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WHAT MAKES A SUCCESSFUL MOBILE MONEY IMPLEMENTATION? LEARNINGS FROM M-PESA IN KENYA AND TANZANIA

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Mobile Money for the Unbanked

What Makes a Successful Mobile Money Implementation?

Learnings from M-PESA in Kenya and Tanzania







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Foreword

Contributed By: Paul Leishman, GSMA

The mobile money community has watched (and compared) the adoption of M-PESA in Kenya and Tanzania with great interest. We're pleased this month to offer an article from Gunnar Camner and Emil Sjoblom from Valuable Bits, and Caroline Pulver from FSD Kenya, which provides a full comparison of the factors which have impacted adoption rates in the two countries. The in-field observations and market research that their paper draws on provides an excellent summary of the contributing factors in each country – from market level to service design.

The mobile industry is known for evolving quickly, and mobile money has been no exception. Since launching M-PESA in Tanzania, Vodacom have continuously adjusted their strategy in an effort to maximize adoption and use. Many of the adjustments made are aligned with the findings and observations detailed by the authors of this paper. To complement the article that follows, I've provided a summary of 5 key changes that Vodacom have made in the last several months.

1. Pricing

When the service first launched, customers were charged a variable fee for sending money. In August 2009, Vodacom adjusted their pricing model: customers are now charged a flat fee of 200 Tanzanian Shillings. The reason for introducing this change was to encourage transfer within the M-PESA registered base and maximize on the benefits of using M-PESA in exchange for goods or services rendered. Additionally the change reduces the revenue loss experienced due to direct deposits where customers asked agents to deposit e-money directly into the recipients account.

2. Registration Incentives

Mobile subscribers in Tanzania were informed earlier in the year by the Tanzania Communications Regulatory Authority that they will be required to register their SIMs between July and December 2009. To do so, customers are typically instructed to visit an agent of their service provider and submit a form with the required details. Vodacom recognized that the information required to register a SIM is the same that is required to register for M-PESA, so were able to leverage this touch-point with their customers as an opportunity to promote M-PESA – the pitch being that for no additional effort you are able to register for a valuable service. Rather than duplicating data bases it was decided that M-PESA would be the central information store with regards to KYC information.

3. Product

Within the last three months, Vodacom introduced to customers the ability to pay their electricity, water, and television bills through M-PESA. MFI loan repayment has also been added in recent months as well as donation payments. These product additions represent a significant evolution from the initial go-to-market proposition of "sending money home".

4. Marketing

While Vodacom has added sophistication to their offering, the way that they communicate with customers has actually been simplified somewhat. Vodacom's marketing orientation has evolved from above the line brand-driving initiatives toward below the line educational campaigns oriented around specific uses of M-PESA.

5. Agent Network

Perhaps the most dramatic change that Vodacom have made recently is their introduction of an 'aggregator model' to their agent distribution network. Since July 2009, Vodacom have begun leveraging 'aggregators' to address two key agent distribution challenges. First, aggregators are used to enable Vodacom to quickly scale the size of their agent distribution network. This scale comes from the 'additional manpower' that aggregators offer as well as the strong relationships with their respective communities. Second, aggregators provide agents with cash float up front to make the business proposition at the agent level more compelling. By enabling aggregators to fund agents (and in return take a portion of commissions), aggregators eliminate the difficulty that some agents (or prospective agents) would have in justifying investing in the business up front or maintaining required cash float.

What makes a Successful Mobile Money Implementation?

Contributed By: Gunnar Camner, Emil Sjöblom, Caroline Pulver

Introduction

This review considers the differences between the adoption rates of M-PESA in Kenya and Tanzania and tries to highlight some of the reasons that the same service launched in seemingly similar countries has yielded such different results. This paper is intended as a discussion document for mobile network operators considering launching a mobile money service.

Safaricom launched M-PESA in Kenya in March 2007 and has since become the most famous and probably the most successful implementation of mobile money service to date. In May 2008, 14 months after the launch, M-PESA in Kenya had 2.7 million users and almost 3,000 agents. Today, over two years since its launch, M-PESA has gained 7 million registered customers and has 10,000 agents spread across the country. This exceeds the reach of any other financial service in Kenya. Finaccess 2009 showed that M-PESA has become the most popular method of money transfer in Kenya with 40% of all adults using the service. The same Kenyan survey also shows a dramatic increase in national remittances; from 17% in 2006 to 52% in 2009, which may be attributed to the ease of money transfer through ubiquitous M-PESA agents.

Many mobile network operators have been eager to repeat M-PESA's success in Kenya, but the formula for this success is not yet clear. One year after the Kenyan launch, Vodacom launched M-PESA in April 2008 in Tanzania. The user uptake of the service in Tanzania has been much slower compared to its northern neighbour. In June 2009, 14 months after the launch, M-PESA in Tanzania had 280,000 users and 1,000 agents (Rasmussen 2009).

Kenya and Tanzania

The two countries may be East African neighbours but they are different places, geographically, economically and culturally. Below we discuss some of the key differentiating features that may have impacted the adoption of M-PESA.

Figure 1. Map of population density in Kenya



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Figure 2. Map of population density in Tanzania



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Urbanization

These neighbouring countries have similar populations of about 40 million but Tanzania is nearly twice the size of Kenya. The higher average density of people in Kenya is further exaggerated by a higher urban population; in Kenya 41% versus 30% in Tanzania.

After independence, the Kenyan government encouraged urbanisation by promoting urban economic development. Whilst in Tanzania a decentralised economy was supported. In rural Kenya it is common for the head of the family to move to find employment in the city. In most cases they move alone with plans to eventually move back to their families. While working in urban areas they maintain their ties to their family through visits and regular remittances (Mas & Morawczynski). This behaviour has led to a dominant urban to rural remittance corridor in Kenya, accounting for up to 70% of all domestic remittances (Oucho 1996). In Tanzania such a dominant pattern does not exist; popular transfers include urban-rural, rural-urban, urban-urban and rural-rural.

Economic Development

When comparing the success of a financial service in the two countries it is important to remember the economic differences between them. Kenya has a stronger economy with a GDP of US$890 per capita while Tanzania has little over half of that, US$520. Kenya also has a more developed banking system. The number of bank branches per 100,000 inhabitants is 1.38 in Kenya compared to 0.57 in Tanzania (Beck, Demirguc-Kunta et al. 2007). M-PESA agents are dependent upon the existing network of bank branches to manage the cash required in their business. A lower density of bank branches makes this cash management more challenging.

Figure 3. Economic and population data

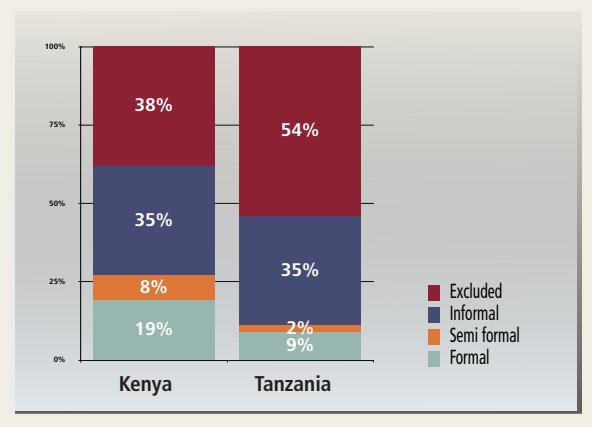
	Kenya	Tanzania
GDP per capita	US$ 890	US$ 520
size km²	582 646	945 090
population	38.6 million	41.5 million
pop. /km²	66.2	43.9

Source: The Swedish Institute of International Affairs, 2008

Access to Finance

The statistics on financial access before the launch of M-PESA in Kenya and Tanzania show some interesting differences. In Kenya 38% of people were excluded (didn't use any form of financial service; formal, semi formal or informal) (FinAccess 2006). Exclusion from financial services in Tanzania was much higher at 54% of the adult population (Finscope 2006). The use of formal and semi formal financial services in Kenya is two and a half times greater than in Tanzania.

Figure 4. Financial Access in Kenya and Tanzania



Source: FinAccess and FinScope 2006

According to a Finscope survey in 2006, the major barriers to accessing financial services in Tanzania were "lack of education in general and financial literacy in particular. More than half the total population has never heard of a debit card, an ATM machine or even a current account".

The higher level of financial literacy in Kenya may have eased adoption of M-PESA where the value of financial services was better established. A recent survey by FSD Kenya reinforces the importance of the banked population as it shows that early adopters of M-PESA were more likely to be banked than non users. Early research suggests that this is also the case in Tanzania, where a minority of the users of M-PESA were unbanked.

The opportunity for branchless mobile banking is in part dependant on the development of the formal financial sector. A poorly developed banking sector makes it more challenging for agents to manage their cash. A low awareness of financial services in general can also be an impediment to service uptake as potential users have to be convinced of the benefit of using financial services in general and then mobile money in particular.

Previous Methods of Money Transfer

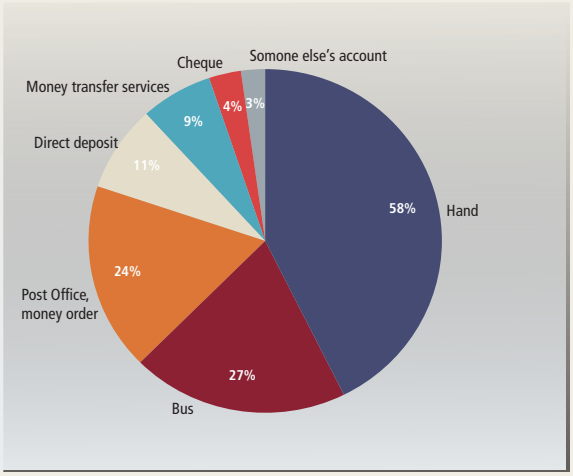
The proportion of people sending money inside their country was slightly higher in Kenya (17%) than in Tanzania (13%) before the launch of M-PESA (FinAccess and FinScope 2006). Both countries showed a preference for sending money with friends or family members and remittances in general has a very important role in both societies. Again the use of courier/bus companies was also popular in both countries. However, a significantly larger proportion of users are sending money using a financial institution in Kenya than in Tanzania. Again this may reflect the larger proportion of Kenyans with access to financial services. A significant proportion of Tanzanian mobile users send airtime to friends and family, some with the intention of this airtime being converted back to cash. The use of this method of money transfer has not been documented in Kenya.

This informal method of sending money through airtime vouchers has been generally accepted as a value transfer service in Tanzania. The process is simple: the sender buys an airtime top-up voucher, scratches it in order to see the code and then texts the code in a text message to the recipient. The recipient then sells the code to people who want to buy airtime, resellers or shops.

Whilst sending airtime may appear similar to M-PESA there are some important differences. Firstly, the resale value of the voucher is usually discounted by 10% but in some cases up to 40% which makes M-PESA much cheaper, charging between 2-5% of the value sent. Sending airtime is more convenient for both the sender and recipient. This is due to the extensive network of airtime sellers and resellers that exists throughout Tanzania. However, this is not the case with large amounts of money which may take weeks to convert. The sending of airtime also has the advantage of not requiring any registration or identification documents unlike M-PESA which must comply with the 'know your customer' rules. Finally, the value of airtime may be more tangible than e-money to a population of users with low exposure to financial services.

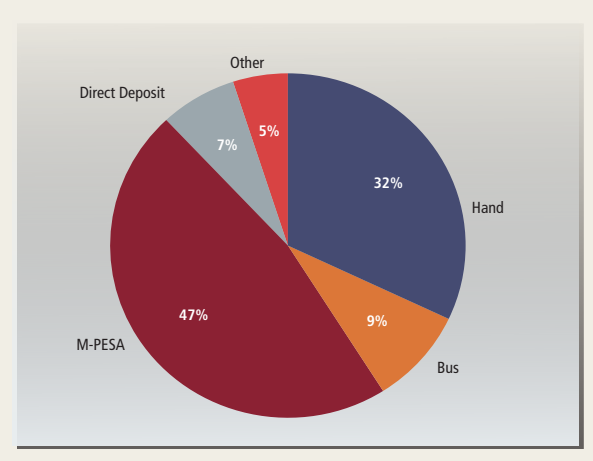
It is only in Kenya that there is financial survey available before and after the launch of M-PESA. These surveys show the change in usage patterns following the introduction of M-PESA. These changes may also indicate which users are most likely to migrate to a new mobile money transfer service.

Figure 5. How people in Kenya sent money before M-PESA



Source: FinAccess 2006

Figure 6. How people in Kenya sent money after the introduction of M-PESA



Source: FSD Kenya M-PESA study 2007

These surveys show a massive reduction in the use of delivery by hand, Post Office money orders and bus and courier companies, following the introduction of M-PESA in Kenya. This information may be useful to mobile operators considering how to build a case to convince users to switch to mobile money transfers.

The Service Providers – Safaricom and Vodacom

M-PESA is a service developed by Vodafone and designed for emerging markets, where many people are still underserved by financial service providers. The first launch of M-PESA was in Kenya by Safaricom, and one year later by Vodacom in Tanzania. Both Safaricom and Vodacom are part owned by the UK's Vodafone and hence have access to the M-PESA model. Vodafone has partnered with Roshan to provide M-Paisa in Afghanistan and there are plans to launch the service in India, Egypt and South Africa.

Even with the great uptake of M-PESA in Kenya it took more than two years before the service broke even, in the beginning of 2009 (Slavova 2009). Hence M-PESA is not about generating revenue directly but instead both Safaricom and Vodacom has seen it as part of a strategy to decrease churn and increase the stickiness of their customers. A secondary concern is to increase the average revenue per customer, ARPU rate. As new mobile operators enter the market, M-PESA should help make customers more reluctant to switch to an upcoming competitor.

Safaricom have allowed users to send money to off network where as the competitive service from Zain, Zap, only allows on network service, which is less convenient for users.

Safaricom has a 'shared revenue' deal with Vodafone. Vodacom pays a fee for each registered customer. Given Safaricom's success, Vodacom anticipated a higher volume of transfers than they got. This led to a proportionally higher cost than expected which hampered further investment in the rollout. Whilst the fee has been adjusted the model is still on a fee per customer basis.

Ownership and Positioning

Vodacom is 65% owned by South African Vodacom (Pty) Ltd, which in turn is 65% owned by the UK's Vodafone. Vodacom was one of the first mobile network operators in Tanzania and is positioned as a provider for the middle classes. Safaricom is part owned by the Kenyan government and Vodafone. It is viewed in the market as a Kenyan company independent of any tribal or political affiliation. The post election violence in Kenya in 2008 showed the advantage of having an impartial reputation. During this period many banks associated with particular political parties or groups suffered (Morawczynski and Miscione 2008).

Market Share

Both Safaricom and Vodacom are the largest mobile network operators in their markets, by numbers of customers. But Safaricom dominates the market with nearly 80% of subscribers whilst Vodacom has less than half the market in Tanzania.

Figure 7. Market share data

	Safaricom	Vodacom
Subscriber Market Share	79%	45%
Subscribers (millions)	13	5.9
Revenue (millions US$)	904	367

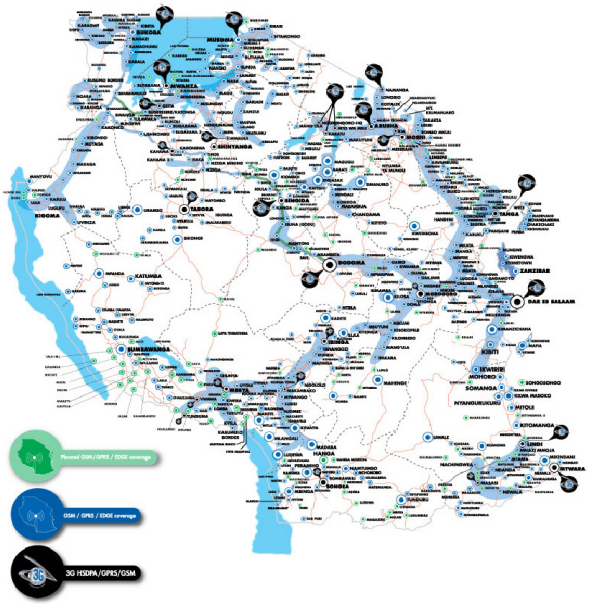
Source: Annual reports of Safaricom and Vodacom 2009

27% of the adult population of Kenya owned a mobile phone before the launch of M-PESA. The same year in Tanzania just 15% of the adult population owned a mobile phone (FinScope and FinAccess 2006). However, a large number of people have access to mobile phones; in Kenya another 28% of people use someone else's phone and in Tanzania another 14% of people have access this way.

Figure 8. Safaricom network coverage map



Figure 9. Vodacom network coverage map



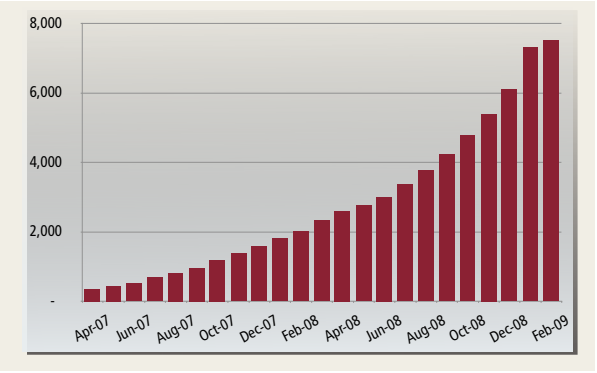
Agent Network

M-PESA uses a branchless banking model (Ivatury and Mas 2008) to enable the service to reach previously unserved communities. Besides making cash withdrawals and deposits possible, the agents also play an important role in registering users, handling the 'know your customer' (KYC) rules and educating users. National IDs are used in Kenya but Tanzania has no system of national IDs so voter registration cards are most frequently used.

When Safaricom and Vodacom launched M-PESA they both built the agent network from their existing airtime distribution channel. However, this distribution channel is different in the two companies. At the start of M-PESA Safaricom had about 1,000 airtime retailers, many of these had multiple outlets. Of these 1,000 airtime retailers 300 joined as M-PESA agents at the launch. Vodacom distribute their airtime through only six national retailers, whom in turn sell the airtime along to their partners. Vodacom then reached out to these end retailers to turn them into M-PESA agents. Today 80% of Vodacom's M-PESA agents are single independent businesses. Each agent has a direct relationship with Vodacom.

Safaricom has succeded in using large and medium sized airtime retailers as master agents of M-PESA. A single agency agreement is signed with this 'aggregator' who brings their multiple outlets to each act as M-PESA agents. This approach allowed Safaricom to very quickly increase the number of M-PESA agents by signing agreements with a limited number of retailers. The use of aggregators also reduced the complexity of management for Safaricom as they did not have to deal directly with thousands of outlets spread out across the country. They also improve cash management, balancing cash float issues between their different outlets caused by regional imbalances between deposits and withdrawals. Vodacom in Tanzania are implementing an aggregator model to build a tiered network separate from their airtime distribution, this takes more time and explains the slower pace in recruiting agents.

Figure 10. Growth of M-PESA agents in Kenya



During the launch of a mobile money service the mobile operator quickly needs a large network of agents in order for the service to be of value to users. At the same time the agents want to see that there is a strong demand for the service before they make any investments in it. Thus it is important that initial users and agents believe in the future success of the service. Becoming an agent requires a substantial investment, and when a company with a market share like Safaricom offers the opportunity to become an agent for a new service the proposal is to be taken seriously.

Advertising

At the launch of a new service, advertising is key as it is only once the service has been established that word of mouth begins to significantly encourage adoption.

Figure 11. How Kenyan users of M-PESA first heard about the service.

Adverts	42%
TV / Radio	30%
Friends	15%
Family Members	10%
Receiving Money	3%

Source: FSD Kenya M-PESA study 2007

Safaricom came up with the simple slogan of "Send money home" which spoke to an existing need. The clear proposition and strong advertising quickly helped gain users, over 70% of users in Kenya first heard of the service through advertising. 25% of users then responded to word of mouth as they heard about M-PESA from friends and family members. Whilst the sender is frequently the person selecting the method of transfer the recipient must also be able to use the technology in order for a transaction to be successfully completed. Since it is cheaper to send money to an M-PESA registered customer, the sender is motivated to introduce and explain the technology to the recipient. This system creates more included users in the system whom otherwise might be reluctant to try new technical services.

When M-PESA was launched in Tanzania, the same "Send money home" slogan and billboard commercials from the campaign in Kenya were used. Yet the uptake was not as fast in Tanzania. It is only now, a year after the launch, that we are beginning to see that the uptake is taking off. People are aware of the M-PESA brand, but the majority are not aware of what the service offer is or how to join the service. It is crucial to explain the service and not to just expose the brand. As the finacial literacy in Tanzania is low, information about the features and advantages of sending money via a mobile phone needed to be clearly explained at an earlier stage. Starting from the second half of 2009 the service will be marketed by presenting different use cases, to explain how the service works, when it might be used and how to sign up to the service.

Fee structure

The fee structure in Kenya and Tanzania is slightly different. In Kenya there is a fixed fee for sending any amount of money to a registered user (up to the maximum limit of US $460). In Tanzania the fee instead scales with the amount transferred. There are differences in pricing at different points between Safaricom's and Vodacom's M-PESA. It is much more expensive to send the minimum amount in Kenya but cheaper to send larger amounts. For the most popular amount sent, which is about US $20 in both countries, Safaricom charges 3.6% and Vodacom 4.5% of the amount sent. The prices have been calculated to include the deposit fee (free), the transfer fee and the fee to withdraw the money.

The actual cost of transferring money using M-PESA in Kenya and Tanzania is broadly similar and substantially lower than other alternatives. However, the slightly more complex sliding scale of charges used in Tanzania may have complicated the offer. Potential users need to have a clear understanding of the cost to compare it with other money transfer offers. If this comparison process is too complex it can deter potential users from considering a new service. Demonstrating usage cases with actual costs could help with this issue.

Technology

In Kenya, M-PESA is delivered using the Sim Toolkit (STK) technology, in Tanzania USSD is used instead. Both are part of the GSM standard and work on almost every mobile phone on the market but the two offer different interface possibilities. With STK the user has an application on the SIM card which is accessed from the phone's menu. This offers very high levels of security but does require the SIM card to be swapped. With USSD the user has to dial a short number in order to activate the menu. After each input the data has to be sent to the server and the new menu screen sent back, which can be time consuming. Even though STK is able to provide a better user experience, very few costumers in Tanzania expressed dissatisfaction with the interface or found it too difficult to learn, therefore it is unlikely that the choice of technical platform was a significant cause of the different popularity of the services.

Conclusions

This review has briefly highlighted some of the differences between the implementation of M-PESA in Kenya and Tanzania. There are many overlapping and interrelated factors that may have influenced the different uptake rates. It is not possible to attribute a single cause of the faster uptake in Kenya versus Tanzania. Instead, this review intended to identify some of the contributing factors. It should be noted that this study did not consider the role of the central bank in either case; this is not because the authors believe this is an unimportant factor but because the role of the central bank is less easily influenced by a mobile operator. Rather our focus has been on the mobile network operators decision to launch a mobile money service in a particular market and the design of their business model and hence proposition to potential users.

When launching a mobile money service one of the greatest challenges is the new relationships that have to be established. The mobile network operator needs to enroll agents, the users have to become comfortable with agents handling their money as well as keeping electronic money on their mobile phones, to name a few. How fast the mobile money service can grow is dependent on how strong these relationships are prior to the launch and how quickly they can be built. An example of this was the relationships Safaricom had with their airtime distributors that they utilised to build an extensive agent network.

This review has also demonstrated the importance of the country context. M-PESA was designed as a service for the unbanked in emerging markets. However, the service cannot function without the presence of the formal financial sector. Bank branches are a vital part of the cash management operation of an M-PESA agent. Secondly, the early adopters of the service in Kenya and Tanzania were more likely to be banked than non users. Higher income individuals are in a better position to risk trying a new service. Having a larger proportion of the population using formal or semi formal financial services may mean a larger pool of early adopters.

A mobile network operator planning to launch a mobile money service needs to build a clear proposition for potential users. They must identify and hook into the existing remittance streams, to understand why and where people are sending money. In Kenya there was a well established and dominant 'urban-rural' remittance corridor with people 'sending money home' to relatives in rural areas. In Tanzania there was a greater variety of remittance corridors, with the case for using M-PESA for each one needing to be established by Vodacom.

It was found that early adopters of the service in Kenya had experienced higher loss rates than non users. This demonstrated a desire for a safer method of transfer. In Kenya the most popular methods previously used were asking a friend or family member to take the money by hand or to use a bus or courier company. We know that these methods can be high risk and do result in losses. The high crime rate in Kenya and Nairobi in particular created a greater demand for a safe way of sending money compared to Tanzania where the risk of robbery is lower.

This review shows the complexity of introducing a successful new mobile money service. The success of M-PESA in Kenya was due to both the efforts of Safaricom and their exploitation of an advantageous country context. To date, the fast growth of M-PESA in Kenya may have been the exception and not the rule. A mobile operator considering the launch of a mobile money service must carefully judge the unique country context before creating a tailored solution that can be clearly articulated to potential users.

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