Health and mobility: realizing the power of mobile technology

In this article, we outline the opportunities for mobile health (mHealth) in Africa and explain EY’s perspective on where mobility is having a significant impact on health care. We highlight several examples where mHealth is enabling innovative approaches to health care delivery in Africa, India and Australia. Understanding the current and future impact of health and its relationship to mobility is crucial to developing solutions that meet the needs of diverse populations globally.
How can diversification be used to unlock growth potential in emerging markets?

Why does operational flexibility offer financial services a new frontier?

What is technology’s evolving role in wealth management?

Authors

Jyoti M. Schlesinger
Manager, Advisory – Performance Improvement, EY, US

Samantha Burris
Supervising Associate, Markets and Business Development, EY, US

Christina Tippmann
Manager, Advisory – Performance Improvement, EY, US
Tremendous strides are being made in the accessibility and quality of mHealth technology globally. The telecom industry continues to drive growth in mature and emerging markets, specifically with mobile value-added services, due to large investments in infrastructure development and affordable hardware options that meet market demands and prices. Smartphone technology is serving as a catalyst in bridging the digital divide, with its rapid mass adoption around the world allowing populations to access data anytime from anywhere.

From banking to health care to education, mobile and cloud-based technology offers an almost unparalleled promise of opportunity. Technology is providing an enabling tool to help improve lives, leverage and capture real-time information, offer analytical insights and deliver services to those who were once hindered by physical or financial barriers. In developing countries, this technology holds the potential to transform populations and revolutionize antiquated business, health and financial systems while enhancing economies.

The World Bank Report Maximizing Mobile – Human and Economic Development Opportunities states that three-quarters of the world’s population has access to a mobile phone. The number of mobile subscriptions is growing rapidly from less than one billion in 2000 to over six billion currently, of which nearly five billion are in developing countries. In 2011, more than 30 billion mobile applications were downloaded.
How technology helps health and sustainable development in sub-Saharan Africa

Sub-Saharan Africa remains a continent of growth and opportunity. Overall health indicators are improving, with significant increases in routine immunization coverage rates, the availability of antiretroviral treatment for people living with AIDS and decreases in maternal mortality. Sub-Saharan Africa remains a continent in sub-Saharan Africa and sustainable development indicators are improving, with significant decreases in maternal mortality. Despite their level of economic and social vulnerability, Africans are adopting and using technology by individuals and communities. Mobile solutions can be powerful enablers, as increased 684% globally, and will reach US$5.8b by 2018, within the first five months of 2014, with Europe and Asia-Pacific representing 49% of the market. Technology helps health and sustainable development

According to the International Data Corporation’s Worldwide Quarterly Mobile Phone Tracker, smartphone shipments are expected to surpass one billion units in 2013, representing 39.3% growth over 2012. Emerging markets continue to drive smartphone sales forward and, by 2017, the estimated total smartphone shipments are expected to approach 1.7 billion. This data represents an opportunity to develop integrated solutions that leverage mHealth, money and commerce to incentivize behavioral and economic choices made by individuals and communities. Mobile solutions can be powerful enablers, as

Providing insight and analysis for business professionals

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From a public health perspective, international development agencies understand the current challenges of effectively integrating mobile solutions into facility- and community-based health services. Health SMS (text) campaigns alerting mothers when and where they can take their children for routine immunizations and behavior-change communication campaigns focused on safe motherhood are well established in Africa.

With the success of SMS campaigns to raise awareness and knowledge regarding specific health issues, the evolution to more sophisticated interventions is in process. One example is UNICEF’s RapidPro, which launched in 2014 and is designed as an open-source SMS framework of operating systems for mobile phones. The concept is that organizations can build mobile-based applications that contribute to managing SMS-based data collection, complex workflows and data analytics.

Mobile health in India is evolving from an information push mechanism to a transformative tool designed to positively influence and better meet the health needs of underserved demographic segments of the population.

Looking beyond health, the private sector is integrating mobile banking, money and commerce in many African countries. Safaricom and other telecom giants in sub-Saharan Africa are currently working to expand and improve mobile and internet services. Safaricom’s M-Pesa mobile money system in Kenya is an example of how technology is reaching millions of people. According to The Economist, M-Pesa was originally designed to manage microfinance loan repayments by phone, reducing the costs associated with handling cash and lowering interest rates. The system expanded and is now used by approximately 17 million Kenyans, and about 25% of the country’s gross national product is processed through it. The services offered through M-Pesa include money transfer, salary deposit, loans and savings and bill payment. Many Kenyans believe that this system is safer than using a traditional bank or wire transfer company.9

With the growing demand for mobile technology, health systems will continue to rise and, with it, the need for elevated dialogue and collaboration between public and private institutions. EY believes that mobile technology will change the way health care is being delivered in Africa and support improved behavioral economics, with significant positive gender implications. Research demonstrates that women who have access to economic resources are more educated, have better health and nutrition, are in more equitable and less abusive relationships, and provide their children with similar advantages.10

A key objective of EY is to drive cross-industry solutions related to health, commerce and education to enhance the quality of people’s lives, communities and economies around the globe. EY is committed to designing and implementing interventions that link health and gender to economic opportunities that go beyond micro-finance to building networks of small and medium enterprises. This was demonstrated at the recent EY Africa Strategic Growth Forum, which focused on the importance of inclusive sustainable growth and the five priorities needed to realize Africa’s potential:

1. Embracing shared value
2. Promoting partnerships
3. Fostering entrepreneurship
4. Accelerating regional integration
5. Bridging the infrastructure gap

These building blocks are shared throughout EY as we focus on health system strengthening by building partnerships that foster improved health outcomes, gender empowerment and supporting communities using technology as a tool to enhance connectedness.

How India uses mHealth to monitor health and control disease

Driven by the health needs of its approximately 1.2 billion people (many of whom are based in rural geographic areas), India has pioneered population health monitoring and disease-control mHealth solutions. The country’s rapid growth in the last two decades has propelled it to the world’s fourth-largest economy.11 The significant gains in economic growth are improving poverty and health demographics. Among key indicators, life expectancy has doubled, literacy rates quadrupled and a sizable middle class has emerged.12

The information and communications technology (ICT) sector is playing a key role by contributing to 7.5% of GDP in 2012 compared with 1.2% in 1998.13 The rapidly growing Indian ICT industry is capitalizing on the advantages of India’s talent pool, lower-cost operations and an innovative remote delivery model. The sector is helping to transform the country’s image into that of a dynamic and entrepreneurial economy. India ranks as the second-largest mobile market in the world with 893 million mobile subscriptions, representing 62.5% of the population.14 Its mobile services market was expected to reach US$20b...
2013, a growth of more than 8% compared with 2012, and its ecommerce market is poised to grow to US$43b in the next five years.

Despite this impressive growth, India continues to be challenged with widespread poverty, low public health spending and a stressed health infrastructure. In particular, the tuberculosis (TB) epidemic remains a primary health concern, with over 2.2 million new cases annually, accounting for one-fifth of the global incidence. With the many constraints and challenges facing the health system, the need to develop creative and cost-effective solutions is critical. India is drawing on the knowledge capital of its booming technology sector to innovate and strengthen the development of health information systems and combat a number of its health challenges. Supported by both the private and public health sectors, mHealth in India is evolving from a health information push mechanism to a transformative tool designed to positively influence and better meet the health needs of underserved demographic segments of the population.

An example of this type of low-cost solution was developed by Tata Docomo, the Global System for Mobile Communication arm of Tata Teleservices. They created Sparsh, which is an interactive voice response service using mobile phones as a vehicle to share accurate information and increase awareness among its subscribers about sexual health issues. The content of the information provided is certified by the Family Planning Association of India, one of the country's largest sexual and reproductive health non-governmental organisations.
Demonstrating EY’s commitment to innovation: India in action

India’s Government recognizes the opportunity that mHealth can provide in helping it achieve universal health care coverage for its population. In order to realize this goal, the Government is prioritizing the development of a health information system. The system will connect networks of health service providers, establishing state-level disease surveillance systems and universal registration of births and deaths. This will enable the Government to have an accurate profile of the health demographics and key population indicators for improved monitoring and evaluation.

EY, through its work with the Bill and Melinda Gates Foundation, is utilizing ICT to support the Indian Government’s National TB Control Program. EY’s relationship with the foundation in the area of TB control interventions started in 2012 with a landscape analysis of TB in India, in which we identified how leading ICT practices could be used to support TB control. Subsequently, EY’s teams have collaborated with the Gates Foundation and its partners on several aspects of TB control activities. EY is currently working with the Gates Foundation on an urban TB project that aims to utilize the potential of an ICT application and a contact center to create awareness and improve diagnosis accuracy and treatment adherence, increase access to services and facilitate data sharing among stakeholders to integrate the public and private sectors. The use of ICT is focused on improving the quality of implementation, service delivery and monitoring of TB treatment processes, especially at the community level. EY utilized its project management expertise to support the ICT platform across the entire program, including:

► Defining the functional requirement specifications for the ICT framework
► Managing the program for the overall sustainable development and implementation of the ICT roll out by a systems integrator that involves multistakeholder collaboration with the Private Provider Interface Agency (PPIA), providers, data working group and other participating agencies for requirement gathering, system development and user testing
► Monitoring and defining the data quality standards to help ensure data being captured in the field is integrated onto an ICT platform
► Ensuring smooth integration between the public and private ICT platforms

It is anticipated that, through this platform, there will be improved visibility, control and patient tracking as a result of unique case files for each patient across the TB treatment cycle. In addition, the solution is expected to lead to increased engagement and contribution by the private sector toward TB control due to early and accurate diagnosis, prompt treatment, reporting and notification.

EY recognizes the potential of technology and how it can and will change the landscape of health care globally. Being a global leader in the private sector consulting industry requires courage, commitment and the willingness to take risks. Therefore, EY is prioritizing and investing in innovative mobility solutions for improving population-based health care, increasing access to services and strengthening systems, driven by a desire to build a better working world.
organizations. Customers can access this service in three languages (English, Hindi and Marathi) for a fee of 10 rupees over a 10-day period.

Another innovative technology model in India is the collaboration of the MOTECH Suite consortium. MOTECH brings together several of the most experienced mHealth implementers, open-source providers and funders to develop innovative solutions that apply to a broad range of health service areas. These areas include behavior change and demand creation, managing patient data, improving health worker performance, “last mile” supply chain assistance and patient adherence to medication. Open-source capabilities in these areas are being developed through a series of flagship programs with consortium partners. Two notable examples of these programs are:

► **CARE International**: pregnant women and children under one year old are tracked, using mobile phones, along the continuum of care, with specific protocols on birth preparedness, labor and delivery, postnatal care, exclusive breastfeeding and complementary feeding. Schedules are generated for home visits, which allow health services providers the ability to organize and plan their work. Built-in checklists enable health providers to adhere to the most appropriate protocol during their interactions with beneficiaries. For example, the application generates a list of patient alerts in each health worker’s catchment area reminding them who is due for immunizations. Supervisors receive real-time reports on services delivered and can follow up if one of their patients did not attend a facility for their immunization appointment.

► **Johnson & Johnson**: in six cities, the MOTECH Suite Treatment Advice by Mobile Alerts (TAMA) calls HIV and AIDS patients to remind them to take their daily antiretroviral medications. Patients can also receive appointment reminders, track their adherence and inquire about side effects they may experience or are of concern to them. Nurses use a web-based tool that allows them to view detailed patient data.

**How Australia empowers patients and improves wellness**

Building on the momentum of recent technological advancements and leveraging a largely untapped resource, i.e., the patient, participatory health allows consumers to catalyze the shift toward patient-driven health systems and redefine perspectives of personalized care.

In Australia, this influential and innovative social movement employs online and mobile technologies that encourage consumers to actively manage

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and influence their personal well-being and empowers patients to contribute meaningfully to their own health outcomes. While participatory health connects patients to critical services across the health spectrum – streamlining support, promoting flexibility and elevating participation – it also signifies an increased self-motivation toward healthier living. Digital technologies such as social networking, mobile applications and wearable devices serve as vehicles for consumers to generate, share and monitor vital health information, offering increased access and control over their own health management and awareness.

Australia’s My QuitBuddy mobile application represents a current example of the country’s advancement toward participatory health. Launched by the Australian National Preventative Health Agency (ANPHA) in June 2012 as part

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of the Australian Government's National Tobacco Campaign, My QuitBuddy offers customized, interactive tools designed to curb cravings and facilitate a smoke-free lifestyle. Users document and manage personal goals, tracking the decline in cigarettes smoked, grams of tar inhaled and money saved. The application includes message boards and links to Facebook and Twitter, where participants share stories and provide community support. My QuitBuddy serves as an advocacy tool for personal wellness and advances the trend toward healthy behavior change. Since inception, My QuitBuddy posted more than 265,000 downloads and 13,500 community comments, creating a network of support for those who engage in the program. More than 40% of users remained smoke-free for nearly six months.21

The increase in popularity of wearable technologies further illustrates the expansion of consumer-driven health interest. Wristbands such as FitBit and Jawbone wirelessly synchronize to a user’s mobile device, recording fitness activities and monitoring vitals. Enhanced smartwatches, illustrated by the Apple Watch22 and Samsung’s Galaxy Gear, incorporate messages and phone calls, offer multiple third-party health and wellness applications and display user’s information with a glance at the wrist. Within the first five months of 2014, sales for wearables increased 684% globally;23 and will reach US$5.8b by 2018, with Europe and Asia-Pacific representing 49% of the market.24

Though increasingly popular, the long-term effect on healthy behavior is still undetermined. Some studies suggest that one-third of wearable owners abandon their device after six months due to boredom, functionality or appearance.25 The vigor of the market, however, embraces fleeting interest and propels innovation to advance platforms for increased effectiveness and viability. For instance, digital communities of like-minded people who network to improve personal well-being demonstrate a sustainable approach to behavior change.

Launched in 2010, the online community Hello Sunday Morning (HSM) encourages users to adjust their relationship with alcohol. Introduced as a unique way to address Australia’s drinking culture, the self-regulated site avoids efforts focused on rehabilitation and instead provides an environment where participants share experiences and advice and offer encouragement. The vast, diverse backgrounds and personal goals of users generate a community that constantly evolves. Today, HSM welcomes more than 50,000 members worldwide who boast a reduction in alcohol intake by 40%.26

Through innovative technologies, Australia’s drive toward personal health management recognizes the potential and understands how to address unique, underlying complexities of consumer-driven care. A multifaceted environment demands a structured and holistic approach to developing connected networks. This approach is progressively moving the country forward on its path to transforming traditional health care practices.