

First Report of the Working Group on Business Models

m-POWERING DEVELOPMENT INITIATIVE

A BDT Initiative — Organized by ITU



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Executive summary

Heavy use of mobile devices, increased access to wireless networks in most parts of the world and more mobile technology based lifestyles are the drivers that change the world. This change is evident in sectors where services provided receive significant support through mobile devices, including education, management, entertainment and health assistance.

The fastest-growing areas of mobile technology applications are health, education, government, entertainment and commerce. The potential of those markets is in continuous development.

In view of this trend, delivery of affordable mobile services is one of the most intractable challenges faced by governments and different players. In countries with well-developed telecommunications technologies, the challenge is to meet the rising expectations of citizens while controlling costs to a manageable level.

In the developing world, on the other hand, the challenge is to build telecommunication infrastructure that is able to deliver an acceptable quality of mobile services to the mass population. For the poorest countries, the challenge is to provide the general population with access to basic mobile services.

Solutions will need to be scalable, sustainable, addressing multiple applications across global markets. Operators will need to understand and manage the regulatory and risks inherent in providing these services. In order to make more revenues, operators will need to move beyond connectivity to providing value-added services which might range from traditional telecom services of security and data management.

Cooperation among all stakeholders will be key to success and this must take the form of strategic partnership between different players to deliver a high quality services.

The main focus of this report is mainly on the business model of various mobile services (education, commerce, health, governance and sport) and also the roles of different stakeholders in their implementations.

Chapter I: m-Commerce

1. m-Commerce

Mobile commerce refers to trusted transactions using a wireless device and data connection that result in the transfer of value in exchange for information, services, or goods.

Mobile commerce, facilitated generally by mobile phones, includes services such as banking, payment, and ticketing.

m-Commerce involves three categories of activities :

- E-commerce conducted with mobile devices (mobile phone, smartphones, tablets);
- Mobile payments (NFC wallets and cloud wallets & other methods);
- Mobile money management (including transfers and banking).

m-commerce purchase cycle



Source: TMForum

2. m-Commerce benefits

For mobile Operators

- ✓ An opportunity for MNO's to further expand non-voice revenues.
- ✓ Mobile operators can benefit from differentiation, increasing loyalty and reducing churn.
- ✓ Build brand value while introducing new opportunities for recurring revenue streams

For consumers

- ✓ Ease-of-use and convenience, purely personal
- ✓ Encourage cashless customer behavior.
- ✓ Purchases / payments faster and easier than traditional payment modes.
- ✓ Ensuring the security and quality of in-store wireless network coverage.
- ✓ Reduce travel time, time to order & cost.
- ✓ Paying bill from anywhere, anytime, 24/7.

- ✓ Provide unbanked customers with a secure solution for transaction (Pin security, SMS alert).

For merchants/retailers

- ✓ The ubiquity of mobile phones helps to drive payments.
- ✓ Opportunities for integration with other merchant value-add applications (e.g., supporting loyalty programs and merchant promotions).
- ✓ Enhance brand presence and develop effective multichannel sales and customer engagement strategies.
- ✓ Contactless readers require less maintenance, providing cost savings to merchants.

For Banks/Financial institutions

- ✓ Decrease of lost transactions resulting from magnetic stripe read problems, reduce cardholder calls and improve satisfaction.
- ✓ Contactless transactions enhance security over magnetic stripe card transactions, leading to reduced fraud.
- ✓ New opportunities to further penetrate cash and check-heavy merchant segments and open new acceptance channels.

3. m-Commerce: Drivers & challenges

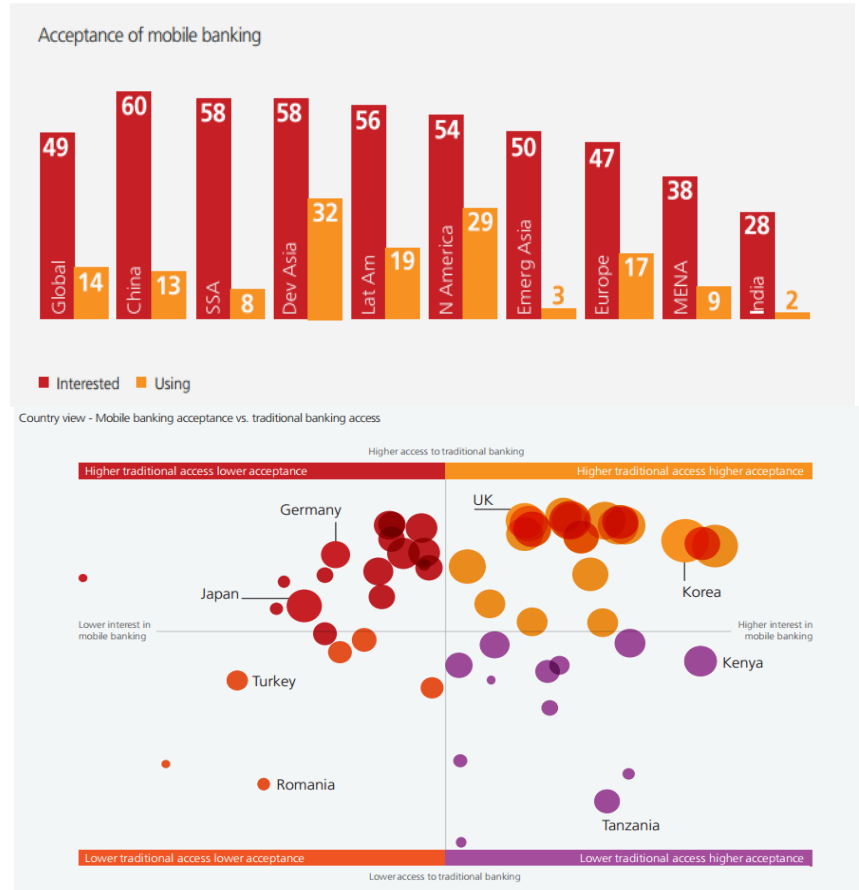
Key Drivers	Key Challenges
<ul style="list-style-type: none"> ▪ Expansion of 3G+, 4G , WiFi Hotspots networks worldwide & convergent networks evolution ▪ Strong growth in smartphones and tablets adoption. ▪ Increase in mobile usage by shoppers for locating stores, reading product reviews and price comparisons. ▪ Increase in Mobile apps development. ▪ Benefits from success leaders such as Amazon, Apple, eBay and Google. ▪ Advancement of associated mobile security technologies. ▪ New payment technologies & methods such as M-Pesa model, Google Wallet, PayPal Here and Square. 	<ul style="list-style-type: none"> ▪ Fragmentation in mobile payment technologies (NFC versus cloud, multiple NFC wallet initiatives, multiple cloud initiatives) ▪ The existence of other stable and proven payment methods ▪ Complex regulations ▪ Broad spectrum of technologies standardization ▪ Privacy & Security concerns ▪ Consumer friction, as people are unaware of new payment options, skeptical of them or content to keep using existing methods

4. Market overview

Key Findings

- Mobile commerce is evolving rapidly and changing the way consumers and businesses operate.
- There is a growing tendency for consumers to use mobile phones to search for and purchase goods online.
- 50% of the world's phone owners are either interested in mobile banking services or using them already, whilst 45% show the same level of enthusiasm for making payments using their phone.

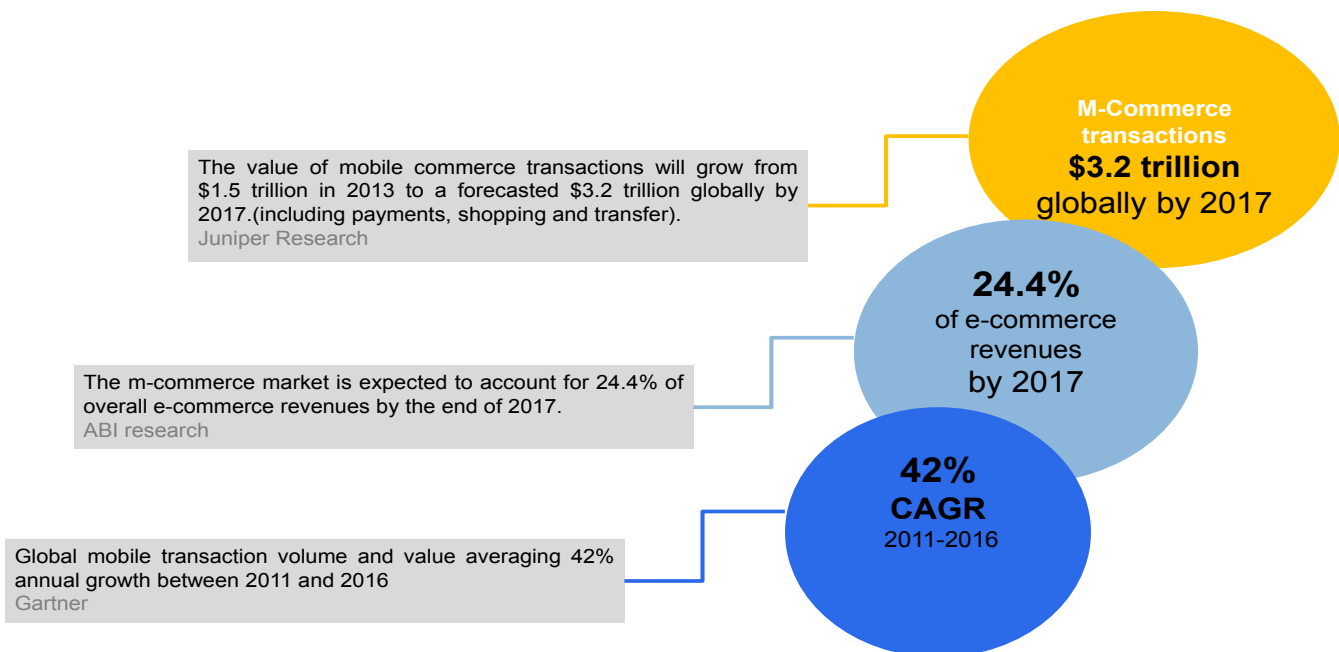
Market overview



Source: TNS - The Mobile Life 2012 study

m-Commerce transactions forecasts

m-Commerce forecasts



5. Competitive landscape

Mobile Payment approaches

Key Message :

The marketplace will include multiple solutions for a considerable period of time. However, it appears likely that mobile NFC handsets will grow to be a dominant mobile payment solution.

The ability to leverage existing payment system assets securely, in combination with enhanced mobile solutions for loyalty and offer management will drive significant growth in NFC handset-based mobile payments.

m-Commerce technologies

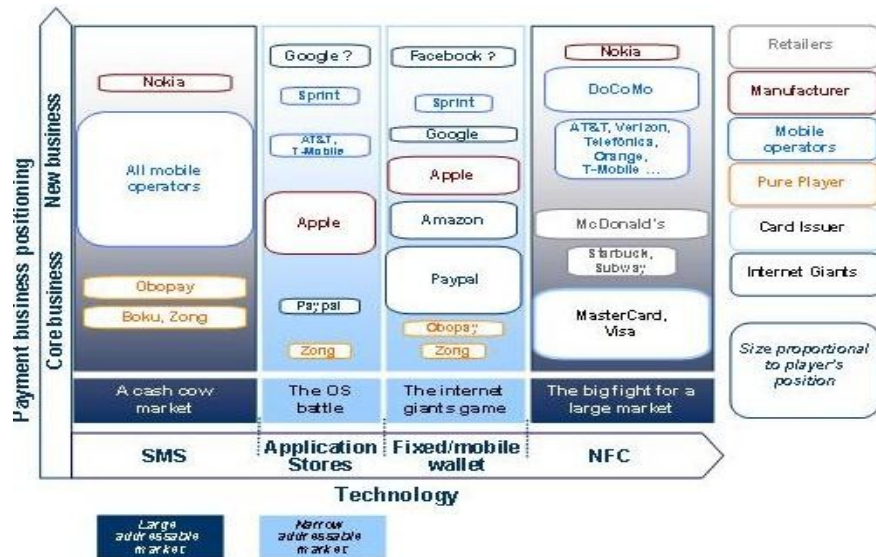
	Integrated NFC	MicroSD	Stickers, Fobs	Bar Codes	Payments in the Cloud	SMS
Reliability	●	◐	◑	◒	◓	◔
Transaction Speed	●	●	●	◑	◒	◓
Security	●	●	◑	◒	◓	◔
Ease-of-Use	●	◑	◒	◓	◔	◕
Wallet Functionality	●	●	○	○	●	○
Acceptance	◑	◑	◑	◑	○	○
Device Availability	○	◑	◑	●	●	●
Additional Value Add Applications	●	◑	○	◑	●	○
<p>Legend Worst ○ ◐ ◑ ◒ ◓ ◔ ◕ Best</p>						

Source: Smart card alliance

A huge variety of companies are jostling for position in this space: Internet giants including Amazon, Apple and Google; cellular operators; financial institutions such as banks, credit card companies and PayPal; and other new entrants.

Payment business positioning & technology

- Big players are present on the four segments.
- Application stores are determined by OS type.
- Mobile wallet segment is dominated by internet giants.
- Mobile operators lead the SMS and the NFC segments.

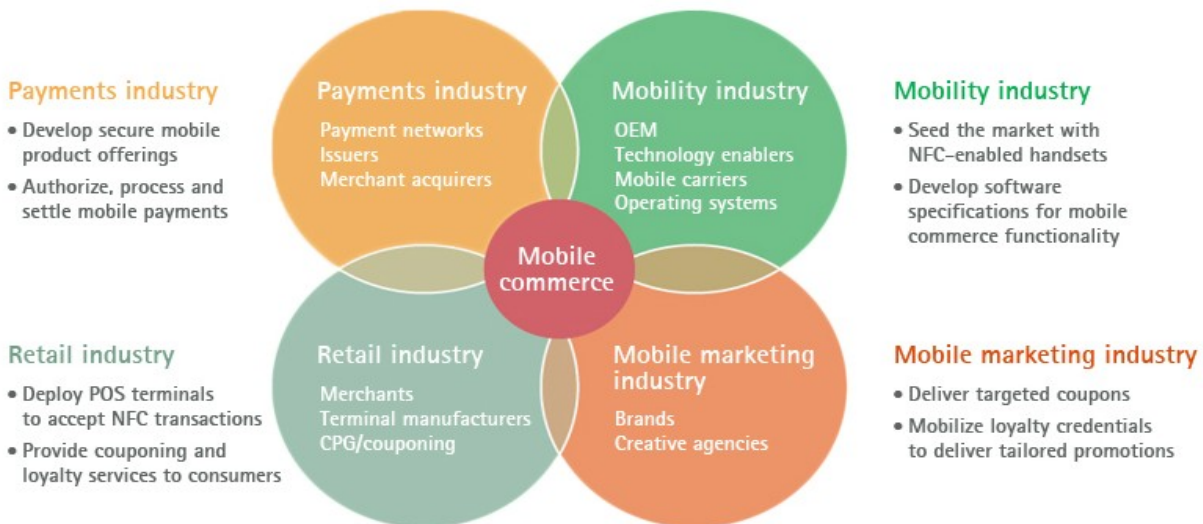


Source : Idate report 2011

6. m-Commerce ecosystem

A new ecosystem

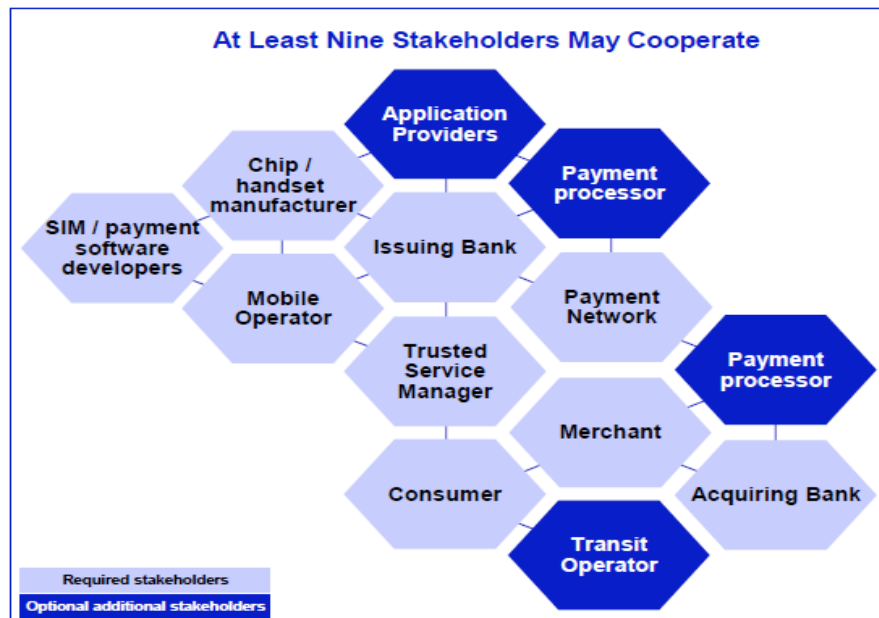
To realize the full benefits of mobile commerce, four distinct industries will have to come together to form a complex ecosystem.



Source: Accenture analysis

7. Key stakeholders

The convergence of mobile and payment is extremely complex, requiring the cooperation of many players and stakeholders.

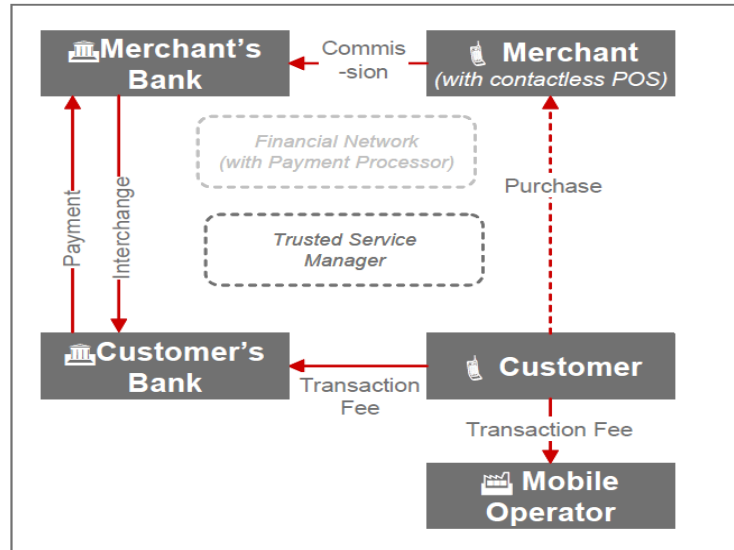


Stakeholders	Roles
Merchant /Retailer	<ul style="list-style-type: none"> Enhance the shopping experience of its customers and improve sales through m-commerce / payment services Use mobile and digital technologies to reduce cash-handling costs and improve their engagement with customers through targeted offers and messaging.
Mobile Operators	<ul style="list-style-type: none"> Enable wireless transaction
Bank	<ul style="list-style-type: none"> Process the transfer of funds from consumer accounts to merchants.
Credit cards company	<ul style="list-style-type: none"> A payment network provider such as Visa or MasterCard to facilitate the transfer of information and funds.
Trusted service manager (TSM)	<ul style="list-style-type: none"> Provides services to manage the secure download and life-cycle management of the mobile NFC applications on behalf of the financial institutions, transit authorities and retailers. The TSM does not participate in the transaction stage of the service, allowing existing business models to be implemented.
Device manufacturers	<ul style="list-style-type: none"> Chip / handset manufacturer.
Mobile Customers	<ul style="list-style-type: none"> Use mobile device for shopping and buying services, products and goods.

8. m-Payment Value Chain

Involves collaboration among banks, mobile operators and other stakeholders in the mobile payments value chain, including a potential new stakeholder - a trusted third party to manage the deployment of mobile applications.

The Collaboration Model



Deploy Mobile Payment Application	Order Product	Perform Payment	Manage Account	Manage Marketing
<ul style="list-style-type: none"> Likely deployed by independent third party trusted service manager May be deployed by operators 	<ul style="list-style-type: none"> Service provider portal to purchase products (eBay) 	<ul style="list-style-type: none"> Contactless or peer-to-peer option 	<ul style="list-style-type: none"> Customers and merchants continue to manage their credit/accounts at their respective financial institutions 	<ul style="list-style-type: none"> Bank and mobile operators collaborate with retailers to develop mobile marketing applications

Source: Smart card alliance

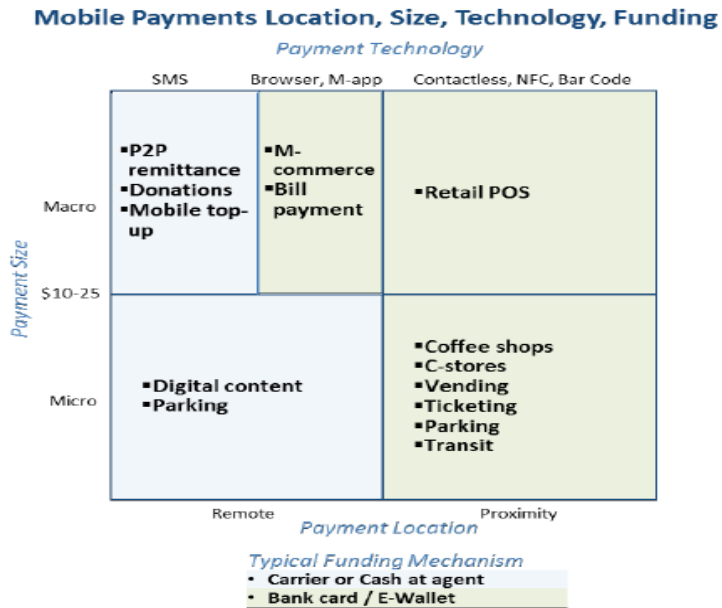
9. m-Payment Segmentation

Mobile payments are typically differentiated by technology, transaction size, location (remote or proximity), and funding mechanism. The market can be segmented into 4 quadrants: (Proximity) in-store vs. Remote & Micro vs. Macro payments, where a micro is estimated as less than \$10- \$25.

Mobile payments, location, size, technology, funding

Consumers can use a mobile device to pay for goods and services such as:

- Music, videos, ringtones, online game subscriptions, wallpapers, and other digital goods.
- Transportation-related items, such as bus, subway, or train fares and parking at meters.
- Any merchandise in a physical merchant location.



Source: Smart card alliance

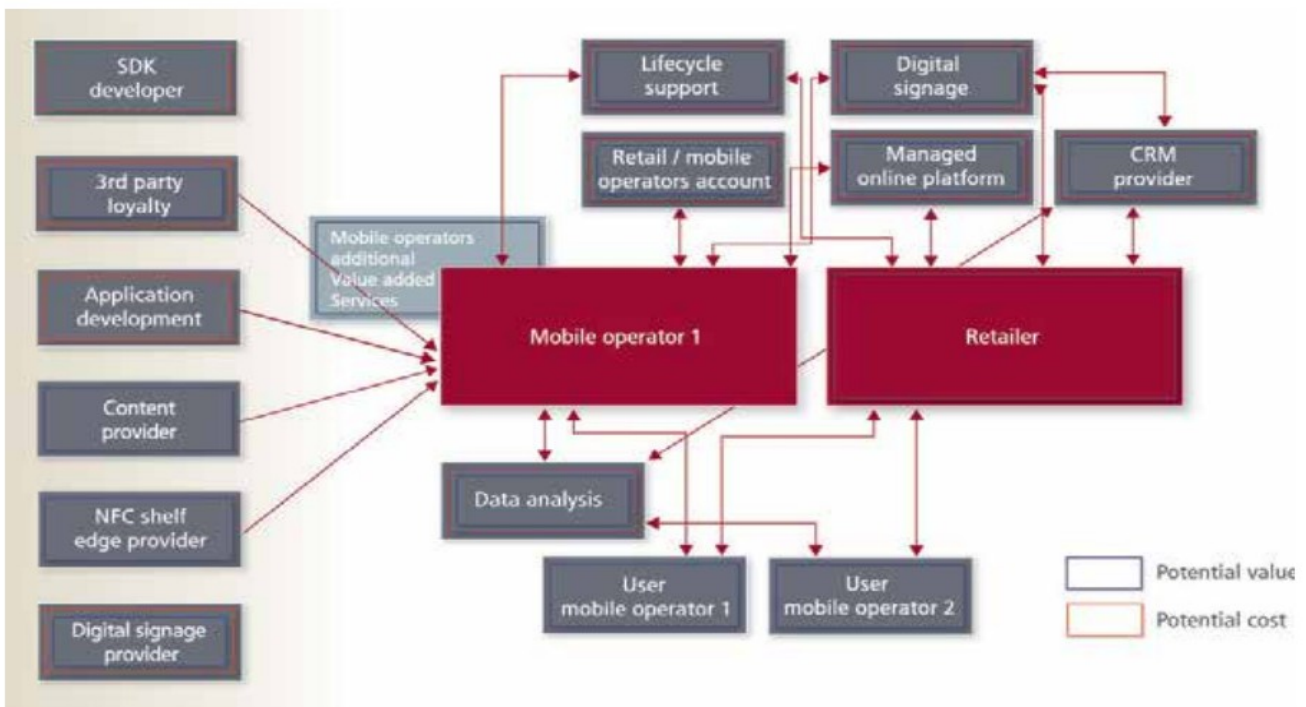
10. m-Commerce Value Chain

A single operator managed service offering

Mobile operators could provide retailers with an end-to-end mobile commerce proposition, encompassing NFC and non NFC elements. They could deliver this either individually or by collaborating with other mobile operators.

First option : a single operator managed service offering

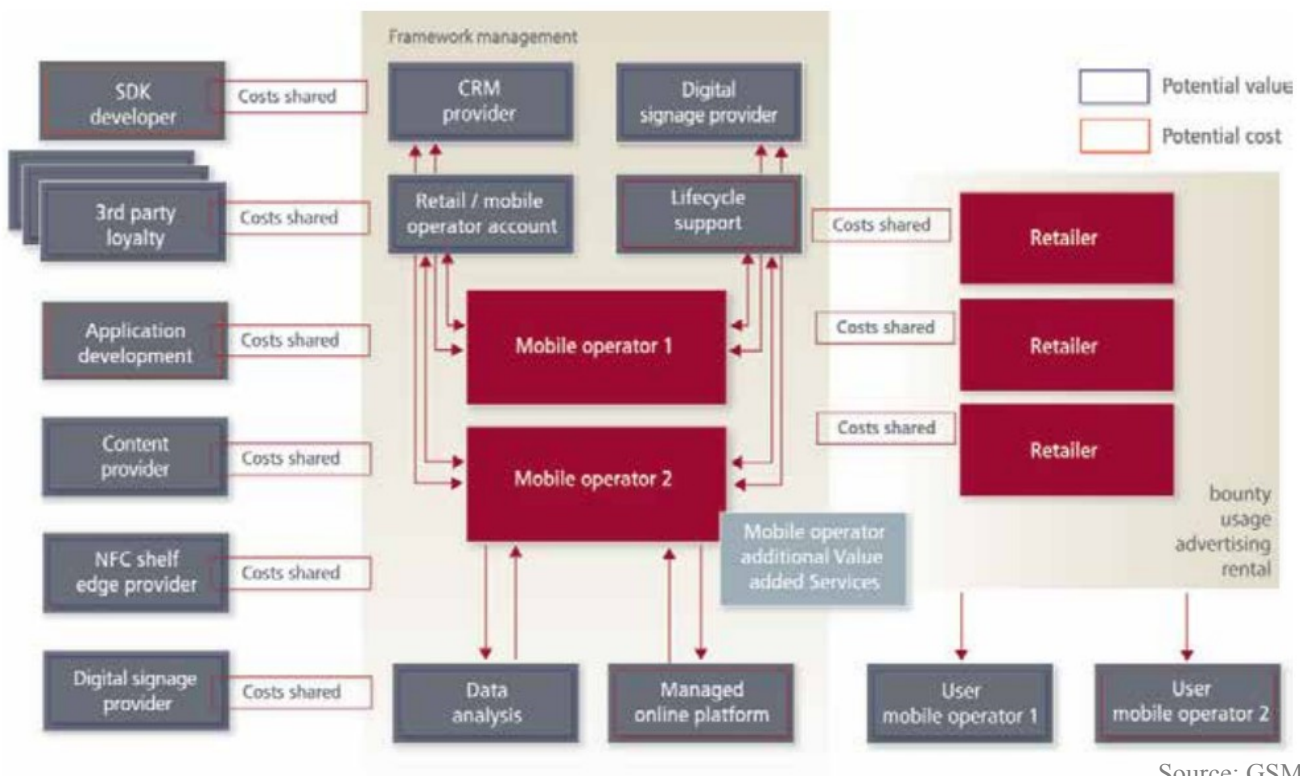
- Require the development of a complex value chain involving significant costs.
- In this case, the mobile operator will have to work directly with a large number of third parties, such as application developers, loyalty programs and digital signage providers, as well as retailers.



Source: GSMA

Second option : a joint operator managed service offering

- Could use framework architecture to generate economies of scale, and reduce costs and complexity.
- The use of common framework architecture across operators would remove the need for a direct relationship between each specialist supplier and individual operators.
- An application developer, for example, would then be able to create an application that is compatible with the framework, knowing it will work across multiple mobile networks. This means that individual mobile operators will share many of the costs with other operators and their suppliers will gain economies of scale.



11. Real life examples & Best practices

Vodafone's M-Pesa

- M-Pesa is a mobile-phone based electronic payments system.
- It was developed by Vodafone and launched commercially by its Kenyan affiliate Safaricom .in March 2007.
- M-PESA operates a system of low-value electronic accounts held by the mobile operator and accessible from their subscribers' mobile phones through a SIM card-resident application.
- The conversion of cash and electronic value is performed at a network of retail stores (often referred to as agents) which are paid for by exchanging these two forms of liquidity on behalf of customers.
- All transactions are authorized and recorded in real time using secure SMS, and are capped at \$500.
- M-PESA is useful as a retail payment platform because of its reach into large segments of the population.

By Aug. 2010:

- 12.6 million registered customers, in the relatively short span of 2½ years (57% of Safaricom’s customer base, 21% of the entire population or 40% of adults).
- 19,900 retail stores (of which nearly half are located outside urban centers).
- USD 350 million per month in P2P transfers.
- USD 8 million in monthly revenue (9% of Safaricom revenues.)

The advertisement features a red header with the Vodafone logo and navigation links for Home, Tariffs, and Support. The main headline reads "m-pesa™ makes money transfer easy". The central image shows a man and a woman inside large purple mobile phones, with the man handing a green 100 Kenyan Shilling note to the woman. Below them are four speech bubbles with questions: "What is m-pesa™?", "What can you do with m-pesa™?", "Benefits of m-pesa™", and "How to get m-pesa™". At the bottom, there is a small text line: "M-Pesa™ is the registered trademark of Vodafone and is Banking Partner [KCB Bank] Terms and conditions for: Customer Agent".

Starbucks App: m-Commerce as a strategy beyond enhancing in-store payments

Starbucks continues to expand its role as a leading mobile payment provider as evidenced in comments made recently by a company executive who said more than 2 million mobile payment transactions occur every week.

The comments were made by Howard Schultz, president/CEO of Starbucks, during a conference call with analysts to discuss the company's fourth quarter results. Mr. Schultz also said that the burden is on companies to recognize the seismic change in consumer behavior as a result of the emergence of mobile commerce and mobile payments as well as social and digital media.

"We believe the rapid adoption of mobile gives us an opportunity to create a unique and much deeper relationship with our customers directly and in the moment like no other consumer brand or retailer," "We have the unprecedented ability to reach new customers, create awareness to new products, drive incremental transactions and explore new revenue streams in music and digital publishing."

Payments squared

Mr. Schultz also reported that Starbucks has had more than 100 million mobile payment transactions since the Starbucks mobile app launched in January 2011.

Starbucks continues to look for ways to expand its mobile payment offering and recently partnered with square. As a result, Starbucks customers will be able to use the square wallet app to pay for purchases with their mobile phones.

Starbucks' app generates a bar code that can be scanned at checkout to authenticate a mobile payment. This strategy has been gaining steam in the marketplace this year as other mobile payment solutions, such as NFC-enabled wallets, have been slower to experience uptake.

However, as more NFC-enabled phones are adopted by consumers this year and next, it is possible NFC-based mobile payments will appeal to more companies, possibly even Starbucks.

"NFC tap and go will inevitably be embraced by Starbucks," Mr. Schwartz said. "NFC is ideal for high traffic, low-value transactions."

mdinar: BIAT's m-wallet (Tunisia)

Mdinar is a mobile payment and m-wallet service that was launched in Tunisia through a partnership between the BIAT Bank and Viamobile (a service provider); powered by Creova's mobile payment technology.

The Mdinar service offers P2P, top-up, and loan payment services directly from a user's mobile phone. It also offers multiple features, including the ability to view account balances, history of transactions, and the possibility to save and use the list of people frequently receiving payments from the user. It also allows the user to send a request for money to another person.

People receiving money through Mdinar don't need to have a bank account. Deposits or withdrawals to credit or debit the Mdinar account can be done through the branches and ATMs of the BIAT bank network.

Tunisian's Mobiflouss (Tunisia)

Mobiflouss is a mobile banking service launched in Tunisia by Tunisiana MNO in partnership with the Tunisia mail (La Poste Tunisienne).

The service will enable users in mobility to transfer money and pay for goods and services.

The subscriber have to use the prepaid card e-DINAR SMART.

Once the users register with Mobiflouss, they can perform various financial functions via their phones.

Tunisie Telecom's Mobidinar (Tunisia)

Mobidinar is a mobile banking service launched in Tunisia by Tunisie Telecom MNO in partnership with the Tunisia mail (La Poste Tunisienne).

The service will enable users in mobility to transfer money and pay for goods and services.

The subscriber have to use the prepaid card e-DINAR SMART. Once the users register with Mobidinar, they can perform various financial functions via their phones.

The banner features a woman holding a gold smartphone. Text includes 'MobiDinar', 'Votre mobile vous simplifie la vie.', and 'MOBIDINAR *104#'. Logos for Tunisie Telecom (TT) and La Poste Tunisienne are present. A button on the right says 'Télécharger la fiche'.


Dans le cadre de l'élargissement de sa gamme de services de paiement via le mobile, TUNISIE TELECOM lance en collaboration avec La Poste Tunisienne, le service « MobiDinar ».


MobiDinar est votre nouveau porte monnaie électronique qui vous permet d'effectuer des transactions financières, de payer vos factures, de recharger vos lignes téléphoniques et de gérer votre compte e-DinarSmart directement, à travers votre téléphone mobile.

MobiDinar est destiné à tous les abonnés mobiles de Tunisie Telecom et de ELISSA détenteurs de la carte e-dinar smart.

Pour en bénéficier, il suffit de vous inscrire gratuitement sur le site www.e-dinar.poste.tn rubrique MobiDinar.

Un SMS de bienvenue vous sera envoyé pour confirmer votre inscription.

Vous pouvez ainsi choisir le service MobiDinar qui répond à vos besoins en composant ***104#** .

 vous souhaitez souscrire à ce service, prière de [cliquer ici](#)

PayPal Here

PayPal Here is a mobile payment solution that includes a free app and a thumb-sized card reader for your iPhone, Android or iPad device.

PayPal Here lets you simply and securely accept multiple forms of payment anytime, anywhere – credit cards, debit cards, checks, invoicing, and PayPal payments.

PayPal Here is available for small business owners who need a simple way to accept payments on-the-go or as a point of sale solution in their retail store.

The service costs a fixed 2.7% rate per transaction and the card reader is given for free.

The screenshot shows the PayPal Here website. The main headline is 'Get paid anywhere.' Below it, a hand is shown using a card reader on a tablet displaying a payment interface. A navigation bar at the top includes 'Complete Payment Solutions', 'Popular Tools', and 'Specialized Solutions'. A form asks for an email to 'Get PayPal Here'. A list of features includes: 'Meet PayPal Here', 'The most payment types', 'Access funds today', '2.7% Simple rate per transaction', 'Manage Multiple Users', 'Enhanced mobile POS systems', and 'Get your card reader in store'. The footer shows logos for PayPal, VISA, MasterCard, and DISCOVER, and notes 'Available on: iPhone'.

Square

Square is a mobile payment service that comes with two applications: Square Register and Square wallet.

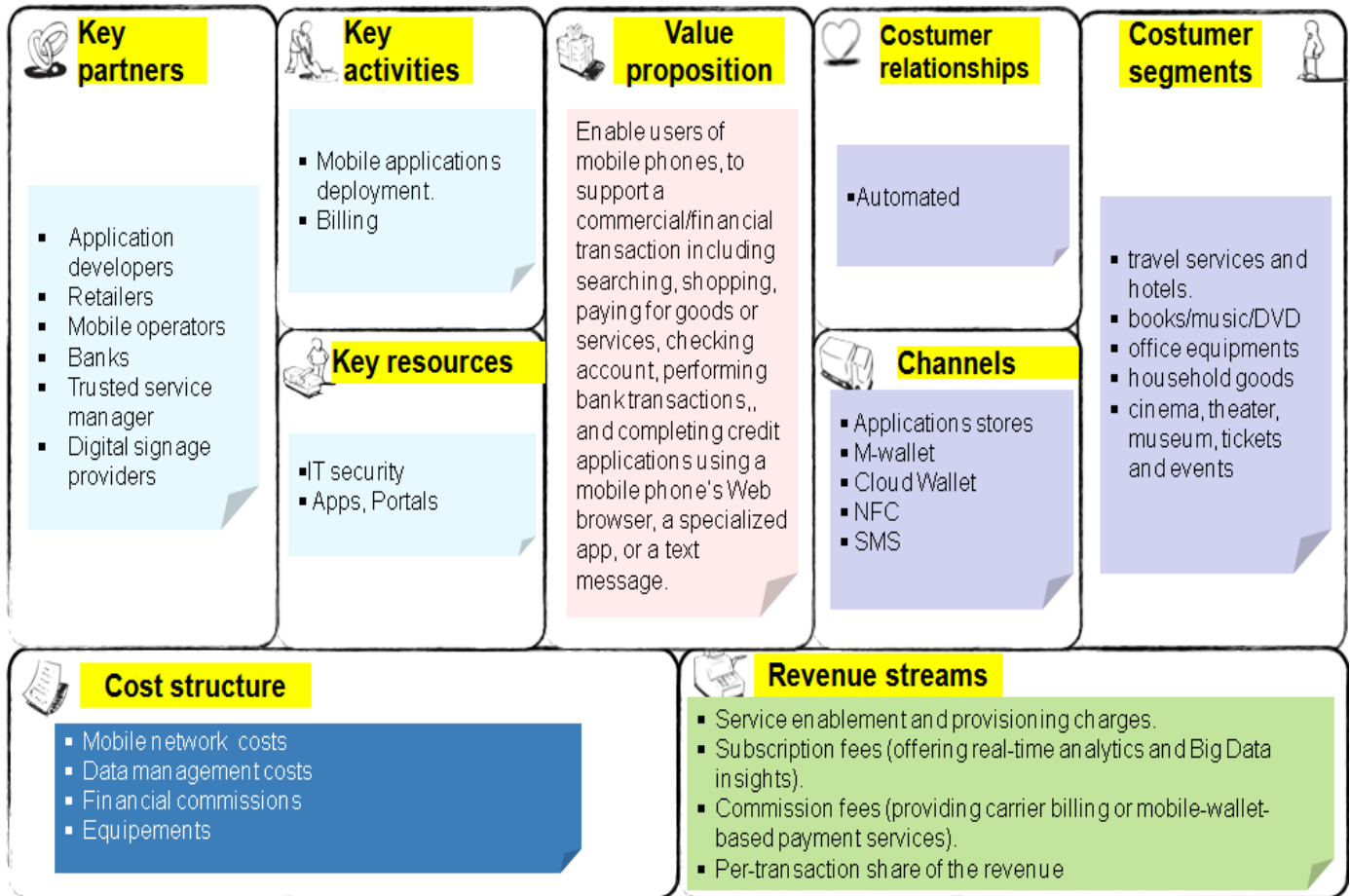
- **Square Register** allows individuals and merchants to accept debit and credit cards on their iOS or Android smartphone or tablet computer.

The app supports manually entering the card details or swiping the card through the Square Reader, a small plastic device which plugs into the audio jack of a supported smartphone or tablet and reads the magnetic stripe.

- **Square Wallet** allows customers to set up a tab and pay for their order simply with their name or a barcode using a stored credit, debit, or gift card.

The image is a composite of three parts. The top left shows a smartphone displaying the Square Register app interface with a welcome message: "Welcome to Barton Street Deli! Say you're paying with Square Wallet at checkout". The top right is a "How it Works" infographic with three steps: 1. Download the app (Link your credit card and upload a photo of yourself), 2. Visit a local business (Open Square Wallet to check in. Search or browse for nearby places too), and 3. Tell the cashier who you are (The cashier taps on your name and photo to confirm it's you. You're all set). The bottom part is a promotional banner for Square Reader, featuring a hand holding a Visa credit card over a smartphone displaying a payment screen. The banner text includes "Start accepting credit cards today.", "Sign up and we'll mail you a free Square Reader.", "Get Free Card Reader", and "2.75% per swipe, no additional fees, and next day deposits". It also lists supported cards (VISA, AMEX, DISCOVER) and compatibility ("Works with iOS and Android devices").

12. m-Commerce Business Model



13. Suggested actions

- Foster a dynamic market with an environment that favors innovation and a diversity of stakeholders.
- Advocate an approach where building an interoperable standards-based eco-system for mobile commerce is central. This way, all players will be able to benefit from the system created.
- Retailers and manufacturers have to embrace a service-based approach that will strengthen core business.
- Mobile Network Operators need to consider how mobile commerce can be integrated with existing tools for revenue generation such as SMS, Premium SMS and MMS as well as the huge potential to drive data traffic.
- Mobile Phone Manufacturers need to consider how to provide mobile devices that suit the needs of the market but also drive the market in new directions, with open architecture and tools allowing new applications to develop based on their devices and platforms.
- Mobile commerce players must tailor their strategies to the conditions of each market to take full advantage.

- Interoperable systems are essential to mass adoption of mobile commerce.
- For service providers, choices need to be made to support interoperability and openness, rather than to develop and use private or proprietary model. Business models need to be developed to make sure this is possible.
- Mobile networks need to be able to deal with large amounts of traffic at high speed. Availability of technologies is vital to success of mobile commerce.
- Fully respect consumer rights and privacy.
- The business model will require collaboration among banks, mobile operators, merchants, handset manufacturers and other service providers.
- NFC approaches emerge as the top choice, despite the challenges of acceptance and device availability, because they are reliable, secure, and easy to use.
- Expand the number of integrated NFC handsets and equipments.
- Installed contactless POS terminals require application or software upgrades to accept NFC contactless payments.

Chapter II : m-Education

1. m-Education

Technology has changed our lives, and mobile devices have played an important role in this shift.

The rapid growth and expansion of mobile technologies must be seen as a great opportunity to improve and enhance education.

Mobile education enables access to learning materials and systems, the creation of content and the interaction with other students, teachers. Furthermore, it allows enhancing teaching & assessment as well as educational administration and management via mobile technologies.

It also contributes to reduce illiteracy and to close the digital divide, thus making it possible to achieve one considerable part of the MDG's (Millennium Development Goals).

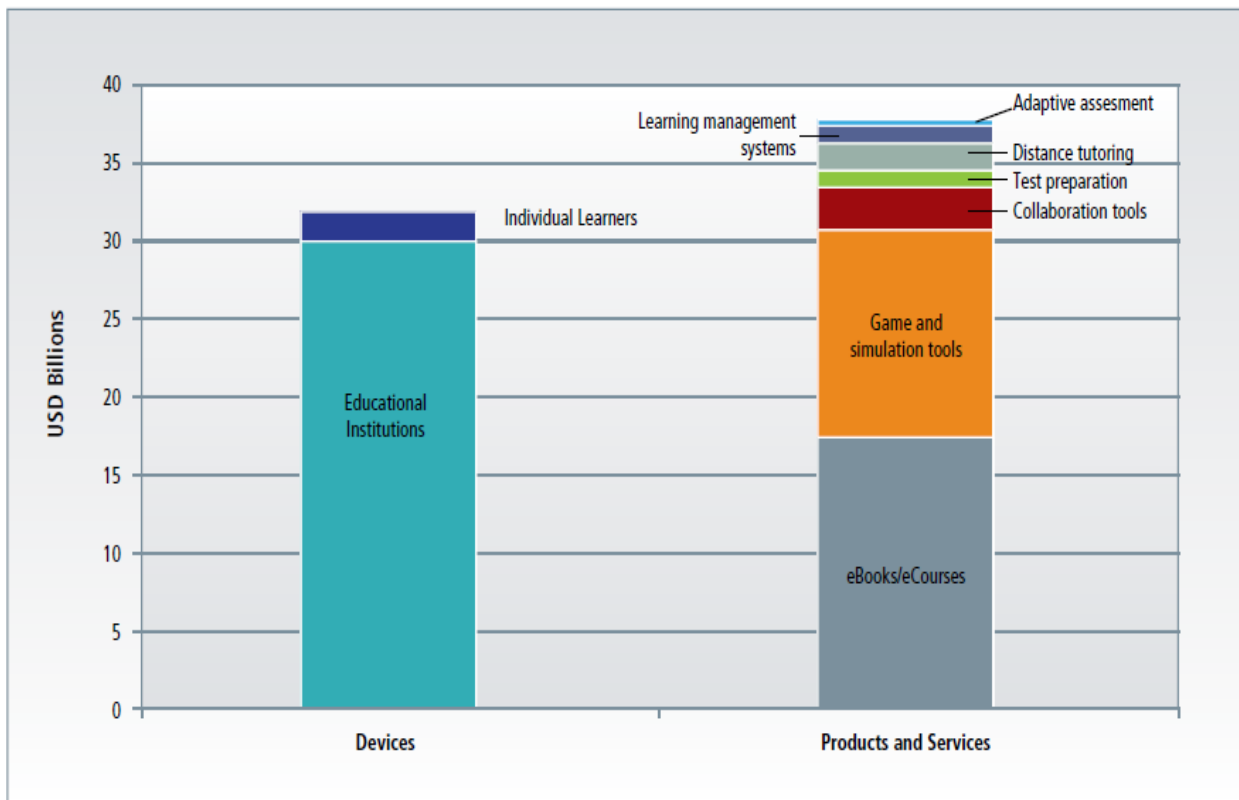
m-Education involve education institutions (Preschool , K-12, universities..), work places and lifelong learners.

2. Market overview

The m-Education market is characterized by:

- ◆ The mobile industry holds a new growth opportunity led by the education sector.
- ◆ A growing market due to high mobile penetration, changing needs, expectations and behaviors of users.
- ◆ USD 70 billion is the worldwide mobile opportunity in the education sector by 2020 as follow:
 - USD 32 billion is attributable to hardware and equipment sales.
 - USD 30 billion is linked to B2B (educational institutions) solutions.
 - USD 2 billion arises from the B2C (individual learners) category.
 - USD 38 billion for a range of products and services (eBooks, eCourses, game and simulation-based learning tools, collaboration tools, assessment tools, teacher training and syllabus structuring advice).

m-Education market opportunity by 2020



SOURCE: Transforming learning through mEducation, McKinsey & Co and GSMA (2012)

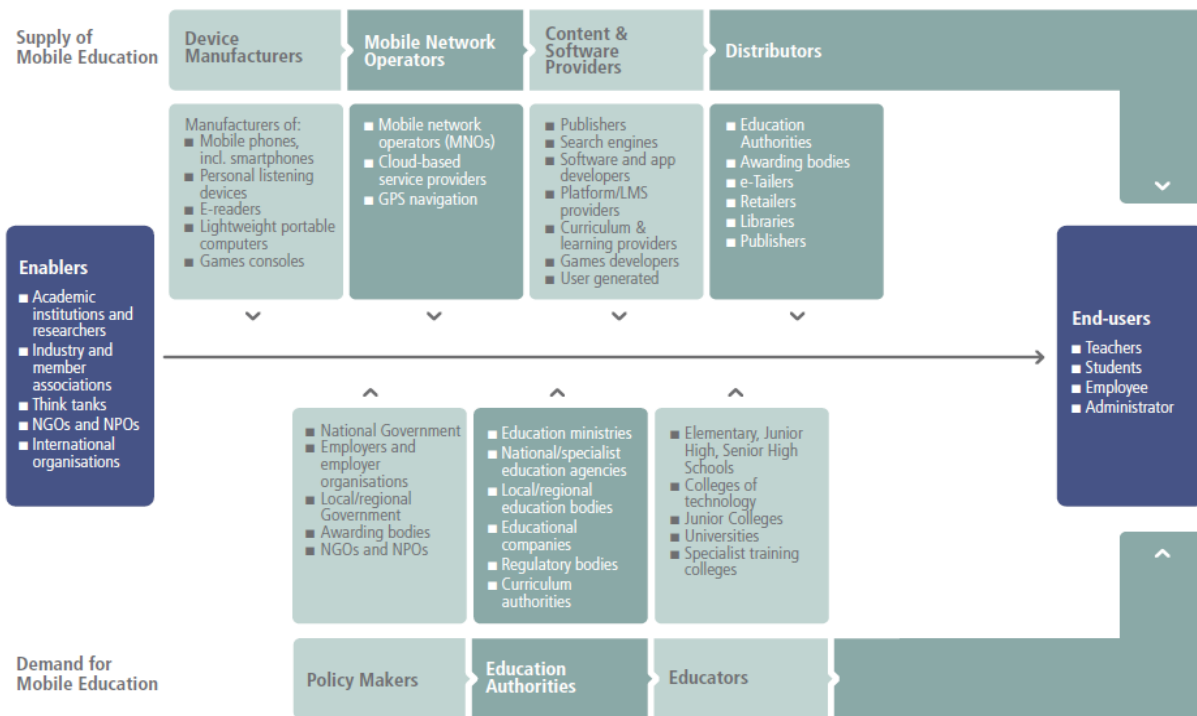
3. m-Education Value Chain

As illustrated in the figure below, the main players of mobile education value chain are :

- **Enablers:** Initiate and drive change, facilitate collaboration and test and solve problems. Often developing pilots and projects bringing together suppliers, users and research organizations.
- **Device manufacturers:** Manufacture and distribute mobile devices for general use. May target education settings or devices may be adapted for education
- **Connectivity Providers (Mobile operators):** Enable devices to be connected to learning materials, other students and teachers, and the internet.
- **Content Providers:** Provide digital content to devices related to learning outcomes.
- **Distributors (Service providers):** Distribute content and services to end users. May also sell mobile devices.
- **Policy makers:** Influence and shape policy at a micro level. Set policy objectives, influencing curriculum, assessment and teaching standards. Main source of funding for m-education.
- **Education authority:** Hold some level of control or influence over education providers. Likely to distribute some level of funding.
- **Educators:** Deliver education and learning, mostly in institutional settings

- **End-users:** Students and teachers using mobile education and other informal users.

m-Education Value Chain



Source: GSMA

4. Real life examples & Best practices

4.1. Plan CEIBAL in Uruguay¹

The CEIBAL plan is a pilot program that aims to promote the technological competitiveness, and it's an embodiment of the OLPC (One Laptop Per Child) program. It focuses on bridging the digital divide by developing a new low-cost laptop computer and promoting tech skills to poor children.

The program was able to:

- Deploy 380,000 laptops in primary schools and about 100,000 in secondary schools.
- Provide internet servers in 2068 schools (98% student coverage);and for 250 public places with Internet connection.
- Train 20,000 teachers, 500 Support teachers, and 1500 volunteers.
- Create educational portal and a TV channel on national television for content dissemination and ongoing training.

4.2. Bharti Airtel: Offering mobile education to improve spoken English and enhance career chances²

Global telecommunications giant Bharti Airtel's m-Education services mirror a classroom experience on a mobile technology platform, making education more convenient, accessible and affordable.

¹Mobile Education Landscape Report, GSMA (2011)

²BhartiAirtel, GSMA (2013)

Spoken English is one such innovative service. A novel voice based course for mobile customers, it has been designed for young learners who cannot afford the time or money, or both, to enroll for regular classes and uses the native language of the customer. It is available across India to all Bharti Airtel mobile customers allowing them access to affordable services on the go, anytime, anywhere, and has received an overwhelming response in a short time frame.

Core technologies

The m-Education services are based on IVR (interactive voice response), SMS or WAP (Wireless Application Protocol) format and offer interactive learning in the native language of the customers.

Learning content

The Spoken English course has been designed on the IVR format, supplemented by SMS and accessed on a toll-free number.

It starts with an optional 'pre-test' to determine current proficiency and based on the results customers are recommended one of two levels – Basic or Advanced. Each level lasts three months (90 days) and customers are allowed to change their level once during the course if they decide they are on the wrong level.

Business model

The Spoken English course is available at a daily subscription of Rs. 5/day with 10 minutes of free usage per day. This allows the customer to complete one lesson for Rs. 5. The course lasts for 90 days, with an automatic renewal on the daily subscription.

4.3. SFR's « e-école pour tous » offering³

Following a strategic review of the French educational market, SFR identified an opportunity to provide a turnkey offering designed to appeal to primary schools with minimal IT expertise. The communications service encompasses connectivity, support for learning capabilities, as well as training and maintenance support. Conceptually, this acts as a platform for the delivery of a digital educational experience, the components of which are supplied by other businesses with specific expertise in educational products and services.

The scope of SFR's services includes connectivity, security services and remote device management of PCs or tablets based on the preferred devices of individual schools. The integration of a learning management system (LMS) into the overall proposition is an important step, as it opens the door for students to experience the virtual learning environment. The LMS also permits auditability.

In other words, student usage information is recorded and represents a potential new service and revenue stream over the long term.

The proposition is in the early stages of being deployed and is based on a partnering model. In addition to SFR, a content provider, a LMS provider and a supplier of digital whiteboards are collaborating to deliver a 'school-as-a-service' offering; a separate finance provider handles payments from the body responsible for local school administration and disburses this to the other four service providers in the partner ecosystem. The payment framework consists of a three-year commitment of monthly subscription fees, as well as a one-time set-up charge.

³GSMA Connected Living program: m-Education, New Business Models: Innovation in Practice October (2012)

4.4. Merill Lynch: How mobile devices are supporting professional learning and development?⁴

In 2007, Merill Lynch began a seven week pilot program in which educational content was wirelessly pushed out to 2100 employees' Blackberry smartphones, enabling them to access learning materials on the daily commute or while travelling on business. The content consisted of three mandated compliance courses, accessible via both smartphones and laptops and desktop computers.

The trial participants completed their compliance training 20 days ahead of the deadline and the pilot group were estimated to have gained 4270 hours of extra productivity. In addition, the pilot participants achieved higher scores in the compliance than other Merill Lynch employees.

4.5. Tunisiana's 'NAJJA7NI' offering⁵ (Tunisia)

The US Department of State has launched a mobile English language learning platform in collaboration with Tunisiana & Edupartage.com. This service is offered to Tunisiana's 6 million subscribers for free, for a period of 90 days.

US Department of State experts have worked in partnership with Edupartage's local teaching committee to offer "Najja7ni M-English" mobile phone-based multiple-choice questionnaires (MCQ) that cover grammar and vocabulary inspired from daily situations.

The service includes 500 MCQs and will cost 0.5 Tunisian Dinars per day of use after the trial period. The revenue will be shared between Tunisiana (30%) and Pro-Invest (70%). Users will have to dial *136# to launch the service, and then be invited to choose from different themes and topic. Thanks to USSD technology, any phone, even old, even basic provides access to Najjahni Education service.

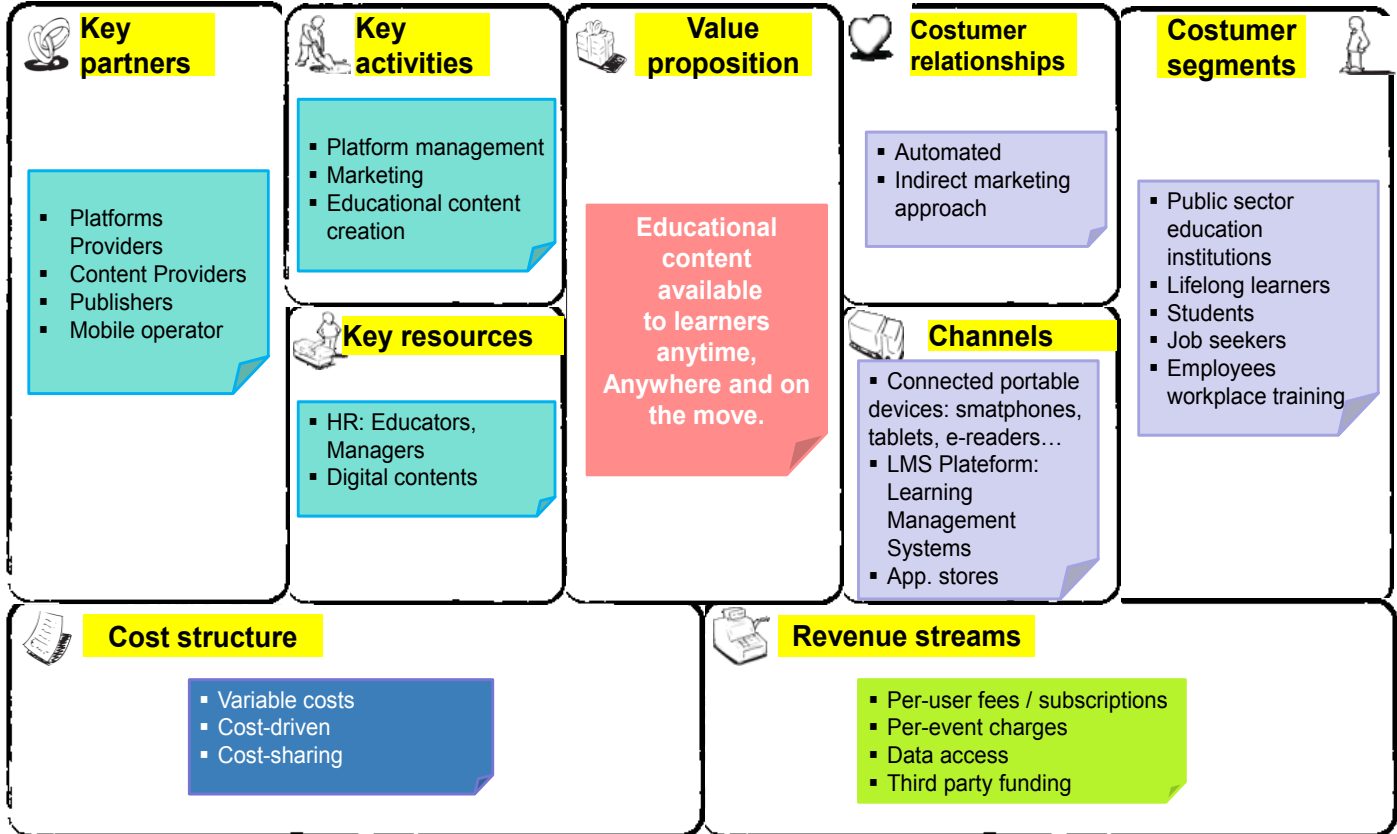
⁴The Mobile Proposition for Education, GSMA (2011)

⁵Najja7ni: Mobile learning services for improving education, English language skills and employment opportunities in Tunisia, GSMA (2014).

5. m-Education Business Model

The business model set according to the business model canvas proceeds as follow:

m-Education business model



Source: www.businessmodelgeneration.com

6. Suggested actions

In order to promote m-Education, the following actions are recommended:

- The promotion of 'digital technology and solution' policies by governments is a significant driver of demand.
- The end-user costs of m-education should be absorbed by government funding through educational institutions.
- Encourage the emergence of new cost segments of low-cost specialists in digital content creation in order to reduce publishers staff and systems costs.
- The need for different sets of tutoring materials, each one aligned with the student's local syllabus.
- The need of a trusted, high end assessments and recognizable credentials.
- Platforms need to support functions such as collaboration and social interaction.
- Promote cross-ecosystem dialogue & operator role.

Chapter III: m-Health

1. M-Health

M-health refers to the usage of mobile communications technology & devices to :

- Enhance access to healthcare information: Medical Information & Healthcare Management.
- Improve distribution of routine and emergency health services: SMS alert for taking drugs, Remote health monitoring (RHM) devices that track and report patients' conditions.
- Provide diagnostic services: Remote consultation/diagnosis and even treatment for patients who do not have easy access to a physician.
- Reach more patients more cost-effectively, raise the general health of the population, enhance hospital management systems and improve the patient experience.

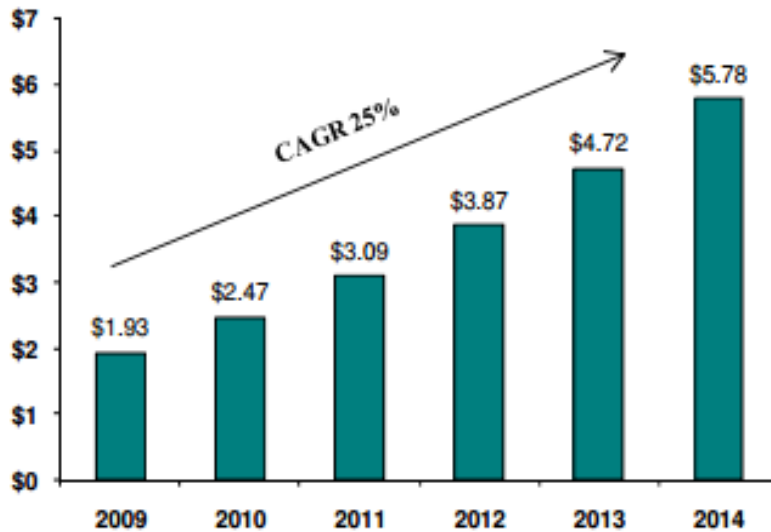
2. Market overview

2.1. Global m-health Market:

Key Findings can be summarized as follow:

- According to M&M, The mobile healthcare market comprises of connected medical devices, healthcare application, and related mobile technology. The global mobile healthcare market is estimated at \$6.336 million in 2013 and is poised to reach \$20.683 million by 2018 at a CAGR of 26.7%.
- Driven by the thriving ecosystem, SNS Research estimates that m-Health market will account for nearly \$9 Billion in 2014 alone
- Despite barriers relating to regulation, patient acceptance and privacy concerns, SNS Research estimates further growth at a CAGR of nearly 40% over the next 6 years
- The widespread availability of high speed connectivity has opened up considerable opportunities for advanced m-Health applications such as remote video consultation
- Besides video applications, mobile network operators are also eyeing on other latency & bandwidth sensitive m-Health applications to capitalize on their recent LTE infrastructure upgrades.
- m-health offers a multitude of **opportunities to the pharmaceutical industry** ranging from R&D activities to securing the supply chain and, in the battle against counterfeit drugs.
- m-health has the potential to dramatically **reduce the costs of healthcare operations**, while **improving the quality of healthcare**. SNS Research estimates that by the end of 2014, m-Health could represent up to \$250 Billion in annual healthcare cost savings worldwide.

Figure 1: European Mobile Healthcare Revenues (\$B)



Source: CSMG analysis

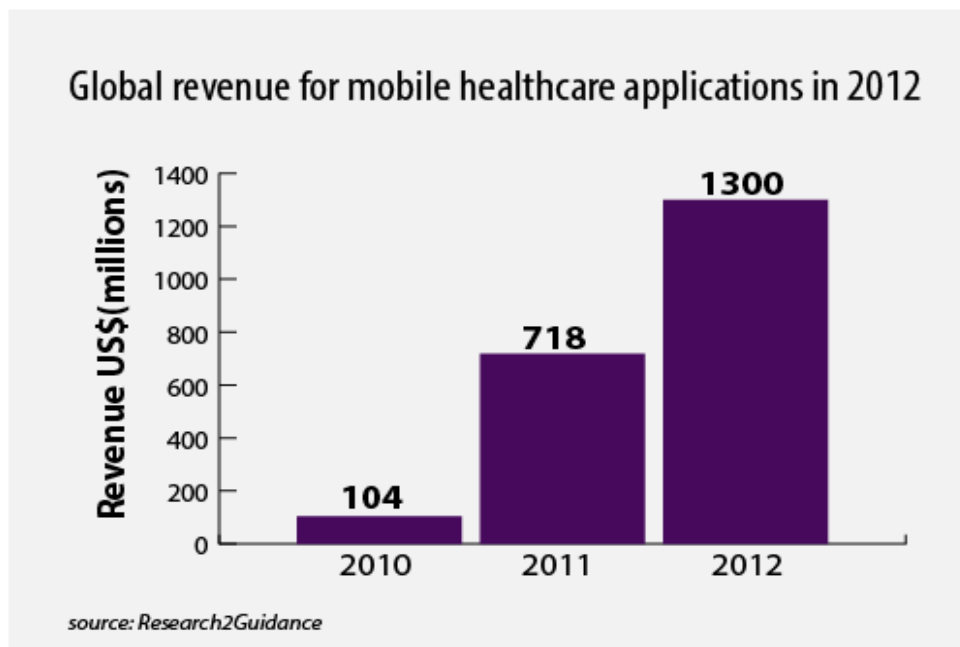
2.2 .Global m-Health App Market

The m-health App market is characterized by the following data:

- Currently there are more than 97,000 m-health applications in major app stores. 42% adhering to the paid business model.
- The majority of these applications are general health and fitness apps that both facilitate the tracking of health parameters by private users, and provide users with basic health and fitness related information as well as guidance.
- Top 10 m-Health applications generate up to 4 million free and 300,000 paid downloads per day.
- By the end of 2017, the total m-Health market revenue will reach US\$26 billion. The main sources of revenue will not come from application download revenue itself, but from m-Health services and hardware sales.
- According to M&M, since its inception (21st century), North America has contributed the maximum to both the devices and applications markets. The Asian mobile healthcare market is majorly contributed to by Japan and China, whereas the U.K. represents the most promising country in Europe. Several government initiatives such as m-Diabetes, Indo-Dutch Project Management Society (IDPMS), Mobile Alliance for Maternal Action (MAMA), EpiSurveyor, Ushahidi, Frontline SMS, OpenMRS, RapidSMS, and Mwana accelerates the rapid adoption of m-Health technology in emerging countries such as South Africa and Brazil.

The following figure illustrates the global revenue for mobile healthcare application in 2012.

Figure 2: Global revenue for mobile healthcare applications in 2012



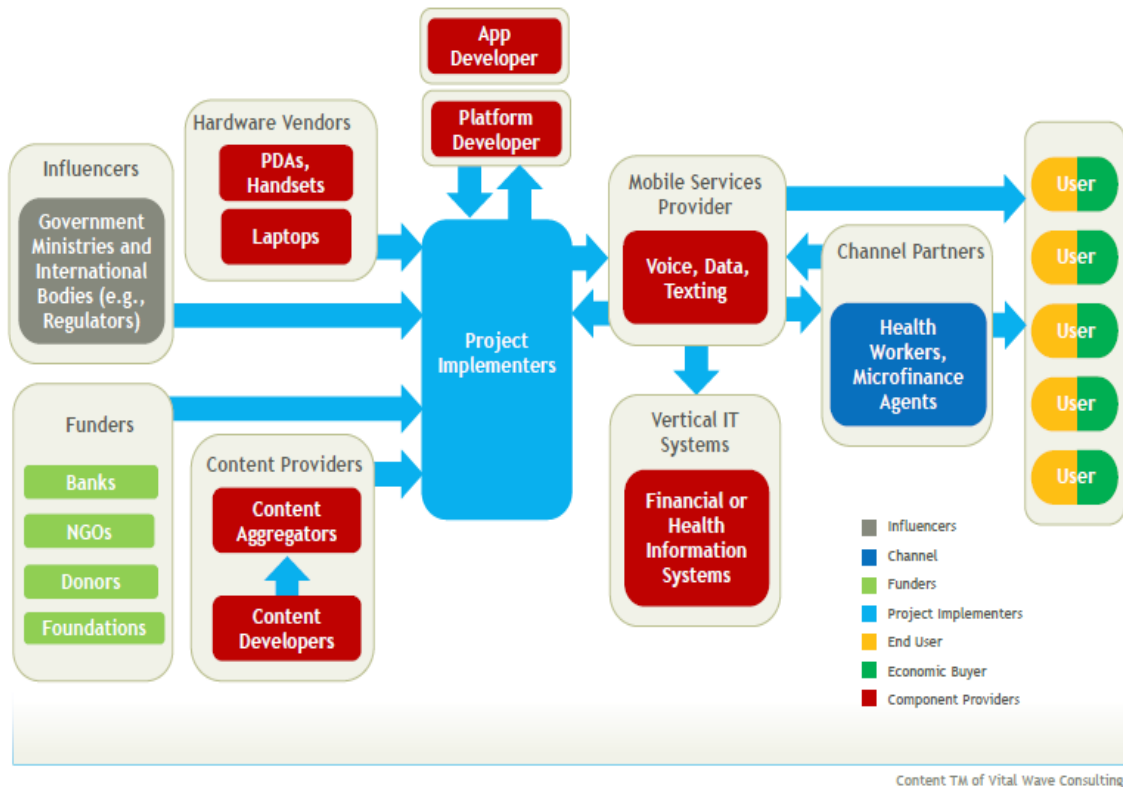
Source : Research2guidance report - March 2013

3. m-Health Value Chain

Mobile healthcare services and applications demonstrate a clear benefit to all players in the value chain, ranging from MNOs and device manufacturers to patients. The m-health value chain is formed by several players.

- **Software vendors** :Develop applications and platforms to serve healthcare to patients and health workers
- **Hardware vendors** : Manufacture and distribute mobile devices for patients and health workers (example : smartphone, tablet, healthcare devices us the wireless Telcare blood glucose meter ...etc)
- **Connectivity Providers (Mobile operators)**: Provide access to data through the mobile network and connected m-Health devices.
- **Content Providers**: Provide health care related content.
- **Funders** : (Donors or investors) Provide the financial resources necessary for the development

Figure 3 : m-health Value Chain



Source : SUSTAINABLE FINANCING FOR MHEALTH, Vital Wave Consulting , mHealth Alliance (2013)

4. Real life examples & Best practices

Health care services can be classified in different ways. GSMA was based on those criteria on its report, Mobile Technology's Promise for Healthcare in 2010: Simple m-Health Solutions, Advanced m-Health Solutions and Regulatory m-Health Solutions.

4.1. Simple m-Health Solutions:

Simple m-health solutions empower patients to manage their conditions and give providers access to critical health information through the use of low-cost and accessible mobile SMS technology. SMS is an ideal solution to engage patients due to the ubiquity of mobile devices and the high utilization by target populations: Text messages can be sent over any mobile operator's network. Examples: SMS sent to patients who have an appointment, providing the name of the patient and a phone number, in case the patient is unable to attend the consultation. The objective is to reduce absenteeism of scheduled appointments by optimizing available resources by decreasing the number of missed appointments, thereby maximizing efficiency and reducing waiting times for hospitals.

Mobile Authentication Service (MAS) in Nigeria

The Nigerian National Agency for Food and Drug Administration and Control (NAFDAC) launched a Mobile Authentication Service (MAS) for one specific drug (BIOFEM's Glucophage) used in diabetes treatment. This service (MAS) consumers to confirm the authenticity of the drug by scratching a label on the drug packaging to reveal a code number, and sending this number by **SMS (for free)** to a database server. An immediate text reply confirms whether the drug is genuine or a fake (or if the secure PIN has already been used or is not recognised), and also contains an always-available helpline number.

The trial was a really success. Plans are in place to scale up the system.

BM : A sustainable BM based on SMS for Free (**Supported by pharmaceutical company**)

Vodafone's Ask a Doctor (India)

Availability: Vodafone's Ask a Doctor – Health@5 is a mobile app in India, Users can activate the service by sending an SMS.

Business model: It is offered at a cost of Rs. 5 per day (unlimited queries)

Description: This service allows individuals to read basic information about disease management, common healthcare myths and wellness. Users can also send questions to a panel of medical experts that are answered within 24 hours.

4.2. Advanced m-Health Solutions:

Advanced Mobile Communications offer a variety of mobile healthcare solutions

Involving:

- Devices that monitor blood sugar levels or heart rates and then transmit that information wirelessly to a physician.
- Asthma monitoring a mobile phone application that allows patients to input readings from peak flow meters and transmits the data directly to GP's surgeries can provide consistent baseline data
- Delivering Live services for users whilst recording actual visit times; combining real-time electronic call monitoring with two-way communication.
- Mobile medical applications that let clinicians and patients easily document, retrieve and communicate patient information at the point-of-care.

3G doctor in the UK and Ireland

Availability: Open to residents of the UK and Ireland 24 hours, seven days a week.

Services: Video consultations are available on the 3G Doctor website and mobile platform.

BM: Pay per session (35 £ per session)

Description : video chat with a licensed doctor on 3G Doctor .The web platform lets patients chat live with medical experts. Consultations are available with registered doctors in the UK and Ireland. A UK or Ireland-based phone number is needed to connect. (often at night or on the weekend).

Heart Monitoring M2M Device in USA

Cinterion's module in USA:

- ◆ Enables secure and reliable communication of detailed diagnostic data via cellular networks and the Internet,
- ◆ Provides patients and their physicians with 24/7 monitoring and improved detection and visibility of arrhythmia events.
- ◆ Helps reduce hospital stays and healthcare costs
- ◆ Ensure patients' data privacy

4.3. Regulatory m-Health Solutions:

For Regulatory m-Health Solutions, the main challenge lies in:

- To find the right balance between the different regulatory motivations, and resulting dynamics, of the communications and healthcare industries while also coping with significant regional variations.
- To support innovation and serve a mass consumer market, mobile health needs a globally harmonized standards and interoperable approaches.
- To find a balance that supports innovative m-health solutions by rewarding positive health outcomes and providing regulatory controls that are proportionate to the risks and applied evenly.
- To assist healthcare professionals, insurers, and patients in Regulatory compliance, confidentiality requirements for patient data for example.

"Health applications play a pivotal role in the mHealth movement because mHealth relies on providers' use of these applications when servicing patient. This creates a dilemma that has not been seen since the development of computers. Providers have been using software to aid their medical decisions for some time, but now providers can also use their mobile devices to help them make actual diagnoses. In addition, mHealth is offering solutions directly to the consumer. While in developing countries, such as the United States, this can create problems. Even though the industry is still in its infancy, statistics show that mHealth is growing exponentially." **Source** : FDA REGULATION OF MOBILE PHONE APPLICATIONS AS MEDICAL DEVICES, Alex Krouse, J.D., 2012, Indiana University Robert H

Med Africa in Kenya

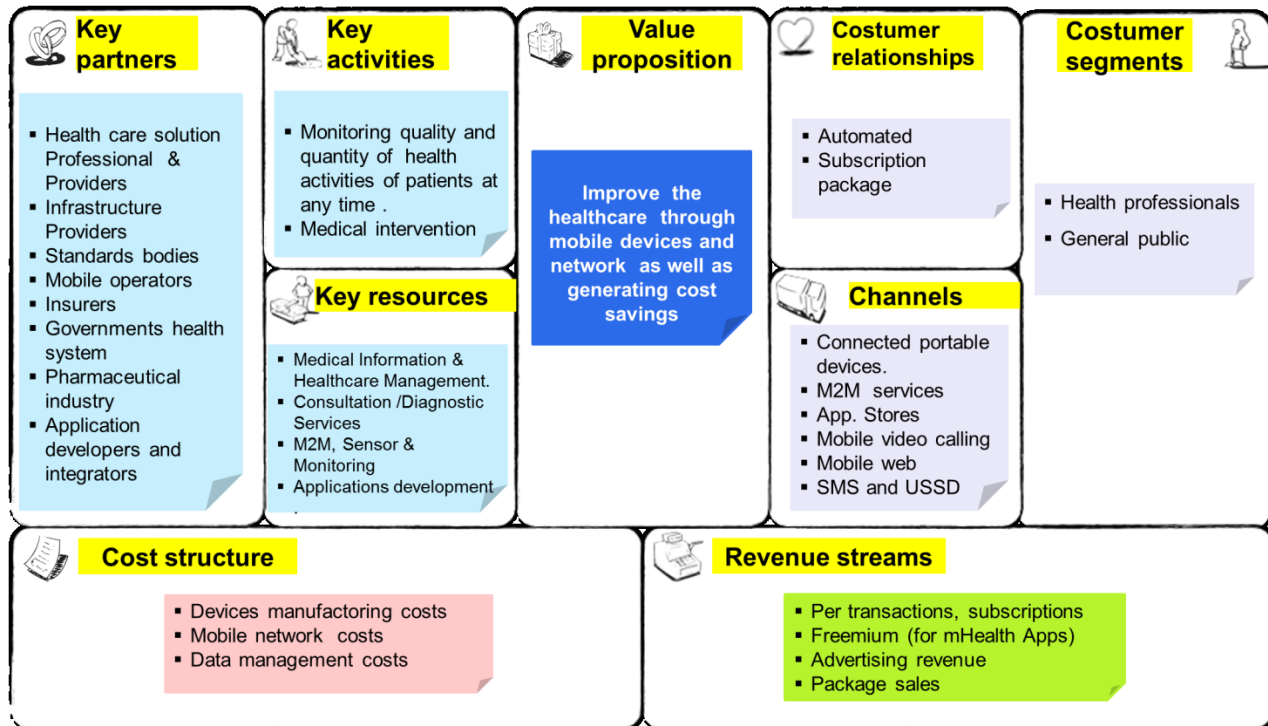
Availability: Available for smart phones and less powerful feature phones;

BM: Free content supported by advertising, offer premium content for a subscription, doctors pay about \$10 a month for access to its user base.

Description: application that connects people in Kenya to quality healthcare and important health-related information. Launched in November 2011 and by March 2012 more than 70,000 users had downloaded the app from Samsung Apps, Nokia, Safaricom and the Android Market.

5. m-Health Business Model

The business model set according to the business model canvas proceeds as follow:



www.businessmodelgeneration.com

Freemium: a business model most commonly used for digital goods and services whereby a basic version of the product is provided free of charge, but a premium is charged for advanced features or functionality

Figure 4: m-health business model

Source: www.businessmodelgeneration.com

6. Suggested actions

- Coordinate with Organizations and engage governments to identify real needs and demands of target beneficiaries and classify local health priorities.
- Thinking to make database of locals conditions, environments, stakeholders and barriers in countries sites of m-Health services.
- Identifying existing similar initiatives and players to not duplicate efforts.
- Establish strategic partnerships to support scale up of the project (industry partners such as mobile technology companies, NGOs...).

- Perform monitoring and evaluation using meaningful and measureable metrics. This process will serve as a basis for decision for future launches.
- The acceptance of mobile health solutions by physicians will be a key enabler for scaling up the market: facilitating adoption process and the alignment of incentives for healthcare professionals will motivate them .
- Identifying health system priorities: the lack of supporting policy and legal issues must be remedied by the transfer of knowledge from successful experiences. (mHealth alliance sharing experience)
- Engaging the private sector in the development and implementation phases of m-Health services through the adoption of new business models that help to encourage them for more participation.
- Telecom Operators have a larger opportunity if they can establish themselves at the core of the m-Health ecosystem rather than as pure transport players (selling consumer health devices, charging a set up and monthly service fee associated with devices like IT services as user authentication).
- The mobile application market is highly fragmented with an ample number of software-developing companies .This represents a major restraining factor that limits the control of theirs efficiency and the regulation of this field: standardization work and control will be necessary.

Chapter IV : m- Governance

1. m-Governance

Mobile Government can be defined as the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits to citizens, businesses and all government units

1.1 Uses

The main uses could be classified in 4 categories of services:

- Alert Service (informational services, Birth & Death Registration, Emergency alerts)
- Interactive Service (Learning services, Graduation results, interactions between agencies, between governments and employees, between governments and businesses)
- Management Service (Call Center, data up date, Daily Grievance Statistics).
- Utility services (SMS-based transaction)

1.2 Key benefits

The beneficiaries of m-governance can be classified as Citizens, Government's unit/Organizations, and Businesses (G2C, G2G & G2B). The main benefits are:

- Reduction of service processing time.
- Reduction of operating costs and less paper work.
- Early detection of problems and crisis.
- Enlarged accessibility (fast and easy access)
- Transparency: Citizen becomes more loyal to the government.
- Increased participation of citizen. (Empowerment)
- Satisfaction of citizen and private users: reduction of human error due to the automated process, elimination of queues ..)

1.3 Objectives

The main objectives of m-Governance are:

- Extend services where wire line internet access is limited.
- Reach to the masses through the use of simplest technology.
- Provide point to point delivery of government services in a personalized manner.
- Improve operational efficiency.
- Provide cost-effective services
- Facilitate business interaction
- Improve the lives of citizens

1.4 Critical Success Factors

- Policy on e-Governance and m-governance
- Right data and clear needs for content developers
- Technology platform (SMS, MMS, WAP, SMS Voice, Apps, M2M, Video)
- Existing an effective Partnerships
- Effective and real demand for m-governance , users adoption
- Transaction cost
- Communication and change management

2. m-governance services

The most important m-Governance services cover many daily citizens' uses. Information provided may concern more than one or the following aspect of daily needs both for citizens, businesses and all government units:

- Health information : SMS - Appointments / Preventives actions / Alerts / ...etc
- SMS Birth & Death Registration
- SMS for utility services (electricity, telecom bill payment, repair, ...)
- Travel information's (Public Transport) using SMS/Apps
- Checking information regarding bank accounts, transactions, property, investments,etc
- Accessing weather forecast information
- E-Appointment alert – SMS is sent to a person one day before appointments
- Public crime alert services via SMS of crimes in the neighborhood
- Traffic information and payment of traffic offenses
- Information regarding current Border Wait time for crossing Country
- Key economic statistical SMS service providing national economy estimates, consumer price index, wholesale trade index, etc.
- Democracy, electronic voting, politic decision making
- Economic indicators, exchange rates, currency converter
- Key Government services phone numbers
- Member of Parliament contact information
- SMS Graduation Results
- Prayer timings Apps
- Trade license status/ fees
- SMS alerts for passport renewal, road tax renewal, contravention
- Safety information's

3. m- Governance value chain:

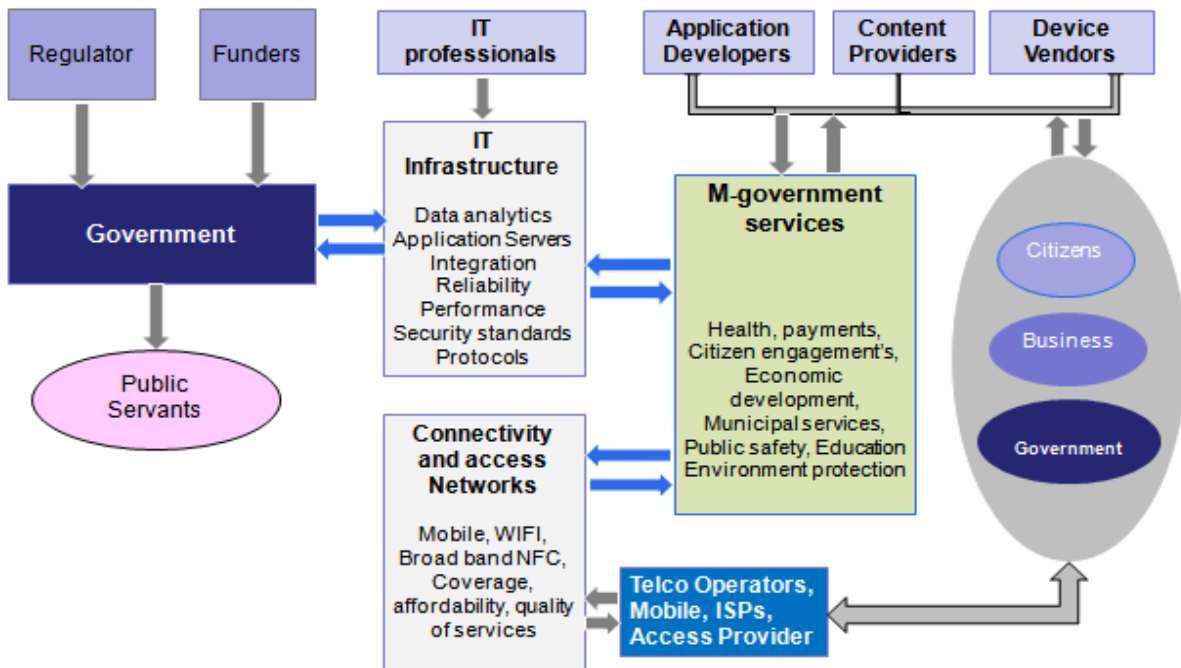
The main stakeholders of m-Governance are:

- **Telecom operators:** provide services that are responsive to the demand of m-Governance service consumers
- **Government:** it develops policies and standards, coordinate between partners. Governments can also

stimulate demand and create the local market.

- **Device manufacturers:** Manufacturers builds mobile devices that can conduct voice or data transactions between proprietary networks and ensure updated operating systems.
- **Content Providers:** Provide digital content to devices related to learning outcomes.
- **Infrastructure providers :** Manufacturing and assembling of switches, gateways, base station controllers, mobile switching centers, packet control unit, GPRS Support Node, Gateways, WAP Servers, PSTN interface and other circuit switch .
- **Application developers:** Create mobile applications to support m-Governance services and support personalization and synchronicity.
- **Content developers and enablers:** Compile content into mobile-ready formats so applications can immediately extract desired information and package it according to users' requests
- **End-users:** Citizens, businesses and government units

Figure1 : m-Governance Value Chain



Source: Susan Cable, Public Technology Institute, 2010

4. Real life examples & Best practices

4.1 m- governance in India:

The National e-Governance Plan (NeGP) of the government of India takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision. Around this idea, a massive country wide infrastructure is developed, and large-scale digitization of records is taking place to enable easy and reliable access over the internet.

The Indian government **integrates mobile government as a part of its e-government strategy**. It views the growth of mobile as an instrument by which the government can interact with citizens in rural areas, especially for the benefit of the economy. Mobile government forms part of **its vision to connect the unconnected**.

As an extension of its e-Governance vision and with the progress of the mobile phone subscriber base of over 870 million in the country, the Government has decided to also provision for access of public services through mobile devices.

Department of Information Technology (DIT) implemented a **Mobile Governance Innovation Fund** to support the development of suitable applications by Government Departments and Agencies and also by third-party developers including start-ups. . The objective of this fund was to accelerate the development and deployment of the mobile applications across the entire spectrum of public services.

Also **creation of knowledge portal and knowledge management framework** on mobile governance enhanced the service provision capabilities of various stakeholders in m-governance.

he integrated platform allows agencies to deliver services through the following channels: Mobile e-governance Service Delivery Gateway, SMS Gateway, Unstructured Supplementary Services Data, Interactive Voice Response System, Location based services, Cell broadcasting based services, Mobile payment services.

4.2 m-Governance in Africa

The implementation of m-governance can create a greater visibility to the government-citizen/businesses/agencies/Organizations relationship and allow governments to become more efficient and effective in fulfilling their service-delivery functions. The figure 2 illustrates some examples of m-Governance initiatives which implemented in Africa.

In some cases it is the private sector driving forward the mobile government agenda.

IBM is working closely with the Kenyan government in shaping the framework for the organization of its data-management systems and enabling better citizen access.

HP is about to ramp up its investment in sub-Saharan Africa and it sees the public sector as an important part of its strategy for growth for the region. Examples of its work include improving disease surveillance through mobile health monitoring technology in Botswana and the deployment of a technology platform providing education to those without access to formal schooling in Senegal.

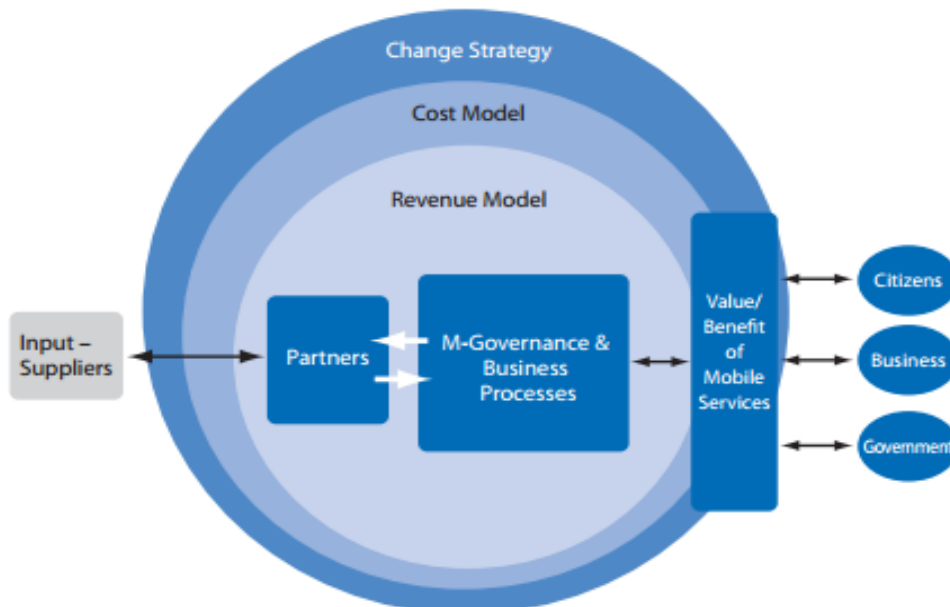
Figure 2: m-governance in Africa

Africa, examples of mobile government projects			
Country	Project	Type	Notes
Rwanda	TRACnet	G2C	A national program supporting those living with HIV
Kenya	NAFIS/NALEP	G2B	Agricultural information service (farmers call in for recorded information)
Tanzania	Agricultural Marketing Systems	G2B	Development Program Commodity price service by SMS, administered by Vodacom and Ministry of Industry and Trade
Uganda	The Question and Answer Service (QAS) Voucher System (VS)	G2B	Voucher system enables personalized advice for farmers, run by the Rural Empowerment Network
Tunisia	Mobile Gov	G2C	Information service, run by central government and delivered by SMS, providing information on travel, weather and schools
Egypt	Government e-Procurement Portal	G2C	SMS-delivered service on government employment opportunities and health; the Ministry of State for Administrative Development worked in partnership with Vodafone Egypt
Egypt	Free SIMs for farmers	G2B	1 million free SIMs for farmers subsidized by central government
South Africa	ID Track and Trace	G2G	Tracking of ID document application via SMS
Uganda	National Water and Sewerage Corp Payments	G2C	Allows consumers to pay water utility bills via MTN Mobile Money

Source: Infarna Telecoms & Media

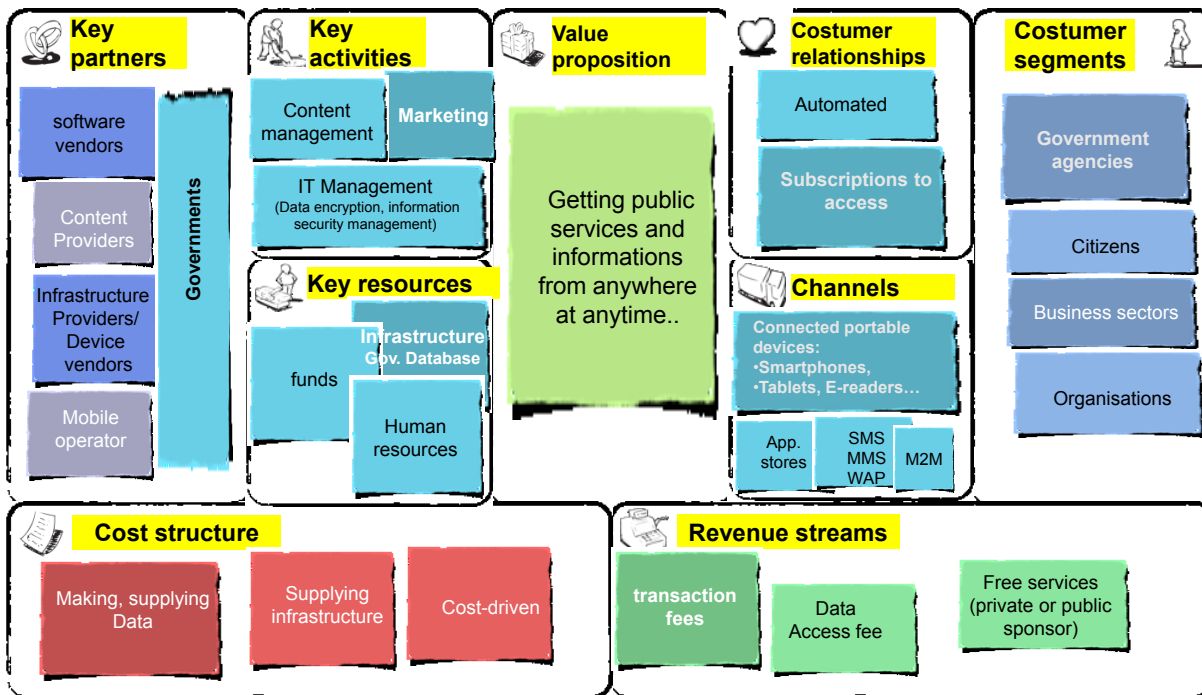
5. m-governance Business Model

Figure 3: m-governance business model



Source: Susan Cable, Public Technology Institute, 2011.

Figure 4: m-governance business model canvas



Source: www.businessmodelgeneration.com

6. Suggested actions

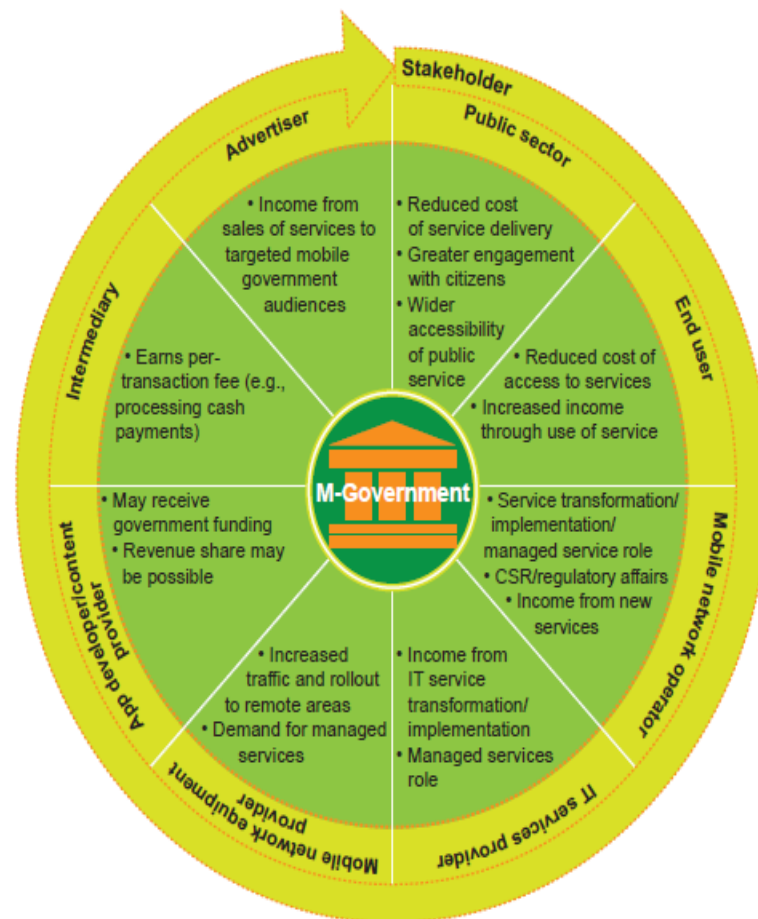
The following recommendations may be useful to promote m-governance:

- M-government services should be viewed as a **strategic project** and planned carefully to reduce the chances of emergence of the islands of information systems dilemma.
- Introducing **Mobile government technology** means that the work conditions are changed and the environment is modified, therefore existing policies, practices, and regulations may need to be updated or even created: Revisiting current policies to make certain that they are still valid and appropriate for the new environment and ensuring privacy and security of government data.
- Governments must make a data base about their staff work and citizen's needs and types of devices could be used to help them do their jobs better or make their lives easier: Developing apps for multiple platforms is more expensive, but can allow people to use Governance-apps with their existing mobile devices.
- Governments should try to **integrate mobile within its existing digital platform** as much as possible. It should be an incremental change, not a giant and costly change example: using existing applications and using them in other domains.
- Governments can **learn from other organizations** around the world that use mobile technology to take payments, help citizens finds embassies and track court case schedules.
- Establishing technical infrastructure must be reviewed to identify if and how it can support a more mobile workforce. Maintaining devices and infrastructure that remains on site is different from maintaining ones

that are in constant movement.

- Mobile government implementation pass through 3 steps: **mobile access, mobile content, mobile services and applications**: establish with partners in each of those steps is necessary, the private sector and organizations can play a crucial role.
- Governments should to **set-up a Mobile Governance Innovation Fund** to support the development of suitable Governance-applications by developers including start-ups. The objective of this fund was to accelerate the development and deployment of the mobile applications across the entire spectrum of public services.
- As illustrated in the figure below, an effective partnership (Public/Private Sectors) is the Key of success in any m-government project. All stakeholders' benefits depend on synergies created and engagements of each player.

Figure 5: Benefits to the main stakeholders in m-Governance services



Source: Informa Telecoms & Media

Chapter V : m-Sport

1. m-Sport

Mobile sport include services and applications for mobile phones that enables sports fans to keep track of their favorite sport, player or sports event at anytime and anywhere. It can be real-time information such as scores, rankings, news, statistics and more or other functionalities including the integration of pictures, video's of goals and other key events.

2. m-sport Market overview

2.1. Global m-Sport Market:

Sports fans are using Smartphone and tablets in growing numbers to access online sports content, according to a new report from Burst Media. Among all sports fans, 45.7 percent use smartphones and 31.6 percent use tablets to access online sports content and video at least occasionally while 23.8 percent use Smartphone and 17.1 percent use tablets to watch live sporting events. The results points to the emergence of tablets and smartphones as sports content consumption platforms.

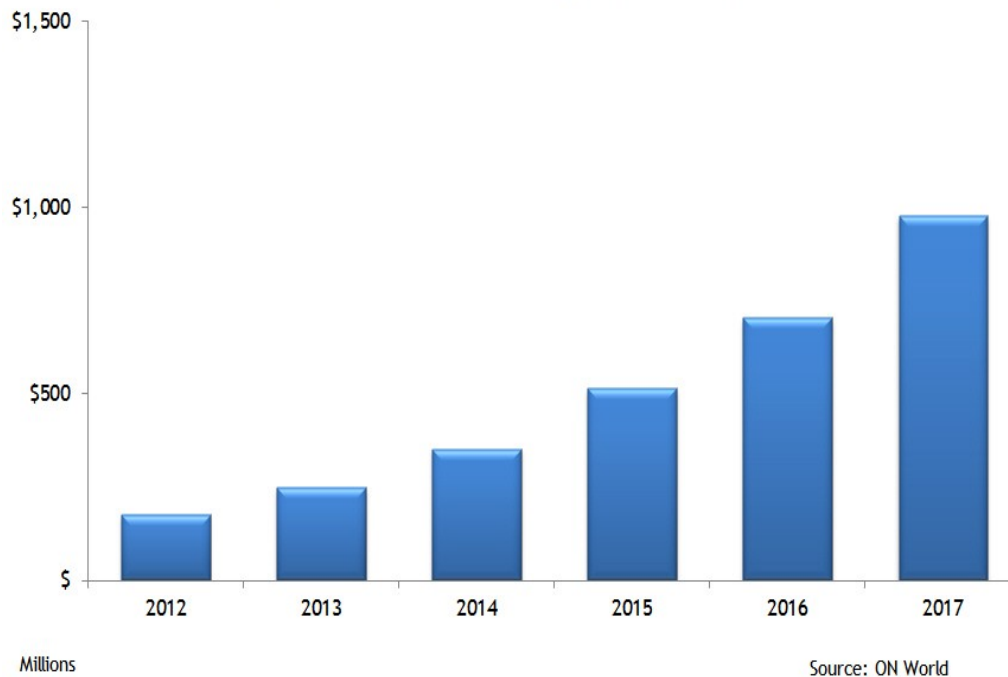
Viewers are no longer in a passive mode of consumption that has the eyes riveted on the TV; they act and react in parallel on their smartphones or tablet computer.

ON World's published, in 2013, report covers the growing market opportunities for mobile sensing solutions in sports and fitness including wearable wireless devices, MEMS sensors and mobile applications.

According to this report:

- As profit margins continue to decline for hardware devices, paid mobile apps and subscriptions will become increasingly important. Global cumulative revenues between 2012 and 2017 for mobile sensing sports and fitness apps and subscriptions will reach \$975 million.
- By 2017, there will be 500 million annual sensor shipments for mobile sensing health and fitness applications and two-thirds of these will be for activity tracking.
- There have been 150 million mobile sensing health and fitness app downloads up to 2013 and this is set to increase 900% over the next five years to 1.4 billion.

Global Sports & Fitness Mobile Sensing App & Subscription Revenues



2.2 . m-sport as a canal of advertising:

Mobile sport is a canal of promotion in which the element promoted can be a physical product, event or a brand name. The goal is to provide the client with strategies to promote the sport or to promote something other than sport through sports.

Sport advertising is divided into three sectors:

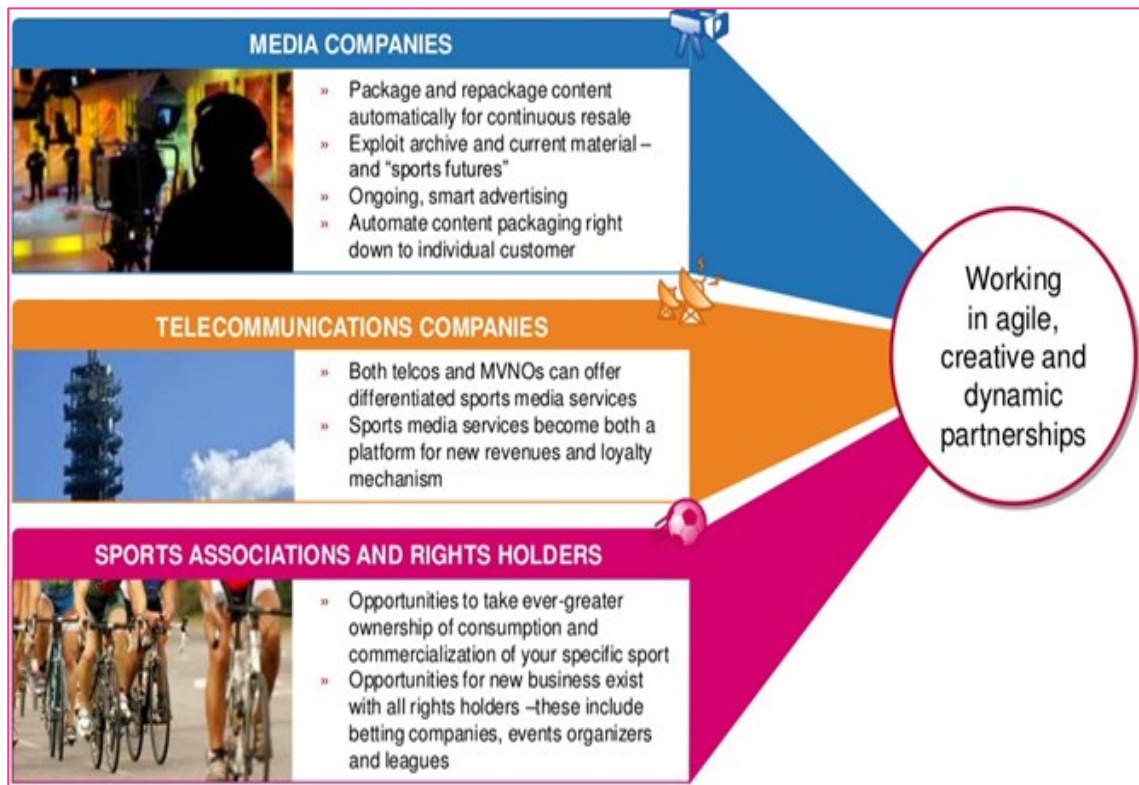
- The advertising of sport events and sports associations such as the Olympics games, European's Football League and other types of sport competition (Athletic games, Handball, Volleyball, Tennis ...).
- The use of sporting events, sporting teams and individual athletes to promote various products. Products can but do not have to be directly related to sports
- The promotion of sport to the public in order to increase participation.

Mobile sports products can classified into four groups:

- Sport events : Players appearances, arenas and stadium.
- Sports goods : Equipment apparel, sportswear, footwear.
- Sport Training: fitness and health services, sport camps and instructions
- Sports informations : Magazine, radio, TV, SMS, MMS, applications.

2.3. m-Sport Business Opportunities:

Figure 2: mobile sport business opportunities



Source: New media in sport, Miguel Morcuende, Mar 01, 2011

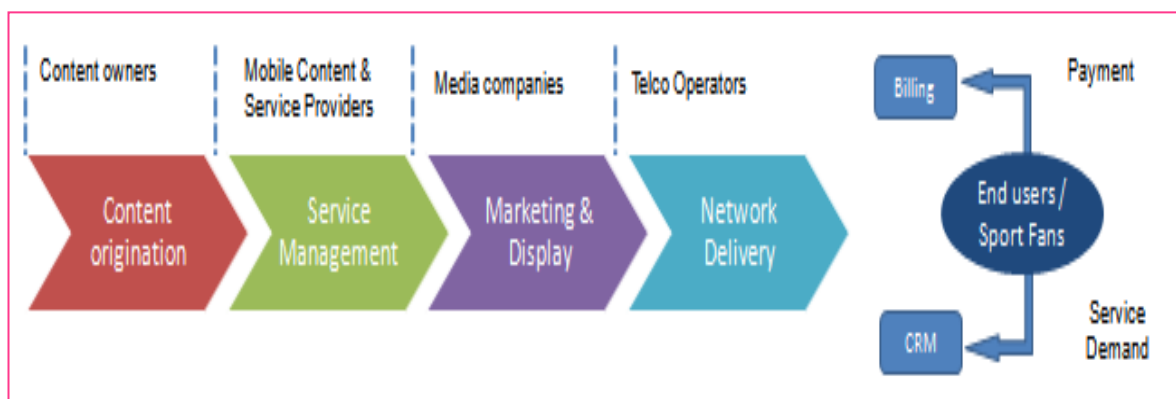
3. m-sport Value Chain

The m-sport value chain is composed by the following players. Partnership program is the main source of income for m-Sport.

- **Content Owners:** They include pre-owned contents and information that can be bundled with a live event such as text, video instant replays, or advertising to be distributed to fans, they can increase the usage of their content assets.
- **Event Hosts:** They organize and host events on behalf of teams and other third parties; they are looking to differentiate their venues and the services they can offer to their customers and spectators.
- **Mobile Content & Service providers:** Aggregation and publishing of content and services in different formats (SMS, MMS, WAP, Apps, Video, catch-up..)
- **Media Company :** Marketing and promotion of sports, product and services
- **Mobile Network Operators:** Deliver access to demand for rich mobile media devices and broadband data delivery services. With the availability of many different wireless broadband technologies like Wi-Fi, 3G, WiMAX or LTE.

- **Advertisers:** With mobile sport services and applications, advertisers can effectively target different segments, such as sports fans at an event, with a rich media interface. The publishing tool and distribution service will support promotions to be delivered based on activities in the event (promoting the jersey of a player who just scored), profile of the sports fan (a football fan attending a football game), the time of day or time in event (halftime) or location (offer a promotion to visit a restaurant near the venue before or after the event).
- **Sports Fans:** Sports fans are the primary segment of end-users for the mobile sport: a sports fan can be an enthusiast for a particular athlete, team, sport, or all of organized sports as a whole. Sports fans often attend sporting events or watch them on TV, and follow news through newspapers and Internet web sites, mobile applications.

Figure 3 .Mobile sport value Chain



4. Real life examples & Best practices

Mobile sport services vary by area of activity.

4.1. Telecoms experience:

4.1.1 Orange: Orange has partnered with Sky sports to allow subscribers to watch the latest live sporting action and up to the minute news from Sky on the move. With access to Sky Sports 1, 2, 3, 4 and ESPN they can tune in live on their mobile and never miss a moment. They also get Sky News, Sky Sports News, CNN and At the Races.

4.1.2. Vodafone: Vodafone UK has partnered with Sky Broadcasting, to provide subscribers with an all-the-football-you-can-watch-per-month premium streaming service for £5 per month or 50p per highlight. Vodafone and Sky Broadcasting split the revenue. The service also includes score and game alerts and is much like the addition of a premium channel in a cable TV subscription plan.

Subscribers to 4G are offered either free mobile access to Sky Sports Mobile TV or free access to the Sportily Premium music streaming service, for six months. After the introductory period each will cost an extra £4.99 per month.

4.2. Media & Association examples:

4.2.1: The Sports Network (TSN) and Contec Innovations:

According to mobile marketer, in its articles ,The Sports Network, Contec expand mobile sports services, published in 2 January 2009,The Sports Network (TSN) and Contec Innovations have partnered, in 2009, on a new global mobile sports service, providing mobile access to all things sports for carriers, publishers and brands.

Covering more than 50 sports and hundreds of leagues and events worldwide, this initiative lets mobile consumers access up-to-date news, photos, scores and results, statistics and live action.

“Available via mobile Internet, SMS and MMS, the service has three distinctive audiences : wireless carriers seeking to enhance their sports offering; mobile service providers that wish to add new services to their portfolios; and media companies and brands that sponsor mobile sports content in their local markets or on a global basis.”

Dan Butcher, The Sports Network, Contec expand mobile sports services, mobile marketer January 2, 2009



4.2.2: Monaco mobile application:

AS Monaco has launched its mobile applications and tablets in February 2013, fans follow the entire Live Text matches, results and rankings updated live, watch all the videos shot in the heart of the news of the club, respond via Twitter or Facebook directly from the applications.

Fans can purchase tickets or make Store shopping online club.

Finally, fans can take pictures with the jerseys AS Monaco FC.

The applications allow fans to:

- watch the entire Live Text matches with all results and rankings Updated live (goal alerts will also be sent to fans in French, English and Russian)
- watch all the videos shot in the heart of the news of Claudio Ranieri's men
- react on Twitter or Facebook directly from applications
- take photo with jerseys AS Monaco
- go to the ticket shop or online club
- locate the Stadium Louis 2 from their mobile and access route to see their match ASM.

Source : Lancement des

applications mobiles et tablettes officielles de l'AS Monaco FC 100% gratuites , Actu Club 22/02/2013 , www.itrpress.com

4.3. Media Company

4.3.1 : BBC SPORT App : Hannah Bouckley indicated in its article “BBC Sport app launches for iPhone, Android coming soon” that The BBC has launched BBC Sport, a dedicated sports app that collates the Beebs sports coverage including: news commentary, analysis stats and live scores. Launching initially on iOS for the iPhone and iPod, an Android version is coming very soon.

Using the new BBC Sport app, you can follow the latest developments in all these sports, along with live and on-demand video highlights and stream Radio 5 Live to listen online.

The release of BBC Sport follows the success of the BBC Olympics app, which was downloaded by 2 million people.

Lucie McLean, from BBC Future Media said: “Through the huge success of the Olympics we know that audiences love to access sport services through both mobile browser and apps. The new BBC Sport app builds on the success of London 2012 to give users an even easier way to get the content they love, whether it’s checking out how their team got on, following live text updates on the day’s sporting action or catching up with the latest news.”

4.3.2. Fox sports GO:

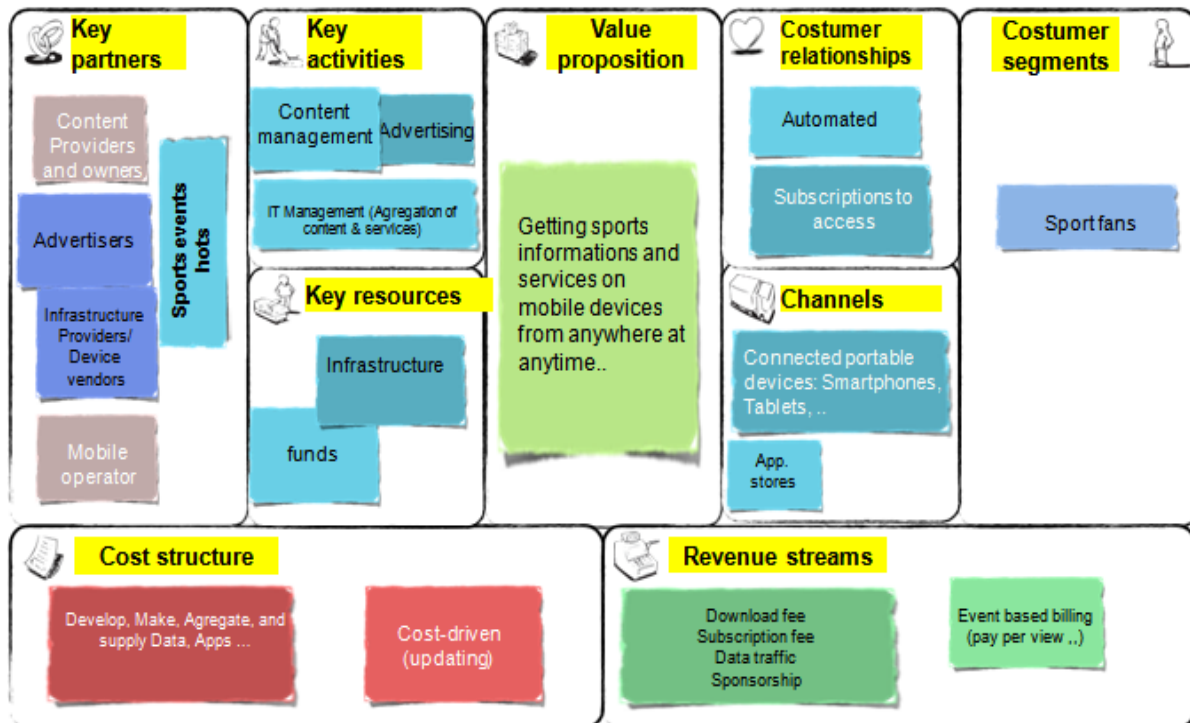
FOX Sports GO is an application that enables subscribers watching live sports and great shows from FOX Sports .Key features include:

- News and exclusive analysis from the FOX Sports team of writers and on-air personalities
- Scores, stats, standings and more for all major sports.
- Video: highlights, pre- and post-game interviews,
- Local content (news, video and analysis) from the Fox Sports Net (FSN) regional cable networks.

5. M-sport Business Model

The business model set according to the business model canvas proceeds as follow:

Figure 4: m-sport business model



Source: www.businessmodelgeneration.com

6. Suggested actions

- Mobile sport can be used as an ideal channel for the development of sportsmanship among fans sports: sports organizations, local and international leagues may think to influence sports fans through this channel enjoying of outstanding events.
- Mobile sports are facing issue of addressing licenses for sports video delivered to mobile devices: Protection from illegal copying, hackers, spyware, and viruses. Rights managers must works on this issue to avoid serious failures.
- Interactive sport mobile TV allows for further opportunities for operator to stimulate incremental spending from viewers of mobile TV, through browsing sessions initiated by a call to action on services or information (video clips, mobile games, ringtones). These will represent a small but important component towards achieving return on investment for network operators.
- Mobile sports players must expand their partnerships involving several other areas: more than advertising for areas close to the sports and health, they must be open to others sectors away from this area. It must be treated as a service that can be very significant developing around it several others: mobile banking, mobile commerce, mobile advertising and mobile health.

Annex A

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Annex B

Additional information for m-Commerce

Cloud – Based Wallet initiatives

Cloud-Based Wallet Provider

Cloud Wallet Provider	Comments
Amazon	The e-commerce giant already offers a "Checkout by Amazon" platform for mobile and facilitates shopping with its Kindle Fire tablet.
Apple Passport	Many expected the iPhone 5 to support NFC. Instead, Apple, for the moment, is pursuing a cloud approach combined with scanning a QR for transaction completion. Just released, so acceptance not yet known.
Groupon	The Groupon Merchants app and card reader is a recent entry to the market. The app also lets users redeem Groupon vouchers, and businesses can get real-time business reports in the online Payments Center.
Intuit	Already well-established in personal and small-business finance.
LevelUp	Stores scan a bar code presented on a smartphone that is based on a user's smartphone credit card.
Mobile operators	Operators already allow purchases to postpaid billing accounts and as a group are pursuing a unified virtual store.
PayPal	Owned by eBay, PayPal also has a system called PayPal Here that allows merchants to scan credit cards with a small reader plugged into a smartphone; this competes with Square.
Paydiant	Offers an SDK for retailers and banks to embed mobile wallet and contactless payment functionality into their own apps.
Square	Starbucks is major investor. Uses GPS to show a picture to a store clerk for streamlined checkout in which user has only to provide his or her name. Also offers a reader that can be plugged into a smartphone to allow merchants to easily scan credit cards.
SRD Wireless	Technology called Cloud Wallet.
Starbucks	Starbucks has been successful in developing a closed payment system specific to its offerings.

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Source : m-commerce : State of the market Report

NFC Initiatives

Key NFC Wallet Initiatives

NFC Wallet Initiative	Companies Involved, Comments
C-SAM	C-SAM, MasterCard; emphasis on Asia Pacific, Middle East and Africa
Google Wallet	Sprint, MasterCard, First Data, Citi
Isis	AT&T, T-Mobile, Verizon, GSMA, Discover. Forthcoming Samsung Galaxy S4 will support Isis.
Microsoft Windows Phone 8 Wallet	Microsoft; incorporated into Windows Phone 8
Serve (Wallet)	American Express
Trustonic (Trusted Execution Environments on ARM processors)	ARM, Gemalto, Giesecke & Devrient
Vodafone (Wallet)	CorFire, Gemalto, Vodafone
Visa Digital Wallet	Visa, Intel, Orange, Vodafone

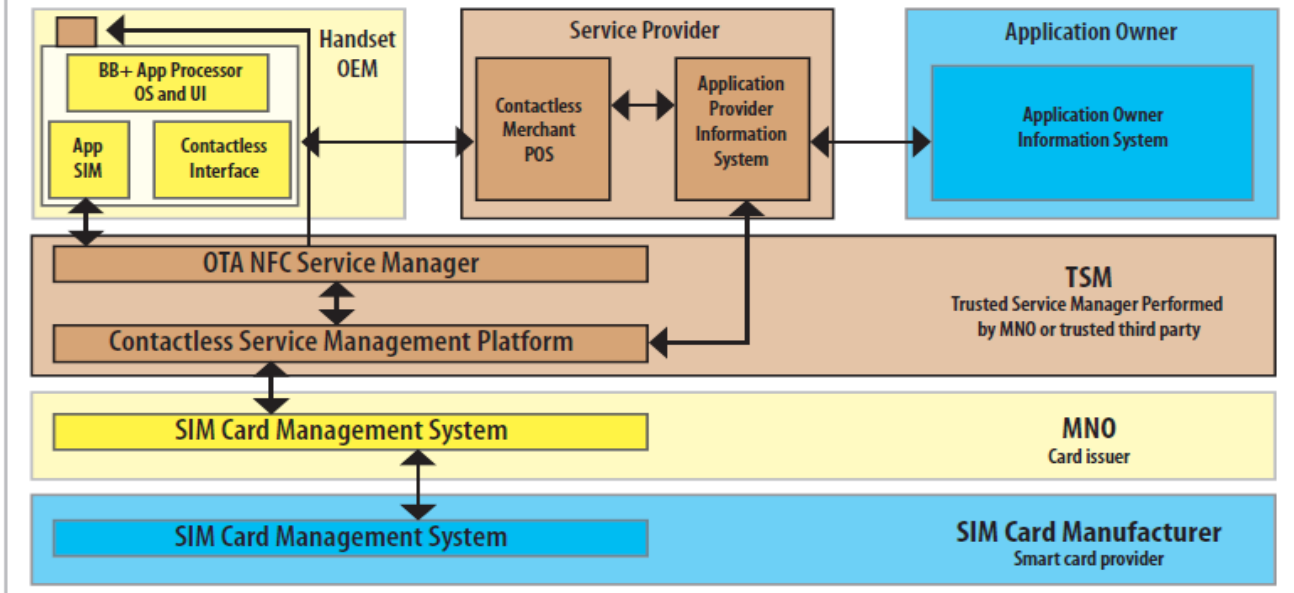
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Source : m-commerce : State of the market Report

NFC Ecosystem

NFC Ecosystem

The GSM Association architecture for NFC payments shows the key technology components: The secure element (SIM card); the Trusted Service Manager (TSM); the SIM card issuer (typically a mobile network operator); the handset, which includes the NFC payment application; an NFC-enabled point-of-sale system and service provider (retailers and banks); and the application owner (mobile commerce vendors like Google).

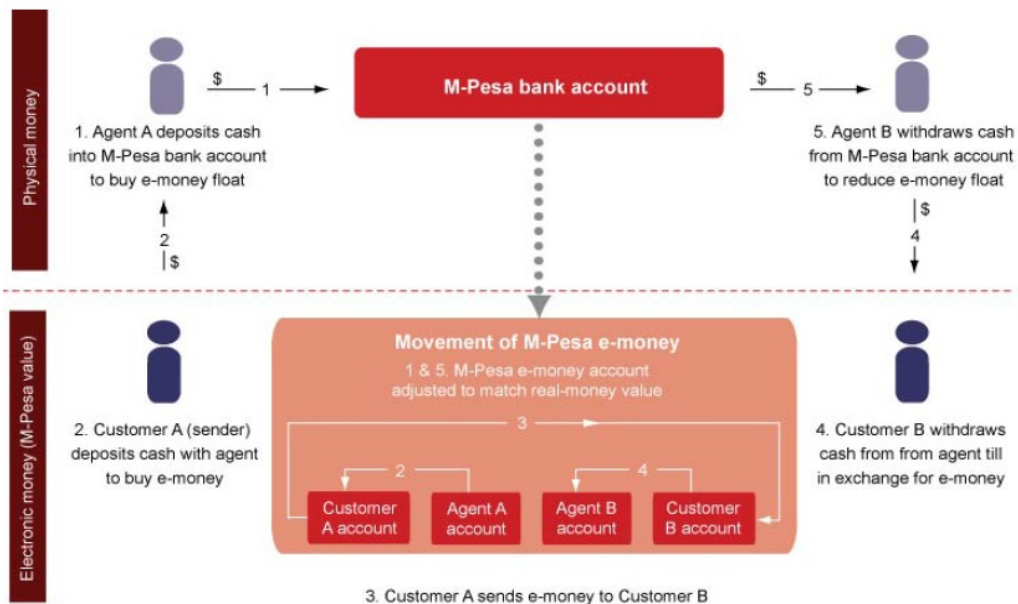


Data: GSM Association

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Source : m-commerce : State of the market Report

The M-Pesa transaction System



Note: \$ → indicates movement of cash.
Source: Safaricom

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