the business and top management about IS/IT value
5	What framework is suitable to develop ISS for CBE? ➢ A refined ISS development framework has been proposed.

Table 13: Summary of case study analysis and findings

5.3.1 Internal Environment Analysis

Background of CBE

CBE's every day banking services are saving (personal saving, demand account, and non-resident account), loan (investment loan, agricultural loan, microfinance loan, and working capital loan), interest free banking (legal maxim, deposit, and financing), and trade services (guarantee, import export, fiancé administration, foreign remittance, and correspondent banks). Branch Network (branch network, CBE Birr Agent, POS Agents), card banking (ATM, POS),

Online Banking (Mobile banking, internet banking, CBE birr), and call center are ways of banking in Commercial Bank of Ethiopia (CBE, 2020).

From the document analysis of CBE, this research found that CBE stands to be a world-class commercial bank by the year 2025 as a vision. The bank includes its mission to realize stakeholder's values through enhanced financial intermediation by deploying the best professionals and technology. And CBE performs its business operations with core values like integrity, service excellence, professionalism, empowerment, learning organization, team work, respect for diversity, and corporate citizenship (CBE, 2020).

5.3.1.1 Theme 1: Strategy

Based on the interview data the current ISS practices, problems exist while trying to strategize the bank, the future dream of the bank's strategy, and how to reach the planned dream have been analyzed as follow.

The first strategy dimension question offered to the candidates was about the overall CBE's ISS, way of formulation, key issues included, way of ISS updating and the responsible body to strategize the bank. Almost all interviewees responded the same answer. All interviewees specified there is no formal and clear ISS in place. They also stated that the bank's IS mainly follows the business strategy as a driver in order to deliver service for the bank as a support using roadmap which is formulated ten years ago. It shows that the bank tackled with deficiency of ISS. The next question raised to the interviewees was concerning the factors for not having formal ISS. Based on the interview data the key factors for not having formal ISS are governance problem (low technology background of front-runners), existence of business driver and IS/IT support strategy, and the view of the business and top management about IS/IT value.

(IE2, 2020) stated currently CBE doesn't have formal ISS. However, it is under development by taking ISS as a pillar for the bank. The factor for not having formal IS strategy is both global and internal factors. When we say global factors like the strategy followed by different financial industries and internally IS/IT is seen as simply a support for the business. In other word, the business is the driver of the bank and IS/IT is just supporting the day to day operation of the business rather than leading and thinking strategically. Even IS/IT is not considered as a core structure of the bank just seen as a support structure.

(IE3, 2020) thought the bank has no clear ISS so far. However, currently it is under preparation. The under development ISS mainly focuses on the 4P's (people, process, product, and partner) by making assessments.

(IE4, 2020) said that there is no such clear and formal ISS so far. However, there was a road map that tells the IS/IT services and operations. Moreover, the bank follows business lead & drive strategy and IS/IT gives a support for the business basing the need of the business. Simply IS/IT run with the roadmap that was established 10 years ago.

(IE6, 2020) indicated that currently the bank has no formal ISS. The bank practices it's IS/IT operation using the roadmap established ten years ago that takes activities from the business strategy by balanced scorecard. (IE6, 2020) stated the factors for not having such formal and clear ISS are the IS/IT department focus on day to day operation rather than thinking strategically, the IS/IT value is seen as a support and the business strategy as a driver of the bank, and the view of the business for IS/IT. In addition to seeing IS/IT as a day to day operation support; the business strategy gives emphasis for digitization.

The next strategy question raised to interviewees was about way of business and IS/IT correlation. Based on the interview data poor business and IS/IT correlation exist in the bank. In this regard an interviewee said that the business and IS staffs have different thoughts.

(EE2, 2020) itemized regard to the correlation between the business and IS/IT is very poor. The business has its own idea and the IS/IT has its own idea. These two different ideas are not correlated properly and we've to find ways to correlated them. The business has to take inputs from IS/IT for better achievement rather than seeing IS/IT simply as a support.

The last strategy dimension question raised to the interviewees was about way of IS infrastructure upgrade, way of handling changes, way of confirming validity of systems, and problems exist in effecting system changes in the bank.

Based on the collected data some of the key strategy related problems are communication gap between top management and operational staffs, system failure, partial service unavailability, gap to adapt with the new system, poor business-IS correlation, compatibility issues, resistance to change, government directives, service demand and supply incompatibility, fear of technology, lack of support from vendor due to COVID 19, being vendor dependency, untrusting systems developed by local capacity, and low local capacity.

Regard to confirming the validity of the existing IS, it is founded that IS infrastructures are tested and validated using different tools like pilot testing, surveying on customer satisfaction, data gotten from the bank's contact center, and mainly assured by quality assurance team.

The study also showed that information infrastructures of the bank upgraded based on vendors request, and customers need. Various changes and system migration issues are handled by change management team whenever major infrastructure replacement decisions are made. And most of the interviewees underlined that change management of the bank is not performing proactively due to different factors. For instance, they said that change management has been removed from the IS structure more than four times. Evidences from the interviewees have been stated as follow.

(EE1, 2020) stated the bank faced with problems in effecting system changes like black out of the services, system failure, partial service unavailability, network fluctuation, power fluctuation, gap to adapt with the new system, and leads to customer dissatisfaction.

(IE2, 2020) specified the bank faced problems while effecting system changes like compatibility issues, slow system until the system performance adjusted, resistance to change, government directives/policies (like foreign transaction policy, foreign exchange policy, card payment policy), service demand and supply incompatibility, frustration of new technologies/fear of technology let's take minor example ATM, users including our staffs resist to use it.

(IE3, 2020) added the bank's information infrastructures upgrade issue was great problem for a long period of time. However, recently core infrastructures have been upgraded (for example: core banking system has been upgraded recently). Information infrastructures of the bank upgraded based on vendors request, and customers need. Various changes and system migration issues are handled by change management team whenever major infrastructure replacement decisions are made. Change management has been removed from the IS structure more than four times.

(IE3, 2020) added CBE faced problems while effecting system changes like lack of support from vendor due to COVID 19, being vendor dependency, untrusting systems developed by local capacity, low local capacity, and resistance to change. It shows that there is less value for change management.

In addition to the above interview data, we have analyzed different documents in order to have sound research findings. Unfortunately the researchers are not able to find formal information system strategy document for analysis purpose. The bank's IS practiced as a support to deliver service based on the business strategy. Regard to the bank's business strategy, it uses balanced scorecard (BSC) framework (financial, customer, internal processes, and learning and growth dimensions).

So, we have tried to triangulate the circumstance that the bank has no formal ISS using interview and document analysis. Since the researchers are not able to see any strategic document that shows where the CBE's ISS is (current practice), where does the CBE's ISS needs to go (future plan) and how to achieve it (way to accomplish the plan) including vision, mission, and key issues included in it.

In summary, the study revealed that the bank faced with IS/IT strategy gap. Better strategic alignment has better performance (Girma, 2013). Therefore, to have better performance and to get competitive advantage the bank has to formulate and implement formal ISS by taking key factors and best practices into consideration.

5.3.1.2 Theme 2: Structure

Based on the document collected from the interview and document analysis; the current IS structure, problems exist in the IS structure, and way of upgrading the structure if any change exist are analyzed as follow.

The first structural dimension question raised to the interviewees was about way of IS/IT department organization in the bank and appropriateness of the structure to discharge its mandate as a commercial bank. Almost all interviewees responded that the bank IS structure is nice to discharge its mandate as a commercial bank and placed in hierarchical structure led by the CIO. (IE2, 2020) thought that the IS structure is organized in the form of hierarchical. The current structure is nice and suitable to discharge the banks mandate as a commercial bank by giving support for the business. However, some IT teams like IT operation team has to build its local capacity and strength its capability.
(IE3, 2020) specified the bank has well organized IS structure based on four pillars as a conceptual model (think (for strategic process), build (for operational process), run (for daily

operation process), monitor (for daily operation process)) and lead by the CIO. The current IS structure is very appropriate to discharge its mandate and deliver its daily services.
(IE4, 2020) declared that the current IS structure is hierarchical and led by the CIO at the top & followed by vice president of IS then directors and others. The existing IS structure is good to discharge its mandate in the bank specially being led by the CIO.

(IE5, 2020) affirmed that the existing IS structure of the bank is good and organized in the form of hierarchical. It is led by the CIO of the bank who has IT/IS background and directors & other positions under it. So, the existing IS structure is good to discharge the bank's mandate as a commercial bank.

The second structural dimension question raised to interviewees was about structural related problems exist in the bank. Based on the collected data, CBE faced with structural related problems like variation in giving recognition for each department, resistance to change, existence of services without responsible body, and existence of some teams in inappropriate place. Evidences to support the above findings have been stated as follow.
(IE2, 2020) stated existence of services that have no owner and responsible body are key structure related problems. It implies forgettable teams and services exist.

(IE3, 2020) stated the bank faced problems like resistance to change because the structure will merge and reduce departments and director's level will decrease. So, no one needs to lose his/her position due to IS structure modification.

(IE3, 2020) said the new structure may lead to problems like existence of services without responsible body, existence of some teams in inappropriate place (for example: E-payment services were managed by business side not IS/IT team. It implies department placement problem exist in the bank), and also the same work may or may not be performed at a time by different teams due to transition of the structure.

(IE5, 2020) mentioned there is less credit on some teams like change management. For example: change management value, empower level, and use of its full capacity is not that much attractive even if it is formulated as a team in the structure.

In addition to the interview data we have assessed IS structure document of CBE. We found that the bank has formal IS structure. The IS structure mainly follows hierarchical structure led by the CIO. The CIO of the bank is responsible to manage the overall IS team and reports to the CEO of

the bank. Under the CIO there are four main players namely IS vice president, IS quality management, IS program management vice president, IS security, and IS service strategy management. And followed by other subdivisions. However, the researchers found that placement of some departments and their empowerment level is not too much satisfactory based on the hierarchical structure of the IS.

So, CBE has to enhance its structure by giving recognition for all departments, and giving them the right place to act proactively. Additionally, as it is new structure the bank needs scope demarcation since it will be challenging for the bank until it takes its exact place.

5.3.1.3 Theme 3: System

Based on the collected document; the current IS of CBE, usability of the existing IS, and problems exist in IS of the bank have been analyzed as follow.

The primary system dimension question raised to the interviewees was about the bank's overall information system in terms of technological infrastructure, security and operation modalities, and relevance. Most of the respondents said that the existing IS infrastructures are good and standardized. And some respondents said that some of the existing IS infrastructures in the bank are not up-to-date. Evidences from the interviewee putted as follow.

(IE2, 2020) stated that the technological infrastructure of the bank includes hardware (includes servers, ATM, router, firewalls, checkpoints, and others), software (includes Temenos T24 core banking system, Linux systems, application programming interface (API) systems, ERP system), and network (like software defined network). The bank uses IBM technologies, Cisco technologies, Virtual Machine Interface (VMI) technologies, and others as technological infrastructures. The bank has the plan to make virtual based servers by considering cloud technologies, to have interesting core banking (by upgrading the version, using better fintech, by having easily interfaced system), and to implement Application Centric Infrastructure (ACI) technologies. However, the existing information system of the bank is not up-to-date and it needs to be handled.

(IE3, 2020) declared that IS of the bank is rich and uses brand full technologies from vendors like IBM, Cisco, and Huawei. Technological infrastructures of the bank are hardware (server, router, firewall, checkpoint, and switches), software (Temenos T24 core banking system,

enterprise resource planning (ERP), and other application). IS of the bank in terms of security and operational modality is good now a day.

(IE4, 2020) confirmed that the overall technological infrastructure (hardware, software, network, and data) of the bank are good. The bank has planned and trying to enter into the process to upgrade the infrastructures with the latest version as much as possible. But, in some areas the challenges are available specially delay of projects. The overall security and operational modality of the bank's information system is good. But, not only for the commercial bank but also as a country level the cyber security issues have to be handled in a well-organized way especially for the financial industries. Imagine the cyber-attack occurred in other countries exist in our country; it is really high cost risk. Even internal (country level) hackers are emerging in our country. I think as a country level we need to do more on the security issues since we're at the starting phase and the technology is dynamic.

(IE5, 2020) thought that the technological infrastructure like hardware, power server, networking devices, wireless and wired devices of the bank are massive. The bank uses best technologies on infrastructures like ORACLE for database, t24 core banking system, highly available interfaces, and good disaster recovery. (IE5, 2020) added the existing information system has good security and operational modality features since the bank uses ISO 27000 security standard and lead by security director. Even the bank has access management manager under security director that ensure and monitor technological infrastructure access based on policy.

The second system dimension question raised to the interviewees was concerning the overall usability of IS in the bank, the overall level of employees satisfaction with the existing IS, and the level of IS effect on employees work life and culture. The findings revealed that IT/IS supports key operations of the bank 24/7 and it is difficult for the bank to accomplish any task without IS. The study also showed that IS infrastructures have effect on employees work life and culture both positively and negatively. Evidences from the interview to support the above findings have been stated as follow.

(IE2, 2020) specified the bank's IS has supported key operations of the bank so far. The bank is unable to perform any operation without the support of IS.

(IE3, 2020) stated that the bank cannot perform any operation without IS. So, IS has supported key operations of the bank 24/7.

(IE4, 2020) said being employee of the giant bank, having variety of exposures, and others are good views for employees to work in a motivated manner in the bank. However, it's to some extent challenging when you see the employee's satisfaction with the current IS. Sometimes employees' dissatisfaction happens since some training is not held on time. The existing IS affect the employees work life and culture. As you can see from your observation, we (IS personnel's) are working like today's Sunday and night to provide a quality service for customers. It is just like the work of military, if system gets down then we've to troubleshoot that issue at any time. It is challenging to balance it with our life. Most of the time we are working by being scarify for family and social life. There is huge problem on work life balance; it is difficult to have annual leave to manage personal issues and even some employees got health problems.

(IE5, 2020) stated the bank operations are accomplished with IS/IT as a support because nothing is possible without IS/IT. It is difficult to say all of the bank employees are satisfied with the current IS since investing a lot on technology can't only make employees satisfied but the governance issues have to be handled very well. (IE5, 2020) added IS/IT changes employees work life and culture. Let's take recent example: due to COVID 19 the bank's employees usual work life and culture in office has been changed to work at home using IS/IT. It is also possible to say the manual work life and culture has been translated to paperless work life using enterprise resource planning.

The last system dimension interview question raised to the interviewees was concerning system related problems they faced so far. Based on the respondents answer; system performance downgrade, system non functionality, size of database increment, old system existence, undocumented system problems and their solution, lack of coordination, existence of redundant systems, the business size, poor IS-business correlation, way of project management and maturity assessment, customers technology know-how and tolerance level, the business doesn't understand IS/IT very well, ISP infrastructure, and power fluctuation are key system related problems which have been revealed. Evidences that support these findings are putted as follow.

(IE2, 2020) itemized system performance downgrade (slow systems), system non functionality, connectivity loss, and size of database increment are key IS related problems.

(IE3, 2020) said CBE has faced system related problems like old system existence, undocumented system problems and their solution.

(IE4, 2020) specified the bank faced different system related problems like lack of coordination (all teams go by itself without integration), existence of redundant systems, the business size itself is a challenge (the business is vast but brings envision ideas for IS which are not long time plan), some systems are not cost effective, poor IS-business correlation, very tiring process of delivering the product integration especially E-payments to 3rd parties quickly within the requested features and time, way of project management and maturity assessment, customers technology know-how and tolerance level, ISP infrastructure.

(IE5, 2020) mentioned the governance issues and gap in assessing ISS as a system related problem. (IE5, 2020) added, the bank doesn't assess the ISS periodically but it may be done via ad hoc. The bank faced different problems like unavailability of systems, ISP (connectivity), power fluctuation, and the business doesn't understand IS/IT very well.

As a researcher we have made a document assessment analysis to know the overall information system of CBE. We have seen and understood that as CBE has successfully upgraded its core banking system from its previous version T24R10 to the new version of T24R17 to enhance its reputation and operational excellence by providing more effective services to its customers, delivering complete suite of banking business solutions, allowing CBE to quickly put in use the features needed within minimal time, risk, effort and cost (CBE, 2020).

Additionally, based on document and interview analysis the following are key demo of the CBE's IT/IS infrastructure and vendors.

Client Application	Outlook, web browser, office
Core User Services	Storage, Video-Conferencing, Exchange Service, Agent banking, CBE-Birr, Mobile Banking, Internet Banking, ATM, POS
Corporate Services and Systems	T24 Core Banking, CBE's Website, ERP, CRM, Contact Center (952), Data warehousing, Customers Record, Finance
Security Infrastructure	Anti-virus, Firewall, Check Point, Anti-Phishing
Database Infrastructure	Oracle
Basic infrastructure	Servers, Network, Disaster Recovery, Data

	Center, Data Storage and Backup, ATM, POS
Vendors	IBM, Cisco, and Huawei

Table 14 : Demonstration of the CBE's IT/IS infrastructure

In summary, most of the IS infrastructures are up-to-date and updated based on business need, customer need, vendors request, and system incapability to accomplish task. However, the research revealed IS related problems that hinder the bank performance. Some of the key problems are system performance downgrade, system non functionality, size of database increment, old system existence, undocumented system problems and their solution, lack of coordination, existence of redundant systems, the business size itself is a challenge, poor IS-business correlation, way of project management and maturity assessment, customers technology know-how and tolerance level, ISP infrastructure, power fluctuation, and the business doesn't understand IS/IT very well. Menelik (2019) found that communication gap and network problems as a challenge for bank of Abyssinia. So, CBE has to take these problems into consideration and mitigate them using the proposed ISS and the refined ISS development framework by implementing formal ISS.

5.3.1.4 Theme 4: Staff

Based on the document collected from the interview; the current staff characteristics, staff turnover rate, working environment, age, education status, work experience, certification and problems exist in the dimension of staff have been analyzed as follow.

The staff dimension question raised to the candidates was about the overall CBE's staff capability and related issues. The findings showed that CBE staffs have good educational level, young age generation, experienced staff, and having different certification but few in number. Evidences from the interview to support the above findings have been stated as follow.

(IE1, 2020) held that the bank has great "center of excellence" to build local capacity especially for fresh employees. And the staff passes through this center. The staff is very strong; it's more than your expectation. Most of the employees are young in age (IE2, 2020).

Most of the employees (staff) are young and huge in number with educational level of bachelor degree and above. The bank has some staffs that are highly certified. However, the number of certification is not too much attractive (IE3, 2020).

The staffs have good certifications, and young age staff (IE5, 2020). The staffs have different certifications in networking, database, and others. And most of the staffs are holder of degree and above educational level (IE6, 2020).

In summary, this research revealed that the bank's staffs have good educational level, young generation, experienced staff, and have certifications. So, enhancing the number of certification holders using center of excellence can make the bank advantageous.

5.3.1.5 Theme 5: Style

Based on interview data CBE's current style of leadership has been analyzed. The style dimension question raised to the candidates was about the overall CBE's style of leadership and related issues. Based on the interview data it is founded that CBE has good leadership style. Evidences from the interviewees are listed below.

(IE1, 2020) stated that CBE leadership style is versatile and all employees are following democratic way of leadership which exposes for discussion, helping each other, and "able and enable" principles. The bank follows democratic leadership styles and it allows employee of the bank to raise his/her idea and get answer for it (IE2, 2020).

The bank follows mixed (both democratic and empowerment) leadership style even if the structure is hierarchical (IE4, 2020). The leadership style followed by the bank is empowerment (IE5, 2020). Hopefully after the new IS structure the bank will enhance the leadership style (IE6, 2020).

Therefore, the bank has to take advantage to spread this kind leadership style throughout the whole banking system to fix the governance related problems.

5.3.1.6 Theme 6: Skill

Based on interview data; CBE's current skill of employees have been analyzed as follow. The skill dimension question raised to the candidates was about the overall CBE employee's skill and

related issues. According to the data collected from interviewees the bank employees have wide variety of skills. Evidences from the interviewees are listed below.

(IE1, 2020) stated that each employee has great personal skills with a variety of customer skill, hard work habit. The skill of employees of the bank is very strong; it's more than your expectation (IE2, 2020). The bank has good employee skill however it needs more effort to be shared across the whole business environment (IE3, 2020). The bank has really nice skilled manpower specially the IS/IT personnel try to upgrade their capacity (IE5, 2020).

In summary, the study discovered that CBE employees have good skill. But, it has been realized the level of sharing this kind skill is not too much attractive. Therefore, CBE has to advance and cultivate the skill of employees to eradicate vendor dependency and to have good habit of technology innovation.

5.3.1.7 Theme 7: Shared Values

Based on the interview data the shared values of CBE have been analyzed as follow. The shared values dimension question raised to the interviewees was about the overall CBE's shared values and related issues. The researchers have found that the shared values of CBE are not well communicated among employees of the bank. Evidences from the interviewees are listed below.

(IE1, 2020) said that there is cooperation to share knowledge and solve problems in order to satisfy customers for business excellence. So, it is possible to say there is shared value on customer satisfaction to keep business excellence. The banks employee has a shared values raised from the corporate vision and mission (IE2, 2020). Customer satisfaction, stakeholder involvement, empowerment, team work, competence, and others are shared values of CBE (IE5, 2020). Hopefully after the new IS structure the bank will enhance the shared values among employees (IE6, 2020).

Based on the interview data, it is founded that communication gap exist among employees. So, CBE has to build good culture of communication to share values of the bank using the available technologies.

5.3.2 External Environment Analysis

5.3.2.1 Theme 1: Political

According to the collected data; the banking industry is affected by the political environment, the government policies and regulations of the country. Government regulations, political stability, government intervention, and trade restrictions are key political factors in different firms (Ho, 2014; Sammut-Bonnici & Galea, 2015; Downey, 2005).

The political dimension questions offered to the interviewees were about the governmental policies and regulations that directly affect the banking industry and the overall assessment of the Ethiopian political environment for the banking industry. All respondents specified that the banking industry is affected by the political factor both positively and negatively. Based on the interview data; the study revealed that existence of foreign exchange policy and existence of security initiatives are external factors for CBE taken as an opportunity. Whereas, high political instability, unscientific government policy, lack of clear technology strategies (like cloud strategy, data governance strategy, and E-commerce strategy), not contextualized cyber security regulations/directive, lack of demand and supply policy, and political involvement in the banking industry are key external factors for CBE booked as a threat. Interview evidences putted as follow.

(EE1, 2020) indicated that the banking industries are affected by governmental policies and regulations like foreign exchange regulation policy, monetary policy, fiscal policy, foreign investment policy, and others. In the context of our country most political decisions affect the economic decisions. It implies the political highly involves in the economy and in the banking industry.

(EE2, 2020) thought that highly involvement of politics in the banking industry especially bank governors and related concerned bodies came up to the position by being a member of the governing political group. They are just selected based on their political viewpoint not the tacit knowledge they have. And different policies are proposed based on those selected top management of the bank which really affect the banking industry. Bond sale policy, Swift, Treasury bill Policy, security initiatives, cloud policies, E-commerce, and data governance regulations has effect on the banking industry. The political environment is instable in case of our country. This instability leads to instable economy and finally banks will not get currency to

be mobilized, leads banks to be hacked by thieves during different time, inability to work and generate income, and inability to troubleshoot ATM machines since this machines need continuous assessment and follow up.

(EE3, 2020) explained that different governmental policies and regulations affect the banking industry. For instance from technological aspect policies like “cloud regulations or policies, data governance policies, E-commerce directives or regulations, security initiative policies, and cyber security policies affect the banking industry”. Let’s say the government has a well-organized cloud strategy then each commercial bank can choice their best strategy to develop internal services and outsourcing other services on the cloud to increase banks investment. However, lacks of such clear cloud regulations, lack data governance framework or policy, lack of E-commerce regulations, and not contextualized cyber security and security initiative policies have effect on the banking industries. Specially, the security initiative policy of our country is borrowed from other countries rather than developing contextually to our country locally by our experts. And from the business side policies or regulations like “foreign investment policies” affect the banking industry. (EE3, 2020) added, having high political instability and high government regulation like enforcement to manage banks creates headache and unhappiness in the banking industries. This high government regulation focuses on enforcing banks to open branches rather than encouraging banks to create cashless society by bringing new emerging technologies in the banking industries. Due to political instability investors are afraid to invest by taking loan from banks and people are saving their money in their home rather than depositing to banks.

In addition to the interview data; from NBE document analyze we found different directives that exist in the banking industry. Banking business, insurance business, microfinance business, movable collateral business, credit reference bureau, capital goods finance business, foreign exchange management, and payment system are some directives exist in the banking industry (NBE, 2020).

In summary, the political opportunities and threats for CBE have been identified. Therefore, CBE has to enhance its capability to take advantage on these political opportunities and to mitigate threats.

5.3.2.2 Theme 2: Economical

Based on the collected data the economy status and environment of the country like domestic and international economy, inflation rate, and balance of payment levels affect the banking industries both directly and indirectly. This research revealed that existence of favorable monetary and fiscal policy and availability of funds are good opportunities for CBE to enhance its performance. Whereas; instable economy / unhealthy economy, economy deficit, most of the currency owned by old and few people, high and paradox inflation rate, shortage of cash, collapsed domestic and international economy, and weak exporters' bargaining power are key threats for CBE. Downey (2005) and Sammut-Bonnici & Galea (2015) indicated interest rates, economic growth, inflation and currency exchange rates are key economic factors which affect the cost of capital and purchasing power of firms.

The first economic dimension question offered to the interviewees was about the domestic and international economic factors that affect the banking sector. In this regard all interviewees specified the banking industry is affected by different domestic and international factors. The study revealed public society saving capacity, public society lending capacity, and resource allocation effectiveness as key domestic economic factors. And foreign currency rate and bilateral agreements as an international economic factors that affect the banking industry. Evidences from the interview putted as follow.

(EE1, 2020) thought that different domestic and international economic factors exist that affect the banking industries. Some of the domestic economic factors that affect the banking industry are public society saving capacity, public society lending capacity, and resource allocation effectiveness. The international economic factors that have effect on the banking industries include foreign currency rate and bilateral agreements (like gifts, loans, NGO from outside, financing different projects). (EE3, 2020) thought that domestic and international economic factors have influence on the banking industries. Since Ethiopia banks are basing on giving loan for customers and this dependability is affected by domestic economic factors like shortage of cash, interest rate fluctuation, and fear of investors to invest by taking loan from banks due to political instability and leads to unstable economy.

The second question offered to the interviewees was about the favorability of fiscal and monetary policy in the banking industry. They said that the favorability of the monetary and fiscal policy depends on situations. In other word, if the policy is used fairly without too much restriction and enforcement it is favorable for the banking industry. But if the policy is too much restricted then it is not favorable for the banking industry. However, in the case of our country both policies are favorable for the banking industry. Evidences from the interview data putted as follow.

(EE1, 2020) confirmed both fiscal and monetary policies may be favorable or not favorable it depends on situation. If the policy is too much restricted, it has negative effect on the banking industry that means it is not favorable for banks. Too much restriction is good to control inflation and other related issues but it affects the banking industry negatively since the regulation doesn't allow people to mobilize resources openly and people are not bringing their resource to the bank. However, relative to the previous practices the current and existing monetary and fiscal policies are favorable for the banking industries.

(EE3, 2020) explained that both monetary and fiscal policies of the country have effect on the banking industry. Even if the policies have limitations, the overall practice is good and favorable for the banking industry since having such policy and regulations keep the economy safe during the economy inflation that has been occurred like the 2008. But formulations of some policies are not scientific based relative to the world since they are not grounded on research, there is imbalance between demand and supply, and the concerned bodies are not proactive in follow up.

The third question offered to the interviewees was about the bearing of the current inflation, the bearing of balance of payment, and related issues on the banking industry. All interviewees thought the bearing of the current inflation rate and balance of payment on the banking industry is very awkward and paradox. In other word, the current inflation rate is increasing at high increasing level and the balance of payment recorded as a deficit. Evidences from the interview putted as follow.

(EE1, 2020) stated that the bearing of the current inflation rate is at high level and it has effect on the banking industries since customers will not able to deposit currency to banks if inflation is high. (EE3, 2020) elucidated that the bearing of the current inflation rate is high and it becomes paradox for the banking sector. Political instability, cash shortage, high cash withdrawal rate, low cash deposit rate, holding of money by people, and power of small group of people to

determine the market rather than the economy determine the market are key factors for high and paradox inflation rate for the country.

(EE1, 2020) stated the bearing of balance of payment is under deficit since we are importing more goods and exporting fewer goods with least price. And this situation leads to shortage of foreign currency. (EE3, 2020) explained that the bearing of the current balance of payment is at deficit stage and it becomes headache for the banking sector. This deficit (high import and low export level) economy leads to low currency level and cause in exchange rate problems.

Different documents also support the interview findings. Fiscal policy and economic evolution variables have long run association. Furthermore the direct tax, capital expenditure, and budget balance have positive connection with economic evolution (Osebo, 2017). In the second quarter of 2019 Ethiopia documented a trade deficit of 2661.80 USD Million. Because of slight fabrication of exportable goods and logistic problems Ethiopia innings regular trade deficits. Gold, coffee, live animals and oilseeds are main export items. Ethiopia is a clear importer of foodstuffs, fuel, and textile clothes. In the second quarter of 2019 Ethiopia recorded a current account deficit of 1378.70 USD Million. Current Account can be taken as the sum of the balance of trade, net factor and net transfer expenditures (World Bank, 2020). Retrieved from: https://www.worldbank.org/en/country/ethiopia/overview.

Therefore, CBE has to take these economic factors into consideration and has to implement the proposed strategy to improve its performance.

5.3.2.3Theme 3: Social

The study revealed that the social dimension elements of the macro environment like change in demography, culture of the population, and change in the educational status have effect on the banking industries both directly and indirectly. Sammut-Bonnici & Galea (2015) and Downey (2005) specified the potential market size of organizations is affected by social factors like age demographics, attitude towards work & health, education standard, and population growth.

The first social dimension question offered to the interviewees was about the effect of the demographic change of Ethiopian population and influence of Ethiopian culture on the banking sector. They stated both demographic change and Ethiopian culture have effect on the banking industry. Based on the interview data this study revealed that harmonized social relationship,

huge young generation population, and existence of many universities are key opportunities for the bank. Whereas; high unemployment rate, high uneducated population, low mind set about digitization, less skilled vendors, low attitude to change and low work habit, and fear of technology and low know-how about technology are key threats for the bank. Evidences that support our findings are also listed below grounded on the interview data.

(EE1, 2020) stated that the banking sector is affected by demographic change of Ethiopian population. Even if we have huge number of population and majority of them are young, the level of employment is low. (EE3, 2020) believed demographic change has great effect on the banking industry. Let's take the real situation in our country, the administration system between the federal and regions have effect on banks. Some group of people like ethnic groups in some regions like basing language and religion create unequal level of participation in social responsibilities and financial services among banks. However, these factors are not too much headache since Ethiopia has harmonized society.

(EE1, 2020) thought that Ethiopian culture influences the banking industry both positively and negatively. Our country has odd culture that others don't have which is great social relationship like helping each other, Edir, and Ekub. However, we Ethiopian have bad cultures which need great improvements like low work habit and attitude to change.

(EE3, 2020) confirmed the banking industry is influenced by the culture of the society. Our people culture sees today's banking services as traditional financial systems like "Arata" and keeps not attractive way of using banking services. Low digital mind set and low attitude to change specially for being cashless society creates ineffective digitization system in the banking industry.

(EE4, 2020) said we have really an amazing social relationship which is harmonized and have the culture help each other, create a stable society which is input to have a stable politics. However, our culture towards work habit and attitude to change is very low.

Literatures also support our findings. Based on (Ethiopia Demographic and Health Survey [EDHS, 2016]) applied by Central Statistical Agency (as cited in Zerfu, 2017); approximately half (47%) of the Ethiopian population is young (under age 15), more than half of Ethiopian families have a mobile than half of Ethiopian households have a mobile telephone (56%), 28% have a radio, and 14% have a television. Urban households are more likely than rural households

to own a mobile telephone, radio, or television, nearly half of women (48%) and 28% of men age 15- 49 have no education, 15% of women and 25% of men use a bank account. A mobile phone is owned by women more than one-quarter and men 55%. Among mobile phone owners, only 5% of women and 9% of men use the phone for financial transactions (Demography survey of Ethiopia, 2016).

The second question offered to the participants was regarding change in the educational status of the population and the demand for the banking product and services. Interviewees stated that educational status and demand for banking products and services have relationship. They assured that most of Ethiopia populations are uneducated and their level of demand for banking products and services is low. Evidences from interview putted as follow.

(EE1, 2020) stated that the demand for banking services and products varies among the populations who have different level of educational status. We Ethiopian have vast number of uneducated population and those populations are not able to use high level technological banking services and products. Uneducated society doesn't request to use technological services and products delivered by the banking industries.

(EE3, 2020) talk about that education status has significant impact on the banking industry. Our societies are not aware and educate the benefits of using banks to save money. Being uneducated (around 80-85% of the total population), frustration of losing their money if depositing at bank, being unaware of benefits from saving at banks, and fear of technology are causes for not using the banking services. (EE3, 2020) added, even if most of the population (around 70%) is young generation who are responsible and receiver of the country, most of them don't have know-how about the banking system, bank products and services.

According to (Mini Demographic and Health Survey of Ethiopian Public Health Institute & Federal Ministry of Health [EPH,2019]); most of the population is young, only 17.9% of the study has secondary and more than secondary educational status while the remaining 82.1% of the sample are uneducated (40.4%) and attending primary school (41.7%).

Different literatures thought that younger, more highly educated or more affluent seniors has relatively substantial technology assets and also has a positive view toward the benefits of online platforms. While older and less affluent is largely disconnected from the world of digital tools and services. All adults are active in using technological products like cell phone, internet, and

broadband than old people. And old people continue to lag in technology adoption. While adapting or adopting new technologies older adults face several unique barriers and challenges. The barriers include physical challenges to using technology, skeptical attitudes about the benefits of technology, difficulties learning to use new technologies (Smith, 2014). Older people are resistant to change and unwilling to interact with "high tech" products such as computers (Czaja, 2005).

A number of empirical studies have shown that firms that employ on average older workers lag further behind the technological frontier than firms with younger workers (Aubert et al., 2006; Meyer, 2011; Malmberg et al., 2008). Companies with advanced portion of aging employees modernize their technology less frequently and favor elder, inexpensive technologies than organizations with a younger labor force. This is due to the shorter expected work life of elderly workers which lets firms shy away from the investment in these workers. The understood yearly output growth rate is reduced by 0.25 ratio points between 2010 to 2025 due to demographic change (labor-force). When the extent of demographic change is greatest, the economy moves two steps away from the technological frontier for the early retirement case (Wasiluk, 2014).

Human capital investment in an endogenous technology framework. Population upsets technological enhancement both through the stream of human. These numerous properties of demographic issues on research and development, economic growth and human capital can explain definite truths (Misoulis, 2003). Both technology and demographics interact with each other to play a statistically significant role in affecting broadband service delivery (Eldridge, 2011).

Achievement and the realization of the strategic goals of firms and eventual failure of its mission when a new technology is introduced without proper cognizance of the attitudes of employees to innovation. This means attitude of employees to innovation has effect on the strategic goal of the company (Amusan et al., 2017).

Therefore, the bank has to take the social dimension into consideration while implementing strategies to get a business success and to take competitive advantage.

5.3.2.4 Theme 4: Technology

Based on the collected data; technology dynamism, availability of variety of technologies, availability of easy to use mobile banking products and services are key opportunities for CBE. Whereas, lack of clear technology strategies, ineffective digitization system in banking industries, rapid technology change/ technology dynamism, network and electric power fluctuation, cost of technological infrastructure, fear of technology and low know-how, and poor innovation culture are key threats for the bank. Different scholars stated that technology has effect on the performance of firms. Sammut-Bonnici and Galea (2015) & Ho (2014) stated investment in innovation, automation/robotics, technology incentive, and rate of technological change are key factors for making decisions in firms.

The first technology dimension question offered to the interviewees was about effect of the observed dynamic nature of information technology on the banking industry. All the interviewees stated that the observed dynamic nature of information technology positively and negatively affect the banking industry. The positive effect of IS/IT on the banking industry include creating customer satisfaction, effective and efficient workflow, increase profitability of the bank by decreasing the number of employee and delivering services on time, increase accessibility of services, leads to think globally, cost reduction, accessibility, and centralized administration. The negative effect of technology dynamism includes having huge cost and being a challenge for banks to predict its feature and invest on it to deploy permanent system. Evidences that support our findings are also listed below.

(EE2, 2020) indicated that IT is dynamic by its nature. This dynamic nature of IT affects the banking industry both positively and negatively. By nature, dynamism of IT is a challenge for the banking industry since it is difficult to deploy permanent systems with high cost by predicting what will happen tomorrow, security issues raised due to technology dynamism since we don’t know what is inside the devices developed by manufacturers, and high investment without seeing the return on investment. IT affects the banking industry positively since it creates customer satisfaction, effective and efficient workflow, increase profitability of the bank by decreasing the number of employee and delivering services on time, increase accessibility of services, leads to think globally, and helps to categorize customers in order to increase its business lines.

(EE3, 2020) said the observed dynamic nature of information technology has both positive and negative effect on the bank. The positive effect of dynamic nature of information technology on the banking industry are customer satisfaction, ease of use, scalability, cost reduction, accessibility, centralized administration (example: converged systems like cloud services create few employees to be employed), effective and efficient banking system. Whereas the negative effect of dynamic nature of information technology on the banking industry are costing hug amount of money and creating distraction.

The second question offered to the interviewees was about the ISS, benefits and challenges they faced while using technologies in the banking industry. They said that formal ISS exist in their bank and many benefits and challenges occurred in the industry. Resistance to change, fear of technology, untrusting technology, budget/investment, low technology skill, poor security awareness, awareness problem on trusting in-house developed systems, less skilled vendors, procurement because of foreign currency, network and power fluctuation from the side of concerned providers are some key challenges for the banking industry. Evidences putted as follow.

(EE2, 2020) thought that the bank has formal ISS. But it is difficult to say fully implemented and finished since it has to pass through many steps. Even it is difficult to say the existing ISS is formulated by taking inputs from concerned banks, by adapting existing frameworks as a lens, and by taking experience from other similar banks. The existing ISS act as a support for the business which is the driver of the bank and it is formulated by taking business strategy into consideration.

(EE3, 2020) thought that technology was seen as cost center and support for the business before 10 years ago. However, starting from 2013 G.C information technology is enabler and driver of the bank with its own formal strategy. The business understands and accepts the value of information technology as an enabler, driver, and 100% essential for the bank. The IS/IT strategy has six main pillars as an issue: market (about segmentation), digital capability (paperless environment creation), customer centricity (focusing on customers), technology leverage (bringing emerging technologies to create operational excellence), people & culture, and risk management (to manage risks).

(EE2, 2020) clarified that technological advancement and innovations are key for the banking industry. Before innovating it is better to know the existing technologies. As a core bank of the country it is difficult to say there is available innovation in the industry since there is huge political interference in the banking industry and those politicians know-how about technology is low. So, the level of technology doesn't reach innovation level because top level managers see from the view of politics not from the view of technology. Available technologies and systems in the bank include national payment system, quantum banking system (core banking system), Ethio-Automatic transfer system, credit information system, fleet management system, and human resource management system.

(EE3, 2020) said different modern technological advancements and innovations which are available and planned to be available in the bank. The existing technologies in the bank are core banking system, different database, Amolie platform, power server generation, card payment system, cloud technologies, virtual technologies, security infrastructures like firewall and checkpoint. As a development aspect the bank follows agile approach which iterative nature. The planned technologies for the bank include enterprise resource planning, data warehousing, tier 3 data center, increasing in-house development capability, and making all services on the cloud except financial issues.

(EE2, 2020) illustrated that the bank gets many benefits from technology and passes through challenges. Some of the benefits include customer satisfaction, efficient and effect service delivery, accessibility of service, online promotion of products, and others. (EE3, 2020) added that while doing so the bank gets many benefits both financially and non- financially. Some of the financial benefits of information technology includes being a cost driven for the bank, being a source of foreign currency from ATM's, and reduces investment cost for storage (if technology is not available it is a must to have a big warehouse to store data which have high cost) and office rent (If technologies like ATM are available then no need to open branches everywhere). Technologies play great role in the bank non-financially like creating collaboration environment, customer satisfaction, creating competitive advantage and good image.

(EE2, 2020) believed that some of the challenges while performing operations include security issues, cost, low awareness about technology, and fear of loss of job.

(EE3, 2020) also said different challenges hinder the bank while performing operations and giving services. These are resistance to change, fear of technology, untrusting technology, budget/investment, low technology skill, poor security awareness, awareness problem on trusting in-house developed systems, less skilled vendors, procurement because of foreign currency, network and power fluctuation from the side of concerned providers, seeing IT staff as a generalized discipline rather than specializing in one stream and lack of authorized body to take SLA responsibilities.

As a researcher we have assessed different documents from external environment to triangulate the finding of the interview with the document analysis. Based on the document analysis of NBE, the key IS/IT services are core banking system, property and service management system, Ethio-automatic transfer system, foreign exchange monitoring system, human resource management system, and national payment system (NBE, 2020).

Ethiopian automatic transfer system, Ethiopian credit reference bureau system, core banking system, foreign exchange management system, human resource management system, and property and services management system are key systems that have been outsourced. Credit information reference system is one of the technology to provide information on loan performance of each bank, Ethiopian automatic transfer system outsourced during 2010 G.C enables NBE to interconnect banks and manages payment system between banks, foreign exchange monitory system helps the bank to gain information whether foreign currencies are used for the envisioned purpose (NBE, as cited in Iyasu, 2017).

Based on the document analysis; Dashen bank offers not only conventional banking but also bargains Sharia compliant interest free banking (“SHARIK”). Technologically the bank works in partnership with leading brands in the electronic payments industry (like AMEX, VISA, MasterCard and UnionPay) and prominent money transfer operators (like Western Union, MoneyGram, Express Money, Dahabshiil, Ezremit, Transfast, WorldRemit and Ria). The bank also introduced a new technology called “Amole” Digital Omni channel payment platform that offers subscribers digital payment capacity and access to aggregated digital product and service from retailers, social media players, third-party service providers, entertainment industries, airtime dealers, airlines, and bill payment points (Dashen bank, 2020). Dashen bank has main networks like ATM network, branch network, and agent network (Dashen bank, 2020).

Products and Services of the bank are domestic banking (current account, loan, letter of guarantee, and money transfer), international banking (Foreign Exchange Permit, Import & Export, Letter of guarantee, money transfer, foreign currency demon, and FOREX Bureau), E-banking (ATM/POS, Internet Banking, Amole Digital Banking, and Agency Banking), and Dashen bank Card (Debit card, salary card, and student card) (Dashen bank, 2020).

From Dashen bank scorecard of 2017/18 and 2018/19 annual report it is noticeable that total assets, deposit, outstanding loans net of provision, total capital, paid-up capital, legal reserve, revenue, expense, cost-to-income ratio, number of depositors, net profit, number of cardholders, number of branches, number of FX bureaus, number of ATMs, number of POS terminals, number of Amole subscribers and number of staff are increasing from year to year. From the bank's annual report and strategy document the IS department has existed in the banks structure lead by the CIO as a vice-president of the IS department under the CEO of the bank (Dashen bank, 2020).

Another document from Dashen bank stated that the bank has formal ISS. From the document of strategic plan (FY2018/19-FY2022/23), the IS strategic plan document of Dashen bank is formulated by the collaboration of CIO office and IT Directors by taking the business strategic plan into consideration. It aims to achieve IT service excellence through creating a culture of customer centricity and providing efficient and effective IT services delivery and support to both internal and external customers. Based on the document analysis it is visible that the ISS plan is documented in a formal way. The ISS plan aims and leads to a coordinated effort to integrate people, process, technology, information and governance (Dashen bank, 2020).

The key IS strategic intents of the bank are improve IT governance and IT service delivery, strengthen the IT organization's technical skills and capabilities, implement enterprise wide management information systems, optimize IT applications and infrastructure landscape, develop cloud Strategy and capabilities, improve availability and usage of IT systems, enhance IT security and IT risk management to a proactive level, and embed sustainable and environment-friendly IT practices throughout the Bank. The bank uses Balanced Scorecard (BSC) framework (Financial, Customer, Internal processes, and learning and growth dimensions) to ensure that the ISS plan intents are clearly defined, measurable, and considerate of multiple perspectives (Dashen bank, 2020).

Eldridge (2011) specified both technology and demographics interact with each other to play a statistically significant role in affecting broadband service delivery. Therefore, CBE has to formulate and implement ISS using the proposed ISS development framework.

5.4 Framing Themes into SWOT Matrix

This kind research has made an analysis using different strategy analysis tools and frameworks and revealed key findings in the form of SWOT matrix. The internal environment analysis is grouped under strength and weakness, and the external environment analysis is grouped under opportunity and threat. It is drawn from interview and document analysis.

Strength	Opportunity
➢ Accessibility ➢ Being influential ➢ Huge financial capital ➢ Having formal business strategy ➢ Low staff turnover ➢ Professionalism ➢ The level of technology acquiring ➢ Having IS steering committee ➢ Customers trust ➢ Staff diversity ➢ Skilled, young, certified (few), educated staff ➢ Proper IS structure ➢ Good technological infrastructure ➢ Good employee attitude to technology ➢ Being huge bank ➢ Support from top management ➢ Business control system ➢ Culture of the bank ➢ Empowerment leadership style ➢ Having center of excellence (R & D) ➢ Delivering new services for customers	➢ Favorable Fiscal and Monetary Policy ➢ Harmonized Social Relationship ➢ Huge Young Generation Population ➢ Existence of foreign exchange policy ➢ Availability of easy to use mobile banking products and services ➢ Existence of security initiatives ➢ Availability of funds ➢ Existence of many universities ➢ Technology dynamism ➢ Availability of variety of technologies

Weakness	Threat
➢ Resource utilization ➢ Poor Business-IS/IT correlation ➢ Existence of ownerless services and old systems ➢ Resistance to change ➢ Lack of clear and formal ISS ➢ Not having enough training ➢ The business view and level of understanding about IS/IT ➢ Being vendor dependency ➢ Poor integration and coordination ➢ Governance gap ➢ Poor Business-IT/IS communication (Poor understanding of the business to IS/IT) ➢ Not giving credit for some departments ➢ Inability to stop system/service incapability while changes occur ➢ Poor knowledge management system ➢ Gap to build local capacity especially for new employees since the knowledge base system is weak. ➢ Work-life imbalance ➢ Inability to use full potential ➢ Inability to upgrade system on time	➢ High Political instability ➢ Lack of clear technology strategies like: ✓ Cloud strategy ✓ Data governance strategy ✓ E-commerce strategy ➢ Not contextualized cyber security regulations/directives. ➢ Instable economy / unhealthy economy ➢ Economy deficit / BOP is deficit ➢ High and Paradox inflation rate ➢ Shortage of cash ➢ Collapsed domestic and international economy ➢ High Unemployment rate ➢ High Uneducated Population ➢ Low mind set about digitization ➢ Ineffective digitization system in banking industries ➢ Rapid technology change/ Technology dynamism ➢ Network and Electric power fluctuation ➢ Cost of technological infrastructure ➢ Less Skilled vendors ➢ Unscientific government policy ➢ Low attitude to change and low work habit ➢ Fear of technology and low know-how ➢ Most of the currency owned by old and few people ➢ Lack of demand and supply policy ➢ Weak exporters' bargaining power ➢ Political involvement in the banking industry ➢ Poor innovation culture

Table 15: SWOT Matrix

5.5 Discussion

In this section the researchers have discussed the overall objective, findings of the research and showed the findings of this research relation with other investigates following the research questions and the specific objectives of the research. Finally, the researchers have proposed and described a refined ISS development framework by taking new findings based on the theoretical framework of this research.

CBE is practicing its day to day operations and IS/IT service delivery without clear and formal information system strategy. Even if the bank has well IS infrastructure and structure, it mainly follows a principle that emphasis business strategy as a driver and IS/IT as support without formal ISS. Internal and external factors have been assessed, analyzed, and four main strategies have been proposed to answer research questions and to meet the research objective.

5.6.1 What ISS is being adopted by CBE? (Research question 1)

This research has made internal and external environment analysis using SWOT analysis tool to answer the research questions and research objectives based on the theoretical framework proposed by Ward and Peppard. Specifically, to answer research question 1 and to identify strength and weakness of CBE the researchers followed 7S McKinsey framework.

Based on the findings, the bank faced with deficiency of formal ISS and presence of governance gap. Almost all respondents assured that CBE lacks formal and clear ISS that answers three main strategy questions (where CBE is, where CBE needs to go, and how CBE needs to go there). Tagel (2016) stated CBE accomplished the IS/IT governance in an informal way and ad hoc foundation. Differently, the study revealed that formal IS structure, clear & formal business strategy, good IS/IT infrastructure, good business control system, low staff turnover, sufficient budget, high investment for IS/IT, high education level, certified, young and skilled manpower existed and practiced in CBE. Additionally, the study revealed that CBE uses different frameworks to assure the IS/IT services like ITIL to ensure the IS service align with business objectives. The findings also revealed that there is an IT roadmap in the bank which is established ten years ago. However, this roadmap is not latest and it doesn’t include key strategic elements, intents and issues. The findings indicated that the CBE practices it’s IS/IT informally and follows the business strategy as a driver of the bank and IS/IT as a support for the business. In this regard (King, 2018; Menelik, 2019) stated that lack of clear strategy is a challenge for

strategy alignment and hinders firms from getting good return on investment on IT/IS, even if they biased to alignment.

In line with ISS factors; the study revealed that governance problem (low technology background of front-runners), existence of business driver and IS/IT support strategy, and the view of the business and top management about IS/IT value are key factors for not having formal ISS. Pearson and Saunders (2010) stated ISS can itself distress and is affected by modifications in a company's organizational and business strategies. Luftman and Brier (1999) also enumerated IT/business lacks close relationships and senior executives do not support IT are inhibitors for strategy alignment. Nature of business, middle management attitudes, and measuring benefits are barriers to ISS success (Wilson, 1989). King (2018) also indicated lack of focus in each department to meet business need is factor for strategy alignment. Senior management commitment, senior management involvement, increased management understanding of IS/IT, assessment/evaluation of ISS, ISS supported by IS management function are key success factors for information system strategy (Galliers, 1991).

Based on the findings; lack of formal ISS leads and exposes the bank to being vendor dependency, not using full potential, project delay, poor business-IS correlation, poor business-IS/IT communication, too much long procurement process, existence of ownerless services, old system existence, governance gap, gap to build local capacity, inability to upgrade system on time, and inability to stop system/service incapability while changes occur. Ward and Peppard (2002) specified not technology-driven, business-driven innovation principle is factor for ISS success. All in all, the bank performs its day to day IS/IT service operations without formal and clear information system strategy. Girma (2013) also stated BITA is a factor that affects the performance of the organization and having better strategic alignment leads to have better performance.

The specific objective of the study was not only identifying the strength and weakness but also aims to discover key opportunity and threat factors for CBE. In line with this, the study revealed political, economic, social, and technological factors affect the banking industry positively and negatively. In line with technology dimension; Sammut-Bonnici and Galea (2015) and Ho (2014) specified investment in automation, technology incentive, innovation, and rate of technological change are key issues for making decisions in different organizations. In line with social dimension; Downey (2005) and Sammut-Bonnici & Galea (2015) indicated the possible

market size of companies is affected by social factors like age demographics, attitude towards work, education standard, and population growth. In line with economic dimension; Sammut-Bonnici and Galea (2015) indicated economic growth, interest rates, and inflation rates are key economic factors which affect the cost of capital and purchasing power of organizations. In line with political dimension; Ho (2014) and Downey (2005) stated political stability, government regulations, government intervention, and trade restrictions are key political factors in different companies.

This research also revealed favorable fiscal and monetary policy, harmonized social relationship, huge young generation population, existence of foreign exchange policy, existence of security initiatives, technology dynamism, and availability of variety of technologies as key opportunities for the bank. Whereas, high political instability, lack of clear technology strategies, instable economy, high and paradox inflation rate, high unemployment rate, high uneducated population, low mind set about digitization, ineffective digitization system in banking industries, technology dynamism, network and electric power fluctuation, cost of technological infrastructure, less skilled vendors, unscientific government policy, and poor innovation culture as threats for CBE. Evidences from the interview data putted as follow that support our findings.

In line with technological dimension, (EE2, 2020) showed that IS/IT is dynamic by its nature and it affects the banking industry both positively and negatively. (EE3, 2020) thought the observed dynamic nature of IS/IT has both positive and negative effect on the bank.

In terms of social dimension, (EE1, 2020) stated that the banking sector is affected by demographic change of Ethiopian population. (EE3, 2020) believed demographic change has great effect on the banking industry.

In line with economic dimension, (EE1, 2020) thought that different domestic and international economic factors exist that affect the banking industries. (EE3, 2020) thought that domestic and international economic factors have influence on the banking industries.

In line with political dimension, (EE1, 2020) specified the banking industry is affected by governmental policies and regulations. (EE3, 2020) clarified different governmental policies and regulations affect the banking industry. So, CBE has to take care on the identified factors and build formal strategy using the proposed framework to get competitive advantage.

5.6.2 Challenges

Based on the collected data and findings the bank faced with internal and external challenges while trying to accomplish its operations and services.

5.6.2.1 Internal challenges

One of the specific objective of the research was about the internal challenges that affect CBE's ISS practice, in line with this the most remarkable internal challenges are being huge bank, being vendor dependency, too much time to adapt/adopt new technology, IS/IT team encounters (too long time to transfer knowledge from project team to operation team), business team encounters (business wing scope to see the system during test phase and implementation phase), and lack of clear and formal ISS. King (2018) enumerated that lack of clear strategy and delinquency to capture knowledge from vendors/ providers is factor for strategy alignment. Menelik (2019) also found that lack of clear strategy is a challenge for strategy alignment.

The study also revealed that poor integration and coordination, complexity of systems, existence of services without owner, existence of teams in incorrect place, delay of projects, very tiring product integration process, delay of trainings, work-life imbalance, existence of redundant systems, poor IS-business correlation, IS/IT governance gap, fear of change, gap to build local capacity especially for new employees, inability to upgrade system on time, not keeping time line, too long procurement process, inability to deliver trainings accordingly, service demand and supply inharmoniousness, system performance downgrade, COVID 19 makes low manpower availabity in the office, low local capacity, less credit for ISS, and , undocumented system problem and solution are key internal challenges. Elias (2017) stated that knowledge management of CBE is at little or no intention level to manage knowledge formally. The following are key evidences from the interview data that support our findings.

(IE2, 2020) stated that delay to upgrade systems, too much tiring procurement process, not keeping timeline, and delay of training delivery process are key internal challenges. (IE3, 2020), COVID19 leads to have low man power in the office are internal challenge. (IE4, 2020), frustration to loss experienced staff and being huge bank are internal challenges. (IE5, 2020), governance gap is key internal challenge for the bank.

5.6.2.2 External challenges

Another specific objective of the study was about the external challenges that affect CBE's ISS practice, in line with this the most remarkable internal challenges are technology dynamism, lack of support from vendors due to COVID 19, level of awareness to use bank's products and service, emerging of new banks, competition from existing commercial bank, payment systems under being out of the banking system, software vendors (level of service is as a vendor (since vendors focus on fee and maximizing their business not caring about us) not a partner (since partner advice for better benefits not only fee)). Menelik (2019) found that vendor dependency, lack of clear national regulation, and external changes are challenges for strategy alignment in case of bank of Abyssinia. The study revealed additional external challenges like customer's technology awareness and tolerance level, economy instability, natural like COVID 19, political instability leads to unavailability of support from vendors, power fluctuation / unstable power, internet connectivity (ISP), and government policy. Selamawit (2018) indicated CBE had the problem of network connection, power supply and telecommunication. Evidences from the interview are putted as follow.

(IE1 & IE2, 2020) stated network fluctuation and power fluctuation are key external challenges for the bank. (IE3, 2020) said COVID19 limit our support from vendors. (IE4, 2020) said technology dynamism, software vendors, and increase amount of competitors are key external challenges. (IE5, 2020), power fluctuation, network fluctuation, government policy, and COVID 19 leads not having support from vendors are key external challenges for the bank.

5.6.3 What framework is suitable to develop ISS for CBE? (Research question 2)

The second research question of the study was about suitable framework to develop ISS. In line with this, the refined ISS development framework (see figure 21) is proposed by taking grave theories from different literatures like the theoretical framework of this research (see figure 14), Galliers (1991), Luftman et al. (2008), and the collected data to have viable ISS and to improve current IS practice of the bank.

IS/IT service management strategy, change management strategy, IS/IT governance strategy, identity and access management strategy, ISS periodic assessment, and competitive advantage are the new dimensions of the proposed ISS development framework. The proposed framework provides ISS formulation tools by making boundary between internal environment (CBE) & external environments and deliverables (includes business-IS strategy, IS/IT strategy, IS/IT management strategy, change management strategy, IS/IT governance strategy, IT/IS service management strategy, identity and access management strategy) including other process to get competitive advantage.

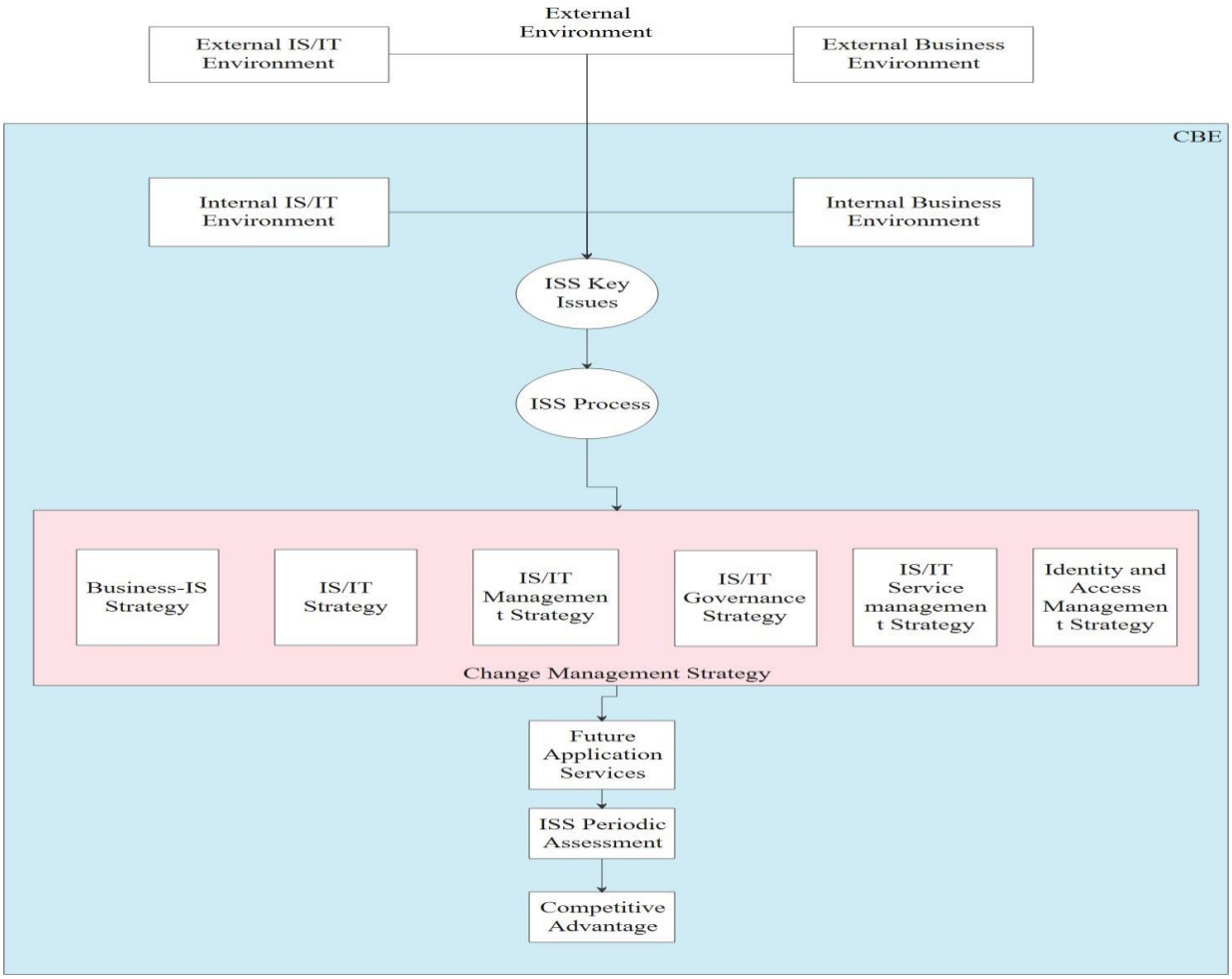

Figure 22: Refined ISS development framework: Adapted from (Ward & peppard, 2002; Galliers, 1991; Luftman et al., 2008, Ho, 2014; Samuel-Bonnici & Galea, 2015)

5.6.3.1 IT/IS service management strategy

IS service management profits for strategic alignment of IS/IT, IS/IT investment, central oversight of budget, risk management, demand and investment management along with standardization of investment rule, procedure, and blueprint (Jeffery & Leliveld, 2004). IS/IT service management includes IS infrastructure, application, and project management. Infrastructure management includes managing the distributed hardware and software, telecommunication technologies, and information resources. It is the management of essential operation components such as policies, process, equipment, data, and external contacts. It can be divided as system management, network management, and storage management. IS/IT application services are critical to achieve future business strategy (McFarlan, 1981). To have full capability on IS/IT service in the business such strategies (like ITIL) have great benefits. For instance, let's see the dynamic nature of technology observed in the banking industry; it affects CBE both positively and negatively and another issue observed in CBE is poor resource utilization which has negative effect on the performance of the bank. Additionally, poor business-IS correlation and ownerless services existence affect the bank's performance. So, IS/IT service management strategy play boundless role to moderate such complications on the observed dynamic nature of technology in the banking industry.

5.6.3.2 Change management strategy

Change management has excessive and great benefit to manage any changes and to mitigate change impact on the business-IT alignment (Menelik, 2019). Organizations must have well-organized change management capability to manage changes and to be successful in the current dynamic and unrestrained business environment. Change may occur in an organization at any unpredictable period (Norbert et al., 2007; Oscar & Kelly, 2014). Change management strategy has been unified as integrating on-going learning and review (Galliers, 2006). Based on the finding of the research, changes occur from both the internal environment like work life habit due to COVID 19, system upgrade, structural changes, business need and business process reengineering and external environment like technology change and dynamism, political and economic instability, power and internet fluctuation. These changes affect the bank's day to day practices directly and indirectly. Consequently, to resolve change related issues and to get the highest competitive advantage in the industry change management strategy plays excessive role.

So, CBE has to implement the change management strategy in its exact place to manage any change proactively.

5.6.3.3 IS/IT governance strategy

IS/IT governance refers to the decision, rights, and responsibilities surrounding IS/IT initiatives. IS/IT governance seek to guide IS/IT delivery across multiple enterprise goals, including strategic alignment, enterprise value, resource allocation and efficiency, risk mitigation, and project performance (Lawson et al., 2013). IS/IT governance is still an issue in many organizations even though the evidence that IS/IT is an integral part of the business (luftman et al., 2008). IS/IT governance is a process and set of metrics and controls that focus on what, who, why, and how IS/IT decisions are made. It is another essential element in IS/IT and business alignment. IS/IT governance is offered through variety of IS/IT governance frameworks like COBIT to formalize IS/IT management in the business (Luftman, 2017). From the collected data, it is clear to realize that CBE faced with difficulties like governance gaps and poor business-IS/IT correlation. And the bank is highly affected by these problems. Therefore, to close such problems and holes formal IS/IT governance strategy has great contribution.

5.6.3.4 Identity and access management strategy

Identity and access management confirms only authorized and legal users can access services/systems and help to protect encryption keys & other sensitive information of organizations in the system. IAM is a crucial of security concerns in the cloud. It helps to solve a series of new problems that cloud computing model has brought (Yang et al., 2014). Cloud computing has a lot of welfares and implementation recently. However, the widespread implementation of cloud is still being hindered by the lack of transparency and accountability, which has traditionally been ensured through security compliance auditing techniques. Examining and auditing in the cloud, but, presents many new encounters in data collection and handling and in confirmation. So, IAM are crucial to mitigate such challenges and take advantage on technology (Majumdar et al., 2015). IAM is a way for authenticating a user encompasses receiving a request from the user to access a resource, where the resource is associated with at least one authentication requirement, and determining a trust level connected with access to the resource (Nguyen et al., 2008). As the Web is gradually used as a platform for diverse applications, companies tackled with new requirements to authentication, authorization and identity management. Recent designs have to control access not only to single, isolated

systems, but to whole business-spanning federations of applications and services (Gaedke et al., 2005). IAM allows to managing insourced and outsourced systems in an organization. Technology dynamism involves different thinking, innovation, a modification in leadership & new business models and incorporating digital strategy into all aspects of the business to improve the experience of organization's employees, customers, suppliers, and partners. To build new, innovative company cultures, business models, and digital strategies, organizations need a solid IT infrastructure that supports all the upcoming changes with agility, innovativeness, and security. Kuppinger Cole Ltd. (n. d.) (an international and independent analyst organization and CXP Group, an independent European research) indicated that a mature identity & access management (IAM) strategy is highly important for ensuing in the technology dynamism and to ensure that the proper people in an enterprise have the appropriate access to technology resources. The risk of not having a proper identity and access management strategy process in place is putting data at risk for being misused and misrepresented. Having and implementing formal identity and access management can enhance organizations competitive advantage.

However, the collected data showed that lack of formal technology strategy at national level, not contextualized security initiatives existence, and emergency of local hackers are frustrations, threats, and problems for the banking industry. Therefore, having a well-organized and formal IAM strategy can eradicate security related pressures and it can also enhance the performance level of firms by assuring confidentiality of the firm in this dynamic technology world.

5.6.3.5 ISS periodic assessment

Technological requirements will grow and new desires are likely to emerge while the strategic planning process has tried to capture the most critical IS/IT applicable wants across the business. IS/IT is dynamic by its nature with evolving best practices, novel and improved technology solutions entering in the business (Lawson et al., 2013). The aim of adapting or adopting an IS/IT strategy process is to assure alignment of IS/IT with the business, to identify where IS/IT contributes most, to gain competitive advantage, to build a cost-effective, and to develop the appropriate resources and competencies to deploy IS/IT successfully across the business (Ward & Peppard, 2002). The main benefit of ISS periodic assessment is to identify the emerging technologies, to assure BITA, to analyze & prioritize gaps, and to take an advantage on technology. Ward and Peppard (2002) thought that strategy must be constantly reviewed, improved, and reformed process.

The findings of this research showed that there is no periodic ISS assessment in the bank. For instance, existence of old systems, existence of ownerless services, poor business-IS correlation, and inability to upgrade infrastructures on time are key encounters for the bank. These encounters affect the bank's performance. Therefore, assessing ISS periodically can make the business to get a competitive advantage by mitigating factors and enhancing usage of latest technologies.

5.6.3.6 ISS Key Issues

ISS key issues are highest priority teething troubles that can affect the business and these issues emerged while assessing the internal and external business environment to formulate strategy. An information systems management studies on key issues turn out to be more and more valuable and appreciable (Fang & Shao, 2007). IS/IT and business alignment, developing and retaining IS/IT professionals, security and privacy, IS/IT strategic planning, and business process reengineering are key management issues in ISS (Luftman et al., 2008). Integration of IT with enterprise activities, improving enterprise IS security, enterprise IS strategies, making effective use of the data resources, the influence of CIO and IS organizations, business process reengineering, the building of enterprise IS infrastructures, the building a responsive IT infrastructures, the evaluation of return on investment of IS, and integration of different suppliers' open systems are key information system management issues (Neiderman et al., 1991).

The interview data show that the bank trust key IS strategic issue identification is essential but doesn't clearly elaborate key IS strategic issues right now. Absence of clear IS strategic issues lead the bank not to prioritize problems in the firm. Based on the environment analysis and different literatures, this study has recognized key IS strategic issues for CBE. Some of the issues are IS strategizing and planning, BISSA (Business Information System Strategy Alignment), improving professionalism, enhancing IAM (Identity and Access Management), BPR (Business Process Reengineering), taking advantage on technology dynamism, building local capacity, bank expansion and noble governance.

Therefore, taking key strategic issues into consideration, clearly identifying issues, and giving highest priority for key IS strategic issues can make the industry get competitive advantage.

5.6.3.7 Competitive advantage

Strategy is the route and truck to competitive advantage that controls performance (Porter, 1985). ISS is an examination of the role that information system can play in helping organizations to outline a path to competitive strategy (Wilson, 1989). Letting the strategic use of information system is for the improvement of getting competitive advantage (Porter & Miler, 1985). Strategic information system supports directors to put the information in a methodical way to make strategic decisions and assists companies to develop their generic strategies in order to attain competitive advantages (Altaf & Khalil, 2017). IS/IT is changing the way companies operate and affects the entire process by which companies create their products. Information used as a competitive advantage. The information revolution is affecting competition by changing industry structure, by altering the rules of competition, by creating competitive advantage by giving companies new ways to outperform their rivals, and spawns whole new businesses (Porter & Millar, 1985). SIS highlighted on refining attractiveness by altering the nature of the business to use IS as groundwork of competitive advantage (Galliers & Somogyi, 1987). Nowadays, IS/IT capabilities have altered from their traditional role and transformed to a means to create competitive advantage and increase market share (Altaf & Khalil, 2016). Therefore, having formal ISS can help companies to take an advantage on IS/IT and to gain a competitive advantage.

5.7 ISS Development Framework Evaluation

Relevance and rigor are two criteria's to evaluate IS research artifacts. To check the relevance IS/IT artifacts can be evaluated in terms of functionality, completeness, accuracy, usability, and fit with the organization (Hevner et al., 2004). This research has prepared and distributed questionnaires to purposively selected participants to evaluate the relevance of the proposed ISS development framework through questionnaire which is adapted from Hevner et al. (2004) and Frezer (2019) (see appendix D). And we found that positive output from the questionnaire that assures the proposed ISS development framework is relevant. Rigor of artifacts is achieved by appropriately applying existing theoretical foundation and methodologies (Hevner et al., 2004). So, this kind research has made an extensive literature review including the theoretical framework of this research to check and declare the rigor nature of the research.

To end with, we recommend to CBE to use the proposed framework as a lens to formulate and implement formal ISS in order to get competitive advantage on the capability of technology.

5.7.1 ISS Development Framework Evaluation Result

The researchers have made evaluation of the proposed ISS development framework using questionnaire in the form of likert scale. The questionnaire has been distributed to six participants.

Based on the respondent's viewpoint the proposed framework is relevant (in terms of functionality, completeness, accuracy, usability, and fit with the organization) since the mean value of each question is good and the cumulative mean value also shows 4.35 (87%). The cumulative mean of the questionnaire is 4.35 (87%) which is nice. In other word, 87% of the respondents approve that the proposed ISS development framework is nice in terms of relevance (see table 12).

No.	Evaluation Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	**Mean**
General							
1	The proposed ISS development framework is clear and understandable.				1	4	4.8
2	The proposed ISS development framework is inclusive in terms of coverage.			1	3	1	4
3	The proposed ISS development framework is suitable to formulate and implement ISS.			1	2	2	4.2
4	The ISS development framework elements are strategic and understandable.				2	3	4.6
5	The objective of the ISS development framework is logical, necessary, hot issue and clear.				4	1	4.2
Relevancy							

1	The elements of the proposed ISS development framework are clear.					5	5
2	The elements of the proposed ISS development framework are accurate / correct.			1	3	1	4
3	The elements of the proposed ISS development framework are inclusive and complete.			1	3	1	4
4	The elements of the proposed ISS development framework are usable and functional.				3	2	4.4
5	The elements of the proposed ISS development framework fit with bank's practice.				4	1	4.2
6	The proposed ISS development framework is appropriate and suitable.				4	1	4.2
7	The applicability of the proposed ISS development framework can enhance the current ISS practice.				2	3	4.6
						Mean of Mean	4.35 (87%)

Table 16: Mean of the proposed ISS development framework evaluation: Adapted from (Frezer, 2019; Hevner et al., 2004)

The overall mean value and percentage of the result looks like the following.

Mean of mean= (4.8+4+4.2+4.6+4.2+5+4+4+4.4+4.2+4.2+4.6)/12= 52.2/12= 4.35

In percentage= (4.35*100)/5=87%

Based on the framework evaluation result, the relevance of the proposed framework is approved since the cumulative mean value shows 4.35. In other word, 87% of the respondents verified the

framework relevance in terms of functionality, completeness, accuracy, usability, and fit with the organization. In summary, the proposed ISS development framework has been evaluated in terms of relevance and scored acceptable evaluation result.

5.8 Chapter Summery

The internal and external environment analysis, findings, discussions, and framework evaluation have been accompanied in this chapter. The researchers have clearly stated strength, weakness, opportunity, threat of the bank and have identified key strategic issues to provide competitive advantage for the bank. Additionally, the researchers have clearly stated challenges (internal and external) for CBE in day to day service delivery and operation. Finally, the researchers have proposed and evaluated the refined ISS development framework to moderate the strategy gap that exists in CBE.

Chapter Six

Conclusion, Recommendations, and Contribution of the Study

6.0 Overview

In this chapter the researchers have mentioned the key contributions of this sympathetic research and have made conclusions and recommendations based on the research findings.

6.1 Research Contributions

In this section the contributions of this research have been stated and mentioned. The researchers have divided the research contributions section into two subgroups addressing contribution to practice and theory.

6.1.1 Theoretical Contribution

The theoretical contribution of this study is identifying factors both internal & external in terms of four dimensions namely strength, weakness, opportunity, and threat. It contributes to our understanding of the question of what ISS CBE has adopted and used in the business environment. This research also contributes by extending and refining the existing theoretical framework to explain a phenomenon where it has not previously applied. The researchers proposed a new solution framework for problems like lack of formal ISS, poor governance, poor resource utilization, and poor business-IS correlation & communication in CBE. Additionally, this research contributes by introducing a new construct and explaining how it narrates to significant concepts.

6.1.2 Practical Contribution

This kind research has practical contribution in addition to the theoretical contribution on the existing literatures with regards to the findings of this kind research. The practical contribution of this research is paying practical awareness and know-how to CBE top managements and employees regarding how ISS is affected by factors listed in the finding of this research

(strength, weakness, opportunity, and threat) and challenges have been identified for CBE to make the bank successful. The observed ISS development framework have the possibility to fix the existing problems in the bank. CBE might still use the findings and the refined ISS development framework of this research as a useful tool and framework while formulating and implementing ISS in order to get competitive advantage from technology.

6.2 Conclusion

Strategic placement is one of the main pursuits in information system research, alongside the quests for integration and sustained competitive advantage. It has become problematic to distinct features of information system strategy from business strategy (Ward & Peppard, 2002). Aligning the business and IT became a major challenge for both business and IT managers. Therefore, having clear and formal ISS helps to fix the strategy gap that exists in many companies. And the proposed ISS development framework can guide firms when formulating and implementing strategies.

Specifically, in case of developing countries like Ethiopia, where the banking industry faced with strategy gap and needs to fix the hole that exist in the industry. So, this is what this study endeavored to discourse and propose strategy development framework by taking the current practice of the bank into consideration.

The general objective of the research was proposing a refined ISS development framework for CBE by taking the existing theoretical framework as a lens, assessing the current practice of the bank using different strategy analysis tools like PEST, McKinsey 7-S, and SWOT. By doing so, the study revealed internal and external factors and clearly stated the strength, weakness, opportunity, threat for the bank and clearly identified ISS key issues. It also showed that the current ISS practice of the bank is unclear and informal. In other word, the study indicated that the bank faced with deficiency of information system strategy. And the researchers have proposed a refined ISS development framework as a solution.

The first research question was on the current ISS practice of CBE and the key findings have showed that the bank faced with ISS deficiency and perform its daily operations with unclear and informal ISS. The study has revealed that governance problem, existence of business driver and IS/IT support strategy, and the view of the business and top management about IS/IT value as a factor for not having formal ISS. The study also found key internal challenges and external

challenges for CBE. Another findings revealed by this study were the strength, weakness, opportunity, and threat for the bank. Based on the findings, the researchers concluded that the bank faced with absence of ISS.

The second research question was about what framework is suitable to develop ISS for CBE. For that reason, this study has proposed a refined ISS development framework for the resolution of the strategy gap by taking the theoretical framework, collected data, and existing literatures into consideration. And this study concluded that applying the proposed ISS development framework can help the bank to resolve the strategy gap that exists in the bank.

All in all, the following key conclusions have been made based on the finding of the study.

- The researchers have clearly assessed the current ISS practice of the bank and proposed best solutions for it.
- The researchers concluded that CBE faced with deficiency of ISS.
- The researchers have shown the factors influencing the practice of IS and ISS of the bank into four dimensions (strength, weakness, opportunity, and threat) see table 16.
- The researchers have made great contribution for CBE by letting the bank to know their strength, weakness, opportunity, and threat. And way of mitigation.
- The researchers have directed that the bank has no formal and clear ISS. And it practiced its operation as a support using old roadmaps based on the business strategy.
- The researchers have proposed a refined ISS development framework (see figure 21) that takes the existing theoretical framework as a lens and the data collected into consideration. It can be taken as a guide while formulating and implementing ISS in the organization.
- The researchers have displayed key challenges (internal like lack of formal ISS, vendor dependency, poor business-IS correlation, governance gap, work-life imbalance, too much procurement process, old system existence and external like network & power fluctuation, government policy, COVID 19, technology dynamism, political & economic instability) for the bank.
- Governance problem (low technology background of front-runners and low technology credit for IS from the business side), existence of business driver and IS/IT support strategy, and the view of the business and top management about IS/IT are key factors explored by the researchers for not having formal ISS.

- The researchers have gone through a variety of strategy formulation tools and framework. This can help future researchers to have clear terms and definition on strategy.

6.3 Recommendations

6.3.1 Recommendation for CBE

ISS is an iterative route to align IS/IT competence with corporate desires and it enables and drives the business if it is aligned with the business strategy (Alaceva & Rusu, 2015).

In this study, internal and external environments have been assessed. And key factors and solutions have been clearly stated as a finding. These findings are useful for CBE to fix strategy gap and to have good business performance. Moreover, based on the collected data, research finding, and existing literatures the bank is recommended to take the following key recommendations into consideration to improve the current practice of CBE, get competitive advantage on technology and to have smooth business operation by solving the existing strategy gap.

- There is ISS deficiency. So, the bank has to formulate and implement formal information system strategy using the proposed framework to fix the strategy deficiency.
- The bank has to implement clear and formal IS/IT strategy plan that defines an IS/IT bank's vision, mission and to reflect the business strategy and goals as a driver of the bank not as support since the time is digitization.
- The bank has to isolate governance from management and implement IS/IT governance frameworks like COBIT to ensure that IT investments support business objectives and to connect business goals to IS/IT goals.
- The bank has to enhance the existing IS service management to enable IS/IT services to be managed across their lifecycle using frameworks like ITIL and ISO/IEC 20000.
- The bank has to convince the central bank in scientific way to implement disaster recovery at national level to minimize currency at nationwide level.
- The bank has to enhance the existing change management by making it at strategy level and allow it to contribute at full level throughout the bank to prepare, support, and help individuals, teams, and organizations in making organizational change not limiting it

under IS service strategy management. Since change may arise from many sides may not be only at the IS service only.

- The bank has to isolate identity and access management from security team and establish it at a strategy level to ensure that the proper people in the bank have the appropriate access to technology resources.
- The bank has to assess the bank's ISS periodically to ensure the alignment between ISS and business strategy.
- The bank has to assess periodically the strategy alignment between business and IS/IT strategy by organizing the responsible body.
- The bank has to assess periodically the infrastructure alignment between the organizational infrastructure and the IS/IT infrastructure.
- The bank has to make sure that the IS/IT infrastructure and IS/IT strategy design activities are clear and vibrant.
- The bank has to make sure that the business strategy and organizational infrastructure design activities are clear and vibrant.
- The bank has to create awareness about IS/IT value to business employees and about the business to IS/IT employees in order to create common understanding about the bank.
- The bank has to allow IS/IT team to contribute value while formulating business strategy at high level (strategy level) not like ad hoc. The IS/IT team has also allow business teams to contribute value while formulating ISS.
- The bank has to develop and maximize local capacity to minimize vendor dependency and reduce currency.
- The bank has to enforce the central bank in scientific way to have formal E-commerce directives, advanced security initiatives, formal data governance directives/strategies, and formal cloud strategies.
- The bank has to take key IS strategic issues into consideration while fromulating and implementing ISS plan.
- The bank has to consider governance issue in addition to 4P's (people, process, product, and partner) while formulating ISS since all those points will not make the bank achieve it's competitive advantage with out good governance. So, it is recommended to switch 4P's to G4P's (Governance, People, Process, Product, and Partner).

- The bank has to create awareness about ISS and technology strategies as a whole to employees and concerned governemntal bodies.

Based on the findings and discussions, it is visible that CBE has to improve its current ISS position by taking the recommendation of this kind research to attain it vision of being world class bank.

6.3.2 Recommendation for Future Work

Conceivable research areas have been identified for future researches during the whole research process since the research is conducted on the banking industry by taking CBE as a case. So, this research is open for future researchers to be extended or rehabilitated. The following are key areas that can be done by future researchers based on this sympathetic research.

- The proposed ISS development framework can be improved by recognizing enhancement opportunities.
- Formulating ISS is stimulating due to technology dynamism. So, taking the technology dynamism into consideration future researches are recommended to enhance the proposed ISS development framework by revealing new factors and dimensions.
- Enhancing the proposed ISS development framework by discovering new variables and dimensions in different firms since this study is conducted in the banking industry.
- Future researchers can use the proposed ISS development framework as a lens while formulating strategies.
- This study has only assessed the external environment specifically the macro-environment. So, further external environment analysis specially giving attention to the industry analysis to identify further opportunities and threats.

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Published Research

I've a published research entitled "Assessment of Digital Library Contribution on Learning and Teaching Process for Students and Teachers" which is published at International Journal of Library Science with Volume 14; Issue No 2; Year 2016; and ISSN 0975-7546; Int. J. Lib. Sci. as a coauthor. This paper was my undergraduate thesis work conducted at Jimma University to fulfill the requirement of Bachelors of Science in Information Science.

After having a defense for my B.Sc. thesis work with the above mentioned research and getting a score of Excellent "A", the request came from my advisor to publish the research and I confirm my esteemed advisor to start the process in order to publish the thesis. Finally, passing through scientific way with the concerned bodies and published on International Journal of Library Science since 2016 G.C.

Available at:

https://scholar.google.com/citations?view_op=list_works&hl=en&authuser=1&user=D5DgfCMAAAAJ

Appendix A

Interview Question Overview

Dear All, First and foremost I would like to say thank you for your kind willingness and cooperation to be a part of this kind research interviewee.

This research entitled “Information System Strategy Development Framework for Commercial Bank of Ethiopia” mainly focuses to propose an information system strategy framework for CBE by taking internal and external environments into consideration. It is being conducted at Addis Ababa University to fulfill the prerequisite of the Degree of Masters of Science in Information System.

I’m confident that this interview data will be used for academic purpose only.

Thank You,

Dereje Mulat

Appendix B

Internal Environment Analysis Interview Questions

I. Strategy
   1. Would you please tell us about your company's Information System Strategy, if you have any?
      1.1. Please tell us how it is formulated
      1.2. What major issues are included in it
      1.3. How often it is updated and who is responsible?
   2. Would you tell us how the business and IT strategy of the bank are correlated?
   3. Would you tell us how the Information Infrastructure of the bank is upgraded?
      3.1. How the various changes and system migration issues are handled whenever major infrastructure replacement decisions are made?
      3.2. How do you confirm validation of services/systems used by users?
      3.3. What problems have you experienced in the process of effecting system changes?

II. Structure
   1. Would you please explain how bank's Information System/IT department is organized?
      1.1. How far the current structure is appropriate to discharge the bank's services and mandate as a commercial bank in the country?
      1.2. What structural related problems have you faced so far?

III. Systems
   1. Would you please describe the bank's overall information system in terms of:
      1.1. Technological infrastructure: Hardware, software, networking, and data
      1.2. Security and operation modalities
      1.3. Currency and relevance
   2. How far the bank's information system has supported key operations of the bank?
      2.1. Would you tell us the extent to which bank's employees are satisfied with the current information system?
      2.2. Would you tell us about the overall usability of the information system?
      2.3. Would you tell us the extent to which the information system change employees work life and culture?
   3. What system related problems have you faced so far?

IV. General
   1. What internal and external challenges you are facing in day to day operation?
   2. Would you tell us the bank's overall shared values, style of leadership, staff, and skills of employee's?

3. Please explain the bank's key strength and weakness in general.

Appendix C

Macro-environment Analysis Interview Questions

I. Political
   1. What governmental policies and regulations directly affect the banking industry? Please explain in detail.
   2. What is your overall assessment of the Ethiopian political environment for the banking industry?

II. Economical
   1. What domestic and international economic factors affect the banking sector?
   2. How do you think the Ethiopian fiscal policies are favorable for the banking sector?
   3. How do you think the Ethiopian monitory policies are favorable for the banking sector?
   4. Would you tell us the bearing of the current inflation and related issues on the banking sector?
   5. Would you tell us the bearing of the current balance of payment and related issues on the banking sector?

III. Social
   1. Would you tell us the effect of the demographic change of Ethiopian population on the banking sector?
   2. Would you tell us the influence of Ethiopian culture (social relationship, work habit, attitude, etc.) on the banking sector?
   3. Would you tell us your observation regarding change in the educational status of the population and the demand for the banking product and services?

IV. Technological
   1. How far the observed dynamic nature of information technology positively or negatively affected the banking industry?
   2. Does the bank has a formal IS/IT strategy? If yes, how it has been formulated? What considerations and frameworks were adopted?
   3. What technological advancements and innovations are available or planned to be available? What benefits and challenges you face? Please explain in detail.

V. General
   1. Please explain key useful and harmful practices in the banking industry you have observed so far in terms of PEST?

Appendix D

Proposed ISS development framework Evaluation Questionnaire

Dear Contributors,

First and foremost we would like to say thank you for your kind willingness and cooperation that you have showed while performing the interview process during data collection phase. As we have stated during the interview session the main objective of the research is proposing a refined information system strategy development framework by assessing the current practice of the bank. Now, we came up with the refined information system strategy framework by considering the current practice of the bank and the existing theoretical framework. Therefore, we are requesting your usual cooperation to evaluate the relevance of the proposed information system strategy framework in terms of inclusiveness, clarity, completeness, usability, accuracy, and functionality.

All the data collected from you are used for academic purpose only.
Thank you for your cooperation and participation in this research.

Instructions!

1. No need of writing your name and related issues.
2. Please make sure that you put a thick mark √ on the appropriate column.
3. Please write any feedback as a comment for the overall research process and outputs at the end of the questionnaire if you have any.

Acronym

IS – Information System

ISS – Information System Strategy

IAM- Identity and Access Management

No.	Evaluation Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	**Mean**
General							
1	The proposed ISS development framework is clear and understandable.						
2	The proposed ISS development framework is inclusive in terms of coverage.						
3	The proposed ISS development framework is suitable to formulate and implement ISS.						
4	The ISS development framework elements are strategic and understandable.						
5	The objective of the ISS development framework is logical, necessary, hot issue and clear.						
Relevance							
1	The elements of the proposed ISS development framework are clear.						
2	The elements of the proposed ISS development framework are accurate / correct.						
3	The elements of the proposed ISS development framework are inclusive and complete.						
4	The elements of the proposed ISS development framework are usable and functional.						

5	The elements of the proposed ISS development framework fit with bank's practice.						
6	The proposed ISS development framework is appropriate and suitable.						
7	The applicability of the proposed ISS development framework can enhance the current ISS practice.						

If you have a disagreement on each evaluation question, please mention the points to be added to the proposed ISS development framework.

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Thank You!

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