



Financial Inclusion: A review of Mobile Money Interoperability in Zimbabwe

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Abstract: Objectives: This article examined whether moral suasion from the national payments system directorate works in Zimbabwe. Moreover, the study examined whether the country needs arbitration for mobile money interoperability or is now at a point where there is a need for mandatory regulatory intervention. **Prior work:** This article builds on the acceptance and use of mobile phones as a powerful financial inclusion tool used by telecommunication and banking institutions as they scramble for market share for their mobile financial products and services. **Approach:** A qualitative approach underpinned by a review of related literature and relevant documents guided the study. **Results:** Despite the availability and existence of mobile money wallets since 2011, nothing has taken place regarding interoperability as an option in Zimbabwe. The financial inclusion strategy had provided guidelines towards mobile money interoperability. **Implications:** The study has policy implications on issues surrounding regulatory interventions. The article closes the knowledge gap in mobile money interoperability in Zimbabwe. **Value:** The study is unique and critical in providing an overview of the subject matter from a qualitative point of view.

Keywords: Financial Inclusion; Mobile Money Interoperability; Mobile Banking; Payment System; Money Transmission; Mobile Money Wallet; Banking Regulations; Zimbabwe

JEL Classification: G20; G23; G28; G29; E42

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1. Introduction

Mobile phone-based technologies have been and are still changing the way information is transferred or shared. Technology has also impacted the way financial transactions are done. Since the launch of the first mobile money platform, the technology has altered the economics (micro and macro) of frontier and emerging economies. In most of these countries, people are now using cell phones to do financial transactions thus the bank is now a thumb away, traditionally the same people had to travel some distance to access a bank branch. Mobile money is already being issued by banks, mobile network operators, mobile virtual network operators, “FinTechs” and “TechFins” to provide billions of unbanked consumers with a way to store and access money digitally.

The information available indicates that the majority of consumers in frontier and emerging economies are now using mobile money and their lives have been transformed in the process. According to Rea and Nelms (2017), Mobile money has provided access to financial services, and the ability to pay and be paid digitally, for some customers they are getting paid for the first time. Digital financial services including mobile money give the opportunity the unbanked people to use their phones (ordinary, feature and smartphones) the same way the banked use their bank accounts. They can now make deposits, and withdrawals as well as the sending money from their handset without having to visit a bank branch.

Over and above the primary service of depositing, sending money and withdrawing, digital financial services now allows consumers to make the customer-to-business (P2B or C2B) transactions these include pay merchant transaction over the counter as well as pay bill transactions remotely. In some instances, employees are now receiving their salaries through mobile wallets and donor organisations are also paying through mobile wallets thus providing a market system solution to donor funding. However, in some cases, donors are forced to give SIM cards of a certain Mobile Network Operator (MNO) to beneficiaries to be able to access mobile money. This is so because the other mobile money operators may not have the adequate support that is required in the field. Sadly, in some cases, the MNO may not even have a signal in certain areas but Non-Governmental Organisations (NGOs) and to some extent the customers seem to prefer the mobile money operators who do not have a signal in their areas. This worries the government as they try to maximise social welfare in the country.

The challenges faced by many frontiers and emerging markets are related to infrastructure, these challenges have made it difficult or unsustainable for most financial services providers like banks and insurance companies to open branches in remote areas. Rural communities are often considered to be unbankable and opening a bank branch is unsustainable due to the costs associated with constructing and opening a bank branch. As a result, bank branch penetration is low leaving over 1.7

billion of the world's population unbanked, yet two-thirds of them own a cell phone¹. A significant number are unhappily banked and others are informally banked through the use of Savings and Credit Cooperative Societies (SACCOs).

Rea and Nelms (2017) argue that the reasons behind the exclusion of such a large number of people are related to barriers such as cost, travel distances and documentation requirements for opening a bank account in developing countries. COMESA research on digital financial inclusion for Micro Small and Medium Enterprises has revealed that, the products and services that are offered by financial services providers are not suited for the bottom of the pyramid (BoP) market.

The objectives of this article are:

- Will moral suasion from the national payments system directorate work in Zimbabwe?
- Does the country need arbitration for mobile money interoperability or the country is now at a point where there is a need for regulatory intervention mandating mobile money interoperability?
- What is the impact of the current market structure, legacy, legal and technical issues on mobile money interoperability?

The remainder of the article is as follows: Section 2 reviews the related literature, Section 3 looks at the methodology used, Section 4 then discusses the findings from the literature and the study, and finally, Section 5 concludes the article.

2. Literature Review

2.1. Mobile Money Overview

The mobile phone penetration rate in Zimbabwe is now at 88.2%² and the bank branch penetration rate per 100 000 adults stands at 4.73³. The data indicates that far more Zimbabweans have access to mobile phones than to banking services. Mobile phones are now trusted and accepted by a large section of society as a means of exchanging information verbally, in short messages and for transactions. The acceptance of the mobile phone as a trusted communication tool coupled with a wide

¹<https://www.worldbank.org/en/news/press-release/2018/04/19/financial-inclusion-on-the-rise-but-gaps-remain-global-findex-database-shows>.

² According to the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) - Third quarter report 2019.

³ <https://tradingeconomics.com/zimbabwe/bank-concentration-percent-wb-data.html> 2017 data.

coverage of 12.9 million¹ subscribers in a country of fewer than 15 million² people opens up opportunities in finance.

Kufandirimbwa et al. (2013) recognise that mobile money is triggering a lot of activity in the market as telecommunication and banking institutions scramble for their share of mobile financial products. Mobile money can be described as the convergence of telecommunications and banking. Introduction mobile money was not an entirely new phenomenon in Zimbabwe, it was introduced by Telecel as Skwama and developed by the banking industry (Kingdom Bank) as CellCard then mastered by Econet as Ecocash, Telecel has re-launched Skwama as TeleCash and NetOne relaunched their mobile money platform twice and have now settled for OneMoney. Similarly, banks refused to be outdone and have launched different e-banking products that are either based on the ZimSwitch system, Zipit or other banked software programs. All the services on the market aim to ensure that the unbanked, the under-banked and the unhappily banked have an alternative to the brick-and-mortar structures of the formal banking systems.

Zimbabwe's demand for mobile money was so evident and led to Ecocash being labeled a sprinter by GSMA (2012) after registering 1.5 million customers in a space of 8 months³. Mobile money has also been gaining popularity in the country possibly due to a loss of confidence in the banking system due to bank closures and a booming informal sector in the country that does not bank⁴. This is all compounded by the cash crisis that the country is currently experiencing.

Despite the availability and existence of three mobile money wallets since 2011, there is no talk about interoperability being an option in Zimbabwe. The study seeks to dive deep into the economic, market, legal and technical factors that are affecting the interoperability discussion. Guidelines on mobile money interoperability have been issued yet there is no evidence of any discussions. The financial inclusion strategy that expires this year has interoperability as a priority but nothing is happening on the ground.

2.2. Zimbabwe Situation Analysis

The status of Zimbabwe's economy is not clear as the World Bank reports that Zimbabwe is a lower middle-income country⁵. However, some reports state that just four months after being upgraded to a lower middle-income economy, Zimbabwe

¹ POTRAZ

² <http://worldpopulationreview.com/countries/zimbabwe-population/>

³ <https://www.gsma.com/mobilefordevelopment/country/zimbabwe/zimbabwes-ecocash-shows-impressive-growth/>

⁴ IMF working paper.

⁵ <https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2019-2020>

was once again downgraded to a low-income economy.¹ The unemployment rate in Zimbabwe has always been debatable, international labour organisation estimates the figures to be around 5%.² Medina and Schneider (2018) observed that Zimbabwe has the largest informal economy in Africa as a percentage of GDP and is the third in the world after Bolivia and Georgia. According to the Zimbabwe Economic Policy Analysis and Research Unit [ZEPARU] and Bankers Association of Zimbabwe [BAZ] (2014) report the informal sector has not had a good relationship with the bankers thus there have been an increased number of informal businesses that lack access to financial institution accounts. The bank branch penetration rate is low within the informal sector.

Table 2. Zimbabwe's Socio-Economic Data

<i>Zimbabwe</i>	
Population (million)	14,5
Urban population	32,20%
Female Population	49,70%
GDP	12,9 Billion
<i>Economically Active</i>	
15-24 years	20,16%
25-54 years	32,94%
55-64 years	4,07%

*Source*³

Zimbabwe became the 86th member of the Maya Declaration in 2012. The Maya Declaration is a statement of common principles regarding the development of financial inclusion policy made by a group of developing nation regulatory institutions during the Alliance for Financial Inclusion (AFI) 2011 Global Policy Forum held in Mexico.

2.3. Mobile Subscriptions

According to the 2020 POTRAZ report, active mobile subscriptions grew by 4% to reach 12, 8 million from 12, 3 million recorded in the second quarter of 2019. The mobile penetration rate increased by 3.4% to reach 88.2% from the 84.8% recorded in the previous quarter. All the mobile operators recorded growth in active subscriptions. Figure 1 shows that Econet remains the dominant player in the market

¹ <https://www.theindependent.co.zw/2019/10/24/reviewing-govts-tsp/>
<https://www.cnbc.com/africa/videos/2019/10/18/world-bank-downgrades-zim-to-a-low-income-country/>
<https://ztn.co.zw/stream/2019/10/world-bank-downgrades-zim-to-low-income-country/>

² <http://www.ilo.org>

³ World Bank. www.cia.gov.

with 68.10% of the mobile subscriptions, NetOne controls 23.70% while Telecel has 8.20% of the market share.

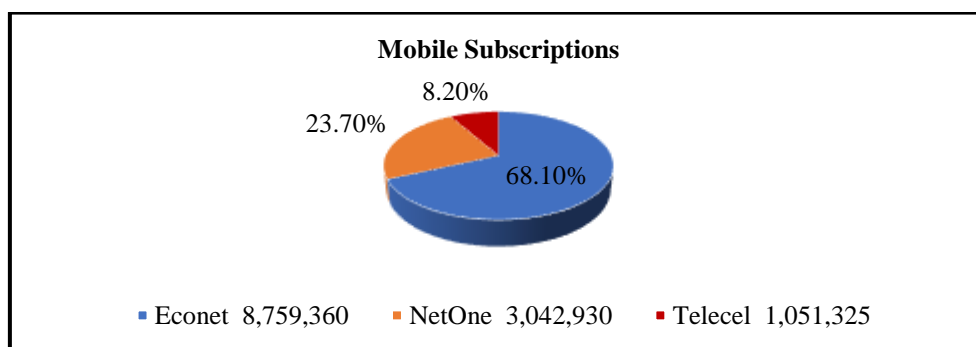


Figure 4. Mobile Subscription in Zimbabwe

This raises the question can the dominance of one MNO be the reason for delays in accepting interoperability in Zimbabwe? The study seeks to reveal the impact of a dominant player in the market on interoperability.

2.3.1. Mobile Money Subscriptions

The POTRAZ reports state that as expected, due to the liquidity challenges there was an overall growth in active mobile money subscriptions across all operators in the last quarter of 2019¹. Figure 2 indicates that EcoCash is the dominant mobile money platform in the country by a huge margin.

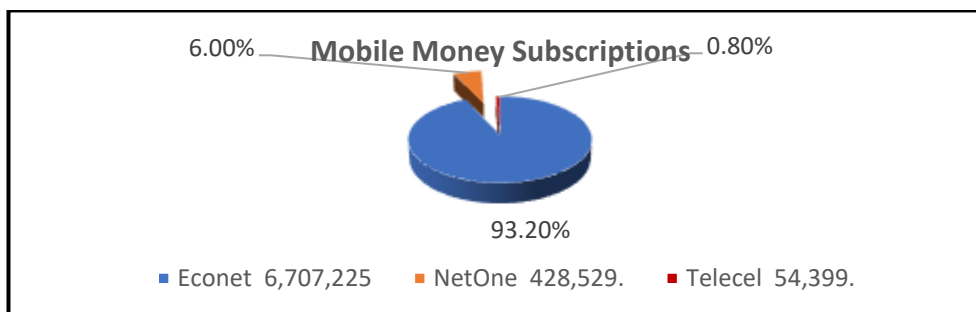


Figure 5. Mobile Money Subscriptions

As mentioned above the study seeks also to look at the relationship between market dominance and market interoperability in mobile money could the dominance of one player in the mobile money market be the cause of delays in mobile money interoperability in Zimbabwe?

¹ POTRAZ third quarter report.

2.4. Zimbabwe National Payment System (NPS)

Zimbabwe has a vibrant payments system with various participants from banks and microfinance institutions to non-bank players like mobile money operators. The global payments business continues to grow, stimulated by increasing world trade and by the accelerating move away from cash to electronic and mobile payments. Domestically the payments business continues to grow as trade continues to increase between individuals in the formal and informal sectors. The continued development of the informal sector coupled with the liquidity challenges makes digital payments the only viable option in Zimbabwe with mobile money pushing the largest volumes.¹ New payment providers continue to enter the market and are challenging incumbents for market share, using technology to disrupt traditional networks and business models across retail and wholesale payments.

Broadly, a payment system enables payments to be effected or facilitates the circulation of money and includes agreements, systems, institutions, rules, laws and procedures. The Bank for International Settlements [BIS] (2005) alludes to the pivotal role payment systems play in maintaining financial system stability while reducing costs and uncertainty of financial transaction settlement.

National Payments System allows for efficiency in the transaction, allows for communication between systems and it improves the speed of settlement. According to the International Telecommunication Union [ITU] (2016) “payment system infrastructures determine the efficiency, safety, and effectiveness with which transaction money is used in the economy, and the risks associated with its use.”

2.4.1. National Payment System Infrastructure

Zimbabwe has several authorised payments system operators these include local players like MyCash, EcoCash, TeleCash, OneMoney, GetCash, PayServe, ZimSwitch, Zipit, Chengetedzai, and international players which include Visa, MasterCard, and UnionPay. Below are regulated payment systems in Zimbabwe and the spectrums from which they operate.

¹ RBZ Quarterly Report December 2019.

Table 2. RBZ Payment System Infrastructure

<i>Stream</i>	<i>Devices or Access point</i>	<i>Approved payment providers</i>
(a) Card	POS & ATMs	ZimSwitch, Visa, MasterCard, Union Pay Int, Various Bank Based Brands
(b) Mobile	Cell phone & POS	OneMoney, EcoCash, TeleCash, Gettcash, MyCash
(c) Internet	Computer & mobile phone	Bank Based and Branded
(d) Cheque	Paper-based	Banks
(e) Electronic funds transfer	Cell phone banks	ZIPIT, Payment

Source: RBZ Payment Systems Infrastructure in Zimbabwe Brochure

2.4.2. National Switch

Zimbabwe has several private switches that are in the market and are also regulated by the Reserve Bank of Zimbabwe (RBZ). ZimSwitch is Zimbabwe's National Electronic Funds Switch for Automated Teller Machines (ATMs) and Point of Sale (PoS) devices. ZimSwitch's mandate is to serve not only the financial institutions that are its members and users but also provide an essential service to their customers.

ZimSwitch was formed upon the signing of a partnership agreement of 8 local financial institutions dated 7 March 1994, to facilitate the shared use of ATMs and POS facilities throughout Zimbabwe¹. Over and above interconnecting all the Bank ATMs in Zimbabwe ZimSwitch has gone further and has made interoperability between non-bank operators and banks possible. To date two mobile money operators, OneMoney and TeleCash are connected on the ZimSwitch platform, while EcoCash is not on the platform.

ZimSwitch is a private entity could the absence of government ownership in a national switch be a contributing factor to why the discussions on mobile money interoperability are not taking centre stage in Zimbabwe?

Mobile money operators in Kenya, Uganda and Zambia through the persuasion of their respective central banks have waived charges on all mobile money transactions during the period of the COVID-19 pandemic. This was done in a way to promote cashless transactions during the period of the COVID-19 pandemic. Zimbabwe is already cash lite, however, the expectation was for the central bank to at least do something about off-network transfers, a temporary interoperability arrangement would have been ideal or maybe discussions along those lines to be prepared if such

¹ <http://www.lxsinternational.com/zimswitch.php>.

happens again. Indications are that even COVID-19 will not push or motivate players to be or to discuss interoperability.

2.5. Payment Systems Interoperability

2.5.1. Interoperability

“Payment systems interoperability enables different payment infrastructures and financial service providers to effect payments between customers. In doing so, interoperability expands the reach of transaction accounts and retail payment instruments, making them more useful for end-users”¹

Zimbabwe is a step ahead in terms of interoperability between financial institutions and authorized non-bank operators and this has been made easier mainly because of the challenges faced in the banking industry - liquidity challenges. However, it is critical to note that the relationship was not as smooth in the early days of mobile money in Zimbabwe, with banks accusing Econet of jumping into their space as well as uncompetitive behaviour. Reports in the local press indicate that Econet was subsequently investigated by the competition and tariff commission² for perceived uncompetitive behaviour. According to Robb et al. (2017), the subject of the bank's complaints related primarily to Econet's initial refusal to partner with ZimSwitch and its insistence that banks should instead integrate with its EcoCash platform should they want their customers to be able to link their accounts to EcoCash mobile money and send money using this method. Interestingly less than 5 years later EcoCash is now integrated with 10³ out of the 17⁴ banking institutions in Zimbabwe and is even at the stage of considering microfinance banks.

Interoperability between banks is standard practice in the industry and has been in existence since the formation of ZimSwitch. This paper is aimed at investigating the reasons behind the absence of mobile money interoperability nine years after the first mobile money operation was launched in Zimbabwe.

2.5.2. Interoperability Global Scan

According to the Consultative Group to Assist the Poor (CGAP) 2016 report, Globally, at least 20 countries, Bangladesh, Brazil, Côte d'Ivoire, Ecuador, Egypt, Ghana, India, Indonesia, Jordan, Kenya, Madagascar, Mexico, Nigeria, Pakistan, Peru, Philippines, Rwanda, Sri-Lanka, Tanzania and Thailand have some degree of mobile money interoperability. However, the nature and degree of interoperability

¹ <https://www.cgap.org/blog/interoperability-and-financial-inclusion-regulators-role>.

² <https://www.techzim.co.zw/2014/06/econet-investigated-anti-competitive-behaviour-mobile-money-business>.

³ <http://www.ecocash.co.zw/about/banking-services#linked-banks>.

⁴ Central Bank Statistics.

depend on the country. The fact that mobile money in Zimbabwe is not interoperable is not a surprising one. Sub-Saharan Africa (SSA) has the largest mobile money deployments, with 140 deployments in over 39 countries. However, only 6 countries have some degree of interoperability. Zimbabwe is particularly of interest now given the development of the digital finance sector, the wallet has evolved from a mere channel for cash-in and cash-out to becoming an ecosystem. Micro-insurance and micro-credit are now being offered with mobile money being the base account. Insurance claims are now paid into mobile money accounts. Over and above the development in the Digital Financial Services (DFS) sector economic factors are contributing to the call for mobile money and the whole of the digital financial services sector to be interoperable.

The table below shows the selected countries in SSA and how they compare to Zimbabwe.

Table 3. Sub-Saharan Africa comparison with Zimbabwe

<i>Country</i>	<i>Mobile Money Launch</i>	<i>Interoperability Agreement / Regulation</i>	<i>Launch to Interoperability Agreement</i>	<i>Number of Mobile Money Players</i>	<i>Market Share</i>	<i>Interoperability Type</i>	<i>Policy, Regulation Guidelines</i>	<i>Methodology¹</i>
Tanzania	2008		6 years	M-Pesa	43%	Multilateral	NPS Act Electronic Money Regulations, 2015	Industry initiated and led by an independent facilitator
				Tigo Pesa	36%			
				Airtel Money	17%			
				Halotel Money	3%			
				Ezy Pesa	1%			
				TTCL	0,04%			
Kenya	2007	2018	11 years	M Pesa	82,43%	Bilateral Platform level interoperability	NPS Act 2014	Strong encouragement from the regulator, no independent facilitator
				Airtel Money	11,28%			
				Equitel	5,77%			
				T-Kash	0,23%			
Rwanda	2010	2014	4 years	Tangaza	0,29%	Multilateral	Exclusivity agreements are not permitted, [Article 23] Guidelines for Retail	Regulator led
				MTN	56%			
Zimbabwe	2011	2014	N/A	Airtel Money	44%	None		
				EcoCash	93,20%			

¹ https://www.cgap.org/sites/default/files/publications/slidedeck/2018_05-Slidedeck-Interoperability-in-East-Africa-Dispatches-from-the-Home-of-Mobile-Money.pdf.

Uganda	2009	2017	8 years			
				OneMoney	6%	
				TeleCash	0,80%	Payment Systems and Instruments 2017
				MTN Money	38%	Multilateral No NPS Act,
				Airtel Money	55%	Strong encouragement from the regulator, but led with an independent facilitator
				Uganda Telecom Africell	2%	Mobile Money Guidelines, 2013
				M-Cash	1%	
				PayWay		strong encouragement from the Bank of Uganda
				Eezy Money		

The table indicates that in countries where there are no dominant players in the mobile money space interoperability has been an easy argument. Could there be a correlation between market dominance and interoperability? The largest mobile money operator in Tanzania, M-Pesa, has 43% of the market share followed by Tigo Pesa with 36% of the market share, Airtel Money has 17% whilst the remainder 4% is shared between TTCL, Halotel Money and Ezy Pesa. In Rwanda MTN money has 56% whilst Airtel control 44%. Similarly, in Uganda the dominant mobile money player is Airtel money with 55%, MTN mobile money with 38% whilst the remainder 7% is shared between 5 mobile money operators. Mobile money was launched in Tanzania a year, in Rwanda 3 years after Kenya and 2 years later in Uganda. However, the three countries reached the mobile money interoperability milestone faster than Kenya.

The table also reveals that no interoperability discussion can go on without regulatory involvement, direct or indirect, it is critical to note the role that the regulatory authorities have played in these countries for them to be interoperable. In Tanzania, the interoperability model was industry-led with a facilitator whilst the regulator was coming in as an advisory board. In Rwanda, the negotiations were regulator led while in Kenya and Uganda there was strong regulator encouragement, the difference being that in Uganda, they had an independent facilitator whilst in Kenya there was none.

While Kenya is now interoperable at the platform level, it took 11 years before their first interoperable transaction went through. The national payments act of 2014 encouraged interoperability in Kenya but it took another four years for it to be operationalised. In comparison, Zimbabwe is in its ninth year after the launch of mobile money and is in its third year since the publishing of guidelines for retail payment systems and instruments. These guidelines encourage the interoperability of not only mobile money but of all payment service providers. To date, the banks

are interoperable amongst themselves and are interconnected with mobile money operators however interoperability between mobile money players as an industry is still non-existent.

2.5.3. Dissecting Interoperability

There are many perceptions about interoperability, from a customer, operator and regulatory perspective. From a customer perspective interoperability may simply mean the ability to send money across networks, off a network or on the network - the majority does not know and does not care as long as they can send money to their loved ones. From an operator's perspective, it can be viewed as positive or negative, depending on which side of the coin the operator is coming from. It is a positive thing for smaller players and can be viewed as negative by the dominant players who want to maintain their competitive edge. From a regulatory perspective, it's considered a catalyst for financial inclusion. The majority of the national inclusion strategies including Zimbabwe do have a paragraph or two on why interoperability is important in the economy. The National Financial Inclusion Strategy (NFIS) 2016 – 2020 has this to say on Interoperability.

“The ability of the payment systems to interact at various levels is important in promoting convenience and reduction of operational costs. While payment systems are already interoperable at various stages, there are significant gaps in the sharing of infrastructure.”

Zimbabwe is running out of time to deliver interoperability before the end of 2020 otherwise it will have to be carried forward into the next Financial Inclusion strategy.

Kumar and Tarazi (2012) concur that the word interoperability in mobile money means a lot of different things to different people. For some, the word means something positive that is efficient services and lower prices for consumers. For others, it means something negative i.e. more costs, threats to competitive advantage and less profitability. For others, the word means a reality that is inevitable but far in the distant future. In some companies in Zimbabwe interoperability is not an option.¹ In certain mobile money companies, the mention of the word may be interpreted as subscribing to the idea of handing over customers to competition on a silver platter.

2.5.4. Types of Interoperability

The Consultative Group to Assist the Poor (CGAP) has proposed a framework that distinguishes between different types of interoperability. The regulators and operators in Zimbabwe may want to consider these as they try to find a workable solution given Zimbabwe's peculiar circumstances.

¹ <https://www.cgap.org/blog/interoperability-branchless-banking-and-mobile-money>.

2.5.4.1. Platform-Level Interconnection

CGAP (2012) states that interoperable platforms, refer to platforms that permit the transfer of funds from one mobile money account to the mobile money account of another service provider. From the banking side, this is the same as being able to transfer money from one bank to another. From the MNO side, it is the same as being able to send a text message from your phone with your MNO to your friend's phone on the network of a different MNO.

From a mobile money perspective, platform-level interconnection means that a customer from OneMoney would be able to transfer e-value from their wallet to a TeleCash wallet. The funds terminate or settle in the TeleCash wallet, thus the TeleCash customer will have access to these funds and use them in the mobile money ecosystem without having to cash out first. This model of interconnection is regarded as a cross-network transfer and is not yet available in Zimbabwe. Off-network transfers are currently available in Zimbabwe. When a OneMoney customer sends money to TeleCash, it is sent to an "unregistered customer" and it arrives as a message, the recipient has to look for a OneMoney agent to be able to cash out, thus termination is at OneMoney agent i.e. the agent of the sending customer. If the customer then wants to use the same funds digitally, they have to look for a TeleCash Agent (assuming agent exclusivity) and cash into their wallet.

A cross-network transfer reduces the time and cost of digital transactions thus catalyses financial inclusion through adoption and usage. Off-network transactions are more like a channel, the recipient has to cash out within a specified period or the funds will be reversed to the sender. There is some degree of platform-level interoperability between the smaller players TeleCash and OneMoney connected through ZimSwitch without the largest player in the mobile money sector EcoCash.

In contrast, CGAP (2015) observed that in Tanzania the four main mobile money providers developed and agreed to common operating standards to enable them to facilitate cross-platform transactions. There was no regulatory mandate that compelled the operators to do so, they did it purely through a voluntary agreement.

Zimbabwe has seen another innovation that seems to be solving the interoperability challenge but is being offered by a sister bank to the dominant operator. The services are offered through a WhatsApp banking platform¹, where customers can make transfers from any wallet into any other wallet bank included. The challenge is that it comes with an extra charge and is not available to those that are not on WhatsApp.

¹ <https://www.techzim.co.zw/2019/03/now-you-can-send-money-between-ecocash-onemoney-or-telecash-and-the-other-way-round/>.

2.5.4.2. Agent-Level Exclusivity

Agent exclusivity revolves around the ability of a customer of one provider to use the agent of another provider for cash-in and/or cash-out services related to that customer's account. Agent interoperability is possible even when there is agent exclusivity, as long as platforms are interconnected (such as with interoperable ATM networks)¹. The RBZ issued a directive in 2014 abolishing agent exclusivity. The National Payment Systems Directive [NPSD] (2014) states among other things that:

“The said exclusivity agreements or covenants are likely to hurt competition and may be detrimental to the smooth operation of payment systems in the Country. Exclusivity agreements will consequently hamper the Reserve Bank's efforts of promoting financial inclusion and the expansion of financial services in the economy.”

While Zimbabwe now has non-exclusive agreements at the agent level, the impact of such a move on financial inclusion, without platform-level interoperability is minimal, because customers are still doing off-network transfers.

2.5.4.3. Customer-level interoperability

According to CGAP customer-level interoperability is a term used to describe two interoperability scenarios related to the mobile handset: a customer's ability to (i) access her account using any phone with a SIM card on the same network; or (ii) access multiple accounts on one SIM². It relates to the particular characteristics of the mobile device as a channel access instrument. An example of customer-level interoperability is MTN mobile money in South Africa, which allows Vodacom customers to open MTN mobile money accounts on Vodacom SIM cards i.e. regardless of the SIM card or the phone. Zimbabwe has a similar arrangement where customers from other MNOs can register on EcoCash but can only access their accounts via the EcoCash application which means they need to have a smartphone. Without smartphones, there is no interoperability.

2.5.5. Challenges of interoperability

Whilst interoperability is an ideal scenario in financial inclusion it faces its challenges, regulatory challenges as well as company-level challenges that affect the implementation in Zimbabwe.

¹ <https://www.cgap.org/blog/interoperability-branchless-banking-and-mobile-money>.

² <https://www.cgap.org/blog/interoperability-branchless-banking-and-mobile-money>.

2.5.1. Regulatory

Milton Friedman an advocate for free market economies views government intervention in markets as a sign of market inefficiencies, a free market economy should be able to correct itself in the long run. This may be the position that most central banks take with innovation, opening the market and hoping the market will correct itself. If the market system could operate at Pareto optimal levels, address all customer needs and fully regulate its behaviour, there will not be any need for government intervention. However, this is not always the case, a market system, by itself, cannot perform all the functions necessary to meet the needs of society nor can it fully regulate itself, hence the need for government intervention.¹

The biggest challenge for regulators is when to come in to regulate the industry, coming in too soon may be viewed as a restricting free market economy and may stifle innovation. Too late may lead to monopolies developing and they will be hard to break down. The second regulatory challenge is how regulators get involved, government can give directives or enact laws to govern intercompany mobile money operations, this may also be viewed as stifling the free market economy principles that most countries subscribe to. Government can come up with guidelines to be followed by operators, the challenge with this approach however is that guidelines are not mandatory and rarely affect companies that are already in the market but can influence licensing of new players.

Moral suasion is a situation where the government tries to motivate companies to act without using policies and regulations. Moral suasion is the act of persuading a person or group to act in a certain way through rhetorical appeals, persuasion, or implicit and explicit threats, as opposed to the use of outright coercion or physical force.²

There are currently no regulatory mandates in place in Zimbabwe forcing anyone in the market to implement interoperability. What are available now are strategy documents and guidelines that are not mandatory thus implementation of interoperability as per strategy and guideline documents is an organisational choice.

2.5.1.1. Legacy issues

There have been accusations and counter-accusations on how the MNOs are or were not settling their interconnection fees. In 2017 Econet Wireless Zimbabwe, the country's largest MNO indicated that it is owed over US\$25 million in interconnection fees by NetOne and TelOne, two State-owned telecoms operators.³ The failure to pay interconnection fees by other mobile network operators may be a

¹ https://link.springer.com/chapter/10.1007/978-3-030-19226-6_1.

² <https://www.investopedia.com/terms/m/moralsuasion.asp>.

³ <https://www.techzim.co.zw/2017/02/econet-says-owed-us25-million-interconnection-fees-netone-telone/>.

contributing reason behind the fear of discussing interoperability between mobile money divisions of the MNOs. Whilst it is a valid argument there are many ways in which this can be solved as will be shown below.

2.5.1.2. Existence of a Dominant Player

Providers can use their competitor's infrastructure, in this case, agents, who have less incentive to build or invest in their agent network as such dominant players and/or first movers would reasonably want to protect their investments and enter into exclusive agreements with agents.

When mobile money was launched in Zimbabwe, the first mover -EcoCash- had anticipated problems associated with agent sharing and they entered into exclusive agreements with agents. As the mobile money market grew smaller players approached agents of bigger players. This was an advantage to them because they (smaller players or newcomers) knew it is easier to ride on an agent network that already understood the business. A turf war began between EcoCash and the others¹ that led to the RBZ intervening and eventually coming up with the directive on agent exclusivity. EcoCash argued that they had invested a lot in agents, training and many other costs associated with building an agent network thus agent inclusivity was never an option.

Generally, the argument is that where there is a first mover or a dominant player in the market interoperability will not come easily in the case of Zimbabwe and Kenya. CGAP (2011) and GSMA (2014) contend that voluntary interconnection is more likely to occur if mobile money operators are still small and of similar size; if one network is larger or has a first mover advantage, then it has less interest in interconnecting with others. Bourreau and Hoernig (2016) support the notion by adding that firms with a strong first-mover advantage, due to an early start and significant investments in rolling out their agent network, are understandably reluctant in opening their network of customers and agents too small competitors, as they are convinced this will impact their competitive advantage.

Benson and Loftness (2012) state that early dominance of one operator (such as Safaricom in Kenya and Ecocash in Zimbabwe) can mean that other operators cannot reach critical mass even if they decide to interoperate among themselves. In such an inefficient market, customers are the ultimate losers, it is highly unlikely that interoperability among mobile money operators will be achieved without direct government intervention. Mas (2011) shares his views on the dominant player problem when he says:

“Larger and more advanced Mobile Money providers see interconnection as a concession of value to their laggardly competitors. That may be true to a larger or

¹ <https://www.techzim.co.zw/2014/02/telecash-ecocash-war-mobile-money-agents-going/>.

smaller degree, but what they should be focusing on is how to maximise the lock-in of their customers to their Mobile Money service. They long since discovered that their customers are best served by making sure they can send and receive messages to/from anyone, even if they are on a different network. But we haven't yet seen this logic extend to Mobile Money. In most countries, the prospect of providers working together is probably less a matter of if than when- just as it has been for banks sharing ATMs and mobile operators sharing towers. That being the case, it's probably not even about when but about how. This will be the path for ecosystem development."

2.5.1.3. Technical Issues

The other challenges that interoperability faces are technical and legal. These challenges often result in a delay in the operationalisation of interoperability even where agreements have been reached. In Tanzania and Uganda, the use of an independent facilitator helped in ironing out sticky issues and come up with a scalable interoperable model in each jurisdiction. The power of technical issues in impacting interoperability cannot be underestimated, Kaschula (2014) observed and listed the following as shared challenges to interoperability¹, the study looks at them individually and how they relate to the Zimbabwean market.

a) The lack of a common definition of what becoming interoperable is, confusing within the industry as different operators have different ideas about what it is. In Zimbabwe, these ideas are shaped by the agenda of each mobile money operator. To the biggest operator whose aim is maintaining dominance in the market and maximising profit, interoperability means opening up their customers, agents and platform to competition. Their offer to being interoperable is allowing customers from other networks to register on their platform.

b) The benefits associated with interoperability are not always immediately clear. The expected benefits of interoperability are not always fully understood or quantified, with the true impact of interoperability being proven as the first cases are deployed. The private sector will not understand the benefits of growing the size of the pie in the short run as noted by Mas above. It is only the government that appreciates the benefits of interoperability and has several times without success tried to push interoperability.²

a. Mistrust amongst competitors can make it difficult for operators to collaborate even when the benefits of interoperability have been understood. Legacy issues mentioned above may be the major contributing factor to the lack of interoperability

¹ <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/interoperability-the-role-of-rules-and-standards/>.

² <https://www.techzim.co.zw/2018/02/supa-mandiwanzira-tells-econet-telecel-netone-to-have-mobile-money-platforms-that-work-together-or-else/>

in Zimbabwe. Banks in Zimbabwe do have an association of bankers' Association¹ which provides them with space to discuss issues and ways to enlarge the pie. Mobile money players do not seem to have any platform where they meet and discuss.

b. Understanding and agreeing to a technical and commercial model, agreeing on commercial arrangements and standards to govern the interoperable process. The choice between a prefunded model or a netting model may impact the direction this discussion will take, Bilateral or multilateral models may also be affected by the dominant player refusing some and accepting some. The RBZ must come in with some guidance on how this should be worked out as it may impact the monetary system. Its failure may lead to systemic challenges.

c. Conflicting organisational priorities can result in the desire to become interoperable being set aside for a time. A government institution may have financial inclusion as the number one priority and may offer services at a suboptimal price whereas a private organisation is profit maximising. The two may not agree on the right path to full interoperability.

d. The imposition of unfavourable regulatory regimes for mobile money and interoperability. As mentioned above the ministry tried to impose interoperability because they were not comfortable with the size of EcoCash² but this has not worked. There is a need for government to come up with a different approach.

2.5.1.4. Legal

Related to the technical issues above are legal issues, anecdotal evidence from informal engagements shows that the management of mobile money operators in Zimbabwe is worried about data, protection, management and ownership. There has always been a debate on the security of customer data, this has more often than not been used as an additional excuse for refusing interoperability in this current state of regulation. One operator refuses platform-level interoperability because they are not sure if they are sending money to an existing customer or not and they have no way of verifying that since the data of that customer is owned by the competitor. However, in terms of anti-money laundering and counter-terrorist financing regulations, the operators are justified in doing so.

2.5.2. An overview of Interoperability in Some Selected African Countries

Many regional trade bodies are working towards improving intra-regional trade within their respective regions and Africa Union is working on the African Continental Free Trade Area (AfCFTA). The success of these initiatives is based on interoperable safe and secure regional payment systems. Trade will also be improved when Micro, Small and Medium Enterprises (MSMEs) are comfortable using their

¹ <http://www.baz.org.zw/>

² <https://www.techzim.co.zw/2018/03/supa-mandiwanzira-thinks-ecocash-dominance-disastrous/>.

preferred method of payment to do cross-border payments. However, it is going to be difficult for MSMEs to jump on international interoperable payments when they have not yet experienced it in their own country. Regulators must find ways to encourage and motivate interoperability at the mobile money level locally.

The study will in a brief look at how selected African countries have achieved interoperability as it tries to find recommendations for Zimbabwe.

2.5.2.1. Tanzania

Under the guidance of the Bank of Tanzania, all mobile money operators and their supporting banks had a meeting with a team from the International Finance Corporation (IFC) and discussed the mechanics of creating a working group on interoperability. The working group was created, and it received funding and technical support from the Bill and Melinda Gates Foundation (BMGF) and the Financial Sector Deepening Trust (FSDT) of Tanzania. The target of the working group was to come up with a platform-level interoperability solution. The central bank allowed them to come up with rules guiding interoperability but pricing was to be discussed bilaterally between companies not collectively as this was going to lead to uncompetitive behaviour. In September 2014, Airtel and Tigo reached a bilateral agreement. In December of the same year, Tigo and Zantel also signed an interoperability agreement. One year later, in February 2016, the market leader, Vodacom, signed bilateral agreements with Airtel and Tigo.¹

2.5.2.2. Rwanda

The central bank of Rwanda required that all payment services providers be interoperable by June 2013, through a national switch - R switch. Rwanda has chosen to use the spoke and hub model of interoperability thus all off-net transaction pass through an independent switch. Three mobile money providers are now licensed under the Payment Service Provider Regulation².

2.5.2.3. Nigeria

Nigeria's model is bank-led and the role of MNOs is to provide the network through which mobile money and mobile banking will operate. The Central Bank of Nigeria (2012) mandated interoperability between mobile money operators with a deadline of February 28, 2013, via a National Central Switch.

2.5.2.4. Madagascar

Bourreau and Hoernig (2016) observed that not much is being said about the modalities of the interoperability in Madagascar as announced by the GSMA. They

¹ Bourreau M. Hoernig S. (2016), Interoperability of mobile money: International experience and recommendations for Mozambique, reference number: S-36404-MOZ-1

² https://www.bnr.rw/fileadmin/user_upload/INTEROPERABILITY_POLICY_JUNE_2014.pdf

stated that on 13 September 2016 the GSMA announced that a national interoperable mobile money system will be launched in Madagascar. While the announcement by GSMA was not clear, no further information seems to be available on its actual form, it seems that this interoperability arrangement is based on collaboration between the three mobile money operators, that is, it is similar in spirit to the arrangement in Tanzania.

2.5.2.5. Kenya

The interoperability journey in Kenya is a long one but can be summarised as follows. The Central Bank of Kenya pushed for interoperability in Kenya, however, Safaricom seemed to be resisting¹. Despite the perceived push from the central bank it seemed not much was being done on the ground to operationalise interoperability in Kenya. The economist had this to say about the situation on the ground²;

*“Making the matter more complicated, the government is a big shareholder in Safaricom, and the company also happens to be the country’s biggest taxpayer: last year it fed the government \$400m in fees, taxes and dividends. Consequently, few officials are keen to take on Mr Collymore.”*³

Mobile money finally became interoperable in 2018 after pressure from the government⁴.

2.5.2.6. Ghana

Mobile money in Ghana is a bank led. The central bank of Ghana mandated the interoperability of mobile money back in 2008, through its Branchless Banking Guidelines.

3. Research Methodology

This article is qualitative in nature. A review of related literature and relevant documents were done. The analysis of published peer-reviewed journal articles together with other relevant documents formulated the literature review as well as the discussion of findings in this article. We analyzed relevant documents and articles to provide an overview position of mobile money interoperability in Zimbabwe. We used the following keywords to search relevant documents and articles; financial inclusion, mobile money interoperability, mobile banking, payment system, money transmission, mobile money wallet, banking regulations,

¹ <https://nextbillion.net/news/safaricom-wont-let-rivals-share-m-pesa/>

² <https://www.malaysiaglobalbusinessforum.com/post/article/a-new-east-africa-campaign/>

³ Mr Collymore is the late former CEO of Safaricom

⁴ <https://www.mobileworldlive.com/money/news-money/regulator-to-force-collaboration-on-safaricom-rivals/>

and Zimbabwe. Scanning of reference lists was also done to search for possible articles or studies to be included in this research article.

We adopted the following criteria to select articles for inclusion in this study; (1) written in English; (2) published in a peer-reviewed journal; (3) an article on mobile money, and mobile banking interoperability in Zimbabwe, and (4) document on mobile money, mobile banking interoperability in Zimbabwe. Articles that focused on Zimbabwe were targeted first with those targeting regional mobile money and banking interoperability also considered to provide some comparative analysis of regional developments regarding the issue.

We also did a database search to yield relevant articles for this study. Different relevant articles were collected from EBSCO, ProQuest, Sage, and Google scholar. We scanned through abstracts to determine relevant articles for our study. Articles were read several times to identify emergent themes, differences, and contradictions.

We considered peer-reviewed published journal articles as well as documents published by reputable and authentic publishers to ensure the reliability of data and information.

4. Discussion of Findings

Under this section, the study will look at the available mobile money interoperability options. The study will then look at the trade-offs between mandating interoperability and leaving the decision to the market. Market maturity plays a significant role in this discourse while the presence of a dominant player can easily impact this trade-off. As the study concludes it will draw learning points for Zimbabwe and recommendations.

4.1. Mobile Money Interoperability Options

From a regional context, three main alternatives of interoperability have been considered in nations where mobile money has been developed, each nation had its peculiar considerations when coming up with the preferred alternative¹.

- Voluntary interoperability using bilateral and multilateral agreements. This has been used in Tanzania and Kenya
- Voluntary interoperability using a national switch. This option has been used in Rwanda

¹ Bourreau and Hoernig (2016).

- Mandated interoperability using a national switch. This option is evident in Ghana and Nigeria

All three mobile money operators in Zimbabwe are already interoperable with banks, for this reason, we conclude that the systems are ready.

4.2. Mandated versus Voluntary

A central bank regulatory intervention making interoperability obligatory may have benefits, but it also has associated costs, thus the need to do a cost-benefit analysis before mandating. Dictated interoperability could hamper mobile money development and innovation, mandates reduce the incentives for market players to compete and innovate with “FinTech” leading solutions, as they have to share their network with their rivals. Bourreau and Hoernig (2016) argue that this risk can be high in the early stages of mobile money development, when consumer demand and the appropriate business model are still uncertain, and the agent network is not yet fully developed. The Zimbabwean mobile money market is evidently past this stage thanks to innovations and market failures like currency shortages. Similarly, there is the possibility that central bank-mandated interoperability may lead to off-network transactions being more expensive as a result it may end up being shunned by customers.

Interventions are considered an indication of an imperfect market; however, a free market may not be giving the desired social welfare outcomes. The central bank has several options between free market and intervention that they can consider. In Tanzania and Kenya, the central banks played major roles in becoming coordinators and at the same time ensuring interoperability agreements do not become costly to customers. There has to be a spectrum and the regulators have to be aware of market developments. While intervening too early may slow down mobile money development, imposing interoperability too late runs the risk of letting some dominant player monopolize the market.

4.3. Existence Dominant Player

The argument for mandating interoperability will depend on the mobile money market structure. According to Bourreau and Hoernig (2016), if the market players have relatively symmetric positions, it can be expected that interoperability can emerge as a market solution because the players will see the benefits in the interconnection of their networks. On the contrary, if an operator has achieved a large market share, this operator may see little benefit in interconnecting with its smaller rivals, and it may therefore resist interoperability. The design of the appropriate regulatory intervention depends on whether the mobile money market is symmetric

or asymmetric. In an asymmetric market, the regulator may have to take a more proactive role to ensure that interoperability can be achieved.

Regulation should not be seen or deemed to be promoting free-riding, in all facets regulation should discourage free-riding at all costs. As stated by Bourreau and Hoernig (2016), a lack of investment by smaller operators in increasing their network should not lead the regulator to automatically mandate interoperability. Rather, the regulator should make clear that a reasonable level of investment is to be expected of all market participants as a precondition for regulatory intervention.

4.4. Data Issues

Zimbabwe has a two-way registration process, where a customer registers for MNO connectivity and has to register again for mobile money. Thus, mobile money registration was left to incentivised agents, this has led to a lot of fraudulent registrations on mobile money platforms¹. Fraudulent registrations lead to fraudulent transactions and this has become cancer in Zimbabwe². At the acquisition stage, agents are incentivised and motivated to make as much commission as they can. There is a tendency for the agent to register non-existent customers with fictitious national Identity numbers or even use deceased person's Identity numbers. The agent is defrauding the master. What will happen with such lines or accounts if they fall in the wrong hands, where do police start their investigations in the event of it being abused?

For there to be progress in the interoperability debate the starting point should be for POTRAZ to regulate the registration process. In Zimbabwe, a SIM can be registered in one owner's name while mobile money can be registered on the same SIM in another person's name. Observations from East Africa and Southern Africa indicate that this practice has since stopped. In Uganda for example a SIM card can only be activated if and only if the identity documents are matched with National Identification and Registration Authority (NIRA) database. The Uganda Communications Commission (UCC) has directed all telecom companies to verify the identity of their subscribers who hold multiple phone SIM cards and has instructed all MNOs to register customers using the biometric registration process. The impact on mobile money is that all mobile money accounts are registered to the individuals who own the lines thus reducing registration fraud. In Kenya, the communications authority indicated in an interview with this researcher that there is no way a mobile money account can be different from an MNO registration.

¹ <https://www.zimbabwesituation.com/news/criminals-resort-to-sim-card-fraud/>.

² <https://www.newsday.co.zw/2018/05/upsurge-in-mobile-money-fraud/>.

When POTRAZ manages to come up with a solution to data issues then arguments like we do not know to whom we are sending the money, since we don't have their data will fall away. Mobile money operators have delayed interoperability discussions because of this data incompatibility argument. Once this is sorted out and data is in a public ledger then registration and activation of mobile money should be linked to the rightful owners. Like Uganda, Zimbabwe can start by targeting all MNO-activated accounts that have a different name on mobile money.

4.5. Legacy Challenges

The existence of legacy issues creates opportunities to resist interoperability since players will continue to focus on historical issues. In such a scenario there is a need for a collective agreement to the terms needed to safely and efficiently exchange payments, from interparty pricing to recourse procedures for fraudulent transactions. The RBZ has the responsibility to oversee the efficiency of payments systems and to mitigate systemic risks therefore legacy fears will not hold water in the NPS. The RBZ will ensure that any introduced settlement risk between schemes due to interoperability is effectively and actively managed such that it is quantifiable and minimised¹. It also ensures the operators are confident they can choose between a net settlement or a pre-funded model. Given the market dynamics in Zimbabwe, the pre-funded model will appeal to the dominant player. The RBZ can also come up with a commercial partner that handles the settlement and routine of transactions through ZimSwitch. The only challenge with a commercial partner is it can make the transactions more expensive.

5. Conclusion

The current environment shows that mobile network coverage is not 100% for all three MNOs. The lack of infrastructure sharing makes it difficult for all three MNOs to cover all of Zimbabwe. Thus, there are instances where one MNO may have a network signal in some area while the other two are absent, or in some cases the other two MNOs are available whilst the dominant mobile money operator network is not available.

From the available information, the study concluded that the mobile money market in Zimbabwe has reached maturity. The cash crisis has aided the speed of maturity in the last few years. The number of active mobile money customers is slightly above 50% of the total population or 89% of the adult population. The NPS report states

¹ https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/03/A2A-interoperability_Online.pdf.

that over 84% of transaction volumes are happening on mobile, in value terms mobile has contributed 22%.

Mobile money operators have evolved their wallets from being cash-in and cash-out channels to becoming an ecosystem. Two mobile money platforms (TeleCash and OneMoney) are linked to ZimSwitch while EcoCash is on MasterCard.

The biggest challenge in this market is that there is a dominant player which controls over 90% of the market share. EcoCash has been innovative in the market it has invested a lot in the platform and agent recruitment and continuous training, while the same cannot be said about the competition. EcoCash is also a big contributor to government revenue considering the number of taxes they pay and collect on behalf of the government. Despite the situation creating a dilemma in regulation, it is clear that voluntary interoperability will not happen thus the need for the RBZ to find a solution to interoperability before the end of the year, otherwise, it will be carried over into the next financial inclusion strategy.

Interoperability presents the opportunity for players to increase the size of the pie and thus increase the size of each company's piece. However, it is not going to be easy as a lot needs to be done from a regulatory perspective before companies are encouraged to discuss or are mandated to be interoperable. Even if interoperability is mandated in Zimbabwe, there is still a need for an independent facilitator to operationalise the interoperability mandates.

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