



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

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STATUS:
Laureate

Organization:
HP

Organization URL:
<http://www.hp.com/hpinfo/socialinnovation/partners-programs.html>

Project Name:
Early Infants Diagnosis in Kenya

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

HP's Office of Global Social Innovation helps share HP talent and technology where they are needed most. With our powerful combination of enthusiastic people, innovative technology, and international presence, we focus on the areas where we can make the biggest impact: education, entrepreneurship, health, and community involvement. At HP, we believe healthcare offers profound and far-reaching opportunities for social innovation. Millions worldwide go without basic services, and millions more are at risk because of inefficient health systems and inconsistent quality of care. HP is collaborating with leading health authorities to reinvent processes, modernize systems, and develop solutions that dramatically expand access, improve care, and save lives. The Early Infant Diagnosis program is achieved through an alliance between HP, the Clinton Health Access Initiative (CHAI), and the Kenyan government to implement a technology-based solution for efficient diagnosis and treatment of HIV-positive infants in Kenya. The program gives babies the best chance of survival by greatly reducing test result turnaround times, enabling an early start on life-saving antiretroviral (ARV) treatment. The program also helps decision-makers to make more informed decisions, monitor infant progress, and ensure receipt of ARV treatment. This innovative program makes it possible to manage multiple items of data (infant HIV test results), and transmit test results via SMS (short message service) to SMS-enabled printers located in even the most remote rural health clinics. SMS is the text component of many of today's web, phone, and mobile communication systems, and is used by an estimated 2.4 billion people worldwide. The benefit of SMS is that test results can be reliably received by each clinic

(whether or not the clinic has Internet access). This program showcases what can be achieved through collaboration between the private sector, an NGO and a government.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

Many different parts of the HP organization contribute to the program: five modern data centers (linked to Kenya's four national laboratories), providing a platform to speed HIV data transmission. The HP Enterprise Storage Servers & Networking (ESSN) business unit donates the servers, storage, and networking equipment, plus time and technology skills. Financial and technical support by the HP ESSN business unit is provided to students from Strathmore University, Nairobi, who developed a custom database application to make HIV test results quickly available online and to enable real-time tracking and analytics. An innovative technology solution that enables test results to be sent from the national labs via SMS (short message service) to a printer in each local clinic was developed by the HP Imaging and Printing Group (IPG) business unit. SMS-enabled printers and PCs were provisioned, and IT training and support was provided at local clinics, enabling test results from the national labs to be received at each clinic. The HP Personal Systems Group (PSG) and HP IPG business units donate this equipment, plus time and technology skills. There is an ongoing commitment to the alliance between HP, the Clinton Health Access Initiative (CHAI), and the Kenyan government, a relationship maintained by the HP Office of Global Social Innovation. As a result of this program, treatment of HIV-positive infants can begin promptly. With the Early Infant Diagnosis program, even the most remote clinics receive test results typically just a day or two after analysis in one of the national laboratories, so ARV treatment can start in days instead of months. Prior to this program, it used to take up to four months between testing an infant and receiving the test result at the local clinic, as government samples travel to regional and national labs by a slow, inefficient postal system.

Please list the specific humanitarian benefits the project has yielded so far.

The Kenyan government tests all infants at birth. By 2009, before the program started, approximately 45,000(1) infants were tested. But at least 120,000(1) Kenyan infants are exposed to HIV each year, as about 715%(1) of pregnant women in Kenya are HIV positive, and mother-to-child transmission is as high as 45%(1). With this new solution, more HIV-positive infants will be tested, from approximately 50,000(1) tests in 2010 to an estimated 70,000(1) in 2012, and test result turnaround times are reduced from several months to just days, so ARV treatment can start early. This turnaround time is a key measure, and is reported by clinics around the country. It is of critical importance to start treating HIV-positive patients early, particularly for HIV-positive infants. Without early treatment, only half(2) of HIV-positive infants are likely to survive past their second birthday. In the program's first full year of operation (November 2010 - October 2011), the Early Infant Diagnosis database revealed that a total of 7,000 Kenyan infants tested HIV positive, representing about one positive result in every 10 tests undertaken by the Kenyan Ministry of Health. (1) Figures provided by the Kenyan Ministry of Public Health. (2) World Health Organization estimate. (3) Figure from the World Aids Day organization: www.worldaidsday.org/about-world-aids-day.php.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

Test results in 12 days rather than 2+ months means the difference between life and death for infants exposed to HIV. This is how the solution works: 1. Mothers and their infants are tested under the early infant diagnosis (EID) scheme. 2. Results are tested at a DNA PCR Lab

connected to a HP datacenter. 3. Instead of using a courier, real-time test results are available online and via SMS/GSM-enabled printers. 4. Infants diagnosed with HIV can begin antiretroviral treatment As a result of this program, treatment of HIV-positive infants can begin promptly. With the Early Infant Diagnosis program, even the most remote clinics receive test results typically just a day or two after analysis in one of the national laboratories, so ARV treatment can start in days instead of months. Prior to this program, it used to take up to four months between testing an infant and receiving the test result at the local clinic, as government samples travel to regional and national labs by a slow, inefficient postal system. This was far too long to ensure effective ARV therapy. Each sample is assigned a barcode, tested, and recorded in a database. Each lab result is sent by text message to an SMS-enabled printer in the local clinic, and can be immediately printed out. If the clinic has Internet access, the result is also emailed, and the local health provider can access it online. Also as a result of this program, more informed healthcare decisions can be made. By providing richer, near-real-time data, timely analysis, and process transparency, the Early Infant Diagnosis program enables policy decision-makers to take decisions based on broader, deeper, up-to-the-minute information. They can also monitor infant progress and ensure receipt of treatment.