Viewpoint

Cuba & ICTs: Real Crisis Leads to Virtual Innovation

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The only sustainable way to avail ourselves of opportunities provided by information and communications technologies (ICTs) for health is when they're folded into a clear, specific political commitment to improve health systems; there are no magic recipes or technologies. Cuba's achievements in using ICTs for health are the result of a social and political process based on universal, equitable health services and education. Together these explain the paradox of how a country in severe economic crisis managed to create a nationwide network providing access to health information and medical knowledge, so that today, Cuba is making strategic use of the Internet and international networks.

In 1992 when Cuba faced the 'Special Period' crisis provoked by the fall of the Socialist bloc, one area of the health system hit hardest and fastest by budget cuts was scientific information. Subscriptions to international journals (at costs exceeding US$1 million annually) were canceled and many national medical journals and texts ceased publication of print versions. Although a policy decision was made to do everything possible to preserve these information resources, other more urgent needs logically took precedence.

> ## There are no magic recipes or technologies

Under these circumstances, ICTs became virtually the only alternative to cope with the crisis and, in the process, became the catalyst for creating a vision for the future. It was as if Dickens were turned on his head: in Cuba, the "worst of times" became "the best of times" – for ICT development at least.

Our decision to build a network to meet the health system's information needs must be viewed in the context of other capacity-expanding efforts aimed at greater innovation and problem-solving capability. By design, INFOMED was first created to interconnect medical schools and institutions across the country, providing access to scientific data and, at the same time, facilitating email exchange and database access, and mitigating the very serious budget cuts. From the start, the network and ICTs were used to provide services and solve specific problems.

How to take up this challenge, in the midst of acute economic depression, with investments reduced to a bare minimum? The answer lies in finding ways to expand national capacity to invest in, manage, and use these technologies, combined with a commitment to train human resources. This combination led to a workable solution for providing access to national and international scientific information in an economically viable way. Prior investments made to develop the national informatics and computer science sectors also helped, including efforts by the Ministry of Science, Technology, and the Environment to connect Cuba to the Internet and by the National Health System to access international bibliographic databases and cooperation networks such as the Latin American and Caribbean Center for Health Sciences Information (BIREME).

Project grants were obtained from international agencies including the UN Development Programme and Pan American Health Organization; these funds were allocated to teach emerging Internet technologies and their application to the national network, INFOMED. The network's development was rather unique, in that we created an intranet compatible with Internet protocols long before we were directly connected to the Internet itself. So once Cuba was connected, INFOMED became an instant multiplier, disseminating information services and other resources including online databases to health professionals all over the country. We also began to provide full electronic texts of the Cuban journals that were forced to stop printing. In this way, INFOMED became an early adopter of the Open Access approach.

The network implemented best international practices and encouraged the creation of nodes in every province, distributing resources throughout the country instead of concentrating them in one national center. Priority was given to information access over investments in costly telemedicine and other ICT applications gaining international attention at that time because, although the future potential of these technologies was undeniable, developing networks was clearly more relevant for us then. Investment was also made in human capacity-building nationwide. So, as more users, institutions, and computers became connected, INFOMED developed a critical mass.

Like other health programs, INFOMED can't be taken out of context or divorced from Cuban reality. For us – in a poor country trying to harness science to benefit public health – being able to rely on publicly-owned information services was of strategic importance from the start. This has made all the difference between fragmented interests pulling in a thousand directions, and a clear commitment to pull together for better health.

This also meant that when Cuba began to recover economically and was in a position to invest more in information technologies, INFOMED benefited directly as further infrastructural improvements were made and service was expanded to the 444 health areas (currently 498) in the country. By then, the network born from crisis had achieved national reach, was relying on experienced and skilled specialists, and was cooperating with other networks to improve the nation's virtual health infrastructure.

From its inception, users weren't simply passive recipients of information, but rather creators and developers of it, explaining the explosion in content we've seen over time, and in turn why INFOMED is one of the most visited portals of its kind worldwide. Above all, our experience has shown us that exploiting the real potential of ICTs in general and networks in particular, depends fundamentally on active participation by the people they are designed to benefit. And that, in turn, depends on achieving and maintaining a political, economic, and social context where human beings, their health, and development come first. ⌁