



Making Waves

A small IDRC-supported project has helped spawn a mass movement to bring the benefits of information and communication technologies to rural villages in India.



"From my long experience in agriculture, I find that whenever poor people derive some benefit from a technology, rich people benefit. The opposite does not happen."

M.S. Swaminathan,
key architect of India's
green revolution

IDRC: N. Lessard

The Development Challenge: **Reaching the unreached**

India's information technology sector emerged during the 1980s as software development companies became established in the cities of Bangalore, Chennai, and Hyderabad. The country is now the world's second largest exporter of software. Yet, the bulk of India's population lives in rural villages, in poverty. How can the information age bring benefits to those who live on less than US\$1 a day?

This was a question that nagged at M.S. Swaminathan more than 15 years ago. He believed that a well-placed computer, like a communal well or an irrigation pump, could be a valuable tool for development. However, in 1990 there were no models for how information and communication technologies (ICTs) could help the rural poor in India. The father of the "green revolution" that staved off famine in India 40 years ago, M.S. Swaminathan set

Mission 2007 will bring the knowledge revolution to 600 000 Indian villages.

out to build a model for a pro-poor, human-centred information revolution in rural areas. Canada's International Development Research Centre (IDRC) was the first donor to support this vision with project funding to the M.S. Swaminathan Research Foundation (MSSRF). In addition to a modest grant, IDRC also provided the MSSRF with information about how ICTs were being used for development in other regions.

The Idea: Information is wealth **(if it's in local currency!)**

Computers, the Internet, mobile phones, interactive CD-ROMs, newspapers, the radio — ultimately all are powerful tools for sharing information. Researchers thought that highly practical, local information could make a dramatic difference in the lives of the ultra-poor living in rural areas. The research question was: what kind of information would be most useful and in what format?

Researchers also thought that a model of community ownership of ICTs (as opposed



to private ownership) would work well in rural India's villages. They also believed that new technologies offered new possibilities for addressing the infrastructure problems plaguing rural India — it would simply be a matter of creative engineering. Ultimately, the researchers were also confident that anyone can learn how to use ICTs if given a fair chance. They based their project on the Gandhian principle of “attention to the poorest person.”

The Research: Creative technological fixes and social innovations

An ingenious hybrid of wired and wireless technologies was conceptualized by Venkataramen Balaji, the project leader and a graduate of the Indian Institute of Technology at Kampur. A “hub and spokes” model for connectivity was fleshed out by project researchers. One village, selected to be the “information hub” was able to connect to the Internet and download relevant information, such as weather reports. This village then conveyed the information through a local area data/voice network to village knowledge centres (VKCs) set up in six other nearby communities. To deal with limited access to electricity, researchers also developed ways to systematically use solar technology for power.

Researchers conducted surveys to gather data on information use patterns from six different locations covering about 12 000 people over a period of 18 months. Researchers also assessed how far the community was willing to go in operationalizing village knowledge centres. They also identified volunteers who could interpret information and make it more user-friendly — for example, by putting complex jargon into simpler terms.



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On the Ground: Creating change in villagers' lives

VKCs were initially set up in five villages, with the community providing the space for the centres. In Villianur, the network's hub, volunteer staff produced, translated, and updated information fed to other villages through the network. At least half of the volunteers are women.

Locally specific databases were created, some with the help of experts such as doctors. Database information was related to prices of agricultural inputs (such as seeds or fertilizers), market prices, government programs, health care, cattle diseases, transport (road conditions, cancellation of bus trips), and weather (appropriate time for sowing, locations of abundant fish, ocean wave heights). Educational material was loaded onto CD-ROMs.

Traditional communication technologies were also used: a community newspaper was created and information is also conveyed over village loudspeakers.



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M.S. Swaminathan

RESEARCH THAT MATTERS

The Impact: "Like fish to water"

The project has illustrated that "rural people, particularly women, learn new skills very quickly and take to technology like 'fish to water', whether it is computer or hybrid-seed technology, or aquaculture," according to M.S. Swaminathan. The asset-less, ultra-poor are among the major users of the village knowledge centres.

"India is home to the highest number of disadvantaged people, but at the same time we have the technology and the tools to correct this imbalance. I assure you that Mission 2007 has the full support of the IT industry."

Saurabh Srivastava, Founding Trustee, Nasscom Foundation (National Association of Software and Service Companies)

The project is making livelihoods more secure, sustainable, and safe, and is helping villagers to develop new skills. For example, each

evening in a coastal village in Pondicherry, women download information on likely wave heights. This information, available on the Web site of the US Naval Oceanographic Office, is then broadcast throughout the village by loudspeakers. The fishers thus get accurate information on sea conditions before they set out in their wooden boats — lifesaving information. In fact, on 26 December 2004, a village knowledge centre in Pondicherry was used to blare out warnings of the impending Asian tsunami. All villagers made it to safety and no lives were lost.

Future Challenges:

Extending the vision to all of India

In 2004, the research project led to the "National Alliance for Mission 2007" a grassroots movement to bring the benefits of the knowledge revolution to 600 000 villages by 15 August 2007 — the 60th anniversary of India's independence. The idea is to replicate the model created in Pondicherry. The Government of India committed the equivalent of CA\$28 million to this initiative in its March 2005 national budget.

The village knowledge centre in Pondicherry.



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