## innovations

**TECHNOLOGY** GOVERNANCE GLOBALIZATION

## Microfinance 2.0

Technology and Services for Ascending Markets

#### Lead Essays

Beyond Lending Fazle Hasan Abed and Imran Matin Patient Capital Jacqueline Novogratz

#### Cases Authored by Innovators

Kiva and the Birth of Person-to-Person Microfinance Matt Flannery *commentary by* Robert D. Austin

### M-PESA: Mobile Money for the "Unbanked"

Nick Hughes and Susie Lonie commentary by Mudit Kapoor, Jonathan Morduch, and Shamika Ravi

#### Analytic and Policy Articles

Microfinance Matures Elisabeth Rhyne and María Otero Commercial Returns at the Base of the Pyramid Michael Chu The Next 4 Billion Allen L. Hammond et al. The Architecture of Audacity Susan Davis and Vinod Khosla Regulatory Innovation in Microfinance Guy Stuart Is Securitization Right for Microfinance? Sharon Stieber

#### SOLUTIONS IN THE PUBLIC INTEREST

#### **Editors** Philip Auerswald Iqbal Quadir

**Senior Editor** Winthrop Carty

**Associate Editors** Miriam Avins Elizabeth Dougherty

#### **Consulting Editors** Christian Duttweiler

Helen Snively Interns

Ana Agan Justin Lee Huang

#### **Chairman of the Advisory Board** John Holdren

#### **Advisory Board**

Lewis Branscomb Susan Davis Bill Drayton Robert Frosch John Gibbons Anil Gupta Daniel Kammen Don Kash David Kellogg Neal Lane Eric Lemelson Monique Maddy Granger Morgan Jacqueline Novogratz R. K. Pachauri Gowher Rivzi Roger Stough Karen Tramontano Iames Turner Xue Lan

#### **Editorial Board**

David Audretsch Michael Best Matthew Bunn Susan Cozzens Maryann Feldman Frank Field III Richard Florida Keenan Grenell **James** Levitt Martin Malin Peter Mandaville Julia Novy-Hildesley William J. Nuttall David Reiner Kenneth Reinert Ian Rivkin Steve Ruth Peter Spink Francisco Veloso Nicholas Vonortas Yang Xuedong

**Publisher** Nicholas Sullivan

*Innovations: Technology* | *Governance* | *Globalization* is co-hosted by the Center for Science and Technology Policy, School of Public Policy, George Mason University (Fairfax VA, USA) and the Belfer Center for Science and International Affairs, Kennedy School of Government, Harvard University (Cambridge MA, USA). Support for the journal is provided in part by the Lemelson Foundation, the Ash Institute for Democratic Governance and Innovation, Kennedy School of Government, Harvard University; the Center for Global Studies, George Mason University; and the Schwab Foundation for Social Entrepreneurship.

*Innovations* (ISSN 1558-2477, E-SSN 1558-2485) is published 4 times per year by the MIT Press, 238 Main Street, Suite 500, Cambridge, MA 02142-1046.

Subscription Information. An electronic, full-text version of *Innovations* is available from the MIT Press. Subscription rates are on a volume-year basis: Electronic only—Students \$23.00, Individuals \$45.00, Institutions \$140.00. Canadians add 6% GST. Print and Electronic—Students \$26.00, Individuals \$50.00, Institutions \$155.00. Canadians add 6% GST. Outside the U.S. and Canada add \$20.00 for postage and handling. *Single Issues*: Current issue \$15.00. Back issue rates: Individuals \$20.00, Institutions \$40.00. Canadians add 6% GST. Outside the U.S. and Canada add \$5.00 per issue for postage and handling.

For subscription information, to purchase single copies, or for address changes, contact MIT Press Journals, 238 Main St., Suite 500, Cambridge, MA 02142-1046; phone: (617) 253-2889; U.S./Canada: (800) 207-8354; fax: (617) 577-1545; e-mail: journals-orders@mit.edu. Claims for missing issues will be honored if made within three months after the publication date of the issue. Claims may be submitted to: journals-claims@mit.edu. Prices subject to change without notice.

*Advertising and Mailing List Information:* Please contact the Marketing Department, MIT Press Journals, 238 Main St., Suite 500, Cambridge, MA 02142-1046; (617) 253-2866; fax: (617) 258-5028; e-mail: journals-info@mit.edu.

*Innovations: Technology | Governance | Globalization* is indexed and/or abstracted by CAB Abstracts. *website:* http://www.mitpressjournals.org/innovations/

© 2007 Tagore LLC.

# innovations

### TECHNOLOGY | GOVERNANCE | GLOBALIZATION

#### Lead Essays

- Beyond Lending: How Microfinance Creates New Forms of Capital to Fight Poverty
  Fazle Hasan Abed and Imran Matin
- Meeting Urgent Needs with Patient Capital Jacqueline Novogratz

#### **Cases Authored by Innovators**

- 31 Kiva and the Birth of Person-to-Person Microfinance Matt Flannery
- 57 *Case discussion: Kiva.org*Kiva as a Test of Our "Societal Creativity"Robert D. Austin
- 63 M-PESA: Mobile Money Turning Cellphones into 24-Hour Tellers in Kenya Nick Hughes and Susie Lonie
- 82 Case discussion: M-PESA
  From Microfinance to m-Finance
  Mudit Kapoor, Jonathan Morduch, and Shamika Ravi

#### Analysis

- 91 Microfinance Matures: Opportunities, Risks, and Obstacles for an Emerging Global Industry Elisabeth Rhyne and María Otero
- 115 Commercial Returns at the Base of the Pyramid Michael Chu
- 147 The Next 4 BillionAllen L. Hammond, William J. Kramer, Robert S. Katz,Julia T. Tran, and Courtland Walker

The past 20 years have seen an unprecedented rise in wealth, with new technologies changing the economic landscape. But globalization has also increased the divide between rich and poor, creating a growing sense that something must be done to extend the benefits of the global economy to the 3 billion people—or half the world's population—who live on less than \$3 a day. This glaring inequality is a concern not only for ethical reasons, but also because of the implied economic and security risks associated with such an imbalance. Indeed, the future of capitalism must continue to fuel innovation and productivity while also ensuring opportunity for those at the bottom of the economic pyramid.

While the need to address global inequality becomes clearer, philanthropy is also rapidly changing. Foundations like Gates, Google.org, Skoll, Rockefeller and Cisco increasingly are exploring not only how to interact more effectively with markets, but also ways to harness private sector initiative and resources to solve tough, public problems. Moreover, foundations are not alone in this exploration: corporations and individuals are also considering how best to think about their philanthropy as a means of leveraging real change by working across the private, public, and citizen sectors, and promoting market-oriented solutions to solve social problems.

Acumen Fund, a nonprofit venture capital fund for the poor established in 2001, reflects the growing interest in using markets to solve tough problems of poverty. The organization received seed financing from Rockefeller Foundation, Cisco Foundation and three Silicon Valley individuals, including Cate Muther (the former senior marketing executive at Cisco and founder of the Three Guineas Fund) and Stuart Davidson (a managing partner for Labrador Ventures)—representing from the start a collaboration among a traditional foundation, a high-tech corporate foundation and individuals. Today, the organization is supported by over 200 individuals, foundations and corporations from around the world who are looking for higher social returns (including the recycling and leveraging of capital) on their philanthropic funding.

Jacqueline Novogratz is CEO of Acumen Fund, a nonprofit venture fund that seeks to prove that small amounts of philanthropic capital, combined with large doses of business acumen, can build thriving enterprises that serve vast numbers of the poor. Acumen Fund's investments focus on delivering affordable, critical goods and services—like health care, water, housing and energy—through innovative market-oriented approaches.

© 2007 Jacqueline Novogratz innovations / winter & spring 2007

Acumen Fund raises charitable funds and then turns around and invests equity and loans in both for-profit and non-profit enterprises that deliver affordable health care, water, housing and energy to the poor. Acumen Fund is active in Pakistan, India, Kenya, Tanzania, and South Africa and manages \$20 million in investments. The capital is not returned to "investors," but reinvested by Acumen in other enterprises. It partners with corporations, foundations, individuals and governments. In addition to providing capital, Acumen Fund supports investees with talent (management assistance, strategic planning and providing Acumen

Foundations like Gates, Google.org, Skoll, Rockefeller and Cisco increasingly are exploring not only how to interact more effectively with markets, but also ways to harness private sector initiative and resources to solve tough, public problems. Fund fellows for on-ground support) and knowledge (bringing best practices and lessons to bear on specific business models, metrics, etc).

With this combination of goals, Acumen Fund sits at the center of the "blended value" discussion. Blended value, a term coined by Jed Emerson (a senior fellow with Generation Foundation, and a fellow of the Said Business School at Oxford University), reflects the idea that the value that organizations create is a non-divisible mix of economic, social and environmental components. Acumen Fund is a

non-profit seeking charitable donations that it invests in private enterprises from which it expects a reasonable but often below-market financial return on the capital invested.

Acumen Fund measures success both by its social impact on target markets as well as its own ability to be repaid on obligations outstanding (thus far, all investees are current on debt; and all equity is held at book value). The financial returns that Acumen Fund measures are also meant to be indicators of the potential for these enterprises to attract private capital, which is ultimately much more plentiful than aid or philanthropic funding and perhaps better suited to addressing the needs of the majority of the global population.

The organization builds its pipeline primarily through creating and nurturing networks, which are strengthened by its on-ground presence in Hyderabad, India, Karachi, Pakistan and Nairobi, Kenya. Acumen Fund invests in enterprises with strong leaders that also promise long-term financial sustainability (revenues covering costs) and scale (the aspiration to reach a million customers over time). Given its track record and need to raise additional capital to meet pipeline opportunities, Acumen Fund is currently exploring a "high-risk, low-return" fund for its longstanding partners in which investors would actually be repaid principal and

modest interest (approximately 3%) after 8-10 years provided additional grants are injected to cover the costs of providing essential management assistance.

Since inception, Acumen Fund's investment activities have resulted in significant growth among most of its 21 investee organizations. These enterprises have transferred needed technologies effectively, created more than 16,000 jobs, and delivered basic services to millions of individuals who previously had limited or no access to markets. An approach that recognizes the need for patient capital and the critical role for management assistance is key to this early track record.

#### USING MARKET MECHANISMS TO REACH THE UNDER-SERVED

This article describes four examples of how socially oriented enterprises are using market-mechanisms and innovative financing instruments to deliver affordable, basic goods and services to those who have been excluded from the opportunities of globalization:

Drishtee.com: Low-cost technology, credit and a powerful distribution network. Drishtee is establishing information centers for the rural poor across India, with a growing network of telekiosk franchises that are part of a sustainable network for distributing goods and services to rural areas. Drishtee is providing loans and training to women who have no access to bank credit to support their ability to become telekiosk franchisees.

WaterHealth International: Low-cost rural business model for delivering clean water sustainably. WaterHealth International is building water treatment systems in rural communities and slums in India and the Philippines that provide safe affordable drinking water to communities on a financially sustainable basis. They have developed a credit facility with Acumen Fund and ICICI Bank to finance systems so that more communities can access these systems and cover the capital cost over time.

1298 "Service for All": Ambulance customers who pay subsidize those who can't. With innovative pricing and a well-managed, ethical business model, 1298 is rolling out a network of ambulance services to fill the vacuum for emergency medical services that currently exists in the cities of India, beginning in Mumbai. An innovative pricing structure will allow free or subsidized rates for the poor, providing an opportunity to extend quality health care to a significant portion of urban population in India who live in poverty.

IDE-India: Product design and credit to make agricultural inputs accessible and affordable. IDEI's drip irrigation technology is designed—and priced—to meet the needs of poor farmers, and can double or triple a farmer's income in a single crop season. To help increase affordability, the company partnered with ICICI Bank to extend credit as part of its retail strategy, allowing IDEI to increase outreach, the bank to develop its customer base, dealers to significantly increase sales, and farmers to access credit matched to their needs—and to cash flow from their crops.

Over the past five years, Acumen Fund has worked with models for building businesses that serve the poor, which share common themes around product

design, pricing structures, marketing, and, especially, distribution. All of these businesses focus on designing solutions from the perspectives of the poor as *consumers* and not as passive recipients of charity. This is their fundamental difference with more traditional organizations focused on delivering basic services and it is fundamental to success, regardless of whether nonprofits, private sector corporations or governments are focused on addressing market failures regarding the poor with innovative solutions for change.

## Drishtee.com: Low-cost technology, credit and the creation of a powerful distribution network for the rural poor

Satyan Mishra founded Drishtee.com in Delhi, India in 2000 to build information centers for the rural poor across India. He believed that a lack of access to information would perpetually hinder the rural poor from taking advantage of the opportunities of globalization. His business model depends on finding rural entrepreneurs who will invest in a small kiosk consisting of a computer, a phone and a camera. Drishtee.com not only trains the franchisees but creates a supply chain to deliver not only information products like technology education, matrimonial services, e-governance and the like, but also, increasingly, physical products like low-cost eye glasses, seeds and fertilizers.

Today, Drishtee.com has a rural network of more than 1,500 kiosks in India, employing nearly 3,000 individuals. Even by the high-growth standards of leading Indian technology companies, Drishtree's performance is remarkable, having achieved growth in revenue by a factor of ten over the past three years. By identifying the right local franchisees and providing viable systems with affordable products, Drishtee.com is creating a powerful, sustainable network through which unlimited goods and services can be distributed to underserved—and too often, invisible—rural populations.

Acumen Fund approved \$600,000 in debt and \$1,000,000 in equity to Drishtee in 2006, of which the full equity portion has been disbursed. Bank debt initially was not available to the company due primarily to the company's start-up nature and lack of collateral. Acumen's financing was structured first as equity to give Drishtee.com the maximum flexibility to experiment in the early years and build a system that could scale and last. The debt portion is partially a guarantee facility to leverage financing so that women entrepreneurs might be more easily integrated into the system.

Historically, women have not had access to traditional bank loans due to their lack of collateral and documentation. Microfinance institutions often require women to borrow in groups, which is also not conducive to the Drishtee franchise model.

Acumen Fund worked with Nike Foundation, which provided a \$250,000 grant to help solve the problem of too few women entrepreneurs. The initial capital will enable Drishtee.com to prove the "bankability" of its women entrepreneurs so that ultimately much of the lending to franchisees will come directly from local banks.

This example is key to underscoring the various kinds of capital needed to help scale important entrepreneurial efforts to reach the poor. Acumen Fund used its philanthropic capital to provide initial equity and help give Satyan stability so that he could bring additional, more traditional investors into the company, including an Indian venture fund, funded by institutional investors such as the International Finance Corporation (World Bank) and KfW (the German government-owned development bank), with which they are now in discussions. Nike offered a grant to use to leverage an individual philanthropist's "social investment". Over time, the banks ideally will lend their own capital with a decreasing need for a guarantee structure as women prove themselves as bankable. Ultimately, it is this collaboration among different players with diverse appetites for risk and return that allow for a workable capital structure for this highly innovative enterprise.

As Drishtee.com has become more complex, its need for management talent has grown. Drishtee.com hired a new CEO to oversee the company's day-to-day operations; and Acumen Fund provided a full-time fellow with a degree in engineering and strong background in technology and operations to support new initiatives. Acumen Fund's India Director sits on the board of the company as well. Importantly, the learning has been mutual. Satyan Mishra is a highly innovative entrepreneur with a vision to bring sustainable change to the part of India that has been left out of the opportunities of globalization. He thus is willing to share both successes and failures in a real partnership so that the different parties involved can become smarter and more capable at building and supporting business models that reach the poor. It is this continual dialog that is also essential to affirm when identifying the kinds of entrepreneurs with which Acumen Fund seeks to work entrepreneurs who possess both the will to reach the very poor with critical services and the skill to do so effectively.

Drishtee.com builds management capacity and leadership, income for its kiosk operators and staff, and delivers critical goods and services to remote areas that never see affordable goods and services like health insurance, eyeglasses, and egovernance. What excites rural villagers is that the prices are low and don't even take into account the time saved from the fact that people don't have to travel, for the first time in their lives, to purchase what they need. What excites Drishtee is the building of a model that will hopefully reach over 10,000 villages in the next three years. What excites Acumen Fund is the development of a business model that demonstrates the power of creating a sustainable distribution system started for knowledge that has expanded to delivering physical products and services that significantly enhance lives as well.

## WaterHealth International: Low-cost rural business model for delivering clean water sustainably

Access to safe drinking water is one of the world's most pressing issues. One in five people on earth have never had a glass of clean water. Too often debates around water are polarized between those who assert that water is a human right and should be made free to all people and those who believe it should be privatized.

This is the wrong debate, and one that ends in politicians promising free water that never arrives; or urban water sellers pricing water in slums in Delhi and Mumbai at 30-40 times what their middle class counterparts pay.

Tralance Addy, the entrepreneur who founded Water Health International, focused on a private sector solution that starts with the assumption that affordable safe water is better than free contaminated water. Water Health International is a for-profit company headquartered in Los Angeles with subsidiaries in the Philippines and India. Its business model brings comprehensive water treatment facilities to rural communities with a 20% down payment covered by the local village government (often through philanthropic or government funding). The rest of the funding comes from a low-cost loan that is repaid from user fees. The company offers water at minimal cost—about 2 cents for 15 liters.

Acumen Fund invested \$600,000 in equity into WHI in 2004 alongside the International Finance Corporation. In addition to capital, Acumen Fund also supported the company with talent and knowledge. Acumen placed a Fellow with a background in architecture and consulting who worked with WHI on a new design for their water filtration plants that would streamline aspects of the construction process. Acumen Fund also held a board seat in this company. In 2006, the company raised an additional \$12 million through a Series C round and it now operates in 50 villages, serving over 100,000 customers and providing significant insights into how to deliver affordable, safe water in ways that are sustainable and can ultimately reach tens if not hundreds of millions.

WHI is an example of a private-public partnership that uses a private sector approach. The for-profit company partners with Naandi, a local non-governmental organization (NGO) that provides outreach and support to the villages in which WHI works. Acumen Fund and WHI negotiated a loan guarantee with India's second largest commercial bank, ICICI, which provides a line of credit to WHI based on that guarantee. The IFC and Gates Foundation have also brought capital and expertise to bear on the company's success.

The outcomes associated with WHI should be viewed on several levels. In terms of lives changed directly, 100,000 individuals now have access to safe drinking water. Second, the value of Acumen Fund's original investment remains strong and WHI has demonstrated an ability to attract additional capital to fuel its growth. From a financial and social returns perspective, then, this is a meaningful and impactful investment for the future of clean water delivery.

At the same time, Acumen Fund recognizes that WHI has a long way to go from serving 100,000 customers to the 480 million Indians in need of clean water. In order to scale this approach, a better understanding is needed of the long term social and economic impacts of WHI's water treatment systems. Though Acumen Fund has not typically had the financial resources to measure the primary and secondary health impact of delivering clean water to the poor, the Gates Foundation is supporting us to conduct in-depth research on the social and health impacts that are arising from WHI's involvement at the local community level. Again, different types of capital are required to effect real change through market-oriented approaches.

With Gates' support, researchers are also exploring demand for water as well as gender issues associated with the water delivery. Since establishing the water kiosks, men and not women—the traditional water carriers—are the ones who purchase the water. In villages where WHI operates, local men also have enabled delivery services to start—and they are willing to pay as much to have the water delivered as they are for the water itself. There is clearly much to learn. The WHI example provides important insights into at least one business model that can achieve sustainability while serving some of the world's poorest people by starting with their needs, bringing local talent to bear on organizational and managerial issues, and pricing and distributing correctly given the local context.

## 1298: Innovative pricing structures and a well-managed, ethical business model

Bombay is a city of 18 million people, a crowded and unruly maze of streets with few ambulances that are working and fitted to properly serve emergency needs. Emergency medical services are in the early stages of development in India, and ambulance service is extremely fragmented, informal and highly unorganized. Shaffi Mather, Ravi Krishna, Manish Sacheti, and Naresh Jain, four well-heeled businessmen working in top Indian corporations, decided there had to be a better way to provide services than to rely simply on charities and government, both of which provided well-intentioned but ineffective services in an industry that was growing increasingly corrupt.

In 2002, Shaffi and his partners established Ziqitza Health care Limited, a Mumbai-based company that is rolling out a nationwide network of ambulance services. Commonly referred to as "1298," based on the call-in number they were given after lengthy negotiations with local government, it has a mission of becoming India's first world-class ambulance company with an ethos of "service for all" and a focus on the highest level of professionalism. The company would focus on profitability but it would *not* maximize profits as their paramount objective. Instead, it would measure its success based on the number of people served, the quality of services and their ability to turn a profit as well. The latter goal was critical to a plan to grow the company to reach all corners of the country, and eventually, other countries as well.

The business model is constructed according to a sliding scale pricing model based on the level of hospital to which one is taken. Those who go to free public hospitals for the poor don't pay. Those who are driven to the more expensive hospitals pay accordingly. In other words, there is a cross-subsidy pricing model inherent in the business itself.

No one is asked to pay up-front and there are no negotiations on price. The company covers its costs through a combination of the premium payments made by half their clients and by their lower capital costs for ambulances. As city residents learned of the greater effectiveness of this for-profit model, they began to donate new vehicles to 1298 rather than giving them to a standard charity. Finally, the company is operated efficiently with a constant push to lower costs while maintaining high quality service.

The straightforward ethos of "service for all" requires 1298 to vigilantly balance their social and financial aims. It also requires establishing a clear set of principles by which to operate, including not charging for services until someone has been taken to the hospital and by avoiding any hint of corruption or kickback schemes so common to this industry across India (and many other countries as well). Given the importance of lowering all capital costs, where possible, to make free services available, 1298 is also using a mix of grants, equity and loans to capitalize their business. The company is creating a local nonprofit trust and is currently approaching the Indian diaspora for contributions to purchase additional ambulances. Understanding these hybrid models and the varied financial instruments that drive them is critical to accessing new channels of capital open to institutions involved in social change.

Operating as a for-profit concern and not as a public charity requires that 1298 know its customer and act accordingly. For one thing, though the poor are not charged a fee for services, the company has found that these customers regularly volunteer some sort of payment; typically, someone from the family will come to 1298 sometime after the patient has been delivered to a hospital and provide some kind of tip or thank you. The wealthy, however, tend to negotiate for reduced prices.

Second, 1298 originally thought they could staff each ambulance with a driver and a doctor only; however, doctors are accorded high status in India and are therefore expected to behave in a certain way. When people saw the doctors lifting patients, they assumed the doctors were of low quality. Until attitudes change, 1298 decided to employ an assistant for each ambulance, primarily to do the lifting of patients with the driver and to support the doctor in his or her needs.

Clearly, there is no better listening device than the market itself. By relying on market mechanisms and holding itself accountable to reliability and profitability, 1298 must understand who the customer is—even those who can't afford to pay. Customers provide feedback and 1298 listens. The government is also taking note. Recently, the government of Maharastra adopted 1298 as the main call-in number for ambulances. From Acumen Fund's perspective, then, not only have thousands of lives been saved through the company's operations; also, 1298 is creating a blue-print for how better to build an efficient public-oriented company that can effectively serve the needs of all people regardless of ability to pay.

## IDE India: Product Design and Credit to make agricultural inputs accessible and affordable to the poor

In India today there are nearly 250 million farmers, most of whom live hard-scrabble lives eking out a dollar or two a day from small plots of land. One of their biggest challenges is getting water to the crops. Historically, they've had few options. With water scarcity on the rise in India, the need for affordable water

management tools has never been greater.

Amitabha Sadangi of IDE India is an extraordinary entrepreneur who focused on solving problems of poverty by using the marketplace. Amitabha created a nonprofit and then a company that would make agricultural technologies accessible to poor farmers at prices they could afford and in ways that would enable them to increase their income significantly over time. After more than two decades of working in development, he concluded that creating affordable technologies for farmers that would enhance their income and productivity was indeed one of the only truly sustainable ways of tackling tough problems of poverty in the agricultural areas where he worked.

One of the company's main products is drip irrigation, a system that enables farmers in water-poor areas to bring the scarce resource directly to the roots of crops and therefore enable plants to grow even in drought conditions. Drip irrigation, perfected in Israel, has typically been designed for commercial farms, but the overwhelming majority of Indian farmers cultivate less than 2 hectares; and so a different kind of product was needed.

At heart, Amitabha is a designer. Like all good designers, he started not with his own assumptions of what worked, but with the needs and aspirations of the farmers he wanted to serve. His design principles were clear: products must be as inexpensive as possible, pay a quick return on investment and be infinitely expandable. In other words, in addition to being affordable, the farmer would need to see that the money invested in the drip system would lead to quick improvements in yields and profits. With his additional profits, he could then invest in another system to extend the amount of land irrigated. This way farmers could mitigate their own risks, use a small amount of capital and then grow their own businesses over time.

IDE India uses a flexible pipe rather than the rigid, more expensive plastic pipes used in the commercial market. More recently, it expanded its overall product range so that farmers could start with a \$4 investment for a 20 square meter plot, and move to larger systems typically costing \$200 per acre, four times less than pre-existing products. Thanks to IDEI, poor farmers could thus gain access to a technology that increases water efficiency by 50% and increases yields by 30% or more.

Early growth for the organization came through direct sales with local farmers; however, Amitabha's ambitions were international in scope. With Acumen Fund's support, IDEI created a for-profit wholesale distribution company called Global Easy Water Products (GEWP). The nonprofit continued to focus on research as well as advocacy; and the company, on building a scalable business model that serves the very poor. In its first five years of operations, IDEI has sold over 150,000 systems in 6 Indian states, impacting the lives of 750,000 people by improving their income levels and their nutrition.

Despite the relatively low investment needed by a farmer to purchase and utilize a drip irrigation system, ability to pay continues to be a key constraint. IDEI, therefore, has explored microfinance options to enable farmers to access the cash

needed to purchase essential irrigation equipment. In 2006, GEWP established a partnership with ICICI, to extend credit to GEWP dealers that could offer to customers.

In this case, GEWP dealers, of which there are now close to 300, could become bankers—as ICICI franchisees. ICICI would train them in lending principles and practices—not unlike a car dealer would serve the same function with local financing institutions. The GEWP dealer would provide a deposit to ICICI to receive a line of credit for ten times that amount. The dealer would then provide the equipment to the farmer and take responsibility for ensuring repayment. The rate would be lower than rates available from private lenders.

This system design offers a great value to all partners focused on using a private delivery mechanism to scale a public solution. GEWP increases outreach by improving the affordability of its products and reducing its working capital needs. ICICI develops its customer base in rural areas with limited risks - it has a target of delivering 20% of its loans to rural customers. Dealers significantly increase their sales while also earning a percentage of the loan interest. They also increase their credibility and status in their local community. Most importantly, farmers gain access to credit with a simple procedure and very rapid disbursement unmatched by any other market player. The credit is matched to their needs—and to the cashflow from their crops—and they are able to make the decision to invest in an affordable technology that enables them to see three or four times returns on their investments in a single harvest.

In January 2007, ICICI and GEWP initiated five pilots to validate this design and prepare a large scale roll-out. The company's operations are growing and GEWP is raising capital to support its growth. Through innovative products, organizational designs, and financing mechanisms, they are making it possible for affordable drip irrigation technologies to spread quickly among small farmers.

In addition to working with IDE India in its home country, Acumen Fund has also been working with Unilever Pakistan and the Thar Regional Development Program to transfer the drip irrigation successfully to the Sindh desert, one of the most barren places in Pakistan. Dr. Sono, a social entrepreneur by all measures, founded and has led this organization since 1998 and has a strong knowledge of the needs of local farmers. With support from members of the Acumen Fund teams in India and Pakistan, he has worked closely with Amitabha and has hosted team members from IDE India to gain hands-on knowledge and drive the change process in Pakistan. There are currently more than 200 extremely poor farmers who are piloting IDE India's drip irrigation technology in Pakistan with hopes of scaling it to a national and international level.

#### DIFFERENT FORMS OF CAPITAL FOR DIFFERENT PRIVATE AND PUBLIC NEEDS

While it is thrilling that more traditional forms of capital are seeking financial opportunities in markets serving the poor, there is also one major concern: there

can be no cookie-cutter approach to bringing capital to solutions of poverty. It is too tempting to think that markets alone will eventually solve big problems—and too trite to believe that businesses who "do well by doing good" have all the answers. Indeed, what is needed is more nuance, not less. The demands of increasingly complex problems should drive institutions to use capital—and support it with grant-backed technical assistance and knowledge—in creative ways that are tailored to the problem at hand.

As is the case everywhere, healthy economies in the developing world benefit from both private and public goods. Private goods—where individuals themselves benefit from making an investment (e.g. drip irrigation) can be supported eventually by the market alone. On the other hand, public goods like clean water and preventive health care, will not be provided solely by the market, and yet, they are extremely valuable to society as a whole. In these cases, solutions may require a combination of high risk philanthropic capital at the onset to test new innovations (as in the case of WHI and water); and increasing levels of higher-return capital to enable the enterprise to scale effectively. Philanthropy or aid are also needed in many cases both to subsidize the overall cost of the village-servicing plants (a 20% deposit is required for WHI to install a plant; and this amount often comes from philanthropists or local government) and to bring the kind of management expertise that will enable the venture to succeed. In all cases, a combination of different kinds of capital along with talent and knowledge are critical to long-term success.

These solutions do not, of course, obviate governments' responsibilities for serving the poor. Indeed, government will be a key partner in taking some innovations to scale. What is new is the level of private initiative that is innovating to solve public problems. In the case of drip irrigation, the market could potentially be the response to farmers' needs over time. In other areas—especially in preventative health care—some form of government assistance may be needed. In either case, new entrepreneurs are perfecting the right models for delivering basic services to the most people in the most effective and efficient ways.

#### THE TIME IS NOW, THE NEED IS URGENT

This is an astounding time in history. Not only are banks being more innovative about extending their services to low-income markets, but so are corporations and nonprofits and small businesses. The world is more connected, and people all over have a better sense of the conditions of those who are excluded from the global economy. Those in positions of privilege have an unprecedented opportunity to take the tools of capitalism and extend a sense of hope and possibility to billions of people who want to make their own decisions and solve their own problems.

But what will this really take?

First, a sense of urgency. The rising gap between rich and poor is unsustainable and unacceptable in any moral sense. We can do something, and we must do something.

Second, entrepreneurs and policymakers alike need to see every person on the

planet as a potential customer for the basic goods and services today routinely enjoyed only by the world's wealthy minority. By excluding billions from such goods and services, we are not only harming the excluded; we are also collectively depriving ourselves of an enormous reservoir of human talent—artists, entrepreneurs, teachers, inventors, and others, waiting for their chance to contribute.

Third, those engaged in blended-value activities of the sort I have described need to hold themselves not only to the highest standards of accountability, but also to an equally exacting standard of creativity and flexibility. Experimentation is at the core of innovation. Iterated attempts form the path to new solutions. Sharing failures as well as successes along the way is an integral part of the process. The right balance, and the most effective approaches, will take time to discover.

For Acumen's part, work begins with the premise that part of the solution may be to identify and support entrepreneurs who listen to what people in the poorest places want, and then deliver to them affordable, useful goods and services; to invest in enterprises run by leaders with both the will to serve those whose needs are most neglected, and the skill to grow viable, large-scale businesses; to affect culture and encourage further effort by celebrating success, systematically and regularly.

Most fundamentally, we believe that ending persistent poverty begins with changing perceptions of "the poor." Can it possibly make sense to view the majority of the world's population making less than \$3/day as passive, needy, candidates for charity? Each and every member of the human community has a capacity to move mountains, provided the links between effort, reward, and outcome are intact.

Where those links are broken—are they so often are in poor communities patient capital can help to mend them. Capital must be patient because there are no easy solutions. Capital invested in businesses seeking to deliver basic goods and services to the marginalized majority will require long-term commitments, a lot of management assistance, and sustained relationship building. It is by providing patient capital in such a manner—and not by offering charity—that philanthropy can, and must, play a new role in meeting the challenge of poverty on a global scale.

A sea change is taking place in perceptions regarding the role of aid and philanthropy as they relate to traditional capital markets. This sea change is washing across business sectors and international boundaries. The impacts may carry forward for generations. There is great opportunity ahead provided that the business models that characterize the resulting landscape recognize both the timelines, and the multiple bottom lines, involved in enabling people to help themselves.