Wireless Reach™
from Qualcomm

Health Care | Education | Entrepreneurship | Public Safety | Environment

Partner
- ClickDiagnostics Inc.
- Ministry of Communications and Information Technology
- Ministry of Health
- Mobinil

2011 Statistics
- Life expectancy: 72.9 years
- Population: 83,688,164
- GDP per capita: US$6,500
- Internet penetration: 26.4%
- Mobile penetration: 93.3%

Sources: CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook); Mobile penetration data provided by Informa UK Limited and based on market intelligence. Internet penetration data provided by www.internetworldstats.com and based on data published by Nielsen Online, the International Telecommunication Union, GfK, and local regulators.

This project is an example of how Mobinil's state-of-the-art network can improve the lives of Egyptians. Mobinil has drawn on the expertise and resouces of all the project partners to develop the business model and technology underpinning the remote diagnostics service.

– Hassan Kabbani
Mobinil CEO

Case Study

Egypt Teledermatology Project: Using 3G Mobile Broadband to Bring Dermatology Specialists to Low-Income Areas Virtually

Wireless Reach collaborated with the country's leading wireless service provider Mobinil, ClickDiagnostics Inc., the Egyptian Ministry of Health (MOH) and the Egyptian Ministry of Communications and Information Technology (MCIT) to create a teledermatology program to better facilitate early diagnosis of skin disorders for low-income patients.

This pilot project focuses on providing a communications link between on-site dermatologists working in low-income areas with consulting dermatologists in Cairo. Participating doctors in three hospitals have received HSPA embedded mobile phones with video camera capabilities, which are used to communicate with specialists in order to confirm the diagnosis of skin diseases, upload the health records and provide mobile learning for on-site doctors. The project uses technologies and processes designed to create a sustainable health care service.

Challenge

- In Egypt, many doctors, nurses and public health workers particularly in rural health care settings do not have access to the Internet. This precludes them from sharing information and readily consulting with their peers and the global health community.
- The World Health Organization estimates that 2 to 3 million non-melanoma skin cancers and 132,000 melanoma skin cancers occur globally each year.[1] Early identification and accurate diagnosis of visible skin disorders and diseases is critical to help combat cancer and other conditions.
- Many countries are challenged when it comes to providing adequate health care to the majority of the population. Some of the difficulties faced include physical distance between doctors and their patients, a limited number of skilled health care professionals and the extraordinary costs of purchasing and maintaining health care equipment.
- Equipment and processes currently used for teledermatology, such as digital cameras, laptop or desktop computers, and wired Internet connectivity, often make telemedicine services cumbersome to use and deploy and expensive to expand and scale. Mobile phones can combine and converge the functionality of this equipment into a smaller, less expensive, portable device.
- Patients in Cairo currently pay an average of between 5-15 LE (approximately US $1-$3) to see a doctor in a private clinic in poorer areas, not including costs associated with transportation to the clinic and lost wages from time away from work.

Solution

- A group of dermatologists in low-income areas have been trained to use mobile phones loaded with the ClickDoc application, developed by ClickDiagnostics, to collect patient and case information and photograph skin conditions. The photographs and associated symptom descriptions are sent using the Mobinil 3G network to a password protected web portal hosted by MCIT. Consulting dermatologists, who reside elsewhere, then log on to this web portal to review and confirm the new cases and reply with a diagnosis. The on-site doctor with the mobile phone can then download and relay this diagnosis to the patient.
- Mobile phones with customized software facilitate the gathering of health information. Medical studies have shown that dermatologists can diagnose many skin ailments by examining photographs of the patient, and the diagnosis can be improved by collecting patient and case history information, such as that collected by the ClickDoc application on the mobile phones for this pilot.

- Medical studies have shown that cameras on mobile phones are now advanced enough to take photos that have enough resolution to allow doctors to diagnose skin conditions. In addition, 3G networks facilitate the high-bandwidth data transfer required to send high-resolution photos over the Internet.
- Increased communication between doctors aids in the training and continuing education of all doctors in Egypt.

The Technology

- Mobinil's HSDPA data cards
- Acer Liquid S100 smartphone with Qualcomm QSD 8250 chipset
- ClickDoc application for smartphones developed by ClickDiagnostics Inc.

Impact

- More than 87 percent of the 226 cases diagnosed by the on-site dermatologists participating in this pilot project had complete or partial agreement when diagnosed by the consulting specialist.
- The levels of complete diagnostic agreement confirm that specially trained doctors in remote areas can use this teledermatology application and other mobile applications to help diagnose and treat patients in rural areas.
- The pilot demonstrated that people living in Cairo could have access to specialists that previously were not available to them. This project shows how mobile devices can achieve more timely and accurate diagnosis of skin conditions as well as help alleviate an overburdened health care system.
- The results of the pilot study indicate that mobile teledermatology can be a viable medical solution for Egypt's health care system.

Project Partners

- **ClickDiagnostics Inc.**, a private company responsible for the development of the handset software application. They also participated in the development of the business model, training, testing, and implementation. ClickDiagnostics develops mobile telemedicine solutions specialized for health organizations in developing countries.
- **Ministry of Communications and Information Technology**, the government ministry responsible for consulting and supervision of the project.
- **Ministry of Health**, the government ministry responsible for project consulting and supervision, as well as assigning the participating hospitals and dermatologists.
- **Mobinil**, the mobile network operator responsible for project management and logistical, technical, and marketing support. Mobinil has provided its staff (sales, marketing, communications, and engineering) to support the project and also donated the airtime.
- **Wireless Reach Initiative from Qualcomm** is responsible for overall project funding and supervision.

Dr. Sanaa Mohammed Galal at Imbaba Hospital using the mobile phone to send patient information to a specialist

[1] World Health Organization on April 12, 2011: http://www.who.int/uv/faq/skincancer/en/index1.html

Wireless Reach™ Initiative from Qualcomm

Qualcomm believes access to 3G and next-generation mobile technologies can improve people's lives. Qualcomm's Wireless Reach initiative is a strategic program that brings wireless technology to underserved communities globally. By working with partners, Wireless Reach invests in projects that foster entrepreneurship, aid in public safety, enhance the delivery of health care, enrich teaching and learning and improve environmental sustainability. For more information, please visit www.qualcomm.com/wirelessreach.