EVALUATION OF THE INFORMATION SYSTEM AT STANDARD CHARTERED BANK (GHANA LTD), HEADQUARTERS, ACCRA

BY

DE-GRAFT JOHNSON DEI

(10080989)

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF INFORMATION STUDIES, UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE MASTER OF ARTS DEGREE IN INFORMATION STUDIES.

SEPTEMBER 2007

DECLARATION

I hereby declare and certify that this dissertation is my own research work done under supervision and not submitted, either in the same or different form, for the award of any other degree. Where references have been made to the views of others, full acknowledgment has been made.

…….	……
De-Graft Johnson Dei	Prof. C. O. Kisiedu
(Student)	(Supervisor)
(3Oth September 2007)	(30th September 2007)

DEDICATION

I dedicate this research work to the Almighty God and to the “TRINITY” (Mrs. Esther Serwa Dabi, Ms. Victoria Abra Kokpoe, and Ms. Esther Naa Oboshie Torgbor (Naa-Graft)) without whom it would not have been possible to complete.

ACKNOWLEDGEMENT

I wish to express my profound gratitude to the Almighty God for His favour, grace, and mercy that led me through this study.

My Sincere and unreserved thanks go to my supervisor Prof. C.O. Kisiedu of the Department of Information Studies, Legon. Her guidance, witty criticisms, experience, and deep insight on issues pertaining to information systems, helped steer me on the right path in the writing of this dissertation.

To the management and staff of the Bank (Standard Chartered Bank (Ghana) Ltd.), particularly the Information Technology and Operations unit, I express my profound appreciation, for helping in diverse ways to make the work a success.

My sincere gratitude and appreciation also go to Ms. Esther Naa Oboshie Torgbor (Naa-Graft) for standing by me in all I do. Once again, to her I say a very big "THANK YOU"

To all my siblings, friends, and Ms. Mary Akotua, I say God Bless you for your encouragement, love, support, and care.

I also express my love and profound appreciation to Ms. Victoria Abra Kokpoe and Mrs. Esther Serwah Dabi for their encouragement, love, care, guidance, and moral support which led me through this Great University. What would I have being and achieved without you.

ABSTRACT

This study evaluates the information system at the Standard Chartered Bank (Ghana Ltd) and tried to identify its impact and effect on staff performance and productivity.

The banking sector and specifically, Standard Chartered Bank (Ghana Ltd) continues to invest millions of dollars in its information system. The study sought to examine whether the investment in the information system by the Bank has enabled it to achieve its corporate objectives and vision, helped it to gain competitive advantage in the banking industry, or improved on its corporate image.

The research used techniques such as the questionnaire and interview to elicit factual information and personal opinion from the staff of the bank. Literature on evaluation studies, information systems, and banking in general was reviewed. Some of the major findings were that investments made in information systems has improved forecasting and planning abilities at the bank; job satisfaction and productivity; and the Banks corporate image. The study also made some recommendations which should go a long way to help in the effective and efficient installation and running of information systems in banks in general and in particular Standard Chartered Bank (Ghana Ltd).

LIST OF TABLES

LIST OF FIGURES

FIGURES PAGE

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Today all over the world, information is being created and communicated at a faster rate than ever before. As information is made available in a variety of formats, the need to manage this variety of information types efficiently and effectively becomes critical. The globalization of the markets in which most organizations operate, transformation of many economies to full-fledged knowledge and information-based economies and information explosion in all facets of society have compounded the problem of managing information effectively. Most large organizations including banks, therefore, try to put in place mechanisms or systems to effectively and efficiently manage the large volumes of data / information they receive or generate internally on an hourly and daily basis. (Buatsi, 2003)

The Ghana Banking Act (Act 339, Section 47), (1970) defines the business of banking as

- The acceptance for lending or investment purposes, deposits of money from the public, repayment on demand and withdrawal by cheques, drafts or by other means,
- The financing, whether in whole or in part by way of short, medium or long-term loans or advances of trade, industry, commerce or agriculture.

This definition categorized banks into the following five groups:

a. The Central Banks (eg. Bank of Ghana)
b. Commercial Banks

c. Development Banks

d. Merchant Banks

e. Co-operative and Rural Banks

Commercial Banks were the first financial institutions to be established in Ghana. Ghana Commercial Bank, Barclays Bank, and International Commercial Bank are examples of commercial banks. Their purpose is to make profit by providing services to the public through branch banking all over the country. Standard Chartered Bank Ltd., the bank under study, is also a commercial bank.

To match the level of sophistication of customers and their information needs and information explosion, the quest to satisfy them and other stakeholders, and the competition in the banking industry, Standard Chartered Bank needed to invest in information system. This was to enable them manage their processes and the information they generate for decision-making and planning.

According to O'Brien (2003), an information system can be any organized combination of people, hardware, software, communications network, and data resources that collects, transforms and disseminates the information in an organization. Organizations have relied on information systems to communicate with each other using a variety of physical devices (hardware), information processing instructions and procedures (software), communication channels (networks), and stored data (data resources).

Investment in an information system has become more of a necessity for the following reasons:

i. Globalization of the market in which most organizations operate. This has put a new emphasis on organizational design and management control. Due to this, banks are faced with the tough challenge of making sure that their organizations are properly designed and that information is well organized, coordinated, and managed to ensure effective decision-making, planning, and management. (Hill Charles, 2002), (Bateman and Snell, 2002).

ii. Transformation of many of the world's economies to full-fledged knowledge-information based economies. As a result, banks generally are faced with a great challenge of transforming the management of their businesses. In this process, there is the need to employ quality, efficient and effective use of information systems and technologies to their advantage. This is to create value through the provision of services and products based on resources that cost less than the price of their services and products, and develop new products. It also brings about new strategies, styles, procedures of management and organizational roles and increase employee productivity, customer satisfaction and organizational objectives to be achieved. (O'Brien, 2003)

iii. Information overload/explosion; stores of information and knowledge all over the world are estimated to double every five years. Due to this, there is too much information in the possession of the organizations than they practically need and can process. Now, control and use of the vast amounts of information available have become a problem. (Kupsh and Whitcomb, 1987, Bateman and Snell, 2002), (Adika, 2006)

iv. The revolution of the conception of information. From being a "necessary evil", information has now become a strategic resource that firms can use to gain competitive

> advantage to promote survival and prosperity of an industry. These changes in the conception of information reflect advances in strategic planning and theory. (Koorey & Medley, 1987)

An information system as a strategic resource for competitive advantage can fundamentally change a firm's goals, products and services, internal and external relationships. The information system can be used to transform the core business from traditional banking to electronic record keeping, providing data processing services for securities, fund and now into providing financial information services including monitoring services that allow pensions to keep better tabs on money managers. An information system as a strategic tool has also been used to provide products and services that cannot be easily duplicated. Information systems are also used to create products and services by developing Automated Teller Machines (ATMs) and Bank debit cards (William & Sawyer, 2002).

As part of the leading role, Standard Chartered Bank (Ghana) Ltd has invested in its information system to help effectively manage and track the information of its customers and clients. This led to the installation of the ATM. (http://www.standardchartered.com)

1.2 Statement of the problem

The transition to the market economy demands substantial strengthening of banking institutions and their information systems. Banks run a great risk of running into crisis in the face of financial liberalization, widening competition and diversification if new ways of managing their business resources, in particular, information, are not found. Standard Chartered Bank, in finding

new ways of managing its business, continues to invest huge sums of money in its information system.

However, merely investing in these resources is definitely not enough to ensure the absolute performance necessary to the bank's success and prosperity, or to the satisfaction of its customers, and the general stakeholders. Efficient and effective management of these resources to meet the needs of customers promptly requires the bank to possess the capability to strategically manage its information for effective decision-making, planning and forecasting. This will also provide it with competitive advantage over it competitors in the banking sector. Also due to the information overload, there is need for not just management of the information but also proper and effective management.

The banking sector in Ghana is one industry that collects large volumes of data in their day-to-day transactions. The Standard Chartered Bank, for instance, does this on regular and daily bases. There is, however, a big problem in the collection, organizing, and management of this information. This is because;

a. Employees at the operational level of the bank do not seem to understand the value of the data they are processing.
b. Efficient dissemination of information rarely occurs. Instead most operatives consciously or unconsciously, delay data, leading to inconsistencies and delayed provision of information.

c. There are often large disparities in the data processed and the output produced to management, hence, the difficulty in relying on information produced for decision-making
d. Organizations will continue to be confronted with the problem of properly integrating information systems with their international business environment.

It is believed that 70% of information systems fail because of the absence of a conscious correlation between business needs and technology. It is thus imperative that an organization of the size of the Standard Chartered Bank should undergo periodic analysis and evaluation to ascertain the extent of alignment. (Buatsi, 2002)

These, therefore, cause great difficulty in the management of information and in the provision of the required services that would create customer and other stakeholders' satisfaction, and also beat competition. In order to produce a seamless service to both the internal and external customers and staff of the Bank, this study would evaluate how the Standard Chartered Bank has withstood some of these challenges and suggest measures by which they would be addressed.

The above imperatives strongly suggest that the right investment in information system should be of obvious concern to stakeholders (customers, staff, government, etc) particularly the bank's management.

1.3 Objectives of the study

The objectives of the study are to determine and evaluate:

a. The structure and nature of the information systems in use at the Standard Chartered Bank,

b. The type of data captured and processed in the information system,

c. Whether the investments made in the information system have helped the Bank to gain competitive advantage or not,

d. The extent to which the information system have helped the Standard Chartered Bank to achieve its objectives,

e. The impact of the information system on customer service,

f. The impact of the information system on staff performance.

g. Recommendations will be made at the end of the study based on the findings.

1.4 Hypotheses

The study wants to test the following hypotheses:

1. Banks using information systems are better able to organize their records, files, and information generally.
2. Banks using information systems offer improved, quick, and satisfactory services to their customers.
3. Staff of Banks using computerized information systems work in a more relaxed environment and tend to be more efficient.

1.5 Purpose of the study

The vast improvement in the operations of the Standard Chartered Bank Ghana Ltd within the period of the introduction and continues investment in the Comprised Information Systems has given the researcher the cause to investigate this area of study.

The main purpose of the study is to determine whether the investments made in the information system have helped the Bank to gain competitive advantage or not, and the extent to which the information system have helped the Standard Chartered Bank to achieve its objectives.

1.6 Significance of the study

In recent years, many studies have examined how leading organizations are better utilizing information and knowledge. Almost all activity in which an organization engages requires data. Not surprisingly, most companies readily admit that they should manage data or information as a business resource, just as they manage human and financial resources. It is, therefore, necessary to evaluate the information systems drive and the impact on its stakeholders and find out whether such systems have enabled the Standard Chartered Bank to achieve it objectives and satisfy the stakeholders.

This study is expected to provide an understanding of how the Bank processes its data and operates its information systems; it would provide a framework that might ensure that the Bank's information systems and processes are able to exceed their customers and stakeholders expectation. It would explore the challenges and opportunities inherent in data processing at the Bank and would conclude by presenting actions that would help the Bank surmount the

challenges and successfully pursue the opportunities and/ or improve upon its information systems. The study would also help in the creation of new knowledge and serve as a guide to the management of information at the Standard Chartered Bank. In addition, the study will add to existing literature and knowledge on information systems' evaluation in particular, and evaluation studies in general.

1.7 Limitations of the study

It would have been ideal to cover and conduct a more exhaustive study which should add a lot of weight to the final report. However, the busy schedules and work load of the Bank staff made it difficult for the researcher to identify and collect all the relevant information from the staff. Also, financial constraint and the time frame for the study did not allow for an extensive and comprehensive study. They also prevented the researcher from obtaining some of the relevant data both from primary and secondary sources.

Also, access to internal information was particularly difficult at the Standard Chartered Bank due to very strict observance of information security. Finally, materials and literature on banking and business information systems were very difficult to get since research work on the above topic was very few and scares.

This limitation not withstanding it is hoped that, the outcome of the study would be a fair and adequate assessment of the problem under study.

1.8 Organization of the study

The study has been presented in 6 main chapters as follows:

- Chapter 1: background of the study, Statement of the problem, Objectives of the study, Hypotheses to be tested, Purpose of the study, Significance of the study, and Limitations of the study
- Chapter 2: Literature review
- Chapter 3: Background of the Standard Chartered Bank and its Information System
- Chapter 4: Methodology
- Chapter 5: Data analysis, presentation and discussion of findings
- Chapter 6: Summary of findings, conclusions and recommendations suggestions for further research.

References:

- Adika, G (2006) Lecture notes (Unpublished)
- Banka – Rijeka 2008 (Unpublished)
- Bateman, T.S. and Snell, C.A. (2002) Management: competing in the new era, 5th ed. New York: McGraw Hill.
- Boatsi (2002) Lecture notes (Unpublished)
- Boatsi (2003) Lecture notes (Unpublished)
- Bearden et al (2001), Marketing: Principles & Perspectives 3rd ed., New York: McGraw-Hill
- The Ghana Banking Act, 1970 (Act 339, Section 47),
- Koorey, J.K. and Medley, D.B (1987) Management information systems: planning and decision making. Cincinnati, Ohio: South-Western Publishing Co.
- Kupsh, Joyce and Whitcomb (1987), the electronic office, Mission Hills: Glencoe Publishing Co. pp. 8
- O'Brien, J.A. (2003), Introduction to information systems: essentials for the e-business enterprise,11th ed. New York: McGraw Hill
- William, Brian K. and Sawyer, Stacey (2003), Using information technology: practical introduction to computers and communication, New York: McGraw Hill. pp 220-221, 420.
- http://www.standardchartered.com

CHAPTER TWO

LITERATURE REVIEW

The Literature was reviewed under the following themes

2.1 Data and information as corporate resource

2.2 Information management in organization

2.3 Information systems and organizational issues

2.4 Business systems in organizations

2.5 Banking, banking services and banking Information systems

2.6 Evaluation of information system

2.7 Methods of evaluating banking information systems

2.1 Data and Information as a Corporate Resource

"It is the information age, truly a time when knowledge is power. More so than ever before, businesses all over the world are focusing on information as a key resource" (Haag and Cummings, 2002). The two scholars also found that, today more than ever, businesses are using information to gain and sustain a competitive advantage. This is why businesses understand that what they don't know can become an "Archilles heel" and a source of advantage to their competitors. Even to a greater extent, businesses are focusing on customers, business partners, and processes that provide vital and important information. That is why terms such as competitive intelligence, knowledge workers, competitive scanning and business geography are in business trade press.

It is William and Sawyer's (2003) view that successful organizations are more effective in their use of information. He notes that organizations such as banks are still struggling to understand how to put information to work so that it can improve business performance. Due to this, various methods, techniques and approaches are employed in the processing, and management of information in organizations.

According to Lucey (1997), the terms data and information are used interchangeably in everyday speech to mean the same thing. However, for information managers and specialists the terms have distinct meanings. In general terms, basic data is processed to form information. But the mere act of processing data does not itself produce information. Thus data is usually subjected to value-added processes, for example, its form is aggregated, manipulated and organized; its content is analyzed and evaluated, and it is placed in a proper context for a human user. So information should be viewed as processed data placed in the context that gives it value for specific end-users or managers.

According to Tiamiyu (2003), data and information are two concepts that information professionals deal with everyday in their information systems. The organization of data that should be of interest to any information professional is in three main aspects. These are:

- The creation, organization and display of data on documents and other information sources. This aspect is often the primary concern of archivists, documentalists, librarians and records managers.

- The creation and processing of data on the activities of persons and organizations in computerized data files and databases. These are the primary concerns of computer scientists and systems analysts.
- The problem of how data could be effectively organized and presented during everyday business and organizational activity to enhance the organizations performance, human understanding, and knowledge. This aspect is the primary concern of the communication scientist. However, it is important that, all information professionals and scientists understand the similarities in the problems and strategies in the organization of data in an information system.

2.1.1 Attributes of information as a resource.

Good information is that which creates value. Experience and research have shown that good information has numerous qualities and these qualities distinguish them from the traditional resources (Bearden et al, 2001). These qualities are; intangibility, shareability, transportability, versatility, and storage.

Intangibility

There is universal agreement that, the most sticking characteristic distinguishing information from the traditional resources is its intangibility. Churchill and Peter (1995), opine that the intangible nature of information led some managers to object to consider information/knowledge as a resource. This view point has died away as evidence has grown of the ever-increasing role that these intangible resources play in all businesses, from traditional manufacturing to financial services and other information intensive industries.

As an abstract term or concept, information is clearly intangible. But information records (media) are perfectly tangible, be they paper, microfilm, or computer related media. In some of these cases we need special equipment such as the computer, or a microfilm machine to access their intellectual contents, but that need not make them intangible.

Shareability

This refers to the possibility that several users can simultaneously use the same unit of the resource. O'Brien (2003) notes that data is shareable in two (2) ways; firstly, the same data may have multiple representations in different sets of records or systems each of which can be used simultaneously by different users. That makes information per-se a shareable resource. Secondly, modern information management nearly has simultaneous and multi-user access to the same data records. However, this shareability of data record may be hampered by medium limitation (eg paper records are not available for simultaneous usage). He further noted that shareability can also be intentionally constrained for security reasons via encryption by limiting access to data records or systems via password. However, shareability of data implies both opportunities and perils that are not pertinent for the management of the traditional resources.

Transportability

The ability to transport or move data over large or long distances almost instantaneously has really ushered in the information age. The ability to copy data locally for some time before progress in telecommunication technology made data transmission between distant locations possible. (To be precise, the electronic transmission of data record is not actually transporting of

data record, but rather the creation of copies at the destination point). The efficiency of modern communication is not limited to the speed of transmission: quality and cost effectiveness are almost equally important. With the possible exception of electricity, no other resource can be transported with the ease of efficiency of electronically stored data. The other possible exception is money, which can also be transmitted electronically. (Doyle, 1999)

Versatility

A "versatile" resource is one that can be used for a variety of purposes. Each resource in an organization, to a large extent, is versatile (for example, a variety of raw materials). But a particular raw material for a particular manufacturing process may have limited alternative uses beyond that process. Just as money, information has a much wider (if not the widest) range of possible uses. The versatility of information, along with other characteristics, provides a company with valuable sources of new business and improvement opportunities.

The versatility of data, however, has a negative side which is the possibility of misuse. This mostly occurs when information, legitimately collected for one purpose is used for another illegitimate one. For example, information about a person's age and health, legitimately collected for medical purposes should not be the one that would be used for his or her promotion at work. Ambiguities in data semantics compound this problem. For example, a sales person may view a sale as complete when he or she and the customer have verbally agreed to the deal. But the legal department does not view the sale as complete until a contract is signed, the production department until the product is delivered and the finance department until payment is received. (Berkwitz et al, 1994)

Storage

Information just as other resources can be stored on computers. A compact means of storage should make information easier to manage. There are, however, different modes or media for information capturing and storage. The mode of capturing can be through recording, filming, photocopying, scanning, burning etc. Data can be stored on a hard copy or soft copy media. These properties contribute to the other properties such as the shareability and transportability.

The cost of storing information in businesses is getting lower as compared to the cost of storing other resources. This can be attributed to the improvement or new technological innovation of information capturing and storage which is the computer and its accessories such as the hard disk, flash drive, etc. On the other hand, cheap storage may contribute to the decision to save everything. This can lead to the storing of data that might no longer be useful and relevant. This can, therefore, lead to information explosion and overload or waste of space in the information system. Therefore, care must be taken so that only the most important, needed and relevant information is stored. The problem then is how to identify or determine the importance and relevance of information. The solution lies with the organization to determine it in relation to the objective, missions, visions, plans and goals. (O'Brien, 2003)

2.1.2 Information and System Quality

Information quality is related to the quality of information that an information system including that of a bank delivers to its users, and is measured in terms of accuracy, currency, completeness, and format. Information quality in a banking system determines the success of the bank and

perceived information quality positively affects perception, behavior, attitude, and user acceptance of a banks product (Davis et. al, 1989)

In the opinion of Acquah (2005), Information quality will have a positive effect on

- Perceived usefulness of a banking information system,
- Perceived ease of use of a banking information system,
- Trust of a banking information system,
- User acceptance of a banking information system.

System quality is related to the quality of system that produces information output, which can be measured in terms of reliability, accessibility, integration, and response time (Davis 1989).

2.2. Knowledge management in organizations

Adika (2006) opines that information is now recognized as the fourth factor of production. For this reason, information must be seen and treated as a very valuable asset and resource of any organization. French (1996) stipulated that managing an information resource means gathering, and processing, reporting, storing, and disseminating it as effectively and efficiently as possible. This means there is the need for the creation and maintenance of awareness of both new and innovative technology and processes and changing organizational goals and needs.

For organizations, information management consists of managing the organization's information in accordance with it goals (Stewart & Westgate, 1989). Robert and Brown (1995), defined information management as the administration of information, its use and transmission, and the

application of techniques of information science to create, modify, or improve information handling systems. Thus, it involves the application of systematic and scientific controls to record information required in the operations of an organization's business.

Koorey and Medley (1987), also have explained that, a computer information system involves planning and decision-making and that this is part of the managerial planning process of the organization. This means that it is essential for both the line and top managers of the organization to participate in planning for information systems needs and for computer information systems professionals to dovetail their planning and functions closely with those in the organization at large.

To Haag et al (2002), data processing in organizations can be done by manual methods as well as with the aid of electronic office machines. Manual or human information processing is used to indicate that data is processed by humans as distinct from automated data processed by machines. The manual method of processing data means "using the human brain", perhaps with the aid of a fairly simple business machine such as the calculator. With the advent of computers, most people (if not everybody) think that data processing is exclusively concerned with computers, and do forget that most of data processed or processing is manual.

Data capturing and its subsequent input into an information system are often problematic areas of data processing. An information system will only accept data which is in machine readable or sensible form and if data is captured on a source document, which is not in machine readable form, it must be transcribed into a different form for input to the information system. Also the

information system only processes what is fed or input into it. If you capture wrong data into the information system, it will process that wrong data for you which then lead to wrong output. This is the "GIGO" (Garbage-In-Garbage-Out) (Haag et al, 2002).

2.3 Information Systems and Organizational issues

2.3.1 Definition and types of Information systems

According to O'Brien (2003), an information system can be any organized combination of people, hardware, software, communication networks, and data resources that collects, transforms and disseminates the information in an organization. To O'Brien (2003) information system consists of five (5) basic resources and these are; People resources, Hardware resources, Software resources, Data resources and, Network resources. Organizations have relied on information systems to communicate with each other using a variety of physical devices (hardware), information processing instructions and procedures (software), communication channels (networks), and stored data (data resources). Information systems for modern organizations are computer-based. Thus they use computer hardware and software, the Internet and other telecommunication networks, computer-based data resources management techniques and many other information techniques to transfer data resources into an endless variety of information products for consumers and business professionals.

In the views of William and Sawyer (2003), the purpose of computer-based information is to provide managers (and various categories of employees) with the appropriate kind of information to help them in their planning and decision-making processes. William and Sawyer (2003)

further identified six (6) types of computer-based information systems which serve different levels of management. These are:

- Transaction Processing Systems (TPS): for lower level managers
- Management Information Systems (MIS): and Decision Support Systems (DSS): for middle managers:
- Executive Support System (ESS): for top level management
- Office Automation Systems (OAS) and Expert Systems (ES): for all levels, including non-management

Not only do information systems give customer satisfaction, but they also make supervision by management very easy. Data capturing and exchange have also become effective because of the networking environment.

Davis (1994) identified six kinds of information systems and it use in business/organizations. These are:

- **Executive Support Systems (ESS)**: These are designed to help senior management make strategic decisions. It gathers, analyzes and summarizes the key internal and external information used in the organization.
- **Management Information Systems (MIS):** These are mainly concerned with internal sources of information. MIS usually take data from the transaction processing systems and summarize it into a series of management reports. MIS reports tend to be used by middle management and operational supervisor

- **Decision-Support Systems (DSS):** These are specifically designed to help management make decisions in situations where there is uncertainty about the possible outcomes of those decisions. DSS comprise tools and techniques to help gather relevant information and analyze the options and alternatives. DSS often involves use of complex spreadsheet and databases to create "what-if" models.
- **Knowledge Management Systems (KMS):** These exist to help businesses create and share information. These are typically used in a business where employees create new knowledge and expertise, which can then be shared by other people in the organization to create further commercial opportunities. Examples include firms of lawyers, accountants and management consultants. KMS are built around systems which allow efficient categorization and distribution of knowledge. For example, the knowledge itself might be contained in word processing documents, spreadsheets, PowerPoint presentations or Internet pages. To share the knowledge, a KMS would use group collaboration systems such as an intranet.
- **Transaction Processing Systems (TPS):** These are designed to process routine transactions efficiently and accurately. A business will have several (sometimes many) TPS; for example:
    - Billing systems to send invoices to customers
    - Systems to calculate the weekly and monthly payroll and tax payments
    - Production and purchasing systems to calculate raw material requirements
    - Stock control systems to process all movements into, within and out of the business

- **Office Automation Systems (OAS):** These are systems that try to improve the productivity of employees who need to process data and information. e.g. Microsoft Office XP or systems that allow employees to work from home or whilst on the move.

2.3.2 Effects of information systems on managers of organizations

According to O'Brien (2003), with the right support system in place, an information system will provide the right, adequate, and timely information and support for effective and efficient management and organizational planning and decision-making in the form of reports and displays to managers. The customer relations manager of a bank, for instance, may use the banks networked information system and web browsers to get an instantaneous display of complaints and suggestions from customers and display them accordingly. O'Brien further explains that, management systems like executive supports systems (ESS) provide information to executives in varieties of easy-to-use format.

Buatsi (2002) noted that the introduction of information systems into the banking industry has reduced a lot of stress among employees and customers. He explained that the cumbersome and bulky nature of the paper work has been reduced to just a click on the computer, and that the increasing complexity and volume of financial transactions eventually led to the development of database management systems (DBMS). The role of the DBMS is to overcome the limitations of the conventional filing system by providing a generalized, structured and integrated body of data that could be read and updated in a controlled, effective and reliable way.

According to Lucey (1997), the manager in the organization should be able to define the type of information he or she requires and the information system should be able to supply it. The manager needs relevant information to assist him or her in planning, controlling and making decisions. Thus relevant information is information which increases knowledge, reduces uncertainty, and is usable for the intended purpose.

French (1996), stated that all business personnel, management staff, and accountants need to have a good knowledge of Data Processing (DP) and Information Technology (IT). This is because of the major developments in IT, which is, the technology associated with the creation, manipulation, storage and communication of information, principally computing, telecommunication and electronics. This has led to the rapid evolution of data processing techniques and their integration with other activities in organizations.

In support of the needs expressed above, Buatsi (2002) notes that financial services, professionals and staff of banks enroll in several courses to get training in the use of computer-based information systems. The training instructs staff on how to give customer satisfaction. This would enable the staff to adopt strategies to keep their customers and to get others to patronize their services ultimately. Buatsi further suggests that to keep online banking on the upward growth track, financial institutions must find ways of constantly updating their websites and keeping up-to-date with the technology. For this reason, banks have and continue to employ information systems specialists or analysts, information technology professionals, etc., to help maintain and let their information systems keep going. They also sometimes allow their staff to

go for further studies and training to acquire more and new skills in their field of work to make them more effective and help effectively manage their records and information.

2.4.1 Business Systems in Organizations

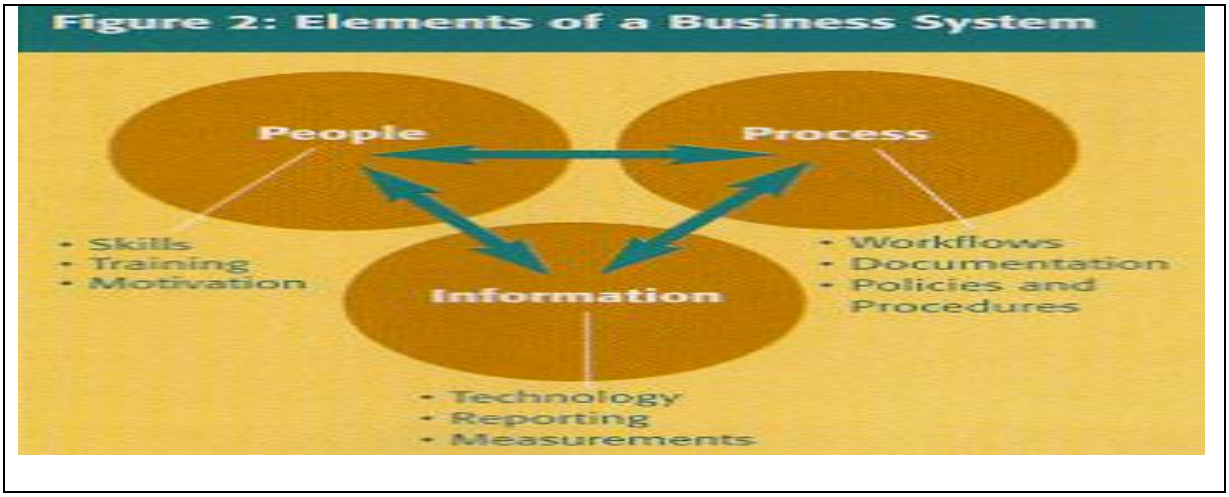
Avison and Fitzgerald (1995) opined that organisations typically develop business systems, by taking into account the current business, the external influences on the business (e.g. the economy, government policy and technological advances), and the aims and objectives of the most senior levels of management. The strategic business system describes how the organisation will strive to move from the current business to the target business.

Business systems support is necessary to achieve the business objectives/plan, so business systems, should describe how the current functions and operations are intended to evolve into the target systems. In the past systems were developed simply to improve the efficiency of specific business functions. More recently systems have been viewed as tools for obtaining competitive advantage. Avison and Fitzgerald (1995) have discussed the following ways in which business systems can help to achieve competitive advantage:-

- "Redefining the boundaries of particular industries,
- Developing new products or services,
- Changing the relationships between suppliers and customers,
- Establishing barriers to deter new entrants to marketplaces."

Downey (2008) postulated that a business is more than finance. Business systems need to be aligned with the organization's strategy. The business systems in organizations consist of

interrelated factors of strategy, owners, investors, management, workers, finance, processes, products, suppliers, customers, and competitors. Business systems can directly support both the operations and management activities in the business functions of accounting, finance, human resource management, marketing, and operations management. In other words, it is any systems within a business organization that support one of the traditional functions of business such as marketing, finance, or production.



Harry (1994) recognizes three basic elements of a business system. These elements are in the figure above. The detail of the three components shows that they are a summary of the five elements of the standard information system explained by O'Brien (2003) above

2.4.2 Business Information Systems (BIS)

According to Harry (1994), business information systems (BIS) are the meeting place of information and computer technology with people and business. Business information systems combine business practice with **informatics**, which focuses on creating, applying and communicating business information. In other words, BIS require both business and technology

facilities. It also requires the analyses of business problems by considering both the technology aspects and the business requirements.

Business information systems (BIS) involve the development, application and management of information systems in business. The evolution of information systems has significantly altered the competitive landscape of modern business. BIS is now recognised as a critical value creating component within business across all industries and sectors. Knowledge based industries and the effective use of e-business, Internet technologies and data management now provide many and varied ways of processing and managing their raw materials and products. There is no doubt that information systems have engineered the development of various businesses in the world today. It is a critical element of organizational transformation. It has been viewed as a progressive means to increase the efficiency and overall performance of a business.

There is a major debate on why information systems and its implications on businesses and banks should be studied or be of concern to businesses and information professionals. In the view of O'Brien (2003), information systems have become a vital component of successful businesses, organizations and banks. Thus, information system constitutes an essential field in business administration and management. Therefore, every manager, entrepreneur, or business professional should have a basic understanding of information systems and other functional areas in banking and business such as accounting, finance, operations management, marketing, human resource management, business administration and others.

Avison & Fitzgerald (1995), opined that all medium to large organisations depend on Information Systems for their continued survival. Organisations like British Gas, British Telecom, the Power and Water companies having to manually calculate, millions of customer bills every month or quarter! Clearly the clerical effort involved would make it difficult if not impossible for the organisation to make a profit. Similar arguments apply to many other organisations such as the high street banks, central and local government. They were emphatic that many large organisations could last no longer than 24 hours without IT support. It is little wonder that attitudes to the development of information systems have changed over the years from an ad hoc almost cavalier approach to a professionally managed, disciplined, planned, and engineering approach.

2.5 Banking, banking services and banking information systems

2.5.1 Banking

The World Book Dictionary defines a bank as a place of business for keeping, lending, exchange and issuing of money. The Microsoft Encarta (2005) also defines a bank broadly as an organization that carries out the business of banking, taking deposits and then using those deposits to make loans. With reference to the local situation, the Banking Act, 1970, of Ghana (Act 339, Section 47), defined a bank as any banking enterprise (whether foreign or Ghanaian) which is issued with a license to carry on the business of Banking. Section 47 of the Act goes further to define the "business of banking" to cover the following:

- "The acceptance for lending or investment purposes, deposit of money from the public, repayment on demand and withdrawal by cheques, drafts or by other means"

- "The financing, whether in whole or in part, by way of short, medium or long-term loans or advances of trade, industry, commerce or agriculture.

This definition categorizes banks into six groups.

a. The Central Bank (eg. Bank of Ghana)
b. Primary Central Bank
c. Secondary Banks
d. Development Banks
e. Merchant Banks, and
f. Co-operative and Rural Banks

Banking is a transaction carried on by any individual or firm engaged in providing financial services to consumers, businesses, or government enterprises. In the broadest sense, banking consists of safeguarding and transfer of funds, lending or facilitating loans, guaranteeing credit worthiness, and exchange of money. These services are provided by such institutions as commercial banks, savings banks, trust companies, finance companies, and merchant banks or other institutions engaged in investment banking.

In essence, a bank aims to make a profit by paying depositors a lower rate of interest than the rate the bank charges borrowers. In accounting terms, deposits are considered liabilities (because they have to be repaid), and loans are considered assets, though some become bad debts. Banks in most countries are supervised by a Central Bank, such as the Bank of England in the United Kingdom and the Bank of Ghana in Ghana. (Microsoft Encarta Encyclopedia Standard, 2005)

A narrower and more common definition of banking is the acceptance, transfer, and, most important, creation of deposits. This includes such depository institutions as commercial banks, savings and loan associations, building societies, and mutual savings banks. All countries subject banking to government regulation and supervision, normally implemented by central banking authorities. (Microsoft Encarta Encyclopedia Standard, 2005)

2.5.2 Banking services

i Internet Banking

The concept of Internet banking is to give customers access to their bank accounts via the bank's web site to enable them to enact certain transactions on their accounts. This feature is also termed as online banking. This service eventually enables customers to manage their money and account from just about any type of browser including the mobile phone, Internet-enabled TV, and even small handheld electronic organizers (http://intsys.fin.qub.ac.uk/itsoc). For expatriates and frequent travelers, the use of Internet technology offers much greater freedom than other banking services.

According to O'Brien (2003), businesses of all sizes and types are using Internet technology to enable all kinds of businesses to effectively and effectively operate and function. That is what e-business really is. O'Brien (2003) recognized that Internet-enabled business processes are becoming fundamentally pervasive in business. The importance of e-business and e-commerce is acknowledged and seen as the engine of growth of banks, industries, business, and commerce globally. O'Brien (2003) also found out that, contrary to the popular opinion that e-business is

synonymous with e-commerce, e-business is much broader in scope, going beyond transaction to signify the use of Internet, in combination with other network technologies and forms of electronic communication, to enable any type of business activity.

ii. Telephone Banking

Telephone banking (telebanking) can be considered as a form of remote or virtual banking which is essentially the delivering of branch financial services via telecommunication devices, where the bank's customers can perform retail banking transactions. It permits customers to make account enquiries, transfer and bill payments by telephone 24 hours a day. This is done by dialing a touch tone telephone or mobile communication unit which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology. With this you can access your account and credit balances, pay bills, transfer funds or cheque book. (Standard Chartered Bank Brochure, 2004, Amalgamated Bank Brochure, 2007)

Telebanking has numerous benefits for both customers and the bank. To the customer; it provides increased convenience, expands access to the bank and it services, and ensures significant time saving. On the other hand, from the bank's perspective, the costs of delivering telephone based services are substantially lower than those of branch-based services.

iii. Automated Teller Machine (ATM) Banking

According to William and Sawyer (2003), Automated Teller Machine (ATM) is a self service banking machine that is connected through a telephone network to a central computer. Thus ATM combines a computer terminal record keeping system and a cash vault. ATM saves the

time of customers and staff of the bank by providing them with a 24 hour, daily, weekly, monthly, weekend and holidays banking server services. These services include statement request, Cheque balance, and fast withdrawal. Some ATM cards are also debit cards which can be used in shops and supermarkets. The purchased amount is deducted immediately from your account.

iv. Short Message Service (SMS) Banking

This service literally puts banking service in your hand or palm. All you need is an account with a bank and a mobile phone. Information about your account is displayed on your mobile phone (Standard Chartered Bank SMS Brochure, 2004 and Cal Bank Brochure, 2007). Using SMS banking, it is possible to receive information about the balance of your bank account, the last transaction about your bank account as well as the state of your bank account (http://www.umc.ua/umc-sms-banking.html). A wide range of banking services can be conducted over a mobile phone. These are; checking of account balance, payment of utility bills, statements request, and update of recent transactions. (http://portal.gtplc.com/portal/index)

2.5.3 Banking Information System

AcaDemon AU (2008), a very recent source, point out that banking information systems are put in place to change and improve the internal operations and the management of procedures within an bank; therefore, a bank professional must understand the impact of the system not only to improve the efficiency and effectiveness of all the existing banks processes but also to create, enlarge and improve certain functions/products, which were not in existence before the information system was inculcated into the bank. The source also points out that, unlike an old

information systems (manual based), which were rigid and inflexible; newer information systems (electronic) should permit a freer flow of information from all points within the bank

According to Banka – Rijeka (2008), banking information system covers a wide range of banking business areas, encompassing all business functions in a typical banking environment. He points out that the system should be built on a number of modules, each of them supporting a particular part of banking business. The main common traits for all modules are: the single homogeneous database, automatic account allocation for all transactions, real time posting in the General Ledger and virtual or real time banking.

Banka – Rijeka recognizes that banking information systems product details to include the following business functions/modules:

- Loans, deposits, guaranties, frame limits; fix transactions; domestic payment system; corporate transaction accounts; securities; factoring; counter (front office) business operations; exchange office; treasury operations; back office operations; retail transaction accounts; retail term deposits; card activities; forced debt collection; money laundering prevention; annuity savings; Internet banking; collateral instruments; general ledger; fixed assets; and payroll accounting

In the view of Ferran-Urdaneta and Lenard (1997), a banking information system is to manage the banks information and assets effectively and efficiently both in the short term and long term. The core products of a financial institution are trust and information. The trust is derived from the effective management of their information and how they disseminate the information to their

customers/clients when needed. It therefore calls on them to be proactive. This also calls on the bank putting systems in place to handle the information.

Ferran-Urdaneta and Lenard further identified seven (7) major functions of a banking information system.

- To Analyze the relationship with each customer based on all their accounts,
- To have a faster response time to clients need,
- To process the banks products,
- To process and manage staff information,
- To process and manage clients/customers information,
- To manage the cash flow, financial instruments and assets of the bank,
- Credit and risk management,

In the view of SNORAS (2008), BIS offer the following benefits:

- BIS provides interactive communication between the client and the bank 24 hours a day**;**
- Information access and transfer can be performed from any part of the world;
- Enables banks guarantees account confidentiality by granting the client identification number and the password. These are entered using the phone keys. Furthermore, BIS facilitates the client to alter the password on his own at any time;
- BIS is connected to a multi-channel phone number.

2.6 Evaluation of information system

2.6.1 Evaluation studies and reasons for evaluating information systems

According to Chowdhury (2002), an evaluation is basically a judgment of worth. In other words, we evaluate a system in order to ascertain the level of its performance or its worth. Evaluation is used for the purposes of making judgments about the worth or success of a given system. To Lancaster (1968), a system can be evaluated by considering the following issues:

- How well the system is satisfying its objectives, that is, how well is it satisfying the demands placed upon it
- How efficiently it is satisfying its objectives, and finally
- Whether the system justifies its existence

Meadow (1973), looks at the reasons for evaluation. According to him, in any endeavor in which we make a substantial investment of money, energy, time, or other resources, there is the need to know what kind of return we will get from it. If we are able to evaluate the return on our investment, it enables us to choose between alternatives at all the phases of the development of information systems. Meadow said further that in evaluating any given system, there must be a careful delineation of what the system is, what components of it we wish to measure, and what relationship the component selected for measurement bear to other components or to the system as a whole.

Swanson (1978) states that evaluation studies have one or more of the following purposes:

1. To assess the set of goals, a program plan, or a design prior to implementation,
2. To determine whether and how well goals or performance expectations are been fulfilled.

3. To determine the specific reasons for successes and failures
4. To uncover principles underlying a successful program.
5. To explore techniques for increasing program effectiveness.
6. To establish a foundation of further research on the reason for the relative success of alternative techniques, and
7. To improve the means employed for attaining objectives or to redefine sub-goals or goals in view of research findings.

Keen (1971), gave three major purposes of evaluating information systems, including are;

1. The need to compare the merits (or demerits) of two or more systems,
2. the need for a measure with which to make comparisons between results obtained in different test situations, and
3. the need to assessing the merits for a real-life system

2.6.2. What can we evaluate?

According to Wilson (1980) the answer to the question "What can we evaluate?" is very simple: any aspect of organizational functioning can be subject to evaluation. He gave several examples of what one can evaluate and included among others the way the management structure functions; internal operations; information systems; new programs of service delivery; new possibilities for technological support to services; etc.

Mor and Maheshwari (2007) in finding an answer to the question ”what can be evaluated” stipulated that evaluation studies can be carried on any of the following; legal systems, financial

or capital market, investment portfolio and banking system; Net Interest Margin, Return on Assets, Return on Equity and various liquidity ratios and gap numbers.

2.7 Methods of evaluation of banking information systems

According to Mor and Maheshwari (2007), Any banking evaluation framework seeks to evaluate the performance of an entity essentially in terms of how it uses its scarce resources. For a bank, the two key scarce resources generally are:

1. Capital
2. Liquidity

They further stated that while in theory it should be possible to measure performance of a bank on both parameters; return on risk capital as well as on liquidity, in practice, the approach adopted should answer the following two distinct and very broad questions:

1. How well is the banks system deploying its capital? (optimisation)
2. Is the bank system operating within the limits of liquidity available to it? (constraint)

Most of the specific parameters that are used to evaluate banks (such as the Net Interest Margin, Return on Assets, Return on Equity and various liquidity ratios and gap numbers) are intended to directly or indirectly, answer these two questions. However, unless the nature of the business of banking is understood clearly there is a real danger that the parameters may convey an incorrect and incomplete picture of the true nature of the bank. Therefore, before going into the details of the specific parameters or criteria that should be used (whether quantitative and/ or qualitative

questions that should be asked) it would be useful to spend some time understanding, more carefully, the "business of banking".

The most important aspect of a bank is that money is its raw material and its assets are primarily composed directly of this very same raw material. And, unlike any other asset or raw material that any other company has, money has some very unique characteristics:

Mor and Maheshwari (2007), also came out with several other parameters often used to evaluate a banking system. These include:

1. Cost to Income Ratio and the Cost to Asset Ratios ratio.
2. Net Interest Margin.
3. Fees to Total Income on the date of maturity – producing a sizeable shock.
4. Average Cost of deposits / borrowings.
5. Gross / Net Non-Performing Assets Ratio.
6. Duration of Assets, Duration of Liabilities and Duration of Equity (Duration of Assets less the Duration of Liabilities).
7. Average Portfolio Credit Rating and Portfolio Diversity Score.
8. Capital Adequacy Ratio.

According to Chowdhury (2002), an evaluation study can be conducted from two points of view; managerial and user-oriented. When it is conducted from the managerial point of view, the evaluation study is called management-oriented; conducted from the users' point of view it is called a user-oriented evaluation study. He advocates that evaluators of an information system

should pay attention to those factors that can provide improved services to the users and customers.

Cleverdon (1978), said that a user-oriented evaluation should try to answer the following questions; how far the system meets both the expressed and the latent needs of its users' requirement, why the system has failed to meet users and customers need, what basic changes are required to improve the output, whether cost can be improved while maintaining the same level of performance, and what would be the possible effect if some new services were introduced or an existing service were withdrawn.

Walsham (1993) has written extensively on interpretive perspectives in IS design and evaluation. He argues that IS evaluation should consider the issues of content, social context and social process. Under the first heading, important questions include the purpose for which the evaluation is being carried out and what factors are included in it. Concerning social context, he argues for the consideration of who are the stakeholders in the situation, what their needs are and how to resolve conflict between those needs. Finally, he suggests that IS evaluation be seen as a multi-stage process occurring at several points, in different ways, during the product life-cycle. It is important he says, to consider evaluation as a learning process for all involved - "questioning is acceptable, all assessments are legitimate in the evaluation discourse, everybody is a learner during the evaluation process, and moral issues can be debated".

Koorey and Medley (1987), stated that every information system (CIS) should have

- Terms and conditions

- Equipment and systems specification and features
- Systems administration
- Emergency configuration
- Testing, installation, and training
- Maintenance and warranty
- Pricing

References:

- AcaDemon AU (2008), the relationship of the business information system function to the management of the organization.

  (http://www.academon.com.au/lib/essay/business-information-systems.html)
- Acquah Paul, http://www.bis.org/review/r060825c.pdf (02/12/2008)
- Adika, G (2006) Lecture notes (Unpublished)
- Amalgamated Bank Brochure, 06/06/07
- Avison, D. & Fitzgerald, M. (1995), Information Systems Development: Methodologies, Techniques and Tools 2nd ed. McGraw Hill, Maidenhead.
- Banka – Rijeka, Kvarner, (2008) Banking Information Systems, (Croatia, BKS Bank AG–Austria) http://www.arbor.hr/index.php?option=com_content&view= article&id= 47&Itemid=66&lang=en (02/12/2008)
- Bearden et al (2001), Marketing: Principles & Perspectives 3rd ed., New York: McGraw-Hill
- Berkowitz et al (1994), Marketing, 4th ed. Boston: Irwin. p. 676
- Boatsi (2002) Lecture notes (Unpublished)
- Boatsi (2003) Lecture notes (Unpublished)
- CalBank Brochure, 06/06/07
- Chowdhury, G.G. (2002) Introduction to modern information retrieval, 2nd ed. London: Facet Publishing. pp. 243-247
- Churchill, G.A. & Peter, P.J. (1994), Marketing; creating value for customers, Boston: Irwin. pp. 384-389.
- Cleverdon, C.W. (1978) User evaluation of information retrieval systems, New York: Knowledge Industry. pp. 154-165

- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology.

  http://www.cba.hawaii.edu/chismar/ITM704/Davis-TAM1989.pdf
- Downey, Myles. (2007) http://www.1000ventures.com/business_guide/crosscuttings/bizs (02/12/2008)
- Doyle, Stephen (1999), Information systems for you. 2nd ed. London: Nelson thornes.
- Ferrán-Urdaneta, C., & Lenard, M. L. (1997). An Object-Oriented Approach to Banking Information Systems. In Proceedings of the World Multiconference on Systemics, Cybernetics and Informatics (SCI '97/ISAS '97), Caracas, Venezuela.
- French, C.S. (1996) Data Processing and Information Technology, 10th ed. London: Continuum.
- Haag, S., Cummings, M. and McCubbrey, D.J. (2002) Management information system: for the information age, 3rd ed. New York: McGraw Hill
- Harry, Mike (1994), Information systems in business, London: Pitman Publishing
- Hill, C.W.L. (2002) Global business, 2nd ed., Boston: McGraw Hill.
- In Lee (2004), Evaluating business process-integrated information technology investment**:** Emerald Group Publishing Limited
- Keen, S., Cummings, M. and McCubbey, D.J. (2002) Management information system: for the information age, 3rd ed. Boston: McGraw Hill.
- Koory, J.K. and Medley, D.B (1987) Management information systems: planning and decision making. Ohio: South-Western Publishing Co.
- Kupsh, Joyce and Whitcomb (1987), the electronic office, Mission Hills: Glencoe Publishing Co. pp. 8

- Lancaster, F. Wilfred (1971) Information retrieval systems: characteristics, testing and evaluation, New York: John Wiley and Sons. pp 55
- Lucey, T. (1997), Management information systems, London: Continuum. pp. 11-20.
- Meadow, Charles T. (1973) the analysis of information system, 2nd ed. Los Angeles: Melville Publishing Co. pp. 160-162
- Microsoft Encarta Encyclopedia Standard, 2005
- Mor, Nachiket and Maheshwari, Basant (2007). Evaluation and Supervision of Banks in Deregulated Real and Financial Markets (http://siteresources.worldbank.org/INTINDIA/Resources/NachiketMor-Paper.htm) 20/11/2008
- O'Brien, J.A. (2003) Introduction to information systems: essentials for the e-business enterprise, 11th ed. New York: McGraw Hill
- Roberk, M.F., Brown, G.F., and Stephens, D.O., (1995). Information and records management, 4th ed. New York: Glencoe. pp 5-6.
- Snoras, A.B. B (2008) Bank Information Systems (BIS) http://www.snoras.com/en/corporate/ebanking/bis (02/12/2008)
- Standard Chartered Bank SMS Brochure, 06/06/07
- Stewart, M.J. and Westgate, D.G. (1989), Information management, Ontario: Nelson.
- Swanson, R.W. (1978) Performing evaluation studies in information science: King D.W. (ed.). New York: John Wiley & Sons. pp. 58-74
- Tiamiyu, Muta (2003) Organization of data in information systems, Ibadan: Stirling-Horden.
- Van-Rijsbergen, C.J. (1975) Information retrieval, 2nd ed. London: Butterworth. pp. 95-99, 144-146

- Walsham, G. (1993) Interpreting information systems in organizations. Chichester: Wiley.
- Warner, Julian (1999) "In the catalogue ye go for men' evaluation criteria for information retrieval systems".(http://informationr.net/ir/4-4/paper62.html) (30-06-2007)
- William Brian K. and Sawyer, Stacey (2003), Using information technology: practical introduction to computers and communication, New York: McGraw Hill. pp 220-221, 420.
- Wilson, Tom (1973), Evaluation strategies for library/ information systems. (http://informationr.net/tdw/publ/papers/evaluation85) 09/06/07
- Wilson, Tom (1980), Evaluation strategies for library/ information systems. (http://informationr.net/tdw/publ/papers/evaluation85) 09/06/07
- Zahir Irani 2002 Information systems evaluation: navigating through the problem domain, Amsterdam: Elsevier Science Publishers B. V.
- The Banking Act, 1970, of Ghana
- http://www.umc.ua/umc-sms-banking.html (20-05-2007)
- http://intsys.fin.qub.ac.uk/itsoc (19-07-2007)
- http://www.ghanabanking.htm (20-06-2007)
- http://www.cba.ca (20-06-2007)
- http://www.meaningofbank.com (20-06-2007)
- http://www.adccindia.com/sms/bank (20-06-2007)
- http://informationr.net/dw (06-06-2007)
- http://www.comp.glam.ac.uk/pages/staff/tdhutchings/chapter1.html#head0 (02/12/2008)
- http://csob.berry.edu/faculty/lleblanc/newpage17.htmsystems. (02/12/2008)
- http://www2.wit.ie/StudyatWIT/UndergraduateCourses/Busi... (02/12/2008)

- http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VD0-46BS994- (02/12/2008)
- http://www.google.com.gh/search?hl=en&q=evaluating+banking+information+system&btnG=Search (Studies Investigated the Success of Information Systems in the Banking Industry) (02/12/2008)
- http://www.elsevier.com/wps/find/bookdescription.cws_home/713803/ (02/12/2008)
- http://ieeexplore.ieee.org/Xplore/login.jsp?url=/ (02/12/2008)

CHAPTER THREE

THE STANDARD CHARTERED BANK, GHANA LTD

3.1 Introduction

The Standard Chartered Bank began its operations long before the independence of Ghana In 1957, with the name Bank of British West African (BWA). It was the only and first bank in Ghana, then the Gold Coast. It acted as the central bank by managing the monetary policy of the economy and by so doing was the foundation on which Ghana's economy and business transaction was based. (Standard Chartered Bank Brochure, http://www.ghanabanking.htm)

In 1964 BWA received a proposal from Standard Bank, Ltd of England for a merger. In 1965 BWA wholly became a subsidiary of the Standard Bank, Ltd. The bank changed its name again to Standard Bank of West Africa Ltd (SBWAL) on 24th August 1966. The bank was incorporated in Ghana under the company code (1963) as Standard Chartered Bank, Ltd on 18th September 1970 and inherently a fully developed banking service with 34 branches and sub branches operated by SBWAL (Standard Chartered Bank Brochure). Currently, over 2,000 branches make up the international network of the Standard Chartered Bank group and underlying the world wide buck up it provides for its services. Standard Chartered Bank, Ltd changed it name again to Standard Chartered Bank Ghana, Ltd on 1st January 1985.

3.1.1 The Vision of the Bank

The vision of Standard Chartered Bank Ltd includes the following

a. Achieve excellence in customer service

b. Focus or quality

c. Reward success

d. Identify with its group network

e. Commit itself to local communities

f. Aim for enhanced shareholders value.

3.1.2 The Objectives of the Bank

The objectives of Standard Chartered Bank, Ltd include the following:

a. To maximize returns for shareholders through growth in earning, dividends and net asset per share,

b. To maintain the banks position as the leading financial institution,

c. To safeguard the bank's assets through the application of prudent banking and business practices,

d. To apply the highest ethical standards to win customers,

e. To provide an environment conducive to teamwork and reward; this motivates employees to provide the highest level of customer services,

f. To demonstrate good corporate citizenship in the country.

3.1.3. Some Services of the Bank

a. Agricultural lending

The agriculture lending services of the Bank are made up of the following; Export Finance; Foreign Exchange and Trade Transactions; Management and Syndication of Loans; Project

Finance; Safe Custody; and Foreign Currency Services through the Standard Forex Bureau Limited.

In recent times the Bank has been providing the medium term finance for the construction of new factories and the acquisition of plant and machinery as well as the rehabilitation of existing industries. The Bank serves small, medium and wholesale banking customers. Customer banking provides personal loans, mortgages, and deposits.

b. Account type

The account type services of the bank include the following; Ghanaian cedi current account; Ghanaian credit call account; Foreign currency current account; Foreign currency call account; and Foreign currency fixed time deposit account.

c. Account payment and receipt

The account payment and receipt services are; Cheques; Electronic fund transfer receipt; Cashiers order – bank cheques; Bankers draft; Direct debit instruction; Direct debit credit instruction; Return cheques; Encashment; Special clearing; and Cheques for collection.

3.1.4 The Processes of the Bank

The underlisted are examples of the Banks processes

a. Consumer Banking (CB)
b. Corporate and institutional banks (C&I)
c. Global Market Operations (GMO)

d. Business Technology (BT)

e. General Administrative (GA) as structure.

f. Liability Products (LP)

a. Consumer Banking

This unit's prime function is to fulfill individual customer needs as well as carry out research to provide efficient customer service. It also takes care of transaction processing. This department provides a range of services in a bid to make it a one-stop bank, where an individual can choose form a range of products. (Standard Chartered Bank Brochure, 2006)

b. Global Market Operations

The unit is responsible for the management of the bank's own account and funds and undertakes the sale and purchase of foreign currency as well as investments of local and foreign currencies. Thus it deals with the foreign exchange market as well as the money and capital markets. (Standard Chartered Bank Brochure, 2006

c. Business *Technology*

The Business Technology unit is made up of global technology and systems processes. The systems and processes handle all projects with regard to the banks information systems and software. The Global Technology unit handles the purchase and installation of hardware, and maintenances of hardware, software and systems. (Standard Chartered Bank Brochure, 2006)

3.2 AN OVERVIEW OF STANDARD CHARTERED BANK INFORMATION SYSTEM

3.2.1 Early Days and the Flat Registers

The Bank has gone through considerable evolution in its operation over the years. The bank started with manual operations, keeping big note books (flat registers as they were called by the Bank) for all accounts at the Bank. There were separate books for savings, current and internal accounts. Everything was hand written. The customer transactions were updated on a daily basis from the vouchers that they used for withdrawals and deposits. These books were checked and balanced to ensure that the credits were equal to the debits on a daily, fortnightly, monthly, and quarterly, half yearly, and yearly basis (Standard Chartered Bank Brochure, 2006).

Interest and ledger fees were calculated every seven days and updated and posted to the customer's account on a monthly and quarterly basis respectively. It took about 15 hours to calculate the interest and ledger fees for a typical branch so this was usually done on weekends. Customer statements were given only on request and these were hand-written on special forms. The Bank kept duplicate copies of these forms.

3.2.2 Ledger Cards

The next improvement was to move its customers' details to special ledger cards, which were kept in files, and this time the cards were grouped according to names in a range. Each range had its own unique file and the customer's name was the key to the accounting details. The customer's deposits and withdrawals were updated on a daily basis. Current account customers were given cheque books with their names embossed on the leaves. Savings account customers

were given passbooks. Their transactions were hand written in their passbooks and were kept by the customer and were submitted each time they visited the bank for any transaction. Interests calculated are applied to customers pass book on the customer's next visit by updating it. (Standard Chartered Bank Brochure)

3.2.3 Semi-Automated Machines-National Cash Register

The Bank later introduced the semi- automated machine for its operation using National Cash Registers (NCR) Class 299 machines. Customers were given unique numbers but their details were still recorded on special ledger cards. From the vouchers customers transaction details were keyed into the class 299 machine with the brought forward balance. The system gave the closing balance after recording all transitions. The recordings were in duplicates, updating the customer statement in the process. These transactions were processed in batches. Statements were mailed to the customers on a quarterly basis. Interest and ledger fees were still calculated manually every seven days and applied on monthly and quarterly basis, respectively. The balancing and checking procedures remained the same, whilst the saving possible was also updated manually. . (Standard Chartered Bank Brochure, 2006)

3.2.4 Introduction of Computers

The Bank adopted the use of computers in it operations in 1985, issuing NCR's banks software called Grand. The Bank had two regional processing centers, one in Accra for the Accra-Tema branches and the other in Kumasi for the Kumasi area branches. This was a back-office system where the customer transactions were not captured immediately, but were received by cashiers and sent for processing in batches at the back office. All customer withdrawal vouchers were

sent to the back office for signature verification. Passbook transactions were also updated automatically by this software.

At the end of each day, the branches ensured that all their books were balanced by printing and checking various reports. They then forwarded their transactions on diskettes to the regional processing center for processing. The transaction files were organized and processed, updating the customer and general ledger details. The branches were then refreshed with their customer balances via diskettes, which were loaded onto their branch personal computers (PCs).

Statements were updated automatically, and ledger fees were also calculated and applied automatically. Although current account customers could transact on a daily basis, savings withdrawal was only allowed fortnightly. Savings deposits were, however, calculated on a daily basis.

3.2.5 A New Banking Software: Band Master

In 1992, the Bank introduced a distributed banking software called Bank Master, where each branch processed it transactions. Transactions were real time and everywhere updated by the cashier as they occur. Passbooks update was also done immediately. Savings withdrawal could now be done on a daily basis. Signatures were captured into the system, so the cashier online could do verification during transaction processing. This made processing of customer transaction very efficient. It also improved the turn-over. The only problem was that the customers could only transact from their branches where they had their bank account.

3.2.6 Introduction of Online Banking: Automated Teller Machine (ATM)

After 98 years of operation, that is, in June 1984, the Bank introduced its first ever Automated Teller Machine (ATM) at two of its branches in Accra (Accra High Street and Liberia Road Branches). The main aims were:

1. To ensure customer convenience, service flexibility, and cost savings from efficient processing;
2. To maintain their competitive edge as market leaders;
3. To make sure strategies fit with their stated intent to grow their retail banking liability book; and
4. To offer flexibility to their customers in their cash withdrawal.

The ATMs were hooked to their distribution banking system. With this setup, only customers of the two branches could have full access to their accounts via the ATMs at their branches in a real true mode, giving the customers up-to-date status of their account, and the customers were known as “online” customers. The services offered to these online customers were

1. Fast cash withdrawal
2. Balance enquiry
3. mini statement
4. statement request
5. cheque book request
6. pin change

The online customers were given a cash withdrawal limit of ¢200,000 a week. Selected customers from the branches where ATMs were given offline services were as follows: Fast cash, cash within, state request, cheque book request, and PIN. They were given a limit of ¢60,000 a week so they could use the ATMs for the above services and their account manually debited the next working day. In 1995 the Bank installed three additional ATMs at its trade market circle, Kumasi Harper Rocal and Obuasi branches to satisfy at least its customers in two of its major regions of operation.

The move to Obuasi was also strategic because the over-the-counter transaction volumes were high. The daily outline limit was removed so the customers did withdraw as much as their account balance could allow. The outline limit was reverted to ¢500,000, the withdrawal cycle reduced to daily, after noticing that long queues were mounting up at ATMs especially, at Obuasi, where customers account withdraw ¢300,000 in batches of ¢2,000 which was the maximum dispensable amount of the ATMs. The offline was also increased to ¢250,000. In 1996 the Bank installed six more ATMs at its Abeka, Tema, Adabraka, Osu, and the first ever off branch ATM at Ashanti Goldfields Co. (AGC) Guest House, Anyinam at Obuasi. By end of 7th April 1996, the Bank had issued 1,030,732 cards.

3.2.7 Centralized ATM Operations

In 1997 the bank decided to centralize its ATMs operations so that its customers could have full access to their balance at any of its ATMs deposited at the branches. This was to increase their information management system (IMS) reports, proper monitoring of their ATMs and more customer convenience. This involved networking all their ATMs via a wide area country setup.

They started with leased copper lines. All ATMS were networked by 31st December 1999 with a mixture of radio and satellite Wide Area Network (WAN), to replace the non-12k compliant ATM software. This also prepared the ground for the centralization of their banking software. http://www.standardchartered.com/gh/ab

References

- http://www.standardchartered.com/gh/ (20-12-08)
- http://www.ghanabanking.com (19/11/08)
- http://globalmarket.standardchartered.com/ (19/11/08)
- Standard Chartered Bank Brochure, 2006

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This section of the study describes the methodology chosen and the techniques used in the research. According to Kumekpor (2002), a method is a way or a procedure of getting specific things done. Methodology begins with the research design and the explanation of evaluation research, the sources of data (primary, secondary), sampling frame (technique) and population description employed, and the data collection instruments used. A blend of both the qualitative and quantitative techniques of data collection and analysis was used for this study.

4.2 Research Design

This study is an evaluation of the information system of a bank; it can therefore be described as a survey. It was necessary to employ the research technique used in such study: the survey method. A survey research gathers information about people's feelings, opinions, beliefs, attitudes, and behavior. This study is an attempt to evaluate the attitudes, opinions and feelings towards the information system of Standard Chartered Bank Ghana Ltd. Therefore the survey method is an appropriate research design.

4.3 Evaluation Research

Studies conducted to obtain objective and systematic evidence of the success and failure of any system is categorized as evaluation research. When a project is evaluated, its relative

effectiveness in terms of standard goals, and objectives is determined and described. Typically, evaluation research is an attempt to measure operations in terms of the goals of any system.

Evaluation studies are not distinguished so much by their methods as they are by their purposes; thus many research techniques are used to effectively evaluate information systems and projects. In order to elicit reactions or evaluations, sometimes, interviews and questionnaires are used, as noted already.

4.4 Data Collection Instruments

Various techniques are used in collecting data for research work. Some common data collection methods are the questionnaire, interview, and observation. Data collection instruments allow systematic collection of data to ensure that they are reliable and can be analyzed for the study. Data for this study was collected from both secondary and primary sources. With regard to the primary sources, two main data collection instrument were used. These are the questionnaire and the interview.

The questionnaire was self-administered and comprised both open-ended and closed-ended questions, designed and administered to both clients and staff of the Bank. In addition, a key personnel (Deputy Director, Operations) was interviewed to get a clearer picture or elicit information from him, which could not have been done using the questionnaires.

3.5 Why the questionnaire?

Questionnaires are more economical, in the sense that they can supply a considerable amount of research data at a relatively low cost in terms of materials, money and time. In addition, questionnaires have higher response rate. Some researchers have sought to improve the response rate by contacting respondents before they send a questionnaire to them.

Questionnaires supply standardized answers, to the extent that all respondents are posed with exactly the same questions and answers, with no scope for variation to slip in via face-to-face contact the researcher. The data collected, then, are very unlikely to be contaminated through variation in the wording of the questions or the manner in which the question is asked. There is also little scope for the data to be affected by interpersonal factors.

The questionnaire also has pre-coded answers; it has a further important, advantage encouraging pre-coded answers. The value of the data is likely to be greatest where respondents provide answers that fit into a range of options offered by the researcher. They also have an advantage for the respondents, who, instead of needing to think of how to express their ideas, are faced with the relatively easy task of needing to pick one or more answers which are spelt out for them.

4.5.*1 Primary Data*

In addition to the data that were collected from the questionnaires and the interview, an initial survey was carried out to elicit information from both members of staff (Junior, Senior, and Management) and clients. Pre-testing issues were generated from the following sources:

1. Review of the literature on information systems, management information systems, information management, information technology and banking, and other sources of relevance to the study.
2. The objectives of the study
3. Informal discussions with a cross section of management, senior, and junior staff on how to align the banks information system to its competitive strategy in order to continue to win the necessary advantage in the financial industry

4.5.2 *Secondary data*

The main sources of secondary data were relevant textbooks, the Bank's annual reports, brochures, and performance reports. The rationale for using these sources was that they are quicker to find and more easily obtained.

4.6 Sampling frame

According to Fraenkel and Wallen (1993), a sample in a research study refers to any group on which information is obtained. In a later edition, Frankel and Wellen (2000), state that many times it is extremely difficult to select either a random (select by chance rather than according to plan) or a systematic non-random sample (according to fixed or organized plan). This technique is also known as available sample or haphazard sample (Spata, 2003). Due to time constraints and the sensitive nature of the study, the convenience sampling technique was used. This method ensured that every individual in the population had a chance to be included in the sample selected. It was employed in the selection of all the other probability samples. A major requirement for the use of the simple random method on its own was that the population should

be homogeneous. According to Peil (1995), the elements which make up the population should be identical, either by living together in a defined territory or having a common nationality. This method of sample selection enabled the researcher do a more exhaustive internal analysis of the Bank, vis-à-vis the role of the information system in the management of records, files and information at the Bank.

4.7 Population:

According to Fraenkel and Wallen (1993), a population is the larger group to which one hopes to apply the results of the study. The population, in other words, is the group of interest to the researcher, the group to whom the researcher would like to generalize the result of the study. According to Peil (1995), the elements which make up the population should be identical, either by living together in a defined territory or having a common nationality. According to Spata (2003), a population is a set of all the events, people, objects and so on, that a researcher is interested in studying.

The population of this study comprised the staff of the IT and the Operations Units at the headquarters of the Standard Chartered Bank Ghana Ltd totaling 110 persons.

4.8 Sampling size

According to Spata (2003), samples are individuals who are selected from a population to participate in a research project. According to Saunders et al (1997) different sample sizes are required from different sizes of population. They further stated that for a population that ranges from 100 to 200, an average sample size of 50% is enough to provide a 95% level of certainty.

Therefore 55 staff, representing 50% was sampled. The Table below shows the breakdown of the sample for the study.

Table 4.1 Population and Sample (IT and Operations units)

	Population	Sample	Sample percentage (%)
Head	1	1	100
Senior Managers	15	8	53.33
Managers	20	10	50.0
Junior Staff	74	36	48.6
TOTAL	110	55	50

4.9 Method of Data Analysis

Data analysis was based on the structure and construction of the questionnaire and the interview. Thus the data was analyzed based on the qualitative and quantitative approach to data analysis using the Statistical Package for the Social Sciences (SPSS). The SPSS presents the social scientist with a useful working language for data analysis. Before the analysis, the questionnaire responses were coded. A value was given to each response and consistencies were maintained throughout the coding, and maintaining the value for each response.

Descriptive statistics such as frequencies and percentages were used to present the results of the analysis. Tables, graphs, and charts were also used to display the results.

References:

Fraenkel, J.R. and Wallen, N.E. (2000) How to design & evaluate research in education, 4th ed., Boston: McGraw Hill. 431p

Fraenkel, J.R. and Wallen, N.E. (1993) How to design & evaluate research in education, 4th ed., Boston: McGraw Hill.

Kumekpor, Tom K.B. (2002) Research methods & techniques of social research, Accra: SonLife Press & Services.

Peil, M (1995) Social Science Research Methods: a handbook for Africa, 2nd ed, Nairobi; East Africa Education Publishers.

Spata, A.V. (2003) Research methods, New York: John Wiley & Sons. p. 12

Swanson, R.W. (1978) Performing evaluation studies in information science: King, D.W. (ed.). New York: John Wiley & Sons. pp. 58-74

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSIONS OF FINDINGS

5.1 Introduction

This chapter presents an analysis and discussion of the data collected primarily from the questionnaires completed by the staff of the Standard Chartered Bank (Ghana) Ltd., Headquarters, Accra and also from the interview granted the researcher by the head of IT and Operations of the Bank. This chapter is divided into two main parts. The first part analyses the data regarding general characteristics of the population whilst the second part focused on the purpose of the research.

5.2 General characteristics of the population and respondents

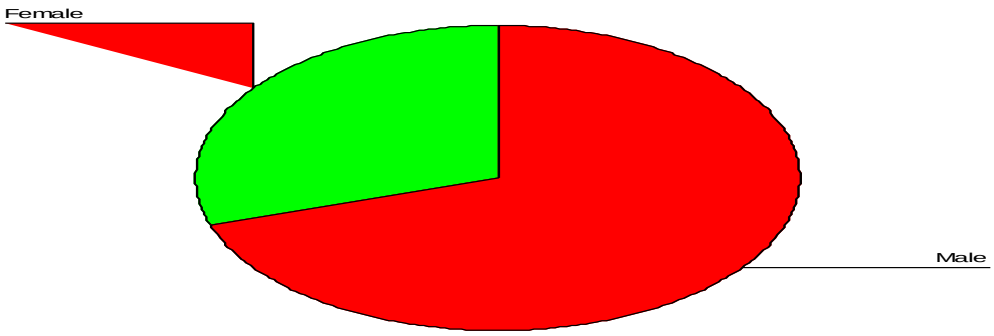
The general population of the study comprises a cross section of the staff of the Information Technology (IT) and the Operations Unit at the headquarters of the Bank totaling 110. For the purposes of data collection and analysis, a sample size of 55 was selected. The researcher was able to retrieve all the 55 questionnaires distributed to the respondents. The components of the population and sample are represented in Table 1.2

Table 5.1 Population and Sample

Position	***Population***	***Sample***	***Sample percentage (%)***
Head	1	1	100
Senior Managers	15	8	53.33
Managers	20	10	50.0
Junior Staff	74	36	48.6
TOTAL	110	55	50

Out of the total number of respondents, 38 constituting 69.1% were male whilst 17 (30.9%) were female. The pie chart (Fig. 5.1) represents the male: female ratio of the respondents.

Figure 5.1. Gender of Respondents



Gender of respondents

A cursory glance at this figure portrays a picture of excessive male dominance. This, however, tends to be representative of the situation in almost all the branches and units where males greatly outnumber females. This situation is especially true of the headquarters of the Standard Chartered Bank (Ghana) Ltd., Accra.

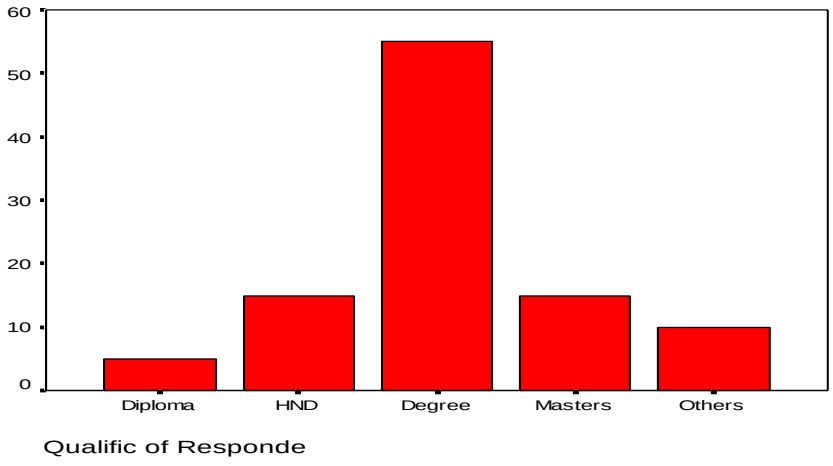
It was realized that most of the respondents were between the ages of 21 and 30. Thirty-two (32) constituting 58.2% indicated that they were between the age range of 21-30; twenty-one (21) constituting 38.2% were between the ages of 31 and 40, whilst two (2) constituting 3.6% were within the age range of 41 and 50. It was, however, surprisingly found that none of the respondents was 20 years or below, or 51 years or above. Table 5.2 shows a cross tabulation of the gender and age of the respondents

Table 5.2 Gender of respondents vrs age of respondents

Gender	Age			
	21-30	31-40	41-50	Total
Male	21	17	0	38
Female	11	4	2	17
Total	32	21	2	55

The situation on the ground shows that the respondents had of varying educational backgrounds and qualifications. It was found that most (32) constituting 58.2% of the respondents were Bachelors degree holders whilst nine (9) constituting 16.4% were Masters Degree holders. The rest were six (6) constituting 10.9% Higher National Diploma (HND) holders, two (2) constituting 3.8% and six (6) constituting 10.9% indicated other qualifications. These include Diploma and Certificate in Information Technology (IT), Association of Certified Chartered Accountants (ACCA), and Chartered Institute of Marketers (CIM). (see Fig. 5.2)

Figure 5.2 Qualification of respondents



With regards to the working experience and how long they had been working in the Bank, the responses shows that 11 (20%) had been working in the Bank for less than one year, 17 (30.9%) said between one and two years, 8 (14.5%) said between two and three years, 4 (7.3%) said between three and four years, and 15 (27.3) said five years or more.

5.3 Use and impact of IT in the Bank's operation

5.3.1 Use of Computers

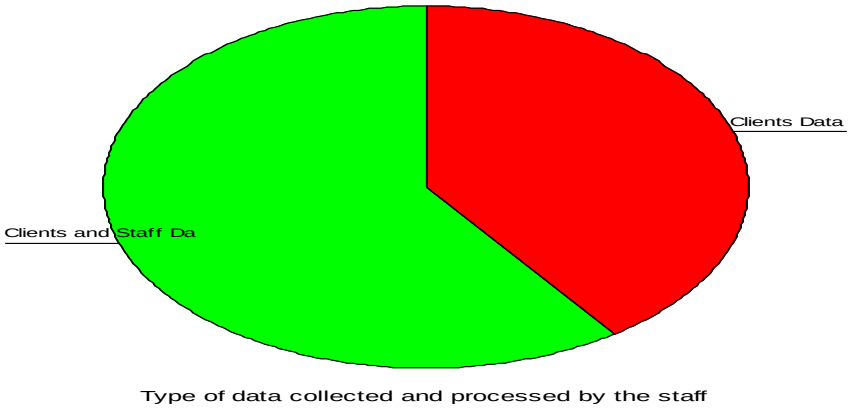
As stated earlier, with the changing competitive environment in which the banks operate, it is essential that staff of banks, especially in the IT and Operations Department, acquire some skills in IT and Information system management. With this background, the researcher wanted to know if the respondents used computers for their work and whether they had any kind of formal training in IT and computer use. A total of 52 respondents representing 94.5% answered in the affirmative, whilst three (5.5%) responses were in the negative. For those who answered in the affirmative, the researcher went on to find out if they were trained by the Bank or not. Nine (9) representing 17.3% said Yes, whilst 31 (59.6) responded No. Ten (10) (19.2) respondents indicated Yes and No at the same time. That is, the respondents might have had some formal training in IT before joining the Bank and the latter went on to improve or retrain them to suit the Bank's setting. There were two invalid responses.

5.3.2 Type of data collected and processed at the Bank

One of the main objectives of the study was to find out the type of data that are collected, organized and processed by the Bank's information system. The researcher therefore, asked the respondents the types of data they normally collected and processed. Twenty-two (22)

respondents (40%) said they collected and processed only client data, whilst 33 respondents representing 60% said they collect and process both client and staff data. None of the respondents said he or she process only clients or staff data. (See Fig. 5.3)

Figure 5.3 Type of data collected and processed

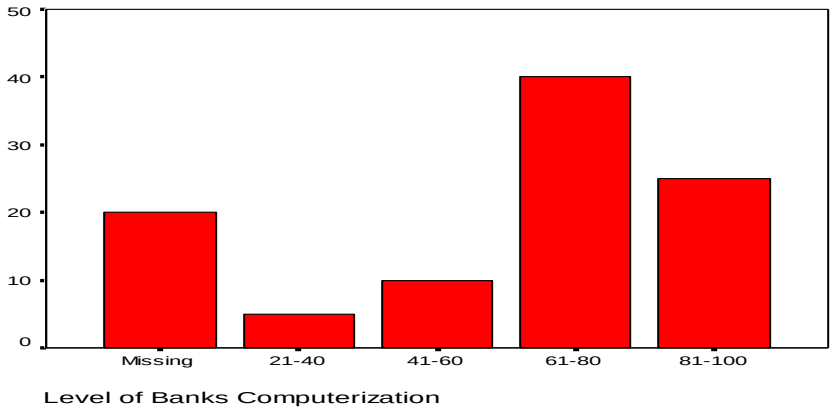


5.3.3 Level of computerization at the bank

The researcher wanted to find out if all the functions and processes at the Bank were computerized. Most of the respondents (39) representing 70.9% said No, whilst 16 respondents representing 29.1% said Yes. This, however, seemed to represent the situation on the ground (the Banks operations and IT units), as most of the functions and processes at the operation were done manually.

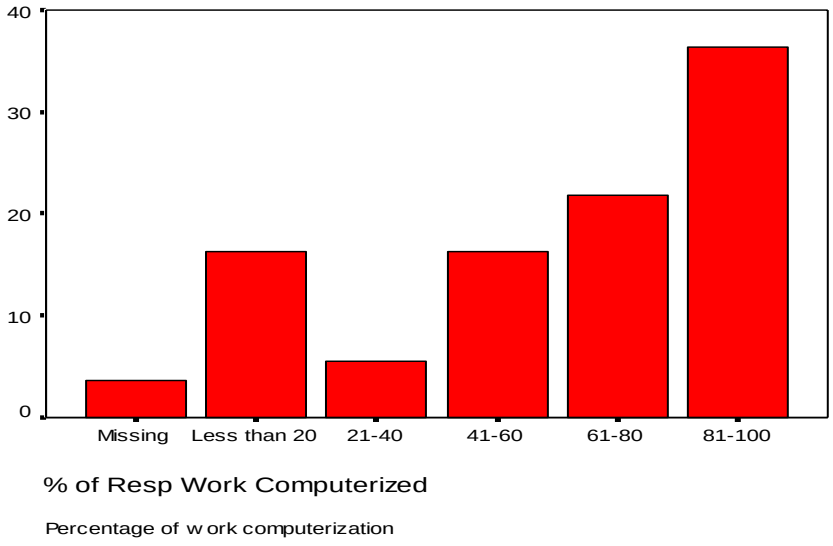
The researcher further asked those who responded 'No' to indicate what percentage of the Bank's processes or functions were computerized. Fig. 5.4 below represents the level of computerization of the Bank.

Figure 5.4 Level of Computerization of the Bank



The figure shows that most of the respondents were of the view that, the Bank had a high level of computerization: 38 respondents represent 69.1% said the level of computerization of the operations and functions of the Bank was 61% or more, whilst just 8 respondents (14.5%) said the level of computerization was 60% or below. The respondents were also asked to show how much of their work was computerized. The responses are illustrated in Fig. 5.5

F*igure 5.5 Percentage of work computerized*



As illustrated in Fig. 1.5, most of the respondents were of the view that most of their function and works were computerized and they used the computer in their day-to-day work at the Bank.

5.4 Perceptions of the Impact of the Computerization on Performance Variables

5.4.1 Effect of Computerization on Staff Turnover and Productivity

The study also aimed at finding whether the use of a computerized information system had effect on staff turnover. The responses show that 14 representing 25.5% of the respondents said 'Yes' whilst 41 representing 74.5% responded No.Those who responded Yes were further asked to show the extent to which the staff number had been reduced. Majority of the respondents (47.1%) were of the view that the rate or degree is less than 10%; 3 (17.6%) said it was between 11%-20%; 3 (17.6%) also said it was between 21%-30%, and another 3 (17.6%) said it was between 31%-40%. None of the respondents, however, thought the degree or extent of effect was more that 40%.

Table 5.3 Effect of the Information System on Staff Turnover

Extent of effect	***No. of responses***	***Percentage (100%)***
Less than 10%	8	47
11-20%	3	17
21-30%	3	17
31-40%	3	17
Over 40%	0	0
Total	17	100

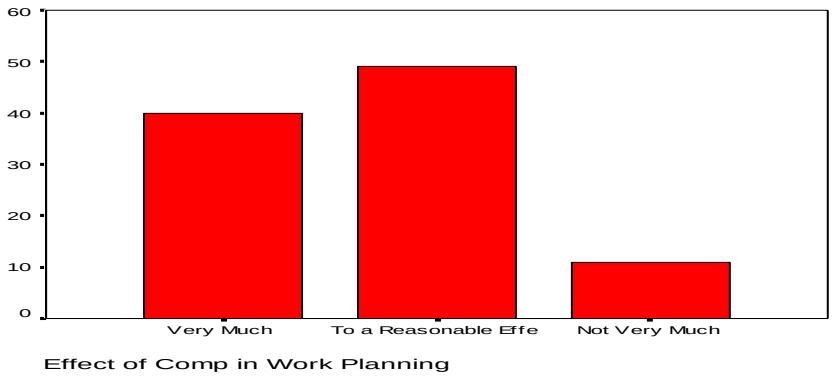
Regarding the effect of computerization on staff performance or productivity, 22 representing 40% of the respondents were of the view that computerization had increased staff efficiency,

enhanced staff skills, increased staff confidence, but reduced level of staff interaction with clients. Eight (8) representing 14.5% and four (4) representing 7.3% were also of the view that it had only increased staff efficiency and enhanced staff skills respectively. Only two (2) respondents representing 3.6% also believed it had increased the level of interaction with clients and increased their confidence.

5.4.2 Impact of Computerization on planning

One of the main objectives of the study is to find out the effect or the extent to which computerization had helped in planning office work and schedules. The responses are illustrated in Fig. 5.6 below.

Figure 5.6 Effect or impact of the information system on planning work at the bank



It is apparent from the Fig. 5.6 above that most of the respondents found the Computerized Information System (CIS) to have helped them in their planning activities & schedules in the office. Although none of the respondents felt that the CIS had helped to a small extent, four (4) representing 7.3% of the respondents found it not very much helpful, 24 representing 43.6% also found it very helpful whilst 27 representing 49.1% of them were of the opinion that the CIS had

helped them to a reasonable extent. None of the respondent was of the view that the CIS had not helped them at all. Most respondents, therefore, found the CIS helpful to a reasonable or large extent.

5.4.3 Impact of Computerization on reporting

In order to find out the effect of the information system on reports writing, the respondents were asked if the computerized information system had resulted in producing more accurate and timely reports that meets deadlines. The results shows that most (53 of the respondents) representation 96.4% responded in the affirmative whilst 2 of the respondents representing 3.6% responded in the negative. The respondents who said Yes were further asked of the extent to which the CIS had helped in production more accurate and timely report in meeting deadlines. Most (38 representing 71.7%) said it was to a large extent whilst 15 representing 28.3% said it was to a medium extent. It was also found that none said it had helped to a small extent.

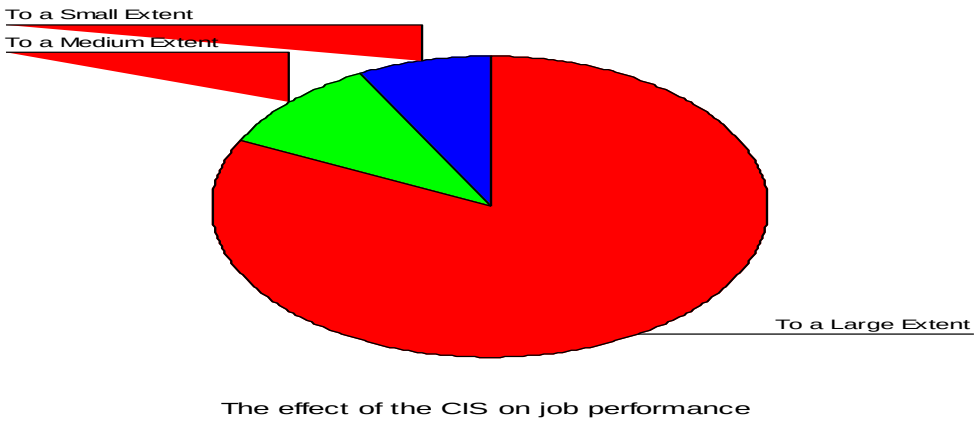
On the other hand, the respondents who said No could not give any reason why the CIS had not help to produced more accurate and timely reports in meeting deadlines.

5.4.4 Effect of the information system on staff performance and job satisfaction

Another objective of the study was to find out the impact of the information system on staff performance and job satisfaction. With reference to this objective, the respondents were asked if the information system had increased job satisfaction. Fifty-one (51) representing 92.7% responded affirmatively whilst four (4) representing 7.3% responded in the negative. The respondents who responded in the affirmative to the question were further asked to show the

extent to which computerized information system had increased job satisfaction. Out of the 51 valid respondents, 41 (75.5%) said it had affected job satisfaction to a large extent, 7 (12.7%) also said it was to a medium extent and 3 (5.5%) said it is to a small extent.

Figure 5.7 The effect of computerization on job performance



The figure above clearly shows that to a large extent, the information system had great impact and effect on job performance and thus, it has also increased job performance to a large extent. On the other hand, when the respondent who responded negatively (No) were asked to show and explain why they said No, two (2) out of the four said since they did not use computers in their daily work and that, they could not access the impact/ effect of characterization on job performance. It is also interesting to know that the other two could however not give any reason for saying No.

5.4.5 Effect of the information system on decision making

To access the effect and impact of the computerized information system on the Bank's decision making process, the respondents were asked if the CIS had helped improved decision making at

the bank. The responses shows that almost all of the respondents (53) representing 96.4% are of the view that the CIS has improved decision making whilst just two (2) representing 3.6% said No. In finding out the extent to which the CIS had improved decision making at the Bank, 35 (66%) respondents said it had affected and improved it to a large extent, 11 (20%) said to a medium extent and 7 (13.7%) said it's to a small extent. It is also interesting to know that, the respondents who said No could not give any reason for their response.

5.4.3 Computerization and good corporate image

Another important objective of the study was to find out the extent to which the information system had enabled the Bank to gain competitive advantage in the banking sector. To this effect, the respondents were asked if the information system has resulted in a better corporate image. All the respondents (55 represent 100%) responded in the affirmative. The respondents were further asked to show the extent to which computerization of the Banks operations had led to a better cooperate image. Their responses are illustrated in the table below.

Table 5.4 The extent to which the CIS has led to a better corporate image

Degree/Extent	***No. of responses***	***Percentages (%)***
To a large extent	49	89.1
To a medium extent	4	7.2
To a small extent	2	3.6
Total	55	100

As illustrated in Table 5.4, most (49 representing 89.1%) said it is to a large extent, 4 (7.2%) said to a medium extent whilst 2 (3.6%) said it is a small extent.

5.4.7 The effect of computerization on the Bank's customers

The respondents were asked if the introduction of the computerized information system has increased the number of the Bank's customers. Fifty (50) representing 90.9% said Yes whilst five (5) representing 9.1% said No. This result shows that majority of the respondents are of the view that the computerized information system has affected the Bank's customer turnover positively.

Also the views/opinions of the respondents were sought on the extent or degree to which the information system had affected staff turnover. Fig. 5.8 below represents their responses.

Table 5.8 The effect of computerization on the Bank's customers

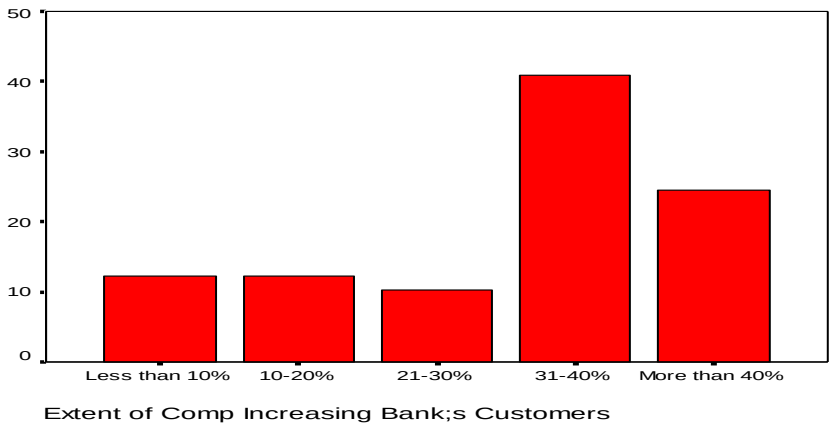


Fig. 5.8 above shows that, 6 (12.2%) of the respondents are of the view that the Bank's customers have increased by less than 10%, and between 10-20%, respectively, five (5) representing 10.2% said it's about 21-30%, 20 (40.8%) said the degree is by 31-40% and 12 (24.5%) said it had positively affected the Bank's customers by more than 40%. This clearly,

shows that most of the respondents are of the view that computerization has positively affected customer turnover.

On the other hand, when the respondents who said No were asked to give reasons why they thought that computerization had not positively affected the Banks customer turnover, they could not give reasons for their responses.

5.5 Problems Encountered Using the Computerized Information System (CIS)

Respondents were asked whether they encounter any problem when using the CIS. The responses show that thirty-seven (37) representing 67.3% said Yes; 12 (21.8%) said No, and 5 (10.9%) responses were invalid. When the respondents who answered Yes to the question were asked to indicate or show the sort of problems they encounter, most of them said they face a periodic slow network which is due to the increase in the number of clients and staff information they process. They said this (increase in the number of clients and staff) does not come with a corresponding improvement and upgrading of the CIS to handle corresponding increase in the volume of information and records they process. Others also said there is slow information transfer due to too many commands being executed simultaneously.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.6 Discussions of findings

The discussion of the findings of the study was presented under the following themes

- Staffing
- Data capturing and processing
- Computerization at the Bank
    - Planning, decision making and report writing
    - Staff turnover and productivity
    - Clients/customer turnover and satisfaction

5.6.1 Staffing

The study revealed that most of the Bank staff were males. That is, there was an excessive male dominance. The result tends to be representative of the situation at Headquarters branch of the Standard Chartered Bank. The study also revealed that majority of the staff at the operations and IT unit were youth. They are were in the age ranges of 21 to 30 years

To find out whether the assertion by Buatsi (2002) that professionals and staff of Banks enrol in several courses to get training and education, the researcher asked of the level of education of the respondents. The result showed that all the staff had completed at least secondary school with majority (75%) having at least a university degree.

With the changing competitive environment in which the banks operate, it is essential that staff of Banks, especially in the IT and Operations Department, acquire some skills in IT and information system management. It was revealed that almost all of the staff had formal training in IT and computer use. This finding confirms the assertion by French (1997) that all business professionals and management staff and accountants need to have a good knowledge of data processing and IT.

It also came to light that even though majority of the respondents were computer literates or were already trained and had formal education in IT and it application before joining the Bank, they still needed training in the use and application of computers with particular reference to the Banks operations.

5.6.2 Data capturing and processing

The study found out that the Bank performed well in terms of data capturing and processing. The findings also indicated that most of the data captured (collected, organized, analyzed/ processed, and stored/preserved) into the information system were client and staff data. However, the staff appeared to be reeling under their tasks due to ‘data overload’ and understaffing at the operations and records units.

The study revealed that the management and preservation of information at the Bank were done both manually and electronically. This supports the assertion by Haag et al. (2002) that data processing in organizations can be done by manual methods as well as with the aid of electronic office machines.

It also came to light that there is the general consensus among staff of the Bank that there is a computerized information system in place to manage the data and information of the Bank. Thus the Bank mainly relies on the computerized information system to organize, process, store and disseminate information. Data capturing, information processing and information dissemination supported by the information technology staff, if well managed can positively impact on the Bank's operations and performance.

5.6.3 Computerization at the Bank

The study revealed that most of the functions and processes at the Bank were computerized. However, the operations unit which largely dealt with records had a low level of computerization**.** This seemed to represent the situation on the ground (the Bank's operations unit), as most of the functions and processes at the operation were done manually.

More often than not when people talk of computerization, they are referring the use and application of computers to the operations of the work and processes at the Bank. The Researcher looked at the effect of computerization on planning and decision making, report writing, the Bank's customers, good corporate image, staff turnover and productivity, staff performance and job satisfaction at the Bank

Planning and decision making

One of the main objectives of the study was to find out the effect or the extent to which computerization had helped in planning office work and schedules. The study revealed that the

Computerized Information System (CIS) had helped the staff in their planning activities & schedules in the office and had improved decision making as well. This supports Williams and Sawyer (2003) view that the purpose of computer-based information is to provide managers (and various categories of employees) with the appropriate kind of information to help them in their planning and decision-making processes.

Another area of concern to the researcher was the effect of the information system on reports writing. It came to light that the computerized information system had resulted in producing more accurate and timely reports that meets deadlines.

Staff Turnover and Productivity

The study also aimed at finding whether the use of a computerized information system had effect on staff turnover. It was revealed that there were mixed reactions and opinions as to whether computerization had affected the Bank's turnover. But to a large extent, it came to light that the computerization had not affected staff turnover negatively. The effect was positive.

The study also revealed that the computerization had increased staff efficiency, enhanced staff skills, increased staff confidence, but reduced the level of staff interaction with clients. The researcher found out that the reduced level of staff interaction with clients was due to the use of e-services and products such as Internet Banking, Telephone Banking, Automated Teller Machine (ATM) Banking, and Short Message Service (SMS) Banking.

Staff performance and job satisfaction

One of the objectives of the study was to find out the impact of the information system on staff performance and job satisfaction. The study revealed that the information system did not just increased job satisfaction among the staff but also increased job performance to a large extent. This affirms William and Sawyer (2003) view that not only do information systems give customer satisfaction, but they also make supervision by management very easy and enhances job performance.

Good corporate image

The study revealed that the information system had enabled the Bank to gain competitive advantage in the banking sector and had resulted in a better corporate image. This was a clear representative of the situation at Standard Chartered Bank as it continues to have a better cooperate image and dominance, and stand tall in the banking sector and became the standard for the other banks in the banking sector. It also confirms Avison and Fitzgerald's (1995) assertion that business information systems can help to achieve competitive advantage.

Bank's customers

The study revealed that the introduction of the computerized information system had increased the number of the Bank's customers. It also came to light that it had increased customer satisfaction and convenience banking.

Challenges of the Computerized Information System (CIS)

More often than not when people talk of computerization, they only consider the positive aspects of it and neglect the challenges and problems encountered in the CIS. The researcher looked at a number of areas concerning the challenges and problems encountered in the CIS.

It came to light that even though majority of the respondents were computer literate they still needed training in the use and application of computers with particular reference to the Bank's operations.

The study also revealed that the main problem encountered was periodic slow down of the network which, was due to the increase in the number of clients and staff information needs and the volume of information the system had to process, store and disseminate at a given time.

It also came to light that the increase in the number of clients and staff did not come with a corresponding improvement and upgrading of the Computerized Information System (CIS) to handle corresponding increase in the volume of information and records processed.

Finally, it was revealed that most of the challenges encountered were because of too many commands being executed simultaneously. This resulted in the reduction of the speed of information transfer.

References:

- Avison, D. & Fitzgerald, M. (1995), Information Systems Development: Methodologies, Techniques and Tools 2nd ed. Maidenhead: McGraw Hill.
- Haag, S., Cummings, M. and McCubbrey, D.J. (2002) Management information system: for the information age, 3rd ed. New York: McGraw Hill
- William, Brian K. and Sawyer, Stacey (2003), Using information technology: practical introduction to computers and communication, New York: McGraw Hill. pp 220-221, 420.
- Boatsi (2002) Lecture notes (Unpublished)

CHAPTER 6

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Introduction

This chapter provides a summery the survey. In addition, the chapter provides the conclusion, recommendations and suggestions for further research on the subject

6.1 Summary

The study examined the extent to which investments in an information system have helped the Standard Chartered Bank to achieve its objectives and goals; whether this has helped or improved the corporate image of the bank or enabled it to gain competitive advantage in the banking sector. From the analysis, the following findings have been drawn

Investments made in information system were noted to have helped in the achievement of the objectives of the bank as indicated below:

They have helped the Bank

1. To maintain its position as a leading financial institution.
2. To apply the highest ethical standards with customers.
3. To provide an environment conducive to teamwork and reward, which motivates employees to provide the highest level of customer services
4. To demonstrate good corporate citizenship in the country.
5. To enhance and improve it corporate image
6. To become the standard for other banks in the banking sector in the country

A number of tangible and intangible benefits were derived from the investment in the information system. These include improvements in;

1. Forecasting and planning abilities and the decision making processes at the Bank
2. Report writing and reports meeting deadlines
3. Job satisfaction and Productivity of staff
4. Staff turnover
5. Information management (both clients and staff information)
6. Bank's corporate image
7. Customer or clients satisfaction and customer loyalty
8. Customer or clients turnover
9. Organizational learning and capacity building

It was also reveled that the banks information system has enabled it to: improve or increase it computerization process and functions at the operations unit. This also led to an increase in staff turnover even though the turnover is on the low side.

The findings also indicated that investment in an information system made by the Bank will in the long run enable the Bank to improve upon its operations and indeed Ghanaian Banks in general making them more effective.

The Bank performs well in terms of data capturing and processing. The findings indicated that most of the data captured (collected, organized, analyzed/ processed, and stored/preserved) into

the information system are clients and staff data. However, the staff appears to be reeling under their tasks due to ‘data overload’ and understaffing at the operations and records units.

There is the general consensus among staff of the Bank that there is a computerized information system in place to manage the data and information of the bank. Thus the Bank mainly relies on the computerized information system to work

Data capturing, information processing and information dissemination supported by the information technology staff, if well managed can positively impact on the Banks operations and performance

6.2 Conclusion

Since 1998, Standard Chartered Bank (Ghana Ltd) has invested about $40 million in its ongoing Information Technology (IT) deployment programs. The study sought to examine whether the investment in these programs which constitute a central part of the Bank’s computerized Information Systems (IS) are worthwhile

The Information Technology and Operations units of the Standard Chartered Bank (Ghana Ltd) are the heart of the Bank. It is responsible for tracking and the management of the Bank’s operations both internally and externally. The other departments/units of the Bank, to a large extent rely on the computerized information system. The CIS thus handles both front and back office operations and transactions. It also handles both clients and staff data and records.

Even though most of the staff at the IT units were already computer literates before their appointments at the Standard Chartered Bank, they are retrained by the Bank to be able to use and effectively operate the information system. The other staffs (operations) are also retrained in-house. There is also provision for staff to go on study leave to acquire more knowledge and skills in IT, Operations, and other managerial or banking sectors.

The software in use is an off-the-shelf software (Bank Master Software) but modified to suit the internal and external operations of the Bank.

The successful story of investment in information system at Standard Chartered Bank will encourage other Banks to embark on such investment with the view to aliening their processes with business objectives and goals.

The conclusion reached is that investments in Computerized Information System (CIS) enabled the Bank to achieve its objectives and helped it gain a better corporate image and improved performance.

This research work therefore contributes towards the essence and importance of periodic evaluation of investments in information systems and bridging the information gap for planning, decision and policy making in banks.

6.3 Recommendations

Based on the findings, the study makes the following recommendations which should further enhance the efficiency of any bank or financial institution embarking on computerization.

a. Technology

Most investments in information systems are technology-led, addressing too narrow an agenda and reflecting too technical on it emphasis (not user friendly, thus one need special or technical knowledge to fully operate it).

1. It is recommended that investments in information systems should, therefore, be client-centered or user-oriented, reflecting the needs of the users who are the staff of the organization. Organizations should successfully attend to the non-technical aspects that are the human and organizational aspects of changing technology and operations.
2. It is recommended that the integrated approach to the organizational and technical change should be adopted. The new technologies should be organized and designed to suit the needs and requirements of the clients, staff, and changing societal and competitive environment.

b. Systems Implementation

1. It is recommended that managers and users should be initially involved in the installation and implementation of the information systems.
2. In particular, it is recommended that enough attention should be paid to the impact of the new and evolving technologies on organizational structures and processes or on job designing.

c. Training and education

1. The Bank should invest in training staff at the Information Technology and Operations Unit to ensure long term services to the other units or departments. The training must cover both the infrastructure (hardware, software, networks, etc) to be maintained and the core processes of the bank to be improved.
2. The Bank should also embark on both formal and informal outreach programs to track the performance of the Bank and processes earmarked for improvement. Such programs will enable the Bank to leverage its resources better to build fully-focused businesses and operations.

d. Data processing and dissemination

The Bank performed well in areas of data capturing and processing. The task is carried out mainly by the team members or the IT and Operations Unit. These groups of staff have complained of too much or work overload.

As a way of improving the Banks situation, it is recommended that

1. The staffing capacity of the IT and Operations Unit must be increased especially during the peak hours of the Bank.
2. The Bank must also improve upon its information dissemination to their customers. Some practical ways of doing this is to increase courier runs and employ additional staff.

6.4 Suggestions for further research

Since no single research can cover all the areas and claim to solve all problems, an attempt has been made in this research to evaluate or find out the effects and impacts of the Information Systems on the Operations of Standard Chartered Bank (Ghana Ltd) Headquarters Branch. However there are other areas which need to be researched into. The following are some of them:

- A feasibility study can be conducted into the extend to which investment in information systems has helped banks to achieve it corporate objectives
- There should be a study into staff perception on the impact of the use of Information system at the Standard Chartered Bank (Ghana Ltd) Headquarters, Accra on staff and bank performance,
- The impact of information systems on Banks in Ghana,
- The impact of information systems on clients turnover in banks.

APPENDIX

DEPARTMENT OF INFORMATION STUDIES

UNIVERSITY OF GHANA, LEGON

Topic: Evaluation of the information system at Standard Chartered Bank (Ghana) Ltd, Headquarters, Accra

Dear Sir/ Madam,

I am a Master of Arts (MA) student at the Information Studies Department, University of Ghana, Legon. I am conducting this study in partial fulfillment of the requirement leading to the award of Master of Arts in Information Studies.

Attached is a questionnaire on the above topic and I should be very grateful if you could complete this questionnaire for the purpose of the survey.

Please be assured that this is for purely academic purpose and any information you provide will be treated with strict confidentiality.

Section A: background information

(Please tick the appropriate answer)

1. Gender:

a. Male [ ]

b. Female [ ]

2. Age:

a. Less than 20yrs [ ]

b. 20-30yrs [ ]

c. 30-40yrs [ ]

d. 40-50yrs [ ]

e. 50yrs or more [ ]

3. How long have you been working at the bank?

a. Less than 1yr [ ]

b. 2yrs [ ]

c. 3yrs [ ]

d. 4yrs [ ]

e. 5yrs or more [ ]

4. What is your highest Qualification?

a. O/A or SSCE Level [ ]

b. Diploma [ ]

c. HND [ ]

d. First Degree [ ]

e. Master Degree [ ]

f. Other (please specify)……

5. What is your Position/ organizational rank?

a. Junior staff [ ]

b. Manager [ ]

c. Senior manager [ ]

d. Other (please specify)……..

Section B (Bank Operations)

1. In which unit or department do you work? ……

2. Do you use computers for your work?

a. Yes [ ]

b. No [ ]

3. If yes, were you trained by the bank to use the computers?

a. Yes [ ]

b. No [ ]

4. What type of data do you collect and process?

a. Client data [ ]

b. Staff data [ ]

c. Client and staff data [ ]

d. Other (please specify) ……

5. Are all processes and functions of the bank computerized?

a. Yes [ ]

b. No [ ]

6. If No, what percentage of processes or functions of the bank are computerized?

a. Less than 20% [ ]

b. 21-40% [ ]

c. 41-60% [ ]

d. 61-80% [ ]

e. 81-100% [ ]

7. To what extent or percentage of your work is computerized?

a. Less than 20% [ ]

b. 21-40% [ ]

c. 41-60% [ ]

d. 61-80% [ ]

f. 81-100% [ ]

8. Has the computerization affected staff turnover at the bank?

a. Yes [ ]

b. No [ ]

9. If yes, to what extent has staff number been reduced?

a. Less than 10% [ ]

b. 10-20% [ ]

c. 21-30% [ ]

d. 31-40% [ ]

e. More than 40% [ ]

10. If no what effect has it had on staff performance or productivity?

a. Increased staff efficiency [ ]

b. Enhanced staff skills [ ]

c. Increased staff confidence [ ]

d. Increased level of staff interaction with clients[ ]

e. Reduced level of staff interaction with clients [ ]

11. How has computerization helped you in planning your work at the office?

a. Very much [ ]

b. To a reasonable extent [ ]

c. Not very much [ ]

d. To a small extent [ ]

e. Not at all [ ]

12. Has computerization resulted in producing more accurate and timely reports in meeting deadlines?

a. Yes [ ]

b. No [ ]

13. If yes, to what extent has this happened?

a. To a large extent [ ]

b. To a medium extent [ ]

c. To a small extent [ ]

14. If no, why? .....

……

15. Has computerization increased job satisfaction?

a. Yes [ ]

b. No [ ]

16. If yes, to what extent?

a. To a large extent [ ]

b. To a medium extent [ ]

c. To a small extent [ ]

17. If no, why not? …….

……..

18. Has computerization improved decision making at the bank?

a. Yes [ ]

b. No [ ]

19. If yes, to what extent?

a. To a large extent [ ]

b. To a medium extent [ ]

c. To a small extent [ ]

20. Has computerization resulted in a better corporate image?

a. Yes [ ]

b. No [ ]

21. If yes, to what extent?

a. To a large extent [ ]

b. To a medium extent [ ]

c. To a small extent [ ]

22. Has computerization increase the number of the banks customers?

Yes [ ]

No [ ]

23. If yes, how much?

a. Less than 10% [ ]

b. 10-20% [ ]

c. 21-30% [ ]

d. 31-40% [ ]

e. More than 40% [ ]

24. Do you encounter any problem when using the information systems?

a. Yes [ ]

b. No [ ]

25. If yes, what are some of the problems you encounter? .....

……

26. General comments/ observation in relation to the study (topic)……

……..……

……

……

……

Thank you.

(De-Graft Johnson Dei)