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BUILDING ON STABILITY



ICT INFRASTRUCTURE:

< By Eva Kolker >

In the past two decades, Information Communication Technology (ICT) has propelled business into an era of interconnectivity, spurring new opportunities for comparative advantage and economic development for emerging markets in a global economy. Yet, for a long time, Africa seemed to have been left behind. Today, the world is buzzing about Africa's 'wireless revolution,' an opportunity both to generate new and expanded markets and further development. Africa-focused ICT innovations have gained momentum in both the private and public sectors. Qualcomm installed high speed Internet connections in disadvantaged neighborhoods in South Africa, while Oracle is a partner in the NEPAD e-learning initiatives in West Africa. Motorola developed SharedPhone, a software that allows a mobile phone to be used as a payphone, enabling small entrepreneurs to sell minutes and texts in their communities.

The Africa Journal is proud to feature three individuals whose localized solutions have greatly contributed to Africa's ICT infrastructure. All three ICT innovators adapted their skills and entrepreneurial spirit to bring business, opportunity and development to Africa.

KEN BANKS, FRONTLINESMS

British IT expert Ken Banks was in South Africa in 2004 working on a project to help the South Africa National Parks Authority (SANParks) implement a text messaging system to communicate with the communities living around the edges of Kruger National Park. While working on this project, he encountered a problem: "Almost everything was Web-based, which, under most conditions,



Ken Banks

would have been fine except that getting any kind of Internet access in many of these rural areas was a challenge at the best of times.

Nobody seemed to be thinking about those working in the field with little or no access to the Internet."

On a rainy Saturday evening in Cambridge, UK a few months later, the idea for FrontlineSMS was born.

"The plan was simply to develop a text messaging system, and to incorporate a wide range of popular features such as survey functionality into a piece of software which ran off a laptop or desktop computer with a mobile phone and cable," Banks explained. "That way, messages could be sent anywhere where there was a mobile signal." With seed money from two ex-Vodafone UK directors, Banks created a beta version of FrontlineSMS.

Today, FrontlineSMS is a household name in the Non-Governmental Organization (NGO) world. The free, open-source

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software allows people to send text messages in bulk to the field without having to rely on a sporadic Internet connection. FrontlineSMS is also unique in that it facilitates reciprocal communications. Not only can NGO headquarters send messages to local communities and stakeholders, but message recipients have the ability to reply with feedback that FrontlineSMS software then stores in a database on the computer. By connecting communities through Web-free text messaging, FrontlineSMS is helping to build infrastructure that is site-specific.

"There's a big difference between how something is used in an airport lounge and how well it might work in a remote village with limited power supply, 100-degree heat, dust storms, and a semi-literate user," Banks observed.

In just under two years, Banks has received FrontlineSMS inquiries from over 100 NGOs across the globe.

"And that is all organic growth without any marketing or advertising. There wasn't a budget for that," Banks added.

FrontlineSMS has been used by NGOs and grassroots organizations on every continent for everything from reporting on human rights abuses and circumventing government censorship in Zimbabwe, to delivering the latest market information to rural farmers in Indonesia, to informing beachgoers in California of the day's surf conditions. In April 2007, the Nigerian NGO Network of Mobile Election Monitors (NMEM) used FrontlineSMS to mobilize volunteer election monitors to send in reports on the conditions at polling booths across the country. With FrontlineSMS, NMEM was able to receive over 11,000 messages from many areas that were

either too small or too remote to assign an official election monitor. Also, whereas official monitors were instructed only to report on mishaps, the volunteers were instructed to report on everything. Therefore, as Banks recounted, NMEM "documented many remote, rural communities where polls were orderly, materials arrived on time, and polls were relatively free and fair."

Banks will be back at Stanford University this Fall, where he spent the past year as a Reuters Digital Vision Fellow, to work on enhancing FrontlineSMS with a \$200,000 grant from the MacArthur Foundation. But what excites Banks most about FrontlineSMS is the role he does not play: "FrontlineSMS provides the tools necessary for people to create their own projects that make a difference. It empowers innovators and organizers in the developing world to achieve their full potential through their own ingenuity."

Visit Frontline SMS at www.frontlinesms.com To read more about Bank's work and other projects where "Technology meets anthropology, conservation and development," visit his website at www.kiwanja.net

HERMAN CHINERY-HESSE, THE SOFTTRIBE

Herman Chinery-Hesse always knew his native Ghana had business potential. With only his PC and entrepreneurial spirit, Chinery-Hesse relocated to Accra,

founding theSOFTtribe, the West African software company that specializes in 'tropically tolerant' software solutions developed specifically for the African market.

"Our clients (local companies and multinationals throughout West Africa) use our software rather than others due to our understanding of the local environment," explained Chinery-Hesse. "Tropically tolerant' systems are needed in the developing world, as our conditions are far more challenging than those of the developed world."

Today, theSOFTtribe products are popular in Ghana, as the company has penetrated the top 100 businesses operating in the country. So how is 'tropically tolerant' software different from software available in Europe and the U.S.? TheSOFTtribe's programs are designed to work on older PC models and are offered at locally affordable prices. In addition, most programs do not require Internet connectivity. If information needs to be shared across a wireless network, information is saved locally first, and transferred automatically when a connection is established. Chinery-Hesse was also behind the Internet café billing software which forms the bedrock of Africa's largest technology development center in Accra, Busyinternet. The software allows the computer to track the time spent surfing the Web, with specific features to prevent hackers from disabling the timer. Even Microsoft wanted a piece of the action. Microsoft Corporation selected theSOFTtribe as their local agent in West Africa, lending theSOFTtribe their source codes so that the company could adapt business solution software, like Enterprise

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Herman Chinery-Hesse

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Resource Planning (ERP) and Dynamics Nav to match local needs. "African countries can develop a leading edge by ensuring that any new infrastructure is based on the most appropriate technology," Chinery-Hesse stated. "The Continent could leapfrog decades of obsolete development in telecommunications and IT, by taking this giant step with systems that are appropriate for the African environment. Lack of demand is no longer an issue."

Chinery-Hesse's software continues to sail ahead of the wave of ICT software and innovations in Africa. More recently, he developed TV quiz show administration software that allows show participants to send in responses via SMS.

"This has become the new craze for the mobile phone wielding populace in Ghana," Chinery-Hesse noted. The software also randomly selects a winner from the correct responses and automatically synchronizes these selections with the work stations at the remote TV studio, eliminating fraud. The UWIN TV quiz show airs a number of times a week on Ghana Television (GTV).

Chinery-Hesse's latest project aims to create a market platform that enables small entrepreneurs to participate in the world market via their cell phones.

"Individual Africans and African small and medium size businesses (SMEs) are currently not on the world map in relation to being 'for sale.' Our platform would make use of SMS in buying and selling products that these individual Africans and SMEs have available, but cannot at present display and sell in the world market place."

Chinery-Hesse has defied his skeptics and amassed a small fortune.

"Ghana is a land of opportunity waiting for entrepreneurs with innovative business ideas that we believe could change the fortunes of Africa."

NAM MOKWUNYE, THE UNIVERSAL DIGITAL CENTRE COMPANY

In the U.S., children are learning how to use computers and navigate the Internet in elementary school. In most parts of Africa, even university students do not have comparable access to technology. This is a major barrier to development, according to Nam Mokwunye, founder of The Universal Digital Centre Company (UDC), a for-profit social venture (in cooperation with CCA-member Cisco Systems, among others) that aims to build an end-to-end IP broadband infrastructure and content distribution platform across 100 Nigerian higher-education institutions.



Nam Mokwunye, founder UDC

"To make Nigerian users globally competitive we need to build an enabling environment that makes affordable digital access a right," Mokwunye asserted.

When Mokwunye visited his native Nigeria in 2002, after being abroad for 22 years, he was shocked at what he found.

"I visited some Nigerian higher-education campuses. I was appalled at what they considered 'connected.' For a 10,000-20,000 student campus, they had sub-standard cyber cafes with sub-optimal bandwidth and a sometimes functioning VSAT terminal at a single academic department. I was excited because I had found the community that truly needed broadband access, was ready to pay for it, and for which services could be scaled until a critical mass was reached," Mokwunye recalled.

The first phase of Mokwunye's project, titled Information, Communications, and Entertainment, will connect 100 higher-education campuses across Nigeria and provide over one million campus users simultaneous access to voice, data, and multimedia services, while enabling them to

collaborate and exchange local and international content. Once the campuses are on the same network, he plans to install wireless mesh systems and connect every campus to the Internet. Then they will not only be connected to each other, but to the rest of the world as well.

Of Nigeria's five million Internet users, the average consumer spends \$150 per year for Internet connectivity in cyber cafes. With such low penetration numbers in a land of 140 million people, the market potential is considerable.

"These campuses will later become hubs for proliferating IP broadband communication services to surrounding communities," Mokwunye stated, explaining how higher-education populations will be the link for scaling up access to the general population. The higher-education campus would provide the space, the policies, and the ready market for Information, Communications, and Entertainment, while The Universal Digital Centre Company would bring the infrastructure, financing, and technical expertise. Once completed, users will be able to surf the net, share class work, conduct research, organize online meetings, attend e-lectures, and communicate more efficiently.

The pilot phase of the Information, Communications, and Entertainment project begins in October 2007 on three campuses in Nigeria. By June 2010, Mokwunye expects to have wired all 100 campuses.

"This is something students want and they are advocating their campuses to cooperate with us. We have firm offers for investments and seem to have the requisite support of key players including campus administration, government agencies, and communications and media regulators," Mokwunye said.

"Affordable digital access should be listed amongst the UN Millennium Development Goals as it is difficult today as a human being to advance without ready access to data networks," Mokwunye concluded. ●