

MOBILE MONEY

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ABSTRACT

The mobile phones have evolved as a key tool of economic empowerment for the world's poorest people. They have resulted in a concept emerging in the electronic banking industry known as mobile money. Mobile money enables electronic transfer of money from one person to another using a mobile phone. It is moving at a fast space in developing nations. This paper provides a brief introduction to mobile money.

Key Words: Mobile Money, Digital Money, Electronic Money, Mobile Cash, Mobile Banking, Mobile Payment, Mobile Wallet, Mobile Money Transfer

1. INTRODUCTION

Developed economies rely on cashless payment systems to fuel engines of commerce. Unfortunately, not all countries have access to such systems. Mobile money attempts to fill this void [1]. The global adoption of mobile or cell phones has led to their rapid spread in the emerging economies and enables a wide range of digital financial services in developing nations. With the mobile phones becoming so commonplace, mobile money has emerged as a new opportunity that allows cash to travel from one hand to another.

Mobile money is perceived as fighting against banking exclusion. It offers to solve at least two major problems: low-cost banking service and lack of banking infrastructures. In 2015, the mobile money service reached 411 million users in 93 nations [2].

Mobile money refers to money that can be accessed and used via cell phone. It provides the ability for users to conduct financial transactions using an application on their mobile phone. People use mobile money to send money to their relatives and friends via mobile phone.

Mobile money is a technology that allows people to transfer money using a mobile or cell phone. It allows users to make low-cost mobile, financial transactions, and mobile banking using their mobile phones. How mobile money is related to mobile transactions, mobile payments, and mobile banking is shown in Figure 1 [3]. To deliver a global mobile payment service may require the use of the Global System for Mobile Communication (GSM), which allows mobile users to roam freely.

Mobile money is used worldwide (in Japan, Kenya, South Africa, the Philippines, New Zealand, Tanzania and most recently in Uganda, Ghana, and Nigeria) to facilitate domestic and international transactions, bill payment, purchases of goods and services. But there is a slow growth of mobile money in the US. There is too much complexity and too little utility for mobile money here in the US. US citizens already have secure, convenient payment methods such as credit cards, checks, and online banking [4]. An alternative technology in the US requires expensive ATM and point-of-sale (POS) networks to function. Even in countries that operate on mobile money system, ATMs are used to give customers a sort of liquidity mechanism. The integration of ATM with mobile money deployment benefits both the service providers and users.

2. HOW MOBILE MONEY WORKS

Mobile money is usually provided by the same companies or mobile money agents (also known as “human ATMs” or “bridges to cash”) that deliver the mobile phone services. Each mobile money user has a unique account number, which is usually the same as their phone number. Using a special app, a user can transfer money to another person or to pay a bill. The user needs to follow the on-screen steps to send money. Recipients of the funds will receive a notification on their phone when they receive the money, while the senders will receive a confirmation when the transfer is complete. There is usually no charge for depositing funds, but a small tariff is levied on withdrawals.

Mobile payment is being used in developing nations as a means of extending financial services to the "unbanked" communities, especially those living in rural areas with little or no banking infrastructure. Nowhere has this been true as in sub-Saharan Africa, where networks of both fixed line communication and physical transportation infrastructure are often inadequate, unreliable, and dilapidated. It is estimated that two billion people remain unbanked, without access to safe, secure, and affordable financial services. It has made financial services responsive and simple as possible to accommodate a wide spectrum of user needs, education levels, and technology types.

Mobile money requires an ecosystem to flourish. Ecosystems are the networks of organizations and individuals that must be in place in order for mobile money to function. These include mobile network operators (MNOs), banks, retailers, and government regulators, as illustrated in Figure 2 [5]. They must communicate and collaborate as they seek to interact in the policy-making process [6]. MNOs come with wireless infrastructure, assets, and capabilities. They offer the technology and enables transactions. They provide mobile money transfer services.

3. APPLICATIONS

Africa, Asia, and Latin America have experienced significant growth in the use of mobile money. It has been successfully deployed and developed in Kenya, Tanzania, Uganda, Zimbabwe, Bangladesh, Pakistan, Bangladesh, the Philippines, Haiti, Ghana, and Nigeria. We will illustrate with four countries where mobile money has been deployed.

Kenya: By far the most successful example of mobile money is Kenya's M-PESA. ("M" stands for mobile and "pesa" means money in Swahili.) This is Africa's first mobile money platform, launched in Kenya in March 2007 by Safaricom, the leading mobile phone company in Kenya. Mobile phones in Kenya have eclipsed landlines as the primary means of communication. Kenyans use them to pay for everything from school fees to taxis. They have impacted the lives of millions of people who previously had limited or even no access to banking services. Rapid expansion of mobile money has reduced poverty in Kenya and deepened financial inclusion. M-PESA has significantly reduced transaction costs in Kenya and made more people in rural areas to be within reach of one. The availability of interest-earning mobile money savings accounts is a blessing to many poor people [7].

Ghana: Several Ghanaians moved to urban centers searching for work and hoping to send money to their relatives in the villages. They use service providers like MTN Mobile Money, Airtel Money, Tigo Cash, and Vodafone Cash, which offer Ghanaians a simple alternative to cash transactions. Ghanaians increasingly use mobile money to pay for things such as utility bills, school fees, and groceries.

Nigeria: Despite its success in other parts of Africa, mobile money is just taking off in Nigeria, Africa's largest economy. The Nigerian market seems to be tailor-made for mobile money. The Central Bank of Nigeria's drawn-out process for granting licenses has been a major obstacle for raising funds. Nigeria has 21 licensed Mobile Money Operators (MMO), the highest number of MMOs in the world. They were licensed to serve as transaction channels for deepening financial inclusion in rural areas across the country. They are responsible for expanding financial services in Nigeria [8]. Nigeria may be positioning herself as the largest mobile payment market in sub-Saharan Africa.

The Philippines: The Philippines is one of the early adopters of mobile money. To reduce poverty, the Philippine government adopted a conditional cash transfer (CCT) program in 2008. It was patterned after successful CCT programs in Latin America. The geographic and demographic challenges of the Philippines require creative mobile money solutions. The Philippines is made up of 7,500 islands (of which 2000 are inhabited). The central bank in the Philippines, the Bangko Sentral ng Pilipinas (BSP) has a remarkably strong financial inclusion mindset. In 2006, the bank passed a circular for consumer protection from electronic banking, prevention of money laundering, and terrorist financing. There are only two providers of mobile money, GCash and SMART, belonging to the two largest telecom companies [9].

These are just examples of innovative models of mobile-money services in less developed nations.

4. BENEFITS AND CHALLENGES

Using mobile money is a faster, convenient, cheaper, and safer way of transferring money compared with the alternatives such as money transfers through banks and post offices. It has a number of benefits. It facilitates e-commerce, making it easy for people to pay and receive payments for goods and services. Bills can be paid with a push of a few buttons. It has become a savings instrument, as well as a means of sending money [10]. Other benefits include financial inclusion of the unbanked, job creation, financial empowerment, and increase in income of rural dwellers.

In spite of its many benefits and huge potential to change the landscape of monetary transactions, the use of mobile money has only taken off in a limited number of nations. The progress of mobile money has been impeded by banks, which are afraid of losing their market share and by regulators, who worry that mobile-money schemes will be abused. Some fear that MNOs could potentially usurp banking functions. Mobile money has some shortcomings as a savings product. It does not pay interest. Mobile money platforms are to date not fully interoperable with each other. Mobile money providers have no incentive to have interoperability of their payment systems.

Users of mobile money are concerned about security, trust, and privacy. These are the essential elements of successful applications of mobile payment. Security entails that confidentiality, integrity, availability, and accountability requirements must be satisfied at the technology level. Mobility has introduced complex trust problems that never existed before in computer networks. Trust must exist in all transactions. Privacy means that sensitive user data is protected [11].

Mobile money transfer (MMT) is an attractive target for fraudsters and attackers. Serious concerns have been raised regarding money laundering or financial terrorist. If proper controls are not in place, fraudsters can get access to service without revealing their identity. A common means of fraud detection in MMT is using machine learning and data mining [12].

Service providers (such as WorldRemit, MTN Mobile Money, Airtel Money, Tigo Cash, and Vodafone Cash) continue to battle with operational issues such as agent liquidity challenges and high numbers of inactive customers. The mobile money services are often not regulated as strictly as traditional banking.

There is a need for standardized and widely accepted mobile payment procedures. This is important for successful business-to-customer mobile commerce.

5. CONCLUSION

Mobile phones are the most ubiquitous modern technology. They not only empower individual users, they enrich their livelihoods and boost the economy as a whole. The use of mobile phones has become widespread worldwide, particularly among the poor. This has led to financial services, such as mobile money, mobile payment, and mobile banking which have fostered financial inclusion.

Mobile money is an emerging and important application of electronic money that enables people to conduct financial transactions using the mobile phone. It allows financial services to be extended to unbanked and hard-to-reach people, providing them with a more affordable, safe, convenient payments system. The remarkable success of M-PESA in East Africa and GCash in the Philippines has shown that the use of mobile money has profound benefits for consumers, governments, and private enterprises. Thus, mobile money has great potential of becoming a catalytic platform.

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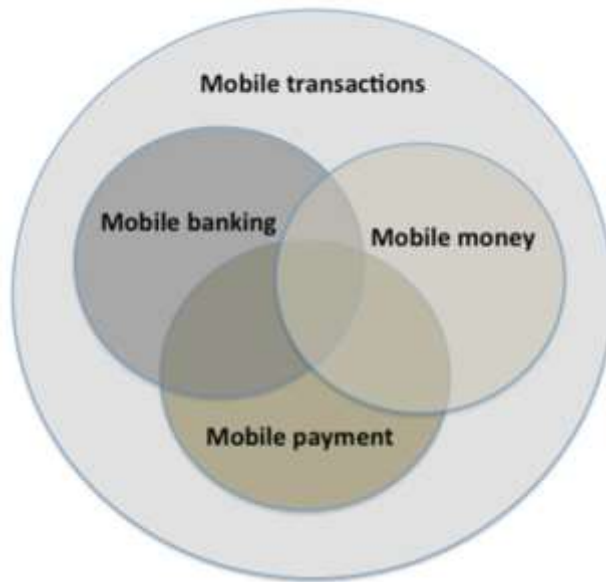


Figure 1: Relationship between mobile money, mobile transactions, mobile payments, and mobile banking[3].

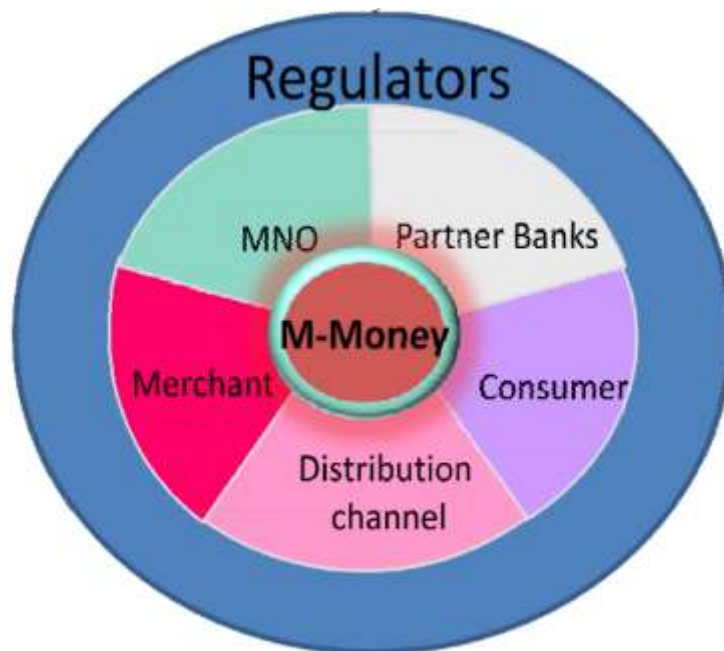


Figure 2 Mobile-money ecosystem [5].