
Reginald Mazana

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University of Zimbabwe

Supervisor: Professor Gabriel Kabanda
DECLARATION

I, Reginald Mazana, do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the acknowledgements, references, and by comments included in the body of the report, and that this dissertation is therefore, my original work and has not been presented in part or in full for any other degree in any other University

Reginald Mazana  ------------------------------ ----   ---------------------------
(Student)                         Signature                                  Date

Approved for submission

Professor G. Kabanda .........................  .........................
(Project Supervisor)  Signed and Accepted             Date
Dedication

Acknowledgment

My thanks go to Professor Gabriel Kabanda for his motivation, comments and expertise that have enriched my understanding of the subject matter.

Special thanks go to my family (wife and kid) for enduring my long absence, during the weekends and public holidays. Special thanks my wife Idah for all the ideas and theories which I truly believe she retains total interest in, and the new kid on the block, Ethan for coming at an opportune time. All the work mates, colleagues and all those who assisted
Abstract

The fast advancing global information infrastructure such as information technology, computer networks, Internet and telecommunications have enabled the development of the electronic commerce at a global level. The nearly universal connectivity which the internet offers had made it invaluable business tool. These developments have created a new type of economy, which maybe called the “digital economy”: This fast emerging economy is bring with it rapidly changing technologies, increasing knowledge intensity in all areas of business and creating virtual supply chains and new forms of businesses and service delivery channels such as Self Service Technology (SST).

As a direct consequence of the emergence of the “digital economy”, the balance of power seems to be shifting towards the customers. Customers are increasingly demanding more value, with goods customised to their exact needs, at less cost, and as quickly as possible. To meet these demands, business needs to develop innovative ways of creating value which often require different enterprising architecture, different IT infrastructures and different way of thinking about doing business. This transformation of business from old company to a new agile electronic corporation not easy and required a lot of innovative thinking, planning and investment.

This study is to find why the local banks have not managed to capitalise on the usage of self-service technologies yet the similar products are doing well in the developed countries such as the United States, Great Britain and Germany. The return on investment as the e-channels struggle to attain a critical mass for them to be profitable. The banks are only implementing the delivery channel as a loss leader and they continue to under pressure from the demanding public.

The results indicate that the target market and product development has not been done well for the product to thrive. Product cannibalisation has been cited as the main cause why the products are failing as they are competing for thin resources. The market is largely unbanked and similar strategies have been deployed in Kenya and South Africa. This study will focus on what they should do in-order to capitalise on technology as a game changing strategy.
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Chapter one

Technology can create or destroy value- Steve Jobs (1955-2011)

1.0 Introduction

Technology has changed the business environment through innovation, increased awareness and demands from customers. Banks are facing rapid change. Customer behaviour, technology and competition are all in transition. What is the most challenging part? It is all happening at the same time. According to Campbell & Frei (2010) tablets and smartphones have taken the world by storm and will soon eclipse the traditional PC sales, a move no one could have predicted five years ago. Companies are moving away from their native business to compete with the traditional banks, these innovative competitors comprise of entrants such as Simple, Movenbank, Google and PayPal. Whatever their origin, all of them show that physical presence does not equal success hence banks must act now to engage their customers or risk losing them to those who will (Shah & Clarke, 2009).

There has been a rapid growth of other types of electronic services since 1990’s where banks have renewed their interest in electronic modes of delivery using internet. Self-Service Technology (SST) has greatly changed the way in which customers and clients interact. To remain competitive bankers have been forced to adopt new forms of banking such as Internet banking, mobile banking, card-based system (ATM and POS) and interactive voice response. These technologies are fast replacing the traditional banking systems comprising a client-to-teller interface. A number of service literatures have suggested that self-service customers are more loyal than their full service counterparts (Balachandran, 2004); (Berry, Seiders, & Grewal, 2007);(Buell, Campbell, & Frei, 2010);(Campbell & Frei, 2010)). There are many explanations why the self-service channels offer better benefits over full service offerings, some of the reasons include improvement in customer satisfaction and by extension, loyalty and the overall customer experience. The alternative explanations are that self-service usage increases switching costs, which improves retention by making it
more difficult for customers to defect to competitors (Buell, Campbell, & Frei, 2010); (Choi, Karmarkar, & Rhim, 2007); (Dorner, Gassmann, & Gebauer, 2011)).

It has been well established in the literature that a satisfied customer is more likely to remain loyal to a firm than an unsatisfied one (Berry, Seiders, & Grewal, 2007). However, a customer who finds it difficult to switch to a competitor as a result of learning costs, psychological effects, transaction costs, or contractual obligations may also remain loyal, despite dissatisfaction (Farrell & Klemperer, 2007). Understanding what motivates self-service customers to remain loyal has significant implications for service organisations. Dissatisfied customers held captive by switching costs spend less money and are notoriously difficult and expensive to serve (Choi, Karmarkar, & Rhim, 2007). They will defect from the firm over time if the switching costs fall. Self-service reduces operation cost, little is known about how customers exploit self-service channels in a multichannel service delivery system which has an impact on firm performance.

1.1 Background
Self-Service Technologies (SST) are technological interfaces that enable customers to produce service independent of direct service employee involvement. Sannes (2008) states that one out of three banks in the United States of America is reporting steady growth of customers on the SST. Organisations around the world are also eager to adopt the use of SST to deliver their services because of its relative lower cost of delivery, higher sales and potential for offering convenience to customers (Ayadi, 2007). More than 40 per cent of organisations from within and outside the financial services sector are now using SST to deliver services (Shah & Clarke, 2009). The banks are employing this strategy in order to increase market presence whilst reducing the number of physical branches, transaction time and the overall overhead cost. The fear that this channel will completely replace the existing channels may not be realistic, and experience so far shows that the future is a mixture of “clicks (e-banking) and mortar (branches)” (ibid).

However, this extra service to the traditional banking systems offers wider choices and convenience for customers. SST can be made available 24 hours a day and throughout the year, and a widespread availability of the internet and
mobile phones means that customers can conduct their financial transactions virtually anywhere and at any time. This provides a convenient retail banking service which helps in de-congesting the banking halls and also assists banks to carefully manage their human resource management and concentrate more on the service delivery. Customer service has been emerging as a weapon for business firms to obtain competitive advantage (Hanson, 2000).

1.1.2. Benefits

1.1.2.1 High value clients
SST, such as internet banking, attracts high valued clients with higher average incomes and education levels and this helps the financial institution to increase on revenue streams (Kheng, Mahamad, Ramayah, & Mosahab, 2010). In retail banking, SST has great importance as high value customers are likely to demand high valued banking products. Most of the people cannot afford to use the banking hall during working hours and hence they would like to pay their bills with the least inconvenience and get their money without any hassles. Some research even suggest that adding the internet delivery channel to an existing portfolio of service delivery channels results in no trivial increases in bank profitability ((Cunliffe, 2008); (Kurnia, 2008); (Marzocchi & Zammit, 2006); (Young, 2007)). The revenues come mainly from the service charges. The service channel has a fixed monthly charge from the service providers and once the channel has managed to accumulate a critical mass, it will then become profitable for the bank to use the service channel.

1.1.2.2 Enhanced image
SST helps to enhance the image of the organisation as a customer focused innovative modern organisation. An attractive banking website with a large portfolio of innovative products can enhance the bank’s image (Dorner, Gassmann, & Gebauer, 2011). This image also helps in becoming effective at e-marketing and attracting young/professional customer base.

1.1.2.3 Increased revenues
There is an opportunity to increase the customer base number using the self-service channels as more people realise the convenience that is associated with the product/services offered by the financial institution. It is a platform for
customer retention, cross-selling and up-selling opportunities (Berry, Seiders, & Grewal, 2007). The SST has changed the traditional retail banking business model in many ways. One of the ways is the increased credit card lending as it is a form of transactional loan that is most easily delivered over the internet. Electronic Bill payment is also on the rise. Young (2007) suggests that the electronic payment and other related capabilities of the SST have a real impact on retail banking practise and rapidly expanded revenue streams. According to Hoffman (2007), the revenues sometimes are not enough for reasonable return on investment and at times these self-service channels are being used as value creation activities.

1.1.2.4 Expansion
Bank expansion was usually characterised by the number of branches a bank opens and its geographical dispersion. The bank would then incur high start-up cost and maintenance costs which tend to be a limiting factor for expanding the network footprint. The introduction of SST enables the traditional banking activities to be based in one part of the world while from other parts; there is virtual banking, which does not require any physical branch presence (Levesque & McDougall, 2009). The brand footprint is increased as people do not need to walk into the physical banking halls.

1.1.2.5 Impact on other channels
The self-serving channels are automated and some of the banking activities can be done using these channels. This reduces load to the other delivery channels such as the banking halls and call centres, where people may call to enquire their bank balances. These balances can be easily accessed either from the Automated Teller Machines, Mobile Banking facility or Internet Banking platform. This will also mean a reduction in the workload of the branch staff, and enable the time and resources to be allocated to other sectors for improving customer service and productivity (Campbell & Frei, 2010). This will translate into higher profits for the bank and a reduction on the transaction fees for the customers.

1.1.2.6 Cost reduction
The SST plays a pivotal part in cost reduction of overheads associated with certain channels, for example branches require expensive building costs and a
staff presence. According to Lawrence & Usman (2010), the cost per transaction of SST often falls more rapidly than that of traditional banks once a critical mass of customers has been achieved. The general consensus is that the fixed costs of SST are much greater than variable cost, so the larger the customers base of the bank, the lower the cost per transaction. This implies that the cost per transaction for smaller banks should be in most cases is greater than those of larger banks. Some sources in this area suggest that larger banks will be able to attract the best and the most skilled workforce on e-commerce because of their ability to pay while smaller banks struggle to keep them ((Cunningham, Young, & Gerlach, 2009);(Lee & Turban, 2001);(Mcknight & Chervany, 2001);(Mohanna, Yaghoubi, Motlaq, & Motlaq, 2011);(Zwass, 2007)). If the smaller banks want to compete, any efficiency related to savings is offset by above average wages and benefits per worker due to the need for more skilled labour to run the more sophisticated delivery system.

1.1.2.7 Organisational efficiency

The financial institutions have to undergo business process re-engineering, system integration and promotion of agile working practices. However, these radical changes are linked to risks such as low employee morale, poorly scoped project and change management issues, or collapse of the traditional services or the customer base (Turban, King, Mckay, Lee, & Viehland, 2008). There is also an opportunity for e-marketing, as the financial institution will be employing e-commerce strategies.

1.1.3 Challenges

1.1.3.1 Telecommunication Infrastructure

The availability of SST is substantially greater in developed countries than in developing countries. Many developing countries do not have the necessary telecommunication infrastructure, banking, commercial, bureaucratic and legal infrastructures to support the widespread introduction of e-banking (Harris & Spence, 2009). Access to the internet is a major challenge in the developing world and presence an obstacle to the growth of e-banking.
1.1.3.2 Capacity/Scalability
It is difficult to predict the usage of SST on hourly basis or daily basis. The scalability problems can give rise to a slowing down website or even website crashing (Blau, 2007). This may cause reputation problems and financial damage. This was the case at Northern Rock bank in the UK, the bank ran into credit problems when news spread that this bank was in trouble, thousands rushed to the bank website to transfer money while others were withdrawing money from the ATM’s which resulted in numerous technical problems in their SST for many days (Harden, 2009).

1.1.3.3 Availability system integration
One of the basic requirements of SST is their 24 hour availability. This often requires e-banking applications integration with their legacy systems which were designed to provide services during specific periods, often with suspension of services during specified periods, often with suspension of services at other times for various reasons such as data back up and end- of day processing. Incompatibility between e-banking applications and legacy systems means that most banks require middleware to integrate these systems, which can be expensive and may bring its own set of problems (Dubelaar, Sohal, & Savic, 2005). Shortcomings in technological infrastructure are often the biggest hurdle in the implementation of e-business channels and their integration with other parts of a business.

1.1.3.4 Website design and operational functionality
Poor design of website has been estimated to result in the loss of up to 50 per cent of potential repeat visits (Cunliffe, 2008). Poor design may include use in appropriate colours, contrast, font or navigation functions. Lack of proper functionality, excessive use of graphics or other similar factors can also deter customers from coming back to the site. Web usage barriers can also be attributed to vision, cognition and physical impairments associated with the normal aging process.
1.2 Problem statement

There has been a generalisation on the expected impact of the SST in the financial services. According to Gono (2009), 40% of the financial services have continued to engage in traditional banking methods which have a higher cost structure and hence passing the costs to the transacting public through high bank charges. Most of the assumed benefits of SST have been realised and some success stories have been recorded in the developed and industrialised nations, there is largely little evidence suggesting similar milestones in most developing nations. According to Laforet & Li (2010), lower use of credit cards and less sophisticated financial infrastructure has resulted in SST being adopted by a small portion of the population in China. In other countries such as Pakistan most of rural branches still operate using filling system which means that SST is only available in large cities.

There is fear that this channel will completely replace the existing channels may not be realistic. Although start-up costs for SST can be high, it can quickly become profitable once a critical mass is achieved. As a result there is heavy reliance on traditional branch based delivery of financial services and little pressure for change.

Excellence in service quality is a key achievement in customer loyalty and it is the primary goal of business organisation. Woherem (2000) claim that the most significant challenge in the financial services sector today is a wide spread failure on the part of the senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. He advises banks to re-examine their service and delivery systems in order to properly position them with the framework of the dictates of the dynamism of information and communication technology. The quest for survival, global relevance, maintenance of existing market share and sustainable development has made exploitation of the many advantages of SST through the use of automated devices in the financial services industry (Southard & Keng, 2004).

“SST’s represent a wide range of IT-based technologies, such as airline check in systems for e-ticket holders, in store kiosks for product information and web-based purchasing. More than 70% of customer
service interactions for information and remote transactions will be automated. SST’s can and do fail. The ATM that mistakenly eats a bankcard and the interactive voice response system that mishears an order are few examples; in all cases nearly 96% of the customers blame companies and their technologies, not themselves, for these dissatisfying experiences” (Nakata & Zhu, 2008).

One survey report conducted by the TechWeb News (TechWeb, 2008) found that SST is the fastest growing commercial activity in the banking sector. In their survey, they discovered that 87 million Americans carry out some banking activity on the self-service channel on a typical day, a 58 percent jump from 2007. The spread of self-service banking has coincided with the spread of high-speed broadband connections and the increasing maturation of the user population. In South Africa however it is a different picture. Supply and demand factors are affecting the evolution of self-service and the adoption is widely varying across different channels, industries and markets, compared with the world’s developed countries that have seen self-service growth across the board (Ayadi, 2007). Hence, SST is a source of competitive advantage and can become a real game changer in the financial services sector.

1.3 PESTLE Model

The PESTLE analysis is a tool that is used to identify and analyse the key drivers of change or business environment (Kotler, Ang, Leong, & Tan, 1999). The abbreviation stands for Political, Economic, Social, Technological, Legal and Environmental factors. The tool allows assessing of the current environment and potential changes. The idea is, if the project is better placed than its competitors, it would be able to respond to changes more effectively.

1.3.1 Political

After the disputed elections of 2008, the three political parties (Zanu PF and the two MDC’s) signed a Global Political Agreement (GPA) to form a Government of National Unity (GNU). The growing animosity between President Mugabe and Prime Minister Tsvangirai is fast resulting in what Americans call gridlock in the Zimbabwe government (Makumbe, 2010). President Mugabe stated that the GNU was not going to have its two year life span extended. This meant that the GNU
was most likely going to terminate about mid-February 2011, whether COPAC will had completed the writing of the constitution or not (ibid). At the time of writing this paper, the calls for election were heard time and again, creating an environment of uncertainty as to when the elections will actually be held. The political environment remained volatile and unstable resulting in the financial sector failing to attract foreign direct investment as well as long term loan facilities due to sovereign risk. The 51 per cent share allotment to locals has also targeted foreign owned banks was an additional deterring factor.

![PESTLE Model](image)

Source: (Kotler, Ang, Leong, & Tan, 1999)

**Figure 1.1: The PESTLE Model adopted from (Kotler, Ang, Leong, & Tan, 1999).**

### 1.3.2 Economic

Zimbabwe first breached the hyperinflation benchmark in March 2007, after falling below the 50 percent threshold in July, August and September 2007, inflation soared, peaking at an astounding monthly rate of 79.6 billion percent in mid-November 2008 (Hanke & Kwok, 2009). The introduction of multi-currency denominations ushered a new era in 2009. The transacting public lost confidence in the financial sector as they lost hard earned life savings. The financial sector had to come up with innovative products in order to capture the largely unbanked public, hence the introduction of the SST (Chamunorwa, 2012). The bank charges on the SST are low and hence it means that the transacting public can...
have more disposable income, however most people prefer taking all the money from the bank as they are earning very little and promoting the culture of not saving.

1.3.3 Social

More than 70 percent of the SST has failed to succeed due to resistance from both internal and external financial institution (Shah & Clarke, 2009). At system implementation, workers may fear job loss, power loss or status which may result in extreme demoralised workforce. In extreme cases, workers can even try to sabotage the new system resulting in failure of the product reaching the projected financial benefit (Cox & Blake, 2010). Changes in values, beliefs and human behaviour in terms of relationship to social rules and practises have also played a pivotal.

According to Spoher & Maglio (2008) modern business environment shows that clients want more choices; they want the traditional banking services, augmented by the convenience of online capabilities and stronger focus by banks on developing personal relationships. Balachandran (2004) postulated that most of the service aspects cannot be automated hence an adequate composite of staff serving customers can be expected to directly influence the customer’s satisfaction. Apte & Pinedo (2008) stressed the importance of the human touch in the customer services. Politeness and neatness, recognition in terms of greetings, willingness to provide prompt service, ability to apologise and express concern for a mistake are all important for bank customers, and these aspects cannot be automated. The adequacy of staff members serving customers can be expected to directly influence the customer’s satisfaction. Offering extra service delivery channels means wider choice and convenience for customers, which itself is an improvement in customer service. Quality is of great importance to in analysing the performance of bank branches, since their survival depends on the quality of service they provide.

1.3.4 Technological

SST backed up by data mining technologies can help in understanding customer’s needs and assist customization of the products/services according to those needs. More than 60 percent of the SST that has been deployed by the
banks has failed to make a positive contribution to the financial institution due to lack of data mining techniques and strategic alignment (Shah & Clarke, 2009). The proliferation of personal information devices such as home computers, mobile phones and digital organizers, coupled with the rise of new media such as e-mail and the world wide web, have altered the way information consumers work and play. These fragmented information channels have often resulted in efficient working patterns as users switch from one device to different media (Evans, 2004). However, if properly harnessed SST can create large market share and more profitability for the organisation as they will be using low transacting channels.

1.3.5 Legal
The National Payment System (NPS) is an act of the Reserve Bank of Zimbabwe Chapter 22:10 of 1964 which empowers it to organise and provide facilities for the collection and clearance of cheques and similar instruments (Gono, 2009). Electronic and card payment methods are currently controlled by private contracts between the banks and the clients. Such contracts must however, comply with the provision of the Consumer Contracts Act Chapter 8:03 of 1994 and the Contractual Penalties Act Chapter 8:04 of 1992 which generally require fair play in the formation of contracts (ibid). Hence financial institutions are compelled to abide by the code of conduct, this is meant to protect depositors and also to curb money laundering activities.

1.3.6 Environmental
SST is a green IT initiative as it means that the transacting public do not need to drive to the bank to withdraw money or to any of the service providers to pay for the service. The use of modern technology such as virtualisation and data centre management also means that the financial institutions cut down on power consumption and carbon emission while at the same time providing a high quality service with high network availability.

1.4 Research Objectives
The major objectives of this research are to:

- Assess the level of awareness of SST in the financial services sector.
• Evaluate the extent of use of SST in the financial services sector.
• Evaluate the effects of SST on customer retention.
• Assess the attributes important for the successful implementation of SST.
• Assess how financial institutions can create a competitive advantage using SST.

1.5 Research questions
The study will answer the following questions

• What is the level of awareness of SST in the financial sector?
• What is the current usage of SST in the financial sector?
• What is the impact of SST on customer retention?
• What are the important attributes in the successful implementation of SST?
• What is the impact of SST on competitive advantage?

1.6 Research hypothesis
$H_0$: Demographic information (age, gender, education, income) is positively correlated to self-service channel use.

$H_a$: there is no correlation between associated demographic information and self-service channel usage.

This hypothesis will allow us to examine the relationship between factors and channel of choice. This will help us in coming up with relevant strategies that will increase the market share and improve on profitability.

$H_0$: Does SST usage affect firm performance?

$H_a$: SST usage does not affect firm performance.

This hypothesis will allow us to see the relationship between SST usage and the performance of the firm in terms of channel utilization, profitability and customer retention and whether the firms should continue to invest in the self-service channels.
1.7 Research proposition
The aim of this research is to understand the usefulness of SST in creating a competitive advantage and competing in hyper-competitive environment. The misalignment of business strategy to the IT strategy has prompted the researcher to look at how banks have deployed the SST and the impact on the Zimbabwean financial services sector.

1.8 Justification
This paper will focus on the adoption of SST in the financial services sector focusing on retail banking. Banking has been a highly information intensive activity and it relies on information technology (IT) to acquire, process, and deliver the information to all relevant users. Not only is IT critical in the processing of information, it provides a way for banks to differentiate their products and services (Tan & Teo, 2007). Banks have to constantly innovate to retain their demanding and discerning customers by providing convenient, reliable, and expedient services. Driven by the challenges to expand and capture a larger share of the banking and market coverage, many have considered a revolutionary approach to deliver their banking services via a new medium: The Self Service Technology (Lallmahamood, 2007).

By undertaking this study, stakeholders in the financial services sector will be able to make informed decisions on the importance of e-commerce to increase market share, customer attrition and profitability.

1.9 Scope
The scope of this study is to understand the impact of e-commerce in the financial services sector in Zimbabwe. The focus will be on the retail banking in Zimbabwe. However due to the limitations of time and resources, the study will focus only on one organisation, FBC Bank. The bank has more than 30 branches country wide and employs both teller based and SST in the quest to reach out to clients, gain market share and remain competitive. Since the multicurrency dollar in 2009, the financial landscape has gone through tremendous changes. Bank acquisition, mergers, deregulation, failures and increased competitive pressure have created dramatic changes in the Zimbabwean banking industry.
1.10 Theoretical framework

Theoretical basis for this study is going to review literature on the broad areas of ICT driven competitiveness and the applicable models and frameworks. Relevant ICT strategic management tools to include IT governance, data mining and knowledge management (KM) will form the theoretical basis of the theoretical core of this research.

1.11 Dissertation outline

The rest of the research paper is structured as followed

**Chapter 2: Literature Review**

This will discuss and explore in some detail the available literature by scholars and researchers on the area under study. Models, concepts and frameworks will be explored as a way to support results obtained from previous researches.

**Chapter 3: Methodology**

This section will justify strategies used in this research. The chapter will discuss sampling methods as well as the data collection techniques used.

**Chapter 4: Presentation and Results**

This chapter will present a detailed discussion on the findings

**Chapter 5: Conclusion and Recommendation**

The chapter makes a brief summary of the research findings; present the conclusions and recommendations of the study as well as areas of study.

1.12 Chapter summary

The financial services sector has to come up with new initiatives and products to increase profitability and gain market share. The introduction of SST properly aligned to the corporate strategy will increase competitive advantage and improve on service delivery as we are now in a technology driven society. This study will assist to see if SST has really become a game changer.
Chapter two

2.0 Literature Review

2.1 Introduction

This chapter presents an awareness of relevant concepts and contributions from other researchers on matters relevant to the scope of the research. Literature review in a study accomplishes several purposes namely:

- It shares with the reader the results of other studies that are closely related to the researcher’s topic.
- It relates the study to the larger pool of literature about the topic, filling the gaps and presenting a contrary perspective.
- It provides a framework for establishing the importance of the study as well as a benchmark for comparing results of the study with other findings.

This study will provide a pragmatic analysis of self-service technology and how customers channel choices are associated with performance. The literature review will look at two main areas that are deemed important in conceptualising of the self-service technology.

First, literature in strategy, SST, encompassing an understanding of technology-based service encounters in a customer viewpoint and secondly about the impact of SST on customer retention, loyalty and firm performance. This will provide a basic understanding of the bank strategic issues.

2.2 Technology and Operation

According to Cunningham, Young, & Gerlach (2009) SST is attracting a great deal of attention from academicians and practitioners because of the relative newness and strategic importance. More than two billion of the world consumer market uses the internet for shopping, managing bank accounts, trading stocks, booking flights, buying movie tickets, tracking packages and selling everything from a silver spoon to a used car (Xue, Hitt, & Harker, 2007). The strategic importance of SST is from the radical changes in service delivery that it has brought to many industries such as airline, banking, travel and retailing. Customers receive the
benefits of convenience, ubiquitous availability, time and money savings, and a reduction from anxiety caused by judgemental service representation (Meuter, Bitner, Ostrom, & Brown, 2005). This radical progression from traditional interpersonal service encounters to SST, which replaces human-to-human contact with human-machine contact, is regarded as a fundamental shift in the nature of services.

According to Xue, Hitt, & Harker (2007) management of the self-service channels present a usual problem in that the performance of the service system is affected by the action of the customers with uncertain capabilities, incentives and goals. The customer's own action and cognitive abilities have a greater impact on service quality in the self-service channels in which they obtain in employee service channels. Customers are free to choose the channels in which they obtain their service. The service provider can shape the incentives; uncertainty in overall customer use of a channel can be further compounded in certainty in customer behaviour (Meuter, Ostrom, Bitner, & Roundtree, 2003). Some institutions have experimented with denying subset of the customer’s access to certainty channels, such as bank branches or other high cost services, often innovations were misunderstood by the consumers (Ayadi, 2007); (Berger & Gensler, 2009); (Jayawardhena & Foley, 2007); (Lawrence & Usman, 2010)). The consequences are serious and might even result in customers switching bank. Many researchers have suggested parallels between managing customers and employees, using insights from human resource management (Bowen, 2003); (Buell, Campbell, & Frei, 2010); (Hitt & Frei, 2002)).

SST has changed the service delivery system due to the convenience, the cheap transaction costs and source of competitive advantage. However, literature indicates that the success is relative to the degree of acceptance by the customers (Balachandran, 2004). It is also affected by the inconsistency nature of services due to customer involvement in the production process which makes standardization of the service experience difficult.

Table 2.1 below shows the most common services of SST in the financial sector and their availability over different types self-service media.
<table>
<thead>
<tr>
<th>Type of self-service</th>
<th>Card based</th>
<th>Internet Banking</th>
<th>Mobile banking</th>
<th>Voice Response Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Access</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Access online account information which is either updated in real time or on a daily bath basis.</td>
</tr>
<tr>
<td>Balance Transfer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>Transfer funds between accounts</td>
</tr>
<tr>
<td>Bill payment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>Payment any designated bill based instructions one proves including whether to pay automatically or manually each month.</td>
</tr>
<tr>
<td>Bill Presentment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>View billing statements as presented electronically, which allows interactive capabilities such as sorting, drill-down details, or advertising, in addition to on click payments</td>
</tr>
<tr>
<td>Mortgage/ Credit Card/ Microfinance lending</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Search, apply, and receive approval online for various types of loans and then review your statements using online bill presentment</td>
</tr>
<tr>
<td>Business banking services</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Basic payment and account services, merchant can manage their electronic lock box for received payments, accounts receivable posing, as well as initiatives payment via networks</td>
</tr>
<tr>
<td>Cross Selling</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Offering new products to users of the channel</td>
</tr>
<tr>
<td>Personalised Content and Tools</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Online financial tools to better manage the finances. When one goes online there is instant recognition and content is displayed oriented towards one’s interest.</td>
</tr>
<tr>
<td>Account Aggregation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Presentation of all the account details on a single page (current account, savings account, mortgage account, etc) on a single page</td>
</tr>
<tr>
<td>Electronic Funds Transfer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>System of transferring money from one bank account directly to another without any paper money changing hands</td>
</tr>
<tr>
<td>Customer service and administration</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Optimal to facilitate interaction with information so that customers can easily</td>
</tr>
</tbody>
</table>

Adapted (Sannes, 2008)

Table 2.1 shows the different services found on self-serving technologies.
2.2.2 Multi-delivery Service Channels

According to Fuchs (2005) customers are convoluted in the service production process either passively or actively. A multi-service delivery channel is a portfolio of employee and self-service channels in both the physical and virtual environments. This portfolio has replaced systems that rely primarily on employee service delivered in systems in physical channels. This has become a competitive necessity and it has a momentous effect on the firm’s operational strategy such as capacity management, and the operational performance of the business process that directly intermingles with the customer such as sales and marketing (Xue, Hitt, & Harker, 2007).

Adding customer self-service to the overall service delivery mix is straightforward, the customers are enabled to pursue their own needs, firms can often provide customized services at mass production cost levels. The underlying self-service technology such as internet based ordering or customer support also has significant economies of scale providing greater access, flexibility and convenience (Roth & Menor, 2003)

![Retail Banking Service delivery Channel Diagram](image)

Source: (Xue, Hitt, & Harker, 2007)
2.2.3 The Internet

According to Hoffman (2007) this is a massive global network of interconnected packet-switched computer network. There are three mutual consents definitions:

1. A network based on TCP/IP protocols.
2. A community of people who use and develop those networks.
3. A collection of resources that can be reached from the networks.

The emergence of the internet has posed a host of new organisational opportunities and challenges. The most common type of e-channel used over the internet is Internet banking (IB) and attractive websites (Curran & Meuter, 2005). There are attributes which enable the web to be an efficient channel for advertising, marketing and even direct distribution of goods and services such as the use of hypertext links (text, icon or image in a document) can point to any document anywhere on the internet, although other e-channels such as Interactive Television (iTV) and Wireless Application Protocol (WAP) technologies are available for service delivery, their use is still limited in the provision of financial services (O’Brien, 2007).

The configuration of Virtual Private Networks (VPN) and Multiple Paths Layered Switching (MPLS) can be used to link the servers and clients in different paths of the world of one service provider to the other providing cloud computing (ibid). This makes the integration easier, cheaper and online systems can be accessed in real-time.

The internet influences the future services/products distribution channel structure in two ways. Firstly, the costs of using it are different from those available to the distribution channels, and the services output provided by traditional distribution channels. Secondly the internet influences customers; many invest time and resources into becoming computer literate and getting to know the internet (Apte & Pinedo, 2008). Other consumers do not become computer literate and do not gain familiarity with the internet. These two customer segments are likely to have similar needs. Therefore, the existing distribution channel also influences changes in the overall distribution channel.
The Internet can make a significant contribution to the company’s value chain. It can improve the company’s relationship with suppliers and vendors, its internal operations and customer relations and offers the prospect of reaching an expanding customer base. The Internet also promises to dramatically lower communication costs by eliminating obstacles created by geography, time zones and locations (Tan & Teo, 2007).

The rise of the internet has resulted in the formation of virtual organisations which have virtually no physical presence in terms of retail outlets and still enjoy access to national and international markets (Shah and Clarke, 2009).

The Internet has played a pivotal role in SST in delivering cheaper channels which have been utilised to enhance firm performance (Xue, Hitt, & Harker, 2007). However, the Internet ceased to be a source of competitive advantage as it is generic and all the institutions are exposed to it. The financial systems using the e-channels need to reach a critical mass for them to be profitable; hence it faces limitations as its success depends on the adaptation of the internet platform by a target market.

**2.2.4 Mobile Banking**

Banks are making significant investments in mobile systems to deliver a range of types of business value, from increased efficiency and cost reduction, to improved operational effectiveness and customer service to provide a competitive advantage (Shah & Clarke, 2009). The number of types of mobile devices has increased rapidly and the functionality available also improved.

The shrinking costs of data transmission and due to the intense competition from suppliers, the reduced costs of devices have catalysed the distribution of mobile technologies and amplified the growth of the worldwide mobile market (TechZim, 2012). In countries like Zimbabwe, where the traditional telecommunication infrastructure is not well developed, mobile technology has not yet fully transformed accessibility to the banking services.

Figure 2.2 below shows the mobile penetration in Zimbabwe from 2006-2011. It clearly shows how Econet outpaces all the other mobile service providers and hence any financial institution that is serious with competing on the mobile
banking platform has to create a strategic alliance with Econet and this in order to reach a critical mass and the product becomes profitable.

**Mobile Penetration in Zimbabwe (2006 - 2011)**

![Graph showing mobile penetration in Zimbabwe](image)

Figure 2.2: Mobile penetration in Zimbabwe (2006-2011)

Source: (TechZim, 2012)

The potential of mobile phones is far greater than that for typical PC users, as there are several times more mobile phone users than PC users. Increasingly “mobile lifestyles” may also fuel the growth of anywhere, anytime applications (Nakata & Zhu, 2008).

According to O'Brien (2007). There are two main types of mobile technologies used in the financial sector

1. **Wireless Application Protocol (WAP)** - This an application environment and set of communication protocols for wireless devices designed to
enable manufacturer, vendor, and platform independent access to the internet and telephony services

2. Wireless Internet Gateway (WIG) – This is a Short Message Service (SMS) - based service, in which a menu of available banking options is initially downloaded from the bank to the device. This enables users to browse banks accounts to the phone and conduct other bank related services such as airtime top up, transfers, bill payment, etc.

Jayawardhena & Foley (2007) assert that the mobile banking service offered by Woolwich in the UK during the early 2000 failed to achieve a critical mass of users. The same story has been repeated in many other countries with mixed results. The main hurdle in development of mobile banking is low consumer adoption due to a number of factors. Some of the factors are listed below.

1. Internet connectivity costs - although connection costs from mobile phones is steadily declining, it is still high enough in many countries to deter customers from using their mobile phones(Kurnia, 2008).

2. Difficult user interface – Human Computer Interface (HCI) issues are key factors in mobile technology acceptance. HCI includes the use and context of computers, human characteristics, computer systems and interface architecture, and the development process (Perry, O’Hara, Sellen, Brown, & Harper, 2008).

3. Lack of awareness amongst customers - many bank customers are not aware of availability of mobile banking or associated benefits. Awareness increases with time and needs considerable promotional efforts(Kurnia, 2008).

4. Limitation in functionality of mobile devices - mobile technologies are still dogged by limitations such as battery life, unreliable network connections, volatile access points, risk of data loss, portability, and location discovery(York & Pendharkar, 2004).

5. Accessibility issue - High speed public Internet access is offering opportunities to get and stay connected in more locations. Today, hotels that cater to business travellers frequently offer in-room high speed
internet access. As these high speed access networks ramp up, mobile applications are growing in popularity (Phifer, 2004).

6. **Security concerns:** Mobile technologies still suffer from question of security, so it may not be suitable to transfer of high confidential financial information. Mobile devices are increasingly becoming a target for virus writers, hackers, and short message service spammers. Over 200 mobile phone viruses have been identified since phones have been able to support PC-like applications such as e-mail, instant messaging and web browsing, and the number is doubling every six months (Blau, 2007). The resulting disruption of service and data theft can cause many problems for consumers, including lost revenues and customer dissatisfaction.

7. **Organisational changes** - Many organisations will need to change their business processes, ways in which information is provided and accessed, working practices and working relationships, working styles and most important of all, changes in the roles and responsibilities and management structure(Caruana, Money, & Berthon, 2000).

8. **Technology overload** - The proliferation of personal information devices such as home computers, mobile phones and digital organizers coupled with the rise of new media such as world wide web, and e-mail have altered the way consumers work and play. These fragmented information channels often result in inefficient working patterns as users switch from device to device and between different media(Evans, 2004).

The market is flooded by a plethora of offerings at the moment but they have not executed to the scale done by EcoCash. Total Service Station Card, Emali by Tetrad, Skwama by Telecel, TextaCash by CABS, Mobile Moola by FBC, OK Card and Kingdom Cell-Card. The products might confuse rather than please the market, if the players are to make any impact in the mobile money, they may have to come up with a united front. This will mean that Telecel and Netone will be allowed to transact on the EcoCash platform. Similar concept done on the ZimSwitch platform where all the member banks can be in a position to share the infrastructure and then compete on service delivery and this will assist in them attaining a critical mass.
2.2.5 M-PESSA success

Geach (2007) states that a mobile phone banking system developed by MNO, Safaricom in Kenya was launched to improve efficiency in the Microfinance by using mobile technology to make financial transactions cheaper, quicker and accessible to a much wider population than was the case. The idea was adopted from South Africa and Korea and it proved to be successful for people with no access to banking or internet installed on a mobile phone. Financial services available present include:

1. Person-to-person (P2P) transfers
2. Individuals to business transfers
3. Cash withdrawal at the registered outlets
4. Receipt or payment of loans
5. Balances in real time and ordering statements

Riivari (2009) researched on mobile banking and found that mobile banking is fast accelerating around Europe and beyond. Another research on mobile and internet banking by (Laforet & Li, 2010) claimed that market penetration and use of internet and mobile banking by young consumers is 30 percent more than the older consumer.

The Zimbabwean and Kenyan situation are similar, with low liquidity in the market and a large number of the unbanked population. The transacting public has lost confidence due to the high rate of bank failures (Gono, 2009). This has had a negative impact on the firm performance in terms of the profitability and customer attrition.

2.2.6 Card based systems

Automated Teller Machine (ATM) is a computerised telecommunication device that provides clients of financial institution with access to financial transactions in a public without the need for a cashier, human clerk or bank teller (Guille & Quinn, 2008). Point of Sale Machine (POS), smaller version of an ATM, the difference is that it has the assistance of a human clerk or bank teller but it enables one to make payments without holding physical cash and notes.
Debit card – allows the card holder to withdraw funds from his account at the issuing bank. Debit cards require a personal identification number (PIN) to be keyed into the terminal before services can be provided. They are mainly used at the Automatic Teller Machines (ATM) and Point of Sale (POS) terminals (Gono, 2009).

Credit Cards- These are generally issued by banks and allow cardholders to obtain cash advances from their accounts and to pay for purchases at the outlets of all participating merchants or service providers. Credit cards like MasterCard and VISA are issued by banks under the licence from International organisations. The international cards can be used locally or internationally. If they are issued for external use, banks have to comply with the certain exchange control requirements that are given the issuance of these cards (ibid).

2.2.7 Backend Systems

2.2.7.1 Product application

Most banks have several different computer applications for their products. In most cases these were developed decades ago and they are called “legacy systems.” There are many problems associated with such systems, including inflexibility in terms of expansion or scaling down, and the rising cost of maintenance (Owens & Robertson, 2007).

Legacy systems often fall short in provision of business intelligence for compliance, sales and management needs and decision making (O'Brien, 2007). This is usually due to data formats used are often incompatible with modern data mining tools. Without data from these core systems the resulting business intelligence is incomplete and misleading (ibid). New product development can also be a challenge as the systems would have to be “hard-coded” even just to make simple product or fee changes, which can be very time consuming and costly. Good customer service for SST is also difficult to achieve because the system is not consistent.
2.2.7.2 Data Warehousing

According to Ayadi (2007), data warehousing can be defined as collecting data from several dispersed sources to build central data storage, so that users can use appropriate data analysing tools to analyse it and convert this data into more meaningful aids for decision making. Data warehouse tools can collect daily transactions both internally and externally, and accumulate, categorize, and store data for further analysis. Business should always seek ways to access, store, maintain, and utilize the enormous data efficiently (ibid).

Data warehousing is very important in designing SST as this will give the benchmark of what services the clients really want and how to attack the market. Most of the financial institutions in Zimbabwe have not done appropriate data mining and hence it has led them to implementing services that are not taken by their clientele base (ITU, 2011).

Figure 2.3 shows some of the databases in the SST set up which can be used to store customer information and if correct data mining tools are used they can become a source of competitive advantage. The databases are connected in a network and information can be extrapolated from the servers and used for e-marketing and strategic alignment.

Figure 2.3: Databases in SST in the banking sector

Source: (O'Brien, 2007)
2.2.7.3 Customer Relationship management

Customer Relationship Management (CRM) are technology enabled management tools which help manage an organization’s relationship with the customers (O’Brien, 2007). CRM systems help to gather/store customer’s data, analyse this data to enable customised marketing and often to semi-automate customer services. According to Shah and Clarke (2009) the main purposes of CRM is often stated as “enriching relationships” with customers to gain greater loyalty, but at times they are used to cut costs of services processes. When using a CRM, customers can move from expensive branch or phone-based services to self-help services over the internet.

There have been numerous CRM failures and successes in literature, as with other new technology and other type of change, success depends on how an organisation manages change process and implements the required processes ((Geach, 2007);(Knorr & Rist, 2005);(Thomas, 2007)). The ability of CRM systems to segment customers also enables business to identify most profitable customers so that marketing efforts can be efficiently targeted at the segment. Failures can be traced to rigid corporate structures and cultures rather than the technology itself. Vendors can also over promise, so organizations planning to implement CRM systems need to evaluate their own needs first and then conduct a detailed evaluation of these systems to meet those needs rather than relying on sales pitch of the vendors (Thomas, 2007).

A major reason why CRM systems may disappoint is that they do not overcome integration problems, as they often have interface with problematic legacy systems (Lester, 2007). Another problem is that CRM can cost millions, and many of its benefits can be hard to quantify and justify in terms of the return on investment. These figures are often calculated on cost saving basis, with possible enrichment of customer relationships, which is, invisible and easily ignored. The evaluation of CRM should be done in multiple dimension accounts such as retention rates, acquisition of new customers and effectiveness of marketing (ibid).

Figure 2.4 above shows how CRM supports the relationship between a business and its customers and this is a three layered approach with the business
managing to acquire, enhancing and retaining customers while the CRM assists in direct marketing, cross-selling and up-selling as well as a proactive service and the internet integrating the solution between partners, the company and the customers.

Figure 2.4: How CRM supports the relationship between a business and its customers?

Source: (O'Brien, 2007)

2.2.7.4 Website Development

In e-banking, the website acts as the bank branch or front end. The main difference is that when customers login they will do most of the work themselves and find themselves without any human assistance (Ayadi, 2007). This creates a positive customer experience which is more critical in the e-banking environment.

E-banking websites and other related systems in SST without the benefit of human guidance are expected to communicate effectively and enhance knowledge and understanding of the sometimes voluminous, and often technical, information involved in financial transaction (Tan & Teo, 2007). To create a positive experience, a great deal of planning, resources and expertise needs to be invested in the development and on-going maintenance of websites.
Table 2.2: Web site design Strategy

<table>
<thead>
<tr>
<th>Web design</th>
<th>Definition / Characteristic</th>
<th>Promotion measures / ways</th>
<th>Merits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informational communication design</td>
<td>This approach is for companies to use the web as a supplement to traditional marketing delivering additional benefits to customers and building relationships with them</td>
<td>1. Putting banking services online. 2. Building broad awareness and image. 3. Using the Web as a cost effective way to augment their core products with related information and service function. 4. Obtaining cost savings from automating routine customer service.</td>
<td>1. Providing large quantities of information to customers. 2. Giving a company an instant global presence and attracting people to one advert, some of them are not the company’s target market but potentially will be. 3. Opening new communication channel enabling enrichment of relationships with customers. 4. All at a reasonable cost.</td>
</tr>
<tr>
<td>On-line Transactional design</td>
<td>This approach is for companies to use the web to construct “virtual business”- independent, profitable ventures that exist only on the internet</td>
<td>1. Creating a retail presence larger than any physical presence could. 2. Creating Virtual business providing extra information in a form competitor cannot imitate. 3. Creating a virtual business that takes a speciality product or collectible and sells it worldwide. 4. Creating a virtual business providing extra information in a form competitors cannot imitate. 5. Creating a virtual business providing convenience to customers that competitors cannot match.</td>
<td>1. Providing a larger or more specialised selection of products than competitors can offer. 2. Providing higher quality and higher quantity information, more economic benefits, more convenience than competitors can offer. 3. Providing a sense of community for customers.</td>
</tr>
</tbody>
</table>

Source: (Goi, 2007)

Table 2.2 suggests that in addition to the customer experience, e-marketing best practise and reliability/responsiveness of the website also play a major part in website success. Customers prefer to have an interactive experience.

2.3 Value creation

According to (Porter, 1985) the Value chain describes the activities within and around an organization, and relates them to an analysis of the competitive strength of the organisation. Therefore, it evaluates which value each particular
activity adds to the organisation products or services. Porter distinguishes between primary activities and support activities. They can be grouped into five main areas: inbound logistics, operations, outbound logistics, marketing and sales and service. Each of these primary activities is linked help to improve their effectiveness or efficiency. The four main areas of support activities are procurement, technology development (Research and development), and human resource management and infrastructure (systems for planning, finance, quality and information systems).

Figure 2.5: Porter’s Value Chain Model for Self Service Technology.
Source: (O’Brien, 2007)

Figure 2.5 shows the value chain for SST and how financial institutions can create a competitive advantage.

Stabell & Fjeldstad (1998) cited in (Sannes, 2008) articulates that in the value shop model, the basic logic value creation is problem solving. Value is created by mobilizing resources and activities to resolve a particular problem. Customer value is not related to the solution itself, but the value of solving the problem. The primary activities of a value shop are cyclical or spiralling process of problem-finding and acquisition, problem solving, choice, execution and control/evaluation (ibid).
In the value network model the basic logic of value creation is linking customers. This value creation can be direct between two customers or indirect where one customer is not directly linked to another but linked through a pool. Value networks rely on mediating technology linking independent customers (Sannes, 2008). The primary activities of a value network are network promotion and contract management, service provision and network infrastructure management.

Network promotion and contract management consists of activities related to attracting and selecting customers and managing customer relationships. Service provision is linking customers to one another and charging for the services provided. Network infrastructure operation consists of related activities to maintaining a physical and informational structure.

According to Sannes (2008), an online replica of the traditional full service bank is best viewed as a value network since the internet does not alter any of the basic characteristics of this value configuration. Network promotion and contract management are necessary in order to recruit new customers into the network and maintain a relationship with the existing customers. Network promotion may include placing banner ads on websites that reach your target groups with links to automated processing of new customers. Contract management applies to changes and renewals of existing contracts (Balachandran, 2004). Service provisioning is offering SST that service enables customers to perform banking services as self-service. Infrastructure operation is running the operation of the self-service platform.

2.3.1 Value network

A value network is facilitating a network relationship between customers. In traditional banking this is usually an indirect function by means of pooling resources in layered and interconnected networks that provide customers with efficient service provision (Sannes, 2008).

According to Meuter, Bitner, Ostrom, & Brown (2005) in a network model, information transparency will drive a standard pricing scheme for commodities. The transactions are simple and either captured from event generating transactions (e.g. electronic bill presentment and payment) or the customer can execute self-service by entering information into standard forms that are
processed automatically by technology. The transactions can be payment, mortgages, loans, insurance and mutual fund (ibid).

Bundling and cross-selling are mechanism that may lead to differentiation. Bundling and alliances are potential strategies to present the situations where transactions are created. Cross-selling of related services is a potential source of differentiation. Operation of layered and interconnected networks is necessary for these strategies.

The table below shows the relationships between the primary activities, transactions and customer services in a value network.

Table 2.3: self –service banking issues in value network configuration

<table>
<thead>
<tr>
<th>Primary activity</th>
<th>Transaction</th>
<th>Customer Service</th>
<th>Self Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>network promotion and contract management</td>
<td>Functions for cross selling and bundling banking services with other services</td>
<td>Functions for maintaining the customer relationship eg by ordering new cards or opening and closing accounts</td>
<td>Customer self-recruiting from clickable banner ads and referential e-mails from friends. Self – configuration of services</td>
</tr>
<tr>
<td>Service provisioning</td>
<td>Standard banking services that are automated or based on forms</td>
<td>Online services that enable customers to monitor their relationship with the bank in terms of status information, history and pending transaction or services</td>
<td>Customer self -training and support in financial services</td>
</tr>
<tr>
<td>Infrastructure operation</td>
<td>Anytime- anytime transaction processing in interoperable systems</td>
<td>Secure access to customer history and transactions</td>
<td>Customer self - training in use of the technology for self-service banking.</td>
</tr>
</tbody>
</table>
lot), high transaction fee (for people who do not use the card much) or a high interest rate (for people who do not revolve their credit card debt). The same strategy could be deployed by the financial institutions in Zimbabwe instead of fixing a high transactional cost.

Berry, Seiders, & Grewal (2007) articulate that an intuitive interface design that is consistent with previous experiences and knowledge will promote adoption and use. A major functional requirement is that the SST must be enabling the customer to complete a transaction or service without any help. Information exchange between the customer and the self-service solution must be interactive with easy access to search functions. The more complex service, the larger is the requirements for information content, its organisation, and availability (Sannes, 2008)

2.3.2 Value shop

In the value shop model the basic logic of value creation is problem solving Cunningham, Young, & Gerlach (2009). Value is created by mobilizing resources and activities to resolve a particular customer problem (Dubelaar, Sohal, & Savic, 2005). Customer value is not related to the solution itself, but to the value of solving the problem. The primary activities of a value shop are cyclical or spiralling process of problem-finding and acquisition, problem-solving, choice, execution and control/evaluation (ibid).

Higher service complexity places higher demands on customer knowledge and skills. Grover & Ramanlal (2008) hypothesises that firstly in addressing problem finding and acquisition, self-service concepts must provide the customer with more tools that support “the diagnosis” of a decision situation, (e.g. how to invest a certain amount of money) or an economic problem (e.g. how changes in interest affect household economy). Access to information on financial services and term is required for this process, at least to reduce uncertainty.

Secondly, the concept must include workflow management that facilitates the generation alternative solutions to the “problem” use of simulation models, templates and wizards are technologies that can be used to generate solutions (Sannes, 2008). The customers will need access to information that can verify whether a potential alternative is a solution or not. Information
benchmarking for decision making becomes critical. In order to use these, clients must have knowledge of financial analysis and full understanding of the self-service concept.

Table 2.4: self-service banking issues in value shop configuration

<table>
<thead>
<tr>
<th>Primary activity</th>
<th>Transaction</th>
<th>Customer Service</th>
<th>Self Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-finding and</td>
<td>Support to the customer in identification of the decision</td>
<td>Pre transaction support in terms of information about financial products and terms</td>
<td>Customer self-training in financial knowledge and financial services and other online support</td>
</tr>
<tr>
<td>acquisition</td>
<td>situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem solving</td>
<td>Problem solving support by templates or wizards that helps the customer to find alternative options</td>
<td>Provide the customer with information that may help in setting decision criteria.</td>
<td>Customer self-training and support in financial analyses plus online support</td>
</tr>
<tr>
<td>Choice</td>
<td>Decision models that aid customers in choosing alternatives</td>
<td>Functions that let the customer evaluate expected outcome in relation to total customer relationship</td>
<td>Customer self-training in financial analyses plus online support</td>
</tr>
<tr>
<td>Execution</td>
<td>Automated services for execution or ordering of financial product</td>
<td>Monitoring of service execution</td>
<td>Customer self-training and support in how to execute a decision in the self-service technology</td>
</tr>
<tr>
<td>Control and evaluation</td>
<td>Functions that allow customers to control the output of service execution and compare it to expectations or a benchmark</td>
<td>Monitoring of service history and benchmarking of decision outcomes, particularly for total portfolio of a customer</td>
<td>Customers self-training in evaluation of financial transaction outcomes and portfolio analysis</td>
</tr>
</tbody>
</table>

Source: (Sannes, 2008)

Thirdly, a customer will need decision models that help in choosing among the alternative solutions. To use these models, the customer must be allowed to define and set the decision criteria to be used in selection of alternatives which requires more knowledge in financial analysis (Sannes, 2008).

Fourthly, when choice has been made, the self-service concept should automate the execution as much as possible (ibid). The support for problem-solving and choice should be able to fully integrate with the execution. Customers should be able to monitor the progress of services that include several steps of that cannot be executed immediately after customer choice.
Finally, a self-service concept should include functions for evaluation and control (ibid). While monitoring the performance of a particular decision, it is at least equally important to support the customer in monitoring its total portfolio of services. Customers may need training to be empowered to perform control and evaluation.

2.4 Competitive forces strategy

2.4.1 Porter’s five forces
According to Porter (1985) as cited in Barney (2008) the nature and degree of the competitive forces in an industry hinge on the following forces:

- threat of new entrants,
- bargaining power of suppliers,
- bargaining power of buyers
- threat of substitute products or services and
- rivalry among competitors

The strongest competitive force or forces determine the profitability of an industry and so are of greatest importance to the strategic formulation. Every industry has an underlying structure, or set of fundamental economic and technical characteristics, that give rise to these forces. Implicitly, this work has adopted two simplifying assumptions. Firstly, these environmental models of competitive advantage have assumed that firms within an industry are identical in terms of strategically relevant resources they control and the strategies they pursue and second. These models assume that the resource heterogeneity will be very short lived because that firm has to implement their strategies are highly mobile (ibid).

However, according to Brandenburg & Nalebuff (1995) business is not about winning or losing, companies can succeed without requiring others to fail or they can fail miserably no matter how well they play if they make the mistake of playing the wrong game. In the financial sector, banks can actually leverage on using their competitor’s infrastructure (POS and ATMS) through as switching network there by reducing their capital and operational expenditure.
2.4.2 Porter’s three generic strategies

Porter(1985) proposes that competitive advantage is to be gained from one of three generic strategies

- **Differentiation** – making your product or service in some way different from that of your competitors.
- **Cost leadership** – generates an advantage by producing at a lower cost, thereby increasing profit margins.
- **Focus**- concentrating on a particular area of the market where the organisations aims to outperform competitors by increased knowledge and skills.

In an attempt to generate competitive advantage from SST, a number of authors have concentrated on these generic strategies, with cost leadership and differentiation being the most favoured approaches ((Ayadi, 2007); (Berger & Gensler, 2009); (Farrell & Klemperer, 2007); (Jayawardhena & Foley, 2007); (Kurnia, 2008)). According Jayawardhena & Foley (2007), cost leadership strategy has been dominant use of technology by the UK banking sector, using such approaches as automated banking to reduce the overall cost base, largely consisting of personnel costs. The use of information to differentiate has been applied, for example, by insurance companies to differentiate the offering of an essentially service based product. In Germany this has resulted, in ten years leading to the new millennium; in moving away from high street based insurance agencies towards telephone based organisations such as Schengen Travel Insurances (Berger & Gensler, 2009).

2.4.3 National payments system

The National Payment System (NPS) is an act of the Reserve Bank of Zimbabwe Chapter 22:10 of 1964 which empowers it to organise and provide facilities for the collection and clearance of cheques and similar instruments (Gono, 2009). Commercial law has influenced by both Roman – Dutch and English law is generally used to regulate payment systems in Zimbabwe. Banking payments services are governed by various acts including the following:
• The banking Act, Chapter 24:01 of 1965
• The Bills of Exchange Act, Chapter 14:02 of 1895
• The Building Societies Act, Chapter 24:02 of 1965
• The Post Office Savings bank Act, Chapter 24:02 of 1965
• The Reserve bank Act, Chapter 24:02 of 1965
• The Companies Act, Chapter 24:03 of 1952
• The Insolvency Act, Chapter 6:04 of 1975

Electronic and card payment methods are currently controlled by private contracts between the banks and the clients, such contracts most however, comply with the provision of the Consumer Contracts Act Chapter 8:03 of 1994 and the Contractual Penalties Act Chapter 8:04 of 1992 which generally require fair play in the formation of contracts (ibid).

ZimSwitch is the National Electronic Switch for their ATM and POS of Zimbabwe that serves not only the financial institutions who are its members and users but also provides essential service to their customers. The number of financial institutions is as shown below in table 2.5 by category

**Table 2.5: Financial institutions in Zimbabwe**

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Banks</td>
<td>18</td>
</tr>
<tr>
<td>Merchant Banks</td>
<td>4</td>
</tr>
<tr>
<td>Finance Houses</td>
<td>0</td>
</tr>
<tr>
<td>Discount Houses</td>
<td>1</td>
</tr>
<tr>
<td>Building Societies</td>
<td>4</td>
</tr>
<tr>
<td>Savings Bank</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
</tr>
<tr>
<td>Asset Management Companies</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: (Gono, 2009)

Most of the banking institutions suffered from capital erosion as the balance sheets were eroded in the hyperinflationary environment resulting in diminution following the change-over to the multi-currency system (ibid). This affected the operations of many financial institutions as they had negative working capital. The insignificant use of the local currency rendered the Central Bank domestic currency lender-of-last resort facility redundant.
In game theory there are two types of games. According to Brandenburg & Nalebuff (1995), firstly the rule based games where the players interact according to specific “rules of engagement”. These rules are derived from contracts, loan covenants and trade agreements. Secondly, freewheeling games, players interact without external constraints for example business may create value in transacting in unstructured fashion (ibid). ZimSwitch enabled the players on the switched network to share the infrastructure through coming in as an issuing bank or as an acquiring bank. This means that the banks do not need to install POS machines in every shop but they can leverage on those that have already installed the devices. NMB has mastered this tactic well, as they do not have any POS devices but rely on the ZimSwitch POS machines. This will lower their capital and operational expenditure.

2.5 Retention

Self-service popularity is a result of decades of innovation in pursuit of lower cost and higher quality propelled by the advancement of information technology. According to Menon (2003), the provision of a multi-delivery channel has become a competitive necessity. Several literature studies have found a positive co-relationship, noting that self-service and online customers have higher repurchase ratios than other full service and offline counterparts ((Berry, Seiders, & Grewal, 2007); (Campbell & Frei, 2010); (Dorner, Gassmann, & Gebauer, 2011);(Hitt & Frei, 2002)). Moving from personal service to self-service has been shown to have a negative effect on bonding and loyalty with low complexity transactions and relationships ((Cunningham, Young, & Gerlach, 2009);(Selnes & Hansen, 2003)). This evidence indicates that though the system has brought about many positive benefits in terms of repeat purchases, it brings about negativities which have a greater long term negative impact in the form of lost brand loyalty, which is a great asset in business.

Figure 2.6 illustrates the interrelationships in a customer-focused business. Intranets, extranets, e-commerce websites and web-enabled internal business processes from the invisible IT platform that supports this e-business model. This enables the business to focus on targeting the kinds of customers it really wants. A customer focused business helps their e-commerce customers to help themselves, while also helping them do their jobs.
Fig 2.6: How customer focused business creates value and loyalty in e-commerce?

Source: (O'Brien, 2007)

2.6 Impact of switching costs

2.6.1 Switching costs
According to Choi, Karmarkar, & Rhim (2007), customers switching costs reduce when investments specific to their current providers must be duplicated for new providers. There are two types of switching costs that are relevant in the banking sector, these are start-up costs and the learning costs. Buell, Campbell, & Frei, (2010) states that start-up costs exist in channels where customers must set up a product for its initial use, for example in retail banking, online bill payment imposes start-up costs by requiring upfront data entry manual by its users.
The learning costs include the time and effort required to acquire the necessary skills to use a service effectively (ibid). Online banking systems impose learning costs, as customers must familiarise themselves with the bank’s web interfaces in order to make efficient use of this service. After start-up and learning costs have been expended, switching to a new competitor requires duplicated effort elsewhere, thereby creating a barrier for defection.

Buell, Campbell, & Frei (2010) suggest that while bill payment and online banking impose new switching costs on customers, other channels like Automated Teller Machines (ATM) and phone banking which is basically standardized between the firms and require no significant start-up investment are not likely to impose such switching costs.

2.6.2 Satisfaction effects

SST has been found to promote customer satisfaction in a number of settings. Marzocchi & Zammit (2006) postulate that 68 per cent of those satisfied with the SST reported that their satisfaction was driven beyond full service offering. In another study done by Xue, Hitt, & Harker (2007) shows those self-service customers were found to be both more efficient and more satisfied than their full service counterparts. Ease of use, service performance, perceived control, and conveniences have been shown to be significant drivers of satisfaction in online service settings (Yen, 2005). Multiple channel interaction, including transactions conducted in self-service channels, has led to the positive disconfirmation, which has led to increased satisfaction and loyalty (Wallace, Giese, & Johnson, 2004).

More than 78% customers in self-service settings have been found to report technology failures, service design problems, process failures, technology design problems and customer driven failures as sources of dissatisfaction (Meuter, Ostrom, Bitner, & Roundtree, 2003). Customers with technology anxiety are less likely to have a positive self-service experience, even when things go well. Furthermore, while negative feelings towards specific employees diminish a customer’s global opinion of the brand, they have also shown to increase SST usage, which suggest an adverse selection effects may exist among self-service customers (Curran & Meuter, 2005).
If switching costs and satisfaction effects jointly influence the relationship between self-service channel usage and customer retention, then both elements must be considered in order to understand a channel net impact on retention. Table 2.6 shows the interplay of these factors, in the first quadrant; negative retention is predicted, due to the absence of the switching barriers and negative satisfaction effects. In quadrant two, positive satisfaction counterbalances the absence of the switching costs, leading to a net impact on retention that is contingent upon the drivers’ relative effects. In the third quadrant, the outcome is also contingent on the relative strength of each effect as high switching cost barriers endeavours to overcome negative satisfaction effects. Finally in the fourth quadrant, switching cost and satisfaction effects reinforce one another leading to a positive net impact on retention.

Source: (Buell, Campbell, & Frei, 2010)
2.7 Chapter summary

Firstly, they need to satisfy customer requirements that are complex and ever-changing. Secondly, they need to deal with increased competition from old as well as new entrants coming into the market. Third, they need to address the pressures on the supply chain to deliver their services quickly. Finally, they must continually develop new and innovative services to differentiate themselves from competition, as having a large branch network is no longer seen as a source of competitive advantage.
3.0 Research Methodology

3.1 Introduction
In this paper, self-service banking is limited to the retail segment which is very different from electronic integration in corporate segments (Retail is defined as banking services for small and medium sized enterprise (SME) and private customers (Sannes, 2008)). The researcher will use FBC Bank, a registered financial institution as a case study.

This will provide an introductory discussion on the research methodology and research design strategy and research instruments to be used in the study. Methods of data collection and data analysis for the study are outlined as well as the techniques which the researcher applied to ensure that the objectives of the project would be achieved.

3.2 Research Design
Research design is the conceptual structure within which research will be conducted; the function of research is to provide for the collection of relevant information with minimal expenditure of effort, time and money (Kumar, 2005). This research has focused on a methodological approach primarily on the philosophical assumptions that guide qualitative, quantitative and mixed method research approached (Bahl & Milne, 2006). The researcher will conduct the study in the context of the retail banking industry in Zimbabwe.

3.2.1 Research philosophy
This research belongs to a branch of computer science called e-commerce. The post-positivist and interpretivist paradigm have been discussed in terms of their ontological, axiological and epistemological assumptions about nature, values and epistemological assumptions that guide research (Bethlehem & Biffignandi, 2012). The positivist ontology assumes the existence of multiple realities that are socially constructed and is focused on understanding behaviour rather than predicting it. It is argued that mixed method research with pragmatic approach does not align itself with a single system or philosophy (Creswell & Piano,
Mixed Methods research have become the most popular term for mixing qualitative and quantitative data in a single study (Johnson, Onwuegbuzie, & Turner, 2007). Mixed Methods research will be used in this study.

Table 3.1: Mixed Research Methods

<table>
<thead>
<tr>
<th>Rationale</th>
<th>Description</th>
<th>Design type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangulation</td>
<td>Qualitative and quantitative combined to triangulate findings to be mutually corroborated</td>
<td>Concurrent</td>
</tr>
<tr>
<td>Offset</td>
<td>Combining strands offsets their weakness to draw on the strength of both</td>
<td>Concurrent</td>
</tr>
<tr>
<td>Completeness</td>
<td>Bringing together more comprehensive account if both quantitative and qualitative research is employed</td>
<td>Exploratory, explanatory and concurrent</td>
</tr>
<tr>
<td>Process</td>
<td>Qualitative provides an account of structures in social life but qualitative provides research provides sense of process</td>
<td>Exploratory and explanatory</td>
</tr>
<tr>
<td>Different Research questions</td>
<td>Qualitative and quantitative each answers different questions</td>
<td>Concurrent</td>
</tr>
<tr>
<td>Explanation</td>
<td>One is used to help explain findings generated by the other</td>
<td>Explanatory</td>
</tr>
</tbody>
</table>

Source: (Harrison & Reilly, 2011)

According to Bahl & Milne (2006) exploratory designs were the most common type of designs used, they are useful for exploring relationships when studying variables are unknown (Harrison & Reilly, 2011). Qualitative data is data in numerical form, often derived from questionnaires or structured interviews.

The figure 3.1 below is illustrating the integrated research design. The steps for the quantitative method are sequential while those for qualitative par are evolving. During the research process the researcher followed all the steps of the integrated approach.
Figure 3.1: Integrated Research Design

Quantitative - steps

1. Research problem
  的选择研究方法

2. Theoretical Framework
   （识别与定义概念）

3. Formulate research questions

4. Choose research design
   准备材料收集
   - 设计并撰写提案

5. Develop instruments

6. Collect data

7. Statistically analyze data
   - 文献研究
   - 调查问卷

8. Interpret statistical results

9. Report writing

Qualitative - evolving

Choice of research

Preparing for material collection

Collect material

Source: Bahl & Milne (2006)
3.2.2 Research Strategy

Creswell & Piano (2007) postulates that research strategy refers to the actual methods that will be used to collect data in the time covered by the research, researchers participation and the characteristics of the sample.

According to Yin (2003), the most important condition for differentiating among the various research strategies is to identify the type of research questions being asked. There are five main research strategies used when collecting and analysing empirical evidence.

- Experiment
- Survey
- Archival analysis
- History
- Case studies

Table 3.2: Different types of Research Purposes

<table>
<thead>
<tr>
<th>Research Strategy</th>
<th>Forms of Research questions</th>
<th>Requires Control over behavioural system</th>
<th>Focus on contemporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, How many, How much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival Analysis</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: (Yin, 2003)

The strategy to be used depends on the characteristics of the stated problem and the research questions. The rationale of the case study is to assemble information as comprehensive and systematically as possible about the selected organisation (Yin, 2003) in this case FBC Bank. The researcher will therefore use the Case study approach; with special emphasis on the retail banking in Zimbabwe. In addition the strengths of case study approach is its ability to provide rich descriptive detail, conveying a feeling of what it is like to experience the organisation (ibid). There are several reasons why the FBC Bank is ideal for this study:
FBC Bank employs multiple channels to serve their clients. These range from full service teller interactions to completely automated self-service channels such as online banking and ATM.

FBC Bank customers are a varying group with diverse group with varying needs preferences and experiences. This variability creates a rich environment in which to analyse the impact of operational decisions on customer behaviour.

FBC Bank captures and stores a considerable amount of data about their customers, for strategic and regulatory purposes.

Berinsky (2008) states that a case study approach allows several data collection methods to be used such as questionnaires, interviews, observations and documentary analysis. The researcher was able to tap into these resources for empirical analysis.

However, frequent criticism of case study is that its dependence on a single case renders it incapable of providing a generalizing conclusion.

### 3.2.3 Population

According to Berinsky (2008), population can be defined as all people or items with the characteristic under study. There is never enough resources to gather information from the population, hence finding a representative sample (or subset) of that population. A sample for the study was based upon availability of respondents. FBC members of staff and non-members of staff were used as subjects as such they are a representative of the consuming population. They were judgement samples of educated individuals. All the participants could read, understand, and evaluate a simple questionnaire on consumer issues.

### 3.2.3.1 Sampling Techniques

Traditional sampling methods can be divided into two categories: probability and non-probability sampling (Saunders, Lewis, & Thornhill, 2003). Probability sampling is most commonly associated with survey based research where the researcher needs to make inferences from the sample about a population to answer the research questions or to meet the research objectives.
3.2.3.2 Probability sampling
Crawshaw & Chambers (2001) postulate that probability sampling is referent to as random sampling: in which all possible subjects in the samples are equally likely to be selected. A probability sampling scheme is one in which every unit in the population has a chance (greater than zero) of being selected in the sample, and this probability can be accurately determined (Cohen & Mrion, 1999).

There are five subsets of probability sampling and these include

- Simple Random Sampling
- Systematic Sampling,
- Stratified Sampling,
- Probability proportional to Size Sampling, and
- Cluster or Multistage Sampling.

According to (Bethlehem & Biffignandi, 2012), they all have two things in common:

- Non zero probability of being sampled
- Random selection at some point

3.2.3.3 Simple random Sampling
In simple random sample, there is equal probability for all subset of a frame, the frame is not subdivided or partitioned (Corbetta, 2003). Bias is minimized and results simplified. It becomes easy to estimate the accuracy of the results.

Simple Random Sampling (SRS) is vulnerable to sampling error because the result sample result does not reflect the makeup of the population due to the randomness of the selection process (Berinsky, 2008). Investigators are interested in research questions specific to subgroups of the population. For this reason, it was not used in the case study for FBC.

3.2.3.4 Stratified Sampling
According to Heese (1995), the frame can be organised by these categories into separate “strata.” Individual stratum is sampled as an independent sub-population, randomly selected. The potential benefits to stratified sampling are as follows, dividing the population into distinct, independent strata can enable
researches to draw extrapolations about explicit subgroups that might be lost in a more comprehensive random sample (Long, 2008). Exploiting a stratified sampling method leads to more proficient statistical estimates. If a stratified sampling methodology does not lead to augmented statistical efficiency, this tactic will be more efficient simple random sampling (Crawshaw & Chambers, 2001). Data is freely available for individual, pre-existing strata within a population than for the overall population; using a stratified sampling approach will be more expedient than aggregating data across groups (Kumar, 2005). Each stratum is an independent population, different sampling approaches are applied to different strata.

Berinsky (2008) states that the drawbacks of using stratified sampling to include the identification and implementation of this approach to increasing the cost and complexity of sample. The drawbacks also include examining multiple criteria, stratifying variables may lead to some not others, further complicating the design, and potentially reducing the utility strata (Yin, 2003). Finally, and stratified sampling can hypothetically require a larger sample that would other methods (Harrison & Reilly, 2011).

According to Freedman, Pisani, & Purves (2007), a stratified sampling approach is most effective when three stated conditions are met

- Variability with strata are minimized
- Variability between strata are maximised
- The variable upon which the population is stratified is strongly correlated with the desired variable

Advantages

- Focuses on important sub-populations
- Usage of different sampling procedures
- Improves the accuracy/estimation of estimation
- Balance of statistical power of tests of differences between strata (Creswell & Piano, 2007)
Disadvantages

- Difficult to select relevant stratification variables
- Is not convenient when there are no homogeneous subgroups
- Expensive (Bethlehem & Biffignandi, 2012)

The researcher will use stratified sampling techniques for the case study, this is because there are two subsets, the members of staff and the non-members of staff who make part of the consuming public. The members of staff are forced to use the e-channels as they have their salaries deposited into the FBC bank account and they have to use internet banking facilities or card based services to transfer the money from the shadow account into the operational account. This will distort the data as it means that the channel uptake is very high, yet it is only congested by staff members who are not charged transactional costs.

3.2.3.5 Non-probabilistic sampling

Non-probability sampling provides a range of alternative techniques based on researcher subjective judgement (Bartlett, Kotrlik, & Higgins, 2001). The researcher uses the subjective methods such as personal experience: convenience expert judgement to select the element in the sample. Some of the elements of the population have no chance of selection. This involves the selection of elements based on expectations regarding the population of interest, and it forms the criteria for selection, hence because the selection of elements is non-random, non-probability sampling does not allow the estimation of sampling errors (Corbetta, 2003). Such conditions will give rise to the exclusion bias and places limits the information a sample can provide about the population. There is limited information about the relationship between samples and population is limited, makes it difficult to infer from the sample to the population.

The three commonly used non–probability sampling methods: convenience sampling, judgement sampling and quota sampling. Judgement sampling involves the choice of subjects who are in the best position to provide the information required (ibid).
3.2.3.6 Cluster sampling
Defined as selecting respondents in groups (Bahl & Milne, 2006), cluster sampling is applied as multistage sampling. Cluster sampling is a complex form where two or more level units are embedded in the other. The first stage comprises construction of clusters that will be used to sample. The second stage, a simple primary unit will be randomly selected from each cluster. This is followed by selection of clusters.

Multistage sampling reduces sampling costs, where the population list needs to be constructed (before other sampling methods are applied).

3.2.3.7 Quota sampling
Population is first segmented into mutually exclusive sub-groups. Segments from a specific proportion can be selected using judgment (Long, 2008). The sampling selection of the sample is non-random and the weakness is that samples may be biased because not everyone is given a chance to be selected (Freedman, Pisani, & Purves, 2007).

3.2.3.8 Convenience sampling.
Non-probability sampling which involves the sample being drawn from that part of the population, the population is selected because it's availability (Corbetta, 2003). It may be through meeting the person or including a person or including a person in the sample when one meets then or chosen by finding them through technological means such as the internet or through the phone. The researcher cannot scientifically make generalizations on the sample about the total population. The researcher will use convenience sampling to collect data.

3.2.3.9 Sampling errors and biases
Sampling errors and biases are included by the sample design. They include:

- Selection bias: when the true selection probabilities differ from those assumed in calculating the results.
- Random sampling error: Randomly variation in the results due to the elements in the sample being selected at random (Saunders, Lewis, & Thornhill, 2003).
3.2.3.10 Non random sampling errors

These are errors which can impact the final survey estimates, caused by problems in data collection, processing or sample design, they include:

- **Over coverage**: Inclusion of data from outside the population.
- **Under coverage**: Does not include elements in the population
- **Measurement error**: The respondents will misunderstand the research questions or find it difficult to answer them
- **Processing error**: Mistakes in data coding
- **Non response**: Failure to obtain complete data from all selected individuals (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2009).

Two major types of no response exist: unit non response (referring to lack of completion of any part of the survey) and item non response (submission or participation in survey but failing to complete one or more components of the survey)

3.2.4 Data collection

3.2.4.1 Data collection methods

Heese (1995) defined data collection instruments as tools used to collect data from respondents, these tools can be in form of experiments, observation, interviews or questionnaires. The purpose of data collection is to obtain information to keep on record, to make decision about important issue, to pass information on to others (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2009). The researcher will use customer-level satisfaction data, gathered from the questionnaires, personal interviews and service channels operational expenditure information provided by the bank following our period of observation.

3.2.4.2 Questionnaire

A questionnaire is a form containing a list of questions that respondents are requested to answer. Questionnaires include all data collection techniques in which each person is asked to responds to the same set of questions in a
predetermined order. Questionnaires therefore include structured interviews and unstructured interviews (Bethlehem & Biffignandi, 2012).

The questionnaire will consist of 5 sections

   a) Demographics/ Administrative

This section covered the fixed constants which were used in the hypothesis testing; there are gender, age, marital status, designation, annual income, and educational level.

   b) Internet and Mobile technology Accessibility.

This section looked at the accessibility of internet technology to the customer both at home and at work. The researcher was interested in looking at the mobile and internet penetration rate in the residential areas as well as the reliability of the service providers.

   c) Traditional banking system usage

The researcher analysed the usage of the traditional banking systems, this is the customer-to –teller relationship. The researcher was interested in the major reason why customers visited the banking hall and the frequency of switching banks.

   d) Awareness of SST

The section evaluated if the customer is aware of the SST and what it is. It also looked at the reasons why the customer does not use a particular SST.

   e) Usage of SST

The researcher was interested in finding the actual usage of a particular channel of the SST and the services that the customers frequently use. This section also focused on the levels of satisfaction on the channels as well as the attributes that are important to the customer in choosing an SST.

   f) SST as a source of competitive advantage
This section focused on the comparison of the financial institutions that use the same technology and how the customer rates the financial institution, the likely continuation of using the SST and the recommendations of how to better the service.

3.2.4.3 Face-to-face interviews

- Suitable for locations the questionnaires have a high chance of not coming back
- Potential for interview bias.
- Easy to manipulate by completing multiple times to skew results.

The researcher used the face-to-face interview techniques with some of the executives both from FBC and the consuming public. This assisted the researcher in looking at the facial expressions and non-verbal movement. The researcher got some information on how to improve the services and the things that were being wrong by the financial institutions.

3.2.4.4 Mixed methods survey

Researchers can combine several methods for data collection. The researchers approach the targeted banking halls to leave the hard copies of the questionnaires and sent willing participants questionnaires by e-mail. With the introduction of computers to the survey process, survey mode now includes combinations of different approaches or mixed-mode designs (Bahl & Milne, 2006). Data will be collected from mixed-mode surveys from both primary and secondary sources. A total of 150 questionnaires will be administered to respondents. The researcher will distribute 50 questionnaires to the FBC staff members and 100 Questionnaires to non-staff members. This is due to the earlier stated challenge whereby the staff members are forced to use the e-channels due to the fact that they receive their salaries in shadow accounts and hence they have to transfer the money into operational accounts by use of either card based systems or internet banking. Data was also collected using personal interviews from the executive management of the organisation and from other stakeholders.
3.3 Research procedure
Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample (Bartlett, Kotrlik, & Higgins, 2001). Sample sizes are judged based on quality of the resulting estimates.

3.3.1 Estimating means
The estimator of proportion is $\hat{p} = \frac{X}{n}$; where $X$ is the number of “positive observation. When the observations are independent, this estimator has a scaled binomial distribution. The maximum variance of this distribution is $0.25/n$, which occurs when the true parameter is $p=0.5$. According to Crawshaw & Chambers (2001), for sufficiently large $n$ the distribution of $\hat{p}$ will be closely approximated by a normal distribution with the same mean and variance. Using this approximation, it can be shown that around 95% of this distribution's probability lies within 2 standard deviations of the mean.

3.3.2 Cumulative distribution.
Considering two hypothesis, a null hypothesis and alternative hypothesis $H_0: \mu=0$ and $H_a: \mu=\mu^*$

The smallest significance difference, $\mu^* > 0$. This is the smallest value for which we care about observing a difference. If we wish to reject $H_0$ with probability of at least 1-\(\beta\) when $H_a$ is true and reject $H_0$ with probability $\alpha$ when $H_0$ is true:

If $z_{\alpha}$ is the upper $\alpha$ percentage point of the normal distribution, then

\[
\Pr \left( x > \frac{z_{\alpha} \sigma}{\sqrt{n}} | H_0 \text{ true} \right) \geq \alpha \quad \text{and so Reject } H_0 \text{ if our } x \text{ is more than } \frac{z_{\alpha} \sigma}{\sqrt{n}} \text{ (Freedman, Pisani, & Purves, 2007).}
\]

3.4 Data processing, analysis and presentation
Data collected from the questionnaires was edited and coded. Statistical Package for Social Science (SPSS version 16) was used as the statistical analysis tool. The data was cleaned by running frequencies to remove inconsistence in the responses. The questionnaire was tested for reliability using Cronbach’s Alpha. The research findings were presented using tables, bar graphs, histograms and cross tabulations.
3.5 Research limitations

For the purpose of this research, SST is defined as technological interface that allows customers to produce services independent of direct service employee involvement (Meuter, Bitner, Ostrom, & Brown, 2005). The list of SST’s was drawn from a list of exemplary SST’s (Zeithaml & Bitner, 2006). A total of 4 were selected:

- Internet banking
- Mobile Banking
- Card Based services
- Interactive voice response (telephone Banking)

The researcher considered three measures of performance:

- Profitability
- Channel utilization
- Service quality and retention

Due to service’s four distinctive characteristics of intangibility, inseparability, heterogeneity and perishability, it is said to be harder to evaluate (Gremler & Brown, 2006). Service quality is an important determinant to lead services different and gain a lasting competitive advantage. According to Page & Spreng (2007), channel profitability, utilization and retention are better are indicators performance.

Other limitations to the research and these are as follows:

- **Lack of knowledge of technical terms** – some people may not understand the technical language used and hence length explanations may be needed
- **Access to Information** - some people maybe be willing to provide the required information. Some information may not be given out by FBC fearing corporate espionage.
- **Ethical considerations** - information gathering should not violate respondent’s rights
• **Resources** - Time, finances are limited and hence the research has mainly focused on the Harare branches.

3.5 Chapter summary

Mixed methods approach will be used as a research paradigm, Questionnaires and personal interviews were used to collect the data from respondents and total of 150 questionnaires being administered.
Chapter Four

4.0 Results and analysis

4.1 Introduction
This chapter represents research findings and discusses results from both primary and secondary data. These findings and the discussion provide the basis on which conclusions and recommendations of the study will be made. The major issues that were discussed look at the research objectives of the subject matter which is the assessment of SST in relation to firm performance.

4.2 Reliability testing
The questionnaire’s reliability testing was done using Cronbach’s alpha. This is commonly used as a measure of internal consistency or reliability of psychometrics test score for a sample of examinees (Mellenbergh, 2008).

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.721</td>
<td>70</td>
</tr>
</tbody>
</table>

Cronbach’s alpha will generally increase as the inter-correlations among test items increase, and this is thus known as internal consistency estimate of reliability of test scores (ibid). The Cronbach’s Alpha test is means that the questionnaire falls with the acceptable range.

4.3 Analysis of primary data

4.3.1 Response rate
The number of questionnaires distributed was 150 questionnaires using stratified sampling techniques. There were 50 questionnaires distributed to FBC staff and 100 questionnaires to external customers. This was done to so that bias could be eliminated as the internal staff members can end up supporting their brand and product.
Table 4.2: Customer Response rate

<table>
<thead>
<tr>
<th>Customer Group</th>
<th>Questionnaires Presented</th>
<th>Questionnaires Received</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff members</td>
<td>50</td>
<td>35</td>
<td>70%</td>
</tr>
<tr>
<td>Customers</td>
<td>100</td>
<td>82</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
<td><strong>117</strong></td>
<td><strong>78%</strong></td>
</tr>
</tbody>
</table>

The table above shows the response rate of the questionnaires and the response rate was high as a result of researcher’s ability to make constant follow ups using modern communication techniques such as e-mail, mobile phone and personal visits. The branch managers and the operations managers stationed at the various selected branches played a pivotal role in ensuring that the customers signed the questionnaire.

Interview for senior members of the staff was also carried out as well as some executives afforded to take time off to air out their views pertaining to the SST performance and strategies.

Table 4.3: Gender response

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Male</td>
<td>58</td>
<td>49.6</td>
<td>49.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>59</td>
<td>50.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>117</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The percentage of males who responded is 49.6 per cent as compared to the 50.4 per cent of the females. The gender response was more of balanced.
4.3.2 Annual income

The annual income for the sampled population showed that more than 50% of the populations have combined annual income of less than $20,000 per annum. At least 30.8% of the population earned less than $10,000 annually hence the bank was focusing on the low income earners, this could be because most of the companies are not able to perform well and hence they end up paying what they can afford and a greater part of the working class is civil servants who earn a monthly salary of less than $300 per month.

Figure 4.1 shows the incomes annual incomes of the respondents.

4.3.3 Reasons for using the bank

The figure 4.2 below shows the main reasons why the customers visited the banking hall. More than 80 per cent of the customers visited the banking to withdraw cash. This reason can if matched with annual income figure 4.1 above shows that there is an inclination towards a cash society and the liquidity in the market is low. The customers go to the bank to withdraw all the money in the account leaving no reasons to use the SST. Most of the respondents are low
income earners who are not interested in any other financial services except to withdraw the hard earned cash. The level of confidence in the banking sector is very low as most people have lost their money due to bank closures. This has eroded the culture of saving and the people feed hand-to-mouth.

Figure 4.2 Visiting the banking hall

Less than 20 per cent of the customers go in to the banking hall to either deposit cash, do a financial advice inquiry or any other business. According to Howard & Worboys(2007), price and cost saving is the big advantages favouring the use of SST. However, in this study, the researcher discovered that more than 80 per cent of the reason why customers visited the bank was more to do with withdrawing preferring to incur the high service bank charges rather than enjoying the low charges as offered by SST. This can be supported using fig 4.1 above showing the annual income and more than 50 per cent earning less than an annual income of less than $20,000. The researcher then concluded that most of the households could not afford to keep the money in the bank and they withdrew all the money.
More than 70 per cent of the respondents used the bank less than 3 times a month. This means that the banking halls are only congested during the pay days and then have little activity for the rest of the month. The respondent concluded that the banks could use flexible employment methods and concentrate on customer service delivery during the times when the banking halls had very little activity.

### 4.4 Awareness and usage

**a. Research question:** What is the current usage of SST in the financial sector?

**b. Research question:** What is the level of awareness of the SST in the financial sector?

#### 4.4.1 Card based system

The card based systems (ATM and POS Machines) showed that 30.8 per cent of the customers with cards use them daily due to the convenience that they produce in terms of purchasing goods in the shops. The researcher discovered that most of the consumers use the cards in purchasing goods in shops due to the fact that there is hardly change in the shops and this at times leads to the customers getting sweets as change and credit notes, which they sometimes misplace.
The national payment systems such as ZimSwitch penalize the banks on a month to month basis that will have failed to attain an agreed Service Level Agreement of uptime and successful transactions of less than 98 per cent, and hence this has increased the uptime on the service delivery making it very reliable which mitigating the reputational risk on the ZimSwitch branded cards as an unreliable network. This has helped in building the confidence of using card services.

The table 4.4 shows a cross tabulation between Card based usage, between age, gender, income and income testing the hypothesis using Monte Carlo 2 Side, 95 percent confidence interval. The p values were as follows

<table>
<thead>
<tr>
<th>Channel usage</th>
<th>Age</th>
<th>Gender</th>
<th>Education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card based System</td>
<td>.546</td>
<td>.003</td>
<td>0.01</td>
<td>.000</td>
</tr>
</tbody>
</table>

The p values are more than 0.05, hence we conclude that age is not positively correlated to card based channel use and accept the null hypothesis. The researcher concluded that it is not only the young who are now technologically astute but also the old, and hence the financial services sector should aim at targeting all the groups. According to Becker (2005) the older consumers have
increased SST usage has by over 56 percent due to the convenience that it brings. However Laforet & Li (2010) claims that the younger generation uses card-based services more than the older generation. This is contradictory to the results that the researcher found and concluded that there is an uneven distribution in the usage of card based services. The researcher concluded that the financial institutions needed to target all the age groups despite the age factor.

However, gender, education and income are positively correlated to card based channel use and we fail to accept the null hypothesis. The researcher concluded that women used the card-based service more that the male counterparts as they do more shopping than men. Solomon, Marshall, & Stuart (2008) state that 86 per cent of the buying decisions in the house are done by the women, they have a higher propensity to spend and they are spontaneous buyers, banks should target them as a strategy. The researcher also concluded that those who are highly educated and have a higher income tend to use the SST more than those who are not. This is due to the complexity of the interfaces and that those who are more educated appreciate the convenience that is brought about by the SST.

This is as supported by literature ((Ayadi, 2007); (Berger & Gensler, 2009) (Howard & Worboys, 2007)).

Table 4.5: ZimSwitch Financial rankings for May 2012

<table>
<thead>
<tr>
<th>Rank</th>
<th>Financial Institution</th>
<th>Total Issued</th>
<th>Total Issued</th>
<th>Total Issued</th>
<th>OK Issued</th>
<th>Not OK Issued</th>
<th>% OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>POSB</td>
<td>24,424</td>
<td>611</td>
<td>33,283</td>
<td>974</td>
<td>27</td>
<td>99.92%</td>
</tr>
<tr>
<td>2</td>
<td>FBC Building Society</td>
<td>9,855</td>
<td>365</td>
<td>9,490</td>
<td>9,419</td>
<td>71</td>
<td>99.25%</td>
</tr>
<tr>
<td>3</td>
<td>FBC Bank</td>
<td>22,262</td>
<td>2,844</td>
<td>20,418</td>
<td>99.18%</td>
<td>65</td>
<td>99.18%</td>
</tr>
<tr>
<td>4</td>
<td>Stanbic</td>
<td>11,334</td>
<td>987</td>
<td>10,344</td>
<td>99.18%</td>
<td>59</td>
<td>99.18%</td>
</tr>
<tr>
<td>5</td>
<td>NBICA</td>
<td>6,251</td>
<td>567</td>
<td>5,694</td>
<td>99.18%</td>
<td>46</td>
<td>99.18%</td>
</tr>
<tr>
<td>6</td>
<td>ZB Bank</td>
<td>22,422</td>
<td>1,260</td>
<td>21,162</td>
<td>99.18%</td>
<td>237</td>
<td>99.18%</td>
</tr>
<tr>
<td>7</td>
<td>Trust Bank</td>
<td>5,385</td>
<td>563</td>
<td>4,820</td>
<td>99.18%</td>
<td>68</td>
<td>99.18%</td>
</tr>
<tr>
<td>8</td>
<td>NHB</td>
<td>10,911</td>
<td>987</td>
<td>9,924</td>
<td>99.18%</td>
<td>159</td>
<td>99.18%</td>
</tr>
<tr>
<td>9</td>
<td>Barclays</td>
<td>31,560</td>
<td>2,848</td>
<td>28,712</td>
<td>99.18%</td>
<td>650</td>
<td>99.18%</td>
</tr>
<tr>
<td>10</td>
<td>CBAS</td>
<td>35,003</td>
<td>1,799</td>
<td>33,204</td>
<td>99.18%</td>
<td>990</td>
<td>99.18%</td>
</tr>
<tr>
<td>11</td>
<td>CSIZ</td>
<td>24,985</td>
<td>1,663</td>
<td>23,322</td>
<td>99.18%</td>
<td>972</td>
<td>99.18%</td>
</tr>
<tr>
<td>12</td>
<td>Kingdom</td>
<td>35,003</td>
<td>2,014</td>
<td>33,204</td>
<td>99.18%</td>
<td>1,441</td>
<td>99.18%</td>
</tr>
<tr>
<td>13</td>
<td>Midbank</td>
<td>13,950</td>
<td>905</td>
<td>13,045</td>
<td>99.18%</td>
<td>828</td>
<td>99.18%</td>
</tr>
<tr>
<td>14</td>
<td>SCBZ</td>
<td>33,843</td>
<td>2,988</td>
<td>30,855</td>
<td>99.18%</td>
<td>2,685</td>
<td>99.18%</td>
</tr>
<tr>
<td>15</td>
<td>Agribank</td>
<td>13,983</td>
<td>2</td>
<td>13,981</td>
<td>99.18%</td>
<td>2</td>
<td>99.18%</td>
</tr>
<tr>
<td>16</td>
<td>BarNBIC</td>
<td>6,440</td>
<td>552</td>
<td>5,888</td>
<td>99.18%</td>
<td>748</td>
<td>99.18%</td>
</tr>
<tr>
<td>17</td>
<td>Interfin</td>
<td>2,546</td>
<td>93</td>
<td>2,453</td>
<td>99.18%</td>
<td>72</td>
<td>99.18%</td>
</tr>
<tr>
<td>18</td>
<td>Premier</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>99.18%</td>
<td>0</td>
<td>99.18%</td>
</tr>
<tr>
<td>19</td>
<td>ZABG</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>99.18%</td>
<td>0</td>
<td>99.18%</td>
</tr>
</tbody>
</table>

Grand Totals | 307,062 | 21,319 | 285,743 | 272,902 | 12,841

Note: Minimum charge is $20.00. All adjustments have been made.

Source: (Chamunorwa, 2012)
Table 4.5 above shows that FBC Bank managed to do 22,262 transactions for the month of May and the channel had an uptime connectivity of 99.21%. They had 161 failed transactions. This number represents the number of times the bank users failed to offer service; this could be due to timeouts on the core banking infrastructure or any other impediments on the switching network.

4.4.2 Internet banking usage

The Internet banking has very low usage with 55 percent of the respondents not even using the product. Figure 4.4 shows that only 27 per cent of the respondents use the internet banking every day. According to Shah & Clarke (2009), internet security is still one of the major issues hindering the growth of internet related transactions. Internet frauds are common, and related stories get immediate media attention, making people hesitant to bank online. The internet influences customers; many invest time and resources into becoming computer literate and getting to know the internet (Apte & Pinedo, 2008). Other consumers do not become computer literate and do not gain familiarity with the internet.

![Internet Banking usage](image)

**Figure 4.5 Internet banking usage**

The internet banking interface has a major role to play, as the in many cases it confuses to the transacting client due to the unnecessary fields and the financial, representation (Harden, 2009). The researcher discovered that most financial institutions have default interfaces from the system developers and have not...
customised the interfaces to suit the clientele base based on the needs of the clients. This is a result of not using data mining tools when customising the interfaces. The internet penetration rate in Zimbabwe stands at 60 per cent and the cost of internet is very high as compared to the regional figures (TechZim, 2012). The researcher also noted that 43 per cent of the respondents stayed in the high density and they did not have access to the internet while at home. This is a significant chunk of the bank’s account holders. However, most of the consumers could access the internet via their cell phones but they could not do internet banking using their mobile phones. The researcher concluded that the product was not aggressively marketed and hence the customers did not see the actual benefits of using the service. The cross tabulation results for internet banking were as follows:

Table 4.6: Cross tabulation between Internet banking usage with age, gender, education and income

<table>
<thead>
<tr>
<th>Channel usage</th>
<th>Age</th>
<th>Gender</th>
<th>Education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking</td>
<td>.267</td>
<td>.008</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>Internet Access</td>
<td>.000</td>
<td>.011</td>
<td>.000</td>
<td>.003</td>
</tr>
</tbody>
</table>

The researcher found that the p values for age and gender more than 0.05. The researcher concluded that age and gender were not positively correlated to internet banking use. According to Laforet & Li (2010), there is an increase in the young consumers using internet banking, however the researcher discovered that internet access has a p value of 0.00 and is positively correlated to age. The researcher concluded that the young people access internet mainly for social networks such as Facebook, You-tube and Whatsup, this had nothing to do with internet banking.

Education and income are positively correlated to internet banking use and the researcher failed to accept the null hypothesis. The researcher concluded that that internet banking attracted highly educated and highly valued clients as support by literature ((Ayadi, 2007);(Berger & Gensler, 2009);(Kheng, Mahamad, Ramayah, & Mosahab, 2010);(Mohanna, Yaghoubi, Motlaq, & Motlaq,
Hence the banking needs to use customer engagement strategies to ensure that they retain the high valued clients.

However, the banks could use the social media platforms as a form of target marketing to promote their products as they can reach out to many people at the same time. User groups can be created on Facebook and be used as a market survey to rate the popularity a product and the level of customer engagement. The customers will have a voice on the product and service quality; potential customers will find the reviews and stories, which will affect their buying decisions.

4.4.3 Mobile bank usage

In a world today, 70 per cent have mobile phones yet only 30 per cent have bank accounts. In India out a population of 1.2 billion, 800 million have cell phones and 250 million have bank accounts (Harden, 2009). However, the mobile banking technology seems to be failing to hit a critical mass in the market in Zimbabwe and hence the probability that the product will fail outweighs its success (Kashangura, 2012). The researcher found that about 50.4 per cent of the respondents do not use the product. According to Shah & Clarke (2009), the potential for mobile banking maybe far greater than typical desktop users, as there are several times more mobile phone users than online PC users. Tablets and smartphones have taken the world by storm and will soon eclipse the traditional PC sales, a move no one could have predicted five years ago (Campbell & Frei, 2010). Cross tabulation of the results show

<table>
<thead>
<tr>
<th>Channel usage</th>
<th>Age</th>
<th>Gender</th>
<th>Education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Banking</td>
<td>.177</td>
<td>.053</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>Mobile phone usage</td>
<td>.000</td>
<td>.01</td>
<td>.000</td>
<td>.017</td>
</tr>
</tbody>
</table>

The researcher discovered that there is no positive correlation between age and gender with mobile banking channel use, and hence accepted the null hypothesis but there was a positive correlation between education and income and we failed to accept the null hypothesis. The researcher also discovered that there was a
positive correlation between age, gender, education and income mobile phone usage. The researcher concluded that the young consumers used mobile phones more than the older consumers; the reason is mainly due to the introduction of smart phones that have internet access. Most of the young users used the product to view balances, transfer and well as airtime top up, using the Mobile Moola. This supported by the research done by ((Becker, 2005); (Berger & Gensler, 2009); (Laforet & Li, 2010); (Levesque & McDougall, 2009)).In developing countries with low banking and high mobile penetration, mobile wallets can bring basic payments to the unbanked (Geach, 2007). Banks should consider making a bolder move in mobile money transfers. They should take an opportunistic approach and partner with a mobile company.

4.4.4 Interactive Voice Response

According to figure 4.6, 68.4% of the respondents did not use the interactive voice response and hence this is the least used account in the SST. This is relatively a new account and hence requires aggressive marketing. Issues to do with security recorded the highest as the consuming public did not feel secure in giving out sensitive information such national identity number account number and name to a machine. According to Chamunorwa (2012), the FBC bank has set up a call centre connected to their core banking systems and customer relationship management so that the Interactive Voice response can quickly give the appropriate service.

Table 4.8: Cross tabulation between Interactive Voice Response with age, gender, education and income.

<table>
<thead>
<tr>
<th>Channel usage</th>
<th>Age</th>
<th>Gender</th>
<th>Education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive Voice Response</td>
<td>.210</td>
<td>.74</td>
<td>0.01</td>
<td>.047</td>
</tr>
</tbody>
</table>

The researcher discovered that there is no positive correlation between age and gender with Interactive Voice Response, and hence accepted the null hypothesis but there was a positive correlation between education and income and we failed to accept the null hypothesis. The bank should target those with higher income and highly educated as they use the product more. The target group is those who
bank with the private banking as they have less time to come to the bank and at the same do not access their accounts using card services, internet banking and mobile banking services

Figure 4.6 Summaries of SST usage.

Most of the customers use mobile banking on a daily basis, this translated to 30.8 per cent of the respondents. This includes SMS banking; SMS notification on account transactions, air time top up and transfers. Hence the bank should ensure that the platform has high availability as this has a reputational risk associated with the unscheduled downtime. The reason why the channel has the highest number of users has been alluded before and hence banks have no option but to partner with mobile companies if they are make a mark in this sector. They can use this platform to cross sell and up sell their products and services.

The interactive voice response has the least usage with 68.4 per cent of the group not using the product and only 9.4 per cent using it on a daily basis. This is largely attributed to the market targeted by the bank; most of their clients are from the high density and very few are from the affluent suburbs as alluded before, there is a strong correlation between education and income, hence the highly educated and those with higher incomes use the channel which is a smaller section of the bank usually serviced by the two private banking branches in
Harare and Bulawayo, and those who are on the international payment card, master card.

Usage on the internet banking platform is very low only at 27.4 per cent while 50.4 per cent don’t even use it. This largely attributed to the poor web page design which captures a lot of unnecessary detail when doing transactions and ends up confusing the clients (Nyagura, 2012). The greater part of the platform usage is from the corporates who do internet transfers.

4.4.5. Channel awareness
There is revenue leakage and opportunity cost as the financial institution is failing to attract these people to use the services. The SST channels need to attract a lot of people to use them as this is a low cost business model and can only be profitable if the channels have attained a critical mass. According to Gono (2009) the transacting public do not have much confidence in the financial services sector and hence the financial services have to find ways to tap into the unbanked sector.

More than 23.1% of the respondents on figure 4.7 have not heard of internet banking. This implies that very little is being done by the financial institutions in terms of creating product awareness. Gorchels (2007) states that an increasing level of internal brand cannibalization and competition for resources along with media fragmentation and a high level of retail and consumer sophistication, some of the of the products will not thrive. In an interview with the e-banking manager and an e-channels manager, the researcher quickly pointed out a duplication of roles to market internet based services and mobile based services yet very little was being done on the Interactive Voice Response. This however created a lot of tension in the structure and has serious impact on the group cohesion and team work (Cox & Blake, 2010). The researcher concluded that Internet banking, mobile banking and Interactive Voice Response; the products have been overshadowed by card based services, which are the flag ship of Convenience Banking.
Figure 4.7 Awareness of SST

The researcher also noticed that the product manager for e-channels and e-banking spend most of their time focusing on the products and fire-fighting in poorly scoped projects almost to the exclusion of the customers, and hence the market penetration has been very poor. The other factor is that as shown in figure 4.1, more than 30 per cent earns less than $10,000 per annum, and hence they are low income earners who cannot afford to use the internet banking as they have to withdrawal all the money at once. About 10.3 per cent of the public are worried about the security concern and about 30.8 percent of the respondents had other reasons why they did not have the mobile banking account and one of these reasons is that they were not aware of how the transactions actually works, hence they did not see any perceived value in having the account.

4.5 Reliability of SST Channels

About 43% of the respondents stated that the current SST channels were reliable and 27% of the respondents said that the channels were very reliable. Almost 13% of the respondents said that the channels were unreliable. However, al lot of work has been done to ensure high availability as well as capacity planning on
the e-channels; this includes installation of fibre optic connectivity to the branches with high availability and resilience. A state-of-the-art Data Centre with world class cooling, properly scoped power supply and virtual server system has been commissioned together with a disaster recovery site to ensure that IT service delivery is managed (Mondo, 2012).

![Reliability of SST channel service provider](image)

Figure 4.8 Reliability of SST channel service

4.6 SST adoption rate

Figure 4.9 shows the likelihood of any of the respondents to open an account within the next 12 months. About 42% of the respondents are unlikely going to open a mobile banking account within the next 12 months, while 27% is unlikely to open an Internet banking account with financial institution. This shows that the two products are highly unpopular and hence they have low market adoption. According to Sannes (2008), the growth in the number of PC and internet users has not been followed by a corresponding rapid adoption of banking services on the Internet. International estimates of internet banking users range from 35-50% of the active internet users population in countries with the highest adoption rate (ITU, 2011).
Fig 4.9 Adoption of SST

4.6. Customer Retention and Competitive Advantage

Figure 4.9 below shows the customer attrition of the SST in the financial services sector. About 54% of the respondents are most likely going to continue using the FBC self-service channels. This shows a good number of repeated purchases and hence continued focus on excellent customer delivery will see the numbers soaring. While only 6% of the respondents are most likely going to stop using the services.
Fig 4.10 Continued use of SST

Cross tabulations between age and continues use of the services was as tabled below using Monte Carlo, 2 side test, 95% confidence interval.

Table 4.9: Cross tabulation on competitive advantage with customer age, gender, education and income

<table>
<thead>
<tr>
<th>Competitive advantage</th>
<th>Age</th>
<th>Gender</th>
<th>education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continued use</td>
<td>.000</td>
<td>.057</td>
<td>.002</td>
<td>.021</td>
</tr>
<tr>
<td>Referral to use</td>
<td>.003</td>
<td>.567</td>
<td>.293</td>
<td>.192</td>
</tr>
</tbody>
</table>

The researcher discovered that there is a positive correlation between age with continued use and referral to use. Age has a positive correlation with Internet and mobile use. For the bank to gain a competitive advantage, they need to reach out to the young via the social media as well as aggressive marketing strategies. However, the researcher also discovered that education and income have positive correlation with continued use but no correlation for referral to use the service; this means that the highly educated and those who have high incomes continue to use the service but will not refer other people actively, although these actions could be a passive referral to others as brand loyalty and role modelling.
Figure 4.11 Customer satisfaction

About 85 per cent of the respondents were satisfied with the card based services, and this means that the channel retention ration was about 0.85. The financial institution would benefit more from returned business while 8.4 per cent were dissatisfied with the service. The satisfaction can be attributed to the financial institution’s large foot print in the ATM and POS market while at the same time hocked to the national switch, ZimSwitch which has a large contribution to the convenience.

4.7 Important attributes in SST Implementation

Figure 4.12 shows the most important attributes in implementing an SST, and 24 hours conveniences was the most important with 69.2% of the respondents. Value added services were the least important with less than 50%. The transacting public is more interested in the basic services offered by the SST. Customer experience had 65.8% and reliability had 65%. The researcher discovered that only 48.7% of the respondents were viewed in the bank asset size as very important and 9% did not even consider it; this was particularly
interesting in the current environment which has been characterised bank failures that had lowered the confidence in the financial sector.

Customers need incentives to adapt to the new self-service channel, especially as it requires additional knowledge and a shift in customer behaviour. In Kenya, where conveniently located bank branches are not an option, SST has enjoyed great success as customers see the clear benefit in adopting the e-banking channel. At the same time, banks in South Africa are expanding their networks as they try to gain on market share in the rural areas (Dubelaar, Sohal, & Savic, 2005). A second demand side factor relates to customer confidence, where South Africans are, in general, fairly sceptical about the safety of their money and goods.

Figure 4.12 Important attributes in SST usage

![Importance of attributes in SST usage graph]

- **Very Important**
- **Important**
- **Neutral**
- **Not Important**
- **Don’t Even Consider It**

---

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4.8 Channel profitability.

4.8.1 Card Based Systems

FBC Bank has 50 active ATMs distributed countrywide and 1500 active Point of Sale devices. About 45 of the ATM’s are housed at the branches, while 5 ATM’s are offsite ATMs. The Point of Sale machines are kept by the respective merchants and they use either GPRS connectivity or Ethernet connectivity (LAN). Both the ATM’s and POS terminals are connected to the on the ZimSwitch network and MasterCard network.

Table 4.10: Card based service cash-flows.

<table>
<thead>
<tr>
<th>Cash-flows</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premises Rental</td>
<td>($108,000)</td>
<td>($113,400)</td>
<td>($124,740)</td>
</tr>
<tr>
<td>Connectivity Rental.</td>
<td>($89,100)</td>
<td>($86,100)</td>
<td>($83,00)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>($49,996)</td>
<td>($49,996)</td>
<td>($49,996)</td>
</tr>
<tr>
<td>Security (24 hrs)</td>
<td>($108,000)</td>
<td>($112,000)</td>
<td>($120,000)</td>
</tr>
<tr>
<td>Channel Revenue</td>
<td>$241,040</td>
<td>$358,269</td>
<td>$447,575</td>
</tr>
<tr>
<td>Cash in transit</td>
<td>(99,000)</td>
<td>(105,000)</td>
<td>($110,000)</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>(36,000)</td>
<td>($36,000)</td>
<td>($40,000)</td>
</tr>
<tr>
<td><strong>Netflow</strong></td>
<td><strong>($199,060)</strong></td>
<td><strong>($143,227)</strong></td>
<td><strong>($80,161)</strong></td>
</tr>
</tbody>
</table>

Source: (Magwaza, 2012)

The cost of connectivity is going down as due to influx of Public Switched Data Network Operators (PSDNO) and competitive pressure. The product has an negative cash flow since 2009, however there was increased in channel revenue of 24.92 per cent between 2010 and 2011. The researcher concluded that the ATM has not yet reached a critical mass to be profitable but with correct strategies the channel had the potential of making positive contributions to the bottom-line of the bank. The FBC Bank is keeping the ATM as value adding product meant to extend convenience to their clients (Mugwagwa, 2011). FBC Bank has issued 195 794 cards but statistic on the ZimSwitch shows that in the month of May 2012, they only managed to do 22,626 transactions hence the capacity utilisation of this channel is 11.56%.

The card based system is making a positive contribution to the profitability of the financial institution, using our second hypothesis, we fail to accept the null hypothesis and conclude that card based usage affects the firm performance.
4.8.2 Internet Banking.

The internet banking was introduced in 2005 as another value adding product aimed at enhancing the image of the bank and the channel has 8,584 active accounts (Chamunorwa, 2012). The table 4.11 below shows the number of transactions that were recorded for the years 2009-11.

Table 4.11: Internet banking Transactions

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of transactions (Internal)</th>
<th>Number of transactions (external)</th>
<th>Total number of Transactions</th>
<th>Total amount transacted</th>
<th>Channel Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3,825</td>
<td>28,912</td>
<td>32,737</td>
<td>978,967.12</td>
<td>23,567.67</td>
</tr>
<tr>
<td>2010</td>
<td>4,578</td>
<td>43,789</td>
<td>48,367</td>
<td>1,789,476.35</td>
<td>67,987.78</td>
</tr>
<tr>
<td>2011</td>
<td>6,456</td>
<td>62,643</td>
<td>69,099</td>
<td>11,346,567.20</td>
<td>108,367.90</td>
</tr>
<tr>
<td>Total</td>
<td>14,859</td>
<td>135,403</td>
<td>150,203</td>
<td>14,115,010.67</td>
<td>199,923.35</td>
</tr>
</tbody>
</table>

Source: (Magwaza, 2012)

The table 4.11 above shows a 37.83 percent increment in the number of transactions from 2010 to 2011. The channel revenue for the same period (2010-11), also increased by 59.39 percent. The biggest increase revenue was between 2009-10, with 188.47 percent, this was actually due to the fact that most companies had begun using the Internet transfers for high valued transactions because had FBC moved the internet banking limit from $5,000 to $50,000. The bank had also increased on the number of transacting platform with the inclusion of bill payment City Councils (Harare, Bulawayo, Mutare, Chinhoyi, etc), ZESA, Truworths, DSTV, Edgars, CIMAS (Chamunorwa, 2012). This extended a lot of convenience to the transacting public. It was difficult to show the actual channel profitability but the figures show that the channel actually contributed to the bottom-line of the bank. The channel is also adding to the convenience and hence the numbers of transactions are beginning to pick up although the transactions have not yet reached a critical mass.

4.8.3 Mobile Banking

This is a relatively new product on the market for FBC, it was commissioned in February 2011 and hence it was not possible for the researcher at the time of the project to do a conclusive analysis. Although the SMS banking product was started in 2010 with only Econet on the platform, the fully integration of all the
other services in to a fully-fledged mobile banking followed later (Chamunorwa, 2012).

Table 4.12: Mobile banking subscribers

<table>
<thead>
<tr>
<th>Item</th>
<th>Mobile Service Provider</th>
<th>Number of subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Econet</td>
<td>5,833</td>
</tr>
<tr>
<td>2</td>
<td>Netone</td>
<td>1,674</td>
</tr>
<tr>
<td>3</td>
<td>Telecel</td>
<td>789</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8,296</td>
</tr>
</tbody>
</table>

Source:(Chamunorwa, 2012)

4.9 Testing the Hypothesis

Testing hypothesis 1

\( H_0 \): factors associated with customer efficiency (age, gender, education, income) are positively correlated to self-service channel use.

\( H_a \): there is no correlation between associated factors

The researcher conclude that there is no correlation self-service usage and two customer efficiency factors (age and gender), hence we accept the null hypothesis but there is a positive correlation between self-service usage and the other two customer efficiency factors (education and income) so we fail to accept the null hypothesis.

Testing hypothesis 2

\( H_0 \): Does SST usage affect firm performance?

\( H_a \): SST usage does not affect firm performance.

The researcher concluded that SST usage affects firm performance and hence we fail to accept the null hypothesis.

4.10 Chapter Summary

This chapter sort to analyse data from the research and draw informed judgements. The information collected conformed to most the literature that was gathered and the demographic factors (age, gender, education and income) showed that they had relationships with SST usage and also that the firm under study.
Chapter five

5.0 Conclusion and Recommendations

5.1 Introduction
This chapter presents the conclusions and recommendations of the study and suggestion of the areas for further research. The conclusions are based on the analysis and discussions of the results in chapter four while the recommendations are based on the researcher’s understanding of the area of study.

5.1 Conclusion

5.1.1 Adoption
- The research findings indicated that the liquidity is very low. Banks and switching companies, such as ZimSwitch have to lower the transactions costs; this will increase the usage of the SST, decreasing the congestion of the banking halls. This means banks can actually concentrate on other customer service channels as well as effectively managing their human resources and employee engagement.
- From the research findings, the rate of adoption of SST has been very low despite internet and mobile technology having a high adoption rate. Age plays no significant role in the usage of SST, the young who are technologically astute do not have excess money to keep in the banks and hence they have not realised the benefits of using SST. Banks have to invade the playfield of the young, aggressively marketing the benefits associated with the product and services over the social forum such as Facebook, Twitter, Whatup and You-tube.

5.1.2 Firm performance
- From the research findings SST has a positive effect on firm performance. The self-service channels have not managed to reach a critical mass and hence they have negative cash flows, but the number of transactions has increased significantly for the period
under study. Correct alignment of the strategy will see the self-service channels contributing to the bottom-line of the financial institution.

- SST has played a pivotal role in customer attrition; the high net-worth clients enjoy the convenience of accessing their money and ability to pay their bills at any time. The financial institutions have to ensure that the service is available 24 hrs a day and 7 days a week.

- The researcher also concluded that SST usage is not only restricted to the financial services industry a function of all other supporting industries.

- The banks have only deployed basic functions of SST and they have not yet realised the benefits of the whole value network, hence the profit margins are depressed.

- The researcher concluded that SST is revolutionary development in the financial services sector and it gives consumers another medium for conducting their banking. Despite the low cost base, the response is generally disappointing and the uptake much lower than expected. The fears that this channel will completely replace existing channels may not be realistic and the future is a mixture of “clicks (SST) and mortar (branches).” The advantage of using a mixed channel strategy is that the start-up costs for SST are high, but it quickly becomes profitable once a critical mass has been reached. Moving some of the existing branch customers to the cost-effective channel would be easier than trying to win new ones.

- The banks should leverage on their core competencies in primary activities. Most customers keen on using SST are also keen on the convenience of using the physical branches. Brand names play a pivotal role, if the customer experience is positive, there are high chances of repeated purchase.
5.2 Recommendations

5.2.1 Strategic alignment
The purpose of strategic alignment is to align information technology with an organisation’s corporate and or business unit strategies. Information technology cannot be viewed as distinct from the rest of the business, assuming that once corporate strategy is detailed, a strategy for SST can be formulated to “fit” the corporate strategy, without regard to any other issues.

Clarke (2007) argues that the strategic issues related to information systems have focused strongly on IT strategy and have seen it as “a functional strategy that responds to the chosen business strategy.” This leads to focus on internal issues such as information architecture (dominate by types and configurations of computer equipment), processes and skills, and fails to deal the opportunities which exist in the market place and maybe exploited through IS strategy.

5.2.2 Market penetration
Banks can determined by their customer credit rating, to set a fee structure of their credit card, choosing whether they want to pay a higher annual fee (advantageous for people who use the card a lot), high transaction fee (for people who do not use the card much) or a high interest rate (for people who do not revolve their credit card debt).

They can also use market penetration strategies by creating a closed loop for their clients, such that if the clients use a bank branded card on the bank’s infrastructure, they will be charged very little unlike if they use the competitor’s. This would promote the use of the channels.

The banks can also give incentives for using SST and punishment for those who withdraw money from the banking hall. The punishment can be in the form of high transaction fees.

5.2.3 Change management
Technology adoption is usually slow if too much attention is paid to technical aspect rather than business process and social issues. Some financial institutions sell their e-commerce projects as ‘pilots’ and leave the development to the IT department. Most senior executives equate SST with a specific technology in
mind, rather than using digital technologies to implement organisation’s strategic objectives. SST is about serving customers, creating innovative products/services, leveraging organisational talent, achieving significant improvements in productivity, and increasing revenues (Balachandran, 2004).

Adoption of SST can be derailed by the absence of clearly defines performance measures.

5.2.4 Website design and Operability
Poor design of website has been estimated to result in the loss of upto 50 percent of the potential repeated visits (Cunliffe, 2008). Poor designs may include use of inappropriate colours, contrast font or navigational functions. Lack of proper functionality, excessive use of graphics or similar factors can also deter customers from coming back to the site. Web usage barriers can also be attributed to vision, cognition and physical impairments associated with normal ageing process (Becker, 2005). As the study has shown that the senior citizens are also using the SST, just as much as the young and this is more to do mobility issues.

Poor website design can also result in decreased trust in using online financial services as look and feel often creates a lasting impression.

5.2.5 System integration.
SST is one way for the financial institutions to reduce costs but poorly implemented SST can also increase costs and alienate customers.

- To improve customer service, the provision of information on timely bases, prevention of fraud, and to support new and agile business models the financial Institutions need to deal with all problematic issues associated with legacy systems. The financial institution has two options either to replace the systems and to re-engineer the system (O’Donnel, 2007). The former can prove to be very expensive for the financial institution and the later, if well executed can help link a bank infrastructure with modern business processes driven application. The organisation can implement a Service Orientation Architecture (SOA)
Figure 5.1: Service Orientation Architecture (SOA)

Source: (Knorr & Rist, 2005)

- Knorr & Rist (2005) define SOA as a broad, standards based framework in which services are built, deployed, managed and orchestrated in pursuit of new and much more agile IT infrastructure that respond swiftly to shifting business demand. SOA builds on stack of protocols such as Extensible Mark-up Language (XML), Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL) and the concept of Business Process Re-engineering (BPR).

- The potential benefits such as reduced IT costs, system integration and greater business agility have persuaded many organisations to adopt SOA (ibid). According to O'Donnel (2007) the advantages of SOA over other software development technologies is that by externalising functionality into reusable components and organising them into logical framework, it minimizes two of the greatest cause of delay.

5.3.3 Technology life cycle

Technology which is used to support Information Systems typically will have a finite life cycle (Clarke, 2007). In any given industry, it is essential to be aware of the technology currently in use; the first year is one of emergence, followed by periods in which the bank must commit to the new technology in order to compete before moving out of it and into newer technologies as its impact declines.
5.3 Areas of further studies
The future of SST will involve products and services that are not feasible in the traditional banking models. This could be tools that help the people in managing their multiple bank accounts. These tools could be with complete biometrics, enterprise risk management, advanced customer interaction and artificial intelligence.

Contactless payments (Near field Communication) involve swiping an enabled mobile phone near a point-of-sale terminal to make payments which could be a bill or purchase of goods. These efforts to develop such systems often have to support from credit card vendors who are looking for new ways to make payment process more convenient.
6. Bibliography


7. Appendices: Questionnaire

Section A: Administrative Please tick appropriate box

1. Gender
   Male □    Female □

2. Please tick your age group
   0-18 □    19-29 □    30-39 □
   40-49 □    50-59 □    60-69 □
   Over 70 □

3. Marital Status
   Married □    single □    Divorced □    widowed □

4. Designation
   Executive □    management □    Operational □
   Student □    self-employed □    other □

5. Annual income
   0-$10,000 □    $50,001-$60,000 □
   $10,001-$20,000 □    $60,001-$70,000 □
   $30,001-$40,000 □    $70,001-$80,000 □    +$90,000 □
   $40,001-$50,000 □    $80,001-$90,000 □

6. Highest education level attained
   Primary □    secondary □    Diploma □    Post graduate □    other □
   □

Section B: Internet and Mobile Technology Accessibility

7. Do you have an internet connectivity at home
   Yes □    □
8. Residential Area
   Low Density □ middle density □ High Density □

9. Who is your internet service provider?
   Africom □ IwayAfrica □ Liquid telecomm □ Yo-africa □
   Econet □ Telecel □ Powertel □ Other □ don’t have □

10. How reliable your internet service provider
    Very reliable □ Reliable □ Neutral □
    Unreliable □ Very unreliable □

11. Who is your mobile service provider
    Econet □ Telecel □ Netone □

12. Do you have internet access at work?
    Yes □ No □

13. Do you access the internet using your mobile phone
    Yes □ No □

Section C: Traditional Banking System

14. How frequently do you visit the banking hall per month?
    Less than □ 1 □ times 3 to 5 times □
    5 to 8 times □ more than 8 times □

15. What is the main reason why you visit the bank?
    To make a deposit □
    To get financial advice □
    To inquire a balance □
    To withdraw cash □
    Other □
16. How long have you been using an FBC account holder

Less than 6 month
6 months to less than 1 year
1 year to 3 years
3 years to 5 years
Over 5 years

17. Have you switched a bank in the past 10 years apart from geographical relocation, have you many times have you switched a bank

Never   1 to 3 times   3 to 8 times

18. Please state the reasons for above question

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

Section D: Awareness of Self-Service Technology

19. Do you have an ATM/POS Card

Yes   no

20. What are the main reasons that you do not have an ATM card (Please respond if the answer above is NO)

Never heard of ATM/POS cards
Concerned about security
Have taken time to apply for a card
Don’t see real value in having this account
Transaction costs are too high
Too  I would like to see how it works, then I apply
Others
21. How likely are you going to apply for an ATM/POS card within the next 12 months
   - Very unlikely
   - Somewhat likely
   - Neither Likely nor Unlikely
   - Somewhat likely
   - Very likely

22. Do you have an internet banking account?
   - Yes
   - No

23. What are the main reasons why you don’t have an internet banking account (Please respond, if the above answer is NO)
   - Never heard of Internet banking
   - Concerned about security
   - Haven’t taken time to open an account
   - Don’t see any real value in having this type of account
   - Transaction costs are too high
   - Too new. I would like to see how it works, then open an account
   - Other

24. How likely is it that you are going to open an internet banking account within the next 12 months
   - Very likely
   - Somewhat likely
   - Neither unlikely nor likely
   - Somewhat likely
   - Very likely

25. Do you have a mobile banking account
   - Yes
   - No
26. What are the main reasons why you do not have a mobile banking account (Please respond if the answer above is NO)

☐ never hear of Mobile banking.
☐ concerned about security.
☐ haven’t taken time to open an account
☐ don’t see any real value on this type of account
☐ transaction costs are too high.
☐ new. I would like to see how works, then I may open the account

27. How likely is it that you will open a mobile banking account with us?

☐ Very likely
☐ Somewhat likely
☐ Neither unlikely or likely
☐ Somewhat likely
☐ Very likely

Section E: Usage of Self-service Technology

28. How often do you use our e-banking channels (Please tick all that apply)

Don’t use Daily weekly monthly Quarterly
Card Based Services
Internet Banking
Mobile banking
Interactive Voice Response
29. What banking services do you use over internet banking? (check all that apply)

- Seek product and rate information
- Calculate loan payment information
- Download loan application
- Download personal bank transaction activity
- Check balances online
- Apply for consumer loans or credit online
- Inter account transfer
- Online bill payments and purchases

30. What services do use over card based system? (Check all that apply)

- Bill payment /Purchases / Swiping
- Cash withdrawal
- Check balances
- Transfers
- Other

31. What services do you use over mobile banking system? (Check all that apply)

- Bill payment/ Purchases
- Check balances
- Transfers
- Air top up
- Other
32. How do you rate the level of satisfaction of the our self-service channels

<table>
<thead>
<tr>
<th>V. satisfactory</th>
<th>satisfied</th>
<th>neutral</th>
<th>dissatisfied</th>
<th>V. dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card Based Services</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Internet banking</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>□</td>
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<td>□</td>
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</tr>
<tr>
<td>Interactive Voice Response</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

33. For your choice of internet banking, please indicate how much the following attributes are important to you

<table>
<thead>
<tr>
<th>Very important</th>
<th>important</th>
<th>neutral</th>
<th>Not important</th>
<th>don’t even consider it</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Customer Service experience | Better rate and service charge
Accessibility | Bank familiarity
Convenience (24 hours) | Bank location
Reliability | Bank Size (Asset base)
Query resolution | Security of transaction
Quality of service | Variety of services offered
Customer-friendly interfaces | Value added services (eg brokerage)

Section F: Self service technology as a source of competitive advantage

34. How do we rate in comparison to other financial institutions that offer self-service

<table>
<thead>
<tr>
<th>Much higher</th>
<th>Somewhat higher</th>
<th>Same</th>
<th>Much lower</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
35. Why did you choose to use our e-banking channels?
   I have a traditional banking account with this bank
   The brand of the bank
   The excellent service offered by this bank

36. How likely are you going to continue using our self-service channels?

   [ ] Very likely
   [ ] Somewhat likely
   [ ] Neutral
   [ ] Somewhat unlikely
   [ ] Very unlikely

37. Would you refer anyone to use FBC’s self services

   Yes [ ] No [ ]

38. What do you recommend that FBC must do to improve their service

   ……………………………………………………………………………………………………………………………
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Thank you.