Mini project: Ecosystem strategy

Branchless banking in Kenya – M-Pesa mobile money

*Dial M for Money*

**Introduction**

The reality of the economic situation in Kenya, as in other developing countries, is that many people from rural areas or very low income brackets don’t have access to financial services. Building on the introduction to microfinance services in Kenya, Vodafone and its affiliate Safaricom launched a service of mobile-phone based money transfer named M-Pesa\(^1\). This paper will investigate why a mobile network operator decided to get into a banking project and which other players Vodafone had to get in touch with to make this enterprise successful. The first part of this case will focus on a presentation of service implemented by Vodafone and an analysis of the gap it tries to fill. The second part will present the different players involved (Vodafone, Safaricom, government and regulatory authorities, agents, software provider, commercial banks,...).

**Understanding the market: what makes mobile banking an opportunity to seize?**

- **Key Facts on Kenya performance\(^2\)**

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<th>STRENGTHS</th>
<th>WEAKNESSES</th>
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<td>• Innovative capacity thanks to good collaboration between business sector and research institutions.</td>
<td>• Public institutions are assessed as increasingly inefficient and rising government corruption.</td>
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<td>• An educational system that—although reaching a relatively small proportion of the population—gets good marks for quality as well as for on-the-job training.</td>
<td>• Security situation is also worrisome, particularly in regard to crime and violence, the potential of terrorism, and the prevalence of organized crime.</td>
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<td>• Financial markets that are sophisticated by international standards, even though there is a tendency of low savings and investment.</td>
<td>• High prevalence of communicable diseases (low life expectancy of 54 years.)</td>
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\(^1\) “Pesa” means money in Swahili.

\(^2\) Based on information provided by World Bank's Poverty Reduction and Economic Management Unit, World Economic Forum, and United Nations.
Analysis of banking system in Kenya

According to the World Bank, nearly three billion poor people in developing countries lack access to basic financial services such as savings, credit, insurance, and money transfers. Banking is very expensive in Kenya, as reflected by high interest spreads and margins. These high costs alone can explain why less than 20% of the population in Kenya has a bank account. 81% of Kenyans cannot afford the fees for checking accounts, given their annual income and the assumption that they cannot spend more than 2% of household income on financial transaction account charges. Furthermore, high documentation requirements to open an account represent a significant barrier given that large parts of the population live and work in the informal sector.

The Kenyan government is undertaking reforms to enhance the environment for private savings and investment, and lower interest rate levels and spreads. The reforms will address poor governance and market structure by establishing a new regulatory framework and enhancing competitiveness. The government also intends to reform Development Finance Institutions, which provide financial services to specific groups and certain sectors of the economy, especially the ones owned by Government and in poor financial condition.

Analysis of mobile phone industry in Kenya

Mobile communications penetration has boomed in Kenya, helping them to compensate for an often underdeveloped and flawed fixed telephony infrastructure. There are two main competitors in the mobile industry in Kenya, Safaricom and Kencell, which have expanded access to telecommunications services to about 2.2 million subscribers.

The government recognizes the urgent need to open the doors for a major expansion of the telecommunications sector as one of the necessary conditions for accelerating growth in other productive sector of the economy. Because of that, the government plans to significantly increase private sector participation and investment.

Mobile banking and mobile payments represent a cheap alternative for the poor in Kenya to gain access to the formal financial market and consequently to credit, insurance, and money transfers. This sector has a high potential since remittances nowadays represent more than double the amount of foreign aid to Kenya and are therefore among the most important sources of money in rural areas of the country.

Identifying the end customer and building an offer

From the very beginning, Vodafone planned on targeting the “unbanked” market, that is to say all the people that are not targeted customers of traditional banks (because they are too poor or because they live in places to remote from cities and don’t have access to bank branches). Initially, Vodafone thought about entering the branchless banking business to facilitate receiving and repaying of loans granted by microfinance institutions (MFI). The idea was to provide a more convenient service to borrowers by using the network airtime sellers built by Safaricom: instead of having to take a long trip to the closest MFI, borrowers could instead go to a Safaricom airtime seller and make the transaction using their cellphone. M-Pesa was supposed to be a complement to MFIs.
But a trial undertaken between October 2005 and March 2006 revealed that there was actually a better market to service and that MFI processes were too heavy for Vodafone. M-Pesa then became a service that enabled registered M-Pesa customers to handle basic transactions (cash deposit and withdrawal, money transfer across the country to send remittances home for example, payments, buying of prepaid airtime) through their cellphones by turning real money into emoney or the other way around. The service involves the participation of agents (airtime sellers in Safaricom network or retail outlets) who handle the transaction (send emoney on your M-Pesa account in exchange of cash or give cash in exchange for emoney on your account). Those services are free and an SMS is send to both the customer and the agent to confirm the transaction. It is now also possible for customers to withdraw money from a PesaPoint ATM by ordering the withdrawal from their cell (they receive an SMS with an authorization code that they are to enter along with their phone number). M-Pesa customers also can send money to other mobile phone users (including non Safaricom subscriber), M-Pesa charges a transaction fee to the sender of funds.

An M-Pesa customer is not a traditional customer, which means that his or her needs are very different from those of a Western customer: though there still has to be a focus on transaction security, the key factors of success are simplicity of transactions (most customers will be semi-literate and not necessarily familiar with mobile phones) and range of the agents network. Those elements were central in the creation of the value chain, as will be developed in the second part of the case.

In March 2007, the service was launched at last and the fast rate of adoption (20,000 customers registered during the first month) suggests that the unbanked market in Kenya was really big. As of May 2009, there were 6.5 million M-Pesa subscribers. An analysis realized by CGAP\(^3\) (Consultative Group to Assist the Poor) in August 2009 showed that there were two types of customers: urban senders (mostly men) and rural recipients (mostly women). Money transfers are either recurrent (part of the monthly income sent city workers to relatives living in rural areas) or lump sum (to pay for farm inputs or school fees).

**Building the value chain: who should be involved and how to get them involved?**

If Vodafone was to enter the mobile banking business, it needed to build alliances and partnerships with other players whose help was required to build a value proposition that could meet the end customer’s needs. The key partners of Vodafone in this enterprise were: Safaricom (leading MNO in Kenya, owned at 40% by Vodafone), regulatory authorities (in the UK and in Kenya), Sagentia (the software developer, which recently sold the software to IBM), agents, the Kenyan Commercial Bank. As the service got developed, other partners joined the ecosystem: PesaPoint (an ATM company) and businesses which decided to become M-Pesa users (thus granting to their clients the opportunity to pay by simply transferring money from their M-Pesa account to that of the business).

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\(^3\) *Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-Pesa* by Olga Morawczynski and Mark Pickens.
For each of the players identified in the diagram above, we will try and analyze the reason why they got involved in the M-Pesa project, the assets that they brought to the table as well as the challenges that had to be overcome to keep them on the project.

✓ **Vodafone**

Vodafone is a British MNO founded in 1983, and it is one of the major players worldwide in the telecom industry. The company runs operation in over 30 countries in 5 continents and deals with 40 partner networks. Vodafone is the pilot company for the M-Pesa project. Its interest in the project is dual. First, it gives the company access to a huge untargeted market of people in developing countries who would be willing to pay a small fee to have access to basic banking services. Implementing such a service would help create new markets as economic activity fosters job creation and trade. Second, the project falls into the company’s actions to meet with the Millenium Development Goals to reduce poverty.

As a technology-based service organization, Vodafone would bring to the table its expertise in mobile services as well as financial contribution in the form if people put on the project. Vodafone being a British company, the company had the opportunity to apply for a public-sector challenge grant awarded by the Financial Deepening Challenge Fund, operated by the UK Government Department for International Development.
As the pilot of this whole project development, Vodafone and its executives had to devote a lot of time to the project. The whole process (getting funding, identifying the interests, putting in place a pilot experiment, overcoming the constraints of the other players revealed by the pilot experiment, revamping the value proposition and getting authorization from the Kenyan authorities to launch the service) took the company 4 years. One of the biggest challenges was to train customers and agents to use the service. For example, the trial revealed that the agents were reluctant to open the till and take money from it to give it to customers simply on the basis of a text message ordering them to do so.

✓ Safaricom

Formed in 1997, Safaricom is the leading MNO in Kenya. Its majority shareholder as of 2000 is Vodafone, which owns 40% shares of the company. For Safaricom, getting involved in the M-Pesa project represented access to new revenue streams. Safaricom being the first telecom company to launch the service, M-Pesa also gave the company the opportunity to bundle its traditional service with a new exciting offer designed to appeal to a new market. People who did not have mobile phones before would be interested in acquiring one to have access to money transfer services and end up buying airtime from Safaricom.

Safaricom being the leading mobile network operator in Kenya, its commitment to the project was crucial: the company was bringing to the table connectivity as well as its nationwide network of air time sellers who are at the center of the value proposition. Its brand name and history in Kenya were also vital to gain customers’ trust in the service (surveys showed that it was Safaricom that the customers trusted with their money and not agents). Finally, Safaricom was also to administer the pilot trial in Kenya: its presence on Kenyan soil was mandatory for the exploratory phases to succeed.

Safaricom was a relatively new company still in its growing phase when the project started. Its employees’ efforts were devoted to growing the customer base and managing the network. As a result, Vodafone chose to use its own resources and to send a dedicated manager in Kenya to work alongside with IT, customer care and top management. Vodafone’s supervision and enthusiasm for the project was key in keeping Safaricom’s teams motivated.

✓ Sagentia (IBM)

Sagentia is a British company specialized in technology consulting and product and technology development. Working on the M-Pesa project fell into the company core business and represented the opportunity to work with a new and interesting client. Operating the platform needed for the service represented an additional revenue stream for Sagentia (if the project was to succeed, the potential market was big as Vodafone’s commitment to M-Pesa proved it), not to mention the fact that collaborating efficiently with Vodafone could mean future contracts for the company.

What Sagentia brought to the table was essential its expertise in technology development (the company had a history of successful commercializing of emerging technology-based services). Its creative, innovative and flexible culture was also essential since the software had to be modified during several stages of development as the trial gave Vodafone and Safaricom insight on the key characteristics the software had to have to comply with the revamped value proposition.
A challenge to overcome was the limits of Internet and telecom services in East Africa: at first, it was Safaricom that was supposed to host the servers that had to be set up to offer the new service, but because of Internet speeds impediments, the servers were relocated in the UK so that Sagentia’s engineers to be able to work efficiently.

In 2008, after reaching the 6 million customer mark, the service has now been transitioned to be operationally run by IBM Global Services on behalf of Vodafone.

✓ Governments and regulatory authorities

The UK Government established in 2000 the Financial Deepening Challenge Fund (FDCF), making available £15m for joint investments with the private sector on projects that help improve access to financial services. The money was awarded on a matched basis (50% of total costs) and a competitive bid process.

The FDCF fund managers and the proposal assessment team look for innovation. This can involve the development of a product or service that is not previously available in a target market, a new service that give customers access to goods or services that would previously have not been available, or the application of a technology that reduce the costs of service provision.

Vodafone assembled the M-Pesa project and was awarded financing from the FDCF, this was based on the innovative proposal of bringing banking services to the poor. With this financing Vodafone was able to reduce its risk to the project by limiting its exposure to manpower.

Kenyan government has many reasons to support the M-Pesa project:

1. Mobile communication can reduce the two biggest costs associated with providing financial services to the poor: building and maintaining a physical presence, and handling small transactions.
2. Since many M-Pesa consumers use the application to exchange money with business partners, the government sees an opportunity to promote an entrepreneurial spirit among Kenyans. An additional benefit from having more entrepreneurs is the fact that the more competitors a market has, the lower and better will be the services they might provide.
3. Kenyan Government can receive more aid from developed countries to run economic development projects, as it happened with the Department for International Development of UK that invests in M-Pesa launch.
4. Remittances bring social benefits to Africa citizens; in the case of Kenya remittances have reduced rural poverty level by 11%. Kenyan government perceives the M-Pesa service as a way to increase the funds that migrants send to their families during times of need. In the same line, remittances can also improve a country’s creditworthiness and lower the cost of international borrowing for governments and commercial banks.
5. Thanks to revolutionary projects implemented in Kenya, many international organizations and universities are looking for collaboration with national centers to address local needs through the mobile sector, as MIT is doing with its Entrepreneurial Programming and Research on Mobiles. This scenario has allowed Kenya to improve the quality of its education and research systems.
Even though the Kenyan government has allowed private companies, as Vodafone, to invest in the country and has modified the legal framework to attract more foreign capital, it must focus its attention on problems like corruption and organized crime that affect Kenyan image in the world. Government has to strengthen its work on building up an efficient legal system on the mobile communication sector, which is affected by high tax rates, and increase investment in complementary infrastructure, such as backhaul fiber networks and electricity.

✓ **Agents**

The role of agent is assumed by Kenyan merchants that offer customer services such as account opening, handling of deposits and withdrawals into the M-Pesa platform. The majority of M-Pesa agents belong with an established Safaricom network of several hundred airtime dealer outlets across the country. These agents recognized in M-Pesa model an opportunity to take advantage on the latent demand for appropriate saving products. Nowadays, more than 50% of their revenues come from M-Pesa services, which are 3.2 times more profitable than selling airtime; moreover, it is impressive the number of daily transactions, raising up to 86 per agent, made by customers.

The agents have contributed to the success of M-Pesa model serving as the market channel to reach out the mass; Vodafone and Safaricom had to rely on agents’ knowledge about the Kenyan consumerism, especially on consumer behavior in small rural villages. Furthermore, the agents have helped to educate customers on how to use the M-Pesa; an agent invests several minutes to explain the M-Pesa features on cell phones to potential consumers.

One of the concerns of agents is that frequently they run out of e-money float; when customers deposit more cash than is deposited at an outlet, the e-money float is reduced, sometimes to the point where the agent run out. At the same time, customers complain directly to the agents when the service fails (i.e. service becomes congested at ‘peak texting times’), so they face a lack of trust from many M-Pesa users who argue to be stolen after a deposit is made and no confirmation SMS is received.

✓ **Kenya Commercial Bank**

When the M-Pesa system started, agents had to deposit cash into the M-Pesa Holding Company bank account. In the event that they needed to convert M-Pesa emoney into cash (withdrawal) agents had to initiate a request on the M-Pesa system which then went through an internal process before the money was finally transferred to the agent’s bank account through an EFT (Electronic Funds Transfer).

Kenya Commercial Bank (KCB) got involved into the ecosystem mainly looking to increase their customer base, gain knowledge in innovative products for the poor and be more visible among the Kenyan population.

KCB gave to M-Pesa the flexibility needed by agents to deposit and withdraw money from the bank branches throughout Kenya, and see immediately modified their balances on the M-Pesa platform. One of the limitation of KCB (despite being the largest commercial bank in Kenya) is their lack of presence outside the main Kenyan cities, that they plan to overcome through attracting more customers with the M-Pesa system and related services in order to justify the opening of new branches.
PesaPoint

The ATM network of the company PesaPoint got introduced into the M-Pesa system due the requirements of the agents to have more points to withdraw money, especially in remote locations.

For this purpose the technological partner Sagentia developed an application so the agent could withdraw money from his account at M-Pesa with only some codes provided by the M-Pesa platform. This agreement enabled M-Pesa to increase the coverage of its system and the number of agents, so as the liquidity of the daily operations.

For PesaPoint the attractiveness of M-Pesa is to increase the number of transactions that are made in their ATM’s for cash withdrawal, payment of services, etc. so they can earn more commissions and increase their network, plus a testing platform for future micro-finance initiatives.

Businesses

The businesses affiliated to the M-Pesa network (now accounting more than 85 companies) benefit from this mobile money solution by allowing them to make more efficient their payment collection, for services, credits, direct sales, micro-credits, etc. Instead of waiting for the weekly money collection in the small villages and then the long travel to the bank (in some places taking several hours) with the risks that the money could be lost or stolen.

Now with the M-Pesa system, the only thing that needs to be done, is that the customer deposits its payment with the local M-Pesa agent and then send and then make an electronic transfer through its phone!

With this innovative way of making transactions, the local businesses that saw their growth limited by geographical and liquidity constrains, can now make long distance transactions through M-Pesa transfers or immediately provide the service or good to the local customer that had just received e-money from a relative in the big city.

More recently M-Pesa has started with direct cash withdrawals from PesaPoint ATM’s are, eliminating the need to depend on the local agent liquidity to be able to make a withdrawal.
Sustaining the value proposition: what the ecosystem faces and what should be done?

M-Pesa ecosystem currently faces three important issues due to the mass of customer, inadequate infrastructure and inefficient government practices:

1. **M-Pesa technology is limited** bringing out failed transactions in urban areas, cash float shortages in rural villages, and inability to get help from Safaricom.
2. There is a greater demand for formal savings and the payment of interests. Since Safaricom is not registered as a financial service provider, providing interest on savings is not an option.
3. Kenyan government keeps a tax system that disproportionately targets the mobile industry, such as special taxes on airtime, or high import duties on handsets and network equipment.

In order to overcome the problems mentioned above, Safaricom and Vodafone could undertake these recommendations:

1. **M-Pesa wallets should be linked to accounts managed by formal financial institutions** to be allowed to offer the savings service, deposits will be free of charge, and it could also provide interests for the cash saved. Even though, international competitors, as Western Union, do not represent danger for M-Pesa for its high fees, regional companies as Zain’s mobile money service are working to work along with financial institutions to provide the alternatives Kenyans are asking for.
2. In Africa, mobile phones are being used to improve the efficiency of labor markets, report on human rights abuses, and democratize the flow of information. Safaricom is reviewing opportunities to provide complementary services; however, it will focus on developing its core mobile money services before supporting cross-domain business models.
3. Safaricom could seek more resources from donor countries who are interested in overcoming poverty in Africa, such as the Canadian International Development Agency, to improve M-Pesa technology platform. In addition, they could get technical support for this challenge from prestigious universities and centers working on mobile application to economic development.
4. Safaricom might collaborate with the Kenyan government, primordially with the Central Bank, and citizen sector organization to regulate and promote more efficient tax and banking systems not only to benefit service providers, but also to protect the consumer against risks involved. The better the regulator understands the capabilities and limitations of services like M-Pesa, the better and more appropriate the regulation will be.
5. **If successful, there are plans to extend this service to other countries; potential markets should be those countries where major national sources are remittances.** On the same line, marketing expenditure will be direct to countries as US, France and Germany where there are large segments of Kenyan emigrants.
Sources of information

World Bank’s Poverty Reduction and Economic Management Unit, World Economic Forum, and United Nations

CGAP: http://technology.cgap.org; brief (Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-Pesa); focus notes (The Early Experience with Branchless Banking)

Safaricom: http://www.safaricom.co.ke (M-Pesa Services, Press releases)

Vodafone: http://www.vodafone.com (Media Relations, M-Pesa)

Videos on Youtube:
- M-Pesa Documentary http://www.youtube.com/watch?v=zQo4VoLyHe0&feature=fvw
- M-Pesa Customer Interview http://www.youtube.com/watch?v=5y-X_hiXit8
- M-Pesa Store-owner http://www.youtube.com/watch?v=8Kxe1swjfVM&feature=related

The Economist September 26th 2009, Report on The power of mobile phone by Eric Cantor, Kunal Bajaj, Dunkan Clark, and Stephan Beckert.

Mobile Money for the “Unbanked” Turning Cellphones into 24-Hour Tellers in Kenya by Nick Hughes, a Vodafone executive and Susie Lonie, an m-commerce expert.

Exploring trust in mobile banking transactions: the case of M-Pesa in Kenya by Olga Morawczynski, University of Edinburg and Gianluca Miscione, University of Oslo.