

**EXPLORING THE EFFECTS OF INFORMATION COMMUNICATION
TECHNOLOGY (ICT) ON CUSTOMER SATISFACTION. THE CASE OF BARCLAYS
BANK OF GHANA LTD., TAFO BRANCH**

by

MAXWELL AGYAPONG, BSc. Planning

PG3029009

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DECLARATION

I hereby declare that this submission is my own work towards the Executive Masters of Business Administration and that, to the best to my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Maxwell Agyapong

PG3029009

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.....
Student Name & ID

.....
Signature

.....
Date

Certified by:

Ahmed Agyapong

.....

Supervisor Name

.....
Signature

.....
Date

Certified by:

Prof. I. K. Dontwi

.....

.....

Dean, IDL

Signature

Date

DEDICATION

This piece is dedicated to my parents Mr. Kofi Agyapong and Theresa Boakye, my siblings, Doris and Juliana Agyapong, my fiancée, Cynthia Dansoa Boateng, and all those who played major roles in my academic life.

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ABSTRACT

Rapid advancements in technology in the service industry is radically changing the way business is done. These developments in technology have resulted in new delivery channels for banking products and services such as Short Message Service (SMS) alerts, Automated Teller Machines (ATMs), Telephone Banking, PC-Banking, and Electronic Funds Transfer at Point of Sale (EFTPoS) among others. The main objectives were to: identify ICT strategies used at Barclays Bank to improve customer service; measure the extent of customer satisfaction of Barclays Bank ICT strategies; identify the problems associated with the ICT strategies being used at Barclays Bank; and measure the relationship between the use of ICT and customer satisfaction at Barclays Bank. The researcher used both quantitative and qualitative research methods in this study and data was collected mainly from primary sources. Questionnaire and interview guide were used for data collection from sampled customers and management staff of Barclays Bank Ghana limited respectively. The data collected was analysed by use of frequency, percentage and correlation analysis. The results of the study generally indicate that, ICT have contributed positively to customer satisfaction in the Ghanaian banking industry. The study revealed that, customers of the bank are generally satisfied with the level of ICT strategies being implemented by the bank though some expressed misgivings about some inconveniences caused with the use of ATMs. However, to maximize the benefits of these strategies, it is suggested that the bank creates awareness, improves on security measures and constantly monitor and evaluate these various strategies.

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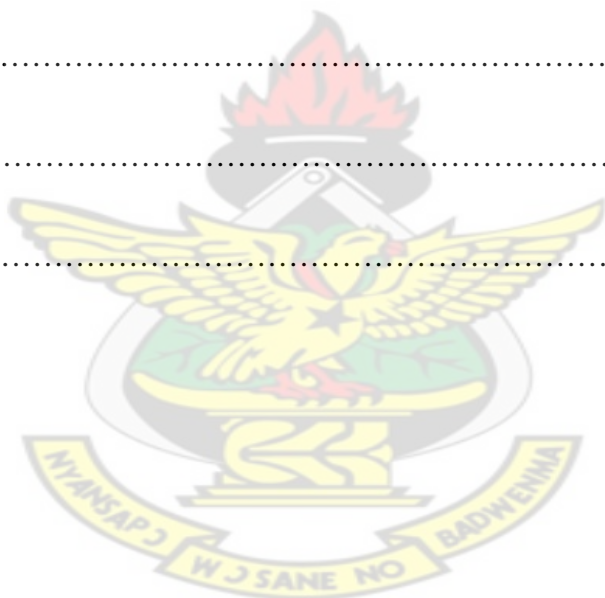
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LIST OF ABBREVIATIONS

ACRONYMS	MEANING
ACH	Automated Clearing House
ATM	Automated Teller Machine
AVR	Automated Voice Response
BBG	Barclays Bank of Ghana
CCC	Code line Cheque Clearing
CRT	Cathode Ray Tube
ECSI	European Customer Satisfaction Index
EFTPoS	Electronic Funds Transfer at Point of Sale
EN	Electronic Network
ICT	Information Communication Technology
IT	Information Technology
PC	Personal Computer
PDA	Personal Digital Assistant
PDF	Portable Document Format
PIN	Personal Identification Number
POS	Point of Sale
SCB	Standard Chartered Bank
SMS	Short Message Service
SPSS	Special Package for Social Sciences
SSB	Social Security Bank
WAN	Wide Area network

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Over the past 15 years, technology has increasingly been employed in the delivery of services. The adoption of technology in the service industry is becoming a strong trend as service providers are now being urged by industry bodies to invest in technology (Australian Coalition of Services Industries, 1997) as a way of securing their future in the electronic age. The role of technology in service organizations as discussed by Kelly (1998) has been predominantly employed to reduce costs and eliminate uncertainties. In the service sector, technology has been used to standardize services by reducing the employee/customer interface, Quinn (1996). Currently, the majority of consumers more than ever prefer to opt for a technology-based service delivery over that of the employee (European Magazine for Applications of Computer Telephony, 1997).

The financial services industry has been subject to dramatic changes over the past decades, as a result of advances in IT, deregulation, and globalization. These changes have reduced margins in traditional banking activities, leading banks to merge with other banks as well as with non-bank financial institutions and adopt Information Communication Technology (ICT).

Technology saves time and money and eliminates errors, thereby addressing certain issues associated with changing cultural and social trends, it also reduces direct customer interaction and any associated service value to be gained, Smith (1987; 1993), Bitner, (2001). According to Joseph et al. (1999), reliable and accurate banking services, customer service, personalized services and accurate records are some of the factors

which are considered by customers in their choice of a given type of service delivery channel.

Innovations in information processing, telecommunications, and related technologies – known collectively as “information technology” (IT) – are often credited with helping fuel strong growth in the many economies as stated by Coombs *et al.*, (1987). It seems apparent then that, technological innovation affects not just banking and financial services, but also the direction of an economy and its capacity for continued growth. Ige (1995) defined IT is as the modern handling of information by electronic means, which involves its access, storage, processing, transportation or transfer and delivery. According to Alu (2002), IT affects financial institutions by easing enquiry, saving time, and improving service delivery. In recent decades, investment in IT by commercial banks has served to streamline operations, improve competitiveness, and increase the variety and quality of services provided.

According to Yasuharu (2003), implementation of information technology and communication networking has brought revolution in the functioning of the banks and the financial institutions. It is argued that dramatic structural changes are in store for financial services industry as a result of the Internet revolution; others see a continuation of trends already under way.

E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on

financial products and services through a public or private network, including the Internet. Customers access e-banking services using an intelligent electronic device, such as a personal computer (PC), personal digital assistant (PDA), automated teller machine (ATM), and Touch Tone telephone.

This emerging trend raises some pertinent issues about the impact that technology will have on service quality and customer satisfaction levels. Electronic commerce is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace, Balachandher *et al.* (2001).

ICT have been compared to other important historical inventions like the steam engine or the electric motor by Quinn (1996). These inventions are interpreted as ‘general purpose technologies’ (GPT) with three main characteristics: they are pervasive, they carry an inherent potential for technical improvements and they lead to innovational complementarities and scale economies according to Bresnahan and Trajtenberg (1995). According to this view, GPT should be understood primarily as ‘enabling technologies’, “opening up new opportunities rather than offering complete, final solutions”, Bresnahan and Trajtenberg, (1995:84).

Surjadjaja *et al.* (2003) however state that, developments in Information and Communications Technology have provided a platform by which companies can design, develop and deliver services that can be perceived by customers as superior.

1.2 Description of Research Problem

One of the greatest concerns of every business organization is customer satisfaction. In the banking industry, most customers are motivated by accuracy of records and timely provision of services. Particularly, most of them measure the service standard of banks on how timely transactions are completed.

When customers evaluate the quality of service they receive from a banking institution they use different criteria which are likely to differ in their importance, usually some being more important than others. According to Sethi and King (1994), these determinant attributes are the ones that will define service quality or satisfaction from the customer's perspective. However, many established models of service quality have tended to focus on expectations and marginalized the issue of importance. For example, the most widely used model to measure service quality was developed by Parasuraman et al. (1985, 1998).

The banking industry has already been depicted as exhibiting little market orientation and fulfilling service with little regard to customer needs as well as including branches dissimilar in efficiency, long queues, limited time for customer service, transaction errors, excessive bureaucracy, security and network failures have been said to be the most frequent problems using banking services, Vandermerwe (1993); Daniel (1999).

In the current climate, competition in the banking industry is intense with new financial service providers emerging all the time. Enhanced customer satisfaction or service quality is seen more than ever, as a key differentiator in the market place. One question that arises is whether automation, telephone and internet banking represent a positive change and are delivering enhanced service quality to customers.

Technology, has since the year 2000, been increasingly employed in the Ghanaian banking industry. The adoption of technology by service industries more importantly in banking is gaining solid grounds as service providers are being urged by industry bodies to invest in technology. The small business segment (retail and corporate services) has not been an easy one for the main banks to target and a number of studies have highlighted imperfection in customer satisfaction and problems regarding service quality according to Ennew (1993) and Bauer et al., (2005). Particularly problematic areas include knowledge and understanding, providing explanations for decisions, queuing, network failure and insecurity.

Due to this, customer satisfaction levels are at all time low, dragging the bank's image, credibility and staff morale down according to Joseph and Beatriz (1997) and Schlitz, (2003). A number of studies have been undertaken on service quality delivery in the banking industry. However, in Ghana, not much research has been done to look at the relationship between technology and customer satisfaction in the Ghanaian banking industry. This study therefore sought to investigate the relationship between the use of technology and customer satisfaction in the Ghanaian banking industry with much emphasis on Barclays Bank Ghana Ltd.

1.3 Objectives

This research seeks to:

- To identify ICT strategies used at Barclays Bank to improve customer service.
- To measure the extent of customer satisfaction of Barclays Bank ICT strategies.

- To identify the problems associated with the ICT strategies being used at Barclays Bank.
- To measure the relationship between the use of ICT and customer satisfaction at Barclays Bank.

1.4 Research Questions

In view of the foregoing, the researcher sought to offer answers to the under-listed questions relating to the phenomena described above:

- What ICT strategies are used by Barclays Bank Ghana Ltd (BBG) to enhance customer satisfaction?
- To what extent is the customer service situation affected by the use of ICT in BBG?
- What are the associated problems with the use of the ICT strategies in BBG?
- What is the relationship between ICT use and customer satisfaction at Barclays bank?

1.5 Scope

Geographically the study took place in the Kumasi Metropolis where most of the banking institutions are located. Conceptually the study assessed the influence of ICT (conceptualised as e-funds transfer, ATM, telephone banking and Internet banking technologies) on customer service and satisfaction in the banking industry (conceptualised as cash deposit, cash withdrawal and account balance inquiry etc.). The sample space included individual customers of the banks.

1.6 Significance of the Study

Banking in today's world is heavily reliant on Information and Communication Technology (ICT) and is characterised by fierce competition. The increasing presence of new banks in the sub region further heightens the intensity of competition among players in the banking space. This phenomenon has led to the increasing application of technology to improve customer satisfaction.

This study considers various opinions and literature about the relationship of the application of ICT and customer satisfaction in the banking industry and attempts to outline some solutions to enable players in the industry make the most of their investments.

The research enlightens the banking institutions on how ICT has influenced its individual customers with regards to satisfaction. The study is useful to policy makers such as the Government of Ghana for implementation of policies geared towards the influence of ICT on the banking industry. The study provides knowledge that may be adopted by society, especially researchers interested in ICT application within the banking industry. To the university, the research seeks to add to academia as it would serve as the basis for subsequent study about the phenomenon.

1.7 Brief Methodology

The methodology adopted involved the conduct of interviews and/or interrogation; preparation of a number of questionnaires and their administration. The questionnaires were designed to ascertain customers' perceptions on the effect of IT innovations or electronic delivery channels on the banking services in Ghana. The responses were

measured with a five-point Likert-type rating scale, where strongly Agree (SA) = 1; Agree (A) = 2; Neutral (N) = 3; Disagree (D) = 4; and Strongly Disagree (SD) = 5. The sample size was drawn from customers and bank officials of Barclays bank Tafo branch.

1.8 Limitations

Firstly, being a worker and a student made it difficult to collect data for this research. However, with the help of able field assistants, I was able to gather the relevant data for the purpose of this research. Secondly, getting access to some classified information posed a challenge. The researcher was able to overcome this through negotiation. Lastly, there was the issue of funding for the research. This was managed efficiently by allocating personal savings for the research.

1.9 Organisation of the study

This study is organized into five (5) chapters. Chapter 1 – Introduction serves as an introductory chapter to the entire research. This deals with the background, research question and significance of the research. This is followed by the chapter on literature review-Chapter 2. The literature review in this chapter acted as a foundation for the rest of the research, in that it explores areas that are pertinent to a discussion in the area of use of ICT in retail banking. This chapter looks at three broad issues which include; use of ICT, channels and customer service which if properly managed could help change the face of our branches according to authoritative and established practitioners and academics.

Chapter 3 deals with Research Methodology. Data collection methods are discussed and justification for selected research techniques is detailed in accordance with the case study

organisation and research objectives. The contribution of the secondary and primary data is demonstrated, followed by an examination of the advantages and disadvantages of qualitative and quantitative methods of data collection. The limitations of the research are also discussed so that the results could be evaluated in context.

Chapter 4 –The results of the employed methodology are presented in accordance with the research questions that stemmed from the research objectives and the review of current literature in chapter two. Mathematical tools such as graphs and charts are used to depict the results. Chapter 5 – Summary, Conclusion and Recommendations, the final chapter takes information from the previous chapters to provide conclusions from the research and recommendations to the case study organisation. Recommendations for further research are also discussed as a final conclusion to the study.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section entails the theoretical review, conceptual framework and the review of literature. This section expands on the theory used in the research as explained in the theoretical background. It also expands on the concepts given in the conceptual background to build the conceptual model and finally explains views of different researchers, which are related to the study. Basically this chapter is based on views of different researchers, which are conceptualised by the researcher to get a directed path for this research.

2.2 Historical Development of ICT in the Banking Industry in Ghana

Over time, technology has increased in importance in Ghanaian banks. Traditionally, banks have always sought media through which they would serve their clients more cost-effectively as well as increase the utility to their clientele. Their main concern has been to serve clients more conveniently, and in the process increase profits and competitiveness. Electronic and communications technologies have been used extensively in banking for many years to advance agenda of banks

In Ghana, the earliest forms of electronic and communications technologies used were mainly office automation devices. Telephones, telex and facsimile were employed to speed up and make more efficient, the process of servicing clients. For decades, they remained the main information and communication technologies used for transacting bank business, Abor (2005).

Later in the 1980s, as competition intensified and the personal computer (PC) got proletarian, Ghanaian banks began to use them in back-office operations and later tellers used them to service clients. Advancements in computer technology saw the banks networking their branches and operations thereby making the one-branch philosophy a reality. Barclays Bank (Gh.) and Standard Chartered Bank (Gh.) pioneered this very important electronic novelty, which changed the banking landscape in the country, Abor (2005).

Arguably, the most revolutionary electronic innovation in this country and the world over has been the ATM. In Ghana, banks with ATM offerings have them networked and this has increased their utility to customers. The Trust Bank Ghana, in 1995 installed the first ATM. Not long after, most of the major banks began their ATM networks at competitive positions. Ghana Commercial Bank started its ATM offering in 2001 in collaboration with Agricultural Development Bank. Five (5) banks currently operate ATMs in Ghana, Abor (2005).

The ATM has been the most successful delivery medium for consumer banking in this country. Customers consider it as important in their choice of banks, and banks that delayed the implementation of their ATM systems, have suffered irreparably. ATMs have been able to entrench the one-branch philosophy in this country, by being networked, so people do not necessarily have to go to their branch to do some banking.

Another technological innovation in Ghanaian banking is the various electronic cards, which the banks have developed over the years. The first major cash card is a product of Social Security Bank, now Socete Generale SSB, introduced in May 1997. Their card, 'Sika Card' is a value card, onto which a cash amount is electronically loaded. In the

earlier part of year 2001 Standard Chartered Bank launched the first ever debit card in this country. Its functions have recently been integrated with the customers' ATM cards, which have increased its availability to the public since a separate application process is not needed to access it. A consortium of three (3) banks (Ecobank, Cal Merchant Bank and The Trust Bank) introduced a further development in electronic cards in November 2001, called 'E-Card'. This card is online in real time, so anytime a client uses the card, or changes occur in their account balance, their card automatically reflects the change, Abor (2005).

Though ATMs have enjoyed great success because of their great utility, it has been recognized that it is possible for banks to improve their competitive stance and profitability by providing their clients with even more convenience. Once again ICT was what saved the day, making it possible for home and office banking services to become a reality. In Ghana, some banks started to offer PC banking services, mainly to corporate clients. The banks provide the customers with the proprietary software, which they use to access their bank accounts, sometimes via the World Wide Web (WWW). This is on a more limited scale though, as it has been targeted largely at corporate clients. Ghana Commercial Bank, Ecobank (Gh.) Ltd, Standard Chartered Bank (Gh.) Ltd. and Barclays Bank (Gh.) Ltd and Stanbic Bank (Gh.) are the main banks known to offer PC banking services.

Abor, (2005), argues that banks have recognized the internet as representing an opportunity to increase profits and their competitiveness. Currently, no bank is offering internet banking (i-banking) in Ghana, but some have well laid plans to start. Ecobank (Gh.) Ltd, Standard Chartered Bank (Gh.) Ltd. and Barclays Bank (Gh.) Ltd, also have

plans for doing so in the not-too-distant future.

Telephone banking, has also taken a big leap with its convenience and time. Barclays Bank (Gh.) launched its telephone banking services in August 28, 2002. SSB Bank also launched its “Sikatel” or “SSB Call Centre” (telephone banking) in September 19, 2002. The services available with this system are ascertaining credible information about the bank’s products, the customers’ complaints, bank statements and cheque book request and any other complaints and inquiry, Abor (2005).

2.3 Definitions and Theoretical Framework

2.3.1 Automation Banking

Sinkey J.F. referred to automation banking as “the use of electronic equipment and application of advance computers and communication technologies to the functions of banking such as receiving, collecting, transferring, paying, lending, investing, dealing, exchanging and servicing (safe deposits, withdrawals, agency, trusteeship, custodianship) money and claims to money both domestically and internationally. Automation banking is manifested primarily in the form of electronic banking and computerized banking otherwise known as “Backroom Technology”, Sinkey (1990).

2.3.2. Electronic banking

Welch (1999) describes electronic banking as “a group of electronic systems or equipment called electronic funds transfer system, which involves the application of advance computer and communication technologies to the problem of effecting payment”. Electronic funds transfer system however, refers to any transfer of funds, other than a transaction that is originated by a paper instrument that is initiated through an

electronic terminal, telephone or computer or magnetic tape and that orders or authorizes a financial institution to debit or credit an account. This includes Points of Sales (PoS), Automated Teller Machine (ATM), Automated Clearing House (ACH), Home Banking, Automated Payroll Deposit, Electronic cheques, direct deposits electronically of funds, such as deposits of social security or salary payments, debit cards, credit cards, smart cards, giro systems etc.

2.3.3. Computerized/Teller Banking

This refers “to an assemblage of Cathode Ray Tube (CRT) terminals, hard-copy terminals, printers, software and other devices that support the bank teller by conducting routine teller functions. It is often linked to a central computer so that transactions are recorded instantly in the centralized database”, Evans (1999). There are two main types of computer operations employed in the delivery of banking services at SCB. They are: On-line and Real-time network. On-line networks indicate that a terminal unit is connected directly to a central computer by a rented post office telephone line.

Entries are made by each branch and are accumulated in the central computer for the subsequent updating of relevant accounts at the end of the day. The branch direct from the computer can obtain customer's balances and details of posted entries. Real-time network is one in which the computer stores data, handles on-line transactions and maintain a central time. Telephone, telegraph and data communication lines are used for remote inquiry and data input. Example a cashier can ask the file for any kind of stored information on a customer and can enter special instructions into the system depending on the needs of the customer or the bank, Adjei-Tuffour et al. (2005).

The difference between the real-time and on-line systems is that the former provides continuous up dating while the latter does not include transactions, which have taken place since the last updating usually completed overnight. Some computerized banking services include demand deposit account, savings account, payroll of customers (e.g. calculating wage and salary schedules for business), reconciliation of paid cheques, accounting and invoicing, credit card system, investment portfolio valuation share registration, automated clearing system, commercial loans, corporate trust, lines of credit, central information file, general ledgers, cost accounting, international business etc., Adjei-Tuffour et al. (2005).

2.4 ICT Strategies used by the Banks

This section describes the various forms of technological innovations or electronic delivery channels adopted by banks. Technological innovations have been identified to contribute to the distribution channels of Banks in delivering satisfaction to customers.

The electronic delivery channels are collectively referred to as Electronic Banking. Electronic Banking is really not one technology, but an attempt to merge several different technologies. Each of these evolved in different ways, but in recent years different groups and industries have recognized the importance of working together. Bankers now see a kind of evolution in their business, partly, because the world has taken a quantum leap in the use of technologies in the last several years. The various electronic delivery channels are discussed below:

2.4.1 Automated Teller Machines (ATMs)

Rose (1999), describes ATMs as follows: “an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the

bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day". Once access is gained, it offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines.

However, due to advancements in technology, ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or accounts and bill payments. Banks tend to utilize this electronic banking device, as all others for competitive advantage.

The combined services of both the Automated and human tellers imply more productivity for the bank during banking hours. Also, as it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities. Rose (1999) stated that, ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (an average of about 6,400 transactions per month for ATMs compared to 4,300 for human tellers. Furthermore, as the ATMs continue when human tellers stop, there is continual productivity for the banks even after banking hours.

2.4.2 Telephone Banking

"Telebanking (telephone banking) can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking

transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology”, Balachandher *et al*, (2001).

According to Leow (1999), telebanking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks' perspective, the costs of delivering telephone-based services are substantially lower than those of branch based services. It has almost all the impact on productivity of ATMs, except that it lacks the productivity generated from cash dispensing by the ATMs. For, as a delivery conduit that provides retail banking services even after banking hours (24 hours a day) it accrues continual productivity for the bank. It offers retail banking services to customers at their offices/homes as an alternative to going to the bank branch/ATM. This saves customers time, and gives more convenience for higher productivity.

2.4.3 Personal Computer Banking

“PC-Banking is a service which allows the bank's customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer”. Once access is gained, the customer can perform a lot of retail banking functions. The increasing awareness of the importance of computer literacy has resulted in increasing the use of personal computers. This certainly supports the growth of PC banking which virtually establishes a branch in the customers' home or office, and offers 24-hour service, seven days a week. It also has the benefits of Telephone Banking and ATMs.

2.4.4 Internet Banking

The idea of Internet banking according to Essinger (1999) is: “to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security checks”. To the Federal Reserve Board of Chicago’s Office of the Comptroller of the Currency (OCC) (2001), Internet Banking is described as “the provision of traditional (banking) services over the internet”.

Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational (informing customers on bank’s products, etc) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Telebanking and PC-Banking. Aside that it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers.

2.4.5 Branch Networking

Networking of branches is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN); for the creating and sharing of consolidated customer information/records.

It offers quicker rate of inter-branch transactions as the consequence of distance and time are eliminated. Hence, there is more productivity per time period. Also, with the several networked branches serving the customer populace as one system, there is simulated

division of labour among bank branches with its associated positive impact on productivity among the branches. Furthermore, as it curtails customer travel distance to bank branches it offers more time for customers' productive activities.

2.4.6 Electronic Funds Transfer at Point of Sale (EFTPoS)

An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A PoS uses a debit card to activate an Electronic Fund Transfer Process, Chorafas (1988).

Increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. Furthermore, the system continues after banking hours, hence continual productivity for the bank even after banking hours. It also saves customers time and energy in getting to bank branches or ATMs for cash withdrawals which can be harnessed into other productive activities.

2.5 Problems with ICT strategies in the Banking industry

The Banking industry faces numerous challenges to fully adopt and adapt E-Banking applications and seize the opportunities presented by ICT applications in general. Key Challenges for E-Banking applications includes among others:

- Low level of internet penetration and poorly developed telecommunication infrastructure. Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in e-commerce in Ghana. Most rural areas of the country, where the majority of small and medium

businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities, ITU4D (2006).

- High rates of illiteracy remain another challenge. Low literacy rate is a serious impediment for the adoption of ICT as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.
- High cost of Internet: The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements, ITU4D (2006).
- Frequent power interruption: Lack of reliable power supply is a key challenge for smoothly ICT embedding strategies in the banking industry.
- Cyber security issues: Cyber security is a global challenge that requires global and multi-dimensional response with respect to policy, socio-economic, legal and technological aspects. E-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm banking customers. It is imperative for banks to understand and address security concerns in order to leverage the potentials of ICTs in delivering E-banking applications. In the deployment of E-banking application, attention should be drawn to the prevention of cyber crime (i.e. the use of ICTs by individuals to commit fraud and other crimes against banking transactions), ITU4D (2006).

2.6 Customer Satisfaction

Despite extensive research on customer satisfaction, its antecedents, and consequences, no consensual definition of customer satisfaction has been developed yet. Various definitions are either fundamentally or partially inconsistent with one another even when these definitions have overlapping components. In general, customer satisfaction is viewed as a response, based on valuations, and expressed some time during the purchase-consumption process.

Oliver (1997) addresses this issue by noting that *"everyone knows what [satisfaction] is until asked to give a definition. Then it seems, nobody knows"*. Research on customer satisfaction mostly focuses on testing various conceptual models rather than on definitional issues (Giese and Cote, 2000) and, as a result, customer satisfaction lacks in definitional and methodological standardization, Peterson and Wilson (1992).

Based on a literature review, Giese and Cote (2000) presented a summary of twenty one customer satisfaction definitions. Customer satisfaction is defined as an emotional response, Cadotte et al., (1987), a cognitive response, Churchill and Surprenant (1982) or as comprised of both cognitive and affective dimensions, Westbrook and Reilly (1983). However, more recent definitions concede an emotional response (e.g. Halstead et al., 1994; Spreng et al., 1996).

Further, customer satisfaction is defined either as transaction/purchase specific (Halstead et al., 1994) or as an attitude based on a holistic evaluation of the product/ service performance (Fornell, 1992). Mano and Oliver (1993), considers Customer satisfaction as a post consumption or post-purchase (Fornell, 1992) or post-choice (Westbrook and

Oliver, 1991) response or even shaped during consumption (Halstead et al., 1994).

Yi (1990) also defines Customer satisfaction either as an outcome or as a process. Vavra (1997), on the other hand defines outcome satisfaction as *“the end state resulting from the consumption experience”*. The end state might be a positive perception of the reward sacrifices ratio or an emotional response to the consumption and use experience or resulting from the comparison of rewards and sacrifices against anticipated consequences from consuming and use of the product or service. Vavra (1997) also gave an alternative definition of satisfaction, viewed as *“a process emphasizing the perceptual, evaluative and psychological processes that contribute to satisfaction”*.

Evaluation of satisfaction is made during the delivery process. However, the definition that *“customer satisfaction is an emotional response to the use of a product or service; and it is also a complex human process, which involves cognitive and affective processes, as well as other psychological and physiological influences”* (Oliver, 1981) is broad enough to be generally accepted.

2.6.1 Customer Satisfaction Models

The most widely used model of customer satisfaction is based on Oliver's (1980) expectancy disconfirmation theory. Oliver (1980) suggests that customers purchase goods and services with pre-purchase *“performance-specific expectations”* based on their previous experience and used as reference points against which the product/service's performance, once purchased and used, is compared.

When product/service performance matches expectations then confirmation takes place

while disconfirmation occurs when a discrepancy exists between the actual performance and expectations. Negative disconfirmation occurs when performance is less than expected while positive disconfirmation occurs when performance is better than expected. Confirmation and positive disconfirmation cause satisfaction while negative disconfirmation causes dissatisfaction. Satisfaction is thus viewed as a function of pre-purchase expectations and the resulting confirmation/disconfirmation.

Apart from Oliver's (1980) expectancy disconfirmation model, other models have also been introduced in the literature. Hom (2000) classifies these models into six broad categories:

- Perceived Performance Models
- Norms Models
- Multiple Process Models
- Attribution Models
- Affective models
- Equity Models

2.6.2 Measurement of Customer Satisfaction

One perspective in measurement of customer satisfaction includes the composition of attribute-specific and overall evaluation. The reason for choosing an overall evaluation is that customer satisfaction is considered one-dimensional. Researchers using attribute-specific measurement regard customer satisfaction as multidimensional. The interrelationship between attribute-specific and overall satisfaction is often not strictly additive, leaving theoretical and empirical insights into overall satisfaction as a unique characteristics. At the methodological level, there is a need to measure both constructs

separately in order to ensure reasonable data validity, Meyer and Westerbarkey (1996).

Most researchers assume that customer satisfaction is one-dimensional. That is, satisfaction and dissatisfaction are two poles on the same scale. It is also worthwhile considering that the two might be different constructs found through different attributes (Brandit, 1987; Mersha and Adlakha, 1992). Since both constructs are then considered to be unrelated, the level of satisfaction is independent of the level of dissatisfaction, allowing management to keep track of the essential satisfying factors and be able to recognize and control the dissatisfiers.

Increased customer expectations have created a competitive climate whereby the quality of the relationship between the customer and bank has taken on a greater significance in some cases than the product itself (Smith, 1990). The strategic marketing implications of this change includes an intense battle for market share, the emergence of new distribution channels such as remote banking (De Moubray, 1991), increases in corporate advertising and generic “image building” programmes, increased product proliferation and fragmentation of markets, and a growing potential for niche marketing opportunities, Ennew et al., (1989).

Krishnan, Ramaswamy, Meyer & Damien (1999) point out that, the banking industry strives to succeed by putting the topic of rapid and changing customers needs to their agenda. This according to Dabholkar (1994), is achieved in form of good customer care and offering attractive services or products that other competitors may not offer. Therefore, Meuter et al., (2000) postulate that customer satisfaction is seen as a key performance indicator within business.

In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy, Jones and Sasser (1995). The concept of customer satisfaction occupies a central position in marketing and practice, Cardozo (1965). Fornell (1992) argues that Satisfaction is important to an individual consumer (not only payer for product/service but also a user of consumed) because it reflects a positive outcome from the outlay of scarce resources and/or the fulfillment of unmet needs.

Customer satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance or outcome in relation to his or her expectations (Giese and Cote, 2000). Consumer satisfaction is typically defined as being the result of an evaluative process that contrasts pre-purchase expectations with the perceptions of performance during and after consumption experience (Meuter et al., 2000).

The inclusion of expectations suggests that products fulfilling high expectations are predicted to generate greater consumer satisfaction than products that meet low expectations, De Moubray (1991). Jamal and Naser (2003) generally defines Customer satisfaction as a feeling or judgment by customers towards products or services after they have used them.

Customer satisfaction in service industries has been approached in two ways; satisfaction as a function of disconfirmation, and as a function of perception by Davis and Heineke (1998). The confirmation or disconfirmation paradigm views customer satisfaction judgments as the result of consumer perceptions of the gap between their expectation and

perception of actual performance, Parasuraman et al., (1994).

Lariviere & Poel (2004) observe that, if the performance falls short of expectations, the customer is dissatisfied. If the performance matches the expectations, the customer is satisfied, Oliver (1981). If the performance exceeds expectations, the customer is highly satisfied or delighted, De Moubray (1991). The high level of competition in the banking industry has placed an even greater emphasis on customer satisfaction. Nowadays understanding and reacting to changes of customer behavior is an inevitable aspect of surviving in a competitive and mature market, Smith (1990). Customers complain when they are dissatisfied with product they have bought or a service they have received, Yeung et al., (2002). This means that the absolute number or percentage of complaints can be the indicators of customer dissatisfaction, Smith (1990). If an organization succeeds in reducing customer complaints to zero, it indicates that customer dissatisfaction had been eliminated, Oliver (1981).

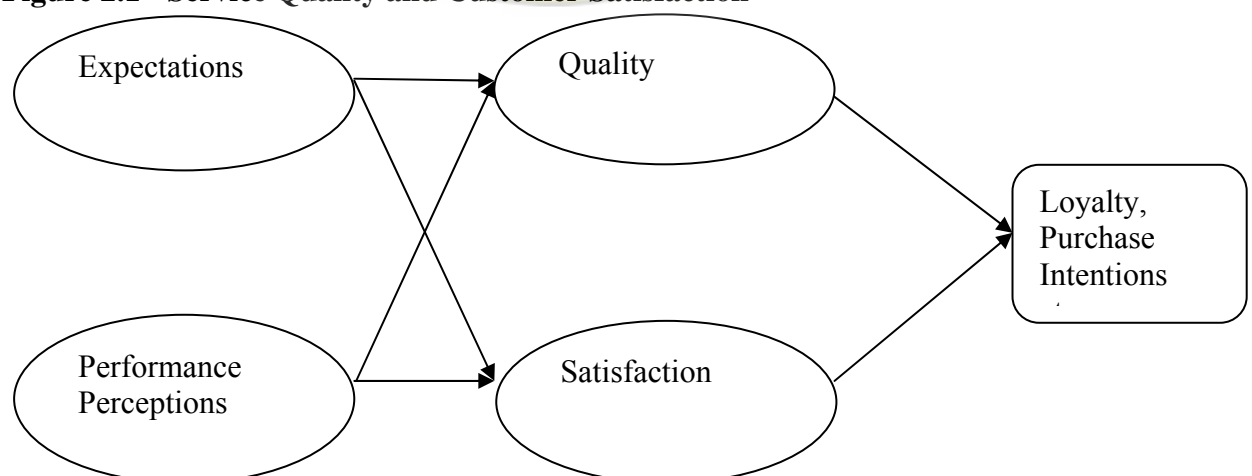
However, it is important to recognize that reducing dissatisfaction is not always the same as achieving satisfaction, Dabholkar (1994). A series of transactions between customer and bank transforms into relationship step by step, being a result of social exchange between the client and bank, Giese and Cote (2000). The relationships of both buyer and seller in banking sector are valuable and create dimension of power, Oliver (1981), co-operation, commitment and trust much higher than in consumer goods market, Spreng et al., (1996). The seller in the banking sector could benefit more from knowing about his buyer's habits, behaviour and visions, therefore, the offering of banking services could be better suited to the market and the demand of particular products could be projected, Parasuraman et al., (1991).

Achieving customer satisfaction is a vital target for most service firms today (Jones and Sasser, 1995) as it leads to improved profits, word-of-mouth, and less marketing expenditure, Reichheld (1996).

2.6.3 The Link between Service Quality and Customer Satisfaction.

Although service quality and customer satisfaction are dominating the marketing literature, it is common to find no clear distinctions between the two constructs. Sometimes the terms “service quality” and “customer satisfaction” are used interchangeably both in industry and in academia, Iacobucci et al., (1995). This confusion is largely a result of two factors (Figure 2.1). The first factor is the, somewhat exclusive, use of the disconfirmation paradigm to conceptualize both service quality and customer satisfaction as functions of expectations and performance perceptions. The second factor is that the two constructs have similar consequences. Nguyen (1991) considers that service quality and customer satisfaction represent the same concept while Dabholkar (1993) suggests that service quality and customer satisfaction converge in time to represent the same thing: a kind of global attitude.

Figure 2.1 - Service Quality and Customer Satisfaction



Source: Iacobucci et al., 1995

Further, the issue on whether customers are in a position to distinguish between the two constructs, is still unresolved, Bitner and Hubert (1994); Saurina and Coenders (2002). Iacobucci et al. (1995) suggest that the difference between service quality and customer satisfaction may only reflect managerial versus customers' concerns; that is when service providers deliver high quality services customers are satisfied or not upon experiencing these services.

However, the position that service quality and customer satisfaction are conceptually distinct but closely related constructs prevails in the literature, Shemwell et al., (1998). Service quality researchers tend to consider service quality as a more long-term and general evaluation as opposed to satisfaction which is a transaction specific assessment. Based on these grounds, Parasuraman et al. (1988) proposed that the instances of satisfaction over a time period lead to a perception of general service quality.

This argument gained support from other researchers such as Bitner (1990), who developed a transaction appraisal model in services and empirically supported the effect of satisfaction on service quality, and Bolton and Drew (1991b) who suggested that satisfaction leads to service quality. On the contrary, customer satisfaction researchers propose that perceived service quality is an antecedent of customer satisfaction. For example, Cronin and Taylor (1992) reported that, in their analysis for the causal relationships between satisfaction, service quality, and purchasing intentions, the coefficients of the path:

'service quality'→'satisfaction'→'purchasing intentions' were all significant while the ones of the path: 'satisfaction'→ 'service quality'→ 'purchasing intentions' were not.

Parasuraman et al. (1994a) pointed out that conflicting arguments might result from the holistic focus of research on service quality contrary to satisfaction research which is mainly based on specific transactions. They proposed that service quality and customer satisfaction should be examined under both viewpoints.

The prevailing general conclusion is that when the term service quality is used to refer to a global, long-term attitude about a service provider, then customer satisfaction is generally recognized as an antecedent of service quality. However, where the term is used to refer to something rather more specific (quality of the delivered service or quality of the service encounter, for example), then there seems to be a strong case for seeing quality as an antecedent of satisfaction, Zeithaml (1988). For the purposes of the current study, the focus is on the relatively specific assessment of the quality of service provided in the context of a service relationship, and this is seen as a determinant of overall satisfaction.

The particular dimensions of the impact of service quality on customer satisfaction have been examined by a number of individual studies. Empirical research provides evidence that service improvement creates increased customer satisfaction along particular processes or attributes (Rust et al., 1998) which in turn leads to increased overall satisfaction or perceived service quality (e.g. Kordupleski et al., 1993; Keiningham et al., 1994/1995; Rust et al., 1995). The various models linking perceived service quality to customer satisfaction can be classified in five basic categories with perceived service quality and expectations being the main antecedents of satisfaction.

Kristensen et al. (1999) propose that the relationship of perceived quality with customer satisfaction depends on product category and the process of satisfaction depends on price and other factors such as: a) the complexity of evaluation b) the objective quality of the product and c) how prestigious the product is with respect to the customer's social status. These factors are included in the European Customer Satisfaction Index (**ECSI**) which links customer satisfaction with its determinants and its outcome, namely customer loyalty. In the **ECSI** model, perceived quality is divided in two components namely hardware, referring to the quality of the attributes of the product/service and human ware referring to the human contact. These correspond to Grönroos's (1984) technical and functional quality respectively.

Overall, the causal relationships between service quality and customer satisfaction have been examined by a number of studies, in service settings around the world, but mainly at the level of aggregate constructs. The conclusions that the two constructs are distinct though interrelated and that service quality is an antecedent of customer satisfaction, when focusing on the assessment of service quality in the context of a service relationship, is prevailing in the literature.

However, little is known regarding the relationships between the two constructs at the level of individual dimensions. This is a literature gap that this research attempts to narrow by reporting its findings from studying these links in a model of which the constituent variables are the individual dimensions of service quality, customer satisfaction and the individual dimensions of customer loyalty.

2.7 Business Value of ICT Investments

The subject of business value from IT investments has a long history but continues to attract significant interest both in the business press and academic literature (Kohli and Devaraj 2003; The Economist 2002; Waters 2004). Beginning with in-depth, case-based studies of specific IT applications at the firm level (Banker, Kauffman and Morey 1990; Banker and Kauffman 1991; Lucas 1975), this stream of literature now encompasses large sample empirical studies linking IT investments with outcome measures at the economy, firm, and process levels (for recent reviews of this literature, see Barua and Mukhopadhyay 2000; Dedrick, Gurbaxani and Kraemer 2003).

In studying the effect of IT on firm performance, researchers have looked at the effect of aggregate IT expenditures as well as specific IT applications. Both sets of studies have their advantages. While studies examining the effect of aggregate IT expenditures answer managerial concerns about appropriate level of IT expenditures and their effects on firm level outcome measures such as productivity and shareholder value (Bharadwaj, Bharadwaj and Konsynski 1999; Brynjolfsson and Hitt 1996; Dewan and Kraemer 1998; Dewan and Min 1997; Menon, Lee and Eldenburg 2000); studies at the IT application level provide a better understanding of the causal mechanisms that underlie value creation from IT (Banker et al. 2003; Barua, Kriebel and Mukhopadhyay 1995; Kauffman and Kriebel 1988; Mukhopadhyay, Kekre and Kalathur 1995; Mukhopadhyay, Rajiv and Srinivasan 1997).

Though numerous researches has provided valuable insights into the relationship between IT investments and business value, very few studies have directly accounted for the customers' perspective of the value gained from IT investments in the banking industry.

Most of the prior studies have addressed managers' and investors' perspectives of business-value measures such as productivity or market value. Focusing on customer satisfaction is particularly relevant because, as noted earlier, customer franchise has emerged as a critical asset for firms, and customer satisfaction has been reported as a leading indicator of the market value of firms, Ittner and Larcker (1998).

Customer satisfaction is an important measure of firm performance because of its positive influence on customer loyalty (Anderson, Fornell and Rust 1997; Fornell 1992; Fornell 2001). Previous research has documented that increased customer loyalty secures future revenues, reduces the cost of future transactions, decreases price elasticity and minimizes the likelihood of customer defection in the event of poor quality (Anderson 1996; Anderson and Sullivan 1993; Reichheld and Sasser 1990; Rust and Keiningham 1994). In addition to these advantages, customer satisfaction also helps in accounting for intangible outputs such as product quality or variety that are not captured in firm productivity measures, Quinn and Bailey (1994). The quantification of such intangible improvements in product quality, variety or consumption experience through a customer-satisfaction index at the firm level has the potential to complement the productivity-based measurement of economic growth, Waters (2004).

Although information-systems researchers have studied the effect of ICT on consumer surplus and consumer welfare at the economy level (Brynjolfsson 1996; Hitt and Brynjolfsson 1996), with some exceptions (Devaraj and Kohli 2000), very few studies have related IT investments to customer satisfaction at the firm level.

2.8 Relating ICT to Customer Satisfaction

Some research in marketing literature points to several theoretical constructs as determinants of customer satisfaction at the firm level: perceived quality, perceived value and customer expectations (Anderson, Fornell and Rust 1997; Fornell 2001; Fornell et al. 1996). Perceived quality, which captures recent consumption experience, has two components: (a) customization, i.e., the degree to which the firm's offering is customized to meet heterogeneous customer needs, and (b) reliability, i.e., the degree to which a product or service is standardized and free from deficiencies. Perceived value refers to the perceived level of product quality vis-à-vis the price paid.

Finally, Customer expectations refer to customer perspectives on prior consumption experiences as well as customers' belief in the firm's ability to deliver quality in the future. Empirical studies on the relative importance of these three determinants of customer satisfaction show that customer expectations do not play a major role in affecting customer satisfaction and perceived quality has a significantly greater effect on customer satisfaction than perceived value, Anderson and Sullivan (1993); Fornell et al. (1996). We, therefore, concentrate on elaborating how IT influences perceived quality and perceived value in the banking industry.

We posit that IT applications have the potential to enable banks to influence the perceived quality and perceived value of goods and services leading to an increase in customer satisfaction. For example, IT can enable both the determinants of perceived quality (customization and consistency of consumption experience) by capturing customer information and using such customer information to customize banks' offerings and by providing a seamless service experience to customers. Bharadwaj, Bharadwaj and

Konsynski (1999) have noted the importance of IT enabled customization and improved customer service in creating intangible value for firms. In addition, by facilitating seamless flow of information in an organization, IT facilitates efficient allocation of resources, shorter response times and improved quality.

Furthermore, IT also facilitates business-process innovation by redefining and redirecting business relationships and core processes through new channels leading to significant improvements in total customer experience, Armstrong and Sambamurthy (1999). These outcomes may enhance the perceived quality of a bank's customer service, with a favorable impact on customer satisfaction.

Besides its impact on perceived quality, IT may also affect perceived value of a firm's offering. For example, IT investments in supply chain and ERP systems with end-to-end integration have the potential to improve perceived value of a firm's offering from a customer viewpoint through quicker responses to customer enquiries and consistent order fulfillment processes. IT may also help in the automation of business processes leading to efficiency gains and cost reductions. Such efficiency gains and cost reductions, if passed on to the consumers, may enhance the perceived value of a firm's offerings.

The role of IT in affecting customer satisfaction has attracted the attention in the banking industry. In several jurisdictions, bankers have acknowledged the potential impact of IT on the customer satisfaction performance of banks and have therefore pointed out the need of studying the relationship between ICT and customer satisfaction (Anderson, Fornell and Rust, 1997; Bitner, Brown and Meuter, 2000; Parasuraman and Grewal, 2000).

2.9 Chapter summary

This chapter demarcated the boundary of the study by expanding on Rogers' Diffusion of Innovations Theory and formulating the conceptual framework/model basing on other researchers. Emphasis was placed on the concept of ICT and its influence on the banking industry while conceptualising past studies. Attempts on ICTs relation to the banking industry have been inconclusive and it has been noted that e-banking technology is an important aspect that has received little attention. The focal point of the literature review was based on the e- funds transfer, telephone banking and Internet banking technologies and their effect on customer satisfaction in the banking industry as shown in the objectives.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails research design, study population, sampling procedure, data collection method and tool, quality of research tool, research procedure and data processing and analysis. This chapter generally contains the approach used to achieve the objectives of the study.

3.2 Research design

The base in any research is to collect and analyze data. The method used should be chosen according to the problem and purposes of the research (Nyberg, 1999). There are two main types of research methods namely Qualitative and Quantitative research methods and all two methods were used by the researcher. The researcher adopted both qualitative and quantitative methods of research. The survey approach is chosen for the reason that the researcher needed to contact relatively large number of respondents to obtain data on the issue. Therefore, the need arose for both approaches to be combined in the study.

3.3 Study population

According to Schindler et al., (2011), cited in Osman (2007) argues that, the population is the total collection of elements about which some inferences can be made. Also, Kumekpor (2002), cited in Osman (2007) explains that the population of a study may be considered as the number of all units of the phenomenon to be investigated that exists in the area of investigation. In addition, Nachmias and Nachmias (1996), cited in Osman (2007) assert that population is the “aggregate of all cases that conform to some

designated set of specifications. The population of the study is made up of about 9549 customers who dealt with the Tafo branch of Barclays Bank in the Kumasi metropolis, as well as 12 members of staff during the period of the study.

3.4 Sample and Sampling procedure

Nachmias and Nachmias (1996), cited in Osman (2007) define a sample as any subset of sampling units from a population. Kumeckpor (2002) cited in Osman (2007) also states that a sample of a population consists of that proportion of the number of units selected for investigation. Jankowicz (2002) cited in Osman (2007) further states that, sampling is the deliberate choice of a number of people who are to provide the data from which conclusions about these people can be drawn.

Due to the cost and time constraints to covering the entire population, it was relevant for the researcher to draw a sample size of one hundred customers and ten staff (management members) of the bank. Also, the sample size was drawn because of the greater need of accuracy of result and the greater speed of data collection. A sample representative of the population provides a higher accuracy and speed of data collection compared to the total population. Total sample size for the study was one hundred and ten (110) respondents.

Two main methods are considered in determining the sample size namely; probability and non probability methods. With probability sampling, all units have the same probability of being included in the sample while with non- probability sampling, there is no way of specifying the probability that every unit has some chance of being included.

The researcher, for convenience and economic reasons adopted non-probability sampling technique. The specific non-probability sampling method used was convenience sampling, as this method allows researchers obtain a convenient sample by selecting whatever sampling units are conveniently available and relevant to the study. However, purposive sampling was used in gathering information from management because they have in depth knowledge about the subject matter.

3.5 Sources of data

In undertaking the study, the researcher obtained information from only primary sources. Primary data described as data obtained for the specific purpose at hand. In order to obtain current information about the phenomenon, the researcher used primary data to address the objectives. This notwithstanding, there are challenges such as cost and bureaucracy associated with primary data gathering.

3.6 Tools for data collection

A research instrument by definition is any type of written or physical device used to measure variables. However, the choice of a research instrument depends on many factors such as reliability, validity, ease of administering and interpretation among others.

3.6.1 Questionnaire

The questionnaire method was used as a means of data collection given the fact that the target population was large. This came in the form of close-ended and open-ended questions. The close-ended questions were relevant for the reason that they were easy to ask and quick to answer. This is significant since data had to be collected quickly to meet the time frame for the research. Another reason was that analysis of closed-ended

questions was fairly easy and straight forward. However, the potential for the closed ended questions to introduce bias was duly recognize

3.6.2 Interview

An interview guide was developed to solicit the views of some management members of the bank. This provided general background information about the phenomenon being studied. This also provided the researcher the opportunity to probe respondents further for clarity of responses given. In spite of this advantage, there is much difficulty in analysing open-ended questions.

3.7 Pre-testing

In order to test the validity and reliability of the questionnaire used for the study, the researcher pre-tested the questionnaire to ten (10) respondents. These respondents as well as their answers were not part of the actual study process and were only used for testing purposes. After the questions have been answered, the researcher asked the respondents for any suggestions or any necessary corrections to ensure further improvement and validity of the instrument.

The researcher revised the survey questionnaire based on suggestions of these respondents. The researcher then excluded irrelevant questions and changed vague or difficult ones in order to ensure comprehension and subsequently achieve purpose.

3.8 Data Collection Process

Personal interviews were conducted with some members of management of the bank. In all, ten (10) bank staff were interviewed using an interview guide. Questionnaires for the

other set of respondents (i.e. customers) were self administered while they waited in queues in the banking hall. One hundred (100) customers gave responses to the set of questions in the questionnaire.

3.9 Data Processing and Analysis Technique

Data collected were coded, edited, cleaned and input into a computer. Data were coded by classifying responses into meaningful categories by numbering them. Data editing was performed by checking for errors and omissions and by making sure that all interview schedules have been completed as required. Data cleaning is the proofreading of the data to identify and correct errors and inconsistent codes (Nachmias and Nachmias, 1996; cited in Osman, 2007). The data were then processed using the statistical package for social sciences (SPSS) software. The information generated was presented using frequency distribution table because of their ease of usage and clarity. Analysis was then made of the findings.

3.10 Chapter summary

This chapter shows the approach the researcher used to achieve the objectives. Quantitative data collection method was mainly used for data collection given, the fact that the entire population of study was too large. Qualitative approach was used in the interpretation of the research findings. A sample size of 100 respondents was taken as representative of the entire individual customer population of the Tafo branch of Barclays bank whiles 10 management members were interviewed.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter entails presentation of analysis from respondents engaged in the study. This includes response from management and customers of the bank.

4.2 Analysis of Interview conducted with Management

4.2.1 Background information of management members

In order to get well in depth knowledge about the subject matter, some management members of the bank were interviewed. All the ten members interviewed were in senior management positions (e.g. country management committee, area managers, IT personnel, branch managers and operations managers) in the bank and had at least been with the business for the past 15 years. The people interviewed demonstrated in depth knowledge about the subject matter as a result of their roles and length of service in the bank.

4.2.2 Description of ICT strategies used by Barclays Bank Ghana Ltd

4.2.2.1 SMS alert

Barclays Text Alerts is a service that allows you to keep track of your money by receiving texts to your mobile phone. Customers choose the information they wish to receive and that information is delivered them, based on transactions and account balance at the close of business the previous working day. It's a very simple technology in partnership with telecommunication companies.

The system allows customers to build their own personal package from 4 different services: Weekly Balance and Last 5 Transaction Alert, Near Limit Alert, Large Credit

Alert and Large Debit Alert. The system provides customers with real time account information giving customers control of their accounts.

4.2.2.2 Barclays Integrator – Total Transaction Solutions

According to management, the Bank in its quest to improve customer satisfaction by bringing world class banking to the door steps of customers introduced Barclays Integrator, an innovative internet transactional banking solution that offers customers access to view, track, transfer and effect payments on their accounts regardless of their location on the globe or the time transactions are executed. Barclays Integrator is a transactional banking platform second to none in the market.

Barclays Integrator offers both onshore and offshore Corporate and Business Banking customer's total control of their business finances through a range of features that gives you the flexibility and the reassurance of secure banking. Barclays Integrator offers you, the customer, more control, improved efficiency and greater convenience through the following services:

Account Enquiry - Account information is real-time, meaning inflows and outflows can be monitored as and when they occur on all linked Barclays accounts held across Africa.

Local Payments - enables payments to be made within Ghana, to accounts within Barclays or to other banks.

Future Dated payments - enable your payments to be created and/or authorised prior to the day they need to be executed.

Inter Account Transfers - allow you to transfer funds between your own Barclays accounts. The transfer will be instant and funds will be available for use immediately.

File Import - the feature allows you to extract a large number of transactions from your accounting system for upload and authorisation. This eliminates the need to recapture the payments manually. This feature is available for both payments and collections in all currencies.

File Export - this feature gives you the ability to export statement information to a treasury PC for reconciliation purposes.

Swift Payments - enables you to send telegraphic transfers cross-border in multiple currencies. Swift payments can be made directly to the beneficiary's bank without sending application forms to the bank.

Direct Debits - enables you to process a direct debit against a remitters account and greatly improve your collection process and enhance cash flow in your business.

Recurring Payments - enables you to create multiple recurring payments in a recurring manner that suits your needs. This will work for both local and swift payments.

Cash Requests - this facility allows you to order cash in specified denominations, in local and foreign currency from the bank.

Cheque Requests - this feature offers the opportunity to instruct the bank to issue Corporate Cheques or Bank Guaranteed Cheques on your behalf.

Management members interviewed attested that the system uses the highest level of security available in the world, and this lies within its design.

According to management, the benefits of the system amongst others include:

- Access to Real time account information
- No more software installation or maintenance requirement

- All you need is your existing internet access. This could be through dial ups, lease lines or wireless connectivity
- You can bank anywhere and anytime you please
- You receive automatic upgrades to the system
- State of the art security protocol.
- Seamless processing which translates to better customer service and improved response times to queries.

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4.2.2.3 Cheque Codeline Clearing (CCC)

Cheque Codeline Clearing with Cheque Truncation (CCC) is a process of clearing cheques electronically whereby the physical movement of the cheque is stopped or truncated at the point of deposit for value (depository bank) and replaced by its captured image and MICR codeline data for the rest of the clearing process.

The CCC system processes different clearing types. Each clearing type has a separate clearing window known as a clearing session. For cheque clearing there is one presentment clearing session and one corresponding return clearing session per day.

Benefits:

- Funds collected are available on a scheduled date such as the billing due date.
- Cheque handling and manual payment processing are eliminated.
- Costs associated with printing and mailing monthly bills may be eliminated. Item processing costs are reduced.

- Eliminates erroneous / fraudulent cheques (i.e., no signature or wrong amount).
Reduces the possibility of insufficient funds.
- Allows businesses to offer additional customer payment service.
- Reduces employee time lost due to personal banking business on payday.
Additional employee benefit for little or no cost.
- Streamlines the reconciliation process
- Cash flow forecasting and funds management are improved.

4.2.2.4 Telephone banking

Telephone banking is a convenient, timesaving service that enables customers to have instant access to their account at virtually any time by simply calling the Barclays telephone banking line.

The services available by phone include: Check on the balance of current or savings account, Confirmation of payments into and out of the account, Transfer of funds between accounts for first party only, Request for interim statements, Request for cheque books, saving accounts, fixed deposits and foreign currency exchange rates etc.

Telephone banking is fast and convenient, without the hassles of driving to the branch, finding parking and then standing in a queue. And on a day and night basis it means the customer is in total control of his or her finances at all times.

The service is totally confidential and secure, with access to accounts only available through a customer's own personal identification number.

4.2.2.5 Automated Teller Machines (ATMs)

The ATM is an electronic banking outlet, which allows customers to complete basic transactions without the aid of a branch representative.

There are two primary types of automated teller machines, or ATMs. The basic units allow the customer to only withdraw cash, receive a report of the account's balance, print mini statements and request for cheque books. The more complex machines will accept deposits, facilitate credit card payments and report account information. The ATMs of the bank are used by customers mainly for cash withdrawal purposes.

4.2.2.6 E-Statement

The e-statement service offered by the bank is aimed at delivering customer's bank statement in an encrypted PDF attachment to their registered e-mail address held with the bank. E-Statements contain the same information as the paper based bank statements that customers would otherwise receive from the bank via post. Management is of the view that, e-statement bring with it many benefits some of which are enumerated below:

- Time savings: E-Statements are delivered faster (within 24 hours of issuance) than hard copies through the post.
- Convenience: E-Statements can easily be saved unto computers and printed when needed.
- Security: E-Statements are delivered in an encrypted PDF to registered e-mail addresses held with the bank.
- Environmentally friendly: E-statements help reduce paper consumptions and associated carbon emissions.

4.2.3 The use of ICT to enhance customer satisfaction

ICT is now seen as a major tool in the service industry. All the members of staff interviewed were of the conviction that customer satisfaction is greatly influenced by the level of technology adopted. According to management, for the bank to fulfill its mandate of bringing world class banking to the door step of its customers, there is the need to strengthen the use of ICT as a means of reaching out to customers. As a result, management of the bank justified their continued investments in technology to maintain and upgrade the infrastructure not only to provide new electronic-based services but also to manage their risk positions.

According to management, the investments in ICT had yielded positive results as customer complaints had been reduced coupled with increased customer loyalty and retention. As noted by many scholars, customer satisfaction is affected by a number of factors including accessibility of the service. In their view, for instance, the bank has the highest number of ATMs in the country and this implies that most of the customers of the bank have access to their accounts anytime even after official working hours. Patronage of the ATMs according to management has reduced errors associated with human interactions and this also has a telling effect on customer satisfaction.

In addition, management believes that the introduction of SMS alert has provided customers of the bank with real time account information affording customers the opportunity to make well informed decisions as they are able to control and manage their accounts. Thus the SMS alerts serves as an efficient monitoring tool which customers use to monitor and manage their accounts. This in their view has impacted positively on customer satisfaction as customers can stay in the comfort of their homes and still know

what is happening on their accounts without having to call personally to the branch network.

4.2.4 Challenges associated with the use of ICT strategies or platforms

When interviewed about the challenges encountered with the use of these ICT strategies most of management members held the view that, the success or otherwise of the SMS alert system for instance is highly dependent on the effectiveness of the telecommunication service providers. Data gathered indicates that, seven (7) out of the ten (10) respondents interviewed subscribe to the notion that customers of the bank receive alerts on their phones without interruptions from service providers.

However, there is still cause to worry about as the remaining 3 believe that poor network disrupts the process. This delays the time taken for customers to receive notifications about transactions. In effect, poor network from telecommunication companies in a way is hampering the service.

One other major concern with regards to internet banking has been the issue of hacking. Responses gathered from management indicates that, 4 out of the 10 staff interviewed are of the view that, hacking is a major challenge the bank has to deal with when mailing customer account information mainly statements via the internet. Though customers are issued peculiar passwords to access these mails, the respondents still hold the view that although there has not been any incidence of hacking in the bank, more security features need to be embedded in the process to allay fears of the customers. This fear according to management is hindering the e-statement service as customers are reluctant to sign unto the service.

Another challenge has to do with ATM retraction issues and compromise of Personal Identification Numbers (PIN) by customers. Since the ATM cards are VISA branded, it allows customers to use other bank machines and so when there is a retraction (i.e customers being debited without access to cash) it takes quite some time before such funds are retrieved from the other bank in question and this causes some inconveniences. Also, some customers compromise their Personal Identification Number (PIN) which results in fraudulent withdrawals. This management believes is a source of worry and as such much need to be done.

4.3 Analysis of customer questionnaire

4.3.1 Demographic analysis of respondents

Table 4.1 Gender

	Frequency	Percent
male	55	55.0
female	45	45.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.1 above shows the number of males and females respondents and their percentages. From the table, fifty-five (55) of the respondents were males forming 55% while forty-five (45) respondents forming 45% were females.

Table 4.2 Age Distribution

	Frequency	Percent
18-29	46	46.0
30-39	31	31.0
40-49	14	14.0
50-59	7	7.0
60+	2	2.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.2 indicates the age distribution of the respondents to the questionnaire. Ages 18-29 years (46%) had the highest number of respondents followed by ages 30-39 years (31%), 40-49 years (14%), 50-59 years (7%) and 60plus years (2%) in that order. The distribution clearly shows that most of the respondents are within the youthful and active age group who are noted for their enthusiasm with technological advancements. This age group forms close to 77% (46% + 31%) of the respondents.

Table 4.3 Educational Level

	Frequency	Percent
Basic level	13	13.0
SHS/O'level	17	17.0
Tertiary	70	70.0
Total	100	100.0

Source: Field Survey, 2011

With regards to the educational background of respondents, table 4.3 reveals that an overwhelming majority of seventy (70) respondents out of the hundred (100) had completed tertiary education while seventeen (17) respondents and thirteen (13)

respondents had completed SHS/O' Level and Basic level respectively. The educational background of the customers interviewed portrayed that the bank's customers are highly educated and abreast with technology and would be receptive to any innovation with respect to the use of technology to enhance service delivery.

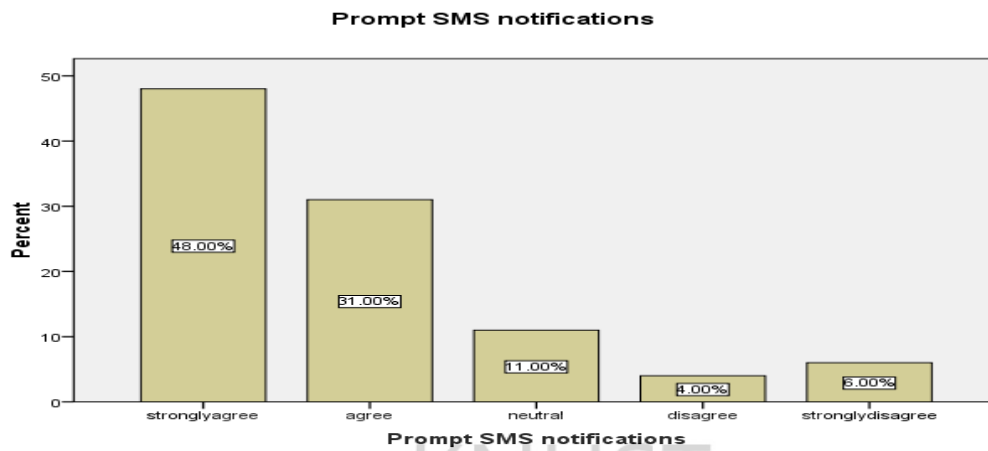
4.4 Customer satisfaction with BBG ICT strategies

4.4.1 Prompt SMS Notifications

On the issue of the bank promptly notifying customers on account information through short messaging service (SMS), the analysis shows that majority (79%) of the respondents are satisfied with the use of SMS alert while 4% of respondents disagree; 6% of respondents strongly disagree and 11% of respondents remained neutral.

With only ten (10) out of hundred (100) respondents responding in the negative, it can be concluded that Barclays Bank has really adopted the use of SMS in giving account information to customers. Customers are promptly notified of any transaction posted on their accounts via SMS alert. The SMS Alert service gives customers real time update on their accounts when transactions are carried out on customers account as indicated in figure 4.1 below.

Figure 4.1 Prompt SMS Notifications



Source: Field Survey, 2011

Table 4.4 Detailed SMS notifications on transactions

	Frequency	Percent
Strongly agree	29	29.0
Agree	29	29.0
Neutral	12	12.0
Disagree	18	18.0
Strongly disagree	12	12.0
Total	100	100.0

Source: Field Survey, 2011

The above distribution indicates the various responses given when respondents were asked on whether they receive detailed SMS notifications on transactions from the bank(s). The table above depicts that out of the total number of respondents, twenty-nine (29) strongly agree; another twenty-nine (29) also agree; eighteen (18) disagree; twelve (12) strongly disagree and another twelve (12) were neutral to the issue.

Table 4.4 shows a majority of the respondents (58%) are satisfied about the kind of information provided about transactions through SMS. However, it must also be acknowledged that a sizable portion (42%) of the respondents are not so much amazed at the kind of information they receive about transactions via SMS alert system.

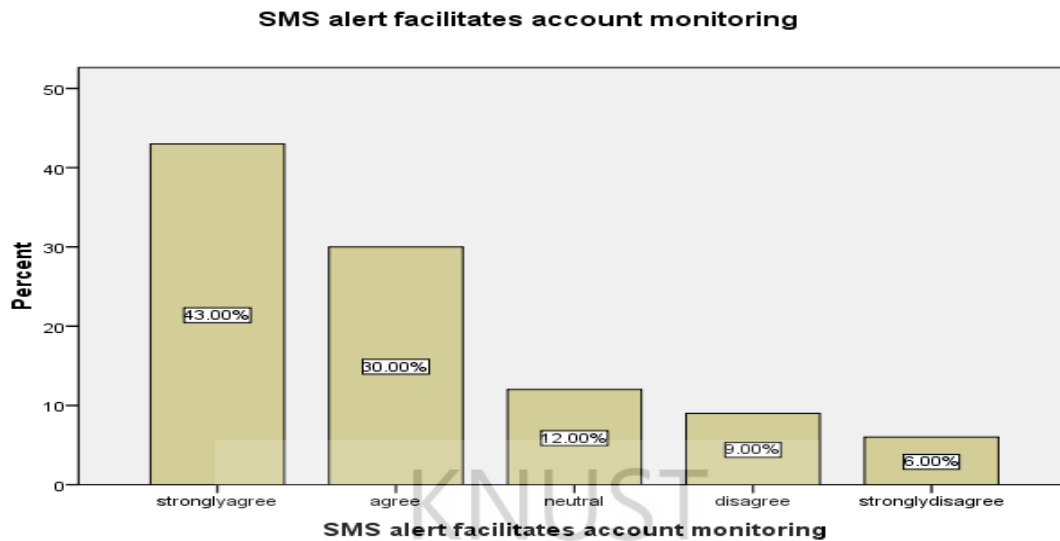
The results of the analysis revealed that customers are not generally satisfied about the details of the SMS alert which is sent to them when transactions are posted on their accounts. Customers believe that some relevant information such as the name of the person effecting the transaction if supplied will go a long way to improve on the service.

4.4.2 SMS alert as a tool for account monitoring

With regards to SMS alert facilitating the proper monitoring of accounts by customers, out of the hundred (100) respondents contacted, forty-three (43) strongly agree with the assertion; thirty (30) agree; nine (9) disagree; six (6) strongly disagree and twelve (12) respondents remained neutral to the assertion.

Data gathered reveals that over 73% are satisfied with the SMS alert by the bank because it provides an avenue for customers to constantly monitor their accounts properly without having to visit the banking premises. Thus, customers who sign on the service are able to monitor their account at the comfort of their home without frequently. However, some customers disagree that the service serves as a monitoring tool due to occasional system failure.

Figure 4.2 SMS alert as a monitoring tool



Source: Field Survey, 2011

Table 4.5 ATM reduces waiting time

	Frequency	Percent
Strongly agree	76	76.0
Agree	23	23.0
Neutral	1	1.0
disagree	0	0
strongly disagree	0	0
Total	100	100.0

Source: Field Survey, 2011

Table 4.5 above indicates whether the Automated Teller Machine (ATM) reduces waiting time in the banking hall(s). Out of the total number of customers interviewed, majority (99%) of the respondents are satisfied about the fact that ATM reduces waiting time while only one (1) respondent remained neutral. From to the table, none of the respondents disagree or strongly disagree with the assertion that ATM reduces waiting time.

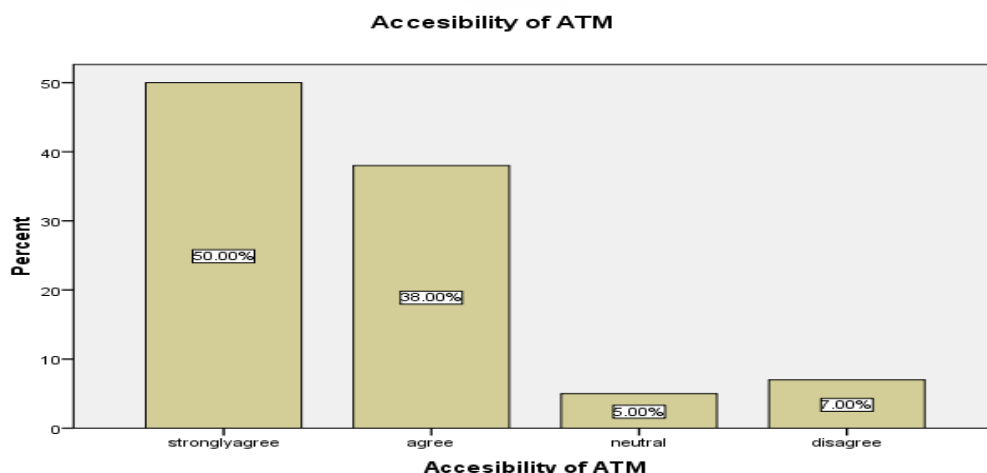
Undoubtedly, the patronage of ATM services by customers reduces waiting time since customers spend some few minutes at the ATM to get their transactions done. The availability of ATM's at vantage points in the city of Kumasi is a source of satisfaction for customers since they find it convenient to perform transactions any time of the day.

4.4.3 Accessibility of ATM

Figure 4.3 below represents the response on ATM providing 24-hour service to customers. From the distribution, majority of the respondents (88%) expressed high levels of satisfaction about the accessibility of the banks ATMs; 7% disagree and 5% were neutral on the issue. Impliedly, customers are generally satisfied since they have access to the ATM 24-hours in a day.

Since the bank has policies in place to ensure that the ATMs are functioning most of the time, customers have access to reliable services any time of the day. Those who disagree argued that the ATM sometimes is faulty at the time they best needed it.

Figure 4.3 Accessibility of ATM



Source: Field Survey, 2011

Table 4.6 ATM provides standardized service

	Frequency	Percent
Strongly agree	36	36.0
Agree	45	45.0
Neutral	9	9.0
Disagree	10	10.0
Total	100	100.0

Source: Field Survey, 2011

When asked about ATM providing standardized service to customers, the response is indicated by table 4.6 above. The table above indicates that, 81% of the respondents were satisfied and convinced that ATM provided standardized service as compared to even human beings who are sometimes tired, frustrated or stressed up. Since the ATM services are standardized through automation, customers receive the same level of satisfaction any time of the day. The human element which sometimes alters the quality of services offered is reduced to the barest minimum due to automation of the system.

Table 4.7 ATM user friendliness

	Frequency	Percent
Strongly agree	60	60.0
Agree	20	20.0
Neutral	6	6.0
Disagree	12	12.0
Strongly disagree	2	2.0
Total	100	100.0

Source: Field Survey, 2011

The table 4.7 above denotes the response on the user or customer friendliness of the ATM. In all, 80 out of the 100 respondents expressed satisfaction about the user

friendliness of the bank's ATM. On the other hand two (2) and twelve (12) of the respondents strongly disagree and disagree respectively to the statement that the ATM is user friendly. Meanwhile six of the respondents chose to remain neutral on the issue and they include those who did not have the ATM card as well as those who were not making use of their cards. All together, 14% of the respondents expressed dissatisfaction because they felt that the ATM is not user friendly.

Nonetheless, over 80% of the respondents attested to the fact that ATM is user friendly and even more efficient. Thus, customers find it more convenient to use the machines with little or no assistance from employees of the bank.

Table 4.8 Prompt delivery of statement via internet

	Frequency	Percent
Strongly agree	4	4.0
Agree	6	6.0
Neutral	24	24.0
Disagree	14	14.0
Strongly disagree	52	52.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.8 indicates whether the bank promptly deliver customers' statements into their mail boxes through the internet. From the response, 66% forming the majority of respondents were dissatisfied about the delivery of customer account statement through the internet. 24% of the respondents chose to remain neutral while 4% and 6% of the respondents strongly agree and agree respectively. This implies that the use of the internet to deliver statements to customers by the bank has been very minimal.

It was also revealed that most of the respondents who remained neutral did not have their e-mail address with the bank. Some those who disagree also had only once or twice received statements through the internet and not promptly as being asserted.

Table 4.9 Availability of telephone banking services

	Frequency	Percent
Strongly agree	6	6.0
Agree	5	5.0
Neutral	3	26.0
Disagree	37	37.0
Strongly disagree	49	49.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.10 Accessibility of telephone banking

	Frequency	Percent
Strongly agree	6	6.0
Agree	5	5.0
Neutral	2	2.0
Disagree	39	39.0
Strongly disagree	48	48.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.11 Patronage of telephone banking

	Frequency	Percent
Strongly agree	1	1.0
Agree	6	6.0
Neutral	0	0.0
Disagree	36	36.0
Strongly disagree	57	57.0
Total	100	100.0

Source: Field Survey, 2011

Tables 4.9, 4.10 and 4.11 above give account of the availability, accessibility and patronage of the bank's telephone banking services. Data gathered indicates clearly that, with regards to telephone banking, there is a wide knowledge gap to be filled by the bank. Table 4.9 indicates that as high as about 89% of the respondents have no knowledge of the availability of the service. As a result, as high as about 93% of the respondents interviewed do not patronize the service. Telephone banking when implemented well has the potential of improving customer service and hence customer satisfaction as customers can get access to account information in the comfort of their homes.

Table 4.12 Quick Response to Calls

	Frequency	Percent
Strongly agree	0	0.0
Agree	2	28.6
Neutral	0	0.0
Disagree	3	42.8
Strongly disagree	2	28.6
Total	7	100.0

Source: Field Survey, 2011

Table 4.13 Adequacy of Information

	Frequency	Percent
Strongly agree	1	14.3
Agree	2	28.6
Neutral	0	0.0
Disagree	3	42.8
Strongly disagree	1	14.3
Total	7	100.0

Source: Field Survey, 2011

Tables 4.12 and 4.13 above depict the response rate and adequacy of information customers receive when they use telephone banking service. From table 4.12, only two (2) out of the seven (7) customers who use the service attested to the fact that, they receive quick response to calls. Majority (71.4%) are dissatisfied with the service because of the delays in responding to their calls. Also, about 57.1% of respondents did not seem satisfied with the adequacy of information via the telephone banking service and as such preferred to visit the branch. This gives much credence as to why patronage of the service is very low as discussed above.

Table 4.14 Speed of cash withdrawal

	Frequency	Percent
Strongly agree	28	28.0
Agree	54	54.0
Neutral	6	6.0
Disagree	9	9.0
Strongly disagree	3	3.0
Total	100	100.0

Source: Field survey, 2011

Table 4.15 Speed of cash deposit

	Frequency	Percent
Strongly agree	38	38.0
Agree	49	49.0
Neutral	5	5.0
Disagree	4	4.0
Strongly agree	4	4.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.16 Speed of balance inquiry

	Frequency	Percent
Strongly agree	24	24.0
Agree	32	32.0
Neutral	26	26.0
Disagree	8	8.0
Strongly disagree	10	10.0
Total	100	100.0

Source: Field Survey, 2011

The introduction of PC banking by the bank to replace the use of ledger books has improved the speed with which customers making deposits and withdrawals are dealt with. Data gathered from the survey as indicated in tables 4.14, 4.15 and 4.16 shows that, on the whole, about 80% of customers are more satisfied at the rate at which their requests particularly withdrawals, deposits and balance inquiries are attended to. This can be attributed to the fact that, the bank uses computers to store customer information and as such make it easy to retrieve such information when needed.

Table 4.17 Availability of integrator

	Frequency	Percent
Strongly agree	5	5.0
Agree	17	17.0
Neutral	49	49.0
Disagree	17	17.0
Strongly disagree	12	12.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.18 Usage of Integrator

	Frequency	Percent
Strongly agree	2	2.0
Agree	5	5.0
Neutral	28	28.0
Disagree	40	40.0
Strongly disagree	25	25.0
Total	100	100.0

Source: Field Survey, 2011

In its quest to make lives much easier for customers, Barclays bank introduced the integrator. This is meant to assist corporate clients of the bank to carry out transfers from their accounts without visiting the branch network with the help of computer software. However, data gathered from the survey indicates that, knowledge of the service is minimal as only 23 out of the 100 respondents interviewed demonstrated knowledge of the service. This has resulted in the low patronage of the service as indicated in tables 4.17 and 4.18 above.

Table 4.19 General customer satisfaction

	Frequency	Percent (%)
Strongly agree	63	63
Agree	19	19
Neutral	5	5
Disagree	8	8
Strongly disagree	5	5
Total	100	100

Source: Field Survey, 2011

The table above indicates the general levels of customer satisfaction with regards to the various technological innovations of the bank. From the table, majority of respondents hold the view that, they are generally satisfied with the technologies introduced by the bank in its attempt to improve on customer experience and satisfaction. Thus to these customers, IT innovations ensures efficient service delivery which has a rippling effect on customer satisfaction and hence their willingness to recommend the bank to others.

That notwithstanding, about 13% of the respondents were not still satisfied with the service received from the bank citing reasons as delays in text messages, ATM retraction among others as indicated in table 4.19 above. Impliedly, there is still much to be done by the bank to ensure that the minority is also catered for adequately.

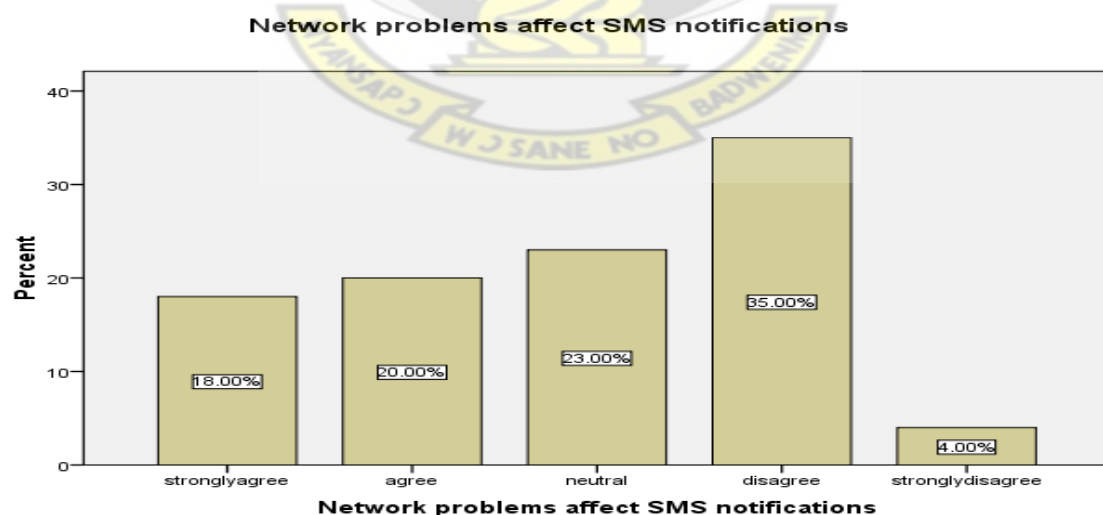
4.5 Problems encountered with the use of ICT strategies

4.5.1 Network challenges

Figure 4.4 below shows whether poor communication network really affect the SMS alert system used by the bank(s) for customers and a majority of thirty-five (35) respondents disagree while four (4) respondents also disagree strongly. Twenty (20) and eighteen (18) respondents agree and strongly agree respectively that poor network affect the SMS alert system. The figure also indicates a sizable number of twenty-three (23) respondents remaining neutral on the issue. Form the distribution, a very slight majority (39%) of respondents do not think that poor network affect the SMS alert system as against 38% respondents who think that poor network really affect the SMS alert system.

Here the scale seems almost balanced but some of those who remained neutral had their own problems with some the network providers for being inconsistent. Nonetheless it can be still concluded that poor network has a negative effect on the SMS alert system.

Figure 4.4 Network challenges affect SMS alert system



Source: Field Survey, 2011

Table 4.20 ATM retraction (not getting access to cash)

	Frequency	Percent
Strongly agree	4	4.0
Agree	11	11.0
Neutral	8	8.0
Disagree	37	37.0
Strongly disagree	40	40.0
Total	100	100.0

Source: Field Survey, 2011

Providing reliable and efficient service plays a key role in customer satisfaction. Table 4.20 shows the response on the issue of ATM retraction. In all, majority 77 of the respondents did not see ATM retraction as a source of worry and hence were satisfied.

On the other hand, 15 of the respondents expressed dissatisfaction with the use of the ATMs as a result of not having access to cash even when their accounts are debited. Again, eight (8) of the respondents chose to remain neutral on the issue and they include those who either did not have or were not making use of their cards.

With over 77% of the respondents expressing satisfaction with the issue of ATM retraction, it can be clearly concluded that customers normally have access to cash when they visit the ATM. This implies that customers of the bank are getting the required level of satisfaction that Automated Teller Machines are designed to provide to those who patronize them.

Table 4.21 Prompt resolution of ATM retraction issues

	Frequency	Percent
Strongly agree	15	15.0
Agree	55	55.0
Neutral	18	18.0
Disagree	10	10.0
Strongly disagree	2	2.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.21 indicates responses given to a follow up question to ATM retraction on whether prompt resolution were always given to ATM retraction issue by the bank(s). From the response, 55% and 15% respondents agree and strongly agree respectively to the issue; 10% and 2% of the respondents disagree and strongly disagree to the issue; 18% respondents chose to remain neutral to the issue. Those who remained neutral had never experienced any retraction with the ATM before and would not know how it was resolved. It can be concluded in a way that ATM retraction issues were promptly being resolved by the bank(s) with not less than 70% respondents attesting to that fact.

Table 4.22 Frequent statement delivery via internet

	Frequency	Percent
Strongly agree	6	6.0
Agree	4	4.0
Neutral	12	12.0
Disagree	19	19.0
Strongly disagree	59	59.0
Total	100	100.0

Source: Field Survey, 2011

Table 4.22 above reveals the response of respondents on whether they receive frequent statements from the bank through the internet. Out of the hundred (100) respondents, seventy-eight (78) are dissatisfied because they do not receive frequent statements from the bank via the internet. Six (6) together with four (4) respondents on the other hand strongly agree and agree respectively. Here too, twelve (12) of the respondents chose to remain neutral to the issue.

With over seventy-eight (78) out of hundred (100) respondents responding negative to frequent statement delivery through the internet, it obvious that the bank has been doing very little in that direction.

4.6 Relationship between the use of ICT and Customer satisfaction

In order to establish the impact of ICT on customer satisfaction, correlation analysis is used to establish the relationship between Customers patronage in the various ICT strategies for the year 2010 and 2011. Base on secondary data derived from Barclays Bank, Tafo Branch, total customer population for 2010 and as at August 2011 is 8379 and 9545 respectively. With all the ICT strategies at customers disposal, the Bank expects all customers to enjoy almost all of them or at least one of them but base on customers preference, the following (as shown in the table below) patronize the above mentioned ICT services.

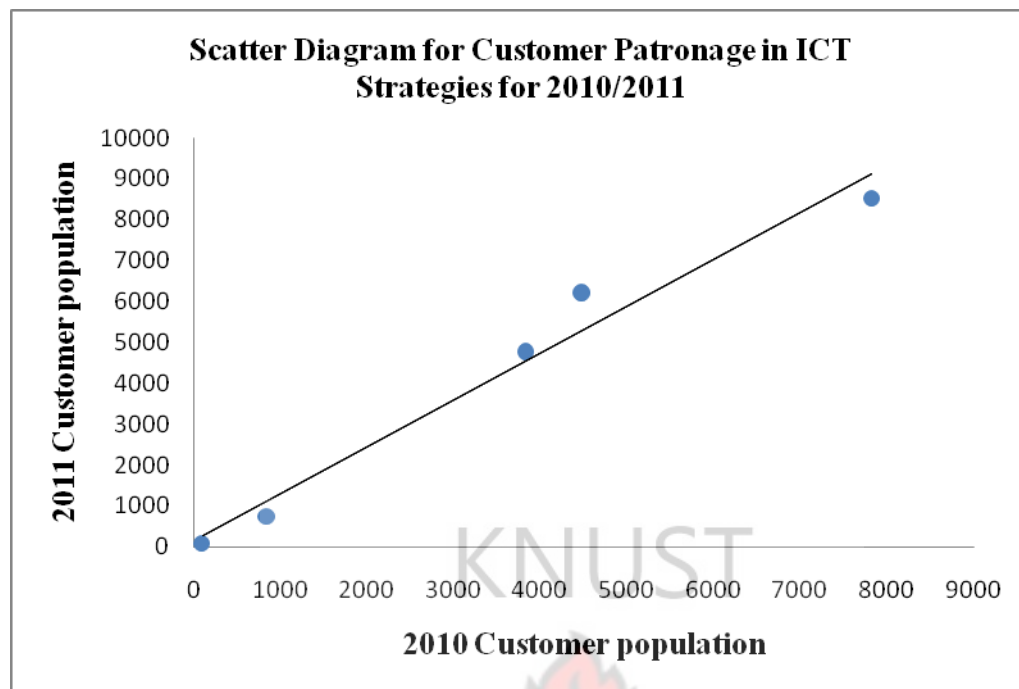
Table 4.23 Customer Patronage Population for the five main ICT strategies

ICT Strategies	Customer Patronage	
	2010	2011
SMS	4478	6234
Barclays Integrator	96	101
Telephone Banking	839	754
ATM	7824	8525
E-Statement	3832	4776
Total	17069	20390

Source: Field Survey, 2011

SMS Alert, Barclays Integrator, Telephone banking, ATM and E-statement increased their customer population in August 2011 by 1756, 5, -85, 701 and 944 respectively. The customer patronage population for 2011 regresses on that of 2010 and therefore depends on it to explain each ICT strategy population for that specific year. Correlation analysis is now applied to determine the strength of linear relationship between the response variable (2011) and the predictor variable (2010). Correlation between the two variables does not necessarily mean that one variable causes the other. Considering the situation at hand, there was a declining number of customers subscribing to Barclays Integrator in 2011 and therefore cannot conclude that the various populations for 2010 cause that of 2011.

Figure 4.5 Scatter Diagram for patronage of ICT Strategies



Source: Field Survey, 2011

The Scatter diagram (figure 4.5) above shows positive linear correlation between the five ICT strategies and therefore need to determine whether they are strongly or weakly correlated by using the Correlation Coefficient.

$$r = \frac{n \sum(xy) - \sum x \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2)(n \sum y^2 - (\sum y)^2)}}$$

Let the total number of ICT strategies be $n = 4$, variable 2010 be x and that of 2011 be y . Dividing Patronized Customer Population in the Various ICT strategies for 2010 and 2011 by 100 to obtain x and y respectively, the table below commences calculating for the correlation coefficient by finding $\sum x$, $\sum y$, $\sum xy$, $\sum x^2$ and $\sum y^2$.

Table 4.24 Calculation of Correlation coefficients

ICT Strategies	$x = \frac{(2010)}{100}$	$y = \frac{(2011)}{100}$	$x y$	X^2	Y^2
SMS	44.78	62.34	2791.59	2005.25	3886.28
Barclays Integrator	0.96	1.01	0.97	0.92	1.02
Telephone Banking	8.39	7.54	63.26	70.39	56.85
ATM	78.24	85.25	6669.96	6121.50	7267.56
E-Statement	38.32	47.76	1830.16	1468.42	2281.02
Total	170.69	203.90	11355.94	9666.48	13492.73

Source: Field Survey, 2011

$$r = \frac{5(11355.94) - (170.69 \times 203.90)}{\sqrt{((5 \times 9666.48) - 170.69^2)((5 \times 13492.73) - 203.90^2)}}$$

$$r = \frac{21976.01}{22293.25}$$

$$r = 0.98577$$

When $r = 0.98577$, is approaching one (1), then there is a strong positive correlation between the patronized customer population of 2010 (x) and 2011 (y). Diagrammatically, all the observations on customer patronage in the five ICT strategies for 2010 and 2011 lie on a straight line with a positive slope as shown in figure 4.5 above. This affirms customers' satisfaction with the ICT and hence an effective relationship between them.

This gives credence to Krishnan, Ramaswamy, Meyer & Damien (1999) who pointed out that, the banking industry strives to succeed by putting the topic of rapid and changing customers needs to their agenda. According to Dabholkar, (1994) this is achieved in the form of good customer care and offering attractive services or products that other competitors may not offer as done by bank.

This assertion could not be over emphasised as from the analysis in table 4.19 which indicates clearly that, well over 82% of the respondents interviewed generally expressed high levels of satisfaction with the ICT innovations/ strategies introduced by the bank.

4.7 Chapter Summary

Data gathered was analysed and presented using the Statistical Package for Social Studies (SPSS). For ease of understanding and presentation of findings, charts and tables were used. The results showed that there is a positive relationship between ICT and customer satisfaction in spite of some challenges.



CHAPTER FIVE

SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The final chapter of the thesis deals with three main aspects namely, summary of findings, recommendations and conclusion. Summary of findings are explained with an attempt to relate research findings with the objectives of the study. Conclusions are the researcher's opinions depending on the outcome from the data analysed as per the objectives of the study. Recommendations are the way forward resulting from conclusions and are very vital for policy making. Further work gives an area of importance that the researcher left unexplored in relation to the ongoing study.

5.2 Summary of findings

5.2.1 ICT strategies used at Barclays Bank to improve customer satisfaction

The research revealed that the bank uses a number of ICT platforms or strategies such as ATM, E-statement, telephone banking, integrator, SMS alert and code line clearing in its quest to improve customer experience/ satisfaction of which the ATM is the most widely used.

Knowledge about the availability and accessibility of other ICT strategies such as Barclay's integrator, telephone banking and e-statement is very low hence resulting in low patronage by customers of the bank. With regards to telephone banking only 11 out of the 100 respondents interviewed demonstrated knowledge about the existence of the facility. It is therefore not surprising that only 7 of the respondents interviewed had subscribed to the service.

The study also revealed that, the banks ATMs are not being fully utilized by customers as customers mainly carry out cash withdrawals with ATMs. As a result, customers usually visit the branch for services such as statement request, balance inquiry, cheque book request etc causing much human traffic in the banking hall.

5.2.2 Extent of customer satisfaction of ICT strategies

The study carried out revealed that bank has a number of Automated Teller Machines (ATMs) located at vantage points to provide service to its numerous clients. This has resulted in customers having access to account information even after the official working hours of the bank as the ATMs provide 24 hr services. To this end, customer satisfaction is positively impacted.

Also, findings from the study indicate that, customers of the bank are now able to constantly monitor and manage their accounts as txt messages are delivered to their cell phones when transactions are posted on their accounts. Coupled with this is the periodic update of account balances via Short Message Service (SMS) alert system.

The use of computerized banking has also greatly affected the speed and accuracy with which customer instructions are dealt with. This has also improved for instance the Turnaround Time (TAT) for cash deposits, withdrawals balance inquiry, account opening among others. In effect, customer satisfaction is positively affected.

5.2.3 Problems associated with the use of ICT strategies at BBG

Findings from the study revealed that, the bank's SMS alert system is sometimes hampered by poor communications network from the service providers. This sometimes

causes delays in the delivery of alerts to customers. Data gathered indicates that, an average of about 40% of customers receive delayed SMS alerts as a result of unstable network from service providers.

In addition, issues of ATM retractions especially with regards to customers who use their VISA electron debit cards on other bank ATMs is a source of worry. The study revealed that, such issues take too long to be resolved and this causes some level of inconveniences for the customers affected.

5.2.4 Relationship between ICT usage and customer satisfaction at BBG

The analysis revealed that, there is a positive correlation between the application of ICT and customer satisfaction. Thus, the introduction of various ICT strategies by the bank has resulted in minimal complaints received. For instance, the analysis revealed that, more than 90% of customers expressed relief that cheques for clearing are processed and funds made available in their accounts within 3 days via code line cheque clearing system.

5.3 Conclusion

In conclusion, it can be said that there is a positive correlation between the application of ICT strategies and customer satisfaction in the banking industry. Thus, investments in ICT have the potential of improving customer satisfaction. Conscious efforts should therefore be made at making these strategies available and accessible to customers. Considering the effect that the service delivery has on the customer satisfaction, it could be concluded that it is essential that the banks maximize the levels of the service quality

that they are offering to their clients with regards to ICT since service delivery has a profound effect on the customer satisfaction levels that a customer attains.

In addition, many Scholars have argued that, there are a number of associated competitive advantages which come with the usage of the information technology innovations. To this end, Barclays Bank Ghana should therefore ensure it improves the information technology infrastructure that it has set up so as to ensure maximum customer satisfaction of the client base that it currently has to still remain a key player in the industry.

5.4 Recommendations

5.4.1 Awareness creation

The results have indicated that there is a positive relation between ICT and customer satisfaction in the banking industry, which is an indication that ICT contributes to improvement in the banking industry. However it has been noted that the awareness on the part of customers about these ICT strategies is still low. This suggests a need to adopt an IT policy, placing more emphasis on the awareness of the numerous ICT platforms while educating individual customers on their existence and benefits. Customers should also be educated of the other uses of systems such as ATM other than cash withdrawal.

5.4.2 Security

Security should be considered one of the vital issues. That is to say the development of e-funds-transfer, telephone banking and Internet banking security strategies as part of the IT strategy should be given much attention since the banking industry is a risky venture which holds people's finances. This will allay fears of customers about reported incidence of hacking.

5.4.3 Monitoring and evaluation of strategies

The management of the bank should make a conscious effort to monitor and evaluate the usage of the implemented technologies. This can be done by identifying the number of customers using a given technology and how often it is used as well as challenges encountered by customers. This will provide the bank with constructive feedback with regards to the technology that should be improved and to realize its maximum benefits.

5.4.4 Collaboration with competitors

There is the need for strong collaboration among the various banks in the industry. This will provide the platform to resolve issue with ATM retraction when customers use their VISA electron debit cards on other bank machines.



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APPENDICES

APPENDIX A

INTERVIEW GUIDE FOR MANAGEMENT

Dear Sir/Madam

You have been selected to be interviewed for the study of “Exploring the effects of ICT on customer satisfaction in the Banking Industry. The case of Barclays Bank Ghana Ltd, Tafo Branch.” You are assured that any information you provide is solely meant for the research and nothing else. Your response to the questions will be kept confidential.

1. What is your position or role in the bank?
2. How long have you been with the business?
3. How important is ICT to the bank with regards to improving customer satisfaction?
4. In the area of ICT, what strategies or IT innovations are being implemented by the bank?
5. Would you say that the bank’s ICT strategies/ platforms have helped in improving customer satisfaction levels and why?
6. What has been some of the challenges in implementing these strategies?

APPENDIX B

QUESTIONNAIRE FOR CUSTOMERS

You have been selected to respond to this questionnaire for the study of “Exploring the effects of ICT on customer satisfaction in the Banking Industry. The case of Barclays Bank Ghana Ltd. Tafo Branch.” You are assured that any information you provide is solely meant for the research and nothing else. Your response to the questions will be kept confidential.

1. Gender

Male ()

Female ()

2. Age

18-29 ()

30-39 ()

40-49 ()

50-59 ()

60+ ()

3. Educational level

Basic level ()

SHS/O’level ()

Tertiary ()

Other (please specify).....

The following questions seek to provide information about ICT usage and confirm the relationship between ICT and customer satisfaction from customers view point.

Scale

1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

	1	2	3	4	5
4. I am notified anytime transaction is posted unto my account via SMS.					
5. The SMS notifications help me to monitor my account frequently.					
6. The use of the ATM reduces waiting time.					
7. I am able to access my account through the ATM 24 hours in a day.					
8. I receive the same kind of service each time I use the ATM.					
9. I promptly receive statements of my account via the internet monthly.					
10. The introduction of the code line cheque clearing system has reduced the number of days in the clearing cycle.					
11. I am able to use the banks ATMs without any assistance.					
12. I get detailed information about transactions on my account through SMS alert service.					

	1	2	3	4	5
13. Telephone banking services are available at Barclays bank					
14. Telephone banking services are accessible at Barclays bank					
15. I use telephone banking services					
16. I find cash withdrawal quick at the bank					
17. I find cash deposit quick at the bank					
18. I find account balance inquiry quick at the bank					
19. Barclays integrator is available at the bank					
20. Barclays integrator is accessible at the bank					
21. I use Barclays integrator to effect transfers from my account					
22. I get quick response when I use telephone banking services					
23. I get detailed information through telephone banking					
Customer satisfaction					
24. I am completely satisfied with the services					

delivered by the bank					
25. I feel absolutely delighted with the bank's technological innovations					
26. I would recommend the bank to others					

The questions below will provide information about problems customers encounter in the application of ICT strategies of the bank.

Scale

1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

	1	2	3	4	5
27. I frequently miss SMS notifications due to poor network from communication service providers.					
28. I am denied access to cash whenever I use the ATM.					
29. Issues regarding the denial of access to cash are resolved promptly by the bank.					
30. I frequently receive my statement through the internet.					