



<https://www.gsma.com/mobilefordevelopment/>

# M-Pesa

---

---

**JOHN BESSANT**  
Managing Innovation

---

# M-Pesa

M-PESA is a mobile payments system originally developed in Kenya which effectively offers a banking system based on mobile phones. Launched in 2007 it is now used by 1.7 million people and estimates suggest that around 25% of the country's gross national product flows through the system. The name comes from the Swahili *pesa* meaning money and the original idea began as a development aid project to enable microfinance repayments. Vodafone, via its local operator Safaricom, became the project partner and rolled out the service. Currently (2013) around 16 million people have M-PESA accounts and the system processes more payments than Western Union does across its entire global network.

The system is simple in concept; users pay money in to one of 40,000 M-PESA agents (who usually operate in small corner shops) who sell airtime on the Safaricom network. Withdrawals can be made by visiting another agent and the system can also be used to send money to other people via a simple menu on the phone. Many people work in cities but send money back to relatives in their home villages and M-PESA allows them to do this safely without the risks of robbery or the inconvenience of having to make the journey. One of the emergent benefits was that during the 2008 post-election violence people began to see M-PESA as a safer place to store their money than mainstream banks.

The basic M-PESA service allows users to:

- Deposit and withdraw money
- Transfer money to other users and non-users
- Pay bills
- Purchase airtime
- Transfer money between the service and a bank account (in some markets)

and the service is funded by a small commission fee for each transaction. (The cumulative effect is large though; estimates suggest that M-PESA accounts for over 10% of Safaricom's annual revenue). There is a cap on transactions of \$500 making it difficult for money laundering or other applications. the average transaction size is around US\$33, but Vodafone has stated that half the transactions are for a value of less than US\$10.

In practice this means that carrying out business becomes much easier, contributing to increased productivity. For example a transport company can now pay their crews, and transfer money to and from customers using their service. If a lorry breaks down, they no longer needs to go to the bank, and then travel miles by bus to reach the stricken vehicle. Instead they can arrange the services needed and pay for them using M-PESA.

A key to the success of M-PESA is that it benefits from what are called 'network effects'. The system only works when enough people use it but once the word of mouth recommendations reached a critical number of subscribers the system became viable and then new uses were found for the platform. It now offers a gateway to loans, salary payments and bill payments – effectively offering a banking

---

system for the traditionally unbanked. This is important in the context of a country where 80% of the population do not have access to the traditional banking system. There are significantly more M-PESA outlets than ATMs, for example.

Soon after the system was launched it was attracting new subscribers at the rate of 12,000/day, quickly building a critical mass for network effects to operate.

The effects on productivity on people who would otherwise spend a lot of their time carrying out multiple journeys, queuing and other activities have been significant and evidence suggests that the effect has also been to raise household incomes by between 5 and 30%. Many start-up businesses have emerged running across the M-PESA platform.

The model has begun to diffuse to other countries – for example Tanzania (where there are now 5m subscribers), Afghanistan and India. An organization set up by the GSM Association (representing mobile phone operators, regulators and others) specializes in monitoring and advising about this approach, Mobile Money for the Unbanked (MMU) suggest that around 80 similar services are now in operation around the world.

<https://www.gsma.com/mobilefordevelopment/>

In the case of Afghanistan when the Roshan system was launched it was initially used to pay policemen's salary, which was set to be competitive with what the Taliban were earning. Soon after the product was launched, the Afghan National Police found that under the previous cash model, 10% of their workforce were ghost police officers who did not exist; their salaries had been pocketed by others. When corrected in the new system, many police officers believed that they had received a raise or that there had been a mistake, as their salaries rose significantly. The National Police discovered that there was so much corruption when payments had been made using the previous model that the policemen didn't know their true salary. The service has been so successful that it has been expanded to include limited merchant payments, peer-to-peer transfers, loan disbursements and payments.

Mobile money of this kind has also been used with increasing effect by aid agencies looking for an alternative to food distribution in humanitarian crisis situations. By setting up a mobile phone network running M-PESA it becomes possible to distribute and control flows of cash such that affected people can make purchases themselves rather than depending on aid convoys.

(See the video interview with Suzana Moreira elsewhere on the Portal which explores her social enterprise which uses the M-PESA model for remitting payments from migrant miners in South Africa to their families back in Mozambique).

## Origins

---

The original concept behind M-PESA was a project in neighbouring Mozambique via the operator M-Cel. Researchers funded by the UK Department of International Aid and Development (DFID) had noted that people in countries like Uganda, Botswana and Ghana were spontaneously using mobile phone airtime credits as a way of transferring money to relatives. (This idea emerged in several other locations as a bottom up approach – the first recorded was in the Philippines where the widespread availability of mobile phones and coverage and the huge geographical dispersal across hundreds of islands created the conditions for such emergence). Their research in 2002 led to the first credit-transfer scheme offered by M-Cel in 2004. Gamos (the research consultants) then proposed using a similar scheme to help repayment of microfinance loans in Kenya and with DFID support began working with Vodafone in 2005. The software supporting M-PESA began as a student development project and was then taken up by the technology consultants Sagentia; this underpinned the launch of M-PESA in 2007.

### **Success factors**

Several aspects of the M-PESA case are worth drawing out as a study of innovation. First is that it offers a good demonstration of the social aspects of diffusion of innovation. Kenya, like many African societies, is heavily dependent on personal relationships and word-of-mouth represents a key way for ideas to spread. In the case of M-PESA this helped build up the network effect; essentially without a critical mass of people connected to the system it doesn't offer much advantage. But the more connections there are the more attractive the system becomes. In the case of M-PESA this 'tipping point' was reached quite early and the widespread connectivity then enabled other services to be added which reinforced the value and drew more subscribers into the network. This network effect extended beyond the phone use itself to the network of retail stores able to offer the service so that people could deposit and receive money.

A Finaccess survey in 2006 revealed that 27 per cent of the population derived their main source of income from transfers from other people but at that time most of the senders (75%) were using informal means such as the bus and friends and family. By 2009 M-PESA had replaced informal transfer mechanisms and was used by 40 per cent of sender whilst the number of people involved in receiving transfers had increased to nearly half of the population.

Related to this is the precondition that many Kenyans had both a mobile phone and access to a well-developed mobile infrastructure. Like many emerging markets, Kenya benefits from not having had a highly developed fixed-line infrastructure; in 2008 the country had 17m mobile phone subscriptions but only 250K fixed line connections. Mobile phone penetration is running at around 83% of the population aged 15 or over and 42% of the total population.

An important issue is the regulatory environment which could have been a limiting factor in the introduction of such a radical innovation. It appears that the relevant authority in this case played a supportive and active role to help shape the service and build the trust needed for people to use it. The Central Bank of Kenya (CBK) adopted a bold 'experiment first, then regulate' stance and was involved since the earliest M-PESA pilot stages in 2004. For example, the CBK insisted that all customer funds be deposited in a regulated financial institution, and reviewed the security features of the technology platform. Importantly interest earned on deposited balances must go to a not-for-profit trust and

---

cannot be appropriated by Safaricom or passed on to customers. There are also limits on transaction sizes to address money-laundering concerns. Although this involved Safaricom in key commitments it meant that they were allowed to operate M-PESA as a payments system outside the existing provisions of the banking law.

Beyond these system infrastructure elements there were other key factors affecting diffusion. In particular people had to be able to trust the system in terms of reliability and usability; Safaricom spent a significant amount of time and resource to build the brand around M-PESA and the story behind it. (See the advertisement as a typical example of the brand message)

<https://www.safaricom.co.ke/personal/m-pesa/>

It supported the fast development of the network effect with low pricing and with incentives for retail stores to get involved.

Another important feature was visibility; the M-PESA logo is bright and clear and is seen on all sorts of store buildings which now number over 20,000. The customer experience is also an important aspect which has been developed; Safaricom recruit store clerks with good language skills and operate an extensive staff training programme.

But it depended critically on word-of-mouth recommendations of the service. A detailed discussion of the entry strategy and brand building can be found at:

*Ignacio Mas and Amolo Ng'weno, 2010, Three keys to M-PESA's success: Branding, channel management and pricing, Journal of Payments Strategy & Systems Volume 4 Number 4*

## **Innovation strategy**

The diffusion of an innovation like M-PESA is difficult to manage because it represents a radical innovation – people have never seen anything like this before. It is a new product launched into a new market of people who had very little experience of formal financial services. In this it can be seen as a disruptive innovation, opening up a new market and in many ways the development and introduction followed that pattern of learning and growing the new market outside of the mainstream financial or communications services market.

Although Safaricom targeted an eventual network size of 1 million users (representing close to 20% of its total market of 6 million subscribers in 2007) it began with small pilots involving fewer than 500 people to learn quickly about the technological and user issues involved in the innovation. The lessons learned helped them set up a launch infrastructure which had 750 stores widely distributed and covering all the 69 administrative regions in Kenya. The early launch was not without difficulties including lengthy delays in reaching customer hotlines and many errors in transactions being processed.

---

## Further information

A key resource describing M-PESA and many related developments is the GSMA website:

<http://www.gsma.com/mobilefordevelopment/programmes/mobile-money-for-the-unbanked/mmu-examples/m-pesa>