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TECHNOLOGY & DESIGN

From the Lab to the Land: Disseminating Technologies for the Poor

Collaboration across sectors supports the scaling up of product dissemination and an organizations' goals of improving the lives of low-income citizens.

By Diana Jue | Mar. 31, 2011

Technologies designed for low-income users exist, but can users access them?

Many engineering students seeking to attack global poverty focus on inventing livelihood-improving and environment-sustaining technologies. These technologies include things like infant baby warmers, prosthetic body parts, bicycle-powered machines, and solar cookers, and they are usually intended to be low-cost, decentralized, easy to operate, and useful. However, while many students expend energy on the design challenge, far fewer tackle the very real and pressing challenge of getting these products to the people who need them.

Outside of academia, many philanthropic and government-funded technology dissemination initiatives fail. Limited funds, management obstacles, momentum shifts, and the real challenges of working in poor, typically rural areas all limit programs' sustainability, scalability, and replicability.

Using business models

The concept of businesses leading the effort to address health, economic, and social issues in developing countries is in vogue. Using an economically sustainable business model is believed to enable the long-term pursuit of a social goal. However, the obstacles of dissemination remain numerous. The social enterprises and partner organizations must provide their products and services at an affordable price while facing dispersed and fragmented markets, high transaction costs, high customer acquisition costs,

poor or nonexistent distribution systems, and limited financing options for consumers and the enterprises themselves. Achieving economies of scale and generating profits—or at least covering costs—is difficult, but it is necessary for long-term, transformative social impact.

Innovation is key

Solving the dissemination problem requires innovating social enterprise business models and the ecosystem in which they operate. My own research in southern India revealed multiple new models of disseminating clean-burning, fuel-efficient, biomass cook stoves. Advocates hope these stoves will help address infant-killing air pollution and climate change. Each dissemination model—usually spearheaded by a social enterprise—aims for large-scale commercialization through the collaboration of diverse entities, including NGOs, women's self-help groups, academic institutions (for product development), traditional enterprises (like factories and rural retailers), social venture capitalists (for enterprise financing), and microfinance institutions and village banks (for customer financing).

Although the number and types of partners varies from model to model, this collaboration across *sectors* and across *localities* (that is, networking at both a global and grassroots level) supports the scaling up of product dissemination and, therefore, the organizations' long-term goals of improving the lives of low-income citizens. The collaboration creates and continues to develop an ecosystem that supports social initiatives.

With the cook stoves project, innovation in sales, marketing, and distribution strategies are tested in the field and directly affect how customers get their hands on products. These strategies include engaging village-level entrepreneurs, using a mass marketing campaign, and building new brick-and-mortar village stores. In my next post, I will elaborate upon and critique these efforts, all of which are limited but nevertheless admirable. These social enterprises are venturing where others haven't seen potential or haven't had the guts to explore. Right now, these new dissemination models must be identified, monitored, evaluated, learned from, and innovated upon. Only then will new technologies live up to their potential to sustainably improve lives.

Diana Jue is working toward her Master of City Planning at MIT's Department of Urban Studies and Planning as a member of the International Development Group. Her interests include international economic development and social entrepreneurship. For her thesis, she researches appropriate technology dissemination through social enterprises to rural India.
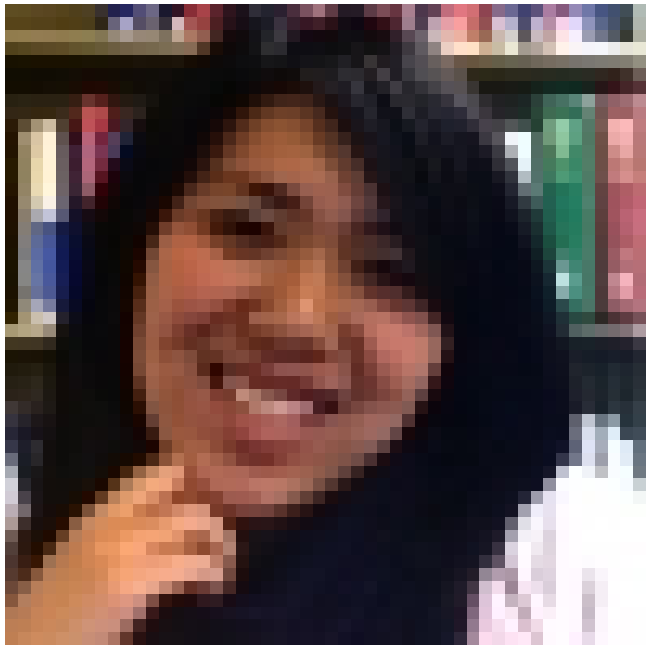
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