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**ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE**

**ASSESSING OPPORTUNITIES AND CHALLENGES OF
IMPLEMENTING MOBILE WALLET BANKING: THE CASE OF
GIZEPAY**

**BY
SEYUM DEBEBE**

**A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF
PROJECT MANAGEMENT PRESENTED IN PARTIAL
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Advisor: Mengistu Bogale (PHD)

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Approval Sheet

**ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
MA IN PROJECT MMANAGEMENT**

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DECLARATION

I, **Seyum Debebe**, declare that this research paper, entitled **“ASSESSING OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING MOBILE WALLET BANKING: THE CASE OF GIZEPAY”** is my original work submitted for the award of fulfillment of requirement for Masters of Arts (MA) Degree in Project Management

It has not been presented for the award of any degree or other similar titles in any other institutions higher learning to the best of my knowledge, and the resource used have been dully acknowledged.

Addis Ababa University would guarantee to protect the property right of the writer and take full responsibility from its side after the submission of the thesis to the Department.

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CERTIFICATE

This is to certify that **SEYUM DEBEBE** has carried out his research work on the topic entitled **“ASSESSING OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING MOBILE WALLET BANKING: THE CASE OF GIZEPAY”**. This work is original in nature and is suitable for submission to the award of MA in project Management.

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ABSTRACT

This study work aimed to examine challenges and opportunities in implementing wallet banking project in Bank of Abyssinia in giving due attention to available opportunities which drive implementation process and challenges which can influence the implementation process of wallet banking. The study applied exploratory research design and used questionnaires, open ended questions, yes/no questions and semi structured interview as instrument to collect primary data, while secondary data were reviewed from various literatures. Purposive sampling was used to gather the data through questionnaire for Digital Banking support, Agent banking and application management department team members with sample size of 31 respondents and Semi structure interview was employed for the executives of agent banking and application management team. A mixed research approach was used to answer the research questions. Quantitative data were analyzed with the use of SPSS version 20 software using statistical tools of frequency, percentage and mean score. The results investigated from the selected respondents and review of secondary data demonstrates that BOA implemented GizePay in a manner that followed the right project management methods, staged and practices by combining lessons learned from previous versions and other earlier released wallet banking platforms at the perfect time table for launching wallet banking. The study also demonstrates opportunities that drive implementation of wallet banking like: the market is endowed with huge potential of untapped and unbanked population, increase in the number of Smartphone, internet and mobile payment users, Inventive mobile payment application, being late adopter gave the bank to take advantage of already developed best and existing experience of other similar platforms, , it is a way to minimize cost for the bank and it reduces risks of traditional payment system, The existence of few local and no international mobile wallet service providers and government policy and incentive to widen mobile banking usage. The study result also identified significant challenges for implementation of wallet banking like: lack of adequate telecommunication infrastructure, Low level of internet penetration, Fraud risk and low trust of mobile wallets by customers made the technology acceptance low, Low level of ICT literacy rate and low perception of customer, lack of aggressive advertising and awareness creation by BOA, Customers preference to stick with the physical bank hampered performance and insurgence of wallet banking, Repetitive data network failure (inaccessibility), data network interruption and requirements of little mobile device knowledge, lack of continuous non-virtual training and government policies. On these bases, recommendation were given for BOA to work on creating awareness to employees, customers and shareholders through aggressive marketing and advertisement, giving continuous non- virtual training and also recommendation for government side to loosen the polices on transaction limits and create environment for inter-bank wallet banking.

Keywords: wallet banking, practice, TOE framework

Table of Contents

Contents	Page
Approval Sheet.....	i
DECLARATION	ii
CERTIFICATE	iii
ACKNOWLEDGMENT.....	iv
ABSTRACT.....	v
LIST OF FIGURES	ix
LIST OF TABLES	x
LIST OF ACRONYMS	xi
CHAPTER ONE.....	1
INTRODUCTION	1
1.1. BACKGROUND OF THE STUDY	1
1.2. STATEMENT OF THE PROBLEM.....	3
1.3. RESEARCH QUESTIONS.....	6
1.4. RESEARCH OBJECTIVE.....	6
1.4.1. General Objective.....	6
1.4.2. Specific Objectives.....	6
1.5. SIGNIFICANCE OF THE STUDY	6
1.6. SCOPE OF THE STUDY	7
1.7. LIMITATION OF THE STUDY	7
1.8. ORGANIZATION OF THE STUDY	8
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1. THEORETICAL LITREATURE REVIEW	9
2.1.1. DEFINITION OF DIGITAL BANKING.....	9
2.2. REVIEWED EMPIRICAL STUDIES ON ETHIOPIAN WALLET BANKING POTENTIAL BASE	35
CHAPTER THREE	38
RESEARCH METHODOLOGY.....	38
3.1. RESEARCH DESIGN.....	38
3.2. RESEARCH APPROACH AND RESEARCH METHOD.....	39
3.3. STUDY AREA.....	40
3.4. TARGET POPULATION.....	40

3.5. SAMPLING AND SAMPLING TECHNIQUE.....	41
3.6. SOURCES OF DATA	41
3.7. DATA COLLECTION INSTRUMENTS.....	41
3.8. METHOD OF DATA ANALYSIS	41
3.9. LIMITATION	42
3.10. ETHICAL CONSIDERATION.....	42
CHAPTER FOUR.....	43
DATA ANALYSIS AND PRESENTATION	43
4.1. INTRODUCTION	43
4.2. DEMOGRAPHIC INFORMATION OF THE RESPONDENTS	44
4.2.1. Gender of the respondents.....	44
4.2.2. Age of the respondents	45
4.2.3. Education qualification.....	45
4.2.4. Responsibility at the department.....	45
4.2.5. Role in the department	45
4.2.6. Experience	45
4.3. TECHNICAL QUESTIONS.....	46
4.3.1. Satisfaction of implementation	46
4.3.2. Other local mobile wallet banking	46
4.3.3. Wallet banking is in similar level and performance with other similar wallet banking platforms.....	46
4.4. ASSESSMENT OF IMPLEMENTATION PRACTICE	47
4.5. ASSESSMENT OF OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING WALLET BANKING IN BOA.....	49
4.5.1. OPPORTUNITIES FOR IMPLEMENTING WALLET BANKING	50
4.5.2. CHALLENGES FACED IN WALLET BANKING PROJECT IMPLEMENTATION	55
CHAPTER FIVE	64
CONCLUSION AND RECOMMENDATION.....	64
5.1. SUMMARY OF FINDINGS.....	64
5.2. CONCLUSION.....	68
5.3. RECOMMENDATIONS	70
5.4. SUGGESTION FOR FURTHER STUDY	71

REFERENCES72
APPENDICES75
REFERENCES.....69
APPENDICES.....71

LIST OF FIGURES

LIST OF FIGURES	PAGE
Figure 2.1 Mobile payments Diagram	10
Figure 2.2 Mobile transactions Diagram	12
Table 2.1 Digital wallet delivery technologies	17
Figure 2.3 Ansoff Matrix	22
Figure 2.4 : Abyssinia's GizePay wallet banking.....	23

LIST OF TABLES

LIST OF TABLES	PAGE
Table 4.1 Demographic Characteristics of the Respondents	44
Table 4.2 technical analysis	46
Table 4.5.Challenges of implementing of mobile wallet banking	55
Table 4.4 Opportunities for implementing wallet banking project.....	50
Table 4.3 Implementation of GizePay response	47

LIST OF ACRONYMS

ATM	Automated teller machine
App	Application
BOA	Bank of Abyssinia
CBE	Commercial Bank of Ethiopia
DSTV	Digital Satellite Television
E-banking	Electronic banking
E-Business	Electronic business
E- Payment	Electronic payment
E- Wallet	Electronic wallet
Et al.	Et alia (meaning “and others”)
G.C	Gregorian calendar
IC	Integrated Circuit
ICT	Information and Communication Technology
IOS	IPhone operating system
IT	Information technology
M-Pesa	Mobile Pesa (Pesa is Swahilui for Money)
MTN	Mobile Telephone Networks
NBE	National Bank of Ethiopia
NFC	Near Field Communication
POS	Point of Sale
QR	Quick Response
RBC	Bank of Canada
SWIFT	Society for Worldwide Interbank Financial telecommunication
SPSS	Statistical Package for Social Scientists
TOE	Technological Organizational Environmental frame work
UK	United Kingdom
US	United States of America

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Most of human history involves trade which encompasses payment. The payment system had moved from bartering, printed paper money and coins, other payment instruments such as cheque and casher payment order and to most recently electronics payment system. An electronic payment is defined as a payment services that utilize information and communications technologies including integrated circuit (IC) card, cryptography, and telecommunications networks (Raja, 2008).More than ever before there is a global concern to establish financial deepening access to previously overlooked areas due to some areas considered economically unviable where majority of the customers operate their businesses. There is an increasing need to promote technological and institutional innovation as a means to expand financial system access and usage (Atandi, 2013).

Digital Banking is a generic term for development of banking services and delivering products through electronic channels, such as the Automated Teller Machines, the telephone, the internet, the mobile phone (A.PappuRajan and G.Saranya, 2018).Electronic banking (e-banking) is nothing but e-business in banking industry. It may also be referred as internet banking. The computer applications are paramount concern to the banks in today's business environment and Internet has become the major platform for all financial, banking and commercial transactions in the present scenario (Magembe and Shemi, 2002).

Internet facility has changed our life. We become dependent upon internet for day to day work. Online shopping and online banking was one of the main services which affects our life and

made our life very easy. Before many years, when we went to the bank, we filled slip, stood in queue and have to wait for long time for making any transaction. But, now, due to internet facility and digital banking, it becomes easy for customer to do any banking transaction from his home, without going to bank. Demonetization was the major factor, which pushed up the role of digital money in positive way, as result many digital computer and mobile application came into market (Mathur, 2019).

Electronic Banking has been widely used in developed countries and is rapidly expanding in developing countries. In Ethiopia, however, cash is still the most dominant medium of exchange, and electronic payment systems are at an embryonic stage. In the face of rapid expansion of electronic payment systems throughout the developed and the developing world, Ethiopia's financial sector cannot remain an exception in expanding the use of the system. All banks in Ethiopia are too late to move with technological advancement and they should clearly chart out the time schedule for their integration and technological advancement. Some of the banks even today do not have their own websites which can help them to provide at least the information on financial services offered by them (Wondimu, 2013).

In order to improve the practice of E-banking in developing countries, a better understanding of the challenges and practices of e banking is critical. By gaining an in -depth understanding of the factors and conditions that influence developing country's ability to fully adopt and realize its benefits, strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of E-banking in the developing countries (Zhao, 2008).

Despite, the importance of the adoption of electronic payment technologies, limited studies are currently available in developing countries, especially in Ethiopia. Therefore, more studies are still required to understand the relevance of E-banking in the country to identify areas in which the country lags behind that inhibit their E-banking adoption and diffusion. There are no studies made on mobile platform banking system in Ethiopia yet. Therefore, to address the current gap in the literature, this study was designed to examine the E-banking adoption situation in Ethiopia, giving due recognition to mobile banking platform and focused on the investigation of barriers and drivers of implementation of GizePay project in Bank of Abyssinia and recommended appropriate actions to be taken to promote Mobile banking platform in the country.

1.2. STATEMENT OF THE PROBLEM

Certainly the banking industry in Ethiopia is underdeveloped and therefore there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state of the art technology being used anywhere in the world (Wondimu, 2013). With a growing number of import-export businesses, and increased international trades and international relations, the current banking system is short of providing efficient and dependable services and therefore all banks operating in Ethiopia should recognize the need for introducing electronic banking system to satisfy their customers and meet the requirements of rapidly expanding domestic and international trades, and increasing international banking services (Kidan, 2005) and (Wondimu, 2013)

Technology has inarguably made our lives easier. It has cut across distance, space and even time. One of the technological innovations in banking, finance and commerce is Electronic Payments. Electronic Payments (e-payments) refers to the technological breakthrough that enables us to

perform financial transactions electronically, thus avoiding long lines and other hassles. Electronic Payments provides greater freedom to individuals in paying their taxes, licenses, fees, fines and purchases at unconventional locations twenty four hours a day and seven days per week (Sumanjeet, 2009). With the rapid growth of mobile phone ownership to facilitate digital payments in the developing world, shifting from cash to digital payments offers high potential payoffs for entrepreneurs worldwide (Klapper, 2017).

In a relatively short period of time, the Internet has moved from an occasional tool to one of the principal ways we communicate, entertain ourselves, and do work. And all that time we spend online has to come at the expense of something else. One main advancement technology has brought to us is the introduction of online banking or E-banking. Traditional banking is characterized by physical decentralization, with branches scattered around populated areas to give customers easy geographical access (Ainin et al., 2005). E- Banking does away with the need for most visits to the bank. However, according to Locket & Littler (1997), physical banks assure customers that their banks has substantial resource and guarantee the security of their savings. A study indicated that electronic banking has been available in the UK since the early 1980s.

Despite, the importance of these adoptions and development of electronics payment technologies, very limited number of research has been done on the opportunities and challenges of implementing electronics payment projects in developing nations like Ethiopia. This implies that, more studies are required to assess opportunities and challenges of electronics payment in the country to identify areas in which banks lags behind and if there is any chance to exploit the opportunities available.

In the study area, there has not yet been detail research works made available to address opportunities and challenges of implementing electronic payment projects in Ethiopian context specifically in BOA. Therefore, the researcher was motivated to fill those aforesaid gaps and tried to conduct a research on e-banking services which will help to support further implementation of E-Banking projects in BOA and adds to the scholarly research literature in the field. Therefore, this study focused on the opportunities and challenges of implementing electronic payment technologies particularly in BOA.

The primary focus of this paper is the assessment of opportunities and challenges of mobile wallet banking implantation called GizePay (formerly known as “PayQwick” and “EnquPay”), which was launched by Bank of Abyssinia in 2020. GizePay Mobile wallet, allows users to make payments to various merchants, transfer funds to various customers and many more. With BOA Mobile wallet, customer can top-up their mobile, pay postpaid, landline and electricity bills, buy bus tickets, airline tickets and movie tickets, shop online, transfer money from one bank to another (BOA, 2020).

Bank of Abyssinia launched its first mobile wallet named PayQuick, but later renamed it to Enqupay due to naming issues. EnquPay was in similar features with PayQuick and served for short time. BOA suspended Enqupay application for a while and replaced it with the now available GizePay. GizePay is more advanced than the former mobile wallets as it incorporates short dial number line to open wallet accounts without the need for internet connection. Downloading the application from play store and using it with internet connection allows for more advanced transaction options that the short dial line fails to deliver (BOA, 2020)

1.3. RESEARCH QUESTIONS

1. What are the opportunities for implementation of wallet banking project?
2. What are the existing challenges to the implementation of wallet banking?

1.4. RESEARCH OBJECTIVE

1.4.1. General Objective

The general objective of this study is to assess the opportunities and challenges of implementing digital wallet banking in bank of Abyssinia

1.4.2. Specific Objectives

The specific objectives of the study were:

- ✓ To study what BOA's wallet banking implantation looks like
- ✓ To Study GizePay's and other bank's wallet banking platform similarities and difference
- ✓ To identify opportunities for wallet banking project implementation
- ✓ To suggest possible solutions in relation to widen Gizepay's usability and engagement
- ✓ To identify the challenges in Gizepay implementation is in particular and wallet banking in general

1.5. SIGNIFICANCE OF THE STUDY

This research will intend to fill the literature gap related to digital banking and giving due attention to wallet banking. Specifically this research will serve as preliminary work or a pace base for further study on wallet banking. Furthermore, this study will also expect to increase knowledge surrounding wallet banking, its implementation, opportunities and challenges the of

wallet banking. The study will in particular benefit Bank of Abyssinia. Generally, this research will benefit several stakeholders such as employees, officers, organization, project teams, other researchers and clients as well as society as a whole

1.6. SCOPE OF THE STUDY

The study is limited both in terms of issues and geographic coverage. Geographically, it would be too difficult to address all branches and districts of BOA; the study was only limited to E-Banking department of the bank. The study is confined to analyze the implementation practice of mobile wallet banking in BOA. On the other hand the study is limited by issues. Although there are different socio-economic issues that made introduction and implementation of wallet banking projects easy or difficult, the proposed study focused only technological, organizational and environmental factors.

1.7. LIMITATION OF THE STUDY

The credibility of the findings depends on the accuracy of the answers from the respondents. Therefore, there might be a limitation on the accuracy of the questionnaires responses and other query information and also unwillingness to give sufficient information and lack of clear and well-handled information. Subjectivity might lead to bias in fear or hope of supporting the organization. Because of this, systematic variance in the survey population due to either known or unknown influences could cause bias. Another big limitation of this paper was absence of sufficient practical and empirical analysis on wallet banking in Ethiopia in general and BOA in particular.

1.8. ORGANIZATION OF THE STUDY

This study was organized and comprises into five chapters. The first chapter consists of an introduction which consists of background of the study, statement of the problem, objectives of the study, significance of the study, scope of the study and definition of terms. The second chapter discusses about the review of related literature. The third chapter deals with the research design and method of the study. The fourth chapter deals with the presentation, analysis and interpretation of the data. The fifth chapter deals with the summary of findings, conclusions and recommendations of the study. Finally, references, a set of appendices and questionnaire that used to collect primary data for this work were included

CHAPTER TWO

LITERATURE REVIEW

2.1. THEORETICAL LITREATURE REVIEW

2.1.1. DEFINITION OF DIGITAL BANKING

Different scholars have defined digital banking in different perspectives with a similar meaning. Mathur (2019) defined digital money as a payment- receipt method which works in electronic form with the help of internet. With the help of internet, smart phone, computer and ATMs machine, money can be transferred from one person to another person without any physical appearance at bank.

Mbama (2018) defined digital banking as a platform that uses telephone, internet and mobile and becoming important for banks service marketing, especially with the increase in digital device usage and customer demand for financial services. The internet banking channel is classified as e-banking (Sarokolaei, et al. 2012), mobile banking as m-banking (Hanafizadeh et al., 2014; Lin, 2011) and telephone banking as t-banking (Sundarraaj & Wu, 2005).

These digital channels share many characteristics with other services, with the main difference being the transmission medium, which can either be mobile or internet digital networks in digital banking. Moreover, digital services are consumed as they are produced, intangible and cannot be kept in an inventory (Hatch, 1997). Digital banking is regular account in a bank that offers on-line services, and enables operations via the Internet: automated payments, manual payments, money transfers, statements, etc. (Neumann, 2018).

WHAT IS WALLET BANKING?

Wallet banking is digital banking platform that allows customers to securely add their cards to the wallet app. Wallet app can be standalone or integrated in the Bank's main mobile app. They are helpful to make one-click payments online without giving websites your card data. Currently in wide usage for several payments including, airlines ticket, DSTV payment, betting ticket, road toll, parking, lottery, event tickets, mobile top-ups, donations (Lenov, 2017)

The granular level of abstraction of mobile payments which involves making in-store payments using the mobile phones involves the services of a mobile wallet. Given below is a diagram representing the various abstraction levels of mobile payments under each driver (Narayan, 2013).

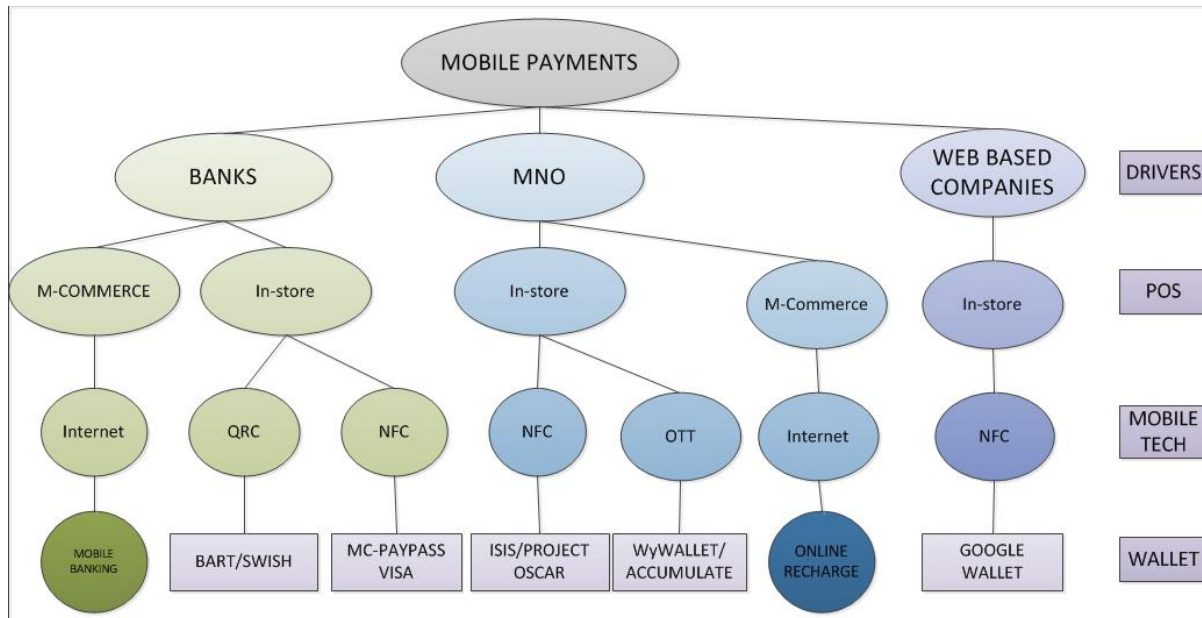


Figure 2.1 Mobile payments Diagram

It is a virtual wallet in your Smartphone, in which money is stored in the form of virtual money.

So overall, it is a digital wallet out of which you can make money transactions and payments. It has the combination of software and hardware on certain devices and all seek to replace the use

of traditional credit/debit cards with mobile phones. You can pay money using smart phone apps, text messages, social media or websites (Bosamia, 2017)

In a study regarding consumer adoption of mobile wallets, Doan (2014) explained that ‘Mobile wallet is formed when your Smartphone functions as a leather wallet: it can have digital coupons, digital money (transactions), digital cards, and digital receipts’. Mobile wallet service allows the user to install an application from online stores in their Smartphone and use them to pay for their online and offline purchases. Using latest technologies that connect Smartphone’s to the physical world such as NFC (Near Field Communication), sound waves, and QRcodes, cloud-based solutions, mobile wallets are believed to provide more convenient payment solutions to the customers in future (Husson, 2015).

Smartphone has gained lot of prominence in our day to day life and its offering many services and people can do many things by just tapping the phone. This electronic gadget not only serves as a communication tool but also used for socialization, entertainment, internet access and payments. Technology has enabled the Smartphone users to do merchandising. Besides payment, people can also do functions like store receipts, coupons, business cards, bills...in their Smartphone’s. When Smartphone’s can function as leather wallets, it is called “Digital Wallet” or widely known as “Mobile Wallet”. Multiple players are involved under the present electronic payment system. For example, Visa and Master card links four parties like issuer, customer, Merchants and Merchant acquirers. Mobile phones are facilitating commerce to grow by making payment ecosystem simple and easy (Rao, 2015)

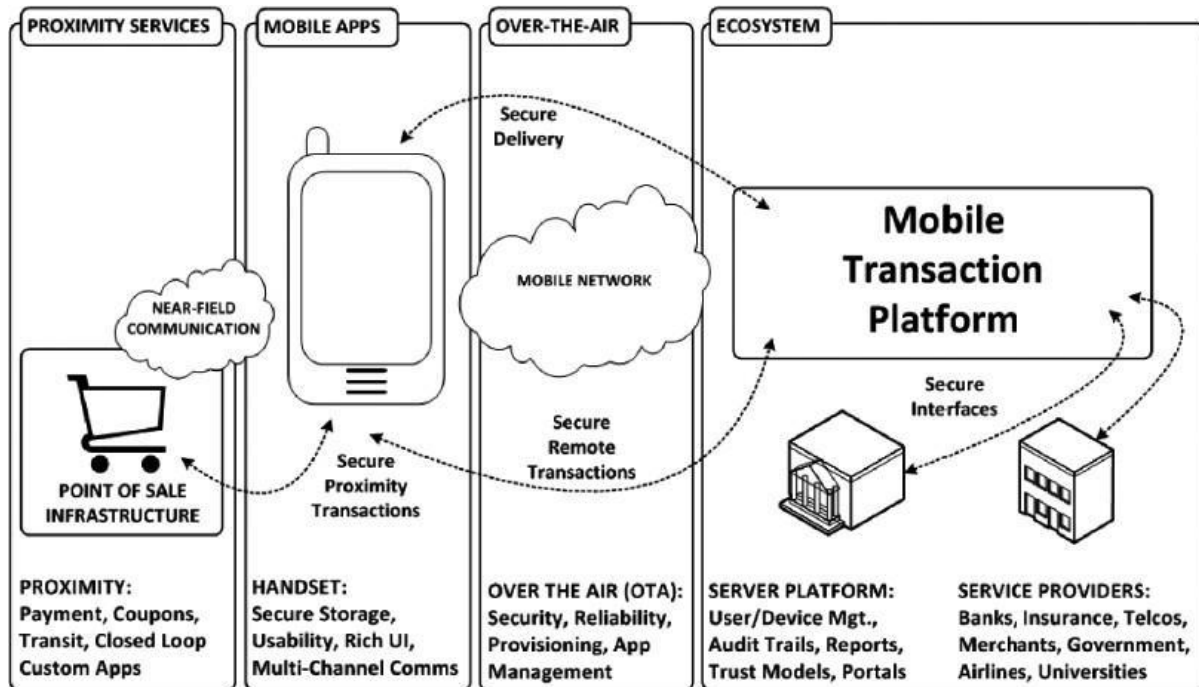


Figure 2.2 Mobile transactions Diagram

Evolution of Digital and Mobile Wallets

Commerce is going mobile. In 2014, smart phones became the dominant internet access tool around the world, replacing desktop and laptop computers, and by 2020, there will be 2.6 billion connected smart phones in the world. Metcalf’s law, the law that says “the value of a telecommunications network is proportional to the square of the number of connected users of the system,” has never had a more powerful example than the growth of the Smartphone. With every new Smartphone user, the potential for interconnectivity through apps increases exponentially, and it’s changing the fabric of global society (Comviva, 2016).

Since 2007, innovations in mobile and digital wallets have resulted in a proliferation of wallet models and solutions, all intended to improve consumer convenience, leverage data, serve up offers, lessen friction, or lower the cost of payments.

The earliest wallet innovators, starting around 2007, were financial technology companies. Startups, including Braintree, Klarna, and Ayden, were launched to solve the problem of enabling in-app and m-commerce payments (U.S. Payments Forum, 2018).

In 2010, AT&T, Verizon, and T-Mobile formed Softcard (formerly Isis) to realize the vision of a Near Field Communication (NFC) wallet with payment credentials securely provisioned in the secure element (SE) by the mobile network operators (MNOs). That same year witnessed the launch of Stripe. Stripe reduced the amount of time it took a new merchant to accept online card payments from weeks to minutes (U.S. Payments Forum, 2018).

A flurry of merchant wallet introductions followed, including LevelUp and Starbucks in 2011, and Dunkin' Donuts in 2012. Also in 2012, the Merchant Customer Exchange (MCX) consortium was created, with the intent to launch a multi-merchant mobile wallet, called CurrentC. MCX, owned by more than a dozen large U.S. retailers comprising convenience store, fuel, grocery, big box retail establishments, and restaurants, claimed to serve nearly every Smartphone-enabled American and account for approximately \$1 trillion in annual sales (U.S. Payments Forum, 2018).

Currently, mobile wallets use has been increased due to more protected security aspects are enhanced. In past people don't have the acceptance of mobile base financial accepted the mobile payments solutions. Still there are many threats affecting to secure transactions to identify and understand the mobile wallets challenges (Bosamia, 2017)

According to Mallat (2007), the adoption of mobile payment methods is dependent upon several factors that affect the consumers' choice and willingness to make use of latest technology for

making payments. Some of the factors that impact the consumer adoption of mobile payment methods either positively or negatively are listed below

Advantages of mobile payment systems: Prior studies suggest that mobile payment methods provide their customers with a number of advantages including location-free access (Laukkanen & Lauronen, 2005), a wide variety of purchase possibilities, an easy alternative to cash payments, and timely contact with their financial resources. These advantages have attracted consumers to make their payments via mobile devices.

Convenience: Convenience (or compatibility) is explained as the consistency between an advancement and experiences, values, and need of consumers. An important aspect of compatibility for users to adopt mobile payment methods is the flexibility of these systems so that they can be easily integrated into consumers' daily lives. Mallat (2007) has identified in a study that mobile payment methods are found to be most convenient for small payments for purchasing movie tickets, mobile games, and content online.

Complexity: According to Laukkanen and Lauronen (2005), complexity in the use of various electronic payment methods including smart cards and mobile payments, have contributed to the low adoption of these services. It is logically to expect mobile payments in future will become less and less complex.

Costs: One of the major factors affecting consumer adoption of mobile payment systems is the effective cost of a transaction. Mallat (2007) has explored that many users have refrained from mobile payment methods because of premium pricing of these services.

Security of mobile payment systems and trust in service providers: Siau et al. (2004) have considered the lack of security and consumer trust in service providers as a major barrier to

adoption of e-commerce transactions. Consumers need confidentiality, authentication, data integrity, and non-repudiation as key requirements for making secure payments over the internet.

According to Karp (2015), one of the major challenges faced by mobile payment systems is the increasing rate of cyber-crime that results in data theft and cyber-attacks on financial data. In addition, security risks accompanied with mobile payments can be classified as either emerging or traditional. Emerging risks entail the use of this payment mode in terrorist funding and money laundering while traditional risks involve the theft of data and services, loss of revenue, customer base, and brand reputation (Mobile Payments: Risk and Security, 2011).

Mobile technology is revolutionizing the global banking and payment industry. It offers new opportunities for banks to provide added convenience to their existing customers in developed countries, and reach a large population of unbanked customers in emerging markets. Mobile technology is poised to have an even more far-reaching impact on the banking and payment industry across the world. By 2015, over 900 million people are expected to transact \$1 trillion in the global mobile payment market (Gupta, 2013)

Banks are already investing in mobile technology and security, developing Smartphone apps, adding new features such as remote deposit of checks, and educating consumers. Consequently mobile banking adoption among consumers has been much faster than the adoption of online banking more than a decade ago. Most banks believe that the mobile channel will help them reduce transaction costs as well as increase customer engagement and retention. This is similar to the intended benefits of online banking several years ago

Comviva (2016), in his paper stated that the growth of mobile online commerce has been rapid, however use of a Smartphone for purchases at a physical point of sale (POS) is nascent, and the

growth rate is much slower than that of mobile online. This is logical, since the Smartphone already “lives” in the virtual world. Its transition into a device for POS usage is complicated by a lack of accepting terminals, conflicting protocols, and limited distribution of payment-enabled phones. All of these factors are changing quickly, however, and the growth rate for physical-world payments is increasing.

DIGITAL WALLET DELIVERY TECHNOLOGIES

While there are several different ways to classify the different digital wallets, viewing them as different executions of specific delivery technologies may help to clarify the space. Digital wallets can use NFC, optical/QR codes, digital (online)-only transactions, and text-message-based transactions. Some digital wallets combine delivery alternatives, but they generally have a primary delivery approach.

Technology	Description	Examples	Use cases	Strengths	Limitations
NFC	Tokenized wallet incorporating a secure element either embedded in the device or using host card emulation (HCE) in the cloud	Apple Pay, Android Pay, Samsung Pay, RBC/Capital One financial institution wallet	In-store mobile proximity Mobile web (HTML5) In-app	Elegant, low-friction UX Flexible, easily integrated into global payments ecosystem Very secure	Physical-world usage limited to NFC-capable POS terminals
Optical/QR code	Uses QR or bar code generated by either the merchant's POS or the customer's device	WeChat Wallet, Starbucks mobile payment, Chase Pay, Walmart Pay	In-store mobile proximity	Simple application Broad distribution of QR/bar code readers with merchants	Optical read can be difficult in bright light No incremental security functionality Does not leverage global payments ecosystem
Digital only	Wallet designed for use online with limited application in the physical-world	Alipay, Paytm, PayPal, Pay with Amazon, ICICI Pockets	Online/in-app payments in designated marketplaces Online payments with merchants offering the wallet for payment Limited physical-world access using either text/QR/bar code or plastic card	Simple to install/use, device (smartphone) agnostic	Usage limited to participating merchants and marketplaces Limited physical-world capability
Text based	SMS-based payment platform with mobile phone functioning both as sending device and POS terminal	M-Pesa, MTN Mobile Money, Tigo, Orange Money	P2P funds transfer, mobile current account, consumer-to-business physical-world purchases	Does not require a smartphone, works with any device that can deliver SMS No payment ecosystem required to implement	Closed-loop platform, not integrated with payment networks Limited to no interoperability between schemes

Table 2.1 Digital wallet delivery technologies

The combination of widespread internet access, increased bandwidth, and devices that can capitalize on that bandwidth to deliver a new customer experience is driving the explosion in wallet development and customer usage. And while physical-world mobile wallets and online digital wallets are currently on separate but parallel development paths, it is inevitable that the lines between the two will blur and hybrid payment tools using online and mobile will emerge.

It's impossible to predict the path of development with certainty, but there are a few signposts and landmarks that can guide the vision (Comviva, 2016).

According to MEF's third annual Global Mobile Money report 2015, e-commerce and mobile banking continue to grow with 69% of mobile users carrying out their banking activity via mobile devices (Perelmuter, 2015). The report conducted a study of 15,000 mobile users across 15 different countries of the world. The report defined the term Mobile Money for the services including in-store payments, carrier billing, online payments, peer-to peer payments, and payments via mobile wallets. Growing use of mobile payment methods also encouraged developed markets to install device penetration system and infrastructure that should support mobile transactions in-store. In addition, contactless payment methods are also becoming popular with their wearable technology (Sacco, 2015) that offers fast, easy, and a secure way to pay at various places. The wearable payment technology includes smart watches, rings, wrist bands, and a number of Android or iOS Smartphone's applications.

GSMA State of the Industry report for 2013 has also displayed some statistics that shade some light on the future of mobile payments. According to this report, 'By the mid-2013, there were over 203 million registered mobile money accounts across the globe with mobile money outlets outnumbering bank branches in over 80% of markets worldwide' (Oracle, 2014). The rate of mobile payment transactions is increasing remarkably worldwide and their value is predicted to rise from US\$ 12.8 billion (estimated in 2012) to US\$ 90billion by 2017 (Oracle, 2014). These statistics clearly show that we have a cashless future ahead with more secure and convenient options for making payments via smart phones and tablets.

Where mobile payment systems have brought new opportunities for merchants and customers, they have also exposed them to new risks regarding privacy and security issues. According to a report on mobile payments, careful planning is required to make security an intrinsic element of online payment methods in future. For a prosperous future of mobile payment market, mobile phones manufacturers, telecommunication companies and payment industry need to collaborate with each other so that a platform can be developed ensuring the most secure environment for online payment transactions. However, it is believed that mobile payment systems have the potential to tackle all of the major security and privacy concerns related to this industry, and current developments reveal that innovations are already being deployed (Oracle, 2014).

According to Reddy (2004), the future of mobile payments can be secured by using the latest technology in order to overcome practical and analytical challenges faced by this industry. Radio barcodes technology is believed to be a revolutionary addition to mobile payment systems. These radio bar-codes send out radio signals that can be used to locate the position of things they are embedded on. With the use of radio barcodes, the mobile payment market can enjoy a promising future by providing enhanced security and convenience to its consumers. Radio bar-codes technology could enable the sales personal to read the numbers and expiry date on consumers' credit cards as they walk by. With enhancing the security protocols and using the latest technology like radio bar-codes, mobile payment service providers can create a system that is not only scalable at greater levels but is also most convenient to use for the consumers.

The evolutionary path for all wallet technologies will be driven by the desire to reduce friction in the transaction to minimize cart abandonment and optimize customer satisfaction. While online and mobile commerce sites will continue to offer a default account-on-file payment mechanism, the trend will be toward variations on one-click buy, either through a proprietary buy button in

the app or on the site or through a third party, such as PayPal. In either case, the digital wallet delivered is different from the traditional wallet model in which the customer can choose from an array of payment alternatives. For buy buttons, only one payment alternative is generally available so that the purchase process is simple, clean, and fast. Along with the continued simplification of digital wallets to reduce friction, the transaction will become plumbing in many cases, whereby the payment is embedded in the overall transaction. Uber is a good example of a transaction process in which the payment has functionally vanished. Once the customer arrives at his or her destination, the Uber driver closes out the trip and Uber sends the receipt for the trip to the customer via email or text. The payment is handled automatically, requiring no effort from either the driver or the customer, a huge reduction in the friction previously encountered in paying for a taxi with a card, or even cash.

What's really interesting is what happens to the customer experience once the payment piece is integrated into other activities. With payments out of the way, the entire commerce process and customer experience can be reimaged, resulting in very new and different ways to do business

Banks can now choose to develop their own digital wallets deploying a white-labeled solution from a third-party provider. Banks may also decide not to offer their own wallet but just make their cards available to third-party wallets such as Apple Pay. Although this is certainly the strategy that requires the least investment, the bank also incurs the risk of losing brand visibility (losing the top-of-wallet position in the wallet's suite of cards and/or becoming the secondary brand after the digital wallet's brand), getting disconnected from the customer, and missing opportunities for innovation and new revenue streams.

IMPLEMENTING MOBILE WALLET (NARAYAN, 2013)

Comparison of different mobile wallet drivers would help in clearly visualizing the similarities and differences in entry level strategies between each driver on aspects that are listed below. This would enable us in answering our predominant research question, analyzing the similarities and differences in drivers of mobile wallet concepts. Use cases under each concept would be investigated and compared under the following factors. The following Figure illustrates the comparative factors, based on which comparative analysis is performed among the mobile wallet drivers:

- Purpose of deploying a mobile Wallet service
- Current demand for a mobile Wallet service
- Existing market scenario in launching a mobile Wallet service
- Analyze the value mesh present with each cooperating organization
- Investigate for substitutes

ANSOFF MATRIX

The Ansoff matrix helps in charting out the potential growth of mobile wallet service against existing actors in the field. It further helps in comparing the each actor's market penetration, market development, product development and diversification principles can be analyzed and compared against one another. The following Figure *depicts* the Ansoff matrix graph used to predict the future marketing strategy of mobile wallet drivers.

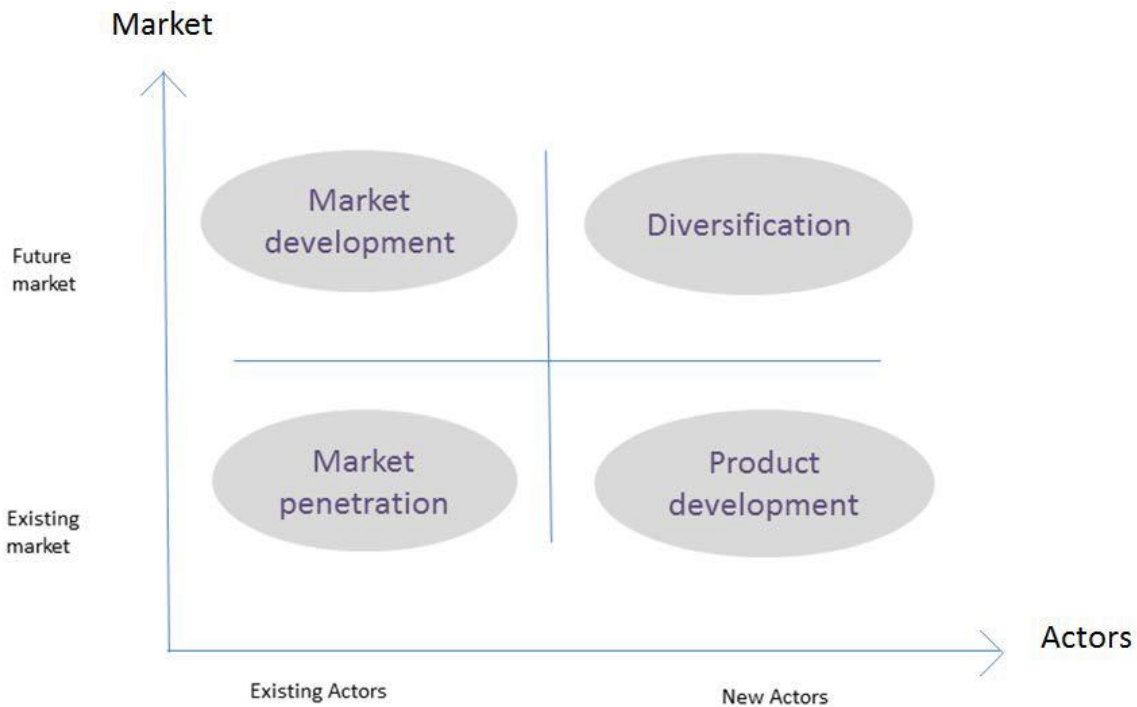


Figure 2.3 Ansoff Matrix

MOBILE WALLET IMPLEMENTATION PROCESS (BOA, 2020 AND OTHER LITERATURES)

Mobile wallet allows both account holder and non-account holder to have mobile payment account. The difference is the first one allows users to link their wallet banking with their saving or demand account at the bank. The first process to own GizePay (or other wallet banking platforms) is to download the application from App Store or playstore. After installing the application the customer would have to insert his personal information in the platform and activate the wallet banking. After activation, the customer can link his saving or demand account to wallet banking account and perform any transaction, bill payment, mobile top up, DSTV payment, airlines ticket or payment to beneficiary.

Figure 2.4 : Abyssinia's GizePay wallet banking

GizePay, A Mobile Wallet is Coming Soon!!!

BoA Mobile Wallet

Bank of Abyssinia is working more innovatively on its mobile financial services than ever before in order to provide efficient mobile wallet features that ensures not only high security but also great customer experience. The Bank presented a new aggregated efficient mobile wallet service that can be accessed through mobile applications, web modules, and USSD short code for public side, agents, merchants, bill and bulk payment services.

Major public side or users services are;

- *Electronic money transfer (P2P, P2B)*
- *Cash-in at Agent (coupon)*
- *Link account*
- *Load money from T-24 account*
- *Receive remittance*
- *Merchant payment*
- *Bill payment*
- *Mobile Air Time top-up*
- *Balance check*
- *Account management; and*
- *Others*

Major Agent Services are;

- *E-Wallet users registration*
- *Cash in-deposit*
- *Cash out-withdrawals*
- *Local electronic money transfer*
- *Mobile Airtime top-up*
- *Merchant payment*
- *Bill payment*
- *Over the counter services (OTC)*
- *Lin bank account*
- *Account management; and,*
- *Others.*



A. Public Side (Users) Services

B. Agent's Services

Agency banking is a way of providing limited scale banking and financial services through engaged agents under a valid agency agreement. Agents are person engaged in a legal commercial/business activity contracted by the Bank to provide the services of the Bank on its behalf in a manner specified in the Directives of National Bank of Ethiopia.




C. Merchant Services

Merchant is a company/individual sole businesses registered and licensed according to the Commercial Code and other applicable laws of Ethiopia and contracted with the Bank to use the mobile wallet merchant services for payment collections from the Bank's registered users.

Major merchant services are;

- *Receive payments online through payment gateway (for online markets)*
- *Receive payments offline with QR code and merchant code (for store based merchants)*



Major public side or users services are;

- *Create branches users*
- *Facilitate refunds at merchants*
- *Instant payment notifications; and,*
- *Accounts management*

D. Bill Payment Services

Bill payment services involve utility bills (water, electricity, telecom, etc) and other fixed tenure payments (school fees, television subscription, etc).

E. Bulk Payment Services

Bulk payment service provides;

- *Salary payment options for private, government and non-gov't organizations; and,*
- *Humanitarian aid distribution services (under safety net programs).*

Features of BoA's Mobile Wallet Services

- **Instant Payments between Wallets:** money transfer between the payer wallet and the payee wallet happens within seconds, instead of within hours or business days.
- **Convenient:** GizePay mobile money accounts are always on the users' hands everywhere and customers can use anywhere there is a mobile phone signal.

Customers can receive, store, spend and send money all from the account on their mobile phone at different ends.

- **Low cost:** In terms of time, efforts and transaction costs compared to the conventional services, BoA's GizePay wallet services are low cost offerings. Customers can pay utility bills, school fees, subscriptions, transfer fund, pay to merchant, transfer to their and others bank account, receive remittances, receive/pay salary, distribute humanitarian aid, etc online without going to bank branches and can make work and personal life easy.
- **Security:** BoA believes that money transactions have to be safe and secure from end to end and also follows all provisions of the applicable laws of the country. Our Mobile mobile wallet is secured with plenty of robust technologies
- **Easy and Fast Self-Registration** As BoA's mobile wallets are all about saving people's time and efforts, self-registration is undeniably easy and fast to accomplish.

Mobile Wallet, a Bank in Your Pocket!

Contact:
 Agent Banking Department
 Mail: Agentbanking@bankofabyssinia.com
 Tel: +251 115-58 30 59

FACTORS INFLUENCING MOBILE WALLET IMPLEMENTATION PROCESS

Nardos (2018) used TOE Framework to show what factors determine digital banking implementation practice in institutional level. Accordingly Technological, organizational and environmental framework (TOE) proposes three main facets to explore the factors that affect the organization's acceptance of innovation technology. The technological context includes the characteristics and the usefulness of the innovative technology; the organization context contains the internal issues within the company such as management, employee, products and services; and the environmental context involves the issues exist in the business related field, such as the competitors and business partners (Chui-Yu, 2017).

The technological context considers the available technologies important to the firm, both internal and external, that might be useful in improving organizational productivity. The organizational context is defined in terms of resources available to support the acceptance of the innovation.

These criteria include firm size and scope; the centralization, formalization, interconnectedness, and complexity of the managerial structure; and the quality and availability of the firm's human resources. The environmental context represents the setting in which the firm conducts business, and influenced by the industry itself, its competitors, the firm's ability to access resources supplied by others, and interactions with the government.

Technological knowledge represents the totality of institutional knowledge resident within a specific firm. As a quality of the firm's human resources, this construct provides a mechanism for evaluating whether an organization can adequately address the technological necessities of web services.

Wondimu (2013) used **Technology Acceptance model (TAM)** to describe both institutional and personal factors related with computer and internet usage. TAM was developed by Davis (1986) to explain the computer-usage behavior. According to the model, in explaining the adoption of any information system, perceived ease of use (PEOU) and perceived usefulness (PU) are the two most important determinants. 14

1. *Perceived ease of use*: - refers to the degree to which a person that using a particular system would be free from effort (Davis 1986).

2. *Perceived usefulness*: - refers to the degree to which an organization that using a particular system would enhance or improve its job performance.

According to Masrom and Hussein (2008) the adoption of whether to use an information system for a particular individual is very much dependent on the perceived usefulness and perceived ease of use of the information system.

TAM was developed to explain and predict particular IT usages. However, this particular Model has been using by many researchers in studying adoption and diffusion of various IT technologies. For this study researcher uses two basic factors of TAM, i.e., perceived ease of use and Perceived usefulness to analyses the perception of users on the adoption of E-banking system in Ethiopia.

The frameworks discussed above have their own advantage and disadvantages based on the nature of the study. In this study, Technology-organization-environment framework and technology acceptance model were used to have a more precise forecast on the challenge and practice of E-banking system in Ethiopian banking industry.

The following are some of the non-institutional factors that influence implementation of digital banking in general and wallet banking in particular.

1. *Literacy*: Wallet banking requires knowledge of mobile phones and internet usage. Any individual that requires the service is required to understand the terms (all of them in English) to open wallet banking account. Countries with higher literacy rate and internet capacity are characterized by higher wallet banking users
2. *Technological advancement and number of Smartphone users*.

Almost all wallet banking platforms require Smartphone and usage of modern technology. The level of Smartphone users determines the level of wallet bank service request

3. *Internet access, speed and cost*

Wallet banking requires internet access to operate with. If the cost of the internet for this service is low, higher numbers of customers request the service. The service request also depends on the internet speed and access available in the country

4. *Unbanked part of population*

One of the biggest benefits of wallet banking is its accessibility to rural and unbanked part of society. Given the infrastructure is suitable, large unbanked population opens door to reach wider customer base and to open as much as possible new mobile wallet accounts.

5. *Government policy*

Recently Ethiopian government passed new law to allow wider digital banking access. Also the new National Bank currency change and limits on transactions open huge door for wallet service providers to engulf new customers. Government policy, especially finance laws, allows for more

digital bank initiative and allows commercial banks to recruit more mobile wallet user customers.

The Outlook for Mobile Payment Systems

Developing an m-payment infrastructure involves a complex process of engaging all players (Scharwatt et al., 2014). A broader perspective is advocated by Staykova and Damsgard (2016), both proposing a framework to analyze the entry and expansion strategies of m-payment solutions. The first of these studies revealed that m-payment programs are typically subsidized by merchants, banks and microfinance lenders as incentives to facilitate product adoption. Recent evidence suggests that banks in developing countries are rolling out non-collateralized electronic micro-loans to lower-income people. This enables fledgling financial services industries to become more efficient, easing out the traditional distribution models and transactional platforms of branches and ATMs that have been too costly (Alexandre et al., 2011).

In 2015, The Economist investigated the role of such Mobile money micro-lenders as Tigo Cash and M-PESA, following how they operated and thrived in a growing market in east Africa (2015). Harkins (2007) described this concept as 'Leapfrogging' - the ability of firms to dominate and stay ahead in an unchartered market using small and incremental innovations. Bargal et al. (2015) found the lack of key public data infrastructure as arguably the main reason why digital systems are in growing use in developing countries. Of course, in developed countries, many consumers do *see* the potential value of m-payments. However, studies show that this realized value is not yet significant enough to sway people into demanding or signing up for m-payment services. The great disparity between consumers in developing nations and developed countries can be attributed to the huge cultural differences (Bargal et al., 2015). For example, in some

poorer countries, people feel unsafe to carry cash or use credit cards due to high rates of theft and fraud, hence their preference for a more secure m-payment system.

Meanwhile, consumers in developed countries - particularly those in Europe –are simply too familiar and satisfied with a particular payment method, and unwilling to switch to a different payment method that will disrupt their habits (Flood et al., 1994; Bargal et al, 2015). Nevertheless, Scharwatt et al. (2014) look at the impact of mobile payment services in the financial sector, describing how m-money services are bringing the “unbanked” and “under banked” people into formal financial services. In contrast, Au and Kauffman (2006) focus on the business case for m-payment services, adopting a robust evaluative framework intended to guide m-payment providers and help them deal with the economic issues arising from mobile banking. Likewise, Zhang et al. (2012) propose a workable m-commerce adoption model using existing empirical studies on m-commerce and structural equation modeling (SEM).

CHALLENGES AND OPPORTUNITIES

The Challenges and Opportunities can best be derived from the expectations of the various players in Mobile Money ecosystem. As the adoption rate and usage rate increases year on year, so are the renewed challenges and opportunities there from. The opportunity and challenges section composed and cited different literatures: - (Tavilla, 2012), (Okereke, 2017), (B Menaka, 2019), Tekabe (2016) (Bultum, 2014), (Gardachew, 2010) and (Ntumwa, 2018)

OPPORTUNITIES FOR MOBILE WALLET BANKING

The following are some of the opportunities available for more wallet banking insurgent for commercial banks as a whole and particularly beneficiary to GizePay

- 1. The increase in number of internet and Smartphone users*

Wallet banking application requires internet access and Smartphone use. The ever high increment in Smartphone and internet users in Ethiopia is huge potential to increase wallet banking users base.

2. Innovative nature of wallet banking applications

Gizepay became the latest platform to incorporate wallet banking with mobile banking. Now everyone with email address and phone can open wallet banking account without the need for internet or Smartphone. M-Birr started its service with short line application without the need for internet access and Smartphone to be accessible by anyone and targeting rural population. The innovative nature allows more customers to become engaged in wallet account

3. Huge unbanked population

More than 85% of Ethiopian population lives in rural areas and only less than 15% of the Ethiopian population is banked. This shows huge potential to reach wider customer base with mobile device and platform.

4. The increasing need for ecommerce, online shopping and payment

Online shopping is booming in the country over the last two years. Ecommerce requires payment gateway to complete the transaction. Wallet banking is the major payment gateway in foreign countries and lately operation is underway to include wallet banking as payment gateway in the online shopping payment integration

5. Opting for online payment system by institutions

Institutions now prefer online payment system for their system. Bill payments like -electricity, water, telecom, internet, DSTV package payment, traffic penalty, airlines ticket, betting tickets,

mobile top up. All this are the latest additions that started operating in online payment platform, specifically in wallet banking

6. Government policy

Government recently passed laws that supports electronic banking and allowed international electronic banking platforms to operate in the country. This will boost the level and awareness of wallet banking to the mass society

7. High cost of opening new branches

Opening new branch for service by banks is becoming expensive. The operation and fixed costs are so high. Banks stated for looking other plausible options. Wallet banking is the most plausible solution in terms of cost operation and effectiveness.

8. High youth population

Our country's population is composed of largely youth population. Youth in nature are technology wise and curios for new technology. This curiosity helps to reach wide youth population to be user of wallet banking in short period of time.

CHALLENGES OF IMPLEMENTING MOBILE WALLET PLATFORM

Many banks have launched a mobile payment service or wallet. This is a very competitive and fast evolving battlefield with specific challenges for banks.

Financial inclusion: if we see the present situation of the people in Ethiopia having bank accounts, we can see that only sixty percent of the country's population has bank accounts. Still large number of people is not having the bank accounts. People without knowledge of operating

accounts are in no way efficient enough to operate the account. There are several other reasons like lack of money, lack of income, illiteracy and lack of information to the account holders.

Limited infrastructure facilities:

The remote areas are still not having the banks at their door step. People have to move to distant places to have their money transactions in the banks. There are no ATM facilities in the remote areas. Even the ATM is not fully backed up with the electricity and other IT related facilities. It is the chief concern of the government and the banks to come up with the basic and secure infrastructure for the banking services.

Lack of education:

People living in the remote villages and areas of the country are still not educated enough to be able to operate the banking services effectively. Illiterate people with bank accounts in the country are not even good enough to fill in the bank forms to deposit and withdrawal money. They have to take help of the people in the banks to fill in the forms and get their work done. It has become the prime responsibility of the government to start a campaign in the form of mission to enable the people to discharge their duty by themselves. Lack of education and the poor syllabus done in the schools are the main reasons that they are not able to operate their bank accounts. Furthermore, illiterate and the people with less exposure to such facilities are not able to operate the cards. The people are not aware of the security measures of the PIN number etc. people should be made aware enough so that they can use the basic banking facilities.

Access of technology:

Technology is the backbone to this banking revolution. Technology must be available in all the areas of the country; it means all the banks at the branch level even in the remote area should have the access to the technology. The technology must have all the aspects that can help the individuals to do the things better and effectively. The second major aspect of the technology is that it should be easily handled and used by the people. It is one of the major aspects of the banking that the consumer must be aware of the technology and should be able to use it effectively for the purpose. The people are not aware of the technology and are not so involved in the use of it.

Large number of people to be covered:

Still forty percent of the India's population are not having access to the bank and banking services. It needs a proper penetration into the market to give the services of banking to the people. It is one of the major challenges for the government to include large number of people in the mainstream.

Resistance to change mindset:

Most of the people due to one reason or the other are not willing to join the cashless banking solutions. The major reasons are the sellers are not willing to accept the cards and cheques as the sale through POS terminals and cheque transactions will be accounted for. The other major aspect is that the sellers mostly ask for the transaction fee that makes the things more costly. The only solution to this problem is that if large number of people joins the revolution of cash less payments by virtue of using debit or credit card it will be easier for the banks or service provider to lower the transaction fees and adjust to the normal phenomenon.

New entrants

Many non-banks have entered the mobile payments market, often with innovative solutions. Mobile network operators have deployed mobile payments services in several countries or have set up joint ventures between them. Money transfer operators like Western Union and MoneyGram, as well as card companies like Visa, MasterCard and Amex all have multiple mobile payments initiatives. Payment service providers like PayPal are throwing their full weight into mobile. E-commerce companies like Google are deploying wallets for contactless payments using NFC (Near Field Communications) (SWIFT, 2012).

An immature business

Only a handful of these mobile payments services have succeeded in attracting a significant user base. New initiatives may fail to go beyond pilot trials and some services have ended altogether (SWIFT, 2012)

Unclear business case

For many banks the business case to do mobile payments is not clear. Mobile payments and linked commerce will represent USD 20-25 billion in revenue by 2016 from new revenue opportunities and potential loss mitigation. But this is a very different kind of payments opportunity for banks to pursue as most of the revenue may be advertising related. Banks will need to compete for these new mobile value added services and revenue streams. In addition, banks need to determine which role to play in these new value chains. In a Telco-centric model for example, the bank's revenue share from providing the trust account function may be limited to 10% whilst 55% goes to the mobile network operator and 35% to the distributor (SWIFT, 2012).

A complex matter

Deploying a mobile payments service is not straightforward as legal frameworks across countries are not harmonized, technology is still evolving, there is a need for multiple partnerships, and in general banks may feel they lack the expertise (SWIFT, 2012).

WALLET BANKING IN ETHIOPIA

Wallet banking is a recent phenomenon in Ethiopian banking system. Its implementation is a new introduced banking platform that started in around 2015 and now almost available in every local bank. The following are the major mobile wallet providers in Ethiopia.

M-Birr

M- Birr is independent mobile wallet provider in Ethiopia designed by Moss ICT consultancy, a spinoff of the Irish firm NCL Technologies. M-birr was the first mobile wallet provider in the country started its operation in 2013 by incorporating 5 microfinance and credit institutions by targeting rural population. It enables farmers to transfer funds without leaving the comfort of their homes, can deposit or withdraw from agents close by, purchase of items like petroleum from gas station, mobile top up, bulk payments and allows farms for credit services (M-Birr, 2020)

In 2015, M –Birr has been able to facilitate 273,620 transactions and had almost 50,000 account holders. These bank holders have transacted around 150 million birr via 800 branches. All five institutions completed pilot stage and approved by NBE, which now overlooks their operation. Each institution has branches, and each branch has minimum of 25 agents (M-Birr, 2020).

CBE Birr

CBE Birr is a mobile wallet launched by Commercial Bank of Ethiopia. It's a platform that can provide wide range of services in a single mobile phone. CBE Birr is a mobile based banking system, in which, the bank selects, trains and authorizes agents to provide banking services on behalf of the CBE through a mobile phone. The system main goal is to extend financial services to unbanked segments of the Ethiopian population CBE Birr enables its users to deposit, withdraw, transfer money, buy mobile airtime, pay bills (utilities :electricity, water, telecom, DSTV, etc) and make payments (CBE, 2020)

AMOLE

Amole is a wallet banking developed by Dashen Bank and Moneta technologies with support from CR2's digital banking platform BankWorld, which provided critical elements of the technology "OmniChannel" solution. Amole allows both retail and business customers to access an extensive range of rich content available to purchase via electronic payments and money transfer options, across one of the Africa's largest and fastest growing economies. Amole uniquely offers seamless integration between digital wallet banking channels allowing customers to purchase content from range of banking digital channels. Currently Amole is widely and solely being used for concert and football online stadium ticket sales (CR2, 2020)

2.2. REVIEWED EMPIRICAL STUDIES ON ETHIOPIAN WALLET BANKING POTENTIAL BASE

The 7 billion people in the world have 6billion mobile phones but only 2 billion bank accounts. Emerging markets are in a unique situation with low penetration of bank accounts but high adoption of mobile phones. In Bangladesh, 57%of its 150 million inhabitants have a mobile

phone, but only 13% have a bank account.⁷ India has a population of 1.2 billion with 900 million mobile phones but only 250 million bank accounts

In SSA out of 590 million adults 350 million do not have access to accounts in bank or with other types of financial institution (David Ashiagbor. 2017). Ethiopia, the second largest country in SSA with an estimated population of 93 million has only 22% of its population formally banked (European Investment Bank, November 2017). The country lags behind its neighboring countries, for example in Kenya 82% of adults have an account, while in Rwanda, account owners stands at 50%. In Ethiopia people rely more on informal institutions for their financial needs, for example, Equib, a rotating saving and credit association where each member agrees to regularly pay a small sum in to a common pool so that each in rotation can receive a large sum (McKinsey and Company, 2016). Cash is the dominant payment mechanism like to pay utilities, receiving payments. Almost all or 99% of adults pay and receive in cash while compared to 12% of population in Kenya and 59% in the region as a whole.

Recent data from central statistics agency show that there are more than 110 million populations in Ethiopia. Despite its population, Ethiopia hasn't taken an advantage of Digital Financial Services that has driven access to and usage of financial and services in Sub-Saharan Africa countries. Data from Ethio-Telecom shows that there were 46.75 million mobile connections in Ethiopia in January 2020. The number of mobile connection in Ethiopia increased by 7.2 million (+18%) between January 2019 and January 2020. The number of mobile connection in Ethiopia in January 2020 was equivalent to 41% of the total population. There were 21.14 million internet users in Ethiopia in January 2020. The number of internet users in Ethiopia increased by 534,000 (+2.6%) between 2019 and 2020. Internet penetration in Ethiopia stood at 19% in January 2020.

GizePay was uploaded to Playstore, a platform that allows any customer or user from any part of the world to download and rate Apps. Playstore data shows that there more than 1000 users of the App.

LITERATURE GAP

The literatures that were listed in the paper consisted of wallet banking studies related with foreign market. The researcher failed to access local researches related with wallet banking in particular. This might be due to the fact that mobile wallet is a recent phenomenon to our country's banking industry. This hampered the research to get literatures and perspective on wallet banking in Ethiopia. So this research paper will be the first of its kind in studying mobile wallet in Ethiopia. It will be in great benefit for BOA and the banking industry in a whole to study about wallet banking and will be a great milestone and literature reference to future studies on the subject.

Another gap in literature is, most studies the researcher used as a literature base cover wallet banking application that are not applicable in our country yet. Differentiating or separating those concepts from the applicable ones might affect the subject and dimension of the research paper. The researcher collects the applicable literature reference for its study that describe or applicable to our mobile wallet application.

The limitation, challenges, opportunities and even application practices used from literatures define nature of developed foreign countries. Applying those literatures to our country wallet banking phenomena wouldn't result the expected outcome from the study. To avoid this, the researcher has to use digital banking related research literatures both from local researches and foreign studies.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter provides information on the research methodology of the study. It discusses the processes and techniques used in carrying out the study. It also gives a description of the respondents including information on the study population, the number of respondents and how they were selected. It also provides an outline of research design and the instruments for data collection. The methods adopted in the administration of the research instrument, data collection procedure, data analysis and measures used to ensure validity of the instrument used. The chapter starts with the description of research design, research approach and methods, and study area. Afterwards, the sample selection, the data collection methods, data analysis and ethical consideration will be presented.

3.1. RESEARCH DESIGN

Research design is usually a plan or blue print which specifies how data relating to a given problem should be collected and analyzed. It provides the procedural outlines for the conduct of any investigation and also a sequence of research tasks and activities. A research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically.

Ghuri & Gronhaug, (2005) distinguished the basic differences between three main classes of research designs; exploratory, descriptive and explanatory. The research can be exploratory when it deals with unknown problem, Descriptive when there is an awareness of the problem and Explanatory, when the problem is clearly defined.

There are numerous types of research design that are appropriate for the different types of research projects. The choice of which design to apply depends on the nature of the problems posed by the research aims. Each type of research design has a range of research methods that are commonly used to collect and analyze the type of data that is generated by the investigations. Consistent with the nature of the problem of this study the researcher used exploratory research design. According to Zikmund (2000), exploratory research is conducted to clarify and research a better understanding of the nature of the problem. Consequently, it is appropriate to use when there is little prior knowledge of the problem being researched. Saunders & Thornhill (2003) argue that exploratory research is advantageous because it is flexible and adaptable to change

The purpose of this paper is to investigate opportunities and the challenges related with GizePay wallet banking implementation. The researcher used exploratory research design to study the implementation practice of GizePay. Given the fact that there were no prior studies made on wallet banking in general and Gizepay in particular, exploratory research design is appropriate for this research thesis.

3.2. RESEARCH APPROACH AND RESEARCH METHOD

Different scholars define research approaches as, plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. There are three common types of research approaches; qualitative, quantitative and mixed approaches. In any form of research, it is required to either count things and/ or talk to people. Quantitative as the name suggests, is concerned with trying to quantify things; it asks questions such as ‘how long’, ‘how many’ or ‘the degree to which’. Qualitative research involves the collection, analysis, and interpretation of data that are not easily reduced to numbers. Mixed

methods research resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches (Anderson, 2010).

The design used in this research is a qualitative method of data analysis. This research employed two survey instruments in the form of questionnaires and interview questions where one was administered to members of the E-banking employees (Agent banking, digital banking support and application management) and includes multiple-choice questions, YES/NO questions as well as subjective comment on implementation, opportunities and challenges them and their teams witnessed, against which developers state their general agreement or disagreements.

The other interview question was filled by the heads of the Agent Banking department and application management of BOA with interview and some open-ended questions.

3.3. STUDY AREA

This study focused on Bank of Abyssinia which was established on February 15, 1996 and started banking services with only one branch in 1996, and recently more than 500 domestic branch networks, of which 153 branches are in Addis Ababa and the remaining 180 are established in bankable towns all over the country. The study focuses on E-Banking and the respondents of the questionnaire were selected from different teams inside E-banking department.

3.4. TARGET POPULATION

In research methods, population is the entire aggregation of items from which samples can be drawn. The populations of this study are E-Banking employees of Bank of Abyssinia. Agent banking, digital banking support and application management team were the target population of this study.

3.5. SAMPLING AND SAMPLING TECHNIQUE

31 representative respondents were interviewed from BOA Agent banking, digital banking support and application management teams. They were randomly selected E-banking department employee of bank including the directors of the teams. The questionnaires were self-administered to the respondents. Purposive sampling technique was used for staff of the banks while simple random sampling technique was employed for other respondents. An informal interview was also conducted with some executives to gather information needed for the study.

3.6. SOURCES OF DATA

The study employed data from primary sources. Primary sources of data include questionnaire administered to randomly selected Agent banking, digital banking support and application management teams members.

3.7. DATA COLLECTION INSTRUMENTS

The researcher relied on primary data sources. The primary sources involved self-administered questionnaires. The questionnaire was used because the researcher considered it to be more convenient as respondents could answer at their convenience. The questionnaire was developed by the researcher based on the research questions and the literature. Open-ended and closed – ended questions were used. The questionnaire began with an introductory statement, which specified the purpose of the research as purely academic. Respondents were encouraged to be objective in their responses since they were assured of confidentiality.

3.8. METHOD OF DATA ANALYSIS

After the raw data was collected, both quantitative and qualitative methods of data analysis were used. Data from the structured self-administered questionnaire was properly organized through

data coding, cleaning and entering. Data processing was by statistical package for social sciences (SPSS) in order to make a descriptive analysis of the data, which enabled to present quantitatively by using frequency, percentage, mean and standard deviations in tables. Particularly with the quantitative data collected via the questionnaire, a descriptive statistical analysis method is used. The data obtained by interviews has been analyzed qualitatively.

Descriptive statistics by percentages, figures and tables were generated from the software to establish relationship among variables. The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. The results were finally presented in tables.

3.9. LIMITATION

Data availability is the major limitation for the research. Since the concept and platform of wallet banking is new, the researcher unable to find much data. The absence of and inaccessibility of reliable records and reports on E-banking data for the past years also limited the research investigation.

3.10. ETHICAL CONSIDERATION

The researcher recognizes that the issue under study is sensitive. Therefore, there was need to protect the identity of the respondents as much as possible. This means that the questionnaires did not require the respondent's names or details that may reveal their identity. The researcher also adhered to strict confidentiality of the information gathered and assured the respondents that the research will meant for academic purposes only.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1. INTRODUCTION

As it has been mentioned in the prior chapters, the main attempt of this study was to investigate bank of Abyssinia's wallet banking implementation practice giving due attention to opportunities and challenges of the project implementation. Data was collected from primary and secondary sources in the form of questionnaires and interviews. Hence, this chapter presents the analysis and discussions for research findings obtained from both data collection tools. Furthermore, only employees working on e-banking department and director of the department were specifically chosen.

This chapter begins by presenting discussion by descriptive statistics of the respondents related questions; like gender, age, profession, and level of education followed by the questionnaires' response rate. The first section contains the background and general information of the respondents and the second section presents the analysis and interpretation of the findings obtained from the respondents using open and closed ended questionnaires and interview. The analysis was conducted using SPSS software version 20.

Data collected using questionnaires were analyzed using statistical package for social sciences (SPSS). The primary data that was collected through questionnaire consisted of 41 close-ended items and a total of 37 questionnaires were distributed employees of Application management, Digital banking support, Agent banking and directors of these departments of Bank of Abyssinia. Among those distributed questionnaire, 31 of them; that has 8.78% response rate were properly completed and returned. The questionnaire used Likert scale with Strongly Disagree (SD) = 1,

Disagree (D) = 2, Neutral (N) = 3, Agree (A) = 4 and Strongly Agree (SA) = 5 and there were other multiple questions. In addition, the interview was used to triangulate the questionnaire responses. The collected data was analyzed, interpreted and presented below

4.2. DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

Demographic profiles of the respondents who participated in the study were analyzed using descriptive analysis with the help of SPSS. The result of the survey is shown in

NO	ITEM	CATAGORIES	FREQUENCY	PERCENTAGE
1	GENDER	MALE	21	67.74
		FEMALE	10	32.26
2	AGE	LESS THAN 25	4	12.9
		25-30	12	38.11
		30-35	9	29.03
		35-40	4	12.9
		ABOVE 40	2	6.45
3	EDUCATION	FIRST DEGREE	24	77.42
		MASTERS	7	22.58
4	RESPONSIBILITY	IT OFFICERS	19	61.29
		MANAGERIAL ROLE (EXCUTIVE)	5	16.13
		OTHERS	7	22.58
5	ROLE	SOFTWARE DEVELOPER	12	38.11
		SOFTWARE TEAM LEADER	5	16.13
		OTHERS	14	45.16
6	EXPERIENCE	0-2 YEARS	15	48.39
		2-5 YEARS	10	32.26
		5-10 YEARS	4	12.9
		10 YEARS AND ABOVE	2	6.45

Table 4.1 Demographic Characteristics of the Respondents

4.2.1. Gender of the respondents

As indicated in the above table, it can be said that most of the respondents were Male, which accounts to 67.74% of the total sample size while, 32.26% of the respondents were Female

4.2.2. Age of the respondents

The above table depicts that the largest number of respondents falls within the range of age 25–30, which accounts to 38.11% of the total sample size. Proportional to the first age category, the second largest portion of the respondents' age was from 30 – 35 which holds 29.03 % of the sample population, whereas 6.45% total sample size fall with the age above 40. Age range less than 25 and age range 35-40 share equal 12.9% of the total sample size.

4.2.3. Education qualification

Among 31 total respondent 24 respondent (77.4%) has first degree and the remaining 7 respondents has (22.5%) has a master's degree. In this regard, there were no respondents who have other qualification. Majority of the respondents were first degree holders.

4.2.4. Responsibility at the department

The IT officer has the highest value, among the total respondent. Of the total respondents 61.29% are IT officer, while managers or executives account for 16.13% and the remaining 22.5% have other responsibility like, operation officer, trainee and other titles.

4.2.5. Role in the department

Among the total respondent's software developer has 38.11% of respondents 12(38.7%) and software team leader has 16.13% and the remaining 45.16% are of other roles like software tester, agent banking It officer, digital banking support officer and such.

4.2.6. Experience

Among the total 31 respondent 15(48.39%) of them have 0-2 years of experience, 10(32.25%) of them have 2-5 years of experience and 4 (12.9%) of them have 5-10 years of experience and the remaining 2 (6.45%) have above 10 years of experiences

4.3. TECHNICAL QUESTIONS

The following are technical question raised for the respondents in the form of yes/no, choice and short description regarding Abyssinia wallet and other banks wallet banking. The respondents were asked if they are familiar with other banks wallet and related questions.

Table 4.2 technical analysis

No	Survey	Frequency
level of implementation of wallet banking in the Bank of Abyssinia is satisfying	Yes	27
	No	4
local mobile wallet banking you use other than Gizepay	Amole	14
	Hello cash	8
	CBE	17
	None	10
Gizepay wallet banking is in similar level and performance with other similar wallet banking platforms	Yes	16
	No	15

4.3.1. Satisfaction of implementation

Among the total respondent 27 of them fell bank of Abyssinia’s wallet banking implementation is satisfying and on good track, while 4 of them disagree with that.

4.3.2. Other local mobile wallet banking

Among the total respondent 14 of them use Amole, 8 of them uses Hello cash, 7 of them uses CBE birr and 10 of them uses none of the local mobile wallet banking application other than GizePay.

4.3.3. Wallet banking is in similar level and performance with other similar wallet banking platforms

Among the total respondent 16 of them believe Abyssinia’s wallet banking is in similar level and performance with other similar wallet banking platforms, while 15 of them believe Abyssinia wallet banking is a way a head or not on the same level performance as others.

4.4. ASSESSMENT OF IMPLEMENTATION PRACTICE

The interpretation of mean scores of each variable shall be represented accordingly. Scale 5 of the likert scale used to represent "strongly agree", 4 "Agree", 3 "Undecided", 2 "Disagree" and 1 "Strongly disagree". The score 35

"Strongly disagree" was taken to be equivalent to mean score ranging from 1 to 1.80, "Disagree" represented mean score ranging from 1.81 to 2.60, "Undecided" represented mean score ranging from 2.61 to 3.40, "Agree" mean score ranging from 3.41 to 4.20 and "strongly agree" represented mean score of 4.21 to 5.

Implementation of GizePay project						
	SA	A	N	D	SD	Mean
Bank of Abyssinia's wallet banking project followed the right path in implementing GizePay project	13 (41.9%)	8 (25.8%)	7 (22.58%)	3 (9.68%)	-	4.00
GizePay's implementation was on time and BOA launched the project at the perfect time	15 (48.39%)	11 (35.48%)	-	5 (16.13%)	-	4.16
GizePay is a trustable, easy, option-wide and effective platform for anyone that requires wallet banking	23 (74.19%)	8 (25.8%)	-	-	-	4.74
GizePay is much preferable than similar wallet banking platforms available right now in the market	10 (32.26%)	7 (22.58%)	9 (29.03%)	5 (16.13%)	-	3.71
GizePay is system error free and not difficult to operate by customers	15 (48.39%)	8 (25.81%)	3 (9.68%)	5 (16.13%)	-	4.06
Gizepay was launched after careful study of the drawbacks and problems of former two versions of the wallet banking platform	25 (80.65%)	6 (19.35%)	-	-	-	4.81

Table 4.3 Implementation of GizePay response

Based on the above table, E-banking employees were asked if GizePay project followed the right path in its implementation. As indicated in the table, 41.9% respondents strongly agreed that the BOA wallet banking implementation followed the right path, 25.8% agree 9.68% disagree while

22.58% are uncertain. BOA's implementation of wallet banking can be regarded as followed the right project management path in its GizePay project implementation with mean score of 4. Likewise, the interview revealed the Bank (Department) followed the right project flow with perfect plans. Even when the project required adjustment, the bank followed the required adjustment principles and completed the project with minimal schedule overruns; it took only 9 months to complete the project in relative to the former versions.

Regarding GizePay's timely launch, 48.39% of the respondents strongly agreed Gizepay was launched in the perfect time, while 16.13% disagree. According to our respondents GizePay was launched on the right time with mean score of 4.16. In an interview with Agent banking Director, he made it clear to me the launch is timely and planned. BOA was studying the market pattern and collecting experience and customers say on wallet banking and launched after well-studied market needs and requirements.

74.19% of the respondents strongly agree that GizePay is a trustable, easy, option-wide and effective platform for anyone that requires wallet banking, while the remaining 25.81 agree on the issue. With mean score of 4.74, my respondents strongly agree that GizePay is a trustable, easy, option-wide and effective platform for anyone that requires wallet banking.

Respondents were asked if Gizepay is much preferable wallet banking platform, 32.26% of the respondents strongly agree that Gizepay is much preferable, while 22.58% agree on the statement. 16.13% of the respondents disagree on GizePay being much preferable, while the remaining 29.03% are uncertain. With mean score of 3.71, the respondents strongly agree on GizPay wallet banking being much preferable wallet banking platform in the market. Likewise, the interview with agent banking and application management directory revealed that all the

remaining wallet banking providers are single business project. I.e. they specialize either on agent, merchant or bill, while GizePay provides all in one. GizePay is multiple business vendor.

Next regarding implementation view, respondents were asked if they believe Gizepay is error free and not difficult to operate with. 48.39% strongly agree on the issue, 25.81% agree and 16.13% disagree about Gizepay being not difficult to operate with, while the remaining 9.63% are uncertain. The respondents strongly agree that Gizepay is error free and not difficult to operate with mean score of 4.06

Lastly respondents were asked if Gizepay was launched after careful study of the drawbacks and problems of former two versions of the wallet banking platform. 80.65% of the respondents strongly agreed, while the remaining 19.35% agreed to the statement. The respondents strongly agree GizePay project was launched after careful study of the former version of BOA's wallet banking with mean score 4.81. My interview with Agent Banking director and application management director proves that GizePay was launched after studying the vendor advancement, experience from other service providers, catchy name, customers needs and most importantly the telecom capacity of the nation.

4.5. ASSESSMENT OF OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING WALLET BANKING IN BOA

One of the main objectives of this paper is to look at the major opportunities and challenges associated with implementing wallet banking in bank of Abyssinia. Lists of opportunities and challenges that were raised on literature was included as part of opportunities and challenges package for the respondents. Additionally, extra space was given for the respondents to add other opportunities and challenges they observed during wallet banking project implantation.

Table 4.3 revealed that summary of the statistical results for all the variables, including the number of frequencies, the mean, and standard deviation of the data points.

4.5.1. OPPORTUNITIES FOR IMPLEMENTING WALLET BANKING

Table 4.4 Opportunities for implementing wallet banking project

Opportunities of implementation of wallet banking						
	SA	A	N	D	SD	Mean
Large rural population resident and untouched potential to reach wide customers	24 (77.41%)	7 (22.58%)				4.77
Increase in the number of Smartphone users	18 (58.06%)	13(41.94%)				4.58
Increased interest in mobile payment among Smartphone users	11 (35.45%)	12(38.71%)	4(12.9%)	4(12.9%)		3.97
Inventive mobile payment application	15 (48.38%)	9 (29.03%)		7(22.58%)		4.03
Being late adopter gave our bank to take advantage of already developed best and existing experience of other banks.	6 (19.37%)	9 (29.03%)	8(25.8%)	8(25.8%)		3.42
The need to reduce cost of transaction, the risk of carrying cash, quick and ease of access; increase reliability and reducing errors.	12 (38.7%)	15(48.38%)	4(12.9%)			4.26
The bank already carried out similar mobile wallet project before and the lessons learned help to make Gizepay successful	8 (25.8%)	12 (38.7%)	7(22.58)	4(12.9%)		3.77
The existence of few local and no international mobile wallet service providers	12 (38.71%)	17(54.84%)		2(6.45%)		4.26
The preference of mobile wallet banking by customers over the traditional (provisional) banking	3 (9.68%)	5 (16.13%)	6(19.35%)	10(32.26%)	7(22.58%)	2.58
The increase in internet and phone users	15(48.39%)	14(45.16%)	2 (6.45%)			4.42
Low cost of internet usage charge for mobile wallet banking	2(6.45%)	5(16.13%)	5(16.13%)	12(38.7%)	7(22.58%)	2.45
Government policy and incentive to widen mobile banking usage	8(25.81%)	11(35.48%)	7(22.58%)	6(19.35%)		3.77

Total of 12 questions on opportunities regarding wallet banking project implementation were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from “1” “Strongly Disagree” to “5” “Strongly Agree”. Where: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Based on the above table 4.4, BOA E-banking staffs were asked if the large rural population resident and untouched potential to reach wide customers is opportunity for future wide wallet banking base. 77.41% of the respondents strongly agreed that large untouched market is huge opportunity, while remaining 22.59% agreed to the statement. With Mean score of 4.77, our respondents strongly agree that the existence of large rural and unbanked population is huge opportunity for wallet banking project.

Next respondents were asked if increase in the number of Smartphone users could contribute to increase in wallet banking customers and 58.06% of the respondents strongly agreed, while the remaining 41.94% agreed to the statement. The study indicates the increasing number of Smartphone users is opportunity for wallet banking projects with mean score of 4.58

Increased interest in mobile payment among Smartphone users also raised as opportunity package for wallet banking. 35.48% of the respondents strongly agreed, 38.71% agreed, 12.9% disagreed, while the remaining 12.9% were uncertain. Most of the respondents agreed to the statement with a mean score of 3.97

Regarding Inventive mobile payment application as opportunity for future wallet banking base, 48.38% of the respondents strongly agreed, and 29.03% agreed while the remaining 22.58%disagreed. The study indicates most respondents strongly agreed that inventive mobile

payment applications are opportunities for further expansion of wallet banking project. My interview with Application management directory executive proves that payment applications are becoming appealing in interface, robust system and are available in all channels like, mobile applications, web modules, and USSD short code. BOA is working to be appealing to customers.

Respondents were also asked if being late adopter of the system gave the bank to take advantage of already developed best and existing experience of other banks. 19.37% of the respondents strongly agreed, 29.03% agreed and 25.8% disagreed, while the remaining 25.8% were uncertain. Respondents believe being late adopter of wallet banking benefited bank of Abyssinia to create room for improvement on GizePay after studying early adopters experience and weakness with mean score 3.42.

According to item number 6 respondents were asked if wallet banking have the potential of overcoming the disadvantages of traditional payment instruments such as, cash and check and the result has proved that the introduction of electronic payment technologies has not only increase customer satisfaction, but also overcame disadvantage of traditional payment instruments by reducing the risk of carrying cash, ease of access, convenience, time saving and other related outcomes of using technologically advanced instruments. This is because, customers are not required to perform processes in traditional payment system which otherwise would have been time taking and exhaustive. 48.38% of the respondents agreed to the statement with a mean score of 4.26.

On Item 7 respondents were asked if the revision and already carried out wallet banking platforms helped to improve current Gizepay platform. 25.8% of the respondents strongly agreed to it, 38.7% agreed to the statement, while, 12.9% believe the revision doesn't helped in shaping

the current Gizipay platform. Majority of the respondents agreed on the statement that revision and experience from previous mobile wallet banking helped in improving GizePay with a mean score of 3.77.

The existence of few local and no international mobile wallet service providers was raised as an opportunity for bank of Abyssinia wallet bank expansion, which 38.71% of the respondents strongly agreed and 54.84% agreed, while 6.45% disagreed. Majority of the respondents strongly agreed that the existence of few mobile wallet providers as a big opportunity for wallet banking projects with a mean score of 4.26

Regarding the question of the preference of mobile wallet banking by customers over the traditional banking could be seen as opportunity, 9.68% of the respondents strongly agreed to the statement, 16.13% agreed, 32.26% disagreed and 22.58% strongly disagreed, while the remaining 19.35% were indifferent to the question citing customers still prefer traditional banking due to safety and reliability issue. Majority of the respondents disagreed to the statement of preference of customers of wallet banking over traditional banking with a mean score of 2.58

On item 10 respondents were asked if the increase in internet and phone users could widen the BOA wallet banking user base. 48.39% of the respondents strongly agree to this statement and 45.16% agreed to the statement while 6.45% disagreed. Regarding the increase in number of internet and phone users as an opportunity for wallet banking project, majority of the respondents agreed with a mean score of 4.42.

Regarding the question if low cost of internet usage charge for mobile wallet banking could be seen as opportunity, 38.7% of the respondents disagreed to the statement, while 22.58% strongly disagreed, citing application usage usually takes more internet usage charge over website or

other sites. Majority of the respondents disagreed to the statement that low cost of internet usage charge for mobile wallet banking in the country could help for expansion of wallet banking with mean score of 2.45

Lastly respondents were asked if government policy and incentive to widen mobile banking usage is an opportunity to the futurity of wallet banking especially for BOA. 25.81% of the respondents strongly agreed to the statement, 35.48% agreed, 22.58% were uncertain, while the remaining 19.35% disagreed to the statement. The majority were in favor of government policy as big opportunity to future wallet banking insurgence citing recent laws passed to support electronics payment and digitalization policy to transform traditional banking to electronic banking in the future with a mean score of 3.77. Yet, an interview with Agent banking director made it clear that government recently adopted digital economy policy and also national digital strategy to widen digital banking usage. These policies help to shape the digital banking performance in general and wallet banking in particular. NBE has issued new payment derivative that will allow banks and micro finance to provide mobile money service via agents. Banks and MFIs are allowed to partner with technology service providers through either software acquisition or revenue sharing arrangements. Additionally it will allow telecommunication companies to step into the non-bank financial services spaces by bringing basic services to mobile customers through their devices. This derivative also increases the daily transaction limit of 8000 birr daily from 6000 birr.

4.5.2. CHALLENGES FACED IN WALLET BANKING PROJECT IMPLEMENTATION

Table 4.5.Challenges of implementing of mobile wallet banking

Challenges of implementation of mobile wallet banking						
	SA	A	N	D	SD	Mean
I. Technological factor						
Implementation of wallet banking was difficult owing to lack of adequate telecommunication infrastructure.	27 (87.10%)	4 (12.9%)				4.87
Low level of internet penetration hinders the implementation of wallet banking	29 (93.55%)	2 (6.45%)				4.94
Fraud risk and low trust of mobile wallets by customers made the technology acceptance low	9 (29.06%)	18 (58.06%)	4 (12.9%)			4.16
Low level of ICT literacy rate and low perception of customers hampered the implementation process	26 (83.87%)	5 (16.13%)				4.83
The platform is subject to regular sign up problems, system unavailability, transaction limits, some features unavailability and etc	3 (9.68%)	6(19.35%)	4 (12.9%)	12 (38.72%)	6(19.35%)	2.42
Poor access to training and knowhow by staff members contributed to low level insurgence of the wallet users	3(9.68%)	4(12.9%)	6(19.35%)	10(32.26%)	8(25.81%)	2.48
II. organizational factors						
The organization wasn't aggressive in advertise its mobile wallet banking platform	4(12.9%)	15(48.39%)	7(22.58%)	5(16.13%)		3.58
Regular revision and change of names of the platform contributed to confusion on customers side and contributed to less request of the service	5(16.13%)	7(22.58%)	9(29.06%)	6(19.35%)	4 (12.9%)	3.01
The organization is late in implementing mobile wallet in comparison to other banks	10(32.26%)	15(48.39%)		6(19.35%)		3.94
The organization doesn't have adequate human resources to implement digital banking projects	2 (6.49%)	6 (19.35%)	4 (12.9%)	19(61.29%)		2.1
Employees lack knowledge and expertise wallet banking platform, business process, policies and industry structure.	8 (25.8%)	15(49.39%)	4(12.9%)	4 (12.9%)		3.87
BOA doesn't have the necessary technical, managerial and other skills to support wallet banking project implementation		2 (6.45%)	8(25.81%)	13 (41.93%)	8(25.81%)	2.13
The bank was not aggressive in creating awareness about the platform to customers, employees and other shareholders	5(18.13%)	7 (22.59%)	10(32.26%)	6 (19.35%)	3(9.68%)	3.16
III. Cultural, Environmental and other factors						
The high level performance (in comparison) of other similar platforms weakened BOA's ambition to reach wider audience	1(3.22%)	5(16.23%)	4(12.9%)	14(45.16%)	7(22.58%)	2.35
Customers preference to stick with the physical bank hampered performance and insurgence of wallet banking	14(45.16%)	15(48.35%)		2(6.45%)		4.32
The requirement of mobile wallet platforms such as downloading the app, android	4(12.9%)	8(25.8%)	2(6.46%)	13(41.94%)	4(12.9%)	2.84

phone, data network etc to use the platform created discomfort among the customers						
Repetitive data network failure (inaccessibility), data network interruption and requirements of little mobile device knowledge to open wallet account on phone and etc considered obstacle to get more users	13(41.94%)	15(48.35%)		3(9.68%)		4.23
Lack of sufficient government support will affect customers' willingness to use technological innovation	11 (35.48%)	16(51.61%)	4(12.9%)			4.1

Technological challenges

From table above, 87.1% of the respondents strongly agreed implementation of wallet banking was difficult owing to lack of adequate telecommunication infrastructure in the country with a mean score 4.87. Wallet banking requires internet service, strong, and Smartphone accessibility as a basic to operate. Item 2 is also related with telecommunication facility and 93.55% of the respondents strongly agreed that low level of internet penetration hinders the implementation of wallet banking with mean score of 4.94. Even though, our country's telecom is characterized by ever increasing telecom users and Ethio-Telecom is introducing easily accessible internet equipment, our internet user levels are still very low. This factor creates difficulty to increase wallet banking customer base. Low internet penetration hinders both the implementation and operation of wallet banking. This shows that the level of internet penetration indeed hindered the implementation process of electronic payment project in general and wallet banking in particular

Respondents were also asked if fraud risk and low trust of mobile wallets by customers made the technology acceptance low. 58.06% of the respondents agreed customers fraud risk and fear of new technology makes them to stick to traditional banking. 12.9% of the respondents disagree on this statement citing new technology always attracts new customers than the traditional long line banking system. Generally, most respondents agreed that low trust on mobile wallet, fraud risk and low-level technology acceptance rate could be huge challenge for wallet banking projects

with a mean score of 4.16. But, in my interview with agent banking director he assured me that there's no security risk at BOA. GizePay (or any of Abyssinia's money banking platform) requires OTP (one time password) to process any transaction. One time password will be send to the owners registered phone in text and to process any transaction it requires OTP. Additionally the bank is better quipped for any security concerns.

83.87% of the respondents strongly agreed regarding low literacy rate affecting implementation of electronic payment projects in general and wallet banking in particular. Though most of the population has got mobile telephone most of them do not use it for further application except for dialing and receiving call frequently. Especially most of the population rarely used telephone for making daily transaction as a result of low literacy rate. Moreover, the result is supported by the findings of Henok (2015) as he stated mostly cell phone applications are designed in foreign language and the majority of unbanked societies, who have cell phone, live in rural areas, where illiteracy rate is high; there exist language barriers to execute financial transactions through mobile telephones. Generally, most of the respondents strongly agreed onlow literacy rate affecting implementation of wallet banking projects with a mean score of 4.83.

Respondents were asked if Gizepay is subject to regular sign-up problems, system unavailability, transaction limits, some features unavailability, Repetitive data network failure, application sign up problems and etc that in turn hinders its application. 38.72% of the respondents disagreed with the statement. 19.35% strongly disagree, 9.68% strongly agreed, and the remaining 12.9% were uncertain. But still 19.35% of the responds believe sometimes Gizepay is subject to sign up problems on some customer cases and they believe updating the platform is one way to of remedy and their department is working on that. Generally, the respondents disagreed with

regular sign-up problems, system unavailability, unavailable features and transaction limits being a challenge with a mean score of 2.42.

Next respondents were asked if poor access to training and knowhow by staff members contributed to low level insurgence of the wallet users. 9.68% of the respondents strongly agreed, 12.9% agreed, 32.26% disagreed and 25.81 of the respondents strongly disagreed, while the remaining 19.35% were uncertain. Most of the respondents disagreed with BOA's limitation to provide enough training to stuffs and awareness creation as a challenge to wallet banking projects with a mean score of 2.48. Most respondents disagreed to the statements claiming BOA is well organized in managerial or employees level to provide the required training, man power and building the skills required for the service. Agent banking director mentioned BOA conducted around 25 trainings in relation to wallet banking, most of them targeting districts. Additionally the bank created face to face training for districts, virtual training for employees, internal communication channel, video user guide, manual user guide, manager sharing and most importantly BOA prepared dedicated department for wallet banking.

Organizational factors

In Organization level as a challenge, respondents were asked if BOA wasn't aggressive in advertise its mobile wallet banking platform to its potential customer. 12.9% of the respondents strongly agreed, 48.39% of the respondents agreed. 16.13% of the respondents disagreed and 3.58% of them strongly disagreed, while the remaining 22.58 % were indifferent. Generally, most of the respondents agreed to the statements and claimed that the bank is yet to advertise its wallet banking platform to wide customers and awareness creation comes out of it with a mean score of 3.58. Likewise, in my interview with agent banking director he mentioned the

advertisement for GizePay is yet to be released on all BOA channels and will be released soon and advertisement will be carried out aggressively

Respondents were asked if regular revision and change of names of the platform contributed to confusion on customers' side and contributed to less request of the service. 16.13% of the respondents strongly agreed, 22.58 % of the respondents agreed, 29.06% of the respondents were uncertain, 19.35% disagreed, while the remaining 12.9% strongly disagreed. Most of the respondents were uncertain if regular name change contributed to low level wallet banking insurance with mean score of 3.01. The bank first released wallet banking called PayQuick later Enqupay and now Gizepay. In My interview with both agent banking director and application management directory, I learned that the reason for wallet banking renaming was due to the need for new vendor. Vendor is a system supplier that sells network devices, smart meters and services. The earlier vendor couldn't scale to the banks needs and was subject to technology slack, security risk, diversification, and branding. That required for vendor advancement for better solution strategy and system. The move was strategic solution wise. Even though the vendor change resulted in cost and schedule overruns, it can be said that it's worth the vendor change for better service. The cost overruns are in relation to switch cost from one vendor to the other.

Next the respondents were asked if BOA is late in implementing mobile wallet in comparison to other banks. 32.26% of the respondents strongly agreed, 48.39% of the respondents agreed, while only 19.35% disagreed on the statement. Item 9 asked the respondents if they believe late launch of BOA's wallet banking could be considered as a challenge. Given the fact that the leading wallet banking platforms were launched in 2015 and 2018 respectively, the respondents believe that BOA is late in implementing mobile wallet in comparison to other banks with a mean score

of 3.94. But late implementation is advantageous according to agent banking director. In 2018 telecom capability was poor to carry out multiple service vendor platform and also poor vendor advancement. But now advanced vendors are available, better telecom advancement, advanced technology, experience from other wallet service providers and government initiation.

From the above table respondents were asked if BOA lacksadequate human resources to implement digital banking projects in general and wallet banking in particular. 6.49 % of the respondents strongly agreed, 19.35% agreed and 61.29 of the respondents disagreed, while the remaining 12.9% were indifferent. Generally, most respondents disagreed in BOA's human resource capability and effective as a challenge to wallet banking project implementation with a mean score of 2.1. BOA is working on creating conducive environment for wallet banking implementation through enhancing the capabilities of the employees so that they thrive for change.

Next respondents were asked if employees lack knowledge and expertise wallet banking platform requires as a challenge for expansion of wallet banking projects. 25.8% of the respondents strongly agree, 49.39% agreed and 12.9% disagreed, while the remaining 12.9% were indifferent. Most respondents saw lack of knowledge in relation with few training availability as a challenge to wallet banking project with a mean score of 3.87.

Respondents were asked if BOA doesn't have the necessary technical, managerial and other skills to support wallet banking project implementation. 6.45% agreed, 41.93% disagreed and 25.81% strongly disagreed, while the remaining 25.81% were uncertain. Most respondents believe BOA fulfilled the required technical, managerial and other skills to support wallet banking project implementation with a mean score of 2.13.

Lastly on organizational category, respondents were asked if BOA was not aggressive in creating awareness about the platform to customers, employees, managers, customer and other shareholders. 18.13% of the respondents strongly agreed, 32.26% agreed and 9.68% disagreed, while the majority of the respondents, 19.35% were uncertain. Majority of the respondents were uncertain if BOA was not aggressive in creating awareness about the platform to customers, employees, managers, customer and other shareholders with a mean score of 3.16.

Cultural, Environmental and other factors

Respondents were first asked if the high level performance (in comparison) of other similar platforms weakened BOA's ambition to reach wider audience. 3.22 of the respondents strongly agreed, 16.23% agreed, 45.16% of the respondents disagreed and 225.58% of the respondents disagreed, while the remaining 12.9% were indifferent. Generally most respondents disagreed on level of performance of other similar wallet banking platforms hindering GizePays's development with a mean score of 2.35.

Next respondents were asked if customers' preference to stick with the physical (provisional) bank hampered performance and insurgence of wallet banking. 45.16% of the respondents strongly agreed, 48.35 % of the respondents agreed, while the remaining 6.45% were indifferent. Most of the respondents agreed that customer's preference to stick to physical baking as a big challenge to wallet banking with a mean score of 4.32.

Next respondents were asked if the requirement of mobile wallet platforms such as downloading the app, android phone, data network etc to use the platform created discomfort among the customers. 12.9% of the strongly agreed, 25.8% agreed, 41.95% disagreed and 12.9% strongly disagreed, while the remaining 6.46% of the respondents were indifferent. Majority of the

respondents disagreed on the statement of mobile requirement such as downloading the app, android phone and data network being a challenge for wallet banking project with a mean score of 2.84.

Next respondents were asked if repetitive data network failure (inaccessibility), data network interruption and requirements of little mobile device knowledge to open wallet account on phone and etc considered obstacle to get more users. 41.94% of the respondents strongly agreed, 48.35% of the respondents agreed, while the remaining 9.68% of the respondents disagreed. Generally, majority of the respondents agreed on data network unavailability or failure, data network interruption, requirement of little phone knowledge and etc. being a challenge for wallet banking projects with mean score of 4.23.

Lastly, respondents were asked if the idea that there is lack of government support that challenged wallet banking expansion. The study outcome showed 51.61% agreed on the statement, while only 12.9% disagreed. This confirms government support is one of the challenges for implementing electronic payment projects as it may lead to inefficient and inadequate service delivery since it is confined with restrictive laws and regulations. From an interview with the agent banking director it can be said that regulatory requirements, including regulation of internet and mobile banking services, NBE limit on wallet banking transaction, NBE requirement to set up wallet banking, lack of inter-operability or inter-wallet exchange auctioneering, privacy and data protection, banking and money transmitting limit, that may bound or prevent the bank from offering such services in the influences of national bank directives and regulations which prevent enforceability of electronic payment technologies.

Additionally the respondents mentioned language barriers as a challenge to wallet banking implementation. Currently the SMS service is providing service in two languages namely English and Amharic, but the web based and mobile application provide their service in 7 local languages and soon the SMS wallet banking will start working in 8 local languages.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter presents the summary of findings, conclusion and recommendations of the research study. Hence, it reviews the problem of the research and concludes the findings with regards to the objectives of the study. The recommendations that focus on how the challenges identified by the research could be addressed are also included in this chapter. The study focused on bank of Abyssinia's wallet banking implementation practice through adopting mixed research approach which is appropriate to exploratory research design. Prior to these chapter theoretical and empirical studies were reviewed to get in depth insight about the topic area. The researcher employed both questionnaire and interview as a data collection instruments. The collected data were analyzed using descriptive statistical tools such as standard deviation, mean, frequencies and percentage by using SPSS version 20. Based on the results of the study discussed in the previous chapter, the following key findings are made:

5.1. SUMMARY OF FINDINGS

The research attempted to study Bank of Abyssinia's wallet banking implementation practice. BOA's wallet banking is called GizePay. The study tried to look the implementation practice of Gizepay and identify opportunities that drive implementation process of wallet banking in BOA with research objective of answering the type and level of opportunities that BOA or any wallet bank provider could benefit from for the expansion of their wallet banking and would drive the implementation process and made an effort to detect and overcome challenges of implementing wallet banking projects in BOA based on technological organizational-environmental (TOE) framework. In line with the research question, how was the implementation of wallet banking in BOA, what were the practices of implementation of wallet

banking, which opportunities and challenges contributed and affected the implementation process of wallet banking and determining the existing opportunities and challenges of implementation process the following findings are derived from the study. Based on the analysis of the questionnaires and interview results on studying implementation practice of wallet banking point out that, Bank of Abyssinia's wallet banking project followed the right path in implementing GizePay project. BOA followed the right project management principles, strategies and methods from project initiation to project closure. The study also found that GizePay's implementation was on time and BOA launched the project at the perfect time, Even though other similar platforms started operation earlier, BOA's GizePay launching was perfect giving the fruit of new vendors in the market, government currency note change and related rules with it, innovative ideas and better preparation, equipped and well organized from the BOA side.

GizePay is a trustable, easy, option-wide and effective platform for anyone that requires wallet banking. Also GizePay is much preferable than similar wallet banking platforms available right now in the market. The reason behind this is GizePay wallet banking is developed based on aggregation business model, while others wallet banking is s single business model wallet banking. This means GizePay can provide agent service, merchant, bill and customers all in one platform, while other wallet banking platforms only work on a specific service. Furthermore, GizePay is system error free or with minimum system dysfunction and not difficult to operate by customers. Any customer withy basic mobile phone knowledge can operate BOA's wallet banking. Finally Gizepay was launched after careful study of the drawbacks and problems of former two versions of the wallet banking platform. This enabled GizePay to operate in higher standard and quality and to be preferable by customers.

Based on the analysis of the questionnaires and interview results on opportunities of implementing wallet banking point out that, in order to survive in the market and to take a competitive advantage over other competitive banks implementing technological oriented products and services is inevitable and being late adopter gave the bank to take advantage of already developed best and existing experience of other banks. The research also found out that large rural population resident, increase in the number of Smartphone users, the increase in internet and phone users and increased interest in mobile payment among Smartphone users created untouched potential opportunities to reach wide customers for wallet banking customer base expansion. Additionally, Inventive mobile payment application can be considered as opportunity for further wallet banking expansion. Lately most banks are integrating wallet banking mobile application with text based mobile text system. The text system alone helps to open wallet banking without the need to have smartphones or data access.

The need to reduce cost of transaction, the risk of carrying cash, quick and ease of access; increase reliability and reducing errors calls for alternative banking systems. Wallet banking have the potential to replace traditional payment system with all the disadvantages such as the risk of carrying cash, time consuming, inconvenience, unreliability, fake recipients, human error and other disadvantages. Furthermore, the bank already carried out similar mobile wallet project before and the lessons learned help to make Gizepay successful. The existence of few local and no international mobile wallet service providers was also another opportunity for wallet banking. Recent data shows not more than 5 active mobile wallet providers, all of them weakened recently due to COVID -19 effects. This is big opportunity for recently launched Gizepay to flourish as a brand wallet banking service provider. Lastly, government policy and incentive to widen mobile banking usage can be seen as an opportunity given that government

recently adopted digital economy plan and passed a law that helps to transform the cash economy into digital non-cash economy.

Based on technological-organizational-environmental frame work (TOE) this study has identified a number of challenges for wallet banking implementation. The technological barriers identified in this study were lack of adequate telecommunication infrastructure, low level of internet penetration, fraud risk and low trust of mobile wallets by customers and low level of ICT literacy rate and low perception of it. Nonetheless, the platform's subject to regular signup problems, system unavailability, transaction limits, some features unavailability and etc. and poor access to training and knowhow by staff members are insignificant given the fact that GizePay is not subject to regular sign up problem, dysfunction, or features unavailability. BOA prepared virtual training to all districts heads and branch representatives on implementation of GizePay wallet project.

On Organizational factors side factors like, BOA's lack of aggressive in advertise its mobile wallet banking platform and lack of creating awareness about the platform to customers, employees and other shareholders was mentioned as a challenge for wallet banking customer base expansion. Also regular revision and change of names of the platform contributed to confusion on customers' side and contributed to less request of the service. BOA was late in implementing mobile wallet in comparison to other banks which respondents agreed as a challenge. This is in relation to creating brand name in the market. Regarding the organization lack of adequate human resources to implement digital banking projects in general and wallet banking in particular, respondents disagreed and believe BOA is well equipped in terms of human resources and have the necessary technical, managerial and other skills to support wallet banking project implementation, but agreed on employees lack of required level of knowledge

and expertise wallet in banking platform, business process, policies and industry structure of wallet banking. They cited the recent pandemic outbreaks, virtual training and lack of initiative as a reason behind employees' lack of required level of skills and knowledge for wallet banking.

Finally, the finding of the study offered other external challenges for the adoption wallet banking like the high level performance (in comparison) of other similar platforms weakened BOA's ambition to reach wider audience, which the respondents disagreed. Also customers' preference to stick with the physical bank hampered performance and insurgence of wallet banking was mentioned as a challenge. Also Repetitive data network failure (inaccessibility), data network interruption and requirements of little mobile device knowledge to open wallet account on phone and etc. were considered obstacle to get more users. Lack of sufficient government support will affect customers' willingness to use technological innovation is considered as another external challenge for expansion of wallet banking. But respondents disagreed on the requirement of mobile wallet platforms such as downloading the app, android phone, data network etc.to use the platform created discomfort among the customers as a challenge, citing nowadays only having phone is enough to open wallet account and it's operable without the need to download the application or having data connection.

5.2. CONCLUSION

The main objective of the research was to assess the implementation practice of GizePay with opportunities and challenges associated with wallet banking in general widely studied. Bearing this in mind, basic research questions were developed and respondents' opinions were collected from E-Banking department of the bank. Based on the objective of the study and problem statement, the following conclusions were made

- ✓ Implementation of wallet banking in BOA possibly increased customer satisfaction which in turn leads to greater volume of productivity and profitability. Additionally, it brought the bank an opportunity of being competitive in local market.
- ✓ Though, being late adopter got its own advantage and disadvantage, but for BOA it could be said that being late adopter worked for the reason that the bank have utilized and leveraged other experience in integrating to their wallet banking platform and chose better advanced technology and vendor for their implementation.
- ✓ There are plenty of available potential unbanked customers which made a reasonable opportunity for implementing wallet banking technologies. Yet, it can be said that customers are unfamiliar with services provided by the bank.
- ✓ Insufficient government support and bottleneck procedures and regulations could be the biggest challenge for BOA while implementing wallet banking projects and also technological factors such as lack of adequate telecommunication infrastructure, low level of internet penetration, low literacy and ICT literacy rate might contribute to the retrograde development and practice of wallet banking
- ✓ Government policies are also helping in shaping the banking industry. Government policy of enhancing digital banking could help BOA in enlarging its Wallet banking user base.
- ✓ BOA usage of security tools, creating conducive environment for wallet banking and continuous follow up helps in branding GizePay
- ✓ BOA is required to create aggressive advertisement and awareness creation to its customers, shareholder, employees and executives

5.3. RECOMMENDATIONS

Based on the above mentioned findings and conclusions, the researcher recommends the following points:

- BOA need to focus on empowering employees with better knowledge, technical skill and other necessary skills in order to improve complexity of those technological oriented payment methods. And also, the bank shall assess the available market to understand competitors' intention regarding advanced technology to take advantage of late adopter to cover the unbanked potential customers by introducing user friendly applications in order to overcome the challenge brought by low level of illiteracy rate which is a way to improve the level of customer satisfaction.
- Government have to support implementation and practice of electronic payment technologies not only by lifting crippling regulations but also by making the financial environment free from exhaustive government control since digitalization and technological advancement is the top prioritized policy of the government. Additional to this the government needs to provide infrastructural facilities to ease implementation process.
- Regarding cost minimization consequently developing and improving technological payment methods should be given priority to increase the profit margin of the bank.
- BOA should focus on creating aggressive advertisement and awareness to its customers, shareholder, employees and executives
- BOA also needs to focus on providing their services on more channels and more languages to provide their services to more unbanked population

5.4. SUGGESTION FOR FURTHER STUDY

This research assessed the implementation practice of GizePay with opportunities and challenges associated with wallet banking. The study centered on technology-organizational-environmental factors to examine opportunities and challenges. To allow for generalization, the researcher recommends that further studies on the same subject shall be conducted to other banks taking other project management factors under consideration. Researchers are also recommended to identify other variables that affect project implementation process. The research is conducted with a constraint of sample size and it is assumed that conducting a regression analysis was not optimal. Therefore, the researcher suggests further studies on project implementation factors to be supported by regression analysis.

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APPENDICES



SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY !



ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE DEPARTMENT OF PROJECT MANAGEMENT

Assessing opportunities and challenges of implementing wallet banking: the case of GizePay

Dear Participant

This MA thesis research questionnaire is designed to assess the implementation and challenges of digital wallet banking project in Bank of Abyssinia. The purpose of this questionnaire is to obtain your perceptions and views regarding the services. The results of the study anticipated to supply the understanding of the basic implementation procedure and challenges of adopting digital wallet banking project in Bank of Abyssinia in delivering of service to customers.

The information obtained will be used for academic purpose only; all information and feedbacks will be kept strictly confidential. Your experience and educational background in the banking industry will greatly contribute to the success of my study and I believe this kind of study will be an input for the development of the growing electronics payment technologies. Your involvement is regarded as a great input to the quality of the research results. The information that you provide will enable me to critically analyze the subject matter. Therefore, please, answer all questions honestly and confidently Hence, I believe that you will amplify your assistance by participating in the study. Your honest and thoughtful response is priceless. So, I am kindly requesting you to respond each and every question.

Thank you,

Seyum Debebe

Section I: Personal Information (Please indicate your answer by ticking (√) in the appropriate category inside the given box)

1. Gender

A. Male

B. Female

2. Please indicate your age

A. Less than 25

C. 30-35 years

B. 25-30 years

D. 35-40 years

E. above 40 years

3. Please indicate your educational qualification

A. Diploma

C. Masters Degree

B. First degree

D. PHD

4. Please specify your responsibility at the department

A. Manager

C. IT Officer

D. Clerk

B. Executive

E. Others (specify) _____

5. Which one of the following best describes your current role in BOA

A. Software Developer

B. Software Tester

C. Software team leader

D. Other (specify) _____

6. How many years of experience do you have

A. 0 – 2 years

B. 2 – 5 years

C. 5 – 10 years

D. 10 – 15 years

E. 15+ years

Part III: Questions related with Implementation, opportunities and challenges of mobile wallet banking

Instruction: Below are lists of statements concerning the implementation of mobile wallet banking in two sections. Please indicate to what extent you agree or disagree with each statement by ticking (√) on the spaces provided. Each choice are identified by numbers ranged from 1 to 5

Note: SA- Strongly Agree, A- Agree, DA- Disagree, N- Neutral, SD- Strongly Disagree

The following section of this survey will attempt to see the implementation practice of GizePay project

	The subsequent are implementation comment and view of IT support officers on Gizepay project	SA	A	N	D	SD
		5	4	3	2	1
	1. Bank of Abyssinia’s wallet banking project followed the right path in implementing GizePay project					
	2. GizePay’s implementation was on time and BOA launched the project at the perfect time					
	3. GizePay is a trustable, easy, option-wide and effective platform for anyone that requires wallet banking					
	4. GizePay is much preferable than similar wallet banking platforms available right now in the market					
	5. GizePay is system error free and not difficult to operate by customers					
	6. Gizepay was launched after careful study of the drawbacks and problems of former two versions of the wallet banking platform					

Please kindly state any implementation view and comment on Bank of Abyssinia’s mobile wallet banking project implementation

The next section of this survey shows the opportunities for more wallet banking user base expansion

	The subsequent are opportunities that the bank might exploit while implementing mobile wallet projects.	SA	A	N	D	SD
		5	4	3	2	1
	1. Large rural population resident and untouched potential to reach wide customers					
	2. Increase in the number of Smartphone users					
	3. Increased interest in mobile payment among Smartphone users					
	4. Inventive mobile payment application					
	5. Being late adopter gave our bank to take advantage of already developed best and existing experience of other banks.					
	6. Reduce cost of transaction, the risk of carrying cash, quick and ease of access; increase reliability and reducing errors.					
	7. The bank already carried out similar mobile wallet project before and the lessons learned help to make Gizepay successful					
	8. The existence of few local and no international mobile wallet service providers					
	9. The preference of mobile wallet banking by customers over the traditional banking					
	10. The increase in internet and phone users					
	11. Low cost of internet usage charge for mobile wallet banking					
	12. Government policy and incentive to widen mobile banking usage					

Please kindly specify below any other opportunities?

The next section of this survey tries to address factors that hinder implementing wallet banking in BOA.

The following are some of the challenges during the introduction of Gizepay project	SA	A	N	D	SD
	5	4	3	2	1
I. Technological factor					
13. Implementation of wallet banking was difficult owing to lack of adequate telecommunication infrastructure.					
14. Low level of internet penetration hinders the implementation of wallet banking					
15. Fraud risk and low trust of mobile wallets by customers made the technology acceptance low					
16. Low level of ICT literacy rate and low perception of customers hampered the implementation process					
17. The platform is subject to regular sign up problems, system unavailability, transaction limits, some features unavailability and etc					
18. Poor access to training and knowhow by staff members contributed to low level insurgence of the wallet users					
II. organizational factors					
19. The organization wasn't aggressive in advertise its mobile wallet banking platform					
20. Regular revision and change of names of the platform contributed to confusion on customers side and contributed to less request of the service					
21. The organization is late in implementing mobile wallet in comparison to other banks					
22. The organization doesn't have adequate human resources to implement digital banking projects					
23. Employees lack knowledge and expertise wallet banking platform, business process, policies and industry structure.					
24. BOA doesn't have the necessary technical, managerial and other skills to support wallet banking project implementation					
25. The bank was not aggressive in creating awareness about the platform to employees, managers, customer and other shareholders					
III. Cultural, Environmental and other factors					
26 The high level performance (in comparison) of other similar platforms weakened BOA's ambition to reach wider audience					
27 Customers preference to stick with the physical bank hampered performance and insurgence of wallet banking					
28 The requirement of mobile wallet platforms such as downloading the app, android phone, data network etc to use the platform created discomfort among the customers					
29 Repetitive data network failure (inaccessibility), data network interruption and requirements of little mobile device knowledge to open wallet account on phone and etc considered obstacle to get more users					
30 Lack of sufficient government support will affect customers' willingness to use technological innovation					
31 The high level performance (in comparison) of other similar platforms weakened BOA's ambition to reach wider audience					

Please kindly specify below any other challenges?

Appendix II

Interview questions designed for Directors of department in relation with wallet banking of Bank of Abyssinia

Date _____ Profession _____

1. BOA's first mobile wallet banking was named as PayQuick, but later changed to EnquPay and finally to GizePay. What factors required those name and platform changes?
2. During this name changes it took almost two years for the bank to finally come with new platform. Do you think the bank lost valuable asset during this process? Does the project go the proper project management process? What went wrong? What valuable lesson you learned? Do you think your department could have avoided all this? How?
3. Do the following factors considered in your institution as challenges for the implementation of mobile wallet or overall digital banking
 - a) Security risk
 - b) Customers and employees resistance for cha
 - c) Lack of social awareness and high illiteracy (including ICT illiteracy
 - d) Cost incurred in the purchase of technological instruments
 - e) Lack of competition among local banks
 - f) Inadequate ICT infrastructure
 - g) Lack of skilled professionals in the bank
 - h) Laws and regulations to operate are not well developed
 - i) Frequent power interruptions
 - j) Language barriers
4. What is the perspective of the bank for E-Banking development projects?
5. How do you see the level of other banks mobile wallet banking implementation?
6. Does BOA created conducive environment for expansion of wallet banking project implementation?
7. What opportunities and changes you expect or your organization plans to implement to make the mobile banking platform to be more accessible and have better acceptance
8. Most digital banking services are limited by language, as most of them only provide service by English and Amharic. What's BOS's digital banking services language options in this regard?