

**ASSESSMENT OF LEGAL AND PRACTICAL CHALLENGES AFFECTING  
MOBILE BANKING: CASE STUDY OF TANZANIA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF THE MASTER OF LAW IN  
INFORMATION TECHNOLOGY AND TELECOMMUNICATION  
(LLM IT & T) OF THE OPEN UNIVERSITY OF TANZANIA**

**2013**

**CERTIFICATION**

I, the undersigned, do hereby certify that I have read and I hereby recommend for examination a Dissertation titled, **Assessment of Legal and Practical Challenges Affecting Mobile Banking: Case Study of Tanzania**, submitted in partial fulfillment of the requirements for the award of the Degree of Masters of Laws in LLM IT & T.

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Prof. David Mellor

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Signature.....

Date.....

## **DEDICATION**

To My Lovely Husband who supported me in every step of my entire education.

This is for you my husband.

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I am very grateful to the management of the Open University of Tanzania for the opportunity to be part of this exclusive program. I also acknowledge the financial support from my lovely husband from the beginning to the successful completion of this course. Special thanks to my supervisor Prof. David Mellor for his support, word of caution whenever I embarked and suggested an unrealistic approach and for intellectual direction. I have learned a lot from you.

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## **ABSTRACT**

This dissertation is about the improvement of mobile banking in Tanzania, particularly, mobile phone banking. The impact of advancement of mobile banking in Tanzania has a direct relationship with the development of legal framework. The focus is on the potential legal and practical assessment of the mobile banking services in Tanzania. Specifically, this dissertation looks at the ways in which legal framework; policies and laws fail or succeed solving the legal and practical challenges in relation to the mobile banking in Tanzania as a case study. This dissertation shows the current status of the regulations, policies and laws in Tanzania and its legal and practical implications towards bridging the mobile banking services. It also suggests ways in which the Bank of Tanzania (BOT), Banks, Mobile phone companies providing mobile banking services, the Government and other stakeholders can approach to resolve current legal and practical challenges facing the sector with a view of improving E-money industry in the world, particularly, the use of mobile banking. The findings in this dissertation highlight the weaknesses in the legal framework of Tanzania in relation to mobile banking services. The dissertation concludes by offering recommendations which are believed to be useful to consider when approaching improvement of legal framework in relation to the mobile banking services in Tanzania. The recommendations are given as a way towards improving the legal framework and security in mobile banking industry.

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## **LIST OF LEGISLATION**

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Banking and Financial Institute Act, 1991

Banking Ordinance (Cap. 430 of the Laws in Tanzania)

Companies Act Cap 212 R.E 2002

Electronic and Postal Communication Act, 2010

Fair Competition Tribunal Act, 2003

Information Technology Act, 2000 – India

Japan Penal Code 1907

Tanzania Communication Regulatory Authority Act, 2003

The Contract Act Cap. 345

Tanzania Penal Code Cap 16

Tanzania Evidence Act

Proceeds of Crimes Act, 254

Mutual Assistance in Criminal Matters Act, Cap. 254

The Prevention of Terrorism Act, Cap 19

**ABBREVIATIONS**

AML	Anti –Money Laundering
ATM	Automatic Teller Machines
ACB	Akiba Commercial Bank
BAFA	Banking and Financial Institution Act
BNM	Bank Negara Malaysia
BOA	Bank of Africa
BOT	Bank of Tanzania
CRDB	CRDB Bank Ltd.
CTF	Counter Terrorist Funding
DPP	Division of Public Prosecution
DTB	Diamond Trust Bank
EPOCA	Electronic and Postal Communication Act
FNB	First National Bank, South Africa
FIU	Financial Intelligence Unit
FIS	Financial Institution Statute
ICT	Information and Communication Technologies
ITU	International Telecommunication Union
GSM	Global System for Mobile Communications
KYC	Know Your Customer
NBS	National Bureau Statistics
NMB	National Microfinance Bank
M-Banking	Mobile Banking

MLRO	Money Laundering Reporting Officer
MNO	Mobile Network Operator
MoU	Memorandum of Understanding
M-Transactions	Mobile Transactions
SADC	Southern Africa Development Community
SIM	Subscriber Identity Module
SMS	Short Message Services
SSL	Secure Socket Layer
STK	SIM Toolkit Standard
TBA	Tanzania Banking Association
TCRA	Tanzania Communication Regulatory Authority
TPB	Tanzania Postal Bank
TTCL	Tanzania Telecommunication Company Limited
UK	United Kingdom
UN	United Nations
US	United States
USSD	Unstructured Supplementary Services Data
VAT	Value Added Tax
WAP	Wireless Access Protocol

## **CHAPTER ONE**

### **1.0 THEORITICAL FRAME WORK**

#### **1.1. Background to the Problem**

Banking services bring into play mobile phones (M-banking) which have been accessible in developed as well as developing countries for numerous years. However, these services were not very common until new modalities of using M-banking have recently started to circulate rapidly to previously unbanked people. The main driver for the rapid advancement is the new M-banking services that are less expensive and have geographical footprint defined by the reach of mobile networks.

In contrast services offered by traditional retail bank branches are out of reach for many people in rural areas from both an economic and geographical perspective. The major benefits of M-banking services to rural users are that, they are affordable, fast and secure transactions. The topic is interesting as M-banking access to previously unbanked groups is believed to have a direct positive impact on users; positively impact a transition from informal to formal transactions, and hence, alleviate poverty and add lubricant to the overall economic advancement machinery (Bagens & Soderberg: 2008).

Mobile banking (M-banking) is the term we use to describe financial services delivered through mobile networks using mobile phones. Normally, such services include depositing, withdrawing sending and saving money, as well as making payments (using a laptop and an internet connection as the link to the bank would instead be referred to as internet banking). M-banking is divided into two categories;



additive and transformational. The additive model uses M-banking as an extra access channel for existing clients. This model is the most commonly used amongst retail banks. The transformational category is categorized by business models that draw upon existing telecom and agent/representatives infrastructure, run by new or alternative banking actors, and has a geographical coverage and pricing with the potential to attract previously unbanked segments. Moreover, it may also have a transformational impact in terms of formalizing previous informal transactions and hence bringing people and their financial assets into the formal economy (Porteous: 2006).

Recently the Bank of Tanzania (BOT) acknowledged the presence of 35% of 2.3 trillion which is the total money on circulation, while Vodacom alone is capable of transacting through M-PESA 35 Billion Tanzanian Shilling per day and the trend is escalating unabatedly. The number of active M-PESA subscribers stand at three million, the Vodacom Managing Director Mr. Rene Meza attributes this to the fact that the service is safe and available throughout the country. (Daily News Paper: 2012).

In Tanzania, as it is in any other developing countries, financial institutions/banks play a big role in the financial. The institutions play the role of allocation of financial resources. Soon after the enactment of the Banking and Financial Institution Act in 1991 the banking industry has undergone a dramatic change allowing the introduction of private bank in Tanzania (Mutaitina: 2010). The financial system in Tanzania has passed a long way since the colonial period to date. During independence (1961) branches of foreign commercial banks including Standard

Bank of South Africa, National and Grindlays Bank and Barclays bank were operating in the country. Other smaller foreign banks which were operating comprised of Ottoman Bank (1958), Bank of India (1953), Bank of Baroda (1953), Commercial Bank of Africa (1961) and National Bank of Pakistan (1962) (Mutaitina: 2010).

Historically, those banks were established locally to finance foreign trade rather than develop local activity (Mutaitina: 2010). Non-banking financial institutions were Post Office Savings Bank, foreign insurance companies and three specialized agricultural credit institutions initiated by the colonial governments called, the Land Bank, the Local Development Loan Fund and African Productivity Loan Fund (BOT: 1996).

In 1967, after the Arusha Declaration, all financial institutions were nationalized and put under the control of the government. Before the nationalization of banks in 1967, the law that governed banking business in Tanzania was the Banking Ordinance (Cap. 430 of the Laws in Tanzania). Unfortunately, the law could not sustain all the changes that had to be made in the banking system. In 1991, the new Act was enacted to oversee all issues relating to banking business. The Act was enacted to consolidate the laws relating to banking and harmonize the operations of all the financial institution in Tanzania (BOT: 1996).

Currently, in Tanzania some financial institutions have already decided to move in and surrender to the Mobile Banking technology seeing it as a big threat to the traditional banking systems. Today, most of the transactions are done through

Mobile Banking technologies and cell phone services providers have come up with plans and schemes to make the services more convenient and efficient. These services are likely to be a big threat to the financial institution to lose their customers who use banks services. This is due to the reason that customers need ease of access services and the only way they can get it is through Mobile Banking.

Financial institution with large retail customer base may find it convenient and profitable to establish SMS banking as a package to retain consumers. Cooperate banks do not require mobile banking while internet banking is satisfactory for them. But the question is “how many Africans live in cooperate world?” If financial institutions do not take cell phone banking as a business opportunity and a chance to increase their income then, they risk losing valuable customers and their deposit to those who offer it (cell phone companies). Most of the Tanzanians now are dwelling into the Mobile Banking services since they are reliable to use and can be accessed easily and on time.

Records show that 15% of Tanzanians have access to formal banking system. The Tanzania Banking Association (TBA) estimates that it is only 25% of money that is banked while 75% circulates informally. It is estimated that more than US \$ 10 million change hands in Kariakoo (the famous market place in Dar es Salaam City) everyday. The figures illustrate openly that since mobile banking does not need you to follow some tiresome procedures of registration and standing in long queues waiting for your money, hence, for the 75% of the informal fund transactions are so likely to shift to the mobile banking rather than being directed to the traditional systems (Daily News Paper: 2012).

According to the BOT Governor, Prof. Benno Ndulu, the trustee account for such services deposited by the agents at various banks has 97 billion Tanzanian shilling while the transactions stood at 760,000 million per day by the end of 2012. This therefore means that cell phone money transfers represent the future of banking. Financial institutions have engaged themselves in fighting against cell phone money transfers, but the BOT boss alleged those to be fears that mobile banking could be the recipe for inflation as it has been alleged (Daily News Paper: 2012).

Currently, financial institutions have to invest more in technology and innovation with more flexible products and services to ensure they survive in tough competition with mobile money transferring companies. The great initiative should be taken to begin offering the mobile money services. Tanzanians have peculiar calling habits and are too much in love with their cell phones. Along with growth usage of cell phones and knowing that the handset would become an excellent basic digital channel for money transfer in the East Africa, this has given birth and popularity to mobile financial services such as M-PESA, Tigo-PESA, Airtel Money and Eazy PESA. Cell phone money products are now directly competing with local financial institutions for market share on deposits and money transfer commissions. As of now almost every financial institution/bank has little research and development project going on about mobile banking. There are all experiment with it, although the question still remains how safe is mobile banking? (allafrica.com: 2012)

Most of cell phone banking uses Unstructured Supplementary Service Data (USSD) for transactions. USSD is a GSM communication technology that is used to transfer texts between a cell phones and an application programme in the network in this

case. Normally there are only two methods which imposters can intercept mobile banking data and transaction; when it is stored on physical computers dedicated to running one or more services to serve the needs of users of the other computers on the network called as servers. (allafrica.com:2012).

The USSD signal itself is not converted into a form called cipher text that cannot be easily understood by unauthorized people when it is transferred over the air the process is called encryption. Although the GSM channel carries the signal it has built-in encryption, authentication, authorization and accounting protocols (allafrica.com: 2012)

## **1.2. Statement of the Problem**

The relevance of ICT to economy and governance has been steadily growing with ICT's contributing to such diverse sectors as education, banking, health and agriculture. The technology development manages to change the style we live, communicate, work, learn do research, buy and purchase receive and send money and how we entertain ourselves. The development has been positively used by mobile phones companies. The companies like Tigo, Zantel, Airtel and Vodacom Tanzania have established mobile phone money transfers which can be called simply banking systems.

Currently, there are 44.9 million people in Tanzania (NBS: 2013) and the mobile communications sector is growing very fast in Tanzania. By June 2012 Tanzania had more than 26 million subscribed SIM CARD in the mobile phone sector and more than 13 million users (Nahonyo: 2012). The mobile phones utilization in Tanzania is

growing very fast and is expected to grow to 36.6 million users by 2015 (Ally: 2015). More than 12 million mobile phones users have registered for mobile money transactions services in Tanzania. The mobile communications sector contributed to a total of more than Tsh. 641, 452 million to the economy in 2006, representing approximately of 4.6% of total GDP. Although the sector is crucial in contribution to Tanzania's social-economic growth, such growths have been both a blessing and a disguise to people, institutions and government. (NBS: 2012).

Most of the rural areas in Tanzania are not connected with banking infrastructure, therefore, people are supposed to travel up to 60 kilometers to get banking services, but the introduction of the mobile phones money transactions helps those people in rural areas to access financial services easily compared to the past. Currently, in Tanzania there are four active mobile phone companies which provide financial services these are: Vodacom Tanzania (M-Pesa), Tigo (Tigo-Pesa), Airtel (Airtel Money) and Zantel (Easy Pesa).

Mobile companies in Tanzania are regulated by the Tanzania Communication Regulatory Authority Act, 2003, and the Electronic and Postal Communication Act, 2010. However, these laws do not cover operation of mobile money transactions. The research found gaps on mobile banking legal framework due to the fact that Mobile banking services do not have foundation in the laws of Tanzania. Telephone companies are not banks or financial institutions to be covered regulated by the laws governing banks and financial institutions. In other countries there have been introduced specific laws and regulations to govern mobile banking. For example; South Africa introduced Electronic Communication and Transactions Act, 2002,

India established Information Technology Act, 2000 (IT Act) which came into force on 17<sup>th</sup> October 2000 and in Japan the Penal Code which was enacted in 1907 and amended in 1987. The main reason for such amendment was to ensure a modern computerized business works by prohibiting any computer crimes particularly to safeguard mobile phone money transactions and the integrity of computer programs and electronic data (Ally: 2012).

Lack of a fully operational legal and regulatory framework jeopardizes the security of consumers. Therefore, for the purpose of ascertaining the most reliable level of regulating mobile phone money transactions, the researcher after assessing the legal and practical challenges affecting the sector come up with recommendations on those existing legal or practical challenges. Currently, mobile phone money transactions are backbones for economic growth of many countries.

### **1.3. Literature Review**

Mobile business is defined as a business transaction performed through mobile communication networks or the internet (Siau & Shen: 2003). M-Commerce can offer value to consumers through convenience and flexibility by enabling time and place independence (Kim et al: 2009 & Venkatesh et al: 2003). Mobile banking is a utilization of M-Commerce which allows customers to access bank accounts through mobile devices, to conduct and complete bank related transaction like balancing cheques, checking account statuses, transferring money and selling tocks (Kim et al: 2009), Tiwari & Base: 2007). Luo, Li, Zhang and Shin (2010) defined mobile banking as an innovative method for accessing banking services via a channel whereby the consumer interacts with a bank using a mobile device for instance

mobile phone or personal digital assistant (PDA).

Currently, around the world mobile banking is implemented through different technology solutions; browser-based applications, messaging-based applications and client-based applications (Kim et al: 2009) & Tiwari & Base: 2007). The browser-based application is essentially a Wireless Access Protocol (WAP)-based internet access (Kim et al: 2009). This needs a compatible mobile phone which is WAP-enabled. The mobile phone is used to access banking portals through the internet.

On the messaging-based applications, the communication between the bank and the consumer is carried out via text messages. For instance, by using a registered mobile number, the subscriber sends a predefined command to the bank, and then uses text messages to conduct transactions with the bank. For example, messaging based application is the Unstructured Supplementary Service Data (USSD), which has compatibility with most mobile phones. Existing mobile banking applications include WIZZIT in South Africa (WIZZIT: 2005), M-PESA in Tanzania (Camer & Sjoblom: 2009), M-PESA in South Africa (Ned Bank: 2010) and FNB mobile banking (FNB: 2010).

On client-based applications, special software is installed in the mobile phones. For instance, a client based application is what is called the SIM Toolkit Standard (STK) (Tiwari & Base: 2007). For example, the M-PESA in Kenya uses the STK technical platform (Safari com: 2007 & Camer & Sjoblom: 2009). M-PESA is a money transfer services which was firstly established in Kenya in March 2007 by Safaricom in partnership with Vodafone (Safaricom: 2007). The M-PESA services allow users



to deposit, withdraw and transfer money using a mobile phone at M-PESA agents countrywide (Safaricom: 2007). The M-PESA application is installed on the SIM Card and works on all makes of handset. M-PESA is widely used in Kenya and Tanzania (Camer & Sjoblom: 2009) it is free to register and the user does not need to have a bank account (Safaricom: 2007).

Annette (2010) surveyed on how effective are financial services in Tanzania. Liberalization of the economy in Tanzania has been the emergency of local and international financial into the market, but so far the issue of financial services is still very low to the overall population. Most of the people in the country do not have knowledge on how to access financial services. The survey conducted in more than twelve (12) regions of Tanzania showed that there is a need for intensive public education on the whole aspect of banking. The effort of educating the general public should go in line with making sure that people get accurate information on how to access financial institution services.

The survey showed that only 12.4% of 7,680 people interviewed had a bank account adding that 4.3% of these received financial services from organizations that are not licensed by the central bank to offer credit services. Also, the survey has showed 56% of the interviewees do not have access to financial services, which is not good for a country that is focusing on reducing poverty.

In her conclusion Ms Annette appealed to the Tanzanian government that there is a need for deliberate government interventions in order to bring on board the number of people who do not have access to financial services because the figure was

worrying especially in rural areas. Also, she said that, Tanzania is a large country, so access to some of the rural areas is still a barrier. Most of the people do not have enough money at their disposal to open up a bank account due to the lack of knowledge and understanding of banking operations. Ms Annette did a great job in her survey but she did not touch anything about legal challenges affecting current innovations in banking system. Therefore this research intends to fill such gap by making assessment whether there are any legal challenges in today's development of banking system particularly Mobile Banking.

Manyenye (2010) traces the development of financial institution in Tanzania. He argues that Tanzania under capitalization was still a big challenge for people to access financial services. He continues by adding that mobile banking entails vehicles that were used to extend financial services among Tanzanians to reach areas where there were no financial institutions. Currently, the system has been using cell phone to offer banking services most common in the country being the M-PESA and ZAP and the services gain popularity since it is kind of a stress-free banking. The cell phone banking initiative is one of the current innovations in the financial sector, but it is not being used to foster growth as many people use it for consumption purposes not investment. He also argues that most of the funds received or sent end up for daily obligations like paying for bills, airtime, bride prices and other family necessities.

He finishes by recommending to the government of Tanzania to establish development banks since interest rates commanded by most commercial banks are rather too high. Also, he says that, there is a need to sensitize the community to

undertake saving culture so as to spare funds for future generation instead of relying on loans with high interest rates.

The author's work is appreciated though that at the time he conducted his research there were only two mobile companies providing cell phone money transfer these are M-PESA and ZAP, but today we have four mobile companies (M-PESA, Tigo-PESA, Airtel Money and Eazy PESA) and new innovations (like accessing banking statement through cell phone) are operating under mobile banking. Also, the author's work did not concentrated much on practical problems affecting the mobile banking; therefore, this research aims at filling the gaps left.

Kruger, P.J.H. (2011) in his thesis known as Cell Phone Banking at the Bottom of the Pyramid: Case Study of South Africa investigates the differences available in GSM bearer channels that can be applied to introduce a cell phone banking application. The author gives special attention to launch such a cell phone banking application to the so called "bottom of the pyramid". The author continues to argue by providing updates situations in South Africa that, there are estimates of 11 to 13 million people with no bank accounts. He believes the cell phone made an ideal opportunity to be used as a method/way to reach this untapped market segment that currently mainly uses cash to pay for day to day living expenses.

He provides more information on the cell phone banking arena in South Africa as well as some projects in other parts of the world. Also, he highlights new innovations on cell phone technology that include Android and iphone delivery channels. Concentration was placed on how the cell phone banking presentation

layer should be delivered through the USSD GSM bearer channel. USSD is to date the crucial channel to consider due to its broad reach and capability to work on any GSM cell phone handset. The author concluded by saying that, even if cell phone banking can be used by any one, the profit to bring financial services to the bottom end of the pyramid must be considered to achieve financial inclusion. Although Kruger did not concentrate on legal and practical challenges in his thesis, but he did a remarkable work which provides lights for this study to succeed. Therefore, this study intends to fill those gaps for development of ICT industry in Tanzania, Africa and globally.

Ally, A. (2012) in his presentation entitled *Legal Challenges Brought by the Development of ICT in Tanzania; An Assessment of the Growth of Mobile Banking Services* briefly analyzes the relevance of information communication technology to the economy and governance. He continues to argue by saying that, the innovations/growth of ICT managed to change the way we live, communicate, work, do research, learn, purchase and sell, receive and send money and how we refresh our minds.

The presenter identifies several legal challenges coupled with the adoption of Mobile Banking like online contracts, legality of M-Banking, money laundering, Electronic money, consumer protection and cybercrimes. Also, the presenter briefly looks into the practical challenges faced by the sector. The presenter did a remarkable work but he does not discuss issues deeply while this research aims at discuss thoroughly relevant aspect relating to Mobile Banking.

#### **1.4 Justification of the Study**

The study on the assessment of legal and practical problems in utilizing services of mobile phone money transaction is very crucial for the growth of ICT industry in Tanzania particularly, mobile phone transactions due to the fact that most of the Tanzanians especially in rural areas prefer to use the services due to lack of banking infrastructures in most of the rural areas and even in some parts of the urban areas.

Therefore, for the purpose of improving mobile phone money transactions the research on legal and practical problems on Mobile banking is very important so as to identify weaknesses in order to come up with recommendations for better laws and methods of improving the sector in Tanzania.

#### **1.5 Objective of the Study**

The main objective of this study was to look at solutions for the existing legal and practical problems affecting mobile banking in Tanzania. Therefore, the specific objectives of this study were:

- (i) To assess the legal and practical challenges affecting mobile banking in Tanzania;
- (ii) To assess whether mobile banking in Tanzania is affected by current laws and practices;
- (iii) To assess whether consumers are aware of the laws and practices govern the services;
- (iv) To assess how other countries handle legal and practical challenges relating to mobile banking; and

- (v) To recommend on the necessary steps to be taken which will come up with solutions to overcome challenges that will be detected during the study.

### **1.6 Hypothesis**

One of the duties of any law around the world is to protect the interest of the people. There are several laws in Tanzania regulating the services given by mobile phone companies such as Tanzania Communication Regulatory Authority Act (Act No. 12 of 2003), Tanzania Electronic and Postal Communications Act, 2010 and Fair Competition Tribunal Act, 2003. Always, the legislature has the duty to enact/amend current laws to include modern challenges. Therefore, the hypothesis is that, there are legal and practical challenges affecting the mobile banking sector in Tanzania, although the country is making effort to overcome the existing gaps in the sector. The current laws in ICT industry and banking sector do not cover mobile banking services.

### **1.7 Research Methodology**

Research methodology that was adopted to carry out this study is library and field research. Library research included the systematic review of books, journals and literature on the subject. Field research involved both direct oral interviews and the use of questionnaires. Apart from the above methods, researcher's observation was another methodology used in carrying out this study.

### **1.8 Research Structure**

Chapter One; this chapter provides for the theoretical framework of this study, it introduces the research subject of the dissertation. Also, it provides brief presentation

relating the subject and matters to be addressed, a description of the research methodology and the structure of the dissertation.

Chapter Two; the chapter provides an overview on the concept of mobile banking. It also provides how and when it was established and operates in Tanzania. Therefore, this chapter aims at explaining a general understanding of the concept of mobile banking and shares experience from other countries.

Chapter Three; the chapter provides for examination of the laws relating to the banking services in Tanzania, particularly, mobile phone money transactions. The law which the research is examines includes; the Tanzania Communication Regulatory Authority Act (Act No. 12 of 2003), the Tanzania Electronic and Postal Communications Act, 2010, the Bank of Tanzania Act, the Banking and Financial Institutions Act, and the Fair Competition Tribunal Act, 2003.

Chapter Four; the chapter provides for research findings and analysis and Chapter Five; the chapter provides for conclusion and recommendation

## **CHAPTER TWO**

### **2.0 THE CONCEPT OF MOBILE BANKING**

#### **2.1. Introduction**

This chapter provides for an overview of the concept of mobile banking. It also provides for when it was established and how operates in Tanzania. Finally, this chapter shares experience of mobile banking from other countries around the world. In Tanzania, in early 2007 Vodacom-Tanzania established a Vodafone M-PESA as new mobile money transfer services in collaboration with Vodafone group. With M-PESA, Vodacom subscribers could convert cash into electronic money at an authorized M-PESA agent. During the second quarter of 2012, Tanzania had a total of 27,945,270 mobile phone subscribers who receive services from seven telecommunication companies (Vodacom, Airtel, Tigo, Zantel, TTCL, Sasatel and Benson Information) (TCRA: 2012).

#### **2.2. Mobile Banking Conceptual Models**

The original requirement of the cell phone was focused on voice communication that would allow connection mobility. The mobile phone banking evolved in recent years into three types of approaches for launching a mobile phone banking or payment application, namely; Bank Led Model, Mobile Network Operator Led Model and Combination of Bank and Mobile Network Operator Led Model. Through bank led model, a bank decides to launch an application to existing customer base of the bank. Typically, in the case of a bank led model, the mobile phone banking application can be available through any participating mobile network operator in the country to the subscriber of this network. In other words, the offering will be done by mobile



operators inclusive to all that would like to participate (Kruger: 2011).

The bank utilizes the infrastructure of the participating mobile network operators to deliver the mobile phone banking application to the banks customers. In the case of a bank led model, there is usually a fully functional bank account behind the application where the currency value of the customer is stored and the mobile phone banking application acts as interference to the normal bank account. Banks can offer enquiry services as well as payment options through this channel (Kruger: 2011).

In the case of a mobile network operator led model, a mobile phone electronic wallet is introduced only to the subscribers of the network. This type of execution is mainly geared to deliver transactions for low value payments, money transfers and buying airtime. In this kind banks need to be involved in hosting the control float account of the total value of the combined mobile phone electronic wallets. A prospective customer that is not part of the mobile network will be required to join the network to participate in the mobile phone electronic wallet solution (Kruger: 2011).

Mobile network operators reflect on mobile phone electronic money transactions as a method to reduce chum of customers away from them (Mambi: 2010). M-PESA mobile phone money transactions were launched through Safaricom and Vodafone in Kenya and later were introduced in Tanzania. Subsequently, Airtel (Airtel Money), Tigo (Tigo Pesa) and Zantel (Eazy PESA) became other mobile network operators in Tanzania. Combination of a bank and mobile network operator led model is another kind of mobile banking. In this advance, the prospective customer must have a bank account with the bank but at the same time has to be a subscriber

of the mobile network operator. The best known example of the said prospective on the African continent is MTN mobile money initiative that was launched by Standard Bank of South Africa and CRDB – Tanzania and NMB – Tanzania (Mwita: 2011).

### **2.3. NMB Mobile Banking in Tanzania**

NMB bank in Tanzania is one of the fastest growing banks in the African continent with an annual growth of approximately 700,000 new customers (NBS: 2012). The bank has a branch network of more than 150 branches throughout Tanzania and approximately more than 500 ATMs to serve their existing customer base of approximately 2.1 million. The existing ATM and branches network could not support the demand from customers, hence the bank made a decision of launching mobile phone banking channel based on the use of USSD (Kruger: 2010).

NMB had a serious problem with customers standings in queues in branches and at ATMs for basic functions like balance inquiries and transfers. NMB mobile services were established in July 2009 in Tanzania and managed to triple the bank's transaction volumes within the first six (6) months of operations. NMB mobile services permit customers to do balance enquiries, person to person transfers, p airtime purchases, and prepaid electricity tokens purchases and water utility bills payment. Before these transactions were introduced only 300 ATMs were available to handle the said transactions, but today customers can do this from the convenience of their homes by using their mobile phones. To simplify, the bank decided to only compress an USSD interface to their customers to make sure that the service has a

huge uptake and to reduce the long queues in the branches and at the ATMs (Kruger: 2010).

#### **2.4. CRDB SIM Banking in Tanzania**

In order to utilize the CRDB SIM banking a customer/subscriber is required to have an account with CRDB Bank or open a new account with the bank and register for the same. The registration is done in a customer's phone and in order to register a customer is required to dial \*150\*03# and then follow the instructions (CRDB Bank: 2012). An account can be a savings or current account; all CRDB Bank customers can use the services regardless of their mobile operators and handsets.

The SIM banking is appropriate for all CRDB bank account holders, traders transferring funds, parents transferring funds and students of higher institutions. SIM banking is a service that allows a customer to make banking transactions using a mobile phone, the service has the following features: intra bank funds transfer to any bank account within CRDB network; funds transfer to any mobile phone in the country; funds transfer to mobile money; bills payment to utilities; airtime purchase for self and others; sending money to people with no bank account or ATM cards, balance inquiry; mini statement; alerts (notifications of Tembo cards/visa/master card usage); online registration through customer's phone; PIN change; and bilingualism, allowing a customer to make a choice of language of Swahili/English (CRDB Bank: 2011).

With SIM banking services a customer have the following benefit: access to bank account anywhere any time; transfer funds to any one without hassles; pay bills at

customer's convenience; pay business partners and supplies without stress; do transactions around the clock save the hassles of having to visit the bank every time and maximize the use of mobile phone. Security is ensured on SIM banking, therefore, all transactions require customer's PIN. A PIN is required each time to have access to the services. Hence, even if unauthorized person has possession of your phone, he cannot make any transactions on SIM banking without a customer's PIN (CRDB Bank: 2013).

In order to access CRDB SIM banking a customer is required to have WAP/internet access and a wireless device with an internet connection. A customer will received the CRDB SIM banking URC - <http://fe.crdb.com8080> or <http://196.45.158.16.8080> into the inbox or browser service inbox of his/her internet enabled wireless device and then connect in using CRDB SIM banking PIN and activation code one was supplied with. Also, a customer can access CRDB SIM banking from any internet enabled cell phone (such as WAP phones), Gadget, Palm One OS device, pocket PC device or RIM Blackberry device (the device must have an internet connection) (Vodacom: 2013).

CRDB mobile banking is encrypted using the Wireless Transport Layer Security (WTLS) protocol which provides the highest level of security available today. Furthermore, all data passes between the wireless gateway, Vodacom's serves and IFM – MOBS RV's web servers is encrypted using the Secure Socket Layer (SSL). Currently, CRDB SIM banking is free of charge for the first six months, but a customer's phones service provider may charge a fee for accessing the internet with

customer' phone. The services provided by CRDB SIM banking include account summaries, account transaction history, transfers, payments, view transactions status, view transfers and payments histories. CRDB SIM banking can be used only by customers who have bank account with CRDB. Also, a customer must visit CRDB Bank branch for filling in application form, upon approval, branches send the authorized forms to headquarter and headquarter creates and activates through messages to the applicant customer (Vodacom: 2013).

## **2.5 Vodacom M-PESA in Tanzania**

M – PESA was launched in Tanzania by Vodacom in 2008, but its initial ability to attract customers fell short of expectations. In 2010, the International Finance Corporation freed report which explored many of these issues in huge depth and analyzed the strategic changes that Vodacom has implemented to improve their market status. In 2012, M-PESA in Tanzania had nine million subscribers and is recently undergoing major upgrades of its system (Wikipedia: 2013).

The initial concept of M-PESA was to create a service which allowed microfinance borrowers to conveniently receive and repay loans using the network of Vodacom airtime resellers. This would enable microfinance institutions (MFIs) to offer more competitive loan rates to their users, as there is a reduced cost relative to dealing in cash. The users of the service would gain through being able to track their finances more easily. But when the services were piloted, customers adopted the services for variety of alternative uses and complications arose. M-PESA was re-focused and established with a different value proposition. This includes sending remittances

home across the country and making payments. M-PESA is a branchless banking service, meaning that it is designed to enable subscribers to complete major banking transactions without visiting a bank branch. The persisting success of M-PESA in Tanzania has been due to the creation of a highly popular manageable payment service with only limited involvement of a bank (Wikipedia: 2013).

M-PESA customers can deposit and withdraw money from a network of agents that includes airtime resellers and retail outlets acting as banking agents. M-PESA is operated by Vodacom, a mobile network operator (MNO), which is not classed as a deposit-taking institution (like bank). M-PESA provides the following services to its customers: deposit and withdraw money; transfer money to other users and non-users; bills payment, airtime purchase and money transfer between the service and a bank account (Kruger : 2011). The user interface technology of M-PESA differs between Safaricom of Kenya and Vodacom of Tanzania, although the underlying platform is the same. Safaricom uses SIM toolkit (STK) to provide handset with menus, but also supports STK.

Currently, Vodacom Tanzania has more than five million M-PESA customers with a total of monthly transaction of US\$ 823 million (Vodacom: 2013). Also, Vodacom signed an agreement with a number of local financial institutions which is designed to spearhead e-commerce in Tanzania. The memorandum of understanding (MoU) was signed with NMB, CRDB, Standard Chartered Bank, Tanzania Postal Bank (TPB), Bank of Africa-Tanzania (BOA Tanzania), Akiba Commercial Bank (ACB) and AMANA Bank. The agreement allows customers to utilize M-PESA services to

access their bank accounts for financial transactions. Moreover, Vodacom tied up with Diamond Trust Bank (DTB) to enable M-PESA customers to withdraw money from their M-PESA accounts through DTB's nationwide network ATMs, which is giving customers 24/7 access to their cash (Vodacom: 2013).

## **2.6. Experience of Other Countries about Mobile Banking**

### **2.6.1 MTN Mobile Money – South Africa**

In 2005, Standard Bank and MTN brought a modern approach to the market when they launched MTN Money in South Africa (finextra.com: 2013). This was the first time in the African Continent for a bank and a mobile operator to put-up their strengths together to establish a mobile phone banking application. This product was established at the time to reach as well the untapped unbanked population of South Africa.

The MTN Money solution was installed on a SIM Toolkit application and it was only offered to subscribers of the MTN Network. MTN customers with 8K and 16K SIM cards had to swap their SIM cards at MTN shops at their own cost in order to upgrade to 32K SIM card that had the MTN money application inserted onto the SIM card. This required effort to first do a SIM Swap which proved to be an obstacle for entry to the service, as the expense to the customer was in excess of R100 to complete this exercise (finextra.com: 2013).

MTN customers who had already 32K SIM Cards could download the application through 17 binary SMS messages that had to arrive in sequence on the cellular

handset to ensure the correct installation of the application. In many instances the download of the application did not work properly and MTN subscribers just ignored the service.

### **2.6.2. Philippines G-Cash and Smart Money**

A number of successful mobile phone banking payment applications were established a few years ago in other parts of the world. G-Cash and Smart Money were established in the Philippines in the early 2005. Both these mobile phone services based on a mobile phone electronic wallet offering that were predominantly used for payments at merchants. G-cash and Smart Money spend great effort in building merchant networks that can accept their mobile phone currency, leading to the successful acceptance in the Philippines for mobile phone payments. Both these initiatives in the Philippines were driven by local mobile network operators and not by the banks in the country. The focus was to make payments easier by using a mobile banking instead of bank cards or cash. The Philippines are known as one of the leading countries in the world that set the pace in mobile phone payments. (Kpmginsiders.com: 2013).

### **2.6.3. ZANACO XAPIT Solution in Zambia**

ZANACO is the largest commercial bank in Zambia with quite a number of branches available in the country. In 2001 ZANACO approached WIZZIT in South Africa to explore the opportunity to establish a similar “WIZZIT like service in Zambia. ZANACO settled to brand the services as XAPIT pronounced as “ZAP IT” that imply speed of moving something.



Zambia has approximately a population of 11 million people and according to research done by Finmark Trust about 7 million people are bankable in the country. The shocking reality is that approximately just over 1 million people in Zambia today have a bank account. ZANACO's plan was to use XAPIT to reach to this unbanked population of the country and grow their customer base by means of this innovation (kpmginsiders.com: 2013).

Airtel is a mobile network operator with GSM networks in number of African countries. At the time of establishing ZANACO XAPIT service in 2008, Airtel had approximately 80% market share of the Zambia mobile phone market and MTN had just been introduced in the country. Airtel was the only mobile network that had a USSD phase 2 gateways in place at the time ZANACO decided to establish a USSD mobile phone banking application for Airtel customers and selected WAP and J2ME mobile phone banking applications for the MTN customers. It was interesting to note the highly successful uptake of the product through both Airtel and MTN subscribers on different GSM channels. Statistics show that the ZANACO XAPIT mobile banking customers conduct on average more than 10 transactions per month. This is perceived as an exceptional figure for mobile phone banking application (kpmginsiders.com: 2013).

Customers confessed that the XAPIT mobile phone banking application changed their lives and the way they purchase services such as prepaid airtime in the past. Before XAPIT they would have purchased airtime on a weekly basis, but it usually happened that they used all the prepaid airtime available on the first day. With

XAPIT, they can now buy in smaller value denominations airtime per day and that makes it much easier for them to control their talk time (kpmginsiders.com: 2013). It is interesting to note that MTN customers in Zambia did not see the WAP and J2ME applications as an inhibiting factor to access the ZANACO XAPIT service. MTN has subsequently implemented an USSD phase 2 gateways and the ZANACO XAPIT service is now offered to the MTN customers as well through the USSD bearer channel. Comparison of MTN Zambia XAPIT transaction volumes and after the introduction of the USSD service indicated an increase in transaction volumes.

## **CHAPTER THREE**

### **3.0. LEGAL FRAMEWORK GOVERNING MOBILE BANKING**

#### **3.1. Introduction**

This chapter looks into the laws of the country relating to the mobile banking services which is growing very faster all over the country. The chapter concentrates on the following legal issues: Legality of Mobile Banking, Online Contracts, Money Laundering, Electronic money, Cyber Crimes and Customer Protection.

#### **3.2. Legality of Mobile Banking**

The issue is whether the utilization of electronic services guarantees e-security for customers and other beneficiaries. As the exponential advances of technology continue to dramatically facilitate the creation of modern developed methods and approaches to financial service delivery while necessitating the introduction of new electronic financial products these opportunities might be tampered by legal uncertainty (Mambi: 2010). This is a big challenge in states like Tanzania and other countries that lack regulation in this fast growing sector.

There are legal issues which affect the advancement of mobile banking services in Tanzania. There is no highly assured security against fraud and other related cyber offences caused by the lack of legal framework that govern this sector in Tanzania. Mobile banking raises a number of legal problems with regard to the effectiveness of the mandate provided by the PIN, privacy, security of the system, liability in the case of fraud or PIN loss and liability of losses caused by system failure. Tanzania needs to have an effective legal framework that will inhabit the development of ICT. Some customers are reluctant to use mobile banking because of the security risks posed by

cyber fraud. Apart from benefits that have been brought by mobile banking, it is indisputable that this technology has simplified theft online with less risk (Mambi: 2010).

In the United Kingdom legal problems in this area were extensively considered by the Review Committee on Banking Services Law and Practice which recommended a two-tier approach to the regulation of such systems, with minimum level of statutory regulation supplemented by a code of best practice (Mambi: 2010). On the other side, mobile banking will always involve the law of contract and agency whereby banks/mobile phones companies and their customers will be the parties, hence, the need for reforms of contract laws to accommodate mobile/electronic banking. All these legal issues need to be well addressed in the banking laws and other related financial matters. Unlike Tanzania, the Banking and Financial Institutions Act (BAFA) 1989 of Malaysia and Bank Negara Malaysia (BNM) guidelines address all issues related to electronic/mobile banking (Mambi: 2010).

Having realized the advancement of digital technology and its effect on banking business and other financial transactions, the United Nation through its commission has introduced UNCITRAL Model Law on International Funds Transfers (1987) and UNCITRAL Model Law on International Funds Transfers (1992) together with UNCITRAL Model Law on Electronic Commerce (1996 and 1998) which seem to solve the challenges brought by digital technology. Any proposed legal framework or electronic laws on mobile banking and other related transactions need to reflect these model laws and take into account the local environment and society (Mambi: 2010).

The current legal framework on financial and other familiar transactions do not suit electronic transactions, hence, it is a barrier to mobile banking advancement. The laws which regulate negotiable instrument and banking in Tanzania do not accommodate online transactions or payment in cyber space, instead they cover offline transactions. For instance, the Banking and Financial Institutions Act, Cap 342 R.E. 2002 is not in match with advancement of mobile banking and other related e-commerce transactions. Under this law (Section 5) is not possible to apply for a license online due to the fact that all application must be in writing and signed manually as opposed to data message and digital signatures. In 2006, Tanzania enacted new laws that provide for a framework for comprehensive regulation of banks and financial institutions and other related field. However, the laws failed to go shoulder to shoulder with mobile banking or e-commerce which is now growing very fast in East African countries.

### **3.3 Online Contracts**

Tanzania laws do not cover online contracts. The Contract Act, Cap 345 R.E. 2002 does not provide a room for an “agreement” concluded among parties either partly or whole by means of data messages. The laws of the country recognize written contracts and dully signed or authenticated before a witness. Mobile Banking operates automatically according to a set of instructions and without supervision. In situation like this, the acceptance is not clearly defined unless there is a law that clearly specifies the situation.

The major problems examined are the ascertainment of the online contract terms and the other party in the contract with the focus to consent (*consensus ad idem*)

requirements and capacity to enter into contract (Mambi: 2010). Mobile banking includes paying bills, schools fees, transfer of money, checking bank statement, buying air time and so forth. While all these services are provided electronically the laws of the country are not suitable for the mobile banking.

Electronic message which is used in mobile banking may be garbled in transmission and also determination of the time in which the message is sent or received as to ascertain offer and acceptance. The requirement of consent in online contract has become a challenge because some electronic agents are involved to contract. It has become a question as to whether the electronic agent can amount to consent of the other party to the contract. Electronic agents are not included in the definition of the laws in the United Republic of Tanzania to mean a person and, hence, this is a problem (Mwita: 2011).

Therefore, there is a mismatch between the current regulations framework on one side and an electronic contract particularly on the issues of contract terms and *consensus ad idem* on the other side. Also, the existing law still favors a traditional method of contracting (paper based contracts). The current laws in the United Republic of Tanzania do not give a general guidance to electronic contracts due to the fact that; there is no specific legislation to govern electronic transactions. This makes it difficult to respond sufficiently to technological changes. In Tanzania, contracts are generally governed by the Law of Contract Act, Cap 345 (R.E. 2002), although courts of law may extend and develop certain principles where necessary to fill the gaps (Mwita: 2011).

Normally, services provided by mobile banking are contracts, a transaction is an agreement, communication or movement taking over between separate entities or objects, always includes exchange of items of value like information, services, money and goods. A mobile banking service is that agreement between an agent/company and a customer/consumer for the exchange of services for payment with the ultimate purpose of doing business with the goods or services.

Customer transactions may technically be confined to individual persons who acquire services mainly for their own use and not for resale or use in production. This is the end user of the services. With current technological advancements a new system of contracting has established mainly incorporating writing and/or oral agreements but using electronics as the channel to communicate the contractual arrangements. Today, most commercial transactions are conducted electronically because it is believed that contracting online businesses can improve efficiencies, reduce paper work and streamline operations.

### **3.4 Customer Protection under Mobile Banking Services**

While the advancement of mobile banking has been generally viewed as being beneficial to consumers as it offers wider choices and more competitive services, there are also concerns relating to the vulnerability of customers to unscrupulous traders operating at a distance, other from foreign jurisdiction. Online customer transactions have become a fact of day to day life for most customers whereby customers are not used to this new way of online transactions for shopping for goods and services. There are a number of growing illegal activities conducted electronically (Mambi: 2010).

The lack of customer trust and confidence and effective legal framework in the medium and the question of quality of the services is a barrier to mobile banking. Customers' trust in mobile banking as a safe medium to conduct successful transactions and customers' trust in mobile banking and the quality of the services they provide is potential for the further advancement of mobile banking customer. Mobile banking customers face the same risk like traditional customers under physical world. No wonder offline offences such as trespassing, embezzlement, malicious destructions and vandalism committed against offline customers can be committed to mobile banking customers and related customers (e-commerce customers). The most top nine damaging forms of security and privacy threats to mobile banking include malicious codes, phishing (deception), hacking, cyber-vandalism, spoofing, denial of services attacks, sniffing and so forth.

Like physical world customers, cyberspace customers also need certain inalienable rights. Under the mobile banking environment customers need sufficient information to be able to make an informed decision. Customers need to be provided with prior information from their agents/companies before any transaction online. The information could include payment information, clear prices including taxes, performance of services, name of the agent/company, and the characteristics of services. The withdrawal and cancel right on the part of the customer also need to be clearly stated (Mambi: 2010). In the absence of laws governing mobile banking in Tanzania, issues regarding consumer protection are still in dilemma. It is time for Tanzania to have sufficient and comprehensive legal framework on information and data protection laws (Abdul: 2012).



### **3.5 Cybercrimes in Mobile Banking**

Mobile banking (tele-banking) services are one of the most exciting modern advancement in the converging finance and telecom industry with tremendous growth expected over four years to come. Mobile banking services presumed to reach US \$ 245 billion in value world wide by 2014 (World Bank: 2012). Mobile banking services have been introduced as an alternative to conventional banking. They are cheap, quick and convenient to be carried out online, such as, depositing and transferring money, shopping and selling online, as well involvement in many other businesses like bill and salary payments (all from mobile services) (Gitau: 2013).

The technologies applied to deliver mobile banking (tele-banking) services have facilitated a wireless, mobile modernization, but they each also carry some inherent risk to institutions and individuals, as does their fastest adoption rate. In Uganda recently, a single fraud incident amounted to US\$ 3.5 million (Gitau: 2013). The financial nature of the mobile banking services imposes the utmost reliability and integrity. In future, branding, distribution and risk management is therefore vital.

The benefit of an agile fraud are many and vary and they include: shrinking revenue leakage due to safer mobile transactions; proactive detection of fraudulent activity resulting in prevention of loss due to fraud; raises trust and customer satisfaction leading to more business; decreased customer churn due to quick and safe mobile transactions; and enhance compliance with regulations like anti-money laundering.

### **3.5.1. Fraud Risk in Mobile Phone Banking**

Positive risk management of mobile banking services must scrutinize customer authenticity. Security access controls transactions accuracy, transactions legality, customer behavior, and agent reliability. It also balances usage and transactions cross examination, commissions and payments account information and logs. Positive controls must also include a regular scan of end to end of a secure, dedicated system and assessments to make sure the risk management programmer's alignment to entity size, strategy and exposure.

Proper scrutinisation of transaction traffic to detect divergence in normal usage or behavior must trigger alarms for early fraud detection. Multi layered fraud prevention teams can work deliberately to avoid fraud rather than reacting to it, after the impact. Take best practices within system architecture, controlling automation and perceiving and adhering to fine corporate governance practice also aids to deterrence fraud (Gitau: 2013).

Good and proper fraud risk policy boost business resilience significantly resulting in systems integrity, good performance and decreased losses. Integrating mobile banking fraud risk administration programme with governance, risk supervision and compliance systems will aid administration to safeguard the institution against fraud and theft and attain business goals and regulatory fulfillment.

Merchant fraud, whole seller get into and perform unauthorized customer transactions or deny the customer full value of the transaction. Other familiar system related fraud include merchant signing up fictitious customers, deposit splitting which

is working with the customer so that the sender and recipient of money transfer deposit and withdraw funds from the same account. This kind of fraud can be controlled by providing education to customers concerning the mechanisms they can apply to safeguard themselves such as safeguarding PIN, needs of a transaction confirmation and building a relationship with trusted merchant. Customer defrauds, this is another kind of fraud which happens when the customer account is accessed by third parties. Customer education aids to enhance the security of the technology applied to prevent hacking and illegitimate access.

System monitoring and capturing of logs is also crucial in case internal staff conspire with other external persons to perpetuate the fraud. Merchant defraud happened when illegal access and transactions deprive the merchant of rightful value either through fictitious transactions, illegal access or use of counterfeit monies or theft. Sticking on general physical and technology security controls and recognizing counterfeit bills is requisite. The service provider should also prescribe a policy that permits timely action in case of a reported incident.

Service provider defrauded is a kind of fraud on which transaction may be intercepted or the mobile phone banking platform hacked. This is a broad based risk that can be applied to perpetrate fraud in other systems to alleviate this fraud type, the mobile phone banking system should incorporate high levels of security, encryption and algorithms' that illegitimate access extremely difficult. Free penetration and ethical hacking can provide an extra level of assurance. Lastly, there is internal fraud which often occurs when there are no appropriate internal controls.

Staff may manipulate fraud opportunities ranging from process flaws, colluding with merchants, compromised vetting, related parties trading, and mobile banking platform rate modifications. Health recruitment adequate internal controls and propagating an ethical culture would reduce risk while red-flagging common kinds of fraud would help to detect it (Gitau: 2013).

ICT has many benefits that least of which is that ICT have made the world a more interconnected place for more people. The dynamic and interconnected nature of ICT also creates a threat to financial services institutions, although data insecurity is a growing trouble as allegations of fraud and cybercrime continue to grow, resulting from security failure. There is a real necessity of strengthening security within the financial institutions sector to combat this threat (Gathungu: 2013).

### **3.5.2 Legal Framework of Cybercrime in Tanzania**

Cybercrime, also known as computer crime are committed using electronic communications. They include stealing personal data like account details, a phishing and pharming. Cybercrime can be committed by external/internal perpetrators or by individuals both inside/outside of an institution who work together to perform the crime. The 2011 information security surveys found 76% of organizations around the world have experienced a security breach and 19% of large organization suffered computer related fraud executed by their employees ( Gathungu: 2013).

In October 2012 reports indicated that East African banks lost over Tsh. 80 billion to fraud in just eight months. In Kenya, a local insurer compensates a local bank more

than Tsh. 200 million due to theft in July 2012. Cybercrime is inspired by financial gain or economic espionage, executed by malicious people intending to sell compromised customer information or by competitors stealing intellectual property, intelligence or information concerning criminals are well organized, patient and willing to invest significantly to complete their objectives (Gathungu: 2013).

There is no specific law on cybercrime in Tanzania, and cybercrimes includes computer fraud, IP crimes, ATM fraud, DoS and hacking. Normally, cyber criminals all over the world are looking for loopholes in order to conduct illegal or illicit businesses. Any state which does not have adequate cyber-law is essentially offering a safe haven for cyber criminals to act with impunity (coe-int: 2013).

Currently, Tanzania is depending on other general pieces of legislation, regulations and guidelines to handle cybercrimes. These statutes are: the Electronic and Postal Communication Act (EPOCA) No. 3 of 2010, the Penal Code (CAP 16), Amendment to Tanzania Evidence Act (e-evidence), Draft Bill on e-Transactions, Draft Bill on e-Payment system. Also, there are efforts to build up a CERT Regulations under section 124 (1) of the Electronic and Postal Communication Act No. 3 of 2010, the Draft Electronic and Postal Communications (Computer Emergency Response Team Regulations, 2011) and effort to develop guidelines on search, seizure, collection, storage and presentation of e-evidence (Kalunde: 2011).

At regional level, Tanzania depends on Draft Convention of the African Union on the Establishment of Legal Framework for Cyber Security, East African Community Law Framework Phase I & II (Incorporates CoE Convention) and Initiatives under

SADC (SADC Model Law on e-Commerce. Institutional framework of cybercrimes in Tanzania can be divided into four (4) departments/divisions, these are: Division of Public Prosecution (AG) which normally deals with coordinating investigations and prosecuting cybercrime cases, review and propose policies, laws, regulations, guidelines and standards on the management of fraud, corruption and cybercrime (Kalunde: 2011).

Also, it deals with coordinating and providing guidelines to all law enforcement agencies in fraud, corruption, cybercrime and other related offences. Another department/division is the Tanzania Police Force (Cybercrime Unit) which has a specialized team of police investigators who are experts in cybercrime investigation. Also, there are other two bodies, namely, the Tanzania Communications Regulatory Authority (TCRA) and the Financial Intelligence Unit (FIU) (Kalunde: 2010). Although the above legal and institutional framework exist in the country, but the war against cybercrime in Tanzania faces several challenges. These challenges are like absence of a proper legal regime on cybercrime, institutional-capacity versus capacity building, police issues versus legislative priority and inadequate funding.

The advancement in ICT and Mobile Banking in particular has also not been spared with cyber related crimes. Part IV of the Electronic and Postal Communication Act No. 3 of 2010 provides for penalties for offences relating to electronic communication as opposed to electronic commerce. Also, section 258 (1) of the Tanzania Penal Code (Cap 16) defines the offence of theft as follows:

*A person who fraudulently and without claim of right takes anything capable of being stolen, or fraudulently converts to the use of any*

*person other than the general or special owner thereof anything capable of being stolen, steals that thing.”*

In the case of information, two objection lie to the relevance of a charge of theft, unless the information is held on some storage device that is also removed and it is not possible to see how the needs of “taking and carrying away” or the needs of depriving the owner of property can be fulfilled. In the case of Oxford V. Moss (1978 Cr App R 183), the Liverpool Magistrates on the basis that confidential information could not be regarded as property Moss was acquitted. The definition of the offence of theft which provides a lot of difficulties in other jurisdictions still exists in our Penal Code (Cap 16) in this digital world. The said situation provides for a loophole for criminals to escape liability (Abdul: 20112).

No matter how reprehensible is, activities that are not defined as crimes in our laws may not be the subject of criminal prosecution. Section 132 of the Criminal Procedure Act, Cap 20 R.E. 2002 directs that offences have to be specified in charge with necessary particulars. Article 13 (6) of the Constitution of the United Republic of Tanzania, 1977 envisages that:

*“No person shall be punished for any act which at the time of its commission was not an offence under the law, and no penalty shall be imposed which is heavier than the penalty in force at the time the offence was committed.”*

Therefore, without having a cyber law in Tanzania, criminals will end up being acquitted.

### **3.6 Money Laundering and Terrorist Financing in Banking Systems**

Tanzania was basically a cash-based economy. Most of the business activities were transacted in cash, instead of paper or electronically like electronic money. Currently, the trend to the use of electronic money is growing faster like paying bills (water, electricity, schools fees and TV stations). Some parts of the country do not have banking services thereby necessitating mobile banking to be a substitute due to the fact that most of the banks in Tanzania are located in major towns leaving the majority of population in the rural areas without financial services. Also, poverty has led to low-level usage of banking services and the level of saving is insignificant.

Money laundering is the engagement of an individual or individuals, directly or indirectly in conversion, transfer, concealment, disguising, use or acquisition of money or property known to be of illicit origin and in which such engagement intends to avoid the legal consequence of such action. It is the process by which criminals attempt to hide and disguise the true origin and ownership of the proceeds of their criminal activities, thereby avoiding prosecution, conviction and confiscation of the proceeds of crime. In essence, money laundering seeks to achieve two basic goals. The first one is to separate the perpetrator and the proceeds from the underlying crime/predicate offence; while the second is to disguise the proceeds as legitimate funds or assets, and hence, allow the criminal to enjoy the benefit of criminal activities.

Money laundering and terrorist financing are linked because the techniques used to launder money are essentially familiar with those employed to conceal the sources



and uses of terrorist financing. Currently, many laundering incidences are a major problem all over the world. States around the world have decided to join forces to fight against an increasingly sophisticated combination of techniques used by experts and professional to disguise the true origin, ownership and control of proceeds of crime. In that respect, the United Republic of Tanzania decided to join efforts with the international community by taking a number of measures including criminalizing money laundering and terrorism financing. This strategy was set-out in a systematic approach for the implementation of the Anti Money Laundering Act, Cap 423.

### **3.6.1 Effect of Money Laundering and Terrorism Financing in Banking System**

Money laundering and terrorist financing have significant effects in attainment of a country's national goals. This is due to the fact that money laundering and terrorism financing activities have the following problems, among others, erosion of the integrity of the financial system and harming a country's reputation; threatening of economic, political and social stability.

The government is responsible for safeguarding of the reputation of the financial sector and other sectors by doing all that is possible to fight against money laundering and terrorism financing. This commitment is due to the fact that if the United Republic of Tanzania does not take necessary efforts to fight against money laundering and terrorism financing, it will increasingly find its economic advancement hampered by lack of international acceptance, recognition and corporation. Tanzania has strong political will and is fully responsible to fight money laundering and terrorism financing. The efforts started as early as 1991 by the enactment of the Proceeds of crime Act, Cap. 256 and the Mutual Assistance in

Criminal Matters Act, Cap 254 which criminalize some of the predicate offences of money laundering and provide a room for cooperation with other states on criminal issues.

In 2000, the BOT issued the Bank of Tanzania Circular No. 8 on Money Laundering Control. The Circular elaborates money laundering control requirements for banks. In 2002, the Prevention of Terrorism Act, Cap 19 was enacted. The Act criminalizes terrorism and prohibits individuals to engage in acts of terrorism and related acts. The United Republic of Tanzania enacted the Anti-Money Laundering Act, Cap 423 in 2006. The AML Act criminalizes money laundering in a manner that is largely consisted with the 1988 UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (Vienna Convention) and the 2000 United Nation Convention against Transnational Organized Crime (Palermo Convention).

In 2007, the Anti-Money Laundering Regulations were promulgated for implementation of the Anti-Money Laundering Act, Cap 423. The Regulations prescribe information to be gathered from customers and verification procedures; provides for procedures for recognizing and reporting of suspicious transactions; and the type of statistics to be maintained by the FIU and maintenance of customers' records. MER recommended amendments to the regulations for effective implementation of the AML Act. In February, consequential amendments to various laws were made through the written laws (Miscellaneous Amendment) Act No. 15 of 2007. These were aimed at giving more effects to the Anti-Money Laundering Act, Cap 423.

### **3.6.2 M-PESA Anti-Money Laundering Policy**

Corruption, money laundering and the financing of terrorism (CMT) are basic threats to sound economic and corporate advancement. Also, they create tests in various companies which either by virtue of the services or product those companies offer, have a social and legal responsibility to execute anti-money laundering controls and those concerned with preventing terrorism financing (Vodacom: 2011). It is Vodacom's policy to comply with all applicable laws, including those, concerning with anti-corruption, anti-money laundering and those preventing terrorism and to make sure that those with whom it does business do the same.

This policy is special for M-PESA money transactions services. Despite the fact that it focuses primarily on Anti-Money Laundering, this policy should be read together with existing CMT policies, Group CMT compliance Code and Vodacom Tanzania CMT Policy and Procedure (Vodacom: 2011). The objectives of having its special Anti-Money Laundering Policy is to make sure that Vodacom Tanzania Ltd complies with the international and relevant domestic Anti-Money Laundering (AML) and Counter Terrorism Funding (CTF) practices. This consists of fulfillment of both the special requirement and the spirit of all appropriate laws and regulations. Also, the policy intends to protect Vodacom Tanzania Ltd and its employees, contracted staff and third party agents from unintentional commission of money laundering and terrorist offences or from failure in operational controls. The final objective is to keep away from reputational damage to Vodacom Tanzania Ltd by having reliable controls in place that prevent abuse of Vodacom Tanzania service by money launders and those involved in financing (Vodacom: 2011).

The policy puts the minimum standard and applies to all Vodacom Tanzania staff (consisting of Permanent and Contracted staff) and business partners/agents providing M-PESA services that are covered by AML legislation. All executive and non executive Directors including the Chairman are accountable for making sure proper controls are set to fight money laundering. The policy includes money laundering from the proceeds of a predicate offence (AML Act, 2006) which includes the financing of terrorism. All references AML consist counter terrorism funding. The control involves:

*“Detailed AML procedures maintained by Vodacom Tanzania Limited operating M-PESA subject to the Anti-Money Laundering Act, 2006 and include any other third party company with whom Vodacom Tanzania Limited has an M-PESA relationship; Verifying the identity of customers and agents and obtaining additional Know Your Customer (KYC) information as appropriate; Monitoring of customer transactions for activity that may be linked to money laundering or financing of terrorism; Procedures for the reporting of suspicious activity, both internally to the Money Laundering Reporting Officer (MLRO) and externally to the Tanzania Financial Intelligence Unit (FIU); Maintaining records of customer identification and transaction and; Education and training of relevant Vodacom employees working on M-PESA, agents and contracts”*

### **3.6.2.1. Know Your Customer (KYC), Know Your Business and Agent Due Diligence**

With this policy, Vodacom Tanzania introduced KYC and Know Your Business and Agent Due Diligence. All potential customers wishing to utilize M-PESA

money transfer services should have their identity verified using reliable, independent documentary evidence. The acceptance forms of evidence may differ from time to time, but the verification should take place before an account being opened. In case evidence cannot be produced, the application must be declined. In order for a customer to be registered for M-PESA services one must submit the following items: passport/voters ID, or driving license/employment ID or college or student ID/ pension fund membership ID, introduction letter from village/Area Executive Officer which must bear full name and photograph of the applicant (Vodacom: 2011).

Furthermore, Know Your Customer information must be achieved on all new and suitable existing customers. KYC information includes but not limited to: residential address, date of birth, gender, nationality and occupation. The level of the KYC information achieved and the extent of verification must be ascertained on a risk-based approach depending on the type of customer, expected level of transaction, product and other relevant risk factors. Low risk customers may not be subjected to very inflexible KYC procedures, but in such situations their transaction levels must be limited (Vodacom: 2011).

For those non-personal customers, agents and business customers, the KYC information must include the nature and purpose of the business, ownership and control structure. Based on this information, suitable identification and verification checks must be carried out. The information must include, business license, copies of ID's of the Directors and beneficial owners, TIN and where applicable, VAT

certification, Bank details and shareholding (ownership and control) structure. Proper identification and verification checks must be done at least once a year. Relationships should be introduced with shell banks as defined by the Financial Action Task Force, 2013 (Vodacom: 20110).

All customers must be screened against appropriate sanction lists within 5 days of registration, while agents and owners should be screened prior to commencing business. The sanction lists to be used for screening are: UN, US Office of Foreign Asset Control, UK HM Treasury, European Union and any other list needed by local legislation.

#### **3.6.2.2. Transaction Monitoring**

For the purpose of identifying potential suspicious activities, systematic monitoring of transaction and account activity must be carried out using a risk based approach. Transaction monitoring reporting entries must be reviewed on a regular basis to make sure they are proportionate and in line with latest product advancement and Money laundering trends. Advancement or purchase of automated monitoring system must include consultation with the Vodafone Group MLRO. Transactions and account activity of customers typed as PEPs must be subject to enhanced monitoring (Vodacom: 2011).

#### **3.6.2.3. Suspicious Activity Reporting**

Vodacom Tanzania Limited Money Reporting Officer (MLRO) is responsible for the receipt investigation and disclosure (where appropriate) of M-PESA associated

suspicious activity reports from staff. The AML procedure manual contains procedures for staff and agents to report activity to the local MLRO for further investigation. The MLRO should then carry-out full investigation about the suspect's activity including a review of any connected accounts, businesses or agents. All this is conducted in conjunction with the Vodacom Group Compliance (Audits and Investigations). In case the suspicious is validated a report should be handled over to the Financial Intelligence Unit (Vodacom: 2011).

Information relating to a suspicious activities report made internally to the MLRO or externally to the authorities should be disclosed to customers or any other third party. In situation a customer has been the subject of more than one validated suspicious activities report, a decision should be made as to whether the account(s) must be closed or not. The decision must be made by the MLRO and the MD, taking into account risks applicable to the AML Act like tipping of the customer that a suspicious transaction exists by closing the account.

### **3.6.3. M-Pesa Responsibility**

Vodacom M-Pesa Tanzania Limited declared that it holds all payment received in respect of the purchase of E-money or transfers of E-money into customer's account (the Trust Amounts). A Customer is considered to agree that the Vodacom M-Pesa may treat the records of the M-Pesa system as conclusive evidence of the amount of E-money at any time standing to the credit of customers account and the Vodacom M-Pesa is not bound to make any independent investigation of customer's beneficial entitlement to the trust amounts. Customers' further acknowledge that, in relation to

any payment to customer in admiration of customer's entitlement to trust amounts, Vodacom M-Pesa may act on instructions given by customer using one's PIN or instructions purported to be provided by a customer using PIN even if they are actually given by a third party (Vodacom: 2009).

Customers must know that, Vodacom M-Pesa shall have no obligation to invest the trust amount other than by way of holding the trust amounts. The customers are supposed to know that they shall have no beneficial entitlement to any interest accrues on the trust amount and Vodacom M-Pesa shall be entitled to retain such interest to defray its own costs and expenses and/or to pay the same to Vodacom towards the costs and expenses of operating the M-Pesa system and /or to pay the same to such charitable cause(s) as Vodacom M-Pesa may in its absolute discretion determine (Vodacom: 2009).

#### **3.6.3.1. M-Pesa Liability and Exclusions**

Vodacom is not liable for any loss which a customer suffers unless it is directly caused by Vodacom M-Pesa's negligence or deliberate wrong doing. Vodacom M-Pesa is only liable for the amount of the loss that a normal customer in his/her position would have suffered and not any loss which results from customers' particular circumstances, even if Vodacom M-Pesa knows that customers circumstances are unusual (Vodacom: 2009). In the occasion that Vodacom M-Pesa is compelled to change/reassign customers telecommunications numbering to meet regulatory requirements or for any other purpose, Vodacom M-Pesa's liability will be limited to retain customer's account and where possible transferring customers



account to a new SIM card. Failure to do this by Vodacom will entitle the customer the right to be paid out the credit balance standing in customers account in cash (Vodacom: 2009).

All agents are independent outlets authorized by Vodacom or an approved M-Pesa agent aggregator to give M-Pesa services and there is no agency relationship which exists among Vodacom and the agents. This, therefore, implies that Vodacom accordingly bear no responsibility for any default or negligence on the part of the agents in providing the M-Pesa services (Vodacom: 2009).

### **3.7. Legal Aspects of National Payment System in Tanzania**

There is no general legislation governing payment systems in Tanzania despite the BOT maintaining a close engagement in management and regulation. The law in Tanzania is highly impacted by common law. The following are the key legislation which directly taps on payment system: the Bills of Exchange Act, Cap. 215; this is a statute in *pari materia* with the Bills of Exchange Act, 1882 of the UK. The Evidence Act, 1967 provides for Bankers' Books Evidence. The Banking and Financial Institution Act 2006 was enacted to merge the law relating to the business of banking and to harmonize the operations of all financial institution in Tanzania.

Also, there is the Bank of Tanzania Act, 2006 with the aim of repealing and re-enact the Bank of Tanzania Act, 1995 in order to provide more definitively the regulatory and supervisory powers of the Bank of Tanzania over other banks and financial institutions; the Bills of Exchange Act Cap. 215 largely cover the use of negotiable

instruments and it provides for the protection of bankers in relation to payments by use of cheque and other familiar instruments. There is also the Bankruptcy Act, Cap. 25 which governs individuals and partnerships solvency proceedings. However, the Ordinance is inapplicable to body corporate like banks (BOT: 2004).

In addition to that, there are other enactments like, the Capital Market and Securities Act 1994 which was enacted to promote and facilitate the advancement of an orderly, fair, efficient, capital and securities market in Tanzania; and the Fair Competition Act, which encourages competition in the economy. It prohibits restrictive trade practices, regulates monopolies and their concentration of economic power and prices. The Act is also aimed at protecting the consumer against all trade malpractices and also gives for other related matters. The Government Loans Guarantees and Grants Act, was enacted to revise and merged the written laws relating to loans raised and guarantees given by the government and for matters connected therewith and incidental thereto (BOT: 2004).

Moreover, the Arbitration Act, Cap. 15 governs arbitration proceeding and processes in Tanzania. The Law of Contract Act, Cap. 345 provides for most of principles of contract law in Tanzania. The Companies Act, Cap. 212 governs activities and affairs of all companies incorporated and or registered to do business in Tanzania. Also, it gives the winding up procedures of companies incorporated under it. The Civil Procedure Code, 1966 provides for procedural law which prescribes procedures for disposal of civil suits instituted in the High Courts and courts subordinate thereto (Resident Magistrates and District Courts). It provides for

procedures through which the court can restore a right to an aggrieved citizen. The Penal Code, Cap 16 codifies criminal offences and provides for punishment thereof (BOT: 2004).

The code makes it an offence for a person to obtain money or credit by cheque without having sufficient funds. Lastly there is Transfer of Business (Protection of Creditors) Ordinance, Cap. 398; this ordinance aims at protecting creditors and even in the event that a debtor, who is a body corporate, intends to transfer either wholly or substantial part of its business to another person/or body corporate.

### **3.7.1. Developments Made in the National Payment Systems**

#### **3.7.1.1. Electronic Money Product and Schemes**

In January 2000, the BOT issued Guidelines for establishment and operation of card based e-money products and schemes in Tanzania. The purpose is to promote non-cash based instruments; mitigate systematic and other risks which may endanger the stability of and the confidence in the national payment system. Therefore, protection measures are aimed at protecting consumer interests as well as having standardization, for future system integration (BOT: 2004).

#### **3.7.1.2. Bank of Tanzania Electronic Clearing House (BOTECH)**

BOT Electronic Clearing House (BOTECH) is a system that assist the normal interbank electronic debit clearing was introduced in the Dar es Salaam Clearing House on the 1<sup>st</sup> March 2002. Consequently, the Bank still monitors its operations after adoption of the clearing House Rules and Regulations to accommodate the Electronic Clearing House Operations (BOT: 2004)

### **3.7.1.3 The Tanzania Inter-bank Settlement (TISS) and the Electronic Funds**

#### **Transfer (EFT) System**

Execution of the Tanzania Inter-bank Settlement System started in April 2003. Then the system went live on April 2004. The system has two separate settlement options, namely real time gross settlement (RTGS) and liquidity optimization settlement facility (LOSF) options. Currently, Tanzania is executing the Electronic Fund Transfer (EFT) system, which facilitates credit clearing of bulk transfers interbank payments. The system was being tested and started to operate on June 2004 (BOT: 2004).

In the process of creating a healthy regulatory framework for the national payment system which is competent of supporting and creating conducive situations for the operations and regulations of payment system, the Bank of Tanzania Act, 1995 – was amended in April 2003 by the Financial Loans (Miscellaneous Amendment) Act, 2003, for the aims of empowering the Bank with explicit powers on the national payment system. These powers include, inter alia, powers to oversee, supervise, establish and regulate the payment, clearing and settlement systems (BOT: 2004).

### **3.7.2. The Role of Other Private and Public Sector Bodies in Payment System**

Other bodies that play a role in the Tanzania payments system include those that provide payment services, setting national payment system policies accounting standards, introducing rules and regulations, and giving payment system infrastructure services.

### **3.7.2.1. The National Payment System Advisory Council (NAC) and Tanzania Bankers Association (TBA)**

NAC is the supreme entity involved in policy issues. It provides directions and foresees the advancement of the payment systems all over Tanzania. Its basic functions include sanctioning reports and recommendations submitted by its specialized committees. TBA is an association whose members are all commercial banks; its major goal is to protect issues of common interest to its members. TBA is the main stakeholder in payment system, as its members are the only organizations that are involved in inter-bank clearing and settlement operations (BOT: 2004).

### **3.7.2.2 Bankers Clearing Houses and Tanzania Institute of Bankers (TioB)**

There are 5 Bankers Clearing Houses situated in five major cities, these are; BOTECH at Dar es Salaam and other Clearing Houses located in Arusha, Mwanza, Mbeya and Zanzibar. Membership is limited to licensed commercial banks. Their key function is to assist the clearance of paper-based inter-bank instruments, principally cheques. The TioB is a specialized entity and acts as a regulatory and disciplinary entity for banking skills and profession also performs all bankers' research activities and runs professional examinations. Membership obscures commercial banks, non-bank financial organization and individual members from the banking sector (BOT: 2004).

### **3.7.2.3. The National Board of Accountants and Auditors (NBAA) and the Tanzania Communication Commission (TCC)**

NBAA is the foreseeing authority and regulatory entity for both accounting and auditing standards. Accounting matters in payment systems are influenced by

standard issued by this body. TCC has been assigned to foresee and regulate all communication activities around the country. It is the only entity accountable for issuing license to all operators of communication services. Communication and network infrastructure is therefore affected by TCC regulations (BOT: 2004).

#### **3.7.2.4 Data Communications and Services Providers**

There are numerous companies, which give communication and network infrastructure services for National Payment Systems operations. These include voice and courier service providers. These service providers are licensed and regulated by TCC (BOT: 2004)

## **CHAPTER FOUR**

### **4.0 DATA ANALYSIS AND RESEARCH FINDINGS**

#### **4.1 Introduction**

This chapter presents data analysis and the findings in proving the research analysis. The chapter also assesses the role of mobile phone banking and legal issues relating to the sector. The chapter also identifies what could be the weaknesses of the mobile phone banking in Tanzania.

#### **4.2 Data Analysis**

Current statistics show that Tanzania has a total number of 44.9 million people (National Censer: 2012), 70% of that population reside in rural areas. The 2011 World Bank Report provides that 35.7% of the Tanzanian population lives under the poverty line (less than \$ 1.25 per day). Tanzania economy depends mostly on agriculture; tourism and mineral production have also transpired as crucial industrial sectors. More than 27 million people have access to voice mobile phone services (TCRA: 2013).

Tanzania has two fixed line operators (TTCL and Zantel) and eight (8) mobile networks, although there are only 4 leading mobile network operators, these are: Airtel, Zantel, Vodacom and Tigo. Tanzania's telecommunications market is competitive although in 2011 and 2012 there was price wars initiated, a consolidation among smaller mobile network operators. The most modern technology in the market include the establishment of Voice over Internet Protocol (VoIP) telephony, 3G of mobile phone services and wireless broadband networks.

To date, there are four m-money inventions on the market, Airtel Money, Ezy Pesa (Zantel Z-Pesa), Vodacom M-PESA and Tigo Pesa. Moreover, the National Microfinance Bank (NMB) offers a mobile application which permits its customers to utilize their mobile phones to send money to any person within Tanzania even if she/he does not have a bank account. Common services available to the customers of m-money in Tanzania includes, internal and international money transfers; mobile payments such as airtime top ups; merchant payments; utility bill payment and salary transfers; and mobile phone banking including balance inquiries, withdrawals, deposits and credit services.

#### **4.3 Regulations of Mobile Banking**

Accountability, for and regulations concerning to mobile money transaction were provided to the Central Bank of Tanzania through the Financial Institution Statute (FIS) of 1993. Nevertheless, the regulatory nature for mobile money transaction in Tanzania is almost the same to that of Kenya where the Central Bank of Tanzania (BOT) has approved the services for operators, but does not completely regulate it under regular banking regulation. Tanzania does not have national ID yet, therefore, registration process is cumbersome (subscribers use voters ID to register) and it is not unusual for account initiation to be delayed until further subscriber selection has been done. Also, Anti-Money Laundering (AML) obligations in Tanzania make registration processes more complicated for customers who wish to transfer/receive more than Tsh. 2 million.

An operator like Vodacom has executed a strict Anti-Money Laundering policy and supplied a copy of AML manual to every agent for their compliance. The company



(Vodacom) reviews the policy every twelve months to modernize it in accordance with changes in the regulatory scope. In 2009 TCRA passed the legislation which requires all mobile operations legitimately to register subscribers buying new SIM cards. The new subscribers should now give a valid ID with photo, which is difficult in a country where there is no national ID system. Moreover, the legislation also needs all current pre-paid mobile phone customers to go through the same procedures of registration and giving formal ID for recognition otherwise their accounts will be deactivated. The procedure for registration for mobile money transactions are now similar to those for mobile phone activation, this gives an excellent chance for the uptake of mobile transactions services in Tanzania.

#### **4.4 Mobile Money Adoption**

Firstly, the research looks at the rate of access to mobile banking services in the middle of Tanzanian households. Tanzania emerges to have the prospective to expand its mobile money market. 60% of the subscribers have logged on or own a mobile phone and 56% of those (subscribers) have at least one operating SIM card. The researcher found that more than one third of all interviewed subscribers have at least registered for one of the mobile money services (35%) and exactly one third of subscribers have at least one registered mobile money SIM card (33%). Half of all respondents interviewed subscribers that have registered for mobile money services (52%) and they have only one account, close to one third (29%) have two mobile accounts and the rest subscribers (19%) have more than three mobile accounts.

The model is comparable for subscribers to have a registered mobile money SIM card. 55% of these subscribers have one account, 28% have two registered accounts

and 17% have amid 3 and 9 registered mobile money accounts. Therefore, the percentage of mobile money utilization is high in the middle of urban and banked subscribers, and subscribers living on top of poverty line. The Dar es Salaam city has the utmost percentage of subscribers with mobile money utilization.

Among entity subscriber officiates, those with no formal education and those with 55 years and over were the least likely to have access to mobile phone banking or to use mobile money. Distinct age, education, and gender are not key factors in mobile money adoption. Males and female vary in terms of access to mobile phones and SIM card possession. The dissimilarity in the utilization of mobile money in the middle males and females is small.

#### **4.4.1 Barriers to Mobile Money Adoption**

##### **4.4.1.1 Insufficient Understanding of the Services**

90% of the interviewed subscribers registered to use mobile money primarily for the purpose of sending or receiving money. Only 10% knows that mobile money services can be used in different ways apart from sending or receiving money. Those who were interviewed admitted that they were not registered for the services. Ant they said, they lack awareness about the services and a few named insufficient understanding of mobile money.

##### **4.4.1.2 Problems with Mobile Money Agents**

Most of the interviewed subscribers who registered for mobile money services blame agents to be a source of problems in their utilization of the mobile money services. The researcher found three top problems from the agents, these are the agents were

not in their offices; agents do not have any/enough e-float and do not have any/enough cash. 83% of the interviewed subscribers experience the above agent related problems. A very few registered users of the mobile money shared their mobile money PIN with another person and one in 10 carried out mobile money transactions with the aid of an agent. 7% of the Vodacom M-PESA, 10% of Airtel Money and 5% of the Tigo Pesa registered users have experience fraud or a scan from their mobile money account.

#### **4.4.1.3 Technical Issues**

Another challenge faced by majority registered mobile money users is technical issues relating to the utilization of the services. Popular users said that the process of registering for and using mobile money services is easy despite other interviewed saying that they need help from other people when executing mobile money transactions. Most of the registered users who faced challenges turn to mobile money agents to get aid with transactions. 23% of M-PESA, 18% Tigo Pesa and 15% of Airtel Money registered users respectively confess that, at least in one incident they were incapable to withdraw money when they need to do so. Regardless of the provider, the technical issues are determined within half a day for the majority of interviewed respondents. A very small number of the registered users had to wait for more than a day. 49% of the interviewed customers of mobile money failed to withdraw money from agents due to system failures.

#### **4.5. Market Share in the Tanzanian Mobile Money Services Sector**

Vodacom M-PESA is a leading mobile money services provider in Tanzania. Currently, it has more than five million customers who use M-PESA with

transactions of more than US\$ 823.3 million per month. Tigo Pesa and Airtel Money are in the second and third position respectively, while Ezy Pesa (Zantel) market share is a minor one. 56% of the interviewed subscribers use Vodacom M-PESA, 24% use Tigo Pesa, 14% use Airtel Money and only 6% use Ezy Pesa (particularly in Zanzibar Islands).

14% of the interviewed subscribers use two mobile money products. The majority amalgamations are Vodacom M-PESA and Tigo Pesa, or Vodacom M-PESA and Airtel Money. 95% of Ezy Pesa subscribers also use Vodacom M-PESA. Only 2% of the interviewed subscribers use three or more mobile money product. More than 75% of the registered mobile money users are familiar with the services through media sources. Friends and relatives are the second source of information concerning mobile money users. Most mobile money subscribers became familiar with the mobile money through TV, radio and friends while in rural and peri-urban registered users were likely to know the services through radio and friends.

#### **4.6 Consumer Awareness/Education**

The doors for free market economy were opened since 1980s through trade liberalization and economic reforms. This is the time when consumer protection changed in Tanzania and in 2003 the Fair Competition Act, 2003 was enacted to govern all issues relating to consumer protection law in Tanzania. The consumer and competition protection policy/law are managed through one roof, that is, the Fair Competition Commission of Tanzania. The Fair Competition Commission is an autonomous government body established under the Fair Competition Act, 2003

(No. 8 of 2003) to promote and safeguard successful competition in trade and commerce; and to safeguard customers from unfair and misleading market conduct.

One of the main problems detected by researcher is that, majority of the customers of the mobile banking have little knowledge about the mobile banking services. Most of the subscribers interviewed know only to send and receive money, very few know about bills payments and other services provided. The answer to the question “why they do not know a lot about mobile banking packages” is “they do not know and no one to tells them about those packages”.

This challenge affects a lot the sector due to the fact that the world is moving fast towards e-commerce and operators introduce a lot of new products in e-commerce while the graph to customers’ understanding is very low. There are no specific laws in Tanzania which describes and protect the rights of consumers under mobile banking sector. The current laws were made purposely to control voice mobile phone services and do not include mobile money services. Therefore, due to the lack of proper legislation in Tanzania customers are at risk when using the services. Moreover, the subscribers living in rural areas are the ones who are affected much with these modern technologies because they are in need of utilizing mobile banking due to the lack of normal bank infrastructures, but they fail to utilize the services effectively due to the lack of knowledge about it.

## **CHAPTER FIVE**

### **5.0 FINDINGS, RECOMMENDATIONS AND CONCLUSION**

The chapter deals with the general findings, recommendations and conclusion of the research. The findings are pointed out on clause 5:1 while conclusion covers only general conclusion of the research and in recommendations the research gives some ideas on how to solve the weaknesses found in order to improve the sector. This is due to the fact that e-commerce (particularly mobile banking) is growing faster within and outside the country.

#### **5.1. Findings**

Findings of this study are as follows:-

- (i) There is no laws governing the whole process relating to the mobile money transactions in Tanzania;
- (ii) There is no disclosing of information of cyber criminals to the laws enforcers in most of the companies dealing with money business;
- (iii) Illiterate of the general public about the electronic transactions and the risk associated with such services; and
- (iv) There are no investments to set-up proper ICT related risk management in most of financial institutions of Tanzania.

#### **5.2. Recommendations**

This research makes several specific recommendations for further improvement of mobile banking sector. It is meaningful to note that bridging the gaps arose in mobile banking sector requires cooperation of different sectors including the Government,

legislators, Regulators, Media, private and Community Services Organizations. Collaboration between these institutions is very crucial so as to play a supportive role on modernizing our laws in order to cope with current situation under mobile banking industry.

The researcher recommends the following as key dimensions in filling the gaps detected by this research on the mobile banking industry:

That, there should be joint efforts between lawyers, ICT experts, institutions and Government to enact new laws which will cover the whole processes relating to mobile money transactions. This will provide an opportunity for the sector to grow well and attract investors to invest in Tanzania. With the current situation some investors have doubts on how the country will handle legal and practical challenges. Normally, cyber criminals look for a loophole to play their role, without proper and strong laws Tanzania will be a playing ground for cyber criminals and this will affect the economy of the country. Statistics show that mobile banking helps rural areas population to access banking services due to the lack of infrastructures for normal banks in those areas.

That, companies must maintain the tradition of disclosing information to the law enforcers relating to the risks related to cyber activities. It has been a challenge in many countries for companies dealing with money business to fail to disclose information concerning cyber crimes occurring in their company with the fear of losing customers. Cyber crimes activities will not be brought to an end if the responsible persons are not sent to the court. Therefore, stakeholders must cooperate with law enforcers every time when the incident occurs. This will be a big step

towards fighting cyber crimes activities in Tanzania. Failure to do so will be like a green light to the cyber criminals to do their activities.

That, the general public must be well educated about electronic transactions and the risk associated with them. Customers' awareness/education is one of the big challenges found by this study. Most of the interviewed people confess that they know only to send and receive money. If operators and banks want many people to adopt mobile banking they should make sure that people are well equipped with the basic information about the products relating to mobile and the education should target all people living in town and rural areas.

Currently, many companies use vehicles to pass around city centers/towns to promote certain service. This is not a better way to educate people about certain services. The researcher advises companies to pay for airtime, either in TV or Radio, to educate customers about certain services and allow them to ask questions. Also, companies should turn the other side of the country (rural areas) where many people do not know how to use mobile transactions while they are in need of those services.

That, financial Institutions in Tanzania should invest to set-up proper ICT related risk management and that, public and private institutions must assist to facilitate law enforcers in capacity building in order to make them abreast of cyber crime.

### **5.3. Conclusion**

The main theme of this study is to assess legal and practical challenges affecting mobile banking sector in Tanzania. Currently, there are four (4) operators providing



mobile banking in Tanzania. These are: Vodacom M-PESA, Tigo Pesa, Airtel Money and Ezy Pesa. The research is done at the peak of development of mobile money in Tanzania, due to the fact that every day new subscribers join mobile money services. Thus, the assessment of the legal and practical challenges affecting mobile money services come at the right moment because the innovations made by the operators and agreements (MoU) signed between mobile companies and banks evidences that the sector grows very fast.

After the assessment of laws, regulations and experiences from other countries the researcher observed the gaps/challenges faced by the mobile money sector as narrated in Chapter Four of this research. However, identifying the challenges is one thing and solving those challenges is another thing. One of the major challenges which is covered under Chapter Four is lack of proper regulations to the sector. The country depends on the legislation regulating voice mobile services to operate also in mobile banking which causes a big chaos to the sector. Even the Bank of Tanzania does not have proper legislation to govern the mobile banking sector.

Also, the researcher observed lack of education/awareness to the subscribers particularly in rural areas. The mobile money services subscribers need adequate knowledge of the products so that they utilize the services enjoyably. But due to the lack of education/awareness on the side of subscribers/customers the number of services enjoyed by them is very limited (most of the subscribers of mobile money know how to send and receive money, very few know other services). The research discovered that, there are weaknesses on providing awareness/education to the

subscribers/consumers; TVs, Radio and Magazine are not user-friendly to the rural areas. Radios reach wide geographical area in Tanzania, but they do not satisfy the need of education/awareness to the people.

Moreover, the research looked at other countries on how they cope with the modern innovation in mobile banking. For example, in South Africa, The Electronic Communication and Transactions Act No. 25 of 2002 were enacted to provide the basic foundation to allow e-contracts. The Act (ECTA, 2002) envisages that, a data message should be considered as having been received by the addressee:

*“When the complete data message enters an information system designated or used for that purpose by the addressee and is capable of being retrieved and processed by the addressee”*

In India, Information Technology Act, 2000 (IT Act) came into force on 17<sup>th</sup> October 2000. The Act was enacted to handle challenges in ICT sector particularly e-transactions. Also, in Japan, the Penal Code which was enacted since 1907 was amended in 1987 with the main purpose of including into it the modern computerized business works to prohibit any computer crimes, especially to protect safety of electronic fund transactions and the integrity of computer programs and electronic data. When other countries enacts special legislation to handle challenges of mobile banking, Tanzania still depends on the Electronic and Postal Communication Act, 2010: the Tanzania Communication Regulatory Authority Act, 2003; the Companies Act, Cap 212 R.E 2002 and the Law of Contract Act, Cap 342 which do not cover mobile banking operations

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