

DEPARTMENT OF INFORMATION STUDIES

UNIVERSITY OF GHANA, LEGON

**THE IMPACT OF INFORMATION SYSTEMS STRATEGY
ON BANK PERFORMANCE IN GHANA**

BY

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STUDIES.**

FEBRUARY, 2014

DECLARATION

I do hereby declare that this thesis is my own original work and has not been submitted either in whole or in part to any institution for any degree. Where references are made to works of other researchers, due acknowledgements are given.

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DEDICATION

This thesis is dedicated to the Sovereign God Almighty,

My late father;

Ebenezer Nii Ardey Ankrah

And finally

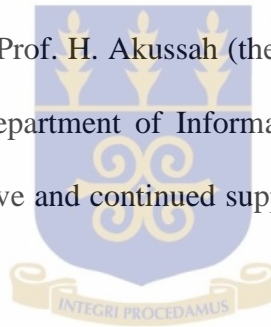
My lovely children Lorthar, Laura and Lilybell.



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LIST OF ABBREVIATIONS

ACCA	–	Association of Certified Chartered Accountants
ADB	–	Agricultural Development Bank
AIS	–	Accounting Information System
ATM	–	Automated Teller Machine
AVR	–	Automated Voice Response
BBG	–	Barclays Bank Ghana
BSC	–	Balanced Score Card
CCS	–	Consumer Credit Scheme
CEO	–	Chief Executive Officer
CIB	–	Chartered Institute of Bankers
CIM	–	Chartered Institute of Marketing
COR	–	Correlation Coefficient
CSF	–	Critical Success Factors
CSR	–	Corporate Social Responsibility
DBMS	–	Database Management System
DBS	–	Diploma in Business Studies
DF	–	Degree of Freedom
DIS	–	Department of Information Studies
eBBS	–	Electronic Business Solution
EFTPoS	–	Electronic Funds Transfer at Point of Sale
ELAC	–	Enterprise Life Assurance Company
EMV	–	Europay MasterCard and Visa

FOS	–	Front Office System
GCB	–	Ghana Commercial Bank
HND	–	Higher National Diploma
HR	–	Human Resource
ICA	–	Institute of Chartered Accountants
ICT	–	Information and Communication Technology
IE	–	Information Engineering
IS	–	Information Systems
ISS	–	Information System Strategy
IT	–	Information Technology
LAN	–	Local Area Network
MA	–	Master of Arts
MBA	–	Masters in Business Administration
MSc	–	Masters of Science.
No	–	Number of Operational Staff
NOS	–	Network Operating System
NIB	–	National Investment Bank
Ns	–	Number of Strategic Staff
OS	–	Operating System
OTP	–	One Time Password
PD	–	Primary Dealer
PIN	–	Personal Identification Number
PM	–	Profit Margin
POS	–	Point of Sale

PR	–	Public Relations
ROA	–	Return on Assets
ROE	–	Return on Equity
SCB	–	Standard Chartered Bank
SLA	–	Service Level Agreement
SPSS	–	Statistical Package for Social Sciences
STC	–	Straight Through Processing
SWOT	–	Strengths, Weakness, Opportunities, and Threats
WAN	–	Wide Area Network
WAP	–	Wireless Access Point
WATM	–	Wireless Automated Teller Machine
WVT	–	Website Visitor Tracking

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ABSTRACT

Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Information system strategy is a plan that aims to (1) identify the required IS assets, structures, monetary resources, and technologies and (2) Allocate the existing Information System assets in the most efficient way. The purpose of this study is to determine the impact of information system strategy on bank performance of six banks in the Greater Accra Region of Ghana. There are two measures of performance that relate to how efficient and profitable a business entity is and these are Return on Asset (ROA) and Return on Equity (ROE).

The study adopted a cross-sectional survey design and was comfortably placed within a scientific epistemology of logical positivism. The cases or study settings investigated were local and foreign banks. This study has three categories of population; the strategic staff, the operational staff and the bank customers from the six banks all selected at their Head Offices in Greater Accra region. A proportionate sample size of 62, 348, and 1,352 were used for the strategic staff, operational staff, and bank customers respectively. Simple random sampling was used for the selection of the operation staff whilst purposive sampling was used for the selection of the bank customers. The instrument used in this study was the questionnaire. The Statistical Package for Social Sciences (SPSS) was used for the analysis of the data. A frequency, percentages, charts and Chi-square test of independence to ascertain the significance of the relationship between

variables has been used to present the results of the study. Logistic regression is also used to predict the value of a dependent variable using more independent variables.

The findings revealed that, the foreign banks (Bank D, Bank E, and Bank F) have invested more in IS than the local banks (Bank A, Bank B, and Bank C). All the foreign banks exhibited increasing trends in the ROA but this trend did not occur in the local banks. This is in line with the second hypothesis that statistically concluded that banks with higher levels of information systems investments have increasing operating profits than banks with low level information systems investments. The effects of IT investment on increasing profitability (ROA and ROE) for banks are significantly great. Strategy appears to have direct effect on IT and IT has direct effect on ROA. The analysis suggests that IT can play a meaningful role in the strategy-ROA relationship. Despite these caveats, the strategic context makes a significant difference in the correlations observed between IT adoption and ROA. Without strategy variable in the model, the correlations would have been underestimated.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and Communication Technology (ICT) is at the centre of this global change curve. Laudon and Laudon, (2007) contend that managers cannot ignore information systems because they play a critical role in contemporary organization. They point out that the entire cash flow of most Fortune 500 companies is linked to information systems. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

The banking sector has seen considerable transformation in the 1980s starting from the United States, then Europe and now the global village. The main forces behind this significant transformation in the banking industry, according to Reixach (2001), are

deregulation and innovation in IT. These forces have brought about increased competition, not only among banks, but also in other financial and non-financial industries. Over the years, IT has contributed to the blurring differences in retail, corporate and investment banking all over the world as universal banking seems to be the most favoured and preferred form of banking to specialized banking. Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. They claim that the most significant shortcoming in the banking industry today is a wide spread of failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advises banks to re-examine their service delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology. The banking industry in Ghana has witnessed tremendous changes linked with the developments in ICT over the years. The quest for survival, global relevance, maintenance of existing market share and sustainable development has made exploitation of the many advantages of ICT through the use of automated devices imperative in the industry. This study looks at the impact of information systems strategy on bank performance in Ghana.

Information and Communication Technology has changed the approaches to conducting business transactions and meeting the growing demands of customers for most organizations. The promise of information system in the banking sector has been seen in

terms of its potential to increase customer base, reduce transaction costs, improve the quality and timeliness of response, enhance opportunities for advertising and branding, facilitate self-service and service customization, and improve customer communication and relationship (Garau, 2002).

Agboola (2003) indicated that the adoption of Information and Communication Technology in banks has improved customer services, facilitated accurate records, provided for home and office banking services, ensured convenient business hours, prompt and fair attention, and enhanced faster services. The adoption of ICT improves the banks' image and leads to a wider, faster and more efficient market. It has also made work easier and more interesting, improved the competitive edge of banks, improved relationship with customers and assisted in solving basic operational and planning problems. Technology is making a tremendous impact on service companies in general and the financial sector is no exception. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness in the banking industry.

1.1.1 Strategic Information Systems

The term Strategic Information System (SIS) has for many become synonymous with “the strategic use of information technology”. But unlike the short cycles of summer files or the similarly brief lives of buzzwords buried soon after birth, the SIS concept now enters its second decade firmly entrenched world-wide. Yet the meaning and

reference of this idea remains a bit elusive. Current approaches to designing a strategic information system aim to obtain top management awareness, and to identify and implement applications that may generate competitive advantage. The systematic approaches are based on two main ingredients: a set of guidelines indicating how information technology (IT) can support the business vis-à-vis the competition and a planning and implementation strategy. The guidelines refer to specific models of competition, while planning and implementation methodologies are grounded on the understanding of how an effective business strategy should be formulated and carried out (Wiseman, 1988).

As the pace of competition is intensifying, the use of strategic information systems as competitive weapons is increasing day by day. Today, business operations and information systems (IS) are so tightly integrated with each other that it would almost be impossible to improve business processes unless corresponding IS support the change. To support any change in the organization, information should be properly planned, developed, implemented and maintained in any organization. The designing of information system is an important phase because, if IS are not properly designed it may lead to organization's failure.

The decreasing cost of the technology and the power of imitation may quickly curtail any competitive advantage acquired through a SIS. On the other hand, the iron law of market competition prescribes that those who do not imitate superior solutions are driven out of business. This means that any successful SIS becomes a competitive necessity for every player in the industry. Tapping standard models of strategy analysis

and data sources for industry analysis will lead to similar systems and enhance, rather than decrease imitation. How then should “true” SIS be developed? It is not surprising, by the way, that business organizations should ask themselves:

- ✓ Is SIS offering true competitive advantage, or do they just represent a competitive necessity?
- ✓ How can one implement systems that cannot be easily copied, thus generating returns over a reasonable period of time?

Information systems strategy is concerned mainly with aligning IS development with business needs and with trying to gain a strategic advantage through the proper using of IT in the firm. It is a planning process for the development of systems towards some future vision of the role of information systems in the organization. IS strategy defines the organization’s demand for IS/IT – the requirements or ‘demand’ for information and systems to support the overall business strategy. It brings together the business aims of the organization, a clear understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. IS strategy is firmly grounded in the business, taking into consideration both the competitive impact and alignment requirements of IS/IT. Basically, IS strategy defines and prioritizes the investments required to achieve the ‘ideal’ application portfolio, the nature of the benefits expected and the changes required to deliver those benefits, within the constraints of resources and systems interdependencies (Ward and Peppard, 2002).

1.1.2 Early Banking Operations in Ghana

The banking industry in Ghana has undergone far reaching changes from colonial times through independence to the present. Banks are financial institutions that provide a range of services to their customers: savings, money transmission and credit services, safe custody and portfolio management functions, and in the process making profits. Before the 1950s, the number of bank accounts in Ghana was very few and what mattered most was the personal contact between the Bank Manager and his customers. There was hardly any urgent demand for information because of the low volumes of transactions. This made it possible to satisfy customers with manually kept records. Thus the majority of banking services were performed using manual operations and personal contact with customers without much information transfer and handling of customer data.

As commercial activities increased and people developed more banking awareness, the volume of work grew and so did the demands on the bankers' services from the customers. The manual system could no longer cope with the demands from customers. Neither did it meet managements' need for timely and accurate information to cater for the dynamic business environment (Andoh, 1998). For instance, within the banks, a lot of mundane and boring jobs like interest rate calculation and long tedious additions were still being done manually by staff. In the early 1950s, however, electro-mechanical machines were introduced into the banking industry in Ghana. This enabled customers to have their bank statements on time and within the banks, tedious jobs like interest rate calculation were taken over by machines, making their jobs more enjoyable and boosting staff morale. Prior to technological development, banks used the manual system for their

operations and customers had to travel to banking halls where they have opened their account to transact business with that particular bank.

1.1.3 Ghanaian Banks

The banking sector is comprised largely of commercial banks, savings and loans associations as well as rural and community banks. The Central Bank often called Bank of Ghana (BOG) exercises oversight responsibility over all the financial institutions in the country. In an effort to ensure systematic development of the banking system, the Central Bank has the responsibility of ensuring that banking is responsive to the needs of the Ghanaian public. The banking system is by far the largest component of the financial system. The banking sector has undergone several structural changes following the implementation of a series of reforms in the sector.

The Bank of Ghana pursues a liberal policy with regard to entry into the banking system. Rose (1999) defines banks as “those financial institutions that offer the widest range of financial services, especially credit, savings and payment services and performs the widest range of financial functions of any business economy”. Over the years the banking industry has experienced several losses. Banks that had been performing well suddenly announced large losses due to credit exposure that turned sour, interest rate position taken, or derivatives exposures that may or may not have been assumed to hedge balance sheet risk. In response to this, banks have almost universally embarked upon an upgrading of their risk management and control systems (Santomero and Mello, 1996).

The Ghanaian economy has experienced high influx rate of foreign banks in recent times. Banking operations are characterized with complexity and competition. To remain competitive, there is the need for a scientific approach in operations. One such an approach is information systems strategy. Ghana has 27 universal banks, 135 rural banks and 49 non-bank financial institutions, including leasing firms, mortgage providers, finance houses, and savings and loan institutions and that is without counting the thousands of 'susu' collectors, who serve as informal, small-scale depository institution for market traders and shopkeepers. Of the 27 universal banks, 10 are locally owned while the remaining are backed by international owners; a mixture of European, American and African banking groups (The Report, Ghana 2012). Many business managers operate in an information fog bank, never really having the right information at the right time to make an informed decision. Instead, managers rely on forecast, best guesses, and luck. The result is over or underproduction of products and services, misallocation of resources, and poor response time.

The banks used in this study are National Investment Bank (NIB), Ghana Commercial Bank Limited (GCB), Agricultural Development Bank (ADB), Barclays Bank of Ghana Limited, Standard Chartered Bank Ghana Limited (SCB), and Stanbic Bank Ghana. National Investment Bank (NIB) Limited was established in March 22, 1963. The National Investment Bank Limited was the first development bank in Ghana to promote and strengthen rapid industrialization in all sectors of the Ghanaian economy. NIB Limited now operates as a universal bank in focusing on development / commercial banking activities. Ghana Commercial Bank Limited (GCB) started operations in 1953 as the Bank of the Gold Coast to provide banking services to the emerging nation for

socio-economic development. The Bank was to provide special attention to Ghanaian traders, business people and farmers who could not elicit support from the expatriate banks. In 1957, when Ghana attained independence, Bank of Ghana was established as the Central Bank while the Bank of the Gold Coast was renamed Ghana Commercial Bank to focus solely on commercial banking services. The Agricultural Development Bank (ADB) was set up by an Act of Parliament (Act 286) in 1965 to promote and modernize the agricultural sector through appropriate but profitable financial intermediation. Its original name then was the Agricultural Credit and Co-operative Bank and the establishing Act gave its main object as “to provide credit facilities to agriculturists and person for connected purposes”.

Barclays has operated in Ghana for ninety four years. It is a wholly owned subsidiary of Barclays Bank PLC. Its vision is to become the best bank for every customer, in every branch, for every product and every time. Barclays Bank of Ghana Limited has an expansive retail and commercial banking network in the country with 92 branches and over 130 ATMs in all regional capitals and major towns. Standard Chartered Bank Ghana Limited (SCB) has been in operation since 1986 when it was known as the Bank of British West Africa. The bank is 80% owned by Standard Chartered PLC, and the remainder of the stock is owned locally and traded on the Ghana stock exchange. Stanbic Bank Ghana takes pride in being part of a large banking group rooted in Africa but reaching out to all corners of the world. Stanbic proactively provides solutions for clients through creative people and effective technology. Stanbic aims to simplify financial transactions to spend more time on client business and less time on banking.

1.1.4 Technology and Banking

Information technology (IT) has provided the banking industry with the wherewithal to deal with the challenges the new economy poses. Information technology has been the cornerstone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector. Technology has brought about a complete paradigm shift in the functioning of banks and delivery of banking services. Gone are the days when every banking transaction required a visit to the bank branch. Today, most of the transactions can be done from the comfort of one's home and customers need not visit the bank branch for anything. Technology is no longer an enabler, but a business driver. The growth of the internet, mobiles and communication technology has added a different dimension to banking. The information technology available today is being leveraged in customer acquisitions, driving automation and process efficiency, delivering ease and efficiency to customers.

The IT revolution has set the stage for unprecedented increase in financial activity across the globe. Contemporary technology in banking comes in the form of computer based application and information technology. From the banking customer's perspective, two of the practical purposes of banking are convenience and accessibility to both funds and account information. Technology in commercial banking comes in the form of automatic/Electronic Networks and Electronic Funds Transfer Systems (EFTs). The basic components of EFTs are Automated Teller Machines (ATM), Point of Sale (POS) Terminals and Automated Clearing Houses (ACHs). The advent of technology has enabled the provision of banking products and services through electronic delivery channels known as electronic banking. E-Banking comes in the form of internet

banking, telephone banking and other electronic delivery channel like On-line virtual terminals. Internet banking may be explained as banking through the World Wide Web. Talmor (1997) explains the motive of banking on the World Wide Web as first providing banks with a delivery channel for selling banking services to their customers, and secondly, helping the development of the electronic commerce infrastructure.

Technology is the traditional stimulus to change and it is powerful in financial market. Commercial banking is being revolutionized by new technology. For banks to remain major players in the financial services industry, they must carefully harness the vast potential of emerging technology. By so doing, they can reach new markets, deliver new products, mobilize revenue, reduce costs, and satisfy customers. Technology seems to be particularly appropriate in commercial bank operations. The operations departments of banks are usually responsible for managing and protecting the physical facilities owned or used by the bank for daily routine. Today's bank customers demand ever-increasing levels of convenience. They expect seven days a week, a twenty-four hour service a day, full service, ATMs everywhere and telephone-home banking. Adding a sharp edge to the urgency for banks to adapt technologically is stiff competition, high technology and low cost competitors. To survive and succeed, banks must recognize the importance of technology and invest in it.

1.1.5 Bank Customers

Customers are the key to a bank's activities, as they are the most important source of a bank's deposit mobilization and revenue generation in the form of credit lending. These customers may be individuals or institutions. Amid sweeping regulatory change, slow

economic growth and tightened margins, banks today are increasingly focused on their most important stakeholders - their customers. Yet, despite their best efforts to attract and retain customers, customer confidence levels in banks remain low. In response, customers are changing their behavior and demanding lower fees for higher levels of service or other improvements. If these demands are not met, they are increasingly likely to shop around at other banks for competitive rates for services and products. A customer's choice of bank is influenced by the innovativeness of the bank, the convenience of services provided, the efficient processing of customer information, and improved customer turnaround. Thus, a bank's survival rests on its ability to attract and maintain customers through the offering of innovative and technologically improved banking services and products in an efficient, speedy, convenient and accurate manner. For these requirements to be met, banks need to upgrade their services – automate their transactions so as to turn transactions and customer data quickly into information for timely presentation to satisfy customer needs.

However, this involves investing more in advanced technological banking systems and doing away with manual banking systems. In the past, banks executives have attributed delays in implementing computer technology to, among other things, the lack of trained personnel to operate and manage computer sections, lack of electricity at most district and rural parts of the country, high customer illiteracy in the use of systems like automated teller machines (ATMs), huge cost in implementing the computer technology, poor telecommunication development and the vagaries of the natural and social elements like the humidity, dust, erratic power supply that might easily break down computers, etc. Notwithstanding the above assertions, these factors cannot be wholly true now, in

view of recent improvements in electric power supply, communication, computer education and literacy, availability of computer experts, consultants, technicians and instructors and accessibility to computers and accessories.

1.2 Motivation of the Study

Information systems strategy is an emerging phenomenon which has a little exposure in terms of banking practices. The researcher is motivated by the fact that, much has not been written on the impact of IS strategy on bank performance. This study is also breaking grounds in the area of information systems strategy and has contributed to the scanty literature in this area of study.

1.3 Statement of the Problem

In Ghana, all the banks have business strategies. They also have information technology (IT) departments that support the various departments technologically. What still remains uncertain is whether the banks information systems strategies assist to achieve the expected business performances. It is certainly true that many intended strategies are ill conceived, the problem often lays one step beyond, in the distinction between formulation and implementation of the information systems strategy. For a long time, relationship between information system functions and corporate strategy was not of much interest to top management of firms. Information systems were thought to be synonymous with corporate data processing and treated as some back-room operation in support of day-to-day mundane tasks. In the 1980's and 1990's, however, there was a growing realization of the need to make information systems of strategic importance to organizations including banks.

Much attention has not been given to returns on information systems investment in the banking industry. Banks in Ghana have been generally slow in adopting new and modern technology to improve their services to their customers. A customer's choice of bank is often influenced by the innovativeness of the bank, the convenience of services provided, the efficient processing of customer information, and improved customer turnaround. Thus, a bank's survival rests on its ability to attract and maintain customers through the offering of innovative and technologically improved banking services and products in an efficient, speedy, convenient and accurate manner (Andoh, 1998). For these requirements to be met, banks need to upgrade their services – automate their transactions, so as to turn transactions and customer data quickly into information for timely presentation to satisfy customer needs.

In Ghana, some banks do not recognize the importance of an information systems strategy and do not have any and even those who have information systems strategy, do not relate it to their business aims. Some banks have major difficulties in the formulation and implementation of information system strategies and for that matter they cannot use IS to gain competitive advantage. Some banks can not reduce cost pertaining to their operations because they have not incorporated IS strategy into their corporate strategy. Some information systems strategies are formulated by top management and do not involve tactical and operational staff. This poses a problem when it comes to implementation. Since some staff are left out during the strategy formulation stage, they also feel reluctant in its implementation which may result as a flaw. Some banks are also using manual approaches in some of their operations. This could result in delayed transactions or loss of data which could frustrate customers.

Information system strategy is now widely recognized as a key factor in economic growth in most advanced countries. However, the problem associated with IS strategy in banking circles is that, it is rarely seen as a key issue in strategy formulation. The underlying problem appears to be an overall lack of relevant IS strategy that eventually sustains the bank in this technological dispensation.

1.4. Purpose of Study

The purpose of this study was to determine the impact of information system strategy on bank performance of six banks in the Greater Accra Region of Ghana, namely: Ghana Commercial Bank, Agricultural Development Bank, National Investment bank, Stanbic Bank, Standard Chartered Bank and Barclays Bank Ghana. Information system strategy is a plan (Mintzberg 1987) that aims to (1) identify the required IS assets, including personnel (e.g., IT staff and capabilities), structure (e.g., IS processes), monetary resources (e.g., budget), and technologies (IS applications and infrastructures): and (2) allocate the existing Information System assets in the most efficient way. There are two measures of performance that relate to how efficient and profitable a business entity is. These are Return on Assets (ROA) and Return on Equity (ROE).

1.5 Objectives of the Study

The following are the specific objectives of the study:

1. To determine the relationship between IS strategy and business strategy and also find out the state of the required IS assets.
2. To explore the success predictors of strategic information system planning and to investigate the staff participation in IS strategy formulation.

3. To determine the barriers to the formulation and implementation of information system strategy.
4. To determine the level of usage and satisfaction of electronic banking products among bank customers.
5. To determine the relationship between IS investments and bank's performance.
6. To determine the effectiveness of strategies in terms of efficiency and profitability of banks.
7. To recommend an appropriate model for aligning information system strategy with business strategy as well as recommendations to overcome the barriers to the formulation and implementation of information system strategy.

1.6 Research Questions

Based on the research objectives the following questions were posed:

1. How does information systems strategy relates to business strategy?
2. What are the required information systems assets?
3. What are the success predictors of strategic information system planning?
4. Which level of staff participate in IS strategy formulation?
5. What are the barriers to the formulation and implementation of information system strategy?
6. What are the electronic banking products and services in the Ghanaian banks?
7. How does information systems investments relate to bank's performance?
8. What are the indicators of efficiency and profitability of banks in Ghana?

1.7 Central Hypotheses

Based on the objectives of the study, the following hypotheses guided the study:

- Information systems strategy has a positive relationship with bank performance.
- Banks with higher levels of information systems investments have increasing operating profits than banks with low levels of information systems investments.
- Bank customers are satisfied with the services of banks with modern technology than banks without modern technology.

1.8 Significance of the Study

As an academic work, this research has contributed to already existing knowledge in the area of study. This study would act as a source of future reference, and it would also add to existing knowledge in this area since “the meaning and reference of this idea remains a bit elusive” (Ciborra and Jelassi, 1994). Even though much has been written on the connection between business strategy and information technology and information systems (IT/IS), very little has been done on the impact of ISS on performance. This research has filled that gap.

The study is significant also in terms of its contribution to understanding the significance of information technology investments in the Ghanaian banking industry. This would enable investors, management and IT managers to be able to deal with and justify the resources spent on technology as well as planning, implementation and evaluation of information system strategy. This study would help bank managers to recognize the

importance of information systems strategy and its use to gain competitive advantage, increase profit margins, and relate business aims to the information systems strategy.

The benefits of information system strategy to banks discovered by the study would be beneficial to the banking industry. The information system model recommended at the end of the study would also assist the banking industry to gain competitive advantage in modern banking. Scholars interested in the development and implementation of ISS would also benefit from this research work. Information systems professionals would as well benefit from this research since it has revealed many issues about information systems. Policy makers would not be left out of the benefit from this research work. It would also help banks to determine the relationship between information systems investment and bank performance. This study has also bring to the fore the level of electronic products and services patronage (Ankrah, 2012).

1.9 Scope and Limitations

The study was limited to six banks all selected from Accra in the Greater Accra Region, since all the banks have their Head offices in Accra. However, the focus was on the impact of information systems strategy on bank performance. The research was restricted to only the operations of banks in their respective Head Offices in Accra. However, the research, comprehensively looked at the formulation and implementation of IS strategy and how this is used to gain competitive advantage in modern banking and eventually on performance. Information systems strategy resides in the Head Offices, hence the selection of the Heads Offices in Accra.

Other major limitations were funds and time. The conduct of a survey requires extensive resources and time beyond the means of a single student or independent research investigator. This was a major research involving purchasing of books, software for analysis, visitation to the field and printing of various materials such as questionnaires. For this reason, the library and the computer laboratory were relied on heavily. The researcher also encountered some constraints on the field. All the strategic staff from the various banks declined to grant interviews to the researcher leading the researcher to rely strongly on questionnaire as the instrument. Most of the respondents were reluctant in responding to the questionnaire so the researcher paid constant visit to the banks.

With the current surge in development and wide expansion of banking services and network coupled with certain problems for good corporate governance on the part of stakeholders, the researcher was faced with the lack of willingness on the part of the banks to provide information on information systems / technology expenses and investment they consider confidential. There was also a difficulty in getting access and audience with strategic level staff of the bank. The construct measurements in this research were adopted from prior studies as they have been extensively validated. A rigorous construct development and validation methodology was adopted in this research in order to eliminate bias as much as possible. Despite these limitations the findings and recommendations are still valid.

1.10 Ethical Considerations

Ethics are norms or standards of behavior that guide moral choices about the researcher's behavior and relationship with others. The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities (Cooper and Schindler, 2008). Ethics were observed accordingly in conducting this research. Introductory letters were taken from the Department of Information Studies and were sent to all the banks for permission to use them in the study. In the data collection process, informed consent of the respondents was sought and respondents were guaranteed anonymity and confidentiality by the researcher. All citations were duly acknowledged and all participants treated respectfully.

1.11 Theoretical Framework

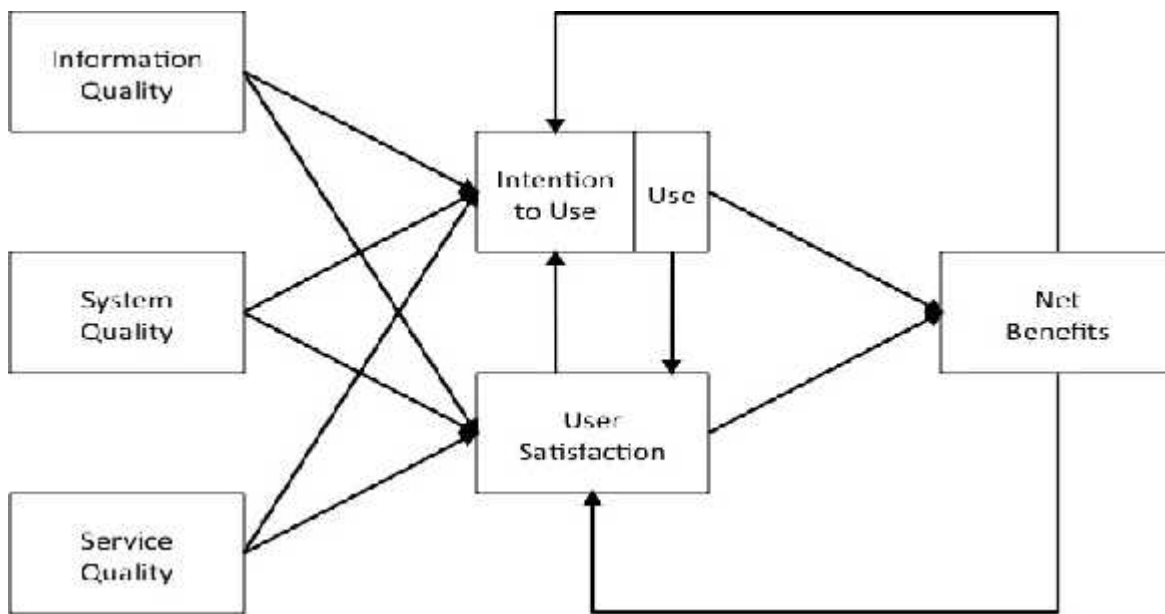
A theory can be defined as a set of definitions and propositions that specify the relationship among variables. They help to explain or predict phenomena that occur in the world. A theory for a study guides the entire study, an organizing model for the research questions and for the data collection procedure (Creswell, 2003). In other words, a theory guides the research process. A theoretical framework is a collection of interrelated concepts, like a theory but not necessarily so well work-out (Borgatti, 1999). A theoretical framework guides one research determining what things to be measured, and what statistical relationships to look for. Radhakrishna (2007) asserts that almost all research studies in social and behavioral science regardless of disciplines or programmes require a rationale or base for conducting research. This rationale or base is often called theoretical framework. A theoretical framework is a conceptual model of how one theorizes or makes logical sense of the relationships among several factors that have

been identified as important to the problem. In essence, it attempts to integrate key pieces of information especially variables in a logical manner, and thereby conceptualizes a problem that can be tested. A theoretical framework tells the big picture of the study. It identifies literature review categories and directs research objectives. A typical theoretical framework provides a schematic description of relationships between and among independent, dependent, moderator, control, and extraneous variables so that a reader can easily comprehend the theorized relationships (Radhakrishna, 2007). This study uses the DeLone and Mclean (2003) IS success model.

DeLone and McLean IS success model

DeLone and McLean (1992) introduced an alternate taxonomy to understand the different dimensions of IS success. The authors aim to make IS success research more coherent and to provide a well-defined outcome measure that can be used to evaluate IS practice, policies, and procedures. DeLone and McLean (1992) use the taxonomy developed by Mason (1978), which grew out of Shannon and Weaver's Information Theory (1949). Even though Mason's work is largely based on Shannon and Weaver's Information Theory, Mason's framework focuses on the actual output of information instead of in the whole process. Mason's adapts Shannon and Weaver's Information Theory and sets the basis for the fundamental terminology for what would be the DeLone and McLean Model of IS Success. They used that framework as a foundation to build up their analysis of the MIS success literature and their own model of IS success.

In the private sector, information system literature, taxonomy was described as being comprehensive enough to take into account all dimensions of information systems



This new model is composed of:

Service quality refers to the support that the users of the system receive from their IT area personnel (i.e. responsiveness and knowledge).

System Quality is an important dimension of information system impact and success. System Quality includes ease of use, response time, data accuracy, reliability, completeness, and flexibility.

Information quality deals with the accuracy, timeliness, reliability, relevance and currency of the information.

Intention to use is a traditional variable (intent to use).

Use is another known measure of information system success. Examples of use include frequency of use, number of functions used, number of records processed, number of hours IT is used and number of computer queries. Use in this study is measured using the number of hours per week for which the application is utilized.

User satisfaction refers to the overall satisfaction one gains from the use of an application. There are numerous measures of user satisfaction (Gefen, 2000, Bhattacharjee, 2004, Wixom and Todd, 2005).

Net benefits include the various impacts such as societal impact, individual impact, and organizational impact. This concept defines net benefits as an idealized comprehensive measure of the sum of all past and expected future benefits, less all past and expected future costs, attributed to the use of an information technology application.

This theoretical framework was selected because it fits perfectly into the study and many authors have also used this model. Many studies have empirically tested the updated

model (Tsai et al., 2012, Shareef et al., 2011, Pitt et al., 2011, Lin et al., 2011, Floropoulos et al., 2010).

1.12 Chapter Outline

The chapters have been arranged as follows:

Chapter One serves as the introduction to the work and this puts the work in perspective. It provides the background to the study, problem statement of the study, the purpose and the objectives of the study as well as the significance of the study. The theoretical framework that guides the study is also contained in this same chapter. The limitations as well as the organization of the various chapters are spelt out explicitly in this same chapter.

Chapter Two focuses on the review of literature. The chapter surveys relevant and pertinent literature relating to the central problem of the study. It discusses generally, literature on the formulation and implementation of information system strategy, electronic bank products and services, and information systems and competitive advantage. The chapter looks also at researched literature closely associated with the problem being investigated.

Chapter Three presents an overview of banking in Ghana and the profile of the six banks under study. The chapter also looks at the history of the six banks as well as the products and services available in each bank.

Chapter Four presents the research methodology used to execute the study. The chapter touches on areas such as the target population, sample size and sampling techniques, data collection instruments, pre-testing research instruments, mode of data collection, and method of data analysis and presentation of results. This chapter was responsible for the design and the implementation of the survey.

Chapter Five focuses on the analysis of data and findings on aspects of strategy. It analyses the data in relation to the objectives of the study. The chapter has been organized under the following major sub-headings: demographics and strategy, vision and vision, business strategy and IS strategy, success predictors and IS strategy, competitive advantage and IS strategy, and barriers to strategy.

Chapter Six focuses on the analysis of data and findings on aspects of information systems and related issues like information technology usage, technology and cost reduction, electronic banking, and customer satisfaction. It analyses the data in relation to the objectives of the study.

Chapter Seven focuses on the analysis of data and findings on aspects of bank performance taking into consideration information technology investment and bank turnover.

Chapter Eight looks at the discussions of the findings and relates them to the literature reviewed.

Chapter Nine provides the summary, conclusion and presents recommendations for the solution of problems identified.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature that relate to the phenomenon under study. The literature review discovers conflicts, contradictions and variables in other research work. It shows gaps in the research to pinpoint areas worthy of additional study. It also explains the ramifications of the problem to show how each research contributes another aspect of the problem and solution. The relevant literature classifies current research to show relationships. The review focuses on the following cardinal areas; Information Systems, Information Systems Strategy, Bank Performance and the Impact of Information Systems Strategy on Bank Performance.

2.2 Information Systems

Information Systems (IS) can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization (www.eHow.com). In addition to supporting decision making, coordination, and control, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products. Information means data that have been shaped into a form that is meaningful and useful to human beings. Data, in contrast, are streams of raw facts representing events occurring in organizations or the physical environment before they have been organized and arranged into a form that people can understand and use. Information

systems contain information about significant people, places, and things within the organization or in the environment surrounding it.

Limited research has been conducted on how system administrators actually can affect information systems (IS) after they have been implemented. Edlund and Lövquist (2012) identified a system administrator's effect on the three IS quality dimensions in the DeLone and McLean IS success model. The empirical findings were based on a single case study where the data was collected through interviews with the system administrator and the system assistants, but also through a questionnaire answered by the users of the IS. The empirical findings suggested that the system administrator can affect IS success through the IS quality dimensions both directly and indirectly. The system administrator's effect on IS success proved to be highly dependent on the external system vendor and the structure of the internal support unit.

2.2.1. Information Systems Governance

Governance is a fundamental framework that must be in place for an information systems (IS) strategic plan and strategic planning process to be successful. Governance provides a decision-making and accountability framework for effective management of IS. There may be many components to IS governance, but the basic purpose of governance is to identify what decisions will be made, and by whom, and to define how activities will be monitored against the plan. The IS strategic plan is a very important component to effective governance. Conversely, a good IS strategic plan will include a clearly documented process for IS governance. Governance ensures that IS delivers value to the business and that risks are sufficiently managed. A variety of individuals or

groups may be involved in these decisions and processes, such as an IS steering committee, executive management, board of directors, the CIO, IS management, business line management, or business liaisons.

2.2.2 Information Technology (IT)

Information Technology (IT) consists of all the hardware and software that a firm needs to use in order to achieve its business objectives. This includes not only computer machines, disk drives, handheld personal digital assistants and iPods (where they are used for a business purpose) but also software, such as the Windows or Linux operating systems, the Microsoft office desktop productivity suite, and the many thousands of computer programs that can be found in a typical large firm.

Johnston and Vitale (1988) assert that, there are many well-known examples of the use of information technology for competitive advantage. This involves systems that link an organization to suppliers, distribution channels, or customers. In general, these systems use information or processing capabilities in one organization to improve the performance of another or to improve relationships among organizations. Declining costs of capturing and using information have joined with increasing competitive pressures to spur numerous innovations in use of information to create value.

2.2.3 Information Technology Infrastructure

Information Technology Infrastructure consists of the shared technology resources that provide the platform for the firm's specific information system applications. Most IT infrastructure components include computer hardware, software, data management

technology, networking and telecommunications technology, and technology services. Computers are categorized as supercomputers, mainframes, midrange computers, and microcomputers. The principal secondary storage technologies are magnetic disk, optical disc, and magnetic tape. The two major types of software are system software and application software. System software coordinates the various parts of the computer system and mediates between application software and computer hardware. Application software is used to develop specific business application. Increasingly, computing is taking place over a network with computing and telecommunications platforms increasingly integrated. Managers and information systems specialists need to pay special attention to hardware capacity planning and scalability to ensure that the firm has enough computing power for its current and future needs. Businesses also need to balance the cost and benefits of building and maintaining their own hardware and software versus outsourcing or using an on-demand computing model. The total cost of ownership (TCO) of the organization's technology assets includes not only the original cost of computer hardware and software but also costs for hardware and software upgrades, maintenance, technical support, and training.

2.2.4 Electronic Products and Services

The electronic products and services are the products and services backed by technology. These include: website, internet banking, mobile banking etc.

2.2.4.1 Website

A website is a collection of web pages having images, videos and other digital assets that is hosted on one or several web servers usually accessible via Internet, cell phone or

a LAN. All publicly accessible websites are seen collectively as constituting the World Wide Web. The pages of websites can usually be accessed from a common root URL called the homepage, and usually reside on the same physical server. The URLs of the pages organize them into a hierarchy, although the hyperlinks between them control how the reader perceives the overall structure and how the traffic flows between the different parts of the sites. Some websites require a subscription to access some or all of their content. At the basic level, internet banking can mean the setting up of a web page by a bank to give information about its products and services.

2.2.4.2 Internet Banking

The idea of internet banking is to give customers access to their accounts via a website and to enable them to enact certain transactions on their account, given compliance with stringent security checks. Internet banking may be explained as banking through the World Wide Web, which is the interconnectivity of computers and telecommunication equipment. Simply put, internet banking is described as “the provision of traditional services over the internet” (Internet Banking handbook, 2001).

Talmor (1997) explains the motive of banking on the World Wide Web as first providing banks with a delivery channel for selling banking services to their customers and secondly, helping the development of the electronic commerce infrastructure. Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Services delivery is informational (informing customers on bank’s products, etc) and transactional (conducting retail banking services). Internet banking involves consumers using the

internet to access their bank account and to undertake banking transactions. At an advance level, it involves provision of facilities such as accessing accounts, funds transfer, and buying financial products or services online. This is called “transactional” online banking (Sathye, 1999). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to telephone banking and PC banking. Aside, it is also the most cost-efficient technology means of yielding higher productivity. Furthermore, it eliminates the barriers of distance/time and provides continual productivity for the bank to unimaginable distant customers.

Internet banking has emerged as a major banking channel. Most of the large and medium banks offer internet banking and funds transfer facilities. While the large banks have specific infrastructure to handle large value transactions, even the small banks operate through shared resources. The positive fact is that most of the electronic transactions are through STP (straight through processing) in the larger banks. This trend will result in enhanced service delivery and quick settlement. Banks are offering several value-added services through their electronic channels such as tax collections, trading, bill payments, and viewing accounts, etc. Certain services such as prepaid mobile recharge have become extremely popular among consumers.

2.2.4.3 Mobile Banking (M-banking)

In one academic model, Tiwari and Buse (2007) defined mobile banking as “the provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information”.

Mobile banking can be considered also virtual banking, alongside telephone where branch financial services are delivered via mobile phone where the bank customers can perform retail-banking transactions. Mobile banking can be in the form of SMS-banking or WAP-banking. However, SMS-banking is accessed by sending text messages whereas WAP-banking is a form of mobile internet service accessed via GPRS (internet) connection.

Ankrah (2012) states that SMS banking services provide instant notification about transactions as and when it happens. It helps to keep a watch on account with a round the clock service. Every debit or credit in account over a limit desired is intimated by SMS. Now, with SMS Banking service, one is always in a position to detect unauthorized access to account. Additionally, SMS banking also helps to know balances and mini statements instantly by just sending an SMS. Features of SMS banking are:

- ✓ Safety: All transactions above a value desired are intimated as and when they happen, so one is always be kept updated on ones transactions
- ✓ Convenience: No need to queue in at a branch or ATM to check account.
- ✓ Updates: Get automatic updates on deposits/loan installments due, interest rate changes and new products.
- ✓ Availability: This service is available from anywhere in the world.

2.2.4.4 Automated Teller Machines (ATMs)

An automated teller machine (ATM) is a computerized telecommunications device that provides the customers of a financial institution with access to financial transaction in a public space without the need for a human clerk or bank teller. Rose (1999), describes

ATMs as follows: “an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank’s book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank’s computerized records 24 hours a day”. The ATM card has a magnetic stripe or a plastic smartcard with chip that contains a unique card and some security information. Once access is gained, it offers several retail banking services to customers.

2.2.4.5 Telephone Banking

Telebanking (telephone banking) can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit. This is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology (Balachander et al., 2001). According to Leow (1999), telebanking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks’ perspective, the costs of delivering telephone-based services are substantially lower than those of branch based services.

2.2.4.6 Personal Computer Banking (PC Banking)

PC-Banking is a service which allows the bank’s customers to access information about their accounts for transactions by subscribing to and dialing into the banks’ intranet proprietary network, usually with the help of proprietary software installed on their

personal computer with a use of passport. Once access is gained, the customer can perform a lot of retail banking functions. The increasing awareness of the importance of computer literacy has resulted in increasing the use of personal computers. This certainly supports the growth of PC banking which virtually establishes a branch in the customers' home or office, and offers 24-hour services, seven days a week. It also has the benefits of Telephone Banking and ATMs.

2.2.4.7 Branch Networking

Networking of branches is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN), for creating and sharing of consolidated customer information/records. It offers quicker rate of inter-branch transactions as the consequences of distance and time are eliminated. Hence, there is more productivity per time. In addition, with the several networked branches serving the customer populace as one system, there is simulated division of labour among bank branches with its associated positive impact on productivity. Furthermore, as it curtails customer travel distance to bank branches, it offers more time for customers' productive activities.

2.2.4.8 Electronic Funds Transfer at Point of Sale (EFTPoS)

An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to the merchant's accounts when making purchases (at purchase points). Increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheque and cash withdrawals for shopping.

The banking industry believes that by adopting new technology, they will be able to improve customer service level and tie to their customer. Pikkarainen, Karjaluo, and Pahnla, (2004) defines internet banking as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investment'. With the exception of cash withdrawal, internet banking gives customer access to almost any type of banking transaction at the click of a mouse (De Young, 2001). Mia, Rahman and Debnath (2007) observed that the latest development in financial services by banks is electronic banking, where banks have now put themselves in the World Wide Web to take advantage of the Internet's power and access to cope with the accelerating pace of change of business environment. Indeed the use of the internet as a new alternative channel for the distribution of financial services has become a competitive necessity instead of just a way to achieve competitive advantage with the advent of globalization and fiercer competition (Flavián, Torres, and Guinalú, 2004). Banks use online banking as it is one of the cheapest delivery channels for banking products (Pikkarainen et al., 2004). Huda, Momen and Ahmed (2004) commented that the banking sector in Bangladesh is clearly recognizing the importance of information technology to their continued success.

As Karjaluo et al. (2002) argued that 'banking is no longer bound to time and geography. Customers over the world have relatively easy access to their accounts, 24 hours per day, and seven days a week'. The author further argued that, with internet banking services, the customers who felt that branch banking took too much time and effort are now able to make transactions at the click of their fingers. There are other numerous advantages to banks offered by e-banking such as mass customization to suit

the likes of each user, innovation of new products and services, more effective marketing and communication at lower costs (Tuchilla, 2000). Stewart (1999) claimed that the failure of the internet in retail banking is largely attributable due to the lack of trust consumers have in the electronic channels. Provision of infrastructural facilities is another factor that could lead to quicker diffusion of innovation. Tomiuk and Pineseault (2001) concurred that the lesser degree of 'richness' and 'sound presence' of banking environment will affect banks ability to create a trusting relationship between their customer and employees. On the other hand for those customers whose relationship is primarily based in efficiency services, e-banking will be an attractive alternative. Ahmed and Islam (2008) observed that adopting e-banking services, banks in developing countries are faced with strategic options between the choice of delivery channels and the level of sophistication of customer services provided by these delivery channels. The relationship between banks and corporate customers is the most important factor in the success of new financial services (Easingwood and Storey, 1993). Mobile and wireless communication devices are becoming enablers for organizations to conduct business more effectively and efficiently. One of the most effective applications is mobile banking (m-banking). The increased flexibility and mobility feature of wireless ATM and its bandwidth on demand function is motivating a large number of carriers towards deployment of the WATM networks.

Electronic banking provides alternatives for faster delivery of banking services to a wider range of customers. The increasing popularity of internet banking, have attracted the attention of both legitimate and illegitimate e-banking practices. Hua (2009) conducted a survey to investigate how users' perception about online banking is affected

by the perceived ease of use of website and the privacy policy provided by the online banking website. Nyangosi, Arora and Singh (2009) argued that banking through electronic channels has gained increasing popularity in recent years. This system, popularly known as 'e-banking', provides alternatives for faster delivery of banking services to a wide range of customers. The overall result indicates that customers in India and Kenya have developed positive attitudes and they attach much importance to the emergence of e-banking. Wise and Ali (2009) argued that many banks in Bangladesh want to invest in ATMs to reduce branch cost since customers prefer to use them instead of a branch to transact business. Rahman (2010) who is the Governor of Bangladesh Bank argued that Bangladesh Bank has achieved a historic milestone in the trade and business arena, departing from conventional banking with the introduction of e-banking recently; a giant stride towards digital Bangladesh.

2.3 Information Systems and Strategy

This section establishes the relationship between information systems and strategy.

2.3.1 Strategy

A strategy is the pattern or plan that integrates an organization's major goals, policies and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organization's resources into a unique and viable posture based on its relative internal competencies and shortcomings, anticipated changes in the environment and contingent moves by intelligent opponents. Goals (or objectives) state what is to be achieved and when results are to be accomplished, but they do not state how the results are to be achieved. All organizations have multiple goals existing in a complex hierarchy

from value objectives, which express the broad value premises towards which the company is to strive: through overall organizational objectives, which establish the intended nature of the enterprise and the directions in which it should move: to a series of less permanent goals that define targets for each organizational unit, its subunits, and finally all major programme activities within each subunit. Major goals that affect the entity's overall direction and viability are called strategic goals (Collins and Porras, 1997).

2.3.1.1 Vision and Mission Statement

While a business must continually adapt to its competitive environment, there are certain core ideals that remain relatively steady and provide guidance in the process of strategic decision-making. These unchanging ideals form the business vision and are expressed in the company mission statement. In their 1996 article entitled Building Your Company's Vision, Collins and Porras (1997) provided a framework for understanding business vision and articulating it in a mission statement. The mission statement communicates the firm's core ideology and visionary goals, generally consisting of the following three components:

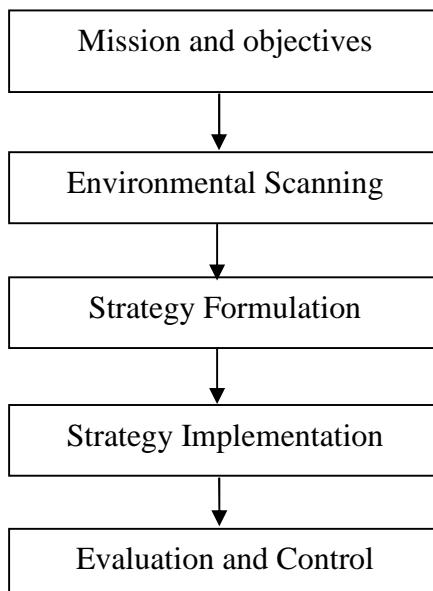
- ✓ Core values to which the firm is committed
- ✓ Core purpose of the firm
- ✓ Visionary goals the firm will pursue to fulfill its mission

2.3.2 The Strategic Planning Process

In today's highly competitive business environment, budget-oriented planning or forecast-based planning methods are insufficient for a large corporation to survive and

prosper. The firm must engage in strategic planning that clearly defines objectives and assesses both the internal and external situation to formulate strategy, implement the strategy, evaluate the progress, and make adjustments as necessary to stay on track. A simplified view of the strategic planning process is shown in Figure 2.1.

Figure 2.1: The Strategic Planning Process



Source: Simplified Strategic Planning

2.3.2.1 Mission and Objectives

The mission statement describes the company's business vision, including the unchanging values and purpose of the firm and forward-looking visionary goals that guide the pursuit of future opportunities. Guided by the business vision, the firm's leaders can define measurable financial and strategic objectives. Financial objectives involve measures such as sales targets and earnings growth. Strategic objectives are

related to the firm's business position, and may include measures such as market share and reputation.

2.3.2.2 Environmental Scan

The environmental scan includes the following components:

- ✓ Internal analysis of the firm
- ✓ Analysis of the firm's industry (task environment)
- ✓ External macro environment (PEST analysis)

The internal analysis can identify the firm's strengths and weaknesses and the external analysis reveals opportunities and threats. A profile of the strengths, weaknesses, opportunities, and threats is generated by means of a SWOT analysis. An industry analysis can be performed using a framework developed by Michael Porter known as Porter's five forces. This framework evaluates entry barriers, suppliers, customers, substitute products, and industry rivalry.

2.3.2.3 Strategy Formulation

Given the information from the environmental scan, the firm should match its strengths to the opportunities that it has identified, while addressing its weaknesses and external threats. To attain superior profitability, the firm seeks to develop a competitive advantage over its rivals. A competitive advantage can be based on cost or differentiation. Michael Porter identified three industry-independent generic strategies from which the firm can choose, namely: cost leadership, differentiation and focus strategies.

2.3.2.4 Strategy Implementation

The selected strategy is implemented by means of programs, budgets, and procedures. Implementation involves organization of the firm's resources and motivation of the staff to achieve objectives. The way in which the strategy is implemented can have a significant impact on whether it will be successful or not. In a large company, those who implement the strategy are likely to be different people from those who formulated it. For this reason, care must be taken to communicate the strategy and the reasoning behind it. Otherwise, the implementation might not succeed if the strategy is misunderstood or if lower-level managers resist its implementation because they do not understand why the particular strategy was selected.

2.3.2.5 Evaluation and Control

The implementation of the strategy must be monitored and adjustments made as needed.

Evaluation and control consist of the following steps:

1. Define parameters to be measured
2. Define target values for those parameters
3. Perform measurements
4. Compare measured results to the pre-defined standard
5. Make necessary changes

Environmental analysis (scanning or appraisal) is very important to modern organization. It is used by corporate planners to monitor the economic factors, competition, government legislation, suppliers, technology and market setting to determine the opportunities for and threats to the enterprise. Organizations scan the

environment in order to understand external forces of change so that they may develop effective responses which secure or improve their position in the future. The importance of environmental analysis lies in its usefulness for evaluating the present strategy, setting strategic objectives, and formulating future strategies. The banking industry is a very strategic catalyst for the overall economic growth in any country. In Nigeria, the industry is generally regarded as an engine room for economic growth and development because of the crucial role it plays in linking all segments of the economy in the main stream (Udoaja, 2002). The fortunes of business enterprise are known to have been determined by changes in the social, economic, political, technological, business and industrial conditions. It is therefore pertinent that a thorough and careful analysis be carried out on these factors.

The general problem of environmental scanning faced in the industry however, could anchor on total ignorance of environmental characteristics which affect them or inadequacy of information for management to plan, implement and control certain events within and outside the organization's environment. A number of studies have been conducted on the subject of environmental scanning and corporate performance. Miller (1994) carried out analysis on eighty-one detailed case studies of successful and failing businesses. The study found that environmental scanning was by far the most important factor in separating the successful companies from the unsuccessful, that this, it accounted for more than half of the observed variance. Environment creates both problems and opportunities for organization. Organization depends on the environment for scarce and valued resources, and organization must cope with unstable and unpredictable external and internal events. The environment itself perhaps, more than

any other factor, affected organizational structure, internal processes and managerial decision making. From an information processing perspective, the environment is important because it creates uncertainty for managers. Environmental uncertainty increases information processing within organization because managers must identify opportunities, detect threats, interpret problem areas and implement strategic or structural adaptation.

Before an organization can begin strategy formulation it must scan its environmental for strengths and weaknesses. Strategic managers view environmental scanning as a prerequisite for formulating effective business strategies (Beal, 2000). Environmental scanning includes both looking at information (viewing) and looking for information (Benczur, 2005). Strategic managers are challenged to anticipate changes in the environment and be flexible enough to adjust strategies to creatively seek out new opportunities. The process of environmental scanning creates the opportunity to weave together the past, present, and future change (Mason, 2001). A corporation uses this tool to avoid strategic surprise and to ensure its long-term health. It is against this background that, researchers believe that there is a positive relationship between environmental scanning and corporate performance. Wheelen and Hunger (2006), defined environmental scanning as the evaluation, monitoring, and dissemination of information from the external and internal environments to key people within the corporation. The term environmental analysis refers to the process of picking up signals from the larger environment, analyzing their significance for the organization and tracking the most relevant of these signals. Environmental analysis also referred to an organized activity of the group responsible for strategy, which improves a firm's

competitiveness by gathering, processing and internally diffusing information, in order to rule the environment. Choo (1999) defines environment scanning as the acquisition and use of information about events, trends, and relationships in an organization's external environment, the knowledge which would assist management in planning the organization's future course of action.

Every business organization operates in an environment that transcends its official boundaries. Organization's environment can be defined as all the forces and conditions within and outside the organization that affect the organization in its day-to-day activities. Meanwhile the environment of business is a highly dynamic, complex, and competitive one. The forces a business is to contend with are varied as they are continually changing. Thus managers must take into account the influence of the environmental forces that can affect the performance of their organizations. They must have sufficient knowledge to be able to identify, evaluate and cope with environmental forces that may affect the operations of their organizations. A thorough understanding and analysis of the business environment by managers will enable the business to cope with the changing forces within the environment. To adequately understand organizational environments, one must borrow some concepts from system theory. One of the basic assumptions of system theory is that organizations are neither self sufficient nor self contained. Rather, they exchange resources with and are depended upon the external environment, which is defined as all elements outside an organization that are relevant to the physical operations (some of these element connect the organization to the physical world) (Stoner, 2004). Organizations take 'input', that is raw materials, money, labour and energy from the external environment, transform them into products

and / or services and then send them back as ‘output’ to the external environment. The external environment has both direct-action and indirection-action elements, also called shareholder including shareholders union, suppliers and many others who directly influence an organization. Indirect action elements; such as the technology, economy, and politics of a society, affects the climate in which an organization operates and have the potential to become direct element.

2.3.3 Hierarchical Levels of Strategy

Strategy can be formulated on three different levels:

- ✓ Corporate level
- ✓ Business unit level
- ✓ Functional or departmental level

While strategy may be about competing and surviving as a firm, one can argue that products, not corporations compete, and products are developed by business units. The role of the corporation then is to manage its business units and products so that each is competitive and so that each contributes to corporate purposes. While the corporation must manage its portfolio of businesses to grow and survive, the success of a diversified firm depends upon its ability to manage each of its product lines.

2.3.3.1 Corporate Level Strategy

Corporate level strategy fundamentally is concerned with the selection of businesses in which the company should compete and with the development and coordination of that portfolio of businesses. Corporate level strategy is concerned with:

- ✓ Managing Activities and Business Interrelationships - Corporate strategy seeks to develop synergies by sharing and coordinating staff and other resources across business units, investing financial resources across business units, and using business units to complement other corporate business activities. Igor Ansoff introduced the concept of synergy to corporate strategy.
- ✓ Management Practices - Corporations decide how business units are to be governed: through direct corporate intervention (centralization) or through more or less autonomous government (decentralization) that relies on persuasion and rewards.

2.3.3.2 Business Unit Level Strategy

A strategic business unit may be a division, product line, or other profit center that can be planned independently from the other business units of the firm. At the business unit level, the strategic issues are less about the coordination of operating units and more about developing and sustaining a competitive advantage for the goods and services that are produced. At the business level, the strategy formulation phase deals with:

- ✓ Positioning the business against rivals
- ✓ Anticipating changes in demand and technologies and adjusting the strategy to accommodate them
- ✓ Influencing the nature of competition through strategic actions such as vertical integration and through political actions such as lobbying.

Michael Porter identified three generic strategies (cost leadership, differentiation, and focus) that can be implemented at the business unit level to create a competitive advantage and defend against the adverse effects of the five forces.

2.3.3.3 Functional Level Strategy

The functional level of the organization is the level of the operating divisions and departments. The strategic issues at the functional level are related to business processes and the value chain. Functional level strategies in marketing, finance, operations, human resources, and R&D involve the development and coordination of resources through which business unit level strategies can be executed efficiently and effectively. Functional units of an organization are involved in higher level strategies by providing input into the business unit level and corporate level strategy, such as providing information on resources and capabilities on which the higher level strategies can be based. Once the higher-level strategy is developed, the functional units translate it into discrete action-plans that each department or division must accomplish for the strategy to succeed.

2.3.3.4 Competitive Strategy

When a firm sustains profits that exceed the average for its industry, the firm is said to possess a competitive advantage over its rivals. The goal of much of business strategy is to achieve a sustainable competitive advantage. Porter (1985) identified two basic types of competitive advantage:

- ✓ Cost advantage
- ✓ Differentiation advantage

A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing products (differentiation advantage). Thus, a competitive advantage enables the firm to create superior value for its customers and superior profits for itself. Cost and differentiation advantages are known as positional advantages since they describe the firm's position in the industry as a leader in either cost or differentiation. A resource-based view emphasizes that a firm utilizes its resources and capabilities to create a competitive advantage that ultimately results in superior value creation. Competitive advantage is created by using resources and capabilities to achieve either a lower cost structure or a differentiated product.

2.3.4 Information Systems Strategy

The literature on Information system strategies is extensive, much of it anecdotal in character, or exhorting managers or chief executives to make more use of information technology. The function of an information Systems (IS) strategy itself is best described by Wilson (1999) who states that: “An information systems strategy brings together the business aims of the company, an understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. It is a plan for the development of systems towards some future vision of the role of information systems in the organization”. An IS strategy is something which is essentially a planning process in the minds of the decision makers, users and developers of the systems. It is supported with written reports and plans, but they are of secondary importance.

The IS strategy is concerned mainly with aligning IS development with business needs and with trying to gain a strategic advantage through the proper using of IT in the firm. It is a planning process for the development of systems towards some future vision of the role of information systems in the organization. IS strategy defines the organization's demand for IS/IT – the requirements or 'demand' for information and systems to support the overall business strategy. It brings together the business aims of the organization, a clear understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. IS strategy is firmly grounded in the business, taking into consideration both the competitive impact and alignment requirements of IS/IT. Basically, IS strategy defines and prioritizes the investments required to achieve the 'ideal' application portfolio, the nature of the benefits expected and the changes required to deliver those benefits, within the constraints of resources and systems interdependencies (Ward and Peppard, 2002).

Information systems strategy is of central importance to IS practice and research. Chen et al., (2010) in their extensive review of the literature suggest that the concept of IS strategy is a term that is used readily. However, it is also a term that is not fully understood. In their study, they follow a perspective paradigm based on the strategic management literature to define IS strategy as an organizational perspective on the investment in, deployment, use, and management of IS. Through a systematic literature search, they identified the following three conceptions of IS strategy employed implicitly in 48 articles published in leading IS journals that focus on the construct of IS strategy:

- (1) IS strategy as the use of IS to support business strategy;
- (2) IS strategy as the master plan of the IS function; and
- (3) IS strategy as the shared view of the IS role within the organization.

They find that the third conception best fits the IS strategy. As such, they consequently propose to operationalize IS strategy as the degree to which the organization has a shared perspective to seek innovation through IS. Specifically, they proposed IS strategic typology and suggest that an organization's IS strategy falls into one of the two defined categories (i.e. IS innovator or IS conservative) or is simply undefined. They also developed measures for this new typology. They argue that the proposed instrument, which was cross validated across both chief information officers and senior business executives, has the potential to serve as a diagnostic tool through which the organization can directly assess its IS strategy. They contend that their reconceptualization and operationalization of IS strategy provides theoretical and practical implications that advance the current level of understanding of IS strategy from extant studies within three predominant literature streams: strategic IS planning, IS/business strategic alignment, and competitive use of IS.

Salmela and Spil (2002) indicate that early attempts to formulate information systems (IS) strategies concentrated on the analytical task of deriving IS strategies from business plans. The limitations of the static plans that often resulted from these formal studies were, however, soon discovered. The critics suggested informal and incremental planning to ensure flexibility, creativity and strategic thinking to comprise emergent strategies as well as planned strategies. In previous IS planning research, there appears

to be a contradiction between the published planning methods and the generally held views about effective implementation of IS planning process. The explicit methods described in IS literature predominantly assume a comprehensive IS planning process. Despite the fact that many researchers consider incremental approaches to be more effective, methods that can be used to facilitate incremental IS planning are few, not detailed enough and not comprehensive. The four cycle's method introduced attempts to combine the strengths of both the comprehensive and incremental planning to be able to recognize emerging trends and to make an e-business strategy. The method provides a basic schedule for organizing planning activities. IS planning is seen as a continuous process that is periodically adjusted to the expectations of the participating managers. Practicing managers can use the method to facilitate implementation of an incremental and continuous IS planning process. For e-business strategy research, Salmela and Spil (2002) provide a theoretically based method that can be tested in future action research projects. The first results of conducted action research show that the method should not be used as a checklist but as a choice list. Each period had a constant focus on external developments and the fit with internal possibilities. The method provided a flexible and dynamic basis for actions. The emergent nature of the changes and the difficulty of formalizing creativity and innovation placed restrictions on the planning process. They learned that a thematic approach where each cycle is given a creative subject helped to "open up" the users in the organization.

2.3.5 Information Systems Strategy Alignment with Business Strategy

Strategic business and information technology (IT) alignment has many synonyms such as alignment (Silvius, 2007), harmony (Luftman et al; 2005), linkage (Reich and

Benbazat, 1996) and business – IT alignment (Maes et al; 2000). Tallon and Kraemer (1998) define strategic alignment as the extent to which the information system (IS) strategy supports and is supported by the business strategy. Silvius (2007) defines strategic alignment as the degree to which the IT applications, infrastructure and organization, the business strategy and processes enables and shapes, as well as the process to realize this. Reich and Benbazat (1996) define strategic alignment as the degree to which the IT mission, objective and plans support and are supported by the business mission, objectives and plans. Strategic alignment has consistently appeared as a top concern for IT practitioners and company executives (Luftman et al., 2005) and it has been constantly and repeatedly ranked as the most important issue facing corporations since the mid- 1980s (Benbya and McKelvey, 2006). Despite the importance of strategic alignment, there is debate in the literature about what strategic alignment actually is (Avison et al., 2004). Luftman (2000) argues that strategic alignment refers to applying information technology in an appropriate and timely way, in harmony with business strategies, goals and needs.

Aligning information systems to the organizational strategy goals has appeared to be a concern for managers over the last decade. Alignment is defined as “the capacity to demonstrate a positive relationship between information systems and the accepted financial measures of performance” (Strassmann, 1997). One of the most extensively used models of alignment is the strategic alignment model proposed by Henderson and Venkatraman (1999). This multidimensional model identifies the internal and external dimensions and how these can be integrated functionally with the organizational strategy (Henderson and Venkatraman, 1999). Basically, the majority of alignment models are

based on the organizational structure and their objectives. This model places alignment at the heart of the organization's needs. Many of these models also reveal the influence of the organization's objectives on the alignment and this type of model focuses on the connection between strategy and technology. To develop an attainable level of alignment within an organization, the IT/IS purpose has to be located within the organizational structure. A direct advantage of strategic alignment is a perception of higher business value of IT/IS. Segars and Glover (1998) suggest that alignment produced by strategically positioned IT/IS improves the stature of IT/IS within an organization. Henderson and Venkatraman (1999) advocate the importance of strategically positioning of IT/IS within organizations. They argued that successful applications of this model result in organizational capability to leverage IT/IS resources on a continuous basis to support competitive advantage in the marketplace. They also indicate the need for a change in IT/IS orientations from an exclusively internal focus to one that fits strategically with the external IT/IS domain environment (Bhatnagar, 2007).

Managers should foresee to achieve a good alignment between information systems and business for smooth work of the organization. Many organizations structure IT/IS and information flow in a way to be centralized thus resulting in the control of information which in turn may result significant power structure within the company (Bhatnagar, 2007). Technology is an important aspect in the alignment of information systems with business strategy. This is dependent on the type of information systems infrastructure used as a resource to assist in granting business goals. Slater (1999) argues that in aligning infrastructure with business strategy it is the hardest when changing business strategy and information systems infrastructure. For business and information systems

strategies to be aligned it is necessary to clearly define business and IT/IS goals and review the formulation of these goals (Slater, 1999). It is important for good alignment that IT/IS professionals be involved during business planning and business professionals to be involved during IT/IS planning (Bhatnagar, 2007). King and Teo (2000) suggested that information systems planning is becoming important as the “organizations attempt to leverage IS applications to improve efficiency, reengineer business processes, gain competitive advantage, and compete more effectively”. It was interesting to know that there was no particular strategy being used for the development of plans. King and Teo (2000) reported that there is no actual model or theory available for developing the IS plan but one have to keep the IT staff trained up to date and fully aware of new technologies, along with the business needs and requirements.

According to Henderson et al., (2012), the potential for using information technology to affect the competitive position of the firm has served to highlight the importance of effective information systems planning. As the criticality of effectively linking the strategic IS plan to the strategic business plan has increased, the need to better understand the nature of strategic planning, in general, and strategic IS planning, in particular, has also increased. It is now particularly relevant to ask how strategic IS planning adds value to efforts to devise a strategic business plan. A better understanding is required of both the types of products produced by a strategic IS plan as well as the impact on the overall planning process. Venkatraman (1989) argues that the intersection of interest between IS planning and strategic planning stems not only from a common critical assumption, i.e., a belief that planning positively affects the performance of the firm, but also from the similarity in the research questions and methodological issues

that have been pursued. Strategic planning is often approached from a systems view of planning and design.

2.3.6 Strategic Information Systems

A Strategic Information System (SIS) is a system that helps companies change or otherwise alter their business strategy and/or structure. It is typically utilized to streamline and quicken the reaction time to environmental changes and aid it in achieving a competitive advantage. Key features of the Strategic Information Systems are as following:

- 1) Decision support systems that enable organizations to develop a strategic approach to align Information Systems (IS) or Information Technologies (IT) with an organization's business strategies
- 2) Primarily Enterprise resource planning solutions that integrate/link the business processes to meet the enterprise objectives for the optimization of the enterprise resources
- 3) Database systems with the "data mining" capabilities to make the best use of available corporate information for marketing, production, promotion and innovation. The SIS systems also facilitate identification of the data collection strategies to help optimize database marketing opportunities.
- 4) The real-time information Systems that intend to maintain a rapid-response and the quality indicators.

Earl (1993) studied the experiences in strategic information systems planning. Strategic information systems planning (SISP) remains a top concern of many organizations.

Accordingly, researchers have investigated SISP practice and proposed both formal methods and principles of good practice. SISP cannot be understood by considering formal methods alone. Earl (1993) examined SISP experience in 27 companies and, unusually, relies on interviews not only with IS managers but also with general managers and line managers. By adopting this broader perspective, the investigation reveals that companies were using five different SISP approaches: business-led, method-driven, administrative, technological, and organizational. Each approach has different characteristics and, therefore, a different likelihood of success. The results show that the organizational approach appears to be most effective.

Segars and Grover (1998) researched into strategic information systems planning success: An investigation of the construct and its measurement. Strategic information systems planning (SISP) requires significant outlays of increasingly scarce human and financial resources. Yet, there exists very little understanding of how the success of this planning activity is measured. Using classical frameworks for measurement development as well as contemporary statistical techniques for assessing dimensionality, Segars and Grover (1998) study theoretically develops and empirically tests a measurement model of SISP success. The results suggest that SISP success can be operationalized as a second-order factor model. The first order constructs of the model are termed alignment, analysis, cooperation, and improvement in capabilities. These factors are governed by a second-order construct of SISP success. The results of the study are framed as a tool, for benchmarking planning efforts as well as a foundation for operationalizing a key dependent variable in SISP research.

Hopkins and Hopkins (1997) conduct a research into strategic planning and financial performance in banks. An integrative model of relationships among managerial, environmental, and organizational factors, strategic planning intensity, and financial performance was developed and tested using data from 112 banks. The results suggested that the intensity with which banks engage in the strategic planning process has a direct, positive effect on banks' financial performance, and mediates the effects of managerial and organizational factors on banks' performance. Results also showed a reciprocal relationship between strategic planning intensity and performance. That is, strategic planning intensity causes better performance and, in turn, better performance causes greater strategic planning intensity. The results hold implications for other financial services institutions subject to similar conditions that banks must operate under.

2.3.7 SISP Success Predictors

There is an overwhelming consensus in the literature that no other process predicts the SISP success as well as top management commitment and active participation (Ang & Teo, 2001; Bechor et al., 2010). Top management plays a key role at enabling good communication and cooperation between different departments and different stakeholders which have specific information needs and opinions about IT issues. Other important areas of top management involvement are: the promotion of the commitment to change, the control of the SISP implementation and the initiation of regular updates of the SISP plan. Strategic business planning represents the most sophisticated and complete process of strategic thinking that provides the enterprise with the capability of continuous control and analysis of the long term alignment between all relevant environmental and enterprise characteristics (Ruohonen, 1996). This process is

composed of four phases (Hunger & Wheelen, 1998): environment scanning, strategy formulation, strategy implementation and strategy evaluation and control. Top management sophistication measured as the quality of top management knowledge and know-how through all four phases of the strategic business planning process was proven to have an important positive effect on the efficiency and spread of IT use in the enterprises (Gupta et al., 1997).

Until the 1990s, most authors considered the role of IT limited to the operational level of planning (Garg et al., 2002) and did not consider IT as a technology that could create important competitive strategic advantages (Griffiths et al., 1990). However, in the last 20 years, such views significantly changed. Today, IT is considered one of the key general purpose technologies (Bresnahan, 2001) that can deliver strategic advantages through all the four phases of strategic planning (Garg et al., 2002) and radically change the process of the creation of goods in the enterprises (Hit & Snir, 1999). Thus, it has become essential that the top managers themselves become power users of IT since without the first-hand knowledge and personal experience, top managers can hardly be able to successfully manage SISP and capture the potential of IT. The need to align the business strategy and the IT strategy has long been advocated as necessary for an enterprise to gain sustainable competitive advantages by both researchers and practitioners (Chan & Sabherwal, 2001; Garg et al., 2002). For this reason, copying the IS from competitors does not create large benefits unless the enterprises have very similar business strategies (Chan & Sabherwal, 2001). The need to align IT with business needs is thus a recognized SISP objective (Earl, 1993) present in several SISP success models (Grover & Segars, 1998).

Enterprises have limited resources to invest in IT. Consequently, evaluating and prioritizing IT projects become important in order to ensure efficient and effective allocation of the available resources. For this reason, a priority system positively influences the success of the IS/IT strategy implementation (Hartono et al., 2003) and is thus recognised as an important activity that influences SISP success (Ang & Teo 2001; Bechor et al., 2010). Such a system should not be a reflection of the power of any stakeholder group, but rather reflect the importance of an IT project for the achievement of a business strategy. Good personal and professional competences of project team members lead to successful management of IT and result in projects that are, with high probability, completed on time and on budget. The ability to obtain sufficiently competent project leaders and team members from the ranks of the middle management was thus soon recognized as a critical SISP success factor (Nelson and Somers, 2001). In SISP, competence includes more than just familiarity with the technical aspects of systems development. Business process identification, knowledge about business processes, as well as interpersonal skills are even more important since they facilitate greater integration between the business planning and the SISP process (Ang et al., 1997).

There is a wide spread consensus in the literature that enterprises can only gain the majority of benefits from IT investments if they complement such investments with changes in business strategy, structure, processes and culture (OECD, 2004). The successful design and implementation of the organizational changes required for a productive use of IT is, however, one of the hardest SISP success predictors to manage successfully because it is accompanied by significant risks, increased complexity and

large costs (Appleton, 1999). Thus, it is not surprising that the underestimation of the magnitude and number of difficulties an enterprise encounters while managing this SISP success predictor is the most common reason that the deployment of IT ends unsuccessfully (Nelson & Somers, 2001). Several authors include the design and implementation of technical changes in the overall success predictor of change management (Kuang et al., 2001; Nelson & Somers, 2001). However, establishing IS goals, planning software functionality, choosing appropriate applications and managing the conversion from the old to the new IS require specific know-how which differs from the know-how needed to manage organizational change. Since monitoring these two “change” success predictors separately enables a clearer attribution of task responsibility to individual internal stakeholders (IT management vs. top management).

The importance of user satisfaction and acceptance of the new IS as a predictor of a successful SISP implementation is well documented (Bechor et al., 2010). When an enterprise involves key users in the SISP process, they get a broader understanding of the significance of the SISP process for the enterprise as a whole and better comprehend the necessity to change their tasks (Bingi et al., 1999) which lowers their overall resistance to change. User involvement in SISP thus positively impacts the flexibility of the IS, which in today’s uncertain environment is often an important benefit (Palanisamy, 2005). End user training is necessary when enterprises implement SISP because it provides the necessary knowledge to end users for efficient execution of their tasks within the newly deployed IS. The goal of the training should be to enable the users to perform new tasks, do existing tasks faster and increase their quality of work. Good user training also significantly reduces the resistance to change from the end users

(Mahrer, 1999). Gottschalk (1999) also found out that if enterprises pay attention to user training during the planning stages of SISP, user training becomes a good predictor of the success of SISP implementation.

2.3.8 The Miles and Snow Typology

Raymond Miles and Charles Snow suggest that business level strategies generally fall into one of four categories: prospector, defender, analyzer, and reactor.

- i. **Prospector:** An organization that follows a prospector strategy is a highly innovative firm that is constantly seeking out new markets and new opportunities and is oriented toward growth and risk taking.
- ii. **Defender:** Rather than seeking new growth opportunities and innovation, an organization that follows a defender strategy concentrates on protecting its current markets, maintaining stable growth, and serving its current customers.
- iii. **Analyzer:** An organization that follows an analyzer strategy both maintains market share and seeks to be innovative, although usually not as innovative as an organization that uses a prospector strategy. Most large companies fall into the third category, because they want both to protect their base of operations and to create new market opportunities
- iv. **Reactor:** According to Miles and Snow, an organization that follows a reactor strategy has no consistent strategic approach; it drifts with environmental events, reacting to but failing to anticipate or influence those events. Not surprisingly, these organizations usually do not perform as well as organizations that implement prospector, defender, or analyzer strategies. Most organizations would probably deny using reactor strategies.

2.4 Bank Performance

Banks have different performance measurements. Some of which are profitability, sales growth, IT infrastructure etc.

2.4.1 Performance Indicators

The result of effective strategic management should be evident in the performance of the organization. Various works support the sustained evolution towards positions, which are more optimistic about the impact of IT (Brynjolfsson and Hitt, 2001; Brynjolfsson, Hitt and Yang, 2000). The researchers involving Hitt and Brynjolfsson, admitted that investment were associated with an increase in productivity of works who work with information and additionally they claim that investments in computing generates greater levels of productivity than any other type of investments, despite the short life-span of this type of tool. However, the researchers maintain that the results obtained do not imply that investing in IT guarantees net productivity gains, but that other factors may influence the relation (Bruque et al., 2002). Hitt and Brynjolfsson (19965) discovered within the same period that there is no relation between growth in market share or business profit and investment in IT and even found slight negative correlation coefficients between both variable pairs.

Evidence showed a relationship between investment in IT and improvement in global business performance and productivity. (Brynjolfsson, Hitt and Yang, 2000; Brynjolfsson and Hitt, 2001). Using a global results indicator (Tobin's Q ratio) based on the firm's value in the stock market, they concluded that those firms, which invested more in IT in the period 1987 – 1994, achieved superior results. More so the correlation

was stronger when the firm, along with the investment in IT, underwent a structural reorganization involving interdisciplinary workgroups, increase in independent decision making and support for employee training. More recently, researchers began to find positive relationships between IT investment and various measures of economic performance.

Ratios and trend analysis were arrived at using data from annual accounts. Specially, the ROA (return on assets) and ROE (return on equity) models were employed to measure performance. These are two measures of performance that relate to how efficient and profitable a business entity is. ROA measure efficiency and tells how well a firm's resources (assets) have been employed to generate income. Efficiency reflects higher ROA which is composed of profit margin (PM) and assets utilization. ROE measures returns to shareholders.

Return on Assets (ROA) Ratio

Return on assets is the ratio of annual net income to average total assets of a business during a financial year. It measures efficiency of the business in using its assets to generate net income. It is a profitability ratio. The formula to calculate return on assets is:

$$\text{ROA} = \frac{\text{Annual Net Income}}{\text{Average Total Assets}}$$

Net income is the after tax income. Total assets at the beginning and at the end of the year can be obtained from year ending balance sheets of two consecutive financial years.

Return on Equity (ROE) Ratio

Return on equity or return on capital is the ratio of net income of a business during a year to its stockholders' equity during that year. It is a measure of profitability of stockholders' investments. It shows net income as percentage of shareholder equity. The formula to calculate return on equity is:

$$\text{ROE} = \frac{\text{Annual Net Income}}{\text{Average Stockholders' Equity}}$$

Net income is the after tax income whereas average shareholders' equity is calculated by dividing the sum of shareholders' equity at the beginning and at the end of the year by 2.

Harris and Katz (1991) found positive relationship between IT expense ratios and various performance ratios although at times the relationship was quite weak. Alpar and Kim (1991) in their study of 759 banks indicated that investment in IT has a cost reducing effect. They also found a 10% increase in IT capital is associated with 1.9% decrease in total costs. Increase in economics of scale as a contributing factor of IT was found in Pulley and Braunstein's (1984) study of information services firm as well. Barua et al., (1991) found IT was positively related to measures of performance, although the magnitude of the effect was generally too small to measurably affect final output.

Alpar and Kim (1991) undertook a study and found out that, the problem of measuring the impact of information technology on economic performance at the business unit or enterprise level is receiving increased attention. Alpar and Kim (1991) developed a

methodology based on the microeconomic theory of production and applied the model to data from the banking industry. In addition, they compare their methodology to approaches based on key ratios of information technology deployment. Both procedures were applied to the same set of data. The results show that reasoning about information technology value based on key ratios may be misleading, especially when the figures are only calculated for a cross-section of data.

2.4.2 Clash of Expectations – Productivity Paradox of IT

Productivity is the fundamental measure of a technology's contribution, which creates room for competitive advantage. While major success stories exist, so do equally impressive failures (Kemerer and Sosa, 1991). Since the beginnings of the computing era (Kaufman, 1966) people have suggested that, the implementation of computing technologies would have a series of positive effects (Cash and Konsynski, 1986). These authors according to Bruque et al., (2002) claimed that IT could play a role as a strategic tool. From the strategic point of view, IT could affect every one of Porter's competitive strategies whether cost leadership, differentiation or specialization in a market niche (Bruque et al, 2002).

Thus, the Productivity Paradox phrase came into being when large investments in information technology apparently failed to produce the much expected significant increases in productivity in the 1980s and early 1990s and the early acclaimed positive effects on two levels. The first is at the industry or economy wide level. This was summed up in 1987 by Nobel Prize winning economist Robert Solow, who wrote, "we see the computer age everywhere except in the productivity statistics, as quoted in

Brynjolfsson and Hitt's (1998) 'beyond the Productivity Paradox' (1998)" the second productivity paradox was observed at the company level, where "there was no correlation whatsoever between expenditures for information technologies and any known measure of profitability" (Strassmann, 1990). The equivocal results of IT investments, in many cases are caused by the inconsistency in IT firm performance measurement issues (Willcocks and Lester, 1999).

Many connoisseurs of early studies examined the correlation between IT spending ratios and various performance measurements, such as profits or stock returns (Dos Santos et al., 1993; Strassmann, 1997). Since the correlation was either zero or very low, some concluded that computer investments has been unproductive. However, spending more on computers should generate higher profitability or stock market returns (Lim et al., 2004).

2.4.3 Information Systems and Performance

The performance of financial firms refers to the ability of meeting the needs of stockholder and stakeholder. The success or failure of these institutions is usually revealed by a careful study of their financial statements. The most important dimensions of performance are profitability and risk. Banks are businesses organized to maximize the value of the shareholders' wealth invested in the firm at an acceptable level of risk. Such an objective requires looking for new opportunities for revenue growth, greater efficiency, and more effective planning and control (Rose and Hudgins, 2008). The determinants of banks' profitability can be divided into two main categories namely the internal determinants which are management controllable and the external determinants

which are beyond the control of the management of these institutions. (Guru, Staunton, and Balashanmugam, 2002).

Lee (2012) tried to find out whether the success of information systems really matters to firm performance. Many failed listed enterprises had strong information capabilities and resources. However, such advantage did not help these enterprises survive during the economy difficult times. Previous research of DeLone and McLean (2003) implied the success of information systems will enhance the performance of enterprises. Based on this implication, many enterprises continuously invested resources on information systems as a strategy trying to gain advantage over competitors. The net benefits in D&M model resulted from the success of information system does not always significantly improve the enterprise performance but rather has a limit on it. In fact, such an excess investment cannot improve the enterprise performance but exhausts more valuable resources instead.

Ho and Mallick (2006) developed and tested a model to examine the effects of information technology (IT) in the US banking industry. It is believed that IT can improve bank's performance in two ways: IT can reduce operational cost (cost effect), and facilitate transactions among customers within the same network (network effect). The empirical studies, however, have shown inconsistency in this hypothesis. Some agree with the Solow Paradox, some are against. Since most empirical studies have adopted the production function approach, it is difficult to identify which effect has dominated; hence the reasons attributed have been the difference in econometric methodology and measurement. Ho and Mallick (2006) attempt to explain the

inconsistency by stressing the heterogeneity in banking services in a differentiated model with network effects. Ho and Mallick (2006) characterize the conditions to identify these two effects and the conditions for the two seemingly positive effects to turn negative in the equilibrium.

Parsons et al., (1990) estimated a production function for banking services in Canada and found that the overall impact of IT on multifactor productivity was quite low between 1974 and 1987 and they posited that IT has positioned the industry for greater growth in the future. Franke (1987) reaching similar conclusions, found that IT was associated with a sharp drop in capital productivity and stagnation in labour productivity, but remained optimistic about the future prospects of IT, citing the long time lags associated with previous “technological transformation”.

Karimi et al., (1996) argue that, recently the globalization of competition has caused many firms in the financial services industry to integrate their information systems. According to a survey of 213 managers, they find that competitive strategy, information technology (IT) maturity and size influence firms' perceived increase in IT investment. Further, they find that the degree of IT integration within firms is a primary determinant of firms' willingness to use IT as part of their strategic response to globalization. It suggests that the new competitive strategies will be increasingly technology-based global initiatives that are affected by the firms' IT maturity.

Harris and Katz (1991) looked at organizational performance and information technology investment intensity in the insurance industry. They consider whether there

existed a significant and systematic relationship between firm performance and information technology investment intensity in the home office operation of 40 systems technology leaders in the life insurance industry for the period 1983-1986. It is hypothesized that in top performance insurance firms (1) information technology costs as a proportion of total operating costs were higher, and (2) information technology costs as a proportion of premium income were lower, than in weak performance firms. Evidence is presented that indicates that firm performance was linked to the level of information technology investment intensity.

Floyd and Wooldridge (1990) undertook a path analysis of the relationship between competitive strategy, information technology, and financial performance. They evaluate the impact of competitive strategy on information technology (IT) and of it on organizational performance. In addition, the research model incorporates indirect performance effects from strategy and IT alignment. Data is drawn from the survey responses of 127 banks and interviews with 68 bank CEOs. Path analysis separates direct, indirect, and spurious effects. Interview data support the quantitative analysis. The results lend statistical support to the strategy-IT relationship described in case studies, and in addition, provide an explanation for inconsistent findings in previous IT performance research.

Beccalli (2007) conducted a research into whether IT investment improves bank performance?" He investigates whether investment in information technology (IT); hardware, software and other IT services influence the performance of banks. Using a sample of 737 European banks over the period 1995–2000, He analyzed whether IT

investment is reflected in improved performance (measured using both standard accounting ratios and cost and alternative profit efficiency measures). Despite banks being major investors in IT, he found little relationship between total IT investment and improved bank profitability or efficiency indicating the existence of a profitability paradox. However, the impact of different types of IT investment (hardware, software and services) on banks' performance is heterogeneous. Investment in IT services from external providers (consulting services, implementation services, training and education, support services) appears to have a positive influence on accounting profits and profit efficiency, while the acquisition of hardware and software seems to reduce banks' performance.

2.4.4 Bank Operations and Cost Reduction

Several banks use IT to automate their key business and operations and help reduce operational costs. Revenues are largely increased with the introduction of more channels such as ATMs, internet banking or mobile banking to bring more customers or to retain existing customers by offering convenience to banks on a 24x7 basis. Banks have also placed a strong emphasis on IT to improve customer service, security, efficiency and competitiveness of the business. Some of the initiatives to reduce costs or increase revenues that the banks have implemented include consolidation of data centers and servers, virtualization, network bandwidth management tool, installation of solid state hard disks or implementation of advanced data replication tools. The proactive monitoring of the infrastructure and applications has also helped banks reduce costs and improve customer service. Infrastructure monitoring helps to reduce the potential downtime and cost of servicing. The implementation of dashboards for various

applications helps the senior management to monitor the status of applications on a real-time basis. E-Procurement or reverse auction has also helped the bank's IT team to reduce their procurement related expenditure.

2.4.5 Customer Satisfaction

Customer satisfaction, a term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is defined as “the number of customers or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals”. It is seen as a key performance indicator within business and is often part of a balanced scorecard. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Within organizations, customer satisfaction ratings can have powerful effects. They focus employees on the importance of fulfilling customers' expectations. Furthermore, when these ratings dip, they warn of problems that can affect sales and profitability. Therefore, it is essential for businesses to effectively manage customer satisfaction. To be able do this, firms need reliable and representative measures of satisfaction. In researching satisfaction, firms generally ask customers whether their product or service has met or exceeded expectations. Thus, expectations are a key factor behind satisfaction. When customers have high expectations and the reality falls short, they will be disappointed and will likely rate their experience as less than satisfying.

2.4.6 Impact of Information System Strategy on Banks Performance

Amoako (2012) examines the impact of ICT on banking operations in Ghana and makes recommendations for the improvement in the banking sector. The surfacing of technological advancement coupled with Globalization has call for the implementation of ICT into business process of which financial institutions is no exception. The increase in customer base as well as increase in demand for more innovative products and services has also required the need for ICT in banking industry. In Ghana, however, banking institutions have been subjected to criticism for not providing their customers with innovative and convenient banking services, with the results that some customers especially business women, find it more convenient keeping their savings at homes than in the banks Amoako (2012).

Wilson (1999) carried out a study into the Implementation of Information Systems strategies in UK companies. The overall objective of the study was to discover the extent to which major UK companies had adopted a strategic view of information systems development. In addition to this main objective there were a number of subsidiary aims. For companies that claimed to have a strategy they wished to know:

- 1) How the link to business strategy was maintained.
- 2) The organizational level at which strategy was initiated.
- 3) How the effectiveness of a strategy was monitored.
- 4) What aspects of information systems development featured in existing strategies, and what were future plans for investment.
- 5) How successful strategies were deemed to have been, and what barriers to the establishment and implementation of strategy had been experienced.

- 6) How far the idea of competitive advantage was incorporated in strategy, and what particular competitive ends were pursued.

Wilson (1999) concluded that:

- ✓ The strategy should be formally documented, should be initiated by the Board, monitored by planned reviews, and should base information provision on key indicators, critical success factors, or on a detailed analysis of management information needs.
- ✓ As a large diverse corporation, IS strategy has tended to be dealt with major grouping levels. Acquisitions have carried on, or developed, independent strategies. A major review is currently in progress to determine the degree to which a corporate strategy is required
- ✓ The central plank is the continuing evolution of a master set of operational systems for the office. It was the original development of these in the late seventies that first established IT as a strategic weapon for the office. And it is still seen by the management that those operational systems are the cornerstone of our IT strategy. The primary additional objective this time round has been to replace existing systems in an evolutionary fashion with systems which will cope with a much higher volume of business in an equally efficient manner and yet will allow rapid product introduction, evolution of product, and evolution of organizational structure. The second major plank is concentrating on the competitive edge, strategic advantage.
- ✓ Another aspect of corporate style is the attitude to cost. The organization will quite happily invest millions almost at the drop of a hat in large-scale technology

for big operational systems. One can get authority to spend a million or two on new hardware to improve the system in a ten minutes meeting with the managing director.

- ✓ Difficulty in gaining full approval of strategy. This makes long-term, integrated systems development difficult.

2.5 Conclusion

From the review of the literature, it is clear that a lot of work have been done in the areas of information system strategy, information systems investment, and bank performance. It is evident that studies outside African are more in-depth than those undertaken in Africa. It is also very clear that very little has been done in the area of information system strategy and bank performance particularly in Ghana and Africa as a whole. Thus, financial services are gradually moving out of the high streets into cyberspace and the realms of electronic commerce. This is accompanied by huge investments in IT for varied reasons. However, the most seemingly reason may be the returns on productivity, profitability, and market share. The uniqueness of this study is derived from the fact that besides determining bank performance and information system strategy as have been the case in earlier studies, this research establishes the relationship between information system strategy, bank information systems, and bank performance. The study seeks to add on to the scanty literature on the impact of information systems strategy on bank performance in the banking industry in Ghana. Even though much has been written on the connection between business strategy and information technology and information systems (IT/IS), very little has been done on the use of IT/IS in the banking sector. This research is an attempt to fill this gap.

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CHAPTER THREE

BACKGROUND INFORMATION ON THE SELECTED BANKS

3.1 Introduction

This chapter provides an overview of banking in Ghana and discusses the various stages that banking in Ghana has gone through over the years. It provides background information on the selected banks in Ghana: National Investment Bank, Ghana Commercial Bank and Agriculture Development Bank which constitute the local banks as well as Barclays Bank Ghana, Standard Chartered Bank Ghana and Stanbic Bank Ghana which also constitute the foreign banks.

3.2 Overview of Banking in Ghana

The Ghanaian banking system comprises of the Bank of Ghana (the Central Bank), the banks, the non-bank financial institution (NBFI), the rural banks, the community banks and forex bureau (Anin, 2000). The profile of the banking industry in Ghana is viewed in terms of colonial era, post war era, banking in a closed economy, banking in the era of structural adjustment, post structural adjustment era, banking laws and prospects of bank risk management in Ghana.

3.2.1 Banking in the Colonial Era: 1890 – 1945

The economic developments in the Gold Coast during the 1800's were underpinned by the use of un-uniform currency. Until 1880, trade was conducted along the West Coast of Africa in a bewildering array of money tokens such as cowries, manilas, and brass rods. The cowries' shells were originally imported from the Maldives Islands but their

use as currency declined in the early 19th Century in favour of expressing the value of goods and services in gold weight values. These were determined according to the generally recognized Asante gold weights.

British coins were first exported to the Gold Coast Colony in 1818. In 1822, dollars were also introduced to pay soldiers' salaries and to meet the cost of their upkeep. In 1825, British silver coins were introduced. These coins eventually became the common currency of the Gold Coast a decade after the passing of the Demonetization Ordinance. The various forms of currency used had various problems, for instance the gold dust had the practical problem of weighing and thus was not always convenient in commercial transactions. Cowries had the setback of being too bulky and were also not always convenient medium of exchange. The Colonial Authorities attempted to resolve the problem with the passing in 1880, of the Demonetization Ordinance which restricted currency to: all Gold and British Sterling, Spanish and South America Doubloons, American Double Eagles, French 20-franc pieces and Gold Dust and Nuggets. The real effect of the Demonetization Ordinance was the virtual elimination from circulation of the traditional local currency tokens.

3.2.2 Entry of the Colonial Bank / Barclays Bank DCO

The Bank of British West Africa (BBWA) was registered as a limited liability company by the directors of Elder Dempster and began trading on March 31, 1894, initially in England, then in Lagos and finally in 1896, opened a new branch of the bank in Accra, Gold Coast. Shortly after the bank was established in Accra it was able to acquire the business of maintaining the Government accounts. In addition, it was able to pioneer the

use of cheques in settlement of Government accounts which helped to advertise the usefulness of the bank to the public (Anin, 2000). The banking monopoly enjoyed by BBWA ended in 1917 with the establishment in Accra a branch of the colonial bank which had since 1836, operated in the West Indies. Its London Board decided in the course of the First World War to expand its operations to other parts of the British Colonial Empire. The Board obtained the consent of the United Kingdom Parliament through the amendment of the Colonial Bank's Charter. In 1925, Barclays concluded all the financial agreement which led to the merger of the colonial bank, the Anglo Egyptian Bank and The National Bank of South Africa to form a new bank known as Barclays Bank DCO (Dominion, Colonial and Overseas). In 1926, the six branches of the Colonial Bank henceforth became branches of Barclay Bank (DCO).

3.2.3 The Nature and Content of Banking Services Offered

The type of foreign banking services offered by the two banks during this era comprises documentary credits, discounting of Bills of Exchange, Collections and Remittances. Domestic banking transactions consisted of the maintenance of numerous current accounts for individuals and corporate customers. The indigenous customers of the two banks consisted mainly of the merchants, senior civil servants and members of the British educated professional's classes who were known colloquially as "been-tos". Saving accounts were also opened for customers who were usually literate. (Anin, 2000). Until the introduction of mechanized bank accounting machines in 1953 by the newly established Bank of Gold Coast, all bank transactions were recorded manually. Interest calculations on all accounts were made by reference to Interest Tables. Another interesting feature of branch accounting in the pre-1950 era was that all branches of the

two banks of the West Coast were controlled from London. Until the establishment of the Bank of Ghana at independence, the currency duties of the West African Currency Board were taken by BBWA on an agency basis (Anin, 2000).

3.2.4 Banking in the Post-War Era: 1945-1960

According to Anin (2000), the end of the Second World War marked a decisive turning point in the history of the Gold Coast. It was not a mere transition from war to peace. In both, the political and economic spheres, there were momentous developments. Banking operations were actively involved in financing the increased demand for West African produce and also for financing a much larger volume of imports. The Bank of Gold Coast Ordinance was passed by the legislature in October 1952. Four months after the Ordinance came into force (February 1953), the first branch of the Bank of God Coast opened its doors to the public on the 20th May 1953. The reaction of the two existing expatriate banks to the new Bank of the Gold Coast was interesting to note. BBWA was more accommodating even though it stood to lose the Government accounts to the newcomer. Barclays DCO's reaction was most strange since it made complaints of the fact that the bank had lost all government businesses which they had previously handled and lost most of their well trained and loyal staff; a practice they had indulged in when they came into existence and it took the treat of an injunction from BBWA's London Office before DCO's poaching of BBWA staff ceased (Anin, 2000). The Bank of Gold Coast was transformed in 1957 into two autonomous institutions with different functions of which the Ghana Commercial Bank and the Bank of Ghana emerged.

3.2.5 Banking in a Closed Economy: 1960 -1983

The period is characterized by the incorporation of state banks which were established to fulfill the development objectives of the government. In addition, to the Ghana Commercial Bank which had been established as a state-owned banking institution as far back as 1953, the Nkrumah administration of the First Republic incorporated specialist banks for the development of industry and agriculture. These banks were the Agricultural Credit and Co-operative Bank and National Investment Bank. Nkrumah's policy of establishing a bank to provide finance for a specific area of the national economy was continued by Col. I. K. Acheampong with the passing, in 1972 of the Bank for Housing and Construction.

3.2.6 Banking in the Era of Structural Adjustment: 1983 – 1997

In April 1983, the government performed a volte-face and dramatically changed the course and content of economic policy and management. It announced a series of reform measures and agreed on a short-term stabilization programme with the World Bank and the IMF. A vital component of the Economic Recovery Programme was the World Bank's determination to carry out a thorough reform of Ghana's banking system, paying special attention to the state owned banking sector.

By 1983, the banking system was reflecting the serious problems of the national economy. The large state-owned industrial and agricultural sectors had run up massive overdrawn position with the state Owned banking institutions. More ominously, these loans and overdrafts had degenerated into the "non-performing" loan categories in the books of these banks. The World Bank and the Government of Ghana agreed that a

reform and restructuring of Ghana's banking industry were indispensable components of Economic Recovery Programme. With technical and financial assistance from the International Development Association (IDA), the Government embarked upon a financial sector reform programme in 1988. The broad objectives of the programme were:

1. To undertake the restructuring of financially distressed banks;
2. To enhance the soundness of the banking system through an improved regulatory and supervisory framework;
3. To improved the mobilization and allocation of financial resources including the development of money and capital markets (Anin, 2000).

3.2.7 The Banking Act 2007, Act 738

The banking Act 2007 is an Act to amend the Banking Act, 2004 (Act 673) to facilitate the establishment of an international financial services centre that seeks to attract foreign direct investment, income from licence fees payable in foreign currencies, create employment, enhance local skills and knowledge, strengthen the financial sector through expansion in the use of investment banking instruments and to provide for related matters.

The Bank of Ghana (BOG) shall issue to the applicant a final approval and a licence to carry on business, after the BOG is satisfied with the organizational infrastructural arrangements made by the applicant, and that the applicant has complied with the terms and conditions stipulated in the provisional approval. A licence issued under this Act

shall be issued subject to the terms and conditions that the Bank of Ghana may impose and shall be in one of the following categories:

- a) General Banking Licence;
- b) Class I Banking Licence; or
- c) Class II Banking Licence;

Subject to this Act or any other enactment, the holder of a Class II Banking Licence shall not:

- i. Take deposits or placements from any person resident in Ghana other than another bank holding a General Banking Licence with respect to its Class II banking business, or another bank holding a Class II Banking Licence;
- ii. Invest in an asset that represents a claim on any person resident in Ghana except a claim resulting from
- iii. Carry on business in Ghana other than the business for which its Class II Banking Licence has been issued.

In the case of a bank holding a General Banking Licence, the bank is not authorized to carry on business in any office or branch, other than its principal place of business, unless it has obtained a prior approval. The bank holding the Class I Banking Licence shall at all times while in operations maintain a capital adequacy ratio of ten percent10%. In the case of holding a Class II Banking Licence, not authorize banks to have more than one place of business for the purpose of Class II banking. In terms of capital required for these various categories of banks to hold, the various licence banks are expected to hold a minimum initial paid up capital after deduction of accumulated

losses: for a General Banking Business GH¢ 70 billion in relation to its class I banking business in a currency and other amount as the BOG may determine. For a class II Banking Licence an amount in a currency as the bank of Ghana determine from time to time and for Rural Banks GH¢ 500 million.

Whilst a bank holding a Class II Banking Licence shall at all times while in operations maintain a capital adequacy ratio of the percentage that the bank may determine. This percentage shall be determined by the Bank of Ghana from time to time, after discussions with the bank, and shall not necessarily be the same for all banks or all banks of that class. The BOG uses the criteria of other financial resources available to the bank in question, the nature, scale and risks of the bank's operations and the amount and nature of net own funds required, in the bank's judgment to protect the interest of depositors and potential depositors and the public. This can be found in section 23 of the banking act. A licence shall not be granted by the Bank, unless it is satisfied with;

- a) The technical knowledge, experience, financial conditions and history of the applicant;
- b) The adequacy of the capital structure of the applicant;
- c) The character of the business and its management;
- d) The adequacy of the applicants accounting control systems and records;
- e) In the case of an applicant incorporated outside Ghana, that the applicant is a branch or related company of a foreign bank of established international reputation.

To sum up, the recent adoption of the Banking Law has tightened risk exposure limits, established higher minimum capital adequacy ratios, strengthened accounting standards, broadened the scope of audits and imposed more stringent reporting requirements for banks.

3.3 Profile of National Investment Bank (NIB)

National Investment Bank (NIB) Limited was established in March 22, 1963. The National Investment Bank Limited was the first development bank in Ghana to promote and strengthen rapid industrialization in all sectors of the Ghanaian economy. NIB Limited now operates as a universal bank in focusing on development/commercial banking activities. NIB has undergone management, institutional and financial restructuring, which has strengthened the organization and now, has 27 branches nationwide. NIB Ltd. has in the past participated in foreign lines of credit, which were administered by Bank of Ghana to meet term loan and working capital needs of the Bank's customers (www.nib-ghana.com). NIB is now one of the designated financial institutions, which sources funds from Export Development and Investment Fund (EDIF) for lending to exporters as term and Working capital loans. The Bank was awarded the prestigious Euromarkets Award in 1994 and won the 2003 Best Bank of the Year for Long Term Loan Financing. NIB plays a leading role in developing a member of highly successful industrial projects in Ghana, through equity and debt financing. Some of these are Nestle Ghana Ltd., Nexans Kabelmetal (Ghana) Ltd., Merchant Bank (Ghana) Ltd., and Total Ghana Ltd.

Apart from development banking activities, NIB Ltd. also provides corporate and commercial banking facilities involving both domestic and foreign transactions at very competitive rates and on flexible terms. These include Current and Savings Account, Call Deposit, Fixed Deposits, Loans and Advances, Personal Services and Warehousing. NIB Ltd. is networked nationwide and renders efficient banking services. NIB ensures that the customers receive consistent and efficient services. In addition, highly trained personnel of the bank attend to standard banking needs promptly. NIB also delivers quantity customer service, tailored to meet requirements of customers. (www.nib-ghana.com).

3.4 Profile of Ghana Commercial Bank (GCB)

Ghana Commercial Bank Limited (GCB) started operations in 1953 as the Bank of the Gold Coast to provide banking services to the emerging nation for socio-economic development. The Bank was to provide special attention to Ghanaian traders, business people and farmers who could not elicit support from the expatriate banks. In 1957, when Ghana attained independence, Bank of Ghana was established as the Central Bank while the Bank of the Gold Coast was renamed Ghana Commercial Bank to focus solely on commercial banking services. Since then GCB branches have been opened across the length and breadth of the nation tapping the potential of the regions that make Ghana. The Bank had been wholly government owned until 1996 when under the economic recovery programme, part of the government ownership was divested. Today government ownership stands at 21.36% while institutional and individual holdings add up to 78.64% (www.gcb.com.gh).

From the one branch of the 1950s, GCB now has over 150 branches and 11 agencies throughout the country with high quality human resource. Currently, there are professionals of various disciplines who work in tandem to achieve the objectives of the Bank. The growth of the Bank has been synonymous with its customer base. During the first five years of the Bank's operations, the customers were mainly small Ghanaian traders (now turned SMEs) and other nationals who were expected to maintain credit balance accounts because the Bank was then not adequately capitalized. From the small trader as customer, GCB now has customer profile that ranges from salaried workers through small and medium scale entrepreneurs to large trading concerns, quasi-governmental institutions and corporate customers (www.gcb.com.gh). The bank's mission is to be the established leader in banking, satisfying the expectations of customers and shareholders, providing a full range of cost efficient and high quality services, through the optimization of information technology and efficient branch network (www.gcb.com.gh).

GCB provides a wide range of products and services for the benefit of its customers. From the traditional products of the Current/Savings Accounts, GCB now offers specialized products and services. There are also investments products like treasury bills as well as fixed and call deposits. These are cut to suit the individual needs of the customers. In addition, GCB has taken advantage of an enhanced information technology system to introduce Internet Banking (Commernet Plus), Royal Banking, Smart Pay (Fee Payments), Kudi NKosuo, GCB Inland Express Money Transfer, International Money Remittance Payments, GCB Kidistar Account and MasterCard. All

these have been done to increase profits and enhance shareholder value. Today GCB can boast of being the widest networked Bank in Ghana (www.gcb.com.gh).

3.5 Profile of Agricultural Development Bank (ADB)

The Agricultural Development Bank (ADB) was set up by an Act of Parliament (Act 286) in 1965 to promote and modernize the agricultural sector through appropriate but profitable financial intermediation. Its original name then was the Agricultural Credit and Co-operative Bank and the establishing Act gave its main object as “to provide credit facilities to agriculturists and person for connected purposes” (www.agricbank.com). ADB has 50 branches nationwide whose locations reflect the level of agricultural activities and the flow of deposits. The Bank also has 4 Farm Loans Offices (FLO) and 10 Agencies. ADB has opened thirty nine (39) ATMs so far. ADB customers are assured of a lot of convenience, since it is possible for card holders to get access to accounts any time and at any of these ATM locations, irrespective of one’s own branch (www.agricbank.com).

ADB primarily provides specialized financial intermediation and related services with the objective of promoting a sustained and diversified agricultural and rural development foundation for the country’s overall development. In addition, to cultivate effective linkages between the agricultural sector and the rest of the economy and to complement the provision of banking services throughout the country. ADB also provides ordinary commercial banking services as well as servicing other sectors of the economy (www.agricbank.com).

3.6 Profile of Barclays Bank of Ghana (BBG)

Barclays has operated in Ghana for ninety four years. It is a wholly owned subsidiary of Barclays Bank PLC. Its vision is to become the best bank for every customer, in every branch, for every product and every time. Barclays Bank of Ghana Limited has an expansive retail and commercial banking network in the country with 92 branches and over 130 ATMs in all regional capitals and major towns. Its products and services are targeted particularly at the business and corporate, as well as retail customers. Barclays offers a wide range of commercial, retail and treasury products and services. It also offers a wide range of commercial products and services for Small Medium Enterprises and indigenous businesses (www.barclays.com/africa/ghana).

The Bank of Ghana in February, 2010 named Barclays Bank of Ghana Limited the biggest foreign bank and also the largest bank in terms of capacity to handle transactions in Ghana. In June 2009, Barclays launched its Banc assurance proposition in partnership with Enterprise Life Assurance Company Limited (ELAC) to enhance product range with insurance product range with insurance product such as Term, Family Funeral Plan and Education Plan for convenience of customers. The Bank's premier banking offers tailor made solutions and one-on-one banking to its high net worth. In addition, Premier Life, a new service proposition to replace Prestige Banking has been introduced. It is targeted at customers who require convenient banking, quick and efficient service as a level of privacy and recognition. The Bank's sustainability programme focuses on three pillars. Banking for brighter futures; Looking after local communities and charity begins at work (www.barclays.com/africa/ghana).

3.7 Profile of Standard Chartered Bank (SCB)

Standard Chartered Bank Ghana Limited (SCB) has been in operation since 1986 when it was known as the Bank of British West Africa. The bank is 80% owned by Standard Chartered PLC, and the remainder of the stock is owned locally and traded on the Ghana stock exchange. SCB provides a wide range of services in the consumer and corporate and institutional banking sectors, including comprehensive trade finance, cash management services and foreign exchange products through treasury operations. SCB has 19 branches and two agencies in the country. Standard Chartered Bank Ghana offers a wide range of personal banking products and services nationwide through a network of 19 branches, 6 excel centers, one agency on the Kwame Nkrumah University of Science and Technology campus and alternate channels such as ATMs, call centers, transaction banking, debit cards, personal loans, and SMS banking. These are fully computerized and networked. Automated teller machines are located at most branches. Corporate and institutional banking services are provided in three main locations in (www.standardchartered.com.gh).

Standard chartered bank is the only bank which has 2 SME centers in the country. Customers enjoy the privilege of a banking partner that is flexible and tailors solutions to take care of their specific banking needs. Standard Chartered services are backed by a strong commitment to providing its customers with effective and reliable banking services and out serving their expectations (www.standardchartered.com.gh).

Standard Chartered Bank offers its corporate and institutional clients comprehensive banking solutions with particulars emphasis on relationship banking. Corporate clients

benefit from a full range of flexible financial propositions that address individual needs. Clients can access traditional as well as structured products in the areas of lending, trade finance, cash management and treasury. Customers also have access to cross-border payments, treasury services, transaction banking and custodial services-all supported by electronic funds transfer and cash management systems. Wholesale Banking provides innovative solutions to address the needs of valued customers. An extensive knowledge of international markets combined with a deep local insight puts the bank in a unique position to provide quality advice and information on currencies, interest rates and risk management. The bank has always been at the forefront of creative product offerings. Products offered include foreign exchange forwards and spots, high yield deposits and foreign currency options. The Bank is an authorized Foreign Exchange Dealer of the Central Bank (www.standardchartered.com.gh).

3.8 Profile of Stanbic Bank Ghana (STANBIC)

Stanbic Bank Ghana takes pride in being part of a large banking group rooted in Africa but reaching out to all corners of the world. Stanbic proactively provides solutions for clients through creative people and effective technology. Stanbic aims to simplify financial transactions to spend more time on client business and less time on banking. Every business is unique and needs its own combination of banking services. Whether you are starting or growing your business, Stanbic has the solutions to meet your needs. Stanbic offers a team of business bankers and business managers who, backed by a global network, are committed to supporting the success of your business. These business bankers and managers can offer you the guidance and expertise you need (www.stanbic.com.gh).

Stanbic Bank is part of Standard Bank group, which delivers services across Africa and extends to the key financial centers of Europe, the United States, and Asia through a network that spans 37 countries. Business Banking aligns the resources of this integrated global financial services group in order to share expertise. Stanbic Bank is committed to providing its customers with the security, the convenience, and value for money. Stanbic offers a range of products and services that enhances banking experience. Stanbic share customer aspirations and trained branch staff are ready to discuss with customers the best options available for saving and borrowing where appropriate from the bank (www.stanbic.com.gh).

3.9 Conclusion

A relatively large number of banks are active in the Ghanaian banking sector. In addition to universal banks, rural and community banks which are much smaller than universal banks but also much more numerous play an important role. The products, services and policies should promote within the industry, efficiency and competition, financial deeping and enhance transparency. This will culminate in the promotion of the development of the banking industry and reduce asymmetric information problems. Though currently, there is no law regarding technological electronic banking, that sector has also been developed with the banking industry. It is the fastest growing industry in the economy due to the huge and successful investment in information technology.

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CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter presents the methodology used in carrying out the study. The major consideration in social science research is to obtain adequate information or data that allows accurate descriptions of situations or relationships between certain variables. Social science research seeks to understand the attitudes of people about whom facts are collected and to account for the resultant opinions. Research methodology refers to the method adopted in carrying out a research. According to Kothari (2004), it is a systematic way applied to solve a research problem. A method, according to Leedy (1993) is a way of accomplishing an end result. He further mentioned that the word method is coined from two Greek elements: meth and odos. The meth means “after” and odos means “way”. “A method is therefore a following after the way someone found to be effective in solving a problem or reaching an objective in getting a job done” (Leedy, 1993).

A research in a scientific community is undertaken to attack or solve problems of significance or to increase theoretical knowledge. The primary objective of research is to develop a general and systematic set of theories from which hypotheses can be generated and tested (Busha and Harter, 1986). The methodology covers the research design, population and sample size, sampling techniques, instrumentation and data analysis.

A research is important in any discipline and it is critical to the growth of any profession (Aina, 2002). He contends that the survey research is carried out through a systematic and comprehensive collection of information about the opinions, attitudes, feelings, beliefs and behaviours of people. Kumekpor (2002), stated that when the term ‘survey’ is applied to social phenomena, it implies a careful scrutiny or investigation of a demarcated geographical area in order to have a comprehensive view of the nature, conditions and composition of the social groups, institutions or premises within such a defined area. The methodology for this study was treated under the following sub-headings: research methods, research design, positivism, population, sample size, sampling technique, instrumentation, mode of data collection and method of data analysis.

4.2 Research Design

For any research to be carried out successfully there is the need to plan as to how to carry out the research. This is usually referred to as a research design. Thus, once the problem has been correctly formulated, a design is developed in order to provide a format for the steps in the study. The nature of the problem defines the type and plan that will be used.

A research design is the overall plan for collecting data in order to answer research questions. It involves the specific data analyzing techniques or methods the researcher intends to use. Several research strategies can be adopted in a social science research such as case study, experiments, surveys, histories, and analysis of archival information. The choice of strategy according to Leedy (1993) is guided by four questions. These are:

what are the data needed, where the data are located, how will the data be collected, how will the data be interpreted. This study adopted the survey methodology. The method allows the results of the study to be generalized from the sample perspective, to the entire population. Due to the large size of the intended population, the survey method was employed to aid the collection of quantitative data for analysis and the results obtained also give a high level of reliability. Survey research was adopted because it does not require a huge financial outlay and it allows collection of data within a short period of time which facilitates the generalization from a sample to a population. Leedy (2001) maintains that the survey has the advantage of wider application as it allows data to be collected on a large population within a short space of time. A survey research allows for comparison of responses on which conclusions can be based (Creswell, 2003). For the purposes of this study, a cross-sectional survey was adopted. This is the method where by information is collected at one point in time.

A research design consists of two essential processes, research methods and data collection (Aina, 2002). For this study, the elements of the research design are as follows:

- ✓ Population
- ✓ Sample size and sampling techniques
- ✓ Data collection instruments
- ✓ Pre-testing research instruments
- ✓ Mode of Data collection
- ✓ Method of Data analysis and presentation of results

4.2.1 Theories Underpinning Survey Methodology

A research philosophy is a belief about the way data about a phenomenon should be collected and analyzed (Levin 1988). To interpret and understand the world we are living, we certainly need ‘ways of viewing’ and ‘ways of interpreting’ to grasp the surrounding facts, ideas, and events. The social world, therefore, can be interpreted and understood via many schools of thoughts. In whatever manifestation, for a theoretical model to explain anything there must be an appropriate relationship between the statements made, the methods used to make such statements, and the philosophical perspective deployed to inform the methods (Abbott 1998). In each of these respects, there are issues pertaining to ontology, epistemology, and methodology. Ontology is concerned with the nature of reality. Its central question is whether social entities can, or should, be considered social constructions built-up from the perception and action of social actors. Epistemology, on the other hand, concerns what constitute acceptable knowledge in an area of study. The key epistemological question is “can the approach to the study of the social world be the same as the approach to studying the natural sciences?” (Saunders, Lewis and Thornhill, 2007). Epistemology provides the philosophical underpinning the credibility which legitimizes knowledge and the framework for a process that will produce through a rigorous methodology. Another research paradigm is critical realism which views the world in terms of three components: the reality, the actual, and the empirical. In behavioural sciences, the positivist posits that human behaviours can be explained and predicted in terms of cause and effect (May 1997).

Positivists believe that the collection of data has to be performed in the social environment and involve reactions of people to it (May, 1997). Principal positivist methods consist of observations, experiments and survey techniques, and often involve complicated statistical analysis in order to generate the findings and to test hypotheses empirically (Schiffman and Kanuk, 1997). The main aim of the positivistic researcher is to generalizing the results to the larger population, 'the deductive approach'. Quantitative Positivist Research (QPR) is a set of methods and techniques that allow information systems (IS) researchers to answer research questions about the interaction of humans and computers.

There are two cornerstones in this approach to research. The first cornerstone is the emphasis on quantitative data. The second cornerstone is the emphasis on positivist philosophy. Regarding the first cornerstone, these methods and techniques tend to specialize in quantities in the sense that numbers come to represent values and levels of theoretical constructs and concepts and the interpretation of the numbers is viewed as strong scientific evidence of how a phenomenon works. The presence of quantities is so predominant in QPR that statistical tools and packages are an essential element in the researcher's toolkit. Sources of data are of less concern in identifying an approach as being QPR than the fact that empirically derived numbers lie at the core of the scientific evidence assembled. A QPR researcher may use archival data or gather it through structured interviews. In both cases, the researcher is motivated by the numerical outputs and how to derive meaning from them. This emphasis on numerical analysis is also key to the second cornerstone, positivism, which defines a scientific theory as one that can be falsified. Taking into account the purpose of the study and the research questions, this

study is comfortably placed within a scientific epistemology of logical positivism because it allows IS researchers to answer research questions about the interaction of humans and computers and it also emphasis on quantitative data.

4.3 Selection of Cases

The cases or study setting investigated were local banks and foreign banks. The local banks consist of Ghana Commercial Bank (GCB), Agricultural Development Bank (ADB), and National Investment Bank (NIB). The foreign banks consist of Stanbic Bank Ghana (Stanbic), Standard Chartered Bank (SCB) and Barclays Bank Ghana (BBG). The justification for the selection of these local banks is that they are the top local banks in the country and the foreign banks also are the top foreign banks in the country. Furthermore, these banks are accessible to the researcher and such data collection was feasible. In terms of branches, GCB has the highest number of branches. NIB on the other hand, leads the Investment banks when it comes to the local banks. ADB is also the second highest bank in the country in terms of size and resources. For the foreign banks in terms of profitability, size and resources Stanbic, SCG and BBG are the market leaders, hence, their inclusion in the cases. The researcher had series of meetings with the HR Managers, Corporate Affairs Managers and the PROs of these banks before finally it was agreed that the researcher could use these banks for the study. This was because there is a fierce competition in the banking industry and no bank wants to give its strategy out. A synopsis together with the three set of questionnaires were also submitted to the banks for their perusal. Some of the questions that the banks were not comfortable with were flagged and the researcher reframed them.

Efforts were made to preserve the anonymity of respondents and ensure the confidentiality promised during the data collection. In this regard, the six banks used were named Bank A, Bank B, Bank C, Bank D, Bank E, and Bank F. The researcher submitted a letter of introduction obtained from the Head of the Department of Information Studies (see Appendix C) to the various Human Resource (HR) Managers. In addition to the Department's letter, the researcher also attached a covering letter, introducing him, the topic and the purpose of the research to the banks. The researcher also provided his official address, cell phone number and e-mail address to facilitate communication with respondents.

4.4 Selection of Subjects

The selection of subjects covers population, sample size determination, and sampling techniques.

4.4.1 Population

A population can be defined as all the units for which information is required. The survey research is characterized by the selection of random samples from populations to obtain empirical knowledge of a contemporary nature. This knowledge allows generalizations to be made about characteristics, opinions, beliefs, and attitudes of the entire population being studied. Busha and Harter (1980) have stated that the concept of population is fundamental to research. They define population as any set of persons or objects that possesses at least one common characteristic. Kumekpor (2002) considers population as the total number of all units of the phenomenon to be investigated that exists in the area of investigation.

This study has three categories of population. These are the Strategic level (Unit Heads and above), the Operational level (Junior staff) and the bank customers from all the six banks all selected at their head offices in Greater Accra region. The decision of the researcher to focus on the strategic staff is justified by the fact that information systems strategy is a functional strategy that emanates from the departmental level and it is also formulated at the strategic level therefore it make sense to use this population. It is important to note that every bank has strategic staff that heads the various units and there is sometimes a General Manager (GM) and Managing Director (MD).

The decision to use operational staff could be justified by the fact that information systems strategy is a functional strategy that emanates from departments and therefore the involvement of all staff would ensure the success of the implementation of the strategy. The involvement of bank customers at the Head Offices could be justified by the fact that, bank customers are also stakeholders and literature has revealed that the success of information system strategy implementation is incomplete without the involvement of bank customers. The number of strategic staff, operational staff, and bank customers at the Head Office in Accra of each bank is presented in Table 4.1.

Table 4.1: Distribution of Staff and Customers of the Bank

Bank	Strategic Staff	Operational Staff	Bank Customers
Bank A	12	230	1,200
Bank B	12	200	1,080
Bank C	9	180	980
Bank D	9	160	1,000
Bank E	10	200	1,300
Bank F	10	190	1,200
Total	62	1,160	6,760

Source: Field data, 2013

The above table is a summary of the population of strategic staff, operational staff and bank customers from the respective banks.

4.4.2 Sample Size Determination

Sampling is the process of selecting study units from the target population as a complete survey of the entire population is usually extremely difficult if not impossible. According to Aina (2002) sampling is the selection of some units from a study's population of interest. It is a technique that allows a researcher to make inference about a population based on the nature of the sample. Kumar (2005) states that sampling is the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for the estimating or predicting the prevalence of the unknown piece of

information, situation or outcome regarding the bigger group. According to Aina (2004), it involves selecting an unbiased and representative unit from a population. The following four factors affect the sample size of the population and this is also confirmed by Aina (2004).

- ✓ The size of the population
- ✓ The variation in the characteristics being measured
- ✓ The number of ways in which data are stratified
- ✓ The parameters required of the data

Alreck and Settle (1985) have proposed the following sampling ratios for different population sizes: sampling ratio of 30% is adequate for a population of less than 1,000; sampling ratio of 20% is adequate for a population between 1,000 and 10,000; and a sampling ratio of 10% is adequate for a population greater than 10,000. The decision to take a sample for the study instead of surveying the total population was informed by the fact that, a saturation survey would have been difficult considering the size of the customers, the availability of all the strategic staff and the operational staff. Limited time as well as other limited resources did not allow for a complete survey. Sampling has the advantage of saving time, financial and human resources. Also, the findings would be reasonably accurate. According to Alreck and Settle (1985), only a small fraction of the entire population ordinarily provides sufficient representation of the group as a whole and enough accuracy to base decisions on the results with confidence.

4.4.2.1 Sample Size of the Strategic Staff of the Banks

The total of all the strategic staff from all the banks is sixty two (62) (See Table 4.1). According to Alreck and Settle (1985), a sampling ratio of 30% which is approximately nineteen (19) strategic staff is appropriate. But because the population is relatively small, the researcher decided to use all the staff instead of a sample.

4.4.2.2 Sample Size for Operational Staff of the Banks

The grand total of the operational staff for all the banks is one thousand one hundred and sixty (1,160) (See Table 4.1). An approximate sample size according to Alreck and Settle (1985) is 232 for the given population size. The researcher decided to increase the sample size to 348 (sampling ratio of 30%) because the researcher needed more of the operational staff to respond to the questionnaire to hedge against low rate of return. This was considered because of the busy and tight schedules of the operational staff. To calculate the proportionate sample size for the operational staff for each bank, the following formula was used (Babbie, 2010):

$$P.S = \frac{\text{Population of Operational staff for each bank}}{\text{Total population of Operational Staff}} \times 348$$

Where P.S = Proportionate sample size. The result is shown in Table 4.2.

Table 4.2: Proportionate Sample Size for Operational Staff for each Bank

Bank	Opt. staff Population	Proportionate Sample
Bank A	230	69
Bank B	200	60
Bank C	180	54
Bank D	160	48
Bank E	200	60
Bank F	190	57
Total	1,160	348

Source: Field data, 2013

Table 4.2 shows the proportionate sample size of the operational staff from the respective banks.

4.4.2.3 Sample Size for Bank Customers

The grand total of the bank customers is six thousand seven hundred and sixty (6,760) (See Table 4.1). An approximate sample size of 1,352 is quite adequate for the study according to Alreck and Settle (1985). To determine the proportionate sample size for the bank customers from each bank, the following formula was used (Babbie, 2010):

$$P.S = \frac{\text{Customer population for each bank}}{\text{Total population of bank customers}} \times 1,352$$

Where P.S = Proportionate Sample Size. The result is shown in Table 4.3.

Table 4.3: Proportionate Sample Size for Bank Customers

Bank	Bank Customers Population	Proportionate Sample
Bank A	1,200	240
Bank B	1,080	216
Bank C	980	196
Bank D	1,000	200
Bank E	1,300	260
Bank F	1,200	240
Total	6,760	1,352

Source: Field data, 2013

Table 4.3 shows the proportionate sample size of the bank customers from the respective banks.

4.4.3 Sampling Techniques

Sampling is the selection of a fraction of the total number of unites of interest to decision makers for the ultimate purpose of being able to draw general conclusions about the entire body of units (Parasuraman, Grewal and Krishnan, 2004). A conclusion can be made from the sample about the population to achieve the research objective” (Saunders *et al.*, 2007). Sampling must be done correctly or it would introduce bias or

error in the results. The sample must be selected properly, or it will not represent the whole (Alreck and Settle, 1985). There are different sampling techniques that can be used in selecting a sample from a population. These include simple random sampling, stratified sampling, accidental sampling, quota sampling, cluster sampling and purposive sampling. The sampling techniques adopted for the study is discussed in the next sub-section.

4.4.3.1 Sampling Techniques for Operational Staff

The sampling technique for the operational staff was simple random sampling. Random sampling includes choosing operational staff from a population through unpredictable means. In its simplest form, all operational staff have an equal chance of being selected out of the population being researched. The operational staff were sampled by a random process, using a sampling frame and random number table (see appendix J), so that each operational staff remaining in the population has the same probability of being selected for the sample. Random sampling assumes that the staff to be sampled are included in a list, also termed a sampling frame. The list is numbered in sequential order from one to the total number of operational staff. One of the biggest benefits of using random sampling is the fact that, since the operational staff are obviously randomized, it is the best way to ensure that the results are unbiased. Additionally, random sampling consistently provides results that are valid, making it easy for the researcher to draw conclusions about large populations.

4.4.3.2 Sampling Techniques for Bank Customers

An ideal sampling strategy for each bank would have been a simple random sampling since it offers every member of the population an equal chance to be selected in the sample. However, purposive sampling was used in each bank for collecting data from customers. With purposive sampling, the researcher selects sampling units subjectively in an attempt to obtain a sample that appears to be the representative of the population. In other words, the chance that a particular sampling unit is selected for the sample depends on the subjective judgment of the researcher. The choice of purposive sampling is justified by the fact that, the customers' population is heterogeneous and has different competence levels. Some of the customers were busy whilst others were not interested in the survey. Furthermore, some were only interested in their bank transactions and were not ready to respond to any survey. The purposive sampling is warranted by the fact that some of the customers are illiterates and could not read, write and understand the survey instrument. Those customers were excluded in the sample. Further, customers selected for the study had a minimum educational level of junior high school.

4.5 Instrumentation

With adherence to a survey research methodology, this study used the questionnaire instrument.

4.5.1 Questionnaire

A questionnaire according to Kumar (2005) is a written list of questions, the answers to which are recorded by respondents. He further stated that it is important that the questions are clear and easy to understand. Kumekpor (1999) states that the use of

questionnaire as a choice of research instrument for data collection has a special advantage over other methods of data collection especially quantitative studies. Other advantages are that questionnaires are completed at the leisure of respondents and help to eliminate the variation in the questioning process due to its fixed format (Kemoni, 2006). However, using questionnaires, according to Kothari (2004), for data collection has certain disadvantages. This position is also shared by Shepherd and Yeo (2003) who have stated that even though questionnaires may be easy to administer, they usually achieve low rates of return. Additionally, personal contact is lacking and the usefulness of the data collected will depend on the understanding of the respondents. To overcome these disadvantages, the competence of the staff in terms of level of education and work experience were taken into consideration in designing the questionnaire.

Questionnaire was used in this study because it is appropriate for the respondents and it facilitates the collection of large amount of data in a relatively short period. It is also easier to quantify and treat statistically. For the purpose of this study, a combination of structured and unstructured questionnaire designed by the researcher was used. A structured questionnaire is the type that has multiple answers provided and the respondents will be expected to tick one or as many as are relevant or applicable. An unstructured questionnaire on the other hand gives respondents the freedom to express their opinion without any restraint. Three different sets of questionnaires were administered; one to the strategy staff (see Appendix D), another to the operational staff (see Appendix E) and the last to bank customers (see Appendix F).

The questionnaire for the strategic staff and the operational staff were designed in sections along the main lines of the objectives of the study and they are;

Section 1: Bank Size and Demographics. This handled the general questions about the bank. The answers for these questions were used to ascertain the bank size and also to portray the demographics of the bank staff.

Section 2: Business Strategy and IS Strategy. This section explored the relationship between the IS strategy and the overall business strategy of the bank. It was also to establish, if any, the importance of the IS strategy to the Vision and Mission of the bank.

Section 3: Key Features of IS Strategy. To every strategy there are key features and this section seeks to solicit the key features of the IS strategy of the bank from the respondents. This section also found out among others the staff that are involved in the formulation and the implementation of the IS strategy.

Section 4: Competitive Advantage. This section established the various competitive strategies of the banks and how the banks are benefiting from the competitive strategies.

Section 5: Barriers to Strategy. This section dealt with the challenges that are associated with the formulation and implementation of an IS strategy and the way forward. The researcher also wishes to find out what matters most in IS formulation and implementation.

Section 6: Information Technology Issues. Basic information technology issues were determined in this section. The emphasis was on how information technology is used to carry out certain banking operations and also the benefits derived from using information technology.

Section 7: Product and Services. This section examined various products and services available at the bank and how they are linked to information technology.

Section 8: Bank Performance. This section explored the level of Information Technology investment of the bank in the short term, medium term and the long term. The section also examines critically the turnover of the various banks and measures the performance in terms of the profitability ratios.

The questionnaire for the bank customers consisted of five sections. The questions were developed bearing in mind the objectives underlying the survey. Section one dealt with the demographic data of respondents. Section two dealt with the information and communication technology products and services available to the customers. Section three covered the involvement of bank customers in the formulation of policies (interest and service charges) of the bank. Section four tried to establish the relation between ICT and customer satisfaction and finally, section five sought ideas from the customers on how the services of the bank could be improved.

4.6 Pre-Testing

Testing is important to establish the face validity of an instrument and to improve questions, format and the scale (Creswell, 2003). Once the research design had been decided upon, it was wise to try out the technique chosen as the main data collection device (Kumar, 2005). A pre-test or pilot survey of the research instrument is what Aina (2002) terms “a dress rehearsal” to the main survey and it helps to clarify certain problems inherent in the survey instruments.

For the purpose of this study, a pilot study was conducted using five strategic staff, twenty operational staff and 50 customers from HFC Bank and Zenith Bank. The selection of HFC Bank and Zenith Bank could be justified by their proximity to the researcher and also the fact that, they have similar structures and perform similar functions as any other local bank and foreign bank respectively. Introductory letters accompanied the questionnaires explaining the reason for carrying out the pre-test and soliciting the cooperation of the participants. They were also requested to make suggestions and comments that could help improve the quality of the instrument. Out of seventy five (75) copies of the questionnaire sent out to the two banks, thirty four were returned fully completed whilst the rest were incomplete, blank or never returned. This gave a response rate of 45.3%. The low response rate was due to the fact that the bank staff were always busy and did not have the time to respond to the questionnaire. The bank customers on the other hand, were only engrossed in their bank transactions and were not interested in the survey and these led to the low responses rate.

Some of the comments made were that some of the open ended questions should be changed to closed ended questions. The number of pages was also to be reduced. On the basis of pilot study or pre-testing, the questionnaire was further improved and standardized. In other words, the pre-testing helped to identify and eliminate ambiguous questions and duplications.

4.7 Mode of Data Collection

This consists of questionnaire administration and collection as well as method of data analysis and presentation of results.

4.7.1 Questionnaire Administration and Collection

Survey questionnaire are administered in two ways. These are self-administered questionnaire survey and mail surveys. The self-administered questionnaire survey is the process whereby the researcher either personally or with the help of assistants gives out the questionnaire to the participants to fill. The completed questionnaire could be collected right after it has been completed or at a later date. The mail survey method is the process whereby the researcher mails the questionnaire directly to the participants for them to complete and return.

The researcher was allowed to administer the questionnaire to the strategic staff personally to those the researcher met on that day. The rest of the copies of the questionnaire were given to the HR managers of the various banks, who helped to administer the remaining copies of the questionnaire. Respondents were entreated to drop completed questionnaires later at a place in the HR department. Each of the banks

has a special unit within HR Department that handles such issues. Respondents were given reasonable period of about three weeks to complete and return the questionnaire to HR Departments at their respective banks. After the expiration of the period, the researcher went for the completed copies of questionnaire. The same procedure was followed for the administration of the questionnaire to the operational staff at the various banks. After the expiration of the period, the researcher went for the completed copies of the questionnaire. For the bank customers, the researcher administered the questionnaire to the bank customers personally at a strategic position in the banking hall of the various banks on different days of the week. Respondents were given reasonable time (about 30 minutes) to complete and return the questionnaire to the researcher in the banking hall on the same day for each bank.

4.7.2 Method of Data Analysis and Presentation of Results

Quantitative data collected needs to be organized and manipulated to get them to reveal things of interest about the social world. The researcher subjected the raw data to different processes in order to trim the data, reorganize them into a form suitable for computers, present them in charts or graphs to summarize their features, and interpret or give theoretical meaning to results. To draw inferences, meaning, comparison and conclusions from the data collected, the Statistical Package for Social Sciences (SPSS) was used for data capturing and analysis due to its ease of use. The SPSS is the most widely used statistical software in the social sciences (Healey, 1993). After retrieving the completed questionnaires administered to the strategic staff, the operational staff and bank customers, consistency in responses were checked and questionnaires were subjected to the following processes:

- A. The completed copies of questionnaire were sorted into strategic staff, operational staff, and bank customers.
- B. The copies of questionnaire were then numbered serially to help in identification in case of error in the data capturing process.
- C. Coding scheme (manual) was designed for each set of questionnaire (see Appendix G, H, and I) to translate the categorical responses to numbers in order to facilitate the analysis.
- D. The copies of the questionnaire were then coded based on the coding scheme. (Assigning numbers to the responses provided by the respondents for each question).
- E. The coded responses were then captured using SPSS.
- F. The data entered into the SPSS is then used for all statistical analysis.

The data analysis is in three parts. The first part analyzes data on the strategy and related issues like; demographics and strategy, vision and mission, business strategy and IS strategy, success predictors and IS strategy, competitive advantage and IS strategy, and barriers to strategy. The second part analyzes data on information technology and related issues like information technology usage, technology and cost reduction, electronic banking, and customer satisfaction whilst the third part analyzes data on bank performance, taking into consideration IT investment and bank turnover. Organizational performance is a multifaceted construct that defies measurement by a single number. The choice of return on assets (ROA) and return on equity (ROE) as the dependent variables for this study was based on two considerations. First, profitability is the most

frequently used measure of firm performance in the strategic management literature. Second, ROA and ROE are widely used measures of financial performance in banking.

The Statistical Package for Social Sciences (SPSS) was used for the analysis of the data. Simple frequencies, percentages, charts, cross tabulations, correlations, regression models and Chi-Square test of independence to ascertain the significance of the relationship between variables was used to present the results of the study. Suppose that there are I rows and J columns, let $P_{i.}$ and $P_{.j}$ be their respective marginal probabilities. Then $p_{ij} = P_{i.} * P_{.j}$ and $E_{ij} = n * p_{ij}$

Let T_i = Total for row i

T_j = Total for column j

$$\text{Then } P_{i.} = \frac{T_i}{n} \quad \text{and} \quad P_{.j} = \frac{T_j}{n}$$

Where n = Total number of observations

P_{ij} = Propability of the ith row and jth column

E_{ij} = Expected Value of the ith row and jth column

The test statistic is a chi square, χ^2 with $(I-1)*(J-1)$ degrees of freedom.

$$\chi^2 \text{ value} = \sum_{i=1}^I \sum_{j=1}^J \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad \text{with } df = (I-1)*(J-1)$$

Where O_{ij} are the observed values

E_{ij} are the expected values and

df is the degrees of freedom

The significance level used for this study is 0.05.

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CHAPTER FIVE

ANALYSIS OF DATA AND FINDINGS ON ASPECTS OF IS STRATEGY AND BANK PERFORMANCE

5.1 Introduction

This chapter looks at the analysis and the presentation of the data collected through questionnaire as well as the discussion of the findings on aspects of strategy. It analyses the data in relation to the objectives of the study. Response rate (also known as completion rate or return rate) in survey research refers to the number of people who answered the survey divided by the number of people in the sample. For the strategic staff, 62 copies of questionnaire were administered. Out of the 62 copies, 32 (51.6%) copies of questionnaire were completed and returned. Similarly, for the operational staff, 348 copies of questionnaire were administered, and 216 (62.1%) copies were completed and returned. The total number of questionnaire returned was 248 out of 410, presenting a response rate of 60.5%. The chapter has been organized under the following major sub-headings:

- i. Demographics
- ii. Information Systems Strategy and Information Systems Assets
- iii. Staff Participation and Success Predictors
- iv. Barriers to Strategy

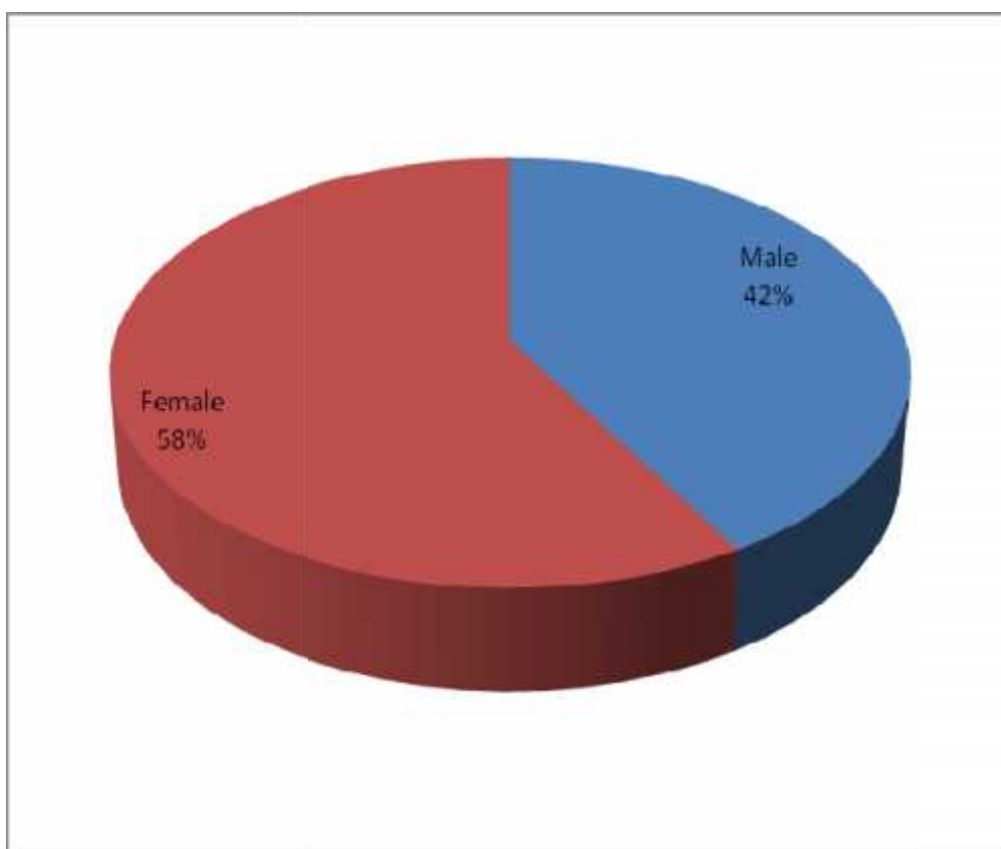
5.2 Demographics

This handled the general questions of demographics about bank staff. The answers to these questions were used to portray the demographics of the bank staff.

5.2.1 Gender of Respondents

Gender was relevant to the study as earlier studies have shown that it influences the patronage of information systems (Davis, 2000). For this reason, the operational staff respondents were asked to indicate their gender. Figure 5.1 depicts the gender distribution of the respondents from all the banks.

Figure 5.1: Gender Distribution of Respondents (Operational Staff)



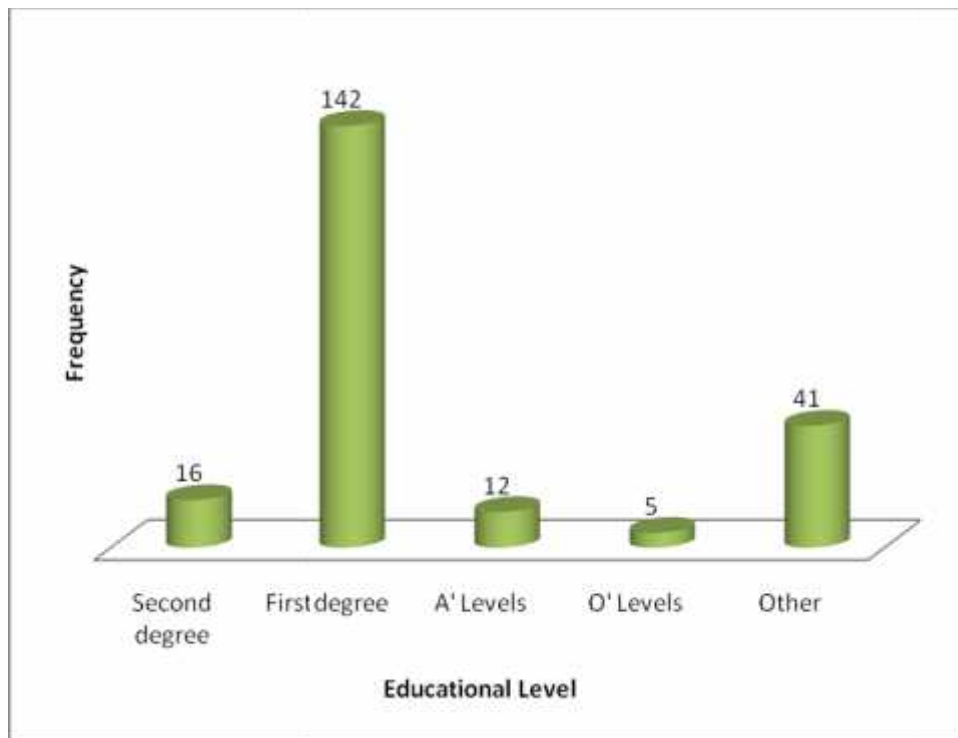
Source: Field data, 2013

Out of the 216 of the operational staff respondents, 90 (41.7%) are males whilst 126 (58.3) are females. This suggests that most of the bank staff at the operational level who responded to the questionnaire are females. This is different at the strategic level. For the

strategic level, 20 (60%) out of the 32 respondents indicated males, and 12 (40%) out of the 32 respondents indicated females. The female population mainly came from Human Resource, Legal and Services Excellence departments and the rest of the departments were populated with males. It is palpable that whilst at the operational level there are more females, at the strategic level there are more males which suggest that there are more males in management positions than females.

5.2.2 Educational Level of Operational Staff

Information system is a global phenomenon that is increasing very fast globally. Any staff working in any information system environment must have a certain level of education. For this reason, the operational staff respondents were asked to indicate their level of education. Figure 5.2 shows the responses from the operational staff.

Figure 5.2: Educational level of Respondents (Operational Staff)

Source: Field data, 2013

From the above figure, most of the operational staff 142 (65.7%) hold first degrees in different disciplines such as Banking and Finance, Marketing, Human Resource, Accounting, Computer Science, Information Technology, Statistics, Mathematics, and Economics. The number of respondents with first degrees may suggest that most of the operational positions require first degrees in the relevant fields. A significant number of 41 (19.0%) indicated that they hold different certificates some of which are; Association of Certified Chartered Accountants (ACCA), Institute of Chartered Accountants (ICA), Chartered Institute of Marketing (CIM), Chartered Institute of Bankers (CIB), Diploma in Business Studies, (DBS), and Higher National Diploma (HND). For ACCA, ICA, CIM, and CIB some of the respondents stated that they hold part one, part two and very

few are chartered with part three. The respondents with second degree, stated the following field for their second degree programs; MBA (Finance), MBA (Accounting), MBA (Marketing), MBA (Human Resource) and some MA and MSc. programs. For the strategic staff, almost all of the respondents have second degrees and professional certificates in the relevant fields of study. The strategic staff indicted the following fields of study; Information Technology, Human Resource, Banking and Finance, Customer Services, Credit Management, Legal and Treasury Management.

5.2.3 Number of Years of Working with the Bank

In the banking sector, working experience is very important. Most of the banking activities are carried out at the operational level. Every activity at the operational level is structured hence the decision taken at this level is structured decision. The operational level is synonymous with routine and repetitive operations hence the more a staff stays on the job the more experienced the staff becomes. Unlike the operational level, the strategic level is unstructured and every activity at the strategic level is unstructured hence the decisions taken at this level are unstructured decisions. The number of years of working plays a very significant role in modern banking since almost all the banking transactions are repetitive. For this reason, both the strategic and operational staff respondents were asked to indicate their number of years of working with the bank. In order to paint the general picture of the number of years of staff, the responses of the strategic staff have been put together as well as the operational staff responses in Table 5.1 for the analysis.

Table 5.1: Number of Years of Working

Ns = 32 No = 216	Strategic Staff		Operational Staff	
	Frequency	Percent	Frequency	Percent
Less than 1 Year	-	-	15	7.0
1 – 5 Years	7	21.9	80	37.0
6 – 10 Years	15	46.9	100	46.3
11 – 15 Years	5	15.6	16	7.4
16 – 20 Years	3	9.4	5	2.3
More than 20 Years	2	6.2	-	-
Total	32	100	216	100

Source: Field data, 2013

None of the operational staff had worked for more than twenty years. Fifteen (7.0%) of the respondents have worked for at most one year in the banking sector. It is understandable from the above table that, most of the operational staff had worked between six to ten years. Relatively small number 5 (2.3%) of the operational staff had worked with the bank for almost twenty years. For the strategic staff, all the respondents had more than one year working experience with the bank. In other words, none of the strategic staff has been employed for less than a year. Fifteen (46.9%) out of 32 strategic staff have been working with the bank for about six to ten years. Most of the staff, both strategic and operational staff have been working for about six to ten years which is significant since, the more staff are retained in the banking sector the better for the

performance of the staff. It is always said that, experience increases with number of working years.

5.3 Information Systems Strategy and Information Systems Assets

This section examined the relationship between the IS strategy and the overall business strategy. The required information systems assets were also identified.

5.3.1 Information System (IS) Strategy

An information systems strategy brings together the business aims of the company, an understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. It is a plan for the development of systems towards some future vision of the role of information systems in the organization. Information System must be structured and documented to fulfill certain standards and requirement. The documentation may be either in a software or hard form. If Information Systems is not structured, it would be very difficult to follow and implement. It was for this reason that the strategic staff were asked whether they have information system strategy. The researcher presents the responses of the strategic staff by banks in Table 5.2.

Table 5.2: Availability of Information Systems Strategy

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Yes	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0
No	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

In response to the question, all the operational staff 216 (100.0%) indicated that they have IS strategy. All the responses from the strategic staff 32 (100.0%) affirmed the presence of information system strategy in the banks. It is apparent from the above table that both the local banks (Bank A, Bank B, and Bank C) and the foreign banks (Bank D, Bank E, and Bank F) all have IS strategy. This finding supports that of Wilson (1999), when 75 percent of the respondents claimed to have an information system strategy, suggesting that the idea of an information system strategy has been widely adopted. He further stated that, in general, financial services companies are most likely to have adopted information system strategies than other industrial firms. Subsequently, since the strategic staff are more linked to IS strategy formulation, they were asked to indicate the components that are present in the IS strategy. Table 5.3 shows the response from the strategic staff by banks.

Table 5.3: Components of IS Strategy by Banks

Ns = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IS Manual	-	-	6	100.0	-	-	5	100.0	5	100.0	5	100.0
IS Training	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0
IS Formulation	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0
IS Implementation	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0
IS Monitoring	-	-	6	100.0	-	-	-	-	5	100.0	5	100.0
IS Control	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

Any structured IS strategy must have IS Training, IS Formulation, IS Implementation, IS Monitoring, and IS Control. In the same way, any documented IS strategy has a manual. It could be inferred from the above table that, IS monitoring was absent in three banks. This suggests that some of the banks do not monitor their IS strategy to satisfaction. All the foreign banks have IS manuals in the IS strategy but only one of the local banks (Bank B) has IS manual in the IS strategy. All the foreign banks (Bank D, Bank E, and Bank F) have all the components of IS strategy except Bank D which does not have IS monitoring. Only one of the local banks (Bank B) has all the components of IS. The remaining two banks (Bank A and Bank C) do not have IS manual and IS monitoring in the IS strategy. Both the foreign and the local banks have IS training, IS formulation and implementation, and IS control in the IS strategy. Only three of the banks (Bank B, Bank E, and Bank F) have all the components present in the IS strategy.

Wilson (1999), found out that, the IS strategy was said to be a ‘formal, documented part of business strategy’ by fewer than half of those claiming to have a strategy. He concluded that, the strategy should be formally documented, should be initiated by the Board, monitored by planned reviews, and should base information provision on key indicators, critical success factors, or on a detailed analysis of management information needs. According to a study conducted by Chen et al., (2010), IS strategy is a term routinely used among organizations, but its meaning is not clearly articulated. Davis (2000) states that there are multiple components collectively addressed by an information system strategy which includes the IT infrastructure, data, software applications, and IT personnel. Other research indicates that the information system strategy must also address the planning, design, and implementation of the systems, themselves (Davis, 2000). Somewhere between these two ideologies, it appears that the information system strategy must not only address the technical side, but the business process aspects of information systems, as well.

5.3.2. Types of Business Strategy

Every business has a philosophical strategy that it drives on. Miles and Snow (2007), classify firms within a given industry into four groups, i.e. defenders, prospectors, analyzers and reactors, depending on how a firm responds to the three major problems facing the firm (entrepreneurial, engineering, and administrative problems). Defenders have a limited range of products and focus on efficiency and process improvement; Prospectors have a broad market/product domain and tend to lead change in the industry; Analyzers fall between the above two groups and are likely to follow a second-but-better strategy; Reactors have no consistent strategy and they merely respond passively to

environment pressure. IS strategic issues are more synonymous to strategic staff, so they were asked to indicate the type of business strategy that the bank is deploying. The analysis of the responses by banks is presented in Table 5.4.

Table 5.4: Responses on Business Strategy by Banks

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Prospector	6	100.0	-	-	-	-	-	-	5	100.0	5	100.0
Analyzer	-	-	6	100.0	-	-	5	100.0	-	-	-	-
Defender	-	-	-	-	5	100.0	-	-	-	-	-	-
Reactor	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

Banks A, B and C constitute the local banks whilst Banks D, E and F constitute the foreign banks. Two of the foreign banks (Bank E and Bank F) use prospector business strategy meaning that they have a broad market/product domain and tend to lead changes in the industry. The third foreign bank (Bank D) uses analyzer business strategy which is a second but better strategy. It is noticeable that, none of the foreign banks use the defender and reactor business strategy. All respondents for each of the local banks indicated that the bank uses one strategy. One of the local banks (Bank A) uses prospect business strategy. Another bank uses the analyzer business strategy whilst the third bank uses defender business strategy meaning that they have a limited range of products and focus on efficiency and process improvement. The absence of a reactor business strategy

suggests that the banks have consistent business strategy. In effect, Bank A, Bank E and Bank F use the same prospector business strategy whilst Bank B and Bank D also use the same analyzer business strategy. Bank C is the only bank that uses defender business strategy.

5.3.3 Competitive Advantage of Information Systems

A company is said to have a competitive advantage over its rivals when its profitability is greater than the average profitability of all other companies competing for the same set of customers. It can also be said that, competitive advantage occurs when an organization acquires or develops an attribute or combination of attributes that allows it to outperform its competitors. Information technology has become such a prominent part of the modern business world that it can also contribute to competitive advantage by outperforming competitors with regard to internet presence. For this reason, the strategic staff respondents were asked to give out sale values and profit margins for the past three years. After analyzing these figures it came to light that the IS strategy of the banks (both foreign and local) is being used competitively and yielding results. Many successful financial institutions have clearly demonstrated that information systems and technologies can be a powerful competitive weapon that can be used to capture market share, improve customer service, reduce operating costs, and create new products and services.

5.3.4 Types of Competitive Strategies

Different banks use different competitive strategies in order to survive the competition. A firm's relative position within its industry determines whether a firm's profitability is

above or below the industry average. The fundamental basis of above average profitability in the long run is sustainable competitive advantage. There are three basic types of competitive advantage a firm can possess: cost leadership, differentiation, and generic. In cost leadership, a firm sets out to become the low cost producer in its industry. In a differentiation strategy a firm seeks to be unique in its industry along some dimensions that are widely valued by buyers. It selects one or more attributes that many buyers in an industry perceive as important, and uniquely positions itself to meet those needs. It is rewarded for its uniqueness with a premium price. The generic strategy of focus rests on the choice of a narrow competitive scope within an industry. Then strategic staff respondents were asked to indicate the type of competitive strategy that the bank uses. The researcher represents the responses of the strategic staff by banks in Table 5.5 below.

Table 5.5: Responses on Competitive Strategy by Banks

Ns = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Cost leadership	5	50.0	5	50.0	4	80.0	-	-	-	-	-	-
Differentiation	1	16.7	1	16.7	1	20.0	5	100.0	5	100.0	5	100.0
Generic	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

Out of the three competitive strategies, Bank D, Bank E, and Bank F only use differentiation strategy. These banks again constitute the foreign banks. All the local banks; Bank A, Bank B and Bank C use a combination of cost leadership, and differentiation strategy.

5.3.5 IS Strategy Alignment to Business Strategy

Alignment between business strategy and IS strategy is widely believed to improve business performance. Information system strategy is a subset of the overall business strategy and the two must be in harmony. Information system strategy must always be aligned to the business strategy. When information system strategy is aligned with the business strategy, it is apparent and widely accepted that the system has an important role in achieving business's goals. The organization's members have an incentive to ensure the system's successful implementation. Considering this alignment, both the strategic and the operational staff were asked to indicate the level of IS strategy alignment with business strategy. For the sake of clarity, the researcher decided to present the responses of the strategic staff by banks in Table 5.7. The researcher also analyzed all the responses from the strategic and operational staff and presents the responses in Table 5.6 to bring out the general alignment of the banks.

Table 5.6: Responses on Alignment of Information System Strategy by Business Strategy

Ns = 32 No = 216	Strategic Staff		Operational Staff	
	Frequency	Percent	Frequency	Percent
Well Aligned	32	100.0	186	86.2
Semi Aligned	-	-	30	13.8
No Alignment	-	-	-	-
Total	32	100.0	216	100.0

Source: Field data, 2013

It is obvious from the operational staff perspective that, most of the banks have their IS strategy well aligned to their business strategy even though 30 (13.83%) of the operational staff stated semi alignment.

Table 5.7: Responses on Alignment of Information System Strategy by banks

Ns = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Well Aligned	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Semi Aligned	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

It is obvious from the above table that, all of the banks have their IS strategy well aligned to their business strategy. All the foreign banks (Bank D, Bank E, and Bank F) and the local banks (Bank A, Bank B, and Bank C) have IS strategy fully aligned to the business strategy. The potential for using information technology to affect the competitive position of a firm has served to highlight the importance of effective information systems planning (Henderson et al., 2012). As the criticality of effectively linking the strategic IS plan to the strategic business plan has increased, the need to better understand the nature of strategic planning, in general, and strategic IS planning, in particular, has also increased.

5.3.6 Concept of IS Strategy Typology

A typology of IS strategy has recently emerged in the literature in which IS strategy is categorized into three types: Innovative, Conservative, and Undefined. Swanson and Ramiller (2004) argue that a mindful organization addresses IS innovation based on a grounded understanding of its own specific organizational situation. Consequently, mindful organizations are more likely to reach a shared organizational perspective and the strategy they pursue is more likely to have meaningful implications to organizational outcomes. In contrast, an organization with an undefined IS strategy, by definition, appears to be representative of a “mindless” organization since this type of organization has an undefined and/or inconsistent IS strategy. It is improbable that a mindless organization would consistently outperform its competitors. It was for this reason that the strategic staff were asked to indicate the type of IS strategy typology they have adopted. The responses are analyzed by banks in Table 5.8.

Table 5.8: Information Systems Strategy Typology by Banks

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IS Innovator	3	50.0	3	50.0	-	-	5	100.0	5	100.0	5	100.0
IS Conservative	3	50.0	3	50.0	5	100.0	-	-	-	-	-	-
Undefined	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

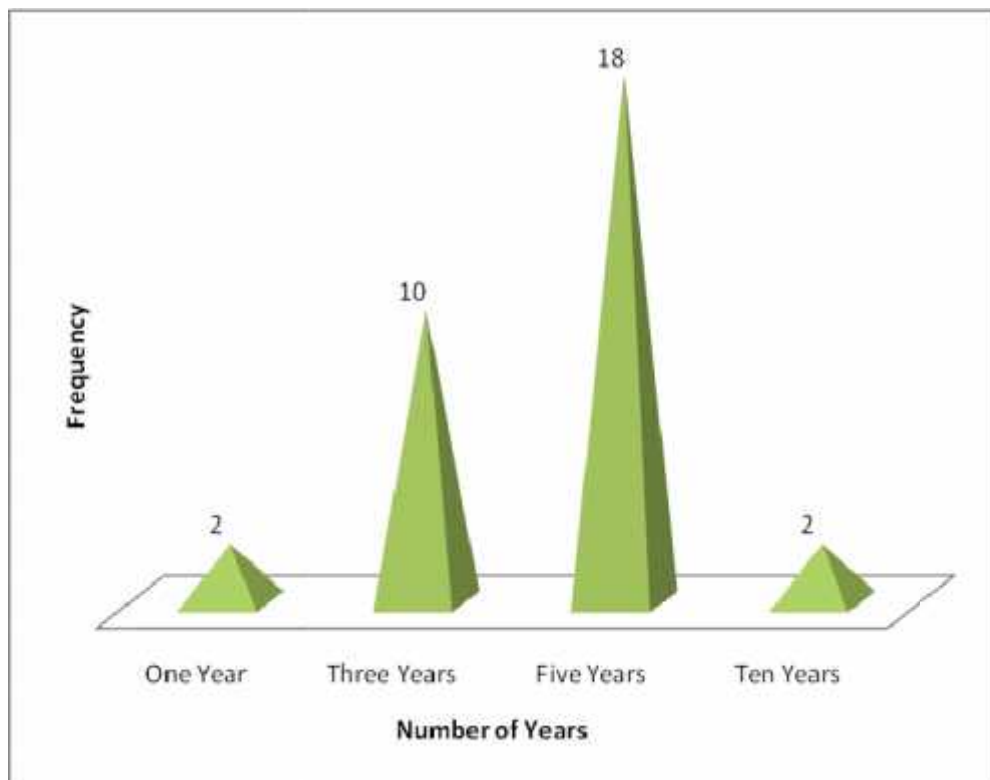
Source: Field data, 2013

All the banks do not use the Undefined IS strategy typology. From the above table, all the foreign banks (Bank D, Bank E, and Bank F) use IS Innovator strategy typology. For the local banks, only two banks (Bank A and Bank B) use IS Innovator strategy typology. It is worth noting that in addition to the IS Innovator strategy typology deployed by the local banks they also use IS Conservative strategy typology. Bank C is the only bank that uses IS Conservative strategy typology alone. The presence of inherent “first-mover” benefits provides the basis for the sustainability of an IT advantage. Inevitably, the technology itself can be imitated. But given sufficient time before followers catch up, a firm’s leadership position may allow it to use the technology to unique advantage. In addition, innovators may achieve advantage that continues even after the technology is widely diffused.

5.3.7 Time Frame of Strategy

Every strategy must be reviewed with time. This is because of the changing scene of life. The time frame may span from one year to ten years. The strategic staff normally review the IS strategy. It was, therefore, important to find out the time frame for the IS strategy. To find out the general time frame for the IS strategy, the researcher analyzed all the responses to produce Figure 5.3.

Figure 5.3: IS Strategy Time Frame



Source: Field data, 2013

Most of the information system strategies according to the respondents have a time span of five years. This implies that the IS strategy is reviewed every five years. Ten (31.3%)

of the respondents indicated that the IS strategy is reviewed every three years. Relatively small number of 2 (6.3%) of the respondents indicated that the IS strategy is reviewed every year and every ten years.

5.3.8 Human Resource Requirement

In many organizations, IS and Human Resources Management (HRM) have become full strategic partners at the governance level. The strategic potential of HRM is well recognized as effective HRM practices support business goals and objectives. (Noe et al., 2010; Wofford, 2002). Human resource is the set of individuals who make up the workforce of an organization, business sector or an economy. In any information system environment, people play a very pivotal role. In order to formulate and implement the information system strategy, the human resource must be taken into consideration. If the right people are not used, it may affect the formulation as well as the implementation of the IS strategy. For this reason, the strategic staff respondents were asked to indicate the level of quality of their human resource to achieve their goals in the next five years. The analysis of the responses by banks is presented in Table 5.9 below.

Table 5.9: Responses on Quality of Human Resource Quality by Banks

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Low	-	-	-	-	1	20.0	-	-	-	-	-	-
Moderate	-	-	2	33.3	-	-	-	-	-	-	-	-
High	6	100.0	4	66.7	4	80.0	5	100.0	5	100.0	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

All the respondents from the foreign banks (Bank D, Bank E, and Bank F) indicated high human resource quality. Four respondents from each of Banks B and C indicated that the bank has high human resource quality. One (20.0%) respondent from Bank C indicated that the banks have low human resource quality whilst 2 (33.3%) of the respondents from Bank B also indicated that the human resource quality is moderate. The quality of staff can affect the formulation and implementation of information system strategy. Low quality staff can affect the information system strategy negatively whilst high quality staff can affect the information system strategy positively. Some of the banks also poach experienced staff from other banks.

5.3.9 Financial Resource Requirement

Strategic art is the skillful balancing of ends (objectives), ways (courses of action), and means (resources) (Chen et al., 2010). The financial resources are the means by which the bank can acquire the technology. The financial strength determines whether the bank is in the position to acquire the technology or not. To find out whether the bank is in

position to acquire new technology, the strategic staff respondents were asked to indicate the financial position of the bank. The responses are presented in Table 5.10 and analyzed on bank bases.

Table 5.10: Responses on the Strategic Staff on Financial Position by Banks

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Moderate	-	-	-	-	2	40.0	-	-	-	-	-	-
High	6	100.0	6	100.0	3	60.0	5	100.0	5	100.0	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

Five out of the six banks have high financial position. Bank D, Bank E, and Bank F which constitute the foreign banks all have high financial positions. Two of the local banks (Bank A and Bank B) also recorded high financial performance. Bank C is the only local bank that did not record hundred percent high financial positions. For this bank, some of the respondents stated moderate whilst the remaining 3 (60.0%) also indicated high financial position.

5.3.10 Information System Infrastructure

Infrastructure is basic physical and organizational structures needed for the operation of an enterprise or the services and facilities necessary for an economy to function (Sullivan et al., 2003). It can be generally defined as the set of interconnected structural elements that provide framework supporting an entire structure of development. The

information system infrastructure is very important when it comes to implementation. For this reason, the operational staff respondents were asked to indicate the level of IS infrastructure in the bank. Table 5.11 presents the responses from the operational staff.

Table 5.11: Levels of Information System Infrastructure by Banks

No = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Low	-	-	-	-	3	8.8	-	-	-	-	-	-
Moderate	5	11.6	5	13.5	6	17.7	-	-	-	-	-	-
High	38	88.4	32	86.5	25	73.5	30	100.0	37	100.0	35	100.0
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

Information technology (IT) infrastructure has been identified in recent years in some businesses as having a critical impact on the firm's ability to use IT competitively. Although a flexible infrastructure is considered highly valuable under certain circumstances, it is difficult to plan and to measure because there is no common, operational definition (Duncan, 1995). Relatively few of the operational staff 3 (1.4%) described the level of IS Infrastructure as low. Most of the operational staff 197 (91.2%) indicated that, the level of IS Infrastructure is high. This opinion is also shared by most of the strategic staff 31 (96.9%). It could be inferred from the above table that, most of the banks have a high information system infrastructure to implement their IS strategy. The foreign banks (Bank D, Bank E, and Bank F) have a very high IT infrastructure to implement the IS strategy whilst the local banks (Bank A, Bank B, and Bank C) do not

have that high infrastructure for the IS strategy implementation. It is worth noting that some of the respondents from Bank C indicated that the bank IS infrastructure is low. Only the local banks (Bank A, Bank B, and Bank C) indicated that the banks have moderate IS infrastructure. The level of IS infrastructure also affects the success of IS implementation.

5.3.11 Improved Technology

Technology is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function (www.eHow.com). Information technology has become a necessary component in any organization with increasing strategic significance. All the banks use technology one way or the other. Therefore, new technology could be bought to replace obsolete technology or the existing technology could be upgraded. There are different types of technology used in the banking sector to achieve their goals. To find out how the respondents expect to achieve the goals of the bank in the next five years, the strategic staff respondents were asked to indicate the type of technology that the bank would need. From the responses, all the respondents from the foreign banks indicated that, the technology needed by the bank to achieve its goals in the next five years are improved network infrastructure, more servers and work stations. The respondents from the local banks (Bank A, Bank B, and Bank C) also indicated that the banks need improved banking software and IT outsourcing (to outsource some of the banking operations). The technology needed by the foreign banks is completely different from that of the local banks to achieve their respective goals.

5.3.12 Willingness of Staff to Use New Technology

New technology is invading our lives at an ever-increasing rate. While many people find new technology exciting and can't wait to get involved in it, some people may feel intimidated by it, or feel that it only complicates their lives and puts more stress on them. Some staff find it difficult to change from a manual system to a computerized system. Changes are difficult to make, therefore it was important to find out whether the staff, both strategic and operational are willing to use a new technology. Analyzing the responses from the operational staff, 10 (4.6%) out of 216 respondents stated that, they are not willing to use a new technology since they are already used to the existing technology. Twenty (9.3%) respondents also indicated that they are indifferent using a new technology, and 186 (86.1%) respondents affirmed their willingness to use a new technology. For the strategic staff, the responses were not different, 2 (6.3%) out of 32 respondents were indifferent. This suggests that, even at the strategic level not all staff are willing to use new technology whilst 30 (93.8%) respondents affirmed their willingness of using a new technology. Karimi at al., (1996) found out that the degree of IT integration within firms is a primary determinant of firms' willingness to use IT as part of their strategic response to globalization.

Table 5.12: Responses on Work Experience by Willingness of Staff to Use New Technology

No = 216			Willingness of Staff to use New Technology			Total
			Not Willing	Somehow Willing	Most Willing	
Working Experience	< 1 Year	Count	10	5	0	15
		Expected Count	0.7	1.4	12.9	15.0
	1 – 5 Years	Count	0	15	65	80
		Expected Count	3.7	7.4	68.9	80.0
	6 – 10 Years	Count	0	0	100	100
		Expected Count	4.6	9.3	86.1	100.0
	11 – 15 Years	Count	0	0	16	16
		Expected Count	0.7	1.5	13.8	16.0
	16 – 20 Years	Count	0	0	5	5
		Expected Count	0.2	0.5	4.3	5.0
	Total	Count	10	20	186	216
		Expected Count	10.0	20.0	186.0	216.0

No = 216 Chi Square = 178.222 DF = 8 $p = 0.000$ COR = 0.569

Nf = 102 Chi Square = 73.578 DF = 4 $p = 0.000$ COR = 0.710

Nl = 114 Chi Square = 9.194 DF = 4 $p = 0.056$ COR = 0.245

Source: Field data, 2013

Change is difficult but it is also inevitable. To find out the relationship between work experience and the willingness to use a new technology, a cross tabulation of the two variables was constructed. Even though cross tabulation could be done for the responses of both strategic and operational staff, the researcher chose to present that of the operational staff (see Table 5.12) for lack of space. As the number of years increase, the willingness to use new technology also increases. Of the fifteen operational staff with

less than one year work experience, majority (10) of the respondents indicated their unwillingness to use a new technology. Since the software (SPSS) has the capability of testing for the relationship between the two variables, this was requested for. The statistics at the bottom of Table 5.12 indicate that, there exists a relationship between work experience and willingness to use a new technology. As can be seen from the correlation coefficient, this relationship is positive and quite strong.

From the statistics at the bottom of Table 5.12 for the foreign banks ($N_f = 102$, Chi Square = 73.578, $DF = 4$, $p = 0.000$, and $COR = 0.710$), there exists a relationship between work experience and willingness to use a new technology. As can be seen from the correlation coefficient, this relationship is positive and quite strong. For the local banks ($N_l = 114$, Chi Square = 9.194, $DF = 4$, $p = 0.056$, and $COR = 0.245$) there also exists a relationship between work experience and willingness to use a new technology but this relationship is not strong. Comparing these two statistics, it could be suggested that the foreign banks (Bank D, Bank E, and Bank F) staff are more willing to use new technology than the local banks (Bank A, Bank B, and Bank C) staff.

5.4 Staff Participation and SISP Success Predictors

To every strategy there are key features and this section established the key success predictors of the IS strategy of the bank. This section also found out among others the staff that are involved in the formulation and the implementation of the IS strategy.

5.4.1 Staff Participation in the IS Strategy Formulation

The formulation and implementation of IS strategy are very important phases in any IS strategic cycle. The people involved are equally important as the process. Basic strategic planning is comprised of several components that build upon the previous piece of the plan, and operates much like a flow chart. However, prior to embarking on this process, it is important to consider the players involved. The caliber of people involved can have a great impact on the formulation of the IS Strategy. For this reason, the strategic staff respondents were asked to identify the staff participation in IS strategy formulation. The strategic staff responses are presented in Table 5.13.

Table 5.13: Staff Participation in the IS Strategy Formulation

Ns = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Mgt Team	4	66.7	4	66.7	3	60.0	-	-	-	-	-	-
IT Depart	2	33.3	2	33.3	2	40.0	-	-	-	-	-	-
Tech Gp	-	-	-	-	-	-	5	100.0	5	100.0	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

From the above table, there are three participants in IS strategy formulation. The local banks concentrate on management team and IT department for the formulation of IS strategy. The story is different for that of the foreign banks. For the foreign banks they solely depend on Technology Group for the formulation of IS strategy. The Technology

Group is a group within each of the foreign banks that has the responsibility of formulating IS strategy for the respective banks. It is also important to note that, outsourcing and all staff are not considered in the formulation process. Wilson (1999) also states that, 6.4 percent of the respondents claim that ISS is a function of individual department, which is at odds with the organization-wide focus. Top management is responsible for the development and implementation of IS strategy since information systems can have a significant strategic impact on an organization's performance (Clemons and McFarlan, 1986). Top management also needs to take responsibility for fostering information systems with the potential to provide this impact.

5.4.2 Strategic Information System Planning (SISP) Success Predictors

Strategy formulation involves designing and developing the company's strategies. Determining company's strengths aids in the formulation of strategies. Strategy formulation is generally broken down into three organizational levels: operational, competitive, and corporate. The worryingly low implementation success rates lead to the realization that SISP is a significantly more complex process that has to address not only the relevant technological issues but also organizational, behavioural and managerial aspects. A successfully implemented SISP process does not end with the implementation of a technologically superior IS, but also encompasses appropriate organizational changes, business process reengineering and organizational learning for a more productive use of IT. It is especially important that the capabilities of the SISP process constantly improve to reflect changing technology and business related developments. For this reason, the operational staff respondents were asked to identify the important SISP success factors. The responses are analyzed and presented in Table 5.14.

Table 5.14: Responses of SISP Success Factors by Operational Staff

No = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Top Mgt Involvement	-	-	-	-	-	-	6	20.0	11	29.7	10	28.6
Staff Training and Involve	12	27.9	6	16.2	9	26.5	-	-	-	-	-	-
Resources	18	41.9	21	56.8	18	52.9	14	46.7	15	40.5	15	42.9
IS Strategy Alignment	13	30.2	10	27.0	7	20.6	-	-	-	-	-	-
Org and Tech Changes	-	-	-	-	-	-	10	33.3	11	29.7	10	28.5
Control and Evaluation	-	-	-	-	-	-	-	-	-	-	-	-
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

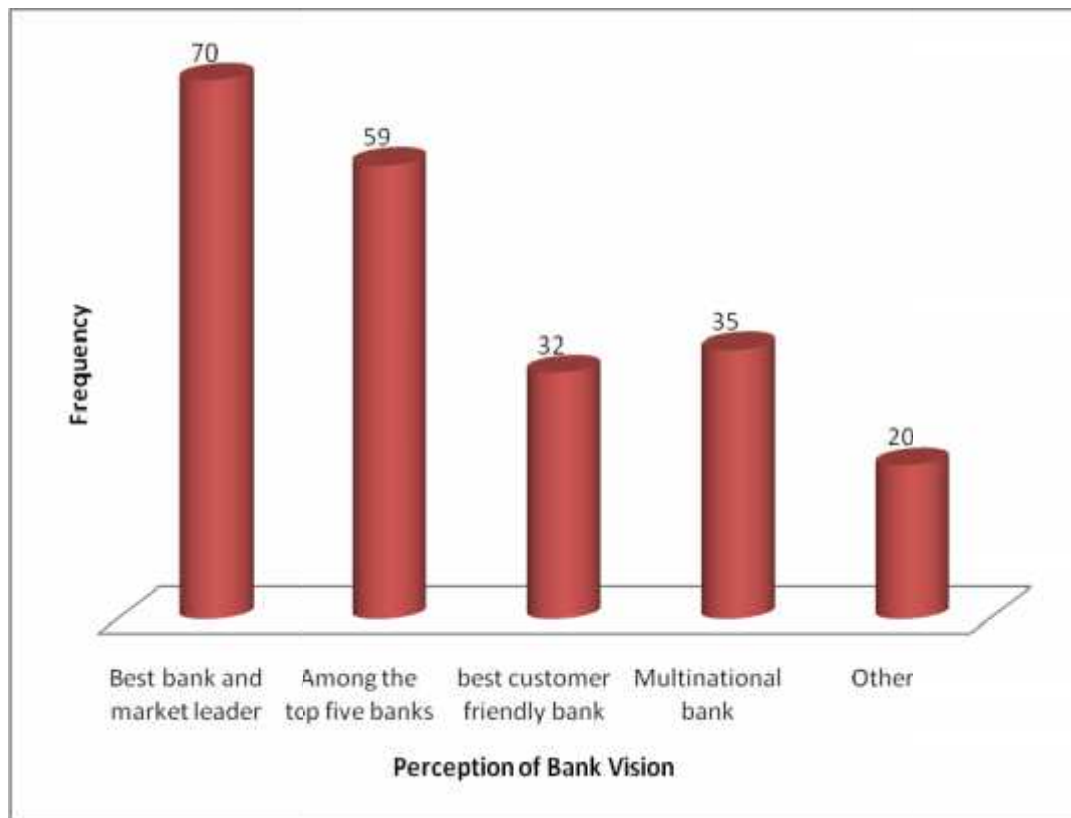
Source: Field data, 2013

Different banks perceived SISP success predictors differently. This is also seen in the origin of the banks. For the local banks (Bank A, Bank B, and Bank C), the most important SISP success factors are resources, IS alignment to the business strategy and staff training and staff involvement. The foreign banks (Bank D, Bank E, and Bank F) also indicated that, the most important SISP success factors are resources, organizational and technological changes and top management involvement. It could be inferred from the above table that, according to the respondents, the most important SISP success factors are resources, organizational and technological changes, IS alignment to the

business strategy, top management involvement, and staff training and staff involvement. It is worth noting that none of the banks considered control and evaluation as an important factor. All the banks, both local and foreign, recognize the importance of resources to the success of SISP, since majority of the respondents indicated that. In response to the same question, the strategic staff also responded in a similar manner. Segars and Grover (1998) researched into Strategic Information Systems Planning Success and concluded that, strategic information systems planning (SISP) requires significant outlays of increasingly scarce human and financial resources.

5.4.3 Staff Perception of Bank Vision

A vision statement is sometimes called a picture of the company in the future but it's so much more than that. A vision statement is an inspiration, framework for all strategic planning. Any business vision has core values, core purpose and visionary goals. To know the perception of staff in terms of vision, both the strategic and the operational staff were asked to indicate their individual vision for the bank. Figure 5.4 shows the responses from the operational staff.

Figure 5.4: Operational Staff Perception of Bank Vision

Source: Field data, 2013

Most of the operational staff postulated that their vision for the bank is to be the best and market leader in the banking sector. Another group of staff also stated that their vision is to see the bank among the top five banks in the country. Thirty five (16.2%) of the operational staff respondents indicated that their vision for the bank is to become a multinational bank. Twenty (9.3%) respondents stated that, their vision for the bank is to increase the infrastructure base, human resource concentration and increase profit margins.

From the strategic staff, 17 (53.1%) of the respondents stated that their vision for the bank is to become a world-class bank, be among the top three performing banks in the country, retain its position in the Club 100 and become the best international bank. Fifteen (46.9%) of the respondents from the strategic staff also stated that their vision for the bank is to balance the market orientation with a development focus on agriculture as well as becoming very competitive in product delivery and pricing in the country. They also added that their vision is to be a bank with quality assets (loans) and non-performing ratio of less than 10% and profitable bank in the country. The vision is also to be a bank in the next five years as delivering superior customer service and meeting the demand of regulators.

The respondents went further to indicate how these visions could be achieved. The staff vision could be achieved by:

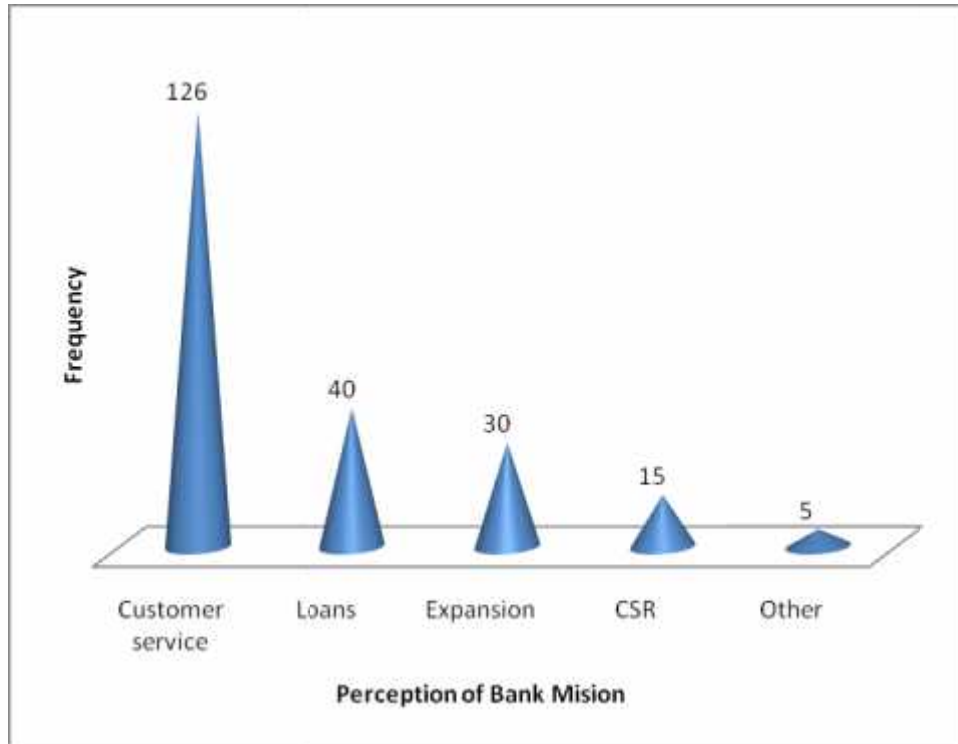
- ✓ The improvement in both internal and external processes of the bank and Investment in ICT infrastructure and human resources must be a cardinal focus for the achievement of this vision.
- ✓ Raising customer's loyalty and sustainable relationships as well as effective processes systems and asset utilization
- ✓ Improvement in corporate governance and sustainable development and leveraging IT as strategic tool and development of strategic competencies, leadership capabilities and performance oriented culture
- ✓ Developing innovative and integrated products and services to increase revenue significantly and effective loan appraisal and monitoring and adhering to bank of

Ghana processes and strengthening best practices in the bank's operations and also using e-channels to roll out electronic banking products

- ✓ Technological improvement, brand differentiation and quality services to customers and involving all the units and departments in the implementation of all strategies and identifying all untapped financial potentials in the banking industry.
- ✓ Training staff, engaging stakeholders in decision making and constant communication of the vision and following the strategy at the business level, departmental level and unit level.
- ✓ Staff focus, drive and leadership of the staff as well as setting targets on this strategy as job objectives and developing the human resources of the bank and improving the IT infrastructure as well as delivering efficient customer service.

5.4.4 Perception of Bank Staff Mission

A mission statement is a statement of the purpose of a company or organization, its reason for existing. A mission statement is a brief description of a company's fundamental purpose. It answers the question, "Why do we exist?" The mission statement articulates the company's purpose both for those in the organization and for the public. To know the perception of staff in terms of mission, both the strategic and the operational staff were asked to indicate their individual missions for the bank. Figure 5.5 shows the responses from the operational staff.

Figure 5.5: Banks Mission of Operational Staff

Source: Field data, 2013

Out of the 216 respondents, 126 (58.4%) avowed that their mission for the bank is to provide quality customer service. Customers in modern times have become a very important entity in the banking industry. It was not in any doubt that more than half of the respondents indicated that the bank exists for customer service. All the responses seek to suggest that, the staff have individual mission for the bank. From the strategic staff perspective, 22 (68.7%) of the respondents indicated that their mission for the bank is service quality, customer satisfaction and growing strong customer-centric bank, providing profitable and diversified financial services for a sustained contribution to agricultural development and wealth creation. They also added that, their mission is in line with provision of efficient banking services using efficient technology for the

benefit of Ghana. Ten (31.3%) of the respondents also indicated that their mission lies in development, universal, and retail banking and also to be the right partner in the financial sector.

5.5 Barriers to Strategy

This section deals with the challenges that are associated with the formulation and implementation of an IS strategy as well as environmental scanning and the way forward as well as issues of environmental scanning.

5.5.1 Environmental Scanning

Environmental analysis (scanning or appraisal) is very important to modern organization. It is used by corporate planners to monitor the economic factors, competition, government legislation, suppliers, technology and market setting to determine the opportunities for and threats to the enterprise. Organizations scan the environment in order to understand external forces of change so that they may develop effective responses which secure or improve their position in the future. The importance of environmental analysis lies in its usefulness for evaluating the present strategy, setting strategic objectives, and formulating future strategies. Strategic decisions are synonymous with the strategic staff. For this reason, the strategic staff were asked to identify the factors that impact on IS strategy and subsequently, whether the factors could be used to achieve strategic fit. The responses are presented in Table 5.15, Table 5.16 and Table 5.17.

Table 5.15: One-Sample Statistics

Bank	Environmental Scanning	N	Mean	Std. Deviation	Std. Error Mean
Foreign banks	Environmental scanning deployment	15	1.07	0.258	0.067
	Scanning helps to achieve strategic fit	15	1.13	0.52	0.091
Local banks	Environmental scanning deployment	17	1.12	0.332	0.81
	Scanning helps to achieve strategic fit	17	1.24	0.437	0.106

Source: Field data, 2013

The above table shows the mean, standard deviation and the standard error of the environmental scanning deployment and scanning as a strategic fit for both the foreign banks and the local banks. The mean response for the foreign banks is 1.07 and that of the local bank is 1.12 concerning the environmental scanning deployment. The standard deviation for the foreign banks is 0.258 and that of the local banks is 0.332. The smaller standard deviation of the foreign banks is an indication that the foreign banks deploy environmental scanning more than the local banks. This position is different when it comes to the assertion that, scanning helps to achieve strategic fit. For this, the standard deviation for the foreign banks is 0.52 which is more than that of the local banks (0.437). This implies that, the local banks believe that scanning helps to achieve strategic fit more than the foreign banks.

Table 5.16: One-Sample Test

	Test Value = 0						
	Responses	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Foreign banks	Environmental scanning deployment	16.000	14	0.000	1.067	0.92	1.21
	Scanning helps to achieve strategic fit	12.475	14	0.000	1.133	0.94	1.33
Local banks	Environmental scanning deployment	13.876	16	0.000	1.118	0.95	1.29
	Scanning helps to achieve strategic fit	11.649	16	0.000	1.235	1.01	1.46

Source: Field data, 2013

This is a two-tailed test with a degree of freedom (DF = n-1). The statistical value for 0.05 at DF= 14, and 16 give 2.145 and 2.120 respectively. With the foreign banks, the calculated t-value, $t_f = 16.000$ and for the local banks the calculated t-value, $t_l = 13.876$. This implies that, both the foreign banks and the local banks deploy environmental scanning in IS strategy formulation. It could be inferred from the above table that, the foreign banks deploy more environmental scanning in IS strategy formulation than the local banks. Again, the significant t-values ($t_f = 12.475$ and $t_l = 11.649$) from both the foreign and local banks are enough to conclude that environmental scanning helps to achieve strategic fix. It is noticeable from the above table that, this assertion weights more to the foreign banks than the local banks.

Table 5.17: Correlation of Environmental Factors

N = 32		Technological	Political	Economic	Socio-Cultural
Technological	Pearson Correlation	1	.266	.558**	.339
	Sig. (2-tailed)		.141	.001	.057
	N	32	32	32	32
Political	Pearson Correlation	.266	1	.246	.296
	Sig. (2-tailed)	.141		.175	.100
	N	32	32	32	32
Economic	Pearson Correlation	.558**	.246	1	.348
	Sig. (2-tailed)	.001	.175		.051
	N	32	32	32	32
Socio-Cultural	Pearson Correlation	.339	.296	.348	1
	Sig. (2-tailed)	.057	.100	.051	
	N	32	32	32	32

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Field data, 2013

The above table indicates the degree of association between the perceived uncertainties in each of the environmental sector – technological, regulatory, economic and socio-cultural and the frequency with which organization scan the environment. Most of the correlations are significant at 0.05 and 0.01 significant level. The analysis of the trends and influences on strategy which emanate from the macro-environmental context of the organization is important to the successes of strategy. The assumption of a link between an organization's strategic profile and its external context is consistent with the principles of strategy paradigm (Venkatraman and Prescott, 1990). From the above table, technology is ranked first among all the factors. This is an indication that technology (COR = 1.000) has a great toll on IS strategy. Economic factor (COR =

0.558) ranks second to technology. The third factor is the socio-cultural (COR = 0.339). The least factor that impacts on IS strategy is political (0.266). The respondents believe that political factor has less impact on IS strategy. This is not surprising because of the peaceful transition of political power in Ghana. The technological and economic sectors of Ghana's environment have the greatest impact on IS strategy with the technological factor having a greater impact than the economic.

5.5.2 Barriers to the Formulation of IS Strategy

Strategic information systems planning (SISP) is a continuous learning process, encompassing the IS/IT strategy formulation and implementation activities, in which various stakeholders tightly cooperate to assure maximum utilization of IT to gain sustainable economic success of the enterprise. To know the barriers that intimidate strategy, the operational staff were asked to state the barriers to the formulation of IS strategy. The responses of the operational staff by banks are presented in Table 5.18.

Table 5.18: Responses on Barriers to IS Strategy Formulation by Banks

No = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lack of Policy	27	62.8	-	-	3	8.8	-	-	-	-	-	-
Lack of Staff Involvement	-	-	-	-	-	-	17	56.7	25	67.6	23	65.7
Lack of Resources	-	-	25	67.6	25	73.6	-	-	-	-	-	-
Org. Culture	8	18.6	6	16.2	3	8.8	-	-	-	-	-	-
Uncertainty	8	18.6	6	16.2	3	8.8	13	43.3	12	32.4	12	34.3
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

The major barriers to IS strategy formulation for the foreign banks (Bank D, Bank E, and Bank F) are lack of staff involvement and uncertainties whilst with the local banks (Bank A, Bank B, and Bank C); the barriers are lack of policy, lack of resources, organizational culture, and uncertainties. The only barrier that affects all the banks is the uncertainty. Bank A has the following barriers, lack of policy, organizational culture, and uncertainty. The barriers to IS strategy formulation according to Bank B are lack of resources, organizational culture, and uncertainties. The barriers that affect information systems strategy formulation in Bank C are lack of policy, lack of resources, organizational culture, and uncertainties. The responses from the strategic staff are also similar to that of the operational staff.

Mintzberg (1987) suggests that strategy formation is a craft, rather than a science, and the process of crafting a strategy will involve negotiating various barriers. The barriers suggested include those that affect any innovation, such as the hostile attitudes of management levels in a company, and the problems of recruiting appropriate staff. Wilson (1999) on the other hand states that, from the various ranking, the difficulties in recruiting appropriate staff, the lack of resources to engage in user education, the nature of the business, and the difficulties of measuring benefits, emerge as the key features of IT strategies that are likely to cause problems for companies. Min et al., (2000) also identified four general SISP methodology problems: lack of support for Information Technology Architecture, under-emphasis on information technology opportunities, duration of SISP, and lack of support for business process reengineering all associated with IS Strategy formulation.

Barriers to the formulation of the IS strategy according to the operational staff could be overcome by ensuring the following:

- ✓ There must be sufficient funds for IS operations and consultants must be used for business process re-engineering and enterprise resource planning.
- ✓ Funding should be made available before the financial year ends.
- ✓ The Board and management must accept the IS strategy and the cost of the IT equipment and infrastructure must be low.
- ✓ Bank staff quickly imbibing IT and high patronage by customers.
- ✓ The bank must conform to the regulatory standards.
- ✓ Needs of the customers must be understood as well as the technology trend and business needs.

5.5.3 Information System Strategy Implementation

The selected strategy is implemented by means of programs, budgets, and procedures. Implementation involves organization of the firm's resources and motivation of the staff to achieve objectives. Properly implemented information systems have become an even more valuable strategic resource, one that any organization can use to improve its competitive advantage. To find the barriers to strategy, the operational staff respondents were asked to indicate what could obstruct the implementation of IS strategy. The researcher presents the responses of the operational staff by banks in Table 5.19.

Table 5.19: Responses on Barriers to IS Strategy Implementation by Banks

No = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lack of IT Training	21	48.8	-	-	6	17.6	-	-	-	-	-	-
Lack of Comm	-	-	-	-	-	-	22	73.3	26	70.3	27	77.1
Lack of Resources	-	-	25	67.6	18	52.9	-	-	-	-	-	-
Internal Factors	11	25.6	6	16.2	4	11.9	-	-	-	-	-	-
External Factors	11	25.6	6	16.2	6	17.6	8	26.7	11	29.7	8	22.9
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

The major barriers to IS strategy implementation for the foreign banks (Bank D, Bank E, and Bank F) are lack of communication and external factors whilst with the local banks (Bank A, Bank B, and Bank C), the barriers are lack of IT training, lack of resources, internal and external factors. One barrier that affects all the banks is the external factor. The lack of resources is the major barrier to the implementation of IS strategy for the local banks. Most of the time it could be as a result of lack of funds, lack of capable human force (humanware), or lack of appropriate technology. The internal and external factors sometimes impede the implementation of the IS strategy.

Lederer and Sethi (1988) undertook a similar study and concluded that, the two problems rated most severe were the difficulty in securing top management commitment for implementing the plan and the need for substantial further analysis in order to carry out the plan. Lederer and Sethi (1988) further suggest that the SISP methodologies may often produce satisfactory plans but that organizations lack the management commitment and control mechanisms to ensure that they follow the plans. The way in which strategy is implemented can have a significant impact on whether it will be successful. In a large company, those who implement the strategy are likely to be different people from those who formulated it. For this reason, care must be taken to communicate the strategy and the reasoning behind it. Otherwise, the implementation might not succeed if the strategy is misunderstood or if lower-level managers resist its implementation because they do not understand why the particular strategy was selected.

The barriers in the implementation of the IS strategy, according to the operational staff could be overcome by the following;

- ✓ Involving both the Board and top level management in the implementation.
- ✓ There must be more investment in IS infrastructure and decentralization of IS in the bank.
- ✓ Staff education must also be intensified in order to overcome the barriers in the implementation of IS strategy.
- ✓ By the upwards adjustment of the budget and increasing the human resource base in terms of technical expertise.
- ✓ Another solution is to involve more technology partners and to involve end-users in the implementation of the IS strategy.
- ✓ By outsourcing the skills and specializations that are not available in the Information Technology Department.

5.5.4 Success of Information System Strategy Implementation

The outcome of Information System Strategy Implementation is very cardinal to the monitoring and control of the strategy. Strategic information systems planning (SISP) is one of the important management issues. The use of Information Technology associated with proper planning would increase business success within the organization. SISP is considered to be the best mechanism that would support the organization to ensure that IT activities are attuned with those of the rest of the organizational needs. For the researcher to find the success level, both the strategic and the operational staff respondents were asked to indicate the bank's level of success. Both the strategic and the operational staff responses are akin, therefore, only the operational staff responses are used for the analysis. From the responses, 196 (90.8%) of the operational staff stated that, the Information System Strategy was successfully implemented and 20 (9.2%)

stated that, the implementation was somehow successful. The number recorded suggests that the information system strategy implementation is successful. CEO commitment enhances IT success by making resources available for implementation, integrating IT with business strategy and processes, and ensuring continuity in IT investments over time (Kettinger et al., 1994).

5.6 Logistic Regression Analysis

This logistic regression is to determine whether the time frame of the strategic plan, the IS strategy aligned to the business strategy and the participants of IS strategy formulation are functions of the business strategy. Any independent variable with a p-value greater than 0.05 is not significant and therefore cannot be used to explain the regression model.

Table 5.20: Regression Coefficients (Business Strategy)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.270	.373		-.723	.476
What time frame does your strategic plan covers?	.259	.166	.246	1.557	.131
How is your IS strategy aligned to your business strategy?	.302	.362	.100	.834	.412
The participants of IS strategy formulation?	.272	.069	.592	3.955	.000

R Square = 0.706 DR = 31 F = 22.465 P-Value = 0.000 STD Error = 0.425

Source: Field data, 2013

From the coefficient table and considering the standardized coefficients, the time frame for the strategic plan ($b=0.246$, $p=0.131$) is not significant. The IS strategy alignment with business strategic ($b=-0.100$, $p=0.412$) is also not significant in the regression model. The participants of IS strategy formulation ($b=0.592$, $p=0.000$) is significant in the regression model. From the model summary, 71 percent of the variation in the business strategy is accounted for by the model thus participants of IS strategy formulation account for 71 percent of the variation in the business strategy. Hence, the model is;

$$Y = -0.270 + 0.592 (\text{Participants of IS formulation})$$

The second logistic regression is to determine whether the types of competitive strategy, business strategy, IS strategy, and IS strategy typology are functions of the outcome of IS strategy implementation.

Table 5.21: Regression Coefficients (Outcome of IS Strategy)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.608	.348		1.749	.092
	What type of competitive strategy does your bank use?	-.030	.113	-.051	-.266	.792
	How would you describe your business strategy?	-.093	.122	-.234	-.760	.454
	Do you have Information System (IS) strategy in your bank?	.427	.261	.355	1.635	.114
	What is the concept of your IS strategy typology?	.173	.176	.282	.984	.334

R Square = 0.162 DR = 31 F = 1.302 P-Value = 0.294 STD Error = 0.291

Source: Field data, 2013

From the coefficient table, the type of competitive strategy ($b=-0.051$, $p=0.792$) is not significant to the regression model. The business strategy ($b=-0.234$, $p=0.454$) is not

significant. The IS strategy ($b=-0.355$, $p=0.114$) is also not significant in the regression model. The IS strategy typology ($b=0.282$, $p=0.334$) is not significant to the regression model. It is concluded from the table below that, the independent variables could not explain the dependent variable. From the model summary, 16 percent of the variation in the outcome of IS implementation is accounted for by the model thus the predictors account for 16 percent of outcome of IS implementation; meaning that the independent variables are not good predictors of outcome of IS implementation.

5.7 Benefits of IS Strategy

There are many benefits that accrue to a bank as a result of using IS strategy. The strategic staff gave the following benefits as the result of IS strategy. These benefits have been categorized into bank operations and performance, products and services, bank staff, and bank customers.

5.7.1 Bank Operations

- ✓ The banks have increased in size, profit margins, and market share.
- ✓ Information system has reduced the cost and time of doing business.
- ✓ Increased productivity and flow of information (communication).
- ✓ The bank has enhanced its processes and documentation.
- ✓ The banks' operations are more effective and efficient.

5.7.2 Products and Services

- ✓ The bank has efficient delivery of all products and services.
- ✓ Information system has enhanced the smooth selling of the bank's products and services.
- ✓ Unique products and services.

5.7.3 Bank Staff

- ✓ The information system has made the bank staff very efficient.
- ✓ The information system is reliable and it has improved the confidence of staff members.

5.7.4 Bank Customers

- ✓ Fast, efficient, and improved customer services.
- ✓ Enjoyment of innovation and new products and services.
- ✓ Increased accessibility in terms of internet banking, SMS and electronic platforms accessibility.
- ✓ Fast, convenient access to money and easy access to ATMs and banking facilities.
- ✓ Faster transaction processing, reduction in processing time and door step banking.
- ✓ Reached out to more customers.

5.8 Conclusion

This chapter digested the following issues: Information systems strategy and information systems assets, staff participation and success predictors and barriers to strategy. From the data analysis, all the foreign banks (Bank D, Bank E, and Bank F) and the local banks (Bank A, Bank B, and Bank C) have IS strategy fully aligned to the business strategy. The analysis also revealed that, the local banks concentrate on management team and IT department for the formulation of IS strategy whilst the foreign banks depend solely on Technology Group for the formulation of IS strategy. The major barrier to IS strategy formulation and implementation to both the foreign and local banks is resources. The next chapter considers the analysis of data and findings on aspects of electronic products and bank performance.

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CHAPTER SIX
ANALYSIS OF DATA AND FINDINGS ON ASPECTS
OF ELECTRONIC PRODUCTS AND BANK PERFORMANCE

6.1 Introduction

This chapter presents the analysis of data and findings on aspects of information systems from the data collected through questionnaire and the presentation of results as well as the discussion of the findings. It analyses the data in relation to the objectives of the study. Response rate (also known as completion rate or return rate) in survey research refers to the number of people who answered the survey divided by the number of people in the sample. For the bank customers, 1,352 copies of the questionnaire were administered. Out of the 1,352 copies, 720 (53.3%) copies of the questionnaire were completed and returned. The results have been presented in tables and charts showing frequencies, percentages, and cross tabulations of the responses given by the respondents who comprised the strategic staff, the operational staff and the customers of the various banks. The discussion relates the findings to the literature review and theoretical framework adopted for the study. The chapter has been organized under the following major sub-headings:

- i. Electronic Banking
- ii. Technology and Customer Satisfaction

6.2 Electronic Banking

This section examines various electronic products and services available at the bank and how they are linked to information technology. It also covered website visitation, level of SMS, internet, and ATM usage, the time spent at the banking hall among others.

6.2.1 Products and Services of the banks

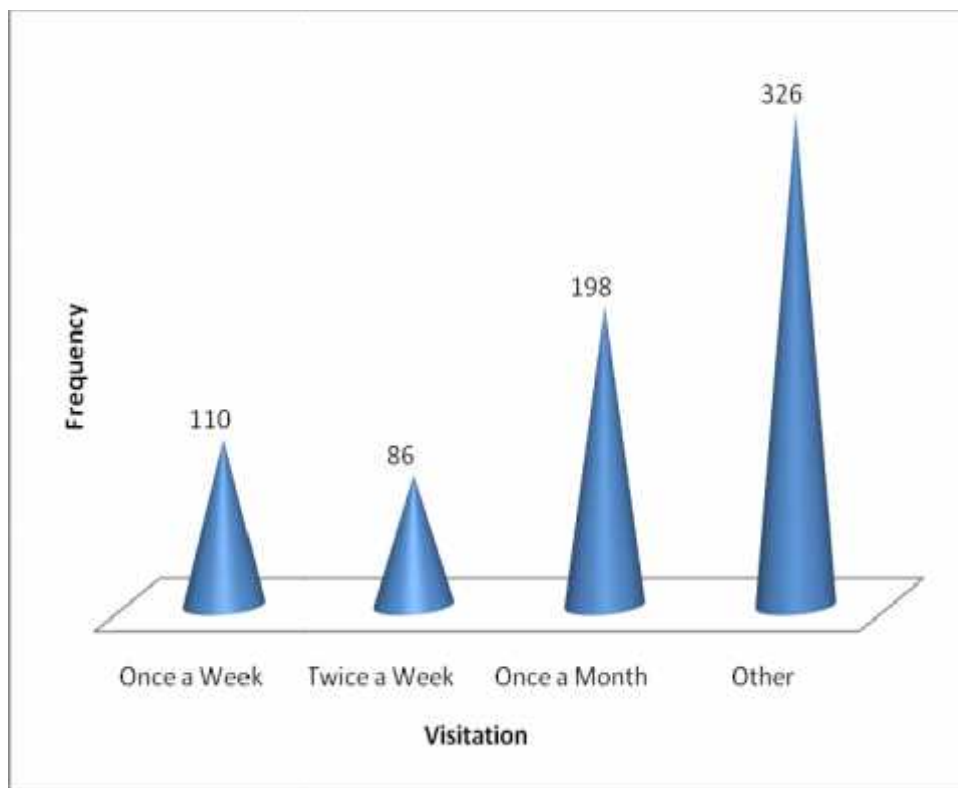
All the banks have products and services that they render to their customers. Some of the products and services are designed with IT whilst others are not. To find out whether the bank's products and services are backed by IT, the strategic staff respondents together with the operational staff respondents were asked to state the products and services of the bank. From the responses of the respondents (both foreign and local) it could be inferred that IT is used to design products and services for the banks. Some of the products and services, according to the respondents, are accounts, online banking, money transfer, SMS banking, loans, e-zwitch, bank assurance, T-bills, ATM, and bills payment.

6.2.2 Website Usage by Customers

A website is a collection of web pages having images, videos and other digital assets that is hosted on one or several web servers usually accessible via Internet, cell phone or a LAN (Ankrah, 2013). All publicly accessible websites are seen collectively as constituting the World Wide Web. The pages of websites can usually be accessed from a common root Uniform Resource Locator (URL) called the homepage, and usually reside on the same physical server. Some websites require a subscription to access some or all of their content (Ankrah, 2013). In information system strategy, electronic media plays a

very significant role in banking. Most of the information about a bank is put on the bank's website for the customers and the public as a whole. In modern times, customers do not have to visit the bank before accessing information. This information could be products, services or general information. The study established that all the banks in the study have websites. To find out whether the customers use the website, the 720 respondents were asked to indicate the number of times they visit the website. The responses from the bank customers were put together for the analysis in Figure 6.1 and subsequently analyzed in terms of banks to bring out the clear picture of website visitations.

Figure 6.1: Frequency of Website Visitation by Customers



Source: Field data, 2013

The internet can be used for e-banking of which internet banking is part. Less than half of the customers visit the banks website once in a month. The respondents stating other suggest that the number of times they visit the website was not among the one proposed by the researcher. This may be justified by the availability of internet connectivity or simply the customers are not interested in visiting the website. Further analysis revealed that, most of the foreign bank customers visit the web site more than the customers of the local banks. Some of the customers visit Bank D, Bank E, and Bank F websites once a week, twice a week and once a month. Most of the customers do not visit the websites of Bank A, Bank B and Bank C. even if they do, once in awhile.

6.2.3 SMS and Internet Banking by Customers

SMS banking service provides instant notification about transactions as and when it happens. It helps to keep a watch on account with a round the clock service. Every debit or credit to an account over a limit desired is intimated by SMS. With SMS banking service, one is always in a position to detect unauthorized access to ones account. Additionally, SMS banking also helps to check account balance and mini statements instantly by just sending an SMS (Ankrah, 2013). Online banking refers to the automated delivery of banking products and services directly to customers through electronic communication channels, most notably the Internet (Ankrah, 2012). The bank customers were asked whether they use the SMS and the internet banking or not. The responses are analyzed on bank bases for the Internet banking (see Table 6.1) and SMS bank usage (see Table 6.2).

Table 6.1: Responses on Internet Banking Usage by Banks

N = 720	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Yes	-	-	-	-	-	-	40	37.4	76	55.1	58	45.3
No	128	100.0	115	100.0	104	100.0	67	62.6	62	44.9	70	54.7
Total	128	100.0	115	100.0	104	100.0	107	100.0	138	100.0	128	100.0

Source: Field data, 2013

Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. For the local banks, all the respondents indicated that they do not use the internet banking. The story is different with the foreign banks. For these banks, some of the customers use internet banking. In the case Bank E, the number of the customers 76 (55.1%) who use the facility is more than the number of customers 62 (44.9%) who don't use internet banking. For the remaining two foreign banks, the number of customers who do not use the facility far exceeds those that use it. Internet banking is the most cost-efficient technology means of yielding higher productivity. Furthermore, it eliminates the barriers of distance/time and provides continual productivity for the bank to unimaginable distant customers. However, banks' ability to reduce operating costs through the adoption of online banking depends upon the extent to which customers are capable of using this service (Polatoglu and Ekin, 2001; Karjaluoto, Mattila and Pento, 2002). Kaiming and Enderwick (2000) argued that the more experience customers have with online banking, the better understanding they will have about online banking technology. Agwu (2012) found out that most customers who have adopted internet banking services believe that it

has a lot of potentials in terms of its advantages, but most users also believe that there are more problems attached to internet banking services than the advantages as evidenced from the findings. This is mainly due to the security and privacy issues on one hand and dearth of telecommunication infrastructures, poor education of the users and poverty (low income) issues on the other.

Table 6.2: Responses on SMS Usage by Banks

N = 720	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	21	16.4	21	18.3	23	22.1	45	42.1	81	58.7	63	49.2
No	107	83.6	94	81.7	81	77.9	62	57.9	57	41.3	65	50.8
Total	128	100.0	115	100.0	104	100.0	107	100.0	138	100.0	128	100.0

Source: Field data, 2013

For SMS banking too, the percent of usage in the local banks is less than that of the foreign banks. Again, there are more customers using this facility in Bank E than those not using it. The reverse is true for Banks D and F. The usage rate of SMS banking in Bank E is higher than the rest of the foreign banks.

6.2.4 Automated Teller Machine (ATM)

Automated Teller Machine (ATM) appears to be the most patronized tech-service by bank customers. From the responses, the foreign banks ATMs are more patronized than the local banks ATMs. Bank B has the minimum number of ATMs of thirty nine whilst Bank F has the highest number of ATMs of one hundred and thirty. This finding

supports the findings of Abor (2004), who found out that ATMs appeared to be the most widely accepted and highly used form of electronic delivery services among Ghanaian banking population.

6.2.5 Length of Bank Transaction

Banking information system is expected to facilitate all banking operations. The time spent in banking transaction is very crucial and important to any customer. Customers would like to have shortest response time and shortest time for any transaction. The time spent in any transaction is a function of loyalty. For this reason, the bank customers were asked to indicate the time spent for any transaction. The analysis of the responses is based on banks and presented in Table 6.3.

Table 6.3: Number of Hours Spent in Transactions by Banks

N = 720	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
< 10 Min	-	-	-	-	-	-	60	56.1	70	50.7	80	62.5
10 – 20 Min	80	62.5	80	69.6	70	67.3	40	37.4	50	36.2	40	31.3
21 – 30 Min	40	31.3	30	26.1	20	19.2	7	6.5	18	13.1	8	6.2
31 – 60 Min	8	6.2	5	4.3	14	13.5	-	-	-	-	-	-
> 60 Min	-	-	-	-	-	-	-	-	-	-	-	-
Total	128	100.0	115	100.0	104	100.0	107	100.0	138	100.0	128	100.0

Source: Field data, 2013

Some of the customers from the foreign banks indicated that they spend less than ten minutes in bank transactions. None of the customers from the local banks indicated that

they spend less than ten minutes in bank transaction. Bank A, Bank B and Bank C recorded the highest transaction time of thirty one to sixty minutes. It is palpable from the above table that most of the bank's customers spend between ten to twenty minutes for their banking transactions. It is noticeable that some of the customers spend almost one hour in their banking transactions. At this era of IT, any transaction that takes more than one hour is a cause for worry and management must rectify this abnormally with immediate effect.

6.3 Technology and Customer Satisfaction

This section determined the level of customer satisfaction in relation to information technology. It also covered issues like modern technology usage, service quality, bank policies and customer suggestions.

6.3.1 Microcomputers at the Departments

A computer is a general purpose device that can be programmed to carry out a finite set of arithmetic or logical operations. A microcomputer is a computer with a microprocessor as its central processing unit (CPU). It includes a microprocessor, memory, and input/output (I/O) facilities. This is the type of computers normally used in offices. In any information system environment, microcomputers are used. The microcomputers serve as the machine component of the information system environment, that is the hardware and the software that process the data. To find out the number of microcomputers in the bank, the strategic staff respondents were asked to indicate the number of microcomputers in their respective departments since they head

the various departments. The responses from the strategic staff are represented in Table 6.4 for the analysis.

Table 6.4: Responses on the Number of Microcomputers at Departments

No = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1 – 20 PCs	-	-	2	33.3	4	80.0	-	-	-	-	-	-
21 – 50 PCs	2	33.3	2	33.3	1	20.0	3	60.0	3	60.0	3	60.0
51 – 70 PCs	2	33.3	2	33.3	-	-	2	40.0	2	40.0	2	40.0
71 – 100 PCs	2	33.3	-	-	-	-	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

From the table above, some of the respondents from Bank B and Bank C indicated 1 – 20 microcomputers in their departments. None of the foreign banks had 1 – 20 microcomputers in their department. Bank A is seen to have the highest number of microcomputers in their departments. Apart from Bank C, all the banks fall within the range of twenty one to seventy microcomputers. Hermanson and Edward (1992) indicated that microcomputers are especially useful in accounting because of the great need for fast and accurate information processing when dealing with large volumes of financial data. Banks rely heavily on mainframes, minicomputers, microcomputers, and workstations. (Gupta and Collins, 1997).

6.3.2 Server Computers at the Banks

A server computer is a computer with a higher capacity and speed that can be linked to other client stations. A server could also be a computer program that provides services to other computer programs (and their users) in the same or other computers. In the information system environment, client / server architecture is maintained. The operational data, exchange, etc. are mounted on the server and are pulled to the various client (work) stations. The requisition of servers is a strategic issue. For this reason, the strategic staff respondents were asked to indicate the number of servers in their banks. Table 6.5 presents their responses by banks.

Table 6.5: Responses on the Number of Server Computers at the Banks

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Three	-	-	-	-	5	100.0	-	-	-	-	-	-
Five	-	-	6	-	-	-	-	-	-	-	-	-
Ten	6	100.0	-	-	-	-	5	100.0	5	100.0	-	-
Other	-	-	-	-	-	-	-	-	-	-	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

The foreign banks (Bank D, Bank E, and F) had more servers than the local banks (Bank A, Bank B, and Bank C). Bank C has the least number of servers whilst Bank F has the highest number of servers. The respondents from Bank F that chose other also indicated that, the bank has fifteen servers. Bank A, Bank D, and Bank E have ten servers each.

6.3.3 Operating Systems of Banks Client Stations

Software is a set of instructions that direct the hardware to perform specified actions. An Operating System (OS) is a set of programmes through which the computer manages its own resources. Every computer has an operating system. This software is usually hidden from the user. The operating system is often referred to as the software environment or platform. In the information system environment, the software (system software and application software) is one of the components of IS environment and the hardware cannot run without the software. The operational staff are more conversant with operating systems. It was therefore more appropriate to ask for information pertaining systems from them. Their responses are summarized in Table 6.6 below.

Table 6.6: Responses on Operating Systems Usage by Banks

No = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Windows XP	38	88.4	30	81.1	26	76.5	19	63.3	26	70.3	22	62.9
Windows 7	4	9.3	4	10.8	3	8.8	6	20.0	6	16.2	7	20.0
Vista	-	-	-	-	-	-	5	16.7	5	13.5	6	17.1
Others	1	2.3	1	2.7	3	8.8	-	-	-	-	-	-
Non-Res	-	-	2	5.4	2	5.9	-	-	-	-	-	-
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

From the table above, all the banks use Windows XP and Window 7 on their client stations. It is comprehensible that only the foreign banks use Vista on some of their

clients' stations. The latest OS for client stations is Window 8, but from the above table, none of the banks use Window 8 but rather Windows 2000 and Windows ME which are the older versions of Windows OS. This is typical with the local banks. These banks are still using the older versions of the Windows OS because according to the respondents certain applications are only compatible with these versions. Apart from Bank A, two of the respondents from each of Bank B and C did not respond to the question. This could be as a result of the fact that, these respondents do not know the type of OS being used. This also exposes the computer illiteracy of some of the respondents.

6.3.4 Network Operating Systems of Banks

Networking Operating System (NOS) is the software that runs on a server and enables the server to manage data, users, groups, security, applications, and other networking functions (Dean, 2009). The network operating system is designed to allow shared files and printer access among multiple computers in a network, typically a Local Area Network (LAN), a private network or to other networks. NOS is an operating system that includes special functions for connecting computers and devices into a Local Area Network (LAN). The term network operating system, however, is generally reserved for software that enhances a basic operating system by adding networking features. The most popular network operating systems are Microsoft Windows Server 2003, Microsoft Windows Server 2008, UNIX, Linux, Mac OS X, Novell NetWare, and BSD. In the information system environment, client/server architecture is maintained. The operational data, exchange, etc. are mounted on the server and are pulled to the various client (work) stations through the assistance of a network operating system. The

operational staff respondents were asked to indicate the type of network operating system that the bank is uses.

All the respondents stated the following network operating systems; Microsoft Windows Server 2000, Microsoft Windows Server 2008, Microsoft Windows Server XP, Microsoft Windows Server NT, Linux, and UNIX. Further analysis of the type of database management system revealed that, the foreign banks use BANKER, Oracle, Bankmaster, Electronic Business Solution (eBBS), and payment system (eOpal) whilst the local banks use BANKER, IBM Webshere, Front Office System (FOS), WINFOS, EBOX and BWAC. The only DBMS used by both the foreign and the local banks is the BANKER. The foreign banks use off the shelf packages whilst the local banks use bespoke packages.

6.3.5 Level of IS Security in the Bank

Information Technology Security is the process of implementing measures and systems designed to securely protect and safeguard information. The information system must be protected against unauthorized usage. When the security is loose, it creates lapses in the system and anyone can take advantage of it. To find out the security situation in the banks, the operational staff respondents were asked to indicate the level of information system security. Information on information system security is more likely to be obtained from the operational staff. A summary of their responses is provided in Table 6.7.

Table 6.7: Responses on the Levels of IS Security by Banks

Ns = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Low	-	-	-	-	-	-	-	-	-	-	-	-
Moderate	5	11.6	-	-	5	14.7	-	-	-	-	-	-
High	38	88.4	37	100	29	85.3	30	100.0	37	100.0	35	100.0
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

Security issues in banks are policies, procedures and technical measures used to prevent unauthorized access, alteration, theft, or physical damage to information systems. All the respondents from four banks indicated that they had high level of IS security in the bank. Out of these four banks, three are foreign banks and one local bank (Bank B). Some of the respondents from Bank A, 5 (11.6%) and Bank C, 5 (14.7%) also indicated moderate IS security in the bank. The banks with high level of security have methods, policies, and organizational procedures that ensure safety of organization's assets, accuracy and reliability of its accounting records; and operational adherence to management standards. Both the foreign and the local banks have the following general controls: Software, Hardware, Computer operations, Data security controls, Implementation, and Administrative controls.

6.3.6 Current Information System

Information Systems (IS) is a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an

organization. In addition to supporting decision making, coordination, and control, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products. Information systems contain information about significant people, places, and things within the organization or in the environment surrounding it. In the information system environment, any system that is not effective would affect the output from the system. An effective information system is a desired system in any organization. To find out the state of the IS, the operational staff were asked to indicate the effectiveness of the current information system. The operational staff responses are summarized in Table 6.8.

Table 6.8: Responses on Effectiveness of IS Systems by Banks

N = 216	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Not Effective	-	-	-	-	-	-	-	-	-	-	-	-
Somehow Effective	5	11.6	-	-	5	14.7	-	-	-	-	-	-
Very Effective	38	88.4	37	100	29	85.3	30	100.0	37	100.0	35	100.0
Total	43	100.0	37	100.0	34	100.0	30	100.0	37	100.0	35	100.0

Source: Field data, 2013

The effectiveness of any information system affects the output from the system. In effect, the effectiveness of any system is a function of its performance. All the foreign banks and one of the local banks, Bank B had a very effective IS in the bank. Bank A

and Bank C also had effective IS but cannot be compared to the four just mentioned. This is because some of the respondents 5 (11.6%) and 5 (14.7%) respectively also indicated that the information system was somehow effective. The response “Somehow” stated by some of the respondents for Bank A and Bank C suggests that the information system was not hundred percent effective. The responses, however, recorded by all the banks suggest that the information systems in the banks were effective.

6.3.7 Updating of Information Technology System by the Banks

Information system strategy calls for the update of information systems periodically since technology is constantly changing to make current systems more efficient. In any organization, the question is whether you need to upgrade to the latest technology to be more profitable and competitive. Since IT systems upgrading is a strategic issue, the strategic staff respondents were asked to indicate how often their systems are updated. For the foreign banks, Bank D updates its IT systems once in two years, Bank E updates its IT systems twice a year and Bank F updates its IT systems once in a year. For the local banks, Bank A updates its IT systems once in five, Bank B and C do not have a definite time for updates but updates their systems as at when it's necessary. It could be said that the foreign banks do better than the local banks in terms of systems update.

6.3.8 Customer Satisfaction

Information systems are expected to provide unique products and services and also satisfy the bank customers in all aspects. Customer's satisfaction is the company's ability to fulfill the business, emotional, and psychological needs of its customers (Pairot, 2008). However, customers have different levels of satisfaction as they have different

attitudes and experiences as perceived from the company. Customer's satisfaction is affected by the importance placed by the customers on each of the attitudes of the product/service. Customer satisfaction is one of the cardinal principles in modern banking. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Customer satisfaction measurement allows an organization to understand the key drivers that create satisfaction or dissatisfaction (Ankrah 2013). The user satisfaction can be seen as the sum of the user's feeling and attitudes toward several factors that affect the usage situation (Bailey and Pearson, 1983). To know the level of satisfaction of the bank customers, they were asked to indicate their level of satisfaction with the services of the bank. The analysis of the responses is based on banks and presented in Table 6.9.

Table 6.9: Responses on Levels of Customer Satisfaction by Banks

N = 720	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Not Satisfy	-	-	-	-	-	-	-	-	-	-	-	-
Somehow Satisfy	48	37.5	25	21.8	10	9.6	17	15.9	38	27.5	20	15.6
Very Satisfy	80	62.5	90	78.2	94	90.4	90	84.1	100	72.5	108	84.4
Total	128	100.0	115	100.0	104	100.0	107	100.0	138	100.0	128	100.0

Source: Field data, 2013

From the above table, most of the respondents from all the banks indicated that they are satisfied with the services of the bank. In addition, some of the respondents from the local banks and the foreign banks indicated that they are somehow satisfied with the services of the banks. In the global consumer banking survey in 2011, it came to light that, customers are changing their behavior and demanding lower fees for higher levels of service or other improvements. If these demands are not met, they are increasingly likely to shop around other banks for competitive rates for services and products.

6.3.9 Modern Technology Usage

Technology has brought about a complete paradigm shift in the functioning of banks and delivery of banking services. Gone are the days when every banking transaction required a visit to the bank branch. Today, most of the transactions can be done from the comfort of one's home and customers need not visit the bank branch for anything. Technology is no longer an enabler, but a business driver (Ankrah, 2012). The growth of the internet, mobiles and communication technology has added a different dimension to banking. The information technology (IT) available today is being leveraged in customer acquisitions, driving automation and process efficiency, delivering ease and efficiency to customers (Ankrah, 2012). Contemporary technology in banking comes in the form of computer based application and information technology. From the banking customer's perspective, two of the practical purposes of banking are convenience and accessibility to both funds and account information. It was based on this that the bank customers were asked whether their bank has modern technology or not. The responses showed that, all the foreign banks (Bank D, Bank E, and Bank F) have modern technology. Two of the local

banks (Bank A and Bank B) also have modern technology whilst Bank C's technology is not up to date.

6.3.10 New Policy and Customer Suggestions

Policy is a statement of intent, and is implemented as a procedure or protocol. Policies are generally adopted by the Board of or senior governance body within an organization. New policies must be communicated to the people involved. When new policies are not disseminated well, it hinders the smooth implementation. Customers are also stakeholders of any given bank and therefore their views must be taken into account. For this reason, the bank customers were asked whether they are informed before new policies are introduced and also whether their suggestions are considered in decision making. From the responses, Bank A, Bank B, and Bank F inform their customers ahead of time before new policies are introduced. Bank C, Bank D, and Bank E do not inform their customers ahead of time before new policies are introduced. In this regard the local banks do better than the foreign banks. The analysis also revealed that most of the customers' suggestions are not considered in decision making by the foreign banks. All the local banks consider customers' suggestions in decision making.

6.3.11 IS and Bank Cost Reduction

Information technology plays a central role in businesses by saving costs, making processes more efficient and allowing firms to stay competitive. A startup business must learn how to use IT to differentiate itself from the competition and offer value to customers that others cannot duplicate. This involves getting the right people, aligning IT strategy with business strategy, exploring clustering opportunities and maintaining

focus on driving sales growth (www.eHow.com). To determine whether IS can be used to reduce cost in the banking industry, both the strategic and the operational staff were asked to indicate areas that IS has been used to reduce cost. From both the strategic and the operational staff responses, it could be inferred that information systems can be used to reduce cost in banking operations.

6.3.12 Cost Reduction in Banking

Many businesses have used information system to reduce cost. The banking sector is not an exception. Banking cost has been reduced in form of automation, accurate interest calculations, maintaining data integrity, acquiring banking software among others. Cost reduction is a strategic issue and very dear to all business organizations. For this reason the strategic staff respondents were asked to indicate the means by which the bank can reduce cost. All the respondents from the banks indicated systems automation as a means of reducing cost in the banking sector. In addition to systems automation, the foreign banks, also stated e-products and services, and effective IS whilst the local banks also added staff training.

6.4 Conclusion

The major considerations of this chapter were electronic banking, technology and customer satisfaction. After the IS strategy formulation, the IS strategy would be realized in the form of information systems and electronic banking. The findings revealed that, for the local banks, all the respondents indicated that they do not use the internet banking whilst with the foreign banks some of the customers use the internet banking. For SMS banking too, the percent of usage in the local banks is less than that

of the foreign banks. The next chapter covers the analysis of data and findings on aspects of bank performance indicators.

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CHAPTER SEVEN
ANALYSIS OF DATA AND FINDINGS ON ASPECTS
OF BANK PERFORMANCE INDICATORS

7.1 Introduction

This chapter looks at the analysis and the presentation of the data collected through questionnaire as well as the discussion of the findings. The analysis of data is in relation to the objectives of the study. The chapter has been organized under the following major sub-headings:

- I. Information Systems Investment and bank performance
- II. Efficiency and Profitability and performance

7.2 Investment in Information Systems

This section explores the level of Information Technology investment of the bank in the short term, medium term and the long term. It also examined the following; IT/IS investment in the past three years, IS/IT Investment in recent times, outsourcing and amount spent in training staff. Research has showed that there is a relationship between investment in IT and business performance. (Brynjolfsson, Hitt and Yang, 2000; Brynjolfsson and Hitt, 2001). Harris and Katz (1991) also found positive relationship between IT expense and performance.

7.2.1 IS/IT Investment in the Past Three Years

The changing scene of information technology and information systems has made businesses to invest more in IT/IS. The strategic staff respondents being at the top

management were asked to indicate the level of information technology / information system investment in the past three year. The analysis of their responses is presented in Table 7.1.

Table 7.1: Responses of Levels of IS/IT Investment by banks in the Past Three Years

No = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Low	-	-	-	-	-	-	-	-	-	-	-	-
Moderate	-	-	-	-	1	20	-	-	-	-	-	-
High	6	100.0	6	100.0	4	80	5	100.0	5	100.0	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

The responses from the operational staff suggest that, there has been a high rate of investment in the past three years. One (20.0%) of the respondents from Bank C also indicated that there has been a moderate investment in terms of information technology and information systems. The foreign banks have invested more in IS/IT than the local banks. Bank C also recorded moderate IS investment even though some of the respondent indicated that the IS investment is high.

Despite banks being major investors in IT, Beccalli (2007) found little relationship between total IT investment and improved bank profitability or efficiency indicating the existence of a profitability paradox. However, the impact of different types of IT

investment (hardware, software and services) on banks' performance is heterogeneous. Investment in IT services from external providers (consulting services, implementation services, training and education, support services) appears to have a positive influence on accounting profits and profit efficiency. Harris and Katz (1991) indicate that firm performance was linked to the level of information technology investment intensity.

7.2.2 IS/IT Investment in Recent Times

The use of information technology is an integral part of enterprise management and operations. Spending or investments in information technology helps enterprises stay on the cutting edge of the new tech to achieve better financial results. Investments in information technology can also provide certain intangible benefits such as improved customer care, increased time efficiency or better coordinated record keeping within an organization (www.eHow.com). Banks also invest in technology based on their needs. The strategic staff being the right respondents for this question were asked to indicate IS investments in recent times. The responses of these staff are analyzed and presented in Table 7.2.

Table 7.2: Response on Information System Investments in Recent Times by Banks

No = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Banking Software	6	100.0	5	83.3	3	60.0	-	-	-	-	-	-
Network Infrastructure	-	-	-	-	1	20.0	5	100.0	3	60.0	3	85.7
Server Computers	-	-	-	-	-	-	-	-	1	20.0	1	5.7
Work Stations	-	-	-	-	-	-	-	-	1	20.0	1	8.6
IT Outsourcing	-	-	1	16.7	1	20.0	-	-	-	-	-	-
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

All the foreign banks have invested in network infrastructure in recent times. Bank E and Bank F in addition to the network infrastructure have invested in servers and work / client stations. The local banks on the other hand have invested in improved banking software. In addition, Bank B has also invested in IT outsourcing activities like ATM services and general maintenance. Bank C has also in addition to the improved banking software has invested in network infrastructure and IT outsourcing activities. The researcher further asked the operational staff about future IS investments. The respondents indicated that the bank has plans to improve upon the current information system and therefore in the future Bank C and Bank D would invest in electronic payment, electronic banking items and customer relationship systems to improve on the

existing systems. Bank B and Bank E would also invest in support treasury dealing system and anti-money laundry systems. Bank A and Bank F would invest in Flexcube upgrade, IT security tools, and ATMs that take deposits in the near future.

Table 7.3: Responses on bank Performance by IT/IS Investment

N = 32		IT / IS Investments			Total	
		Low	Moderate	High		
Bank Performance	Moderate	Count	2	0	6	8
		Expected	.5	2.5	5.0	8.0
		Count				
	High	Count	0	10	14	24
		Expected	1.5	7.5	15.0	24.0
		Count				
Total		Count	2	10	20	32
		Expected	2.0	10.0	20.0	32.0
		Count				

N = 32

Chi Square = 9.600

DF = 2

$p = 0.008$

COR = 0.059

Source: Field data, 2013

To determine the relationship between bank performance and IT/IS investments, a cross tabulation of the two variables was constructed. This was constructed from the responses of the strategic staff. The statistics at the bottom of Table 7.3 indicate that, there exists a relationship between the bank performance and IT/IS investment. As could be seen from the correlation coefficient, this relationship is positive and weak. Thus, it means that banks performance does not depend only on IT/IS investment.

7.2.3 Modes of Training Staff

Quality human resource can affect performance positively. Job training and career qualifications are important factors in getting a certain job or position. Training prepares a person to be qualified for a job. Many people of different occupations continuously train to maintain, update and upgrade their skills. To keep up with the fierce competition, it is vital to train staff periodically. Slow business operations, inadequate number of trained employees and dissatisfied customers can be the consequences of outdated information management systems (www.eHow.com). Every staff that plays a role in researching, selecting or implementing enterprise technology needs to have a firm grasp on the basics of emerging technologies, as well as how they serve a larger business purpose, to ensure that technology is being used to the company's best strategic advantage. That is where staff training becomes important. IS strategic issues are more synonymous with strategic staff. Thus, they were asked to indicate how bank staff are trained. The respondents indicated that, Bank A uses the National Banking College to train staff. Bank B gives in-house training to staff. Bank C has a Banking College that trains staff. Bank D, Bank E, and Bank F (foreign banks) bring in experts to train the staff and sometimes send the staff out for training. An interesting finding that emerged from (Gupta and Collins, 1997) study is that, almost 82 percent of the banks surveyed indicated that they had invested under \$ 50,000 in employee training over the last five years. In spite of the repeated pleas by professionals and experts in the field, banks, like many other institutions, are reluctant to invest in training.

7.3 Efficiency and Profitability

This covers the general questions about the bank. The answers to these questions were used to ascertain the efficiency and profitability of the bank.

7.3.1 Bank Performance in the Past Three Years

Bank performance is a function of IT investment. The higher the organizations invest in information technology, the higher the performance. In order to ascertain the levels of performance (low, moderate and high) the strategic staff respondents were asked to indicate the level of bank performance. Table 7.4 provides a summary of their responses.

Table 7.4: Responses on Bank Performance in the Past Three Years by Banks

No = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Low	-	-	-	-	-	-	-	-	-	-	-	-
Moderate	-	-	-	-	1	20.0	-	-	-	-	-	-
High	6	100.0	6	100.0	4	80.0	5	100.0	5	100.0	5	100.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

From the above table, it could be inferred that most of the respondents indicated that the banks have a high performance rate, whilst 1 (20.0%) of the respondents from Bank C indicated the performance rate of the banks is moderate. The results of Hopkins and Hopkins (1997) suggested that the intensity with which banks engage in the strategic

planning process has a direct, positive effect on banks' financial performance, and mediates the effects of managerial and organizational factors on the banks' performance. All the foreign banks performed very well in the past three years. The local banks also performed very well in the past three years as well. The IS/IT investment has a direct relationship with the performance of the bank. From Table 7.1, all the foreign banks have high investment in IS/IT and this reflected in their performance. In the same light, all the local banks (Bank A and Bank B) that invested heavily in IS/IT also performed very well. Bank C did not invest much in IS/IT and this affected the performance. The most innovative users of information systems and technologies are often those organizations that succeed in aligning corporate goals with technological investments (Gupta and Collins, 1997). In other words, companies that ensure that investments in technology are purposefully and meaningfully aligned with achieving the strategic, tactical, and operational goals of the firm are likely to see a closer link between IS investment and enhancements in organizational productivity.

7.3.2 Effect of IT/IS Investment on Bank Performance

Information technology investments have both positive and negative impacts on the operations of banks in the financial industry. The positive impact indicated here refers to reduction in operating expenses in market share, positive impact on profitability and increases in labour productivity. Information technology investment however can also have negative impact on banking operations. For this reason, the strategic staff respondents were asked to ascertain the positive impact of IT investment in banks. The researcher presents the responses of the strategic staff by banks in Table 7.5.

Table 7.5: Responses on Effect of IT/IS Investment on Bank Performance

N = 32	Bank A		Bank B		Bank C		Bank D		Bank E		Bank F	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Reduces operating expenses	1	16.7	1	16.7	1	20.0	-	-	-		-	
Increase market share of deposits	2	33.3	2	33.3	1	20.0	1	20.0	1	20.0	1	20.0
Increase profits	2	33.3	2	33.3	2	40.0	2	40.0	2	40.0	2	40.0
Positive impact on Return on Asset	1	16.7	1	16.7	1	20.0	1	20.0	1	20.0	1	20.0
Increases labour Productivity	-	-	-	-	-	-	1	20.0	1	20.0	1	20.0
Total	6	100.0	6	100.0	5	100.0	5	100.0	5	100.0	5	100.0

Source: Field data, 2013

On the impact of IT investments on key variables, the above table indicates that all the banks (both foreign and local) asserted that market share, profitability, and ROA increases as IT investment are employed in the industry. This supports the school of thought that banks that invest heavily in technology would have an increase in market share of deposits and loans. In addition, the foreign banks indicated increased labour productivity as one of the key variables on IT investment whilst the local banks also indicated reduction in operating expenses. This expected impact of IT investment is a sure motivator for the employment of the state of the art technology which banks are heavily dependent on to survive in the face of keen competition.

7.3.3 Problems Associated with IT/IS Investment

Technology is much effective and efficient to work with but they do come along with their own problems. The constant changing technological environment alone is a headache to most highly automated organizations for which the banks are not excluded. Certainly, these are taken into consideration by these banks before any form of investments. Scalability is one of the factors considered in cost cutting investment. To find out the problems associated with the IT investments, the strategic staff respondents were asked to indicate the problems associated with IT/IS investment. The researcher presents the responses of the strategic staff in this analysis. From the responses, the problems associated with the foreign banks are different from those of the local banks. For the foreign banks, the problems associated with IS/IT investments are high maintenance cost and energy crises. Whilst with the local banks, the problems are lack of skilled personnel, the fact that some transactions cannot be done, customers cannot use e-media, frequent breakdowns of channels and energy crises. Bank A indicated that customers cannot use e-media and some transactions cannot be done as the main problems associated with IS/IT investment. Bank B also identified customers' inability to use e-media and energy crises. Bank C stated lack of skilled personnel, customers cannot use e-media, and frequent breakdowns of channels.

7.3.4 Return on Assets (ROA)

Return on assets is the ratio of annual net income to average total assets of a business during a financial year. It measures efficiency of the business in using its assets to generate net income. It is a profitability ratio. Return on assets indicates the number of pesewas earned on each cedi of assets. Thus higher values of return on assets show that

business is more profitable. Since the figures from the balance sheet could easily be obtained at the strategic level to calculate the ROA for each bank, the strategic staff respondents were asked to indicate the net income and assets of the bank for the period 2009 - 2011. The responses were used to calculate the ROA for each bank for the period 2009 -2011. Table 7.6 shows the ROA from 2009 – 2011.

Table 7.6: Return on Assets (ROA) by Banks

N = 6	2009	2010	2011	Mean	Std. Dev.
Bank A	1.02	12.54	11.35	8.30	6.34
Bank B	10.72	2.03	4.52	5.76	4.48
Bank C	4.93	0.07	2.31	2.44	2.43
Bank D	0.46	3.29	3.75	2.50	1.78
Bank E	4.00	4.00	6.00	4.67	1.15
Bank F	0.78	3.64	4.86	3.09	2.09

Source: Field data, 2013

On average, Bank A has the highest average ROA for the period 2009 to 2011. The values suggest good performance by the bank. The standard deviation (6.34) means that the ROA values of 2009, 2010, and 2011 are scattered. The least of the average ROE was recorded by Bank C and Bank D. Bank E had the smallest standard deviation (1.15) which indicates that the ROA for the three years are close. All the foreign banks exhibited increasing trends in the ROA. (See appendix K). The increasing trends in ROA recorded by the foreign banks suggests a good IS strategy compared to the local banks.

These results suggest that IT investments have a positive impact on operating profits. Again this finding supports the observations of Kim and Davidson (2004).

7.3.5 Return on Equity (ROE)

Return on equity or return on capital is the ratio of net income of a business during a year to its stockholders' equity during that year. It is a measure of profitability of stockholders' investments. Return on equity is an important measure of the profitability of a company. Again, since the figures from the balance sheet could easily be obtained at the strategic level to calculate the ROE for each bank, the strategic staff respondents were asked to indicate the net income and total equity of the bank for the period 2009 - 2011. The responses were used to calculate the ROE for each bank for the period 2009 - 2011. Table 7.7 shows the ROE from 2009 – 2011.

Table 7.7: Return on Equity (ROE) by Banks

N = 6	2009	2010	2011	Mean	Std. Dev.
Bank A	9.87	149.95	164.40	108.07	85.35
Bank B	10.42	2.39	24.75	12.52	11.33
Bank C	39.69	8.38	22.07	23.38	15.70
Bank D	3.82	26.53	23.53	17.96	12.34
Bank E	36.00	37.00	39.00	37.33	1.53
Bank F	6.25	24.62	26.25	19.04	11.11

Source: Field data, 2013

On average, Bank A had the higher ROE for the period 2009 to 2011. The values suggest good performance by the bank. The standard deviation (85.35) means that the ROE values of 2009, 2010, and 2011 are scattered. The least of the average ROE was recorded by Bank D. Bank E had the smallest standard deviation (1.15) which indicates that the ROE for the three years are close. Again all the foreign banks exhibited increasing trends in the ROE. (See appendix K). Again, the increasing trends in ROE recorded by the foreign banks suggest a good IS strategy compared to the local banks.

7.4 Hypothesis Testing

Hypothesis is a specific statement of prediction. It describes in concrete (rather than theoretical) terms what the expectation will be in the study. A single study may have one or many hypotheses. The chi-squared distribution is used in the common chi-squared tests for goodness of fit of an observed distribution to a theoretical one, and the independence of two criteria of classification of qualitative data. In this study, the researcher employs the chi-square test to test the relationship between two variables. The specific hypotheses are stated before conducting the test. The researcher identifies H_0 with the null hypothesis and H_a with the research hypothesis (alternative hypothesis).

The chi-square statistic was used to test the three hypotheses. The chi square statistic was use to test the hypotheses because the researcher was testing for goodness of fit or better still relationships.

7.4.1 Hypothesis One

Ho: Information systems strategy does not have a positive relationship with bank performance.

Ha: Information systems strategy has a positive relationship with bank performance.

Critical value

From the chi square distribution, a significance level of 0.05 with two degrees of freedom gives a critical value of 5.99.

Decision rule

The researcher cannot accept Ho, if chi-square calculated is greater than 5.99 and concludes that, Information systems strategy has a positive relationship with bank performance else the researcher will fail to reject Ho and conclude that, information systems strategy does not have a positive relationship with bank performance.

Table 7.8: Observed and Expected Values of IS Strategy by Bank Performance

N = 216			Bank Performance			Total
			Low	Moderate	High	
Information System Strategy	Yes	Count	0	20	180	200
		Expected Count	5.6	18.5	175.9	200.0
	No	Count	6	0	10	16
		Expected Count	.4	1.5	14.1	16.0
Total		Count	6	20	190	216
		Expected Count	6.0	20.0	190.0	216.0

No = 216

Chi Square = 77.874

DF = 2

$p = 0.000$

COR = 0.399

Source: Field data, 2013

The chi-square calculated is equal to 77.874 and the critical value is equal to 5.99. Since the chi-square calculated is greater than the critical value, thus, H_0 cannot be accepted. Therefore, information systems strategy has a positive relationship with bank performance.

7.4.2 Hypothesis Two

H_0 : Banks with higher level information systems investments do not have increasing operating profits than banks with low level information systems investments.

H_a : Banks with higher level information systems investments have increasing operating profits than banks with low level information systems investments.

Critical value

From the chi square distribution, a significance level of 0.05 with two degrees of freedom gives a critical value of 5.99.

Decision rule

The researcher cannot accept H_0 , if chi-square calculated is greater than 5.99 and concludes that, banks with higher level information systems investments have increasing operating profits than banks with low level information systems investments else the researcher will fail to reject H_0 and conclude that banks with higher level information systems investments do not have increasing operating profits than banks with low level information systems investments.

Table 7.9: Observed and Expected Values of Profit Margins by IT/IS Investment

		IT / IS Investments			Total	
		Low	Moderate	High		
Profit Margins	Moderate	Count	2	0	6	8
		Expected Count	.5	2.5	5.0	8.0
High	Count	0	10	14	24	
	Expected Count	1.5	7.5	15.0	24.0	
Total	Count	2	10	20	32	
	Expected Count	2.0	10.0	20.0	32.0	

No = 32

Chi Square = 9.600

DF = 2

 $p = 0.000$

COR = 0.590

Source: Field data, 2013

The chi-square calculated is equal to 9.6 and the critical value is equal to 5.99. Since the chi-square calculated is greater than the critical value, thus, H_0 cannot be accepted. Therefore, banks with higher level information systems investments have increasing operating profits than banks with low level information systems investments.

7.4.3 Hypothesis Three

H_0 : Bank customers are not satisfied with the services of banks with modern technology than banks without modern technology.

H_a : Bank customers are satisfied with the services of banks with modern technology than banks without modern technology.

Critical value

From the chi square distribution, a significance level of 0.05 with 1 degree of freedom gives a critical value of 3.84.

Decision rule

The researcher cannot accept H_0 , if chi-square calculated is greater than 3.84 and concludes that, bank customers are satisfied with the services of banks with modern technology than banks without modern technology else the researcher will fail to reject the H_0 and conclude that, bank customers are not satisfied with the services of banks with modern technology than banks without modern technology.

Table 7.10: Observed and Expected Values for Modern Technology and Customer Satisfaction

N = 720			Modern Technology		Total
			Yes	No	
Customer Satisfaction	Yes	Count	480	12	492
		Expected Count	433.2	58.8	492.0
	No	Count	154	74	228
		Expected Count	200.8	27.2	228.0
Total	Count	634	86	720	
	Expected Count	634.0	86.0	720.0	

No = 720 Chi Square = 133.470 DF = 1 $p = 0.000$ COR = 0.431

Source: Field data, 2013

The chi-square calculated is equal to 133.47 and the critical value is equal to 3.84. Since the chi-square calculated is greater than the critical value, H_0 cannot be accepted, hence the conclusion that bank customers are satisfied with the services of banks with modern technology than banks without modern technology.

7.5 Conclusion

Information systems investment, bank performance, efficiency and Profitability were covered under this chapter. These are forms of performance indicators. The findings revealed that, the foreign banks have invested more in IS/IT than the local banks. Harris and Katz (1991) indicate that firm performance was linked to the level of information technology investment intensity. The findings also revealed that, most of the respondents indicated that the banks have a high performance rate due to high investment in IS/IT. The next chapter discusses the major finding from this study.

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CHAPTER EIGHT

DISCUSSION OF MAJOR FINDINGS

8.1 Introduction

This chapter covers the discussion of major findings in relation to both the research objectives and existing knowledge. The discussion segment provides the researcher the opportunity to highlight the reflections, differences, similarities, and extends current knowledge of the area in which the study has been carried out. It is also a chance to demonstrate exactly what the researcher knows about the topic by interpreting the findings and outlining what they mean. A discussion section of a research should demonstrate the original thinking. The research must underpin what is already known about the area. In addition, where something new has been discovered it is important to outline what is new and compare it to what is already known. It is necessary to consider how one's results would extend the knowledge about the field. It is important that this segment is comprehensive and well structured making clear links to the literature review.

The purpose of this study was to determine the impact of information system strategy on bank performance of six banks in the Greater Accra Region of Ghana. Information system strategy is a plan that aims to (1) identify the required IS assets, structures, monetary resources, and technologies and (2) allocate the existing Information System assets in the most efficient way. There are two measures of performance that relate to how efficient and profitable a business entity is and these are ROA and ROE. The study adopted a cross-sectional survey design and was comfortably placed within a scientific

epistemology of logical positivism because it allows IS researchers to answer research questions about the interaction of humans and computers and it also lays emphasis on quantitative data. The cases or study setting investigated were local banks and foreign banks. This study has three categories of population. These are the Strategic level, the Operational level and the bank customers from all the six banks all located at their Head Offices in Greater Accra region. A proportionate sample size of 62, 348, and 1,352 were used for the strategic staff, operational staff, and bank customers respectively. Simple random sampling was used for the selection of the operation staff whilst purposive sampling was used for the selection of the bank customers. The instrument used in this study was the questionnaire. The Statistical Package for Social Sciences (SPSS) was used for the analysis of the data. Simple frequencies, percentages, charts, cross tabulations and Chi-Square test of independence to ascertain the significance of the relationship between variables was used to present the results of the study. Logistic regression was also used to predict the value of a dependent variable using more independent variables.

A number of major findings have been made which will be discussed in this chapter. The discussion was also arranged according to the order in which the research findings were analyzed in the previous chapters (chapter five, six and seven) and also according to the study objectives as follows:

1. IS Strategy and Bank Performance
2. Electronic products and Bank Performance
3. Bank Performance Indicators

8.2 Major Findings on IS Strategy and Bank Performance

This section discusses the findings from the study on aspect of IS strategy. The discussion of the results under this section has been categorized under the following major sub headings:

- a. Information Systems Strategy and Information Systems Assets
- b. Staff Involvement and Success Predictors
- c. Barriers to Strategy

8.2.1 Information Systems Strategy and Information Systems Assets

The business aligning techniques assume that IS will fulfill its most appropriate role if the organization's strategy is used as the basis for developing the IS strategy. One technique that explicitly translates business strategies into IS terms is strategy set transformation. Any business can be said to have a set of business strategies, whether they are formally articulated or not. Henderson et al., (2012) work on critical sets, a variant of CSF analysis intends to align IS to business demands. This particular approach attempts to be both business aligning and business impacting in its effect, but it is obviously going to be mainly about aligning. All aligning techniques work by identifying business goals and plans, and deduce IS requirement via a formal method for translating them.

Segars and Glover (1998) suggest that alignment produced by strategically positioned IT/IS improves the stature of IT/IS within an organization. Henderson and Venkatraman (1999) advocate the importance of strategically positioning of IT/IS within organizations. They argued that successful applications of this model result in

organizational capability to leverage IT/IS resources on a continuous basis to support competitive advantage in the marketplace. They also indicate the need for a change in IT/IS orientations from an exclusively internal focus to one that fits strategically with the external IT/IS domain environment. The model also shows the connection may be influenced by internal and external technological and socio-economic environments. This means that the organization may be highly dynamic and alignment may need to be continually re-examined, monitored and adjusted.

The findings from the research revealed that all the banks both local and foreign have information systems strategy and that only three of the banks (Bank B, Bank E, and Bank F) have all the components present in the IS strategy. This result supports Wilson (1999) findings, where 75 percent of the respondents claimed to have an information system strategy, suggesting that the idea of an information system strategy has been widely adopted. He further stated that, in general, financial services companies are most likely to have adopted information system strategies than other industrial firms. Most of the information system strategy has a time span of five years, meaning that the IS strategy is reviewed every five years. The information system strategy of all the banks is aligned to the overall business strategy.

All the foreign banks and the local banks have IS strategy fully aligned to the business strategy. From the outset, IT researchers advocated tight IT strategy linkages, asserting that IT affects firm strategies that strategies have IT implications and that firms must somehow integrate strategic thrusts with IT capabilities (Porter and Miller, 1985). In sum, IT that is aligned with strategy, that provides sustainable competitive advantage,

and / or that is required to avoid strategic disadvantage, enhances competitive position. IT's effects on organizational performance seem to range along a continuum from strongly positive in cases of competitive advantage, to modestly positive or neutral in cases of strategic necessity or non-strategic IT, to negative cases of strategic misalignment (Floyd and Wooldridge, 1990). As the criticality of effectively linking the strategic IS plan to the strategic business plan has increased the need to better understand the nature of strategic planning in general and strategic IS planning in particular, has also increased (Henderson et al., 2012). The relationship between the IS strategy and the business strategy is very momentous for the success of the bank.

It also came to light that the prospector business strategy was widely used by banks as well as the IS Innovator and IS conservative strategy Typology. All the banks do not use the undefined IS strategy typology. This is because the banks deem it to be inconsistent strategy. The foreign banks use IS Innovator strategy typology. For the local banks, only two banks (Bank A and Bank B) use IS Innovator strategy typology. It is worth noting that in addition to the IS Innovator strategy typology deployed by the local banks they also use IS Conservative strategy typology. Bank C is the only bank that uses IS Conservative strategy typology alone. Innovators may achieve advantage that continues even after the technology is widely diffused. For example, Merrill Lynch's early introduction of Cash Management Accounts apparently achieved a level of market visibility and an image unmatched by followers. The company continues to enjoy a dominant market share (Clemons and Kimbrough, 1986).

For the information systems assets, all the respondents from the foreign banks indicated high human resource quality. Four respondents from each of Banks B and C indicated that the bank has high human resource quality. The findings revealed that, all the foreign banks have high financial positions whilst only two of the local banks (Bank A and Bank B) recorded high financial performance. The foreign banks have a very high IT infrastructure to implement the IS strategy whilst the local banks do not have that high infrastructure for the IS strategy implementation

8.2.2 Staff Participation and SISP Success Predictors

There are many approaches to establishing IS strategy planning teams. Broadly, there are three main approaches: the use of planning specialists, general IS staff or coalition teams (Segars and Grover, 1998). Planning teams can be constructed primarily of specialist planning staff. They then will probably hold responsibility for coordinating, if not actually developing, many other planning effects. This dedicated planners' approach can offer many advantages, with perhaps the most significant being that there is a high chance of the plan being completed (Segars and Grover, 1998). Additionally, since the planners are involved in many other corporate and functional plans, there may be a deeper understanding of business needs. Balancing the potential advantages, however, is that their very specialism can lead to the most notable disadvantage and that is the tendency of these teams to lack an appreciation of reality in issues. Some difficulties associated with this 'strategy by outsiders' route can be addressed by careful attention to the issues of ensuring ownership by those ultimately taking the IS resource decisions (Segars and Grover, 1998).

A second approach is to make the production of the IS strategy the responsibility of general IS staff. Since teams of this type will tend, at least initially, to lack experience of strategic planning and will also tend to suffer the 'tyranny of the urgent' in calls from their everyday responsibility, this may reduce the chance of the plan being completed (Segars and Grover, 1998). However, their significant MIS awareness may produce a more implantation plan, if one is created at all. These teams are likely to be ad hoc in nature or at least busy in other areas, and this may reduce the frequency and increase the elapsed time needed for planning activities. The third route is to use a coalition team drawn from a number of business functions, certainly including IS and perhaps including some specialist planning staff. The breadth of experience should increase the organizational realism within the IS strategy plan. This realism gives the organization the best chance of an IS strategy that is aligned with business objectives. The only potential drawback is that the diversity of interests may act destructively upon team coordination, and that members may be 'moved on' at inappropriate, from a plan point of view times (Segars and Grover, 1998).

The findings from the study brought out that, the major participants in the formulation of IS strategy are management team, IT department and technology group. Ciborra and Jelassi (1994) argue that strategy is formulated at the peak of the managerial pyramid. This finding is also established in this study. The responsibility for strategy rests with the chief executive officer: he or she formulates the strategy and then monitors its application throughout the appropriate hierarchical control systems. The local banks concentrate on management team and IT department for the formulation of IS strategy whilst the foreign banks solely depend on Technology Group for the formulation of IS

strategy. The Technology Group is a group with the foreign banks that formulate IS strategy for the bank. It is also important to note that, outsourcing and all staff involvement are not considered in the formulation process. Wilson (1999) also states that, 6.4 percent of the respondents claim that ISS is a function of individual department, which is at odds with the organization-wide focus. Since information systems can have a significant strategic impact in the manner suggested by a growing number of authors (Clemons and McFarlan, 1986), top management also needs to take responsibility for fostering information systems with the potential to provide this impact.

Strategic art is the skillful balancing of ends (objectives), ways (courses of action), and means (resources). Different banks perceived SISP success predictors differently. The findings also revealed that, for the local banks, the most important SISP success factors are staff training and staff involvement, resources, and IS alignment to the business strategy. The foreign banks also indicated that, the most important SISP success factors are top management involvement, resources, and organizational and technological changes. It is worth noting that none of the banks considered control and evaluation as an important factor but the banks affirmatively recognize the importance of resources to the success of SISP. This findings support that of Segars and Grover (1998) who researched into strategic information systems planning success and concluded that, strategic information systems planning (SISP) requires significant outlays of increasingly scarce human and financial resources. Yet, there exists very little understanding of how the success of this planning activity is measured.

8.2.3 Barriers and Strategy

Grant (2003) advocated that one of the earlier pieces of literature written by Boyd stated that strategic planning has very little effect on the performance of an organization. Nevertheless, the literature suggests strategic planning is vital to the success of an organization. Organizations are often times evaluated on their performance. Executing good performance can be a challenge when there are barriers present and an organization lacks the knowledge of how to overcome them. Eadie (1983) suggests that the purpose of strategic planning is to maintain a favorable balance between an organization and its environment over the long run. Nevertheless, it does not matter how good an organization's ideas are during the strategic planning process if it has major barriers that cannot be overcome.

According to Webster Online Dictionary, a barrier is something immaterial that impedes or separates. It is also described as an obstacle, something that impedes progress or achievement (Meriam-Webster, 2011). There are numerous types of barriers that can hinder the success of strategic planning. From authors such as Geersro and Ritter (2010), Ardani et al., (2009), Ellis and Revitt (2010) and Berns et al., (2009) and in researching a plethora of scholarly works, there have been some barriers discussed that seem to be a little more noticeable than the others. In addition, four major barriers that commonly impede the progress or achievement of successful strategic planning have been found: uncertainty, lack of resources, lack of universal language/communication, and low motivation or morale. Though these are not the only barriers, they are very prominent barriers. These barriers can seriously obstruct the road to successful strategic planning.

The findings revealed that, the major barriers to IS formulation to the foreign banks are lack of staff involvement and uncertainties whilst with the local banks the barriers are lack of policy, lack of resources, organizational culture, and uncertainties. The only barrier that affects all the banks is the external factors (uncertainty). Mintzberg (1987) suggests that strategy formation is a craft, rather than a science, and the process of crafting a strategy will involve negotiating various barriers. The barriers suggested affect any innovation, such as the hostile attitudes of management and the problems of recruiting appropriate staff. Wilson (1999) on the other hand states that, the difficulties in recruiting appropriate staff, the lack of resources to engage in user education, the nature of the business, and the difficulties of measuring benefits, are key features of IT strategies that are likely to cause problems for companies.

The findings further revealed that IT training, staff involvement and motivation, lack of resources, internal factors (organizational culture) and external factors (Uncertainty) are barriers to IS strategy implementation. The major barriers to IS implementation for the foreign banks (Bank D, Bank E, and Bank F) are lack of communication and external factors whilst with the local banks (Bank A, Bank B, and Bank C) the barriers are lack of IT training, lack of resources, internal and external factors. The only barrier that affects all the banks is the external factors. The lack of resources is the major barrier to the implementation of IS strategy for the local banks. Most of the time it could be as a result of lack of funds, lack of capable human force (humanware), or lack of appropriate technology.

8.3 Major Findings of Electronic Products and Bank Performance

This section discusses the findings from the study on aspect of electronic products and bank performance. The discussion of the results under this section has been categorized under the following major sub headings:

- a. Electronic Banking
- b. Technology and Customer Satisfaction

8.3.1 Electronic Banking

E-banking is a generic term for delivery of banking services and products through electronic channels, such as the telephone, the internet, the cell phone, etc. The concept and scope of e-banking is still evolving. It facilitates an effective payment and accounting system thereby enhancing the speed of delivery of banking services considerably. There are many electronic banking delivery channels to provide banking services to customers. Among them are ATM, POS, Mobile banking and internet banking which are widely used. Kumbhar (2011) expresses that today almost all banks are adopting ICT as means to enhance service quality of banking services. It brings convenience, customer centricity, enhance service quality and cost effectiveness in the banking and increasing customer satisfaction in banking services.

The findings revealed that Automated Teller Machine (ATM) is the most patronized electronic service by bank customers. This could be that, customers could visit the ATMs at any time for funds. Automated Teller Machines (ATMs) are necessary to survive in retail banking. Most banks have ATMs with the same basic services, and these systems have significantly enhanced customer access to funds (Floyd and

Wooldridge, 1990). Bank B has the minimum number of ATMs of thirty nine whilst Bank F has the highest number of ATMs of one hundred and thirty. An empirical study (Banker and Kauffman, 1988), however, concluded that ATM deployment among bank branches had little or no effect on realizing greater deposit collection. Apparently, ATMs are “strategic necessities” (Clemons and Kimbrough, 1986), but provide no real competitive advantage to any particular bank.

The research findings have it that most of the foreign bank customers visit the web site more than the customers of the local banks. Some of the customers visit Bank D, Bank E, and Bank F websites once a week, twice a week and once a month. Most of the customers of the local banks do not visit their websites. Even if they do, it is once in a while. The low patronage of the website could be that the customers do not know how to go by it and may also not have internet connectivity.

Internet Banking offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational and transactional. It was also revealed that the level of usage of Internet banking is very low. For the local banks all the customers do not use the internet banking. The story is different with the foreign banks, for these banks some of the customers use the internet banking. Agwu (2012) revealed that most customers who have adopted internet banking services believe that it has a lot of potentials in terms of its advantages, but most users also believe that there are more problems attached to internet banking services than the advantages as evidenced from the findings. This is mainly due to the security and

privacy issues on one hand and dearth of telecommunication infrastructures, poor education of the users and poverty (low income) issues on the other.

The findings also revealed that, for SMS banking, the percent of usage in the local banks is less than that of the foreign banks. This means that, most of the customers use the internet banking offered by Bank D, Bank E, and Bank F than that used by Bank A, Bank B, and Bank C. The low patronage could be attributed to the fact that, the customers may not be aware of such service or simply the customers are avoiding the services charges.

8.3.2 Technology and Customer Satisfaction

Customer satisfaction is a subjective evaluation of a performance related to a standard which when that standard is fulfilled, results in satisfaction, or in dissatisfaction when the standard is not fulfilled (Oliver, 2010). The pleasurable level of under and over fulfillment describes the situation where performance is a little less or a little above the standard, but still results in satisfaction. Customer satisfaction is an important measure of firm performance because of its positive influence on customer loyalty (Fornell, 2001). In a recent study of the relationship between customer satisfaction and shareholder return, Anderson, Fornell and Mazvancheryl (2004) find a strong relationship between customer satisfaction and Tobin's Q (as a measure of shareholder value) after controlling for fixed, random and unobservable factors. Fornell (2001) shows that firms with higher customer satisfaction provide higher stock returns with less risk. IT systems play an important role in enabling a firm's customer management capability. Nambisan (2002) presents a theoretical argument for the positive effect of an

IT-enabled virtual customer environment on the effectiveness of new product development. Karimi, Somers and Gupta (2001) report that firms with better IT planning and integration are more effective at managing IT to improve customer service and thus at managing customer relationships.

The findings revealed that customers are satisfied with the electronic products and services provided by the banks. Most of the customers have been transacting business with the respective banks for about six to ten years. On average bank customers spend ten to twenty minutes on bank transactions in Bank A, Bank E, and Bank F. For Bank B, Bank C, and Bank D, customers spend more than twenty minutes. The findings have it that all the local banks consider customers suggestions in decision making whilst the foreign banks do not consider customers suggestions in decision making. The local banks also inform customers ahead of time before a new policy is introduced but the foreign banks do not do that. From the global consumer banking survey in 2011, banks should help customers to shape their own banking experiences by improving how they provide information and advice, recruiting online affinity groups and by developing flexible loyalty programs.

8.4 Major Findings on Indicators of Bank Performance

This section discusses the findings from the study on aspect of bank Performance. The discussion of the results under this section has been categorized under the following major sub headings:

- a. Information Systems Investment
- b. Efficiency and Profitability

8.4.1 Information Systems Investment

The Productivity Paradox phrase came into being when large investments in information technology apparently failed to produce the much expected significant increases in productivity in the 1980s and early 1990s and the early acclaimed positive effects on two levels. The first is at the industry or economy wide level. This was summed up in 1987 by Nobel Prize winning economist Robert Solow, who wrote, “we see the computer age everywhere except in the productivity statistics, as quoted in Brynjolfsson and Hitt’s (1998) ‘beyond the Productivity Paradox’ (1998)”. The second productivity paradox was observed at the company level, where “there was no correlation whatsoever between expenditures for information technologies and any known measure of profitability” (Strassmann, 1990). The equivocal results of IT investments, in many cases are caused by the inconsistency in IT firm performance measurement issues (Willcocks and Lester, 1999).

Many connoisseurs of early studies examined the correlation between IT spending ratios and various performance measurements, such as profits or stock returns (Dos Santos et al., 1993; Strassmann, 1997). Since the correlation was either zero or very low, some concluded that computer investments has been unproductive. However, spending more on computers should generate higher profitability or stock market returns (Lim et al, 2004). Zero correlation should be interpreted as indicating ‘normal’ ratios to investments in IT (Brynjolfsson and Hitt, 1998).

The findings have it that the foreign banks have invested more in IS than the local banks. All the foreign banks have invested in network infrastructure in recent times whilst the

local banks have invested in improved banking software. There are different modes of training within the banks. This is because some of the banks have their own banking colleges whilst other banks have to train staff in house. Bank A uses the National Banking College to train staff. Bank B gives in-house training to staff. Bank C has a Banking College that trains staff. Bank D, Bank E, and Bank F (foreign banks) bring in experts to train the staff and sometimes send the staff out for training. The findings revealed that there is a linear relationship between IS investments and bank's performance. The more the information systems investments the higher the bank's performance. Several writers suggest that returns on IT investments depend on the system's strategic role (Porter and Millar, 1985; Strassman, 1997). Perhaps significant performance effects should be expected only for IT investments that support strategy.

8.4.2 Efficiency and Profitability

Fisher and Kenny (2000) suggest that organizations infuse information systems into their operations so as to enhance competitiveness and facilitate business growth and success. On the other hand, Laudon and Laudon (2001) believe that information systems are embedded in organizations and are the result of standard operating procedures, work flows, politics, organizational culture and structure. Although organizations have different information systems because they have varying information needs, they all strive for competitive advantage through continuous improvement; re-evaluation of the effectiveness and efficiency of their business information system (Chaffey and Wood 2005).

All the foreign banks (Bank D, Bank E and Bank F) performed very well in the past three years whilst with the local banks, only Bank A and Bank B performed very well in the past three years. These finding supports the assertion that bank performance is linked to the level of IS investment. Evidence is presented that indicates that firm performance was linked to the level of information technology investment intensity (Harris and Katz, 1991). The findings also revealed that efficiency and profitability have increased as the result of information system strategy. The results suggested that the intensity with which banks engage in the strategic planning process has a direct, positive effect on banks' financial performance, and mediates the effects of managerial and organizational factors on banks' performance (Hopkins and Hopkins, 1997)

The effects of IT investment on increasing profitability (ROA) for banks are significantly great. This suggests that IT investment plays a significant role in the industry's operating profit. These results support the fact that IT investments have a positive impact on operating profits. Again this finding supports the observations of Kim and Davidson (2004). Planning does not only improve IT effectiveness but IT may provide the systems and information that can make planning more effective, creating a symbolic IT-Planning relationship.

The findings revealed that, the increasing trends in ROA recorded by the foreign banks suggests a good IS strategy compared to the local banks. Again, the increasing trends in ROE recorded by the foreign banks suggests a good IS strategy compared to the local banks. The zero-order correlation covers up the dynamics between the strategy, IT, and ROA. Strategy appears to have direct effects on IT, and IT has direct effects on ROA.

The analysis suggests that IT can play a meaningful role in the strategy – ROA relationship. Despite these caveats, the strategic context makes a significant difference in the correlations observed between IT adoption and ROA. Without strategy variable in the model, the correlations would have been underestimated.

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CHAPTER NINE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

9.1 Introduction

This chapter presents the summary of the findings based on the study objectives indicated in Chapter One. The chapter also covers the conclusion drawn and recommendations made to address the deficiencies identified in the formulation and implementation of information system strategy, electronic products and services usage, and bank performance.

9.2 Summary of Findings

This study determined the impact of information system strategy on bank performance.

The major findings of the study are as follow:

1. Findings on aspects of IS Strategy and Bank Performance
2. Findings on aspects of Electronic Products and Bank Performance
3. Findings on aspects of Bank Performance Indicators

9.2.1 Findings on IS Strategy and Bank Performance

This section highlights the findings from the study on aspect of strategy. The findings under this section have been categorized under the following major sub headings:

- a. Information Systems Strategy and Information Systems Assets
- b. Staff Involvement and Success Predictors
- c. Barriers to Strategy

9.2.1.1 Information Systems Strategy and Information Systems Assets

The first objective of the study was to determine the relationship between IS strategy and business strategy and also find out the state of the required IS assets. The findings from the research revealed that all the banks, both local and foreign, have information systems strategy. The information system strategy has a time span of five years. All the foreign banks and the local banks have information system strategy fully aligned to the business strategy. The findings further revealed that all the foreign banks use IS Innovator strategy typology whilst the local banks use both IS Innovator and IS Conservative strategy typology. The findings further revealed that the foreign banks (Bank D, Bank E, and Bank F) only use differentiation strategy whilst the local banks (Bank A, Bank B, and Bank C) use a combination of cost leadership and differentiation strategy.

For the information systems assets, all the respondents from the foreign banks indicated high human resource quality. Four respondents from each of Banks B and C indicated that the bank has high human resource quality. The findings revealed that, all the foreign banks have high financial positions whilst only two of the local banks (Bank A and Bank B) recorded high financial performance. The foreign banks have a very high IT infrastructure to implement the IS strategy whilst the local banks do not have that high infrastructure for the IS strategy implementation.

9.2.1.2 Staff Participation and SISP Success Predictors

One of the objectives of the study was to explore the success predictors of strategic information system planning and the staff participation in IS strategy formulation. The

findings showed that the local banks (Bank A, Bank B, and Bank C) concentrate on management team and IT department for the formulation of IS strategy whilst the foreign banks (Bank D, Bank E, and Bank F) solely depend on Technology Group for the formulation of IS strategy. The findings further revealed that for the local banks (Bank A, Bank B, and Bank C), the most important SISP success factors are staff training and staff involvement, resources, and IS alignment to the business strategy. For the foreign banks (Bank D, Bank E, and Bank F), the most important SISP success factors are top management involvement, resources, and organizational and technological changes.

9.2.1.3 Barriers to Strategy

The study also attempted to determine the barriers to the formulation and implementation of information System Strategy. The research findings indicated that the major barriers to IS formulation to the foreign banks (Bank D, Bank E, and Bank F) are lack of staff involvement and uncertainties whilst with the local banks (Bank A, Bank B, and Bank C) the barriers are lack of policy, lack of resources, organizational culture, and uncertainties. The only barrier that affects all the banks is the external factors (uncertainty). The findings further revealed that the major barriers to IS implementation for the foreign banks (Bank D, Bank E, and Bank F) are lack of communication and external factors whilst with the local banks (Bank A, Bank B, and Bank C) the barriers are lack of IT training, lack of resources, internal and external factors.

9.2.2 Findings on Electronic Products and Bank Performance

This section highlights the findings from the study on aspect of electronic products and bank performance. The findings under this section have been categorized under the following major sub headings:

- a. Electronic Banking
- b. Technology and Customer Satisfaction

9.2.2.1 Electronic Banking

The forth objective of the study was to determine the level of usage and satisfaction of electronic banking products among bank customers. The research findings have it that most of the foreign bank customers visit the web site more than the customers of the local banks. Some of the customers visit Bank D, Bank E, and Bank F websites once a week, twice a week and once a month. Most of the customers of the local banks do not visit their websites. Even if they do, it is once in a while. The findings also revealed that, for SMS banking, the percent of usage in the local banks is less than that of the foreign banks. This means that, most of the customers use the internet banking offered by Bank D, Bank E, and Bank F than that used by Bank A, Bank B, and Bank C.

9.2.2.2 Technology and Customer Satisfaction

The findings also revealed that the bank customers are satisfied with the electronic products and services provided by the banks. Most of the customers have been transacting business with the respective banks for about six to ten years. On average bank customers spend ten to twenty minutes on bank transactions in Bank A, Bank E, and Bank F. The findings have it that all the local banks consider customers suggestions

in decision making whilst the foreign banks do not consider customers suggestions in decision making. The local banks also inform customers ahead of time before a new policy is introduced but the foreign banks do not do that.

9.2.3 Findings on Bank Performance

This section highlights the findings from the study on aspect of bank performance. The findings under this section have been categorized under the following major sub headings:

- a. Information Systems Investment
- b. Efficiency and Profitability

9.2.3.1 Information Systems Investments

The study also sought to determine the relationship between IS investment and bank's performance. The research findings showed that there exists is a linear relationship between IS investments and bank's performance. The higher the information systems investments the higher the bank's performance. The findings brought to the fore that there has been a very high rate of investment in the past three years in the banks and the investment has affected the operations of the bank positively. The findings have it that the foreign banks have invested more in IS than the local banks. All the foreign banks have invested in network infrastructure in recent times whilst the local banks have invested in improved banking software. Bank A uses the National Banking College to train staff. Bank B gives in-house training to staff. Bank C has a banking college that trains staff. Bank D, Bank E, and Bank F (foreign banks) bring in experts to train the staff and sometimes send the staff out for training.

9.2.3.2 Efficiency and Profitability

The study determined the effectiveness of strategies in terms of efficiency and profitability. The findings have it bare that, the banks increased their turnover because of the information systems investment. All the foreign banks performed very well in the past three years whilst with the local banks, only Bank A and Bank B performed very well in the past three years. On the impact of IT investments on key variables, all the banks (both foreign and local) asserted that market share, profitability, and ROA increases as IT investment are employed in the industry. From the findings, to the foreign banks, the problems associated with IS/IT investments are high maintenance cost and energy crises. Whilst with the local banks, the problems are lack of skilled personnel, some transactions cannot be done, customers can't use e-media, frequent breakdowns of channels, and energy crises.

All the foreign banks exhibited increasing trends in the ROA but this trend did not occur in the local banks. The effects of IT investment on increasing profitability (ROA and ROE) for banks are significantly great. The findings also have it that, the strategy of the foreign banks seems better than that of the local banks. The increasing trends in ROA recorded by the foreign banks suggest a good IS strategy compared to the local banks. Again, the increasing trends in ROE recorded by the foreign banks also suggest a good IS strategy compared to the local banks.

9.3 Conclusion

As the field of strategy management has expanded, strategy researchers and practitioners have shown increasing interest in the role of information technology in strategy formulation and implementation, and in its impacts on financial performance. Technology has brought about a complete paradigm shift in the functioning of banks and delivery of banking services. Gone are the days when every banking transaction required a visit to the bank branch. Today, most of the transactions can be done from the comfort of one's home and customers need not visit the bank branch for anything. Technology is no longer an enabler, but a business driver. The growth of the internet, mobiles and communication technology has added a different dimension to banking. The information technology (IT) available today is being leveraged in customer acquisitions, driving automation and process efficiency, delivering ease and efficiency to customers. Contemporary technology in banking comes in the form of computer based application and information technology. From the banking customer's perspective, two of the practical purposes of banking are convenience and accessibility to both funds and account information.

The business operations in the banking and financial sector have been increasingly dependent on the computerized information systems over the years. It has now become impossible to separate information technology (IT) from the business of the banks and the financial institutions. There is a need for focused attention on the issues of the corporate governance of the information systems in computerized environment and the security controls to safeguard information and information systems. The application of information technology has brought about significant changes in the way the institutions

in the banking and financial sector process and store data and this sector is now poised to countenance various developments such as internet banking, e-money, e-cheque, e-commerce etc., as the most modern methods of delivery of services to the customers. The telecommunication networks have played a catalytic role in the expansion and integration of the information systems (IS), within and between the institutions, facilitating data accessibility to different users. Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. The term strategic information system (SIS) has for many become synonymous with "the strategic use of information technology". But unlike the short cycles of summer fads or the similarly brief lives of buzzwords buried soon after birth, the SIS concept now enters its second decade firmly entrenched world-wide. Yet the meaning and reference of this idea remains a bit elusive.

Banks have a growing understanding of the power of technology and have begun leveraging advances in technology to improve operations and enhance customer service. However, technology is always changing and improving, and banks typically and desperately adapt in order to keep their customer base. When there is a change in the solution within a bank policy, it affects the interaction of other solutions being used within the same bank. Therefore, to take full advantage of these ever changing solutions, the bank must act to make sure it has full access to information between each solution. While ever-changing technology can pose difficulties, it is still an essential tool to ensure an institution's standing in the highly competitive financial services market. The changes brought about by IT include new products, more sophisticated customers, changing cost structures, and enhanced competitive pressures. These have all combined

to transform the structure of the banking industry. And with further development of new technology, the industry will likely continue to evolve.

Advances in IT have surely changed the optimal size of a bank. Some technologically intensive products, such as processing payments, are more efficiently produced on a large scale; and the banking industry's recent wave of mergers and acquisitions suggests that bankers, at least, believe the "efficient" size of a bank has increased. Information technology has also resulted in new database technology and data-mining techniques that may expand the range of services that banks offer their customers. This technology allows firms to use customer information gathered in one part of their company, say banking, to increase sales in the others, say insurance or brokerage services, and is one of the factors driving recent industry consolidation. Advances in IT have opened up market niches for competitors from unexpected places. Many firms, not just banks, can now use statistical models to evaluate risk efficiently, originate loans, transform them into marketable securities, and sell them to obtain funding to make more loans. Information technology will likely continue to transform some banks into new types of financial institutions whose business bears little resemblance to that of a traditional bank.

There is a growing debate in the business community about the importance of measuring the return on investments in IS. This is a difficult and challenging task, given that many of the benefits derived from IS are both intangible and long term. In spite of the limitations of existing productivity measures, it is important to monitor and assess the contribution of IS investments to organizational productivity and efficiency. Banks that

do not make investments that take advantage of new technology may find that they are losing customers to the better-quality or lower-cost products of firms that do. But using IT as a strategic weapon can be quite tricky, entailing high costs and an uncertain payoff (Brynjolfsson and Hitt, 2001). The study adopted a cross-sectional survey design and was comfortably placed within a scientific epistemology of logical positivism. The cases or study settings investigated were local banks and foreign banks.

The findings revealed that for the local banks, the most important SISP success factors are staff training and staff involvement, resources, and IS alignment to the business strategy. For the foreign banks, the most important SISP success factors are top management involvement, resources, and organizational and technological changes. The major barriers to IS formulation to the foreign banks are lack of staff involvement and uncertainties whilst with the local banks the barriers are lack of policy, lack of resources, organizational culture, and uncertainties. The major barriers to IS implementation for the foreign banks are lack of communication and external factors whilst with the local banks the barriers are lack of IT training, lack of resources, internal and external factors. The research findings suggest that the foreign bank customers visit the web site more than the customers of the local banks. It was also revealed that the level of usage of SMS and internet banking are very low.

On the impact of IT investments on key variables, all the banks (both foreign and local) asserted that market share, profitability, and ROA increases as IT investment are employed in the industry. The zero-order correlation covers up the dynamics between the strategy, IT, and ROA. Strategy appears to have direct effects on IT, and IT has

direct effects on ROA. The analysis suggests that IT can play a meaningful role in the strategy – ROA relationship. Despite these caveats, the strategic context makes a significant difference in the correlations observed between IT adoption and ROA. Without strategy variable in the model, the correlations would have been underestimated. Three hypotheses were statistically tested. The first hypothesis was concluded that information systems strategy has a positive relationship with bank performance even though the relationship is not strong. The second hypothesis was concluded that banks with higher levels of information systems investments have increasing operating profits than banks with low levels of information systems investments. And finally, the third hypothesis was concluded that bank customers are satisfied with the services of banks with modern technology than banks without modern technology.

The study is significant in terms of its contribution to understanding the significance of information technology investments in the Ghanaian banking industry. As an academic work, this study acts as a source of future reference, and it also adds to existing knowledge in this area since “the meaning and reference of this idea remains a bit elusive”. Scholars interested in development and implementation of ISS would also benefit from this research work. In some circumstances, applying IT to a value chain activity is essential, even where it provides no lasting competitive advantage. The technology becomes a strategic necessity “because failing to attend to it results in strategic disadvantage” (Clemons and Kimbrough, 1986). In this sense, IT becomes more threat than opportunity. The costs of adoption may yield little or no return, but the costs of not adopting are sufficiently high to justify the investment.

9.4 Recommendations

The findings of this study informed the following recommendations for improving and sustaining the IS strategy, information systems and bank performance.

Aligning information systems to the organizational strategy goals has appeared to be a concern for managers over the last decade. One of the most extensively used models of alignment is the strategic alignment model proposed by Henderson and Venkatraman. This multidimensional model identifies the internal and external dimensions and how these can be integrated functionally with the organizational strategy. Basically, the majority of alignment models are based on the organizational structure and their objectives. The strategic alignment model places alignment at the heart of the organization's needs. Many of these models also reveal the influence of the organization's objectives on the alignment as this type of model focuses on the connection between strategy and technology. To develop an attainable level of alignment within an organization, the IT/IS purpose has to be located within the organizational structure.

Banks must consider the 'mechanistic' perspective on strategy formulation from the business strategy literature into current SIS frameworks. According to such a perspective, management should in a first phase engage in a purely cognitive formulation process: through the appraisal of the environment, its threats and opportunities, and the strengths and weaknesses of the organization, key success factors and distinctive competencies are identified and translated into a range of competitive strategy alternatives. Once the optimal strategy has been selected, agreed upon and laid

out in sufficient detail, the next phase of implementation follows. The perspective is based on a set of premises or assumptions, to be found in most SIS models, such as the Critical Success Factors, the value chain, the strategic thrusts, and the sustainability analysis. Specifically, the approach can be characterized as being conscious and analytic, top-down and control-oriented, simple and structured, and separating action and structure.

There is the need to develop all the resources (human, physical, financial, technological capabilities for the enhancement of organizational flexibility and performance. The role of intangible (reputation, skills, technical know-how, etc.) and organizational learning are relevant to the capabilities concept and hence to the implementation of strategic management. It is essential for banks to manage both intangible and tangible resources and capabilities (organizational routines) in order to achieve strategic performance. The key to achieving strategic capability is for the banks to coordinate all resources and also to develop organizational learning. Bank C must take steps to increase the financial base and both Bank B and Bank C must increase the quality of their human resources base in order to stay competitive and much the following banks. This could be done through intensive training.

The vision and mission of the bank must be communicated to all staff so as to make staff members fully aware since the vision and mission must be shared. If not, this may impede the productivity of the staff members. The concept of information technology has become global and rules the world. For this reason, all staff members must be aware of the information system strategy irrespective of the department and work experience.

Both foreign and local banks must involve some of the operational staff in the IS formulation process.

IT researchers, consultants, and executives have universally asserted that firms should integrate IT with overall strategic planning efforts. Banks should continuously align their IS strategy with their overall business strategy: one should complement the other. The two strategies must not be in conflict but rather in harmony. As the result of the alignment, banks can increase market shares, profitability, and efficiency. The information system strategy of Bank A, Bank B, and Bank C must also be reviewed every three years since technology is always changing. For the foreign banks, top management must be committed and involved in the formulation of IS strategy for the smooth implementation of the IS strategy. For any bank to remain competitive there is the need to combine certain competitive strategies. Foreign banks must combine both cost leadership and differentiation strategies in order to remain competitive. It has been proven that, banks that use both competitive strategies have competitive edge over the other banks in the same industry.

In an effort to reduce or mitigate barriers of uncertainty when involved in strategic planning, Fitzsimmons (2006) remarked a natural compromise is to build strategies that are robust across multiple alternative future events, but are still tailored to meet the challenges of the most likely future events. That is to say, flexibility in the plan is essential; the plans should be flexible enough to adapt to any necessary changes that may occur within the organization. Fitzsimmons (2006) expressed that a better way to account for uncertainty in strategic planning would be to address several factors that

could be considered as potential threats and/or security challenges. The approach would also need to include transparent, probabilistic, and explicit reasoning in the planning process to ensure a) a better understanding, and b) disciplined judgments. Schwartz (1991) maintains that strategist should not create future scenarios with the intention of seeing the future. Instead, scenarios should be used to make leaders aware of alternative strategies and necessary decisions to be made. The key to dealing with lack of resource barrier is first to identify the cause or causes of the limited resources. By identifying where the limitation originated, one will be better equipped to create an effective strategy for developing superior resources. Instead of seeking greener fields, managers would usually do better by investing in building resources in present fields or a segment of present fields. In other words, to gain the most from strategic planning, the key is to concentrate on small sections at a time while building resources.

The banks must invest in servers with higher capacities and speed. Especially, Bank C and Bank D. More microcomputers must also be considered for client/work stations by all banks, both foreign and local. The local banks are encouraged to move from old version of operating system and use Vista, Windows 7 and Windows 8. Microsoft Office 2010 must also be encouraged since it makes life and work easier. For the Network Operating System (NOS), the banks must invest in the latest versions of Linux, UNIX, and Windows Server 2012. All the banks both foreign and local must also consider improved banking software built on oracle or MYSQL.

IT researchers consistently advocate IT training as an indispensable complement to hardware and software investments (Benjamin and Levinson, 1993). On the other hand,

IT training often has a commodity like character, and generic IT training services are broadly available at a market price. As such, the only sustainable value to IT training appears to lie in merging firm specific information technology with firm specific training to produce idiosyncratic, causally ambiguous organizational capabilities. This may be possible through a combination of formal and on-the-job training methods, such as job rotation, cross training, and mentoring, which emphasize firm specific IT applications, and may in the long run produce embedded IT skills. The provision of training in IT will have to be made for all staff. 'New blood' may have to be introduced to strengthen the technical expertise in the bank. Short as well as long-term formal and refresher training programmes in modern technology usage would have to be pursued. The importance of the IT-business unit partnership cannot be overemphasized.

The people and processes are just as critical to success as hardware and software. Undoubtedly, banks have made great technological advances in storing information. However, the full power to use that information to be more productive and make better decisions still goes unrealized. The effectiveness of the infrastructure is measured in the value it brings to the customer. That value is diminished by business units and individuals that are not networked. Therefore, banks must provide access and training, to each member of the bank who directly or indirectly serves customers. To make this possible, clear standards and expectations must be published, so the information technology organization can bring individuals on-line in a consistent manner.

Banks have understood that educating the customer makes good business sense. There are two levels of education; products and practices. Product education is targeted toward

increasing usage and the practices education is targeted at gaining customer confidence around systems and processes employed at banks. Both the foreign banks and the local banks must encourage the banks customers to use the SMS banking, internet banking, and visit the banks' website. Increased adoption of e-payments and mobile banking are clearly the emerging areas which are bound to strengthen in the near future. In addition the focus is shifting towards systems and processes needed in the maturity phase of the technology needs curve. Banks are and will need to increasingly focusing on cost and profitability management, business intelligence, dashboards / executive information reports, data warehousing and analytics. Improving internal effectiveness and efficiency with integrated data warehouse and real-time access to all customer information will help the banks' decision making and ability to deliver appropriate products and services to the customers. The foreign banks are encouraged to consider suggestions and complaints from bank customers and must endeavour to inform bank customers prior to the introduction of a new policy.

Banks must see beyond applications that provide solutions to today's problems. They need to develop a vision of comprehensive infrastructure comprising internal and external networks instantaneously moving information from data stores to users and back again. Banks must be encouraged to employ more technologies to automate their service delivery. The use of ATMs and electronic based bank services would reduce the number of branches that would be required. Moreover, these technologies would enable banks to explore new markets without maintaining a physical presence. It would reduce the number of staff costs, occupancy cost, paper cost and queuing times in the banking halls. The foreign banks must take collaborative and radical steps in building capacity of

IT employees to reduce over reliance on Technology Group. The foreign banks must also intensify communication within the bank since this would help in the dissemination of information.

The advancement of technology is a necessity of the current era. Businesses need to adopt and embrace new technologies to provide excellent business operation and services to their customers. The banking industry is not an exception with regards to this adaptation. So it is worth suggesting that the banking industry needs to spend more on IT and better apply IT to improve its operations, customer services and products. Banks should devote more resources to the development of secure IT systems, services and products. The local banks must invest more in IS/IT especially, in IT security and IT infrastructure to achieve better results. Bank C must also conduct a systems audit to know the true picture of the system.

9.5 Areas of Future Research

This study investigated six banks out of twenty seven banks in Ghana. More banks could also be investigated. Further research into the analysis of the individual IS strategy of the banks to determine whether it conforms to IS standards would be a vital venture. This study adopted a survey approach. It would be very interesting to subject this study to a case study approach to compare the findings. As a task for the future research agenda, it could be interesting to elaborate an empirical strategy aimed at identifying the different channels through which ICT may affect decentralization. Moreover, it could also be of interest to attempt to analyse the heterogeneity of the strategies followed by the banks in the adoption of competitive strategies and how these reflect on performance.

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APPENDICES

APPENDIX A

GLOSSARY

Automated Teller Machine (ATM) is a computerized telecommunications device that provides the customers of a financial institution with access to financial transaction in a public space without the need for a human clerk or bank teller.

Banks are financial institutions that offer the widest range of financial services, especially credit, savings and payment services and perform the widest range of financial functions of any business economy.

Coding is process by which responses are classified into meaningful categories.

Competitive Advantage: A company is said to have a competitive advantage over its rivals when its profitability is greater than the average profitability of all other companies competing for the same set of customers. There are three basic types of competitive strategies a firm can possess: low cost, differentiation, and generic.

Computer is a general purpose device that can be programmed to carry out a finite set of arithmetic or logical operations.

Computerized System is a computer system with a purpose referring to a function (process or operation) integrated with a computer system and performed by trained people.

Customer Satisfaction is the company's ability to fulfill the business, emotional, and psychological needs of its customers.

Information Technology (IT): Information Technology consists of all the hardware and software that a firm needs to use in order to achieve its business objectives.

Information Technology Infrastructure consists of the shared technology resources that provide the platform for the firm's specific information system applications.

Information Technology Security is the process of implementing measures and systems designed to securely protect and safeguard information.

Information System (IS) is any combination of information technology and people's activities that support operations, management and decision making. Information Systems (IS) is also a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization.

Information Systems Strategy brings together the business aims of the company, an understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. It is a plan for the development of systems towards some future vision of the role of information systems in the organization.

Mobile Banking is the provision of banking and financial services with the help of mobile telecommunication devices.

Mission statement is a brief description of a company's fundamental purpose. It answers the question, "Why do we exist?" The mission statement articulates the company's purpose both for those in the organization and for the public.

Network Operating System (NOS) is the software that runs on a server and enables the server to manage data, users, groups, security, applications, and other networking functions. It also includes special functions for connecting computers and devices into a Local Area Network (LAN).

Online Banking refers to the automated delivery of banking products and services directly to customers through electronic communication channels, most notably the Internet.

Operating System (OS) is a set of programmes through which the computer manages its own resources. Every computer has an operating system hidden from the user. The operating system is often referred to as the software environment or platform.

Policy is a statement of intent, and is implemented as a procedure or protocol.

Return on Assets is the ratio of annual net income to average total assets of a business during a financial year.

Return on Equity or return on capital is the ratio of net income of a business during a year to its stockholders' equity during that year.

Service Quality is seen as the extent to which a service meets customer's needs and expectations. Thus, it is the difference between customer expectations of service and perceived service.

Severs are computers with higher capacity and speed that can be linked to other client stations.

SMS Banking provides instant notification about transactions as and when it happens. It helps to keep a watch on account with a round the clock service.

Software is a set of instructions that direct the hardware to perform specified actions.

Strategy is the pattern or plan that integrates an organization's major goals, policies and action sequences into a cohesive whole.

Strategic Art is the skillful balancing of ends (objectives), ways (courses of action), and means (resources).

Strategic Information Systems (SIS) is a system that helps companies change or otherwise alter their business strategy and/or structure. It is typically utilized to streamline and quicken the reaction time to environmental changes and aid it in achieving a competitive advantage.

Systems are defined as integrated set of components or entities that interact to achieve a particular function or goal.

Technology is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function.

Turnover of a bank is the profit after tax in any financial year.

Vision statement is a picture of a company in the future. It is an inspiration and framework for all strategic planning.

Website is a collection of web pages having images, videos and other digital assets that is hosted on one or several web servers usually accessible via Internet, cell phone or a LAN

A handwritten signature in black ink, appearing to read 'Franklyn', written over several horizontal lines.



Amos



INSTRUCTIONS: Please, tick the appropriate answer for the close ended questions and answer the open ended questions to the best of your knowledge.

SECTION 1: BANK PROFILE

This will find out general questions about the bank. The answers for these questions will be used to find out the bank size and business growth.

1.1 Gender Male [] Female []

1.2 Educational background

Second degree []

First degree []

'A' levels []

'O' Levels []

SHS []

Others.....

1.3 What is the name of your bank?

.....

1.4 What is your current rank in the bank?

.....

1.5 How long have you been working with by the bank?

[] Less than 1 Year

[] 11 – 15 Years

[] 1 – 5 Years

[] 16 – 20 Years

[] 6 – 10 Years

[] More than 20 Years

1.6 What is the total number of employees in your bank (head office)?

[] 1 - 50

[] 51 – 100

[] 101 - 150

[] 151 - 200

[] More than 200

1.7 Which department do you belong to?

.....

1.8 How many staff are currently working in your department?

1- 10 11 – 20 21 – 30 31 – 40 41 – 50 More than 50

SECTION 2: BUSSINESS STRATEGY AND IS STRATEGY

This section will explore the relationship between the IS strategy and the overall business strategy of the bank. It will also try to establish the importance of the IS strategy to the Vision and Mission of the bank.

2.1 Do you have information system strategy? Yes No

2.2 Identify the important components in the IS strategy in your bank?

- IS Manual
- IS Training
- IS Formulation
- IS Implementation
- IS Monitoring
- IS Control

2.3 What time frame does your strategic plan covers?

One yr Three yrs Five yrs Ten yrs Others

2.4 How would you describe your business strategy?

Prosper Analyzer Defender Reactor

2.5 How is your IS strategy aligned to your business strategy?

Well Aligned Semi Aligned No Alignment

- 2.6 What is the concept of your IS strategy typology?
 Innovator Conservative Undefined
- 2.7 How do you see this bank in the next five (5) years (vision of the bank)?
.....
.....
- 2.8 How can this vision be achieved?
.....
.....
- 2.9 Does the bank have the human resources to achieve its goals in the next five (5) years? Yes No
- 2.10 What type of technology does the bank need in order to achieve its goals in the next five (5) years?
.....
.....
- 2.11 Indicate the current financial resources level of the bank
 Low Moderate High
- 2.12 What does your bank exist for (mission of the bank)?
.....
.....
- 2.13 Is the political situation in the country favorable for your bank's IS strategy?
 Yes No
- 2.14 Can the economic factors in the country affect the bank's IS strategy?
 Yes No

2.15 Can the social factors in the country affect the bank's IS strategy?

Yes No

2.16 Can technological factors affect the bank's IS strategy?

Yes No

SECTION 3: STAFF INVOLVEMENT AND SUCCESS PREDICTORS

To every strategy there are key features and this section seeks to find out the key features of the IS strategy of the bank. This section will also find out among others whether the entire staff are involved in the formulation and the implementation of the IS strategy.

3.1 Who are the people involved in your IS strategy formulation?

- Board Members
- Management Team
- Information Technology Department
- Out Sourcing
- Technology Group
- Others

3.2 Identify the important Strategic Information Systems Planning (SISP) success predictors.

.....

3.3 How would you rate your willingness to use a new technology for your operations in the bank?

Not Willing Somehow Willing Most Willing

3.4 Does the bank have the resources to support the formulation and implementation of the IS strategy?

Yes No

SECTION 4: COMPETITIVE ADVANTAGE AND IS STRATEGY

This section seeks to determine the various competitive strategies of the banks and how the banks are benefiting from the competitive strategies.

4.1 Has your profit margins and market share increased since the implementation of the IS strategy? Yes No

4.2 What type of competitive strategy does your bank use?

Cost leadership Differentiation Generic

4.3 Who are your competitors?

.....

4.4 Is the competition affecting the banks profits?

Yes No

4.5 Apart from competitive advantage, what are the benefits accruing to your bank from using information system?

.....

SECTION 5: BARRIERS AND STRATEGY

These questions will find out the challenges that are associated with the formulation and implementation of an IS strategy and the way forward.

5.1 What is the level of the IS infrastructure to implement your strategy?

Low Moderate High

5.2 What was the outcome of your bank's IS strategy implementation?
[] Successful [] Somehow Successful [] Not Successful

5.3 What are the barriers in formulating IS strategy?

.....
.....

5.4 How could the barriers in formulating your IS strategy be overcome?

.....
.....

5.5 What are the barriers in implementing your IS strategy?

.....
.....

5.6 How could the barriers in implementing your IS strategy be overcome?

.....
.....

5.7 How are your customers benefiting as a result of the implementation of an IS strategy?

.....
.....

SECTION 6: INFORMATION TECHNOLOGY ISSUES

Basic information technology issues will be determined in this section. The emphasis will be on how information technology is used to carry out certain banking operations and also the benefits derived from using information technology.

6.1 How many microcomputers (PCs) does your department have?
[] 1 – 20 PCs [] 21 – 50 PCs [] 51 – 70 PCs

71 – 100 PCs 101 – 150 PCs More than 150 PCs

6.2 How many server computers does your bank have?

One Three Five Ten Others

6.3 What type of operating system does your bank use on the client stations?

Windows XP Windows 7 Vista Others...

6.4 What type of network operating system does your bank use?

Windows Server 2000 Windows Server 2008 Windows Server XP
 Windows Server NT UNIX Linux

6.5 Please, what is the name of the database management system that your bank is using?

.....
.....

6.6 What is the level of IS security in your bank?

Low Moderate High

6.7 How would you describe the current information system in the bank?

Not Effective Somehow Effective Very Effective

6.8 Influence of ICT on time saving

Very High High Moderate Low Very Low

6.9 Influence of ICT devices on error rate reduction

Very High High Moderate Low Very Low

6.10 Influence of ICT on Management decisions

Very High High Moderate Low Very Low

6.11 Influence of ICT on speed of transaction

Very High High Moderate Low Very Low High

SECTION 7: PRODUCTS AND SERVICES

These questions will find out the various products and services available at the banks and how they are linked to information technology.

7.1 Which of the following products and services are available to your customers?

- | | |
|---|---|
| <input type="checkbox"/> Accounts | <input type="checkbox"/> Online Banking |
| <input type="checkbox"/> Money transfer | <input type="checkbox"/> SMS Banking |
| <input type="checkbox"/> Loans | <input type="checkbox"/> E-Zwitch |
| <input type="checkbox"/> Bank Assurance | <input type="checkbox"/> T-Bills |
| <input type="checkbox"/> ATM | <input type="checkbox"/> Bills Payment |
| <input type="checkbox"/> | <input type="checkbox"/> |
- Others.....

7.2 Does your bank use IT to design products and services?

Yes No

7.3 How do you perceive the services quality of your bank?

Low Moderate High

7.4 How can information System be used to reduce cost in banking operations?

.....

7.5 What are the banking operations that are supported by information systems?

.....

7.6 What are the problems associated with the banking operations that are handled manually?

.....

7.7 How can information systems be used to improve upon banking operations?

.....

SECTION 8: BANK PERFORMANCE

This section explores the level of IT investment of the bank in the short term, medium term and the long term.

8.1 How much have you invested in your IT systems in terms of hardware and software in the past three (3) years and what has been the effect on the bank's operations?

YEAR	SOFTWARE AND HARDWARE COST	IMPACT ON OPERATIONS
2009		
2010		
2011		

8.2 How would you rate your bank IT/IS investments in the past three years?

Low Moderate High

8.3 Please, how often do you update your IT systems?

Once a year Twice in a year Once in two years
 Once in five years Others

8.4 Please, what has been your **IS/IT** investment in recent times?

.....

8.5 How much do you spend in training your staff each year?

- Less than GH¢ 1,000 GH¢ 1,000 – 1,900
 GH¢ 2,000 – 2,900 GH¢ 3,000 – 3,900
 GH¢ 4,000 – 4,900 Greater than GH¢ 5,000

8.6 Are there any plans to bring improvement or change in the current information systems?

Yes No

8.7 What are some of the **IT** related items that in the future you will investment in?

.....

 .

8.8 List the **IT** services that your bank outsources.

.....

8.9 How would you rate your bank performance in the past three years?

Low Moderate High

8.10 What was the total turnover of your bank in the last three year?

YEAR	2009	2010	2011
TURNOVER(GH¢)			

8.11 In your view, what constitute bank performance?

Profitability Sales Growth IT Infrastructure

8.12 Do you think IT investments have the following effects on your bank?

- | | | | | |
|------------------------------------|--------------------------|-----|--------------------------|----|
| Reduces operating expenses | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Increases market share of deposits | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Increases profits | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Positive impact on Return on Asset | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Increases labour productivity | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |

8.13 Which problem(s) is / are associated with the investments in IT in your bank?

- High cost maintenance
- Frequent breakdowns of channels
- Energy crisis
- Lack of skilled personnel in this field
- Some transactions can't be done through e-medium
- Some customers don't know how to use them
- Others

8.14 Indicate the Net Income, Total Asset, and Total Equity for the following years.

	2009	2010	2011
Net Income			
Total Asset			
Total Equity			



INSTRUCTIONS: Please, tick the appropriate answer for the close ended questions and answer the open ended questions to the best of your knowledge.

SECTION 1: BANK SIZE AND BUSINESS GROWTH

This will find out general questions about the bank. The answers for these questions will be used to find out the bank size and business growth.

1.1 Gender Male Female

1.3 Educational background

Second degree First degree 'A' levels
 'O' Levels SHS Others.....

1.3 What is the name of your bank?

GCB SCB NIB BBG ADB STANBIC

1.4 What is your current rank in the bank?

.....
.....

1.5 How long have you been hired by the bank?

Less than 1 Year 11 – 15 Years
 1 – 5 Years 16 – 20 Years
 6 – 10 Years More than 20 Years

1.6 How many staff are currently working in your department?

1- 10 31 – 40
 11 – 20 41 – 50
 21 – 30 More than 50

1.7 Which department to you belongs to?

Information Technology Credit Management Administration

- | | |
|---|---|
| <input type="checkbox"/> Human Resource | <input type="checkbox"/> Special Assets Management |
| <input type="checkbox"/> Retail Banking | <input type="checkbox"/> Legal Department |
| <input type="checkbox"/> Corporate Banking | <input type="checkbox"/> Operations Department |
| <input type="checkbox"/> Project and Multilateral | <input type="checkbox"/> Financial Control Department |
| <input type="checkbox"/> Service Excellence | <input type="checkbox"/> Treasury Department |

SECTION 2: BUSSINESS STRATEGY AND IS STRATEGY

This section will explore the relationship between the IS strategy and the overall business strategy of the bank. It will also try to establish the importance of the IS strategy to the Vision and Mission of the bank.

- 2.1 Do you have information system strategy? Yes No
- 2.2 Identify the important components in the IS strategy in your bank?
 IS Manual IS Training IS Formulation
 IS Implementation IS Monitoring IS Control
- 2.3 How would you describe your business strategy?
 Prospector Analyzer Defender Reactor
- 2.4 How is your IS strategy aligned to your business strategy?
 Well aligned Semi aligned No alignment
- 2.5 What is the concept of your IS strategy typology?
 Innovator Conservative Undefined
- 2.6 How do you see this bank in the next five (5) years (vision of the bank)?
 Best bank and Market leader
 Among the top five banks
 Best customer friendly bank
 Multinational bank

Others

2.7 Indicate the current human resources level (quality) of the bank

Low Moderate High

2.8 What type of technology does the bank need in order to achieve its goals in the next five (5) years?

Banking software Work stations
 Network Infrastructure IT Outsourcing
 Server computers Others

2.9 Indicate the current financial resources level of the bank

Low Moderate High

2.10 What does your bank exist for (mission of the bank)?

Customer Service Loans Expansion CSR Others

2.11 Is the political situation in the country favorable for your bank's IS strategy?

Yes No

2.12 Can the economic factors in the country affect the bank's IS strategy?

Yes No

2.13 Can the social factors in the country affect the bank's IS strategy?

Yes No

2.14 Can technological factors affect the bank's IS strategy?

Yes No

SECTION 3: STAFF INVOLVEMENT AND SUCCESS PREDICTORS

To every strategy there are key features and this section seeks to find out the key features of the IS strategy of the bank. This section will also find out among others whether the entire staff are involved in the formulation and the implementation of the IS strategy.

3.1 Who are the staff involved in your IS strategy formulation?

- Board Members Management Team IT Department
 Out Sourcing All Staff Technology Group

3.2 Identify the important Strategic Information Systems Planning (SISP) success predictors.

- Top management Involvement
 Staff Training and Staff Involvement
 Resources
 IS strategy alignment with business strategy
 Organizational and Technology Changes
 Control and Evaluation
 Others

3.3 How would you rate your willingness to use a new technology for your operations in the bank?

- Not willing Somehow willing Most willing

3.4 What is the bank level of resources to support the formulation and implementation of the IS strategy?

- Low Moderate High

- 5.4 What are the barriers in implementing your IS strategy?
- Strategy Staff Resources
- Organizational Culture External Factors Others
- 5.5 How are your customers benefiting as a result of the implementation of an IS strategy?
-
-

SECTION 6: INFORMATION TECHNOLOGY ISSUES

Basic information technology issues will be determined in this section. The emphasis will be on how information technology is used to carry out certain banking operations and also the benefits derived from using information technology.

- 6.1 How many microcomputers (PCs) does your department have?
- 1 – 20 PCs 71 – 100 PCs
- 21 – 50 PCs 101 – 150 PCs
- 51 – 70 PCs More than 150 PCs
- 6.2 How many servers does your bank have?
- One Three Five Ten Others
- 6.3 What type of operating system does your bank use on the client stations?
- Windows XP Windows 7 Vista Others
- 6.4 What type of network operating system does your bank use?
- Windows Server 2000 Windows Server 2008 Windows Server XP
- Windows Server NT UNIX Linux
- 6.5 What is the level of IS security in your bank?
- Low Moderate High

- 6.6 How would you describe the current information system in the bank?
 Not effective Somehow Effective Very effective
- 6.7 Influence of ICT on time saving
 Very High High Moderate Low Very Low
- 6.8 Influence of ICT devices on error rate reduction
 Very High High Moderate Low Very Low
- 6.9 Influence of ICT on Management decisions
 Very High High Moderate Low Very Low
- 6.10 Influence of ICT on speed of transaction
 Very High High Moderate Low Very Low

SECTION 7: PRODUCTS AND SERVICES

These questions will find out the various products and services available at the banks and how they are linked to information technology.

- 7.1 Which of the following products and services are available to your customers?
- | | |
|---|---|
| <input type="checkbox"/> Accounts | <input type="checkbox"/> Online Banking |
| <input type="checkbox"/> Money transfer | <input type="checkbox"/> SMS Banking |
| <input type="checkbox"/> Loans | <input type="checkbox"/> E-Zwitch |
| <input type="checkbox"/> Bank Assurance | <input type="checkbox"/> T-Bills |
| <input type="checkbox"/> ATM | <input type="checkbox"/> Bills Payment |
- 7.2 Does your bank use IT to design products and services?
Yes No
- 7.3 How do you perceive the services quality of your bank?
 Low Moderate High

7.4 Can Information Systems be used to reduce cost in banking operations?

Yes No

7.5 How can information System be used to reduce cost in banking operations?

Automation Accurate interest calculations
 Data integrity Banking software
 Trained staff Others

7.6 What are the problems associated with the banking operations that are handled manually?

Errors Slow access Cost
 Lack of backup Delay transactions Others

7.7 Can Information Systems be used to improve upon banking operations?

Yes No

SECTION 8: BANK PERFORMANCE

This section explores the level of IT investment of the bank in the short term, medium term and the long term.

8.1 How would you rate your bank IT/IS investments in the past three years?

Low Moderate High

8.2 Please, how often do you update your IT systems?

Once a year Twice in a year
 Once in two years Once in five years Others

8.3 Please, what has been your IS/IT investment in recent times?

Banking software Network Infrastructure
 Server computers Work stations
 IT Outsourcing Others

- 8.4 How much is spent in training staff each year?
- Less than GH¢ 1,000 GH¢ 1,000 – 1,900
- GH¢ 2,000 – 2,900 GH¢ 3,000 – 3,900
- GH¢ 4,000 – 4,900 Greater than GH¢ 5,000
- Others
- 8.5 Are there any plans to bring improvement or change in the current information systems?
- Yes No
- 8.6 How would you rate your bank performance in the past three years?
- Low Moderate High
- 8.7 In your view, what constitute bank performance?
- Profitability Sales Growth IT Infrastructure
- 8.8 Do you think IT investments have the following effects on your bank?
- | | | |
|------------------------------------|------------------------------|-----------------------------|
| Reduces operating expenses | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Increases market share of deposits | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Increases profits | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Positive impact on Return on Asset | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Increases labour productivity | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- 8.9 Which problem(s) is / are associated with the investments in IT in your bank?
- High cost maintenance
- Frequent breakdowns of channels
- Energy crisis
- Lack of skilled personnel in this field
- Some transactions can't be done through e-medium
- Some customers don't know how to use them



SECTION 1: DEMOGRAPHIC

1.1 Gender Male Female

1.4 Who are your bankers?

GCB SCB NIB
 BBG ADB STANBIC

1.5 How long have you been banking with your bankers?

1– 2 yrs 11 – 15 yrs
 3– 5 yrs 16 – 20 yrs
 6– 10 yrs >21 yrs

SECTION 2: ICT PRODUCTS AND SERVICES

2.1 Which of the following products and services are available to you?

Accounts Online Banking
 Money transfer SMS Banking
 Loans E-Zwitch
 Bank Assurance T-Bills
 ATM Bills Payment
 Others.....

2.2 Why do you transact business with this bank?

.....

2.3 How long do you spend in your bank transactions?

Less than 10 minutes 10 – 20 minutes
 21 – 30 minutes 31 – 60 minutes
 Others.....

- 2.4 Does your bank have modern technology for its operations?
Yes No
- 2.5 Are you satisfied with the services of the bank?
Yes No
- 2.6 Does your bank have a website? Yes No
- 2.7 If yes, how often do you visit the bank's website?
 Once in a week Twice in a week
 Once in a month Others.....
- 2.8 Do you use SMS banking from your bankers? Yes No
- 2.9 Do you use the internet banking? Yes No
- 2.10 If yes, how often do you use the internet banking?
 Once in a week Twice in a week
 Once in a month Others.....
- 2.11 How often do you use the ATMs?
 Never Not Often Most Often
 Frequently Others.....

SECTION 3: POLICY FORMULATION

- 3.1 Are you informed ahead of time before a new policy is introduced?
Yes No
- 3.2 Are your suggestions considered in decision making?
Yes No

SECTION 4: ICT AND CUSTOMER SERVICE

4.1 Adoption of ICT products facilities Accurate Record

- Strongly Agree Agree Hardly Agree
 Disagree Strongly Disagree

4.2 Adoption of ICT enhances faster Services

- Strongly Agree Agree Hardly Agree
 Disagree Strongly Disagree

4.3 Ability to access Accounts at any Location

- Strongly Agree Agree Hardly Agree
 Disagree Strongly Disagree

4.4 Adoption of ICT makes enquiries on Accounts faster

- Strongly Agree Agree Hardly Agree
 Disagree Strongly Disagree

4.5 Adoption of ICT reduces interpersonal relationships

- Strongly Agree Agree Hardly Agree
 Disagree Strongly Disagree

SECTION 5: OTHER ISSUES

5.1 What are some of the products and services that you expect from your bank?

.....
.....

5.2 How can the services of your bank be improved?

.....
.....

APPENDIX G

THE CODING SCHEME FOR THE STRATEGIC STAFF

QUES. NO.	LABEL	CODE	WIDTH
Q1.1	Gender	Male = 1 Female = 2 Non-Response = 99	
Q1.2	Educational Background	Second degree = 1 First degree = 2 'A' levels = 3 'O' Levels = 4 SHS = 5 Non-Response = 99	
Q1.5	Work Experience	Less than 1 Year = 1 1 – 5 Years = 2 6 – 10 Years = 3 11 – 15 Years = 4 16 – 20 Years = 5 More than 20 Years = 6 Non-Response = 99	
Q1.7	Department	Information Technology = 1 Human Resource = 2 Retail Banking = 3 Corporate Banking = 4 Project and Multilateral = 5 Service Excellence = 6 Credit Mgt Admin = 7 Special Assets Mgt = 8 Legal Department = 9 Operations Department = 10 Financial Control Depart = 11 Treasury Department = 12	

		Non-Response =99	
Q2.1	Information System Strategy	Yes = 1 No = 2 Non-Response = 99	
Q2.2	Components of IS strategy	IS Manual = 1 IS Training = 2 IS Formulation = 3 IS Implementation = 4 IS Monitoring = 5 IS Control = 6 Non-Response = 99	
Q2.3	Time Frame of Strategy	One Year = 1 Three Years = 2 Five Years = 3 Ten Years = 4 Others = 5 Non-Responses = 99	
Q2.4	Business Strategy	Prospector = 1 Analyzer = 2 Defender = 3 Reactor = 4 Non-Response = 99	
Q2.5	IS Strategy Aligned to Business Strategy	Well aligned = 1 Semi aligned = 2 No alignment = 3 Non-Response = 99	
Q2.6	IS Strategy Typology	Innovator = 1 Conservative = 2 Undefined = 3 Non-Response = 99	
Q2.9	Human Resources Quality	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q2.11	Financial Resources Level	Low = 1 Moderate = 2 High = 3	

		Non-Response = 99	
Q2.13	Political Situation	Yes = 1 No = 2 Non-Response = 99	
Q2.14	Economic Factors	Yes = 1 No = 2 Non-Response = 99	
Q2.15	Social Factors	Yes = 1 No = 2 Non-Response = 99	
Q2.16	Technological Factors	Yes = 1 No = 2 Non-Response = 99	
Q3.1	Staff Involvement	Board Members = 1 Management Team = 2 IT Department = 3 Out Sourcing = 4 All Staff = 5 Technology Group = 6 Non-Response = 99	
Q3.3	Willingness to Use New Technology	Not willing = 1 Somehow willing = 2 Most willing = 3 Non-Response = 99	
Q3.4	Level of Resources	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q4.1	Increased Profit Margins and Market Share	Yes = 1 No = 2 Non-Response = 99	
Q4.2	Types of Competitive Strategies	Cost leadership = 1 Differentiation = 2 Generic = 3 Non-Response = 99	
Q4.3	Competition Affecting the Banks Profits	Yes = 1 No = 2 Non-Response = 99	
Q5.1	Level of IS Infrastructure	Low = 1	

		Moderate = 2 High = 3 Non-Response = 99	
Q5.2	Outcome of IS strategy	Successful = 1 Somehow Successful = 2 Not Successful = 3 Non-Response = 99	
Q6.1	Number of Microcomputers (PCs)	1 – 20 PCs = 1 21 – 50 PCs = 2 51 – 70 PCs = 3 71 – 100 PCs = 4 101 – 150 PCs = 5 More than 150 PCs = 6 Non-Response = 99	
Q6.2	Number of Servers	One = 1 Three = 2 Five = 3 Ten = 4 Others = 5 Non-Response = 99	
Q6.3	Types of Operating Systems	Windows XP = 1 Windows 7 = 2 Vista = 3 Other = 4 Non-Response = 99	
Q6.4	Type of Network Operating Systems	Windows Server 2000 = 1 Windows Server 2008 = 2 Windows Server XP = 3 Windows Server NT = 4 UNIX = 5 Linux = 6 Non-Response = 99	
Q6.6	Levels of IS Security	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q6.7	Current Information System	Not effective = 1 Somehow Effective = 2 Very effective = 3	

		Non-Response = 99	
Q6.8	Influence of ICT on Time saving	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q6.9	Influence of ICT devices on Error Rate Reduction	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q6.10	Influence of ICT on Management Decisions	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q6.11	Influence of ICT on Speed of Transaction	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q7.2	IT and Design of Products and Services	Yes = 1 No = 2 Non-Response = 99	
Q7.3	Services Quality	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q8.2	IT/IS Investments Rating	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q8.3	Update of IT systems	Once a year = 1 Twice in a year = 2 Once in two years = 3 Once in five years = 4 Others = 5 Non-Response = 99	

Q8.5	Amount spent in Training Staff	Less than GH¢ 1,000 = 1 GH¢ 1,000 – 1,900 = 2 GH¢ 2,000 – 2,900 = 3 GH¢ 3,000 – 3,900 = 4 GH¢ 4,000 – 4,900 = 5 Greater than GH¢ 5,000 = 6 Non-Response = 99	
Q8.6	Plans for Improvement of IS	Yes = 1 No = 2 Non-Response = 99	
Q8.9	Bank Performance Rating	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q8.11	Bank Performance Measures	Profitability = 1 Sales Growth = 2 IT Infrastructure = 3 Non-Response = 99	
Q8.12A	IT Investments - Reduces Operating Expenses	Yes = 1 No = 2 Non-Response = 99	
Q8.12B	IT Investments - Increases Market Share	Yes = 1 No = 2 Non-Response = 99	
Q8.12C	IT Investments - Increases Profits	Yes = 1 No = 2 Non-Response = 99	
Q8.12D	IT Investments - Positive impact on Return on Asset	Yes = 1 No = 2 Non-Response = 99	
Q8.12E	IT Investments - Increases labour productivity	Yes = 1 No = 2 Non-Response = 99	
Q8.13A	IT Investments Problem- High cost	Yes = 1	

	maintenance	No = 2 Non-Response = 99	
Q8.13B	IT Investments Problem- Frequent breakdowns	Yes = 1 No = 2 Non-Response = 99	
Q8.13C	IT Investments Problem- Energy crisis	Yes = 1 No = 2 Non-Response = 99	
Q8.13D	IT Investments Problem- Lack of skilled personnel	Yes = 1 No = 2 Non-Response = 99	
Q8.13E	IT Investments Problem- Some transactions can't be done through e-medium	Yes = 1 No = 2 Non-Response = 99	
Q8.13F	IT Investments Problem- Some customers don't know how to use them	Yes = 1 No = 2 Non-Response = 99	

APPENDIX H**THE CODING SCHEME FOR THE OPERATIONAL STAFF**

QUES. NO.	LABEL	CODE	WIDTH
Q1.1	Gender	Male = 1 Female = 2 Non-Response = 99	
Q1.2	Educational Background	Second degree = 1 First degree = 2 'A' levels = 3 'O' Levels = 4 SHS = 5 Non-Response = 99	
Q1.5	Work Experience	Less than 1 Year = 1 1 – 5 Years = 2 6 – 10 Years = 3 11 – 15 Years = 4 16 – 20 Years = 5 More than 20 Years = 6 Non-Response = 99	
Q1.7	Department	Information Technology = 1 Human Resource = 2 Retail Banking = 3 Corporate Banking = 4 Project and Multilateral = 5 Service Excellence = 6 Credit Mgt Admin = 7 Special Assets Mgt = 8 Legal Department = 9 Operations Department = 10 Financial Control Depart = 11 Treasury Department = 12 Non-Response = 99	
Q2.1	Information System Strategy	Yes = 1 No = 2 Non-Response = 99	
Q2.2	Components of IS strategy	IS Manual = 1 IS Training = 2 IS Formulation = 3 IS Implementation = 4 IS Monitoring = 5 IS Control = 6	

		Non-Response = 99	
Q2.3	Business Strategy	Prospector = 1 Analyzer = 2 Defender = 3 Reactor = 4 Non-Response = 99	
Q2.4	IS Strategy Aligned to Business Strategy	Well aligned = 1 Semi aligned = 2 No alignment = 3 Non-Response = 99	
Q2.5	IS Strategy Typology	Innovator = 1 Conservative = 2 Undefined = 3 Non-Response = 99	
Q2.6	Vision	Best bank and Market leader = 1 Among the top five banks = 2 Among the top ten banks = 3 Best customer friendly bank = 4 Non-Response = 99	
Q2.7	Human Resources Quality	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q2.8	Technology Needed	Banking software = 1 Network Infrastructure = 2 Server computers = 3 Work stations = 4 IT Outsourcing = 5 Non-Response = 99	
Q2.9	Financial Resources Level	Low = 1 Moderate = 2 High = 3 Non-Response = 99	

Q2.10	Mission	Customer Service = 1 Loans = 2 Expansion = 3 CSR = 4 Non-Response = 99	
Q2.11	Political Situation	Yes = 1 No = 2 Non-Response = 99	
Q2.12	Economic Factors	Yes = 1 No = 2 Non-Response = 99	
Q2.13	Social Factors	Yes = 1 No = 2 Non-Response = 99	
Q2.14	Technological Factors	Yes = 1 No = 2 Non-Response = 99	
Q3.1	Staff Involvement	Board Members = 1 Management Team = 2 IT Department = 3 Out Sourcing = 4 All Staff = 5 Technology Group = 6 Non-Response = 99	
Q3.2A	SISP -Top Management Involvement	Yes = 1 No = 2 Non-Response = 99	
Q3.2B	SISP - Staff Training and Staff Involvement	Yes = 1 No = 2 Non-Response = 99	
Q3.2C	SISP - Resources	Yes = 1 No = 2 Non-Response = 99	
Q3.2D	SISP - IS strategy alignment with Business Strategy	Yes = 1 No = 2 Non-Response = 99	
Q3.2E	SISP - Organizational and Technology Changes	Yes = 1 No = 2 Non-Response = 99	

Q3.2F	SISP - Control and Evaluation	Yes = 1 No = 2 Non-Response = 99	
Q3.3	Willingness to Use New Technology	Not willing = 1 Somehow willing = 2 Most willing = 3 Non-Response = 99	
Q3.4	Level of Resources	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q4.1	Increased Profit Margins and Market Share	Yes = 1 No = 2 Non-Response = 99	
Q4.2	Types of Competitive Strategies	Cost leadership = 1 Differentiation = 2 Generic = 3 Non-Response = 99	
Q4.3	Bank Competitors	All banks = 1 Selected banks = 2 Insurance companies = 3 Savings and loans = 4 Credit Unions = 5 Others = 6 Non-Response = 99	
Q4.3	Competition Affecting the Banks Profits	Yes = 1 No = 2 Non-Response = 99	
Q5.1	Level of IS Infrastructure	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q5.2	Outcome of IS strategy	Successful = 1 Somehow Successful = 2 Not Successful = 3 Non-Response = 99	
Q5.3A	Barriers to Formulation - Strategy	Yes = 1	

		No = 2 Non-Response = 99	
Q5.3B	Barriers to Formulation – Staff Involvement	Yes = 1 No = 2 Non-Response = 99	
Q5.3C	Barriers to Formulation - Resources	Yes = 1 No = 2 Non-Response = 99	
Q5.3D	Barriers to Formulation - Organizational Culture	Yes = 1 No = 2 Non-Response = 99	
Q5.3E	Barriers to Formulation – External Factors	Yes = 1 No = 2 Non-Response = 99	
Q5.4A	Barriers in implementation - Strategy	Yes = 1 No = 2 Non-Response = 99	
Q5.4B	Barriers in implementation– Staff Involvement	Yes = 1 No = 2 Non-Response = 99	
Q5.4C	Barriers in implementation - Resources	Yes = 1 No = 2 Non-Response = 99	
Q5.4D	Barriers in implementation – Organizational Culture	Yes = 1 No = 2 Non-Response = 99	
Q5.4E	Barriers in implementation – External Factors	Yes = 1 No = 2 Non-Response = 99	
Q6.1	Number of Microcomputers (PCs)	1 – 20 PCs = 1 21 – 50 PCs = 2 51 – 70 PCs = 3 71 – 100 PCs = 4 101 – 150 PCs = 5 More than 150 PCs = 6 Non-Response = 99	

Q6.2	Number of Servers	One = 1 Three = 2 Five = 3 Ten = 4 Others = 5 Non-Response = 99	
Q6.3	Types of Operating Systems	Windows XP = 1 Windows 7 = 2 Vista = 3 Other = 4 Non-Response = 99	
Q6.4	Type of Network Operating Systems	Windows Server 2000 = 1 Windows Server 2008 = 2 Windows Server XP = 3 Windows Server NT = 4 UNIX = 5 Linux = 6 Non-Response = 99	
Q6.5	Levels of IS Security	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q6.6	Current Information System	Not effective = 1 Somehow Effective = 2 Very effective = 3 Non-Response = 99	
Q6.7	Influence of ICT on Time saving	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q6.8	Influence of ICT devices on Error Rate Reduction	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q6.9	Influence of ICT on Management Decisions	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	

Q6.10	Influence of ICT on Speed of Transaction	Very High = 1 High = 2 Moderate = 3 Low = 4 Very Low = 5 Non-Response = 99	
Q7.2	IT and Design of Products and Services	Yes = 1 No = 2 Non-Response = 99	
Q7.3	Services Quality	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q7.4	Information Systems and Cost Reduction	Yes = 1 No = 2 Non-Response = 99	
Q7.5	Methods of Cost Reduction	Automation = 1 Accurate interest cal = 2 Data integrity = 3 Banking software = 4 Trained staff = 5 Others = 6 Non-Response = 99	
Q7.6	Problems Associated with Manual System	Errors = 1 Slow access = 2 Cost = 3 Lack of backup = 4 Delay transactions = 5 Others = 6 Non-Response = 99	
Q7.7	Improving Banking operations With IS	Yes = 1 No = 2 Non-Response = 99	
Q8.1	IT/IS Investments Rating	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q8.2	Update of IT systems	Once a year = 1 Twice in a year = 2 Once in two years = 3 Once in five years = 4	

		Others = 5 Non-Response = 99	
Q8.3	IS/IT investment - Banking software	Banking software = 1 Network Infrastructure = 2 Server = 3 Work stations = 4 IT Outsourcing = 5 Non-Response = 99	
Q8.4	Amount spent in Training Staff	Less than GH¢ 1,000 = 1 GH¢ 1,000 – 1,900 = 2 GH¢ 2,000 – 2,900 = 3 GH¢ 3,000 – 3,900 = 4 GH¢ 4,000 – 4,900 = 5 Greater than GH¢ 5,000 = 6 Non-Response = 99	
Q8.5	Plans for Improvement of IS	Yes = 1 No = 2 Non-Response = 99	
Q8.6	Bank Performance Rating	Low = 1 Moderate = 2 High = 3 Non-Response = 99	
Q8.7	Bank Performance Measures	Profitability = 1 Sales Growth = 2 IT Infrastructure = 3 Non-Response = 99	
Q8.8A	IT Investments - Reduces Operating Expenses	Yes = 1 No = 2 Non-Response = 99	
Q8.8B	IT Investments - Increases Market Share	Yes = 1 No = 2 Non-Response = 99	
Q8.8C	IT Investments - Increases Profits	Yes = 1 No = 2 Non-Response = 99	
Q8.8D	IT Investments - Positive impact on Return on Asset	Yes = 1 No = 2 Non-Response = 99	
Q8.8E	IT Investments - Increases labour productivity	Yes = 1 No = 2	

		Non-Response = 99	
Q8.9A	IT Investments Problem- High cost maintenance	Yes = 1 No = 2 Non-Response = 99	
Q8.9B	IT Investments Problem- Frequent breakdowns	Yes = 1 No = 2 Non-Response = 99	
Q8.9C	IT Investments Problem- Energy crisis	Yes = 1 No = 2 Non-Response = 99	
Q8.9D	IT Investments Problem- Lack of skilled personnel	Yes = 1 No = 2 Non-Response = 99	
Q8.9E	IT Investments Problem- Some transactions can't be done through e-medium	Yes = 1 No = 2 Non-Response = 99	
Q8.9F	IT Investments Problem- Some customers don't know how to use them	Yes = 1 No = 2 Non-Response = 99	

APPENDIX I**THE CODING SCHEME FOR THE BANK CUSTOMERS**

QUES. NO.	LABEL	CODE	WIDTH
Q1.1	Gender	Male = 1 Female = 2 Non-Response = 99	
Q1.2	Bankers	GCB = 1 SCB = 2 NIB = 3 BBG = 4 ADB = 5 STANBIC = 6 Non-Response = 99	
Q1.3	Number of years of Banking	1– 2 yrs = 1 11 – 15 yrs = 2 3– 5 yrs = 3 16 – 20 yrs = 4 6– 10 yrs = 5 >21 yrs = 6 Non-Response = 99	
Q2.3	Transactions Time	Less than 10 minutes = 1 10 – 20 minutes = 2 21 – 30 minutes = 3 31 – 60 minutes = 4 Others = 5 Non-Response = 99	
Q2.4	Modern Technology	Yes = 1 No = 2 Non-Response = 99	
Q2.5	Service Satisfaction	Yes = 1 No = 2	

		Non-Response = 99	
Q2.6	Bank Website	Yes = 1 No = 2 Non-Response = 99	
Q2.7	Website Visitation	Once in a week = 1 Twice in a week = 2 Once in a month = 3 Others = 4 Non-Response = 99	
Q2.8	SMS Banking	Yes = 1 No = 2 Non-Response = 99	
Q2.9	Internet Banking	Yes = 1 No = 2 Non-Response = 99	
Q2.10	Internet Banking Usage	Once in a week = 1 Twice in a week = 2 Once in a month = 3 Others = 4 Non-Response = 99	
Q2.11	ATM Usage	Never = 1 Not Often = 2 Most Often = 3 Frequently = 4 Others = 5 Non-Response	
Q3.1	New Policy	Yes = 1 No = 2 Non-Response = 99	
Q3.2	Suggestion Consideration	Yes = 1 No = 2 Non-Response = 99	

Q4.1	ICT Products Facilities Accurate Record	Strongly Agree = 1 Agree = 2 Hardly Agree = 3 Disagree = 4 Strongly Disagree = 5 Non-Response = 99	
Q4.2	ICT Enhances Faster Services	Strongly Agree = 1 Agree = 2 Hardly Agree = 3 Disagree = 4 Strongly Disagree = 5 Non-Response = 99	
Q4.3	Ability to Access Accounts at any Location	Strongly Agree = 1 Agree = 2 Hardly Agree = 3 Disagree = 4 Strongly Disagree = 5 Non-Response = 99	
Q4.4	ICT makes Enquiries on Accounts Faster	Strongly Agree = 1 Agree = 2 Hardly Agree = 3 Disagree = 4 Strongly Disagree = 5 Non-Response = 99	
Q4.5	ICT Reduces Interpersonal Relationships	Strongly Agree = 1 Agree = 2 Hardly Agree = 3 Disagree = 4 Strongly Disagree = 5 Non-Response = 99	

APPENDIX J**RANDOM NUMBER TABLE**

13962	70992	65172	28053	02190	83634	66012	70305	66761	88344
43905	46941	72300	11641	43548	30455	07686	31840	03261	89139
00504	48658	38051	59408	16508	82979	92002	63606	41078	86326
61274	57238	47267	35303	29066	02140	60867	39847	50968	96719
43753	21159	16239	50595	62509	61207	86816	29902	23395	72640
83503	51662	21636	68192	84294	38754	84755	34053	94582	29215
36807	71420	35804	44862	23577	79551	42003	58684	09271	68396
19110	55680	18792	41487	16614	83053	00812	16749	45347	88199
82615	86984	93290	87971	60022	35415	20852	02909	99476	45568
05621	26584	36493	63013	68181	57702	49510	75304	38724	15712
06936	37293	55875	71213	83025	46063	74665	12178	10741	58362
84981	60458	16194	92403	80951	80068	47076	23310	74899	87929
66354	88441	96191	04794	14714	64749	43097	83976	83281	72038
49602	94109	36460	62353	00721	66980	82554	90270	12312	56299
78430	72391	96973	70437	97803	78683	04670	70667	58912	21883
33331	51803	15934	75807	46561	80188	78984	29317	27971	16440
62843	84445	56652	91797	45284	25842	96246	73504	21631	81223
19528	15445	77764	33446	41204	70067	33354	70680	66664	75486
16737	01887	50934	43306	75190	86997	56561	79018	34273	25196
99389	06685	45945	62000	76228	60645	87750	46329	46544	95665
36160	38196	77705	28891	12106	56281	86222	66116	39626	06080
05505	45420	44016	79662	92069	27628	50002	32540	19848	27319
85962	19758	92795	00458	71289	05884	37963	23322	73243	98185
28763	04900	54460	22083	89279	43492	00066	40857	86568	49336
42222	40446	82240	79159	44168	38213	46839	26598	29983	67645
43626	40039	51492	36488	70280	24218	14596	04744	89336	35630
97761	43444	95895	24102	07006	71923	04800	32062	41425	66862
49275	44270	52512	03951	21651	53867	73531	70073	45542	22831
15797	75134	39856	73527	78417	36208	59510	76913	22499	68467
04497	24853	43879	07613	26400	17180	18880	66083	02196	10638
95468	87411	30647	88711	01765	57688	60665	57636	36070	37285
01420	74218	71047	14401	74537	14820	45248	78007	65911	38583
74633	40171	97092	79137	30698	97915	36305	42613	87251	75608
46662	99688	59576	04887	02310	35508	69481	30300	94047	57096
10853	10393	03013	90372	89639	65800	88532	71789	59964	50681
68583	01032	67938	29733	71176	35699	10551	15091	52947	20134
75818	78982	24258	93051	02081	83890	66944	99856	87950	13952
16395	16837	00538	57133	89398	78205	72122	99655	25294	20941
53892	15105	40963	69267	85534	00533	27130	90420	72584	84576
66009	26869	91829	65078	89616	49016	14200	97469	88307	92282
45292	93427	92326	70206	15847	14302	60043	30530	57149	08642
34033	45008	41621	79437	98745	84455	66769	94729	17975	50963
13364	09937	00535	88122	47278	90758	23542	35273	67912	97670

03343 62593 93332 09921 25306 57483 98115 33460 55304 43572
46145 24476 62507 19530 41257 97919 02290 40357 38408 50031
37703 51658 17420 30593 39637 64220 45486 03698 80220 12139
12622 98083 17689 59677 56603 93316 79858 52548 67367 72416
56043 00251 70085 28067 78135 53000 18138 40564 77086 49557
43401 35924 28308 55140 07515 53854 23023 70268 80435 24269
18053 53460 32125 81357 26935 67234 78460 47833 20496 35645

From the Rand Corporation, *A Million Random Digits with 100,000 Normal Deviates*
(New York: The Free Press, 1955)

APPENDIX K

ROA AND ROE RATIOS

