Since late last autumn, Mira Mehta and Shane Kiernan have lived in converted chicken coops on a farm in Nigeria’s Nasarawa State—a two-hour drive, when roads are passable, northeast of Abuja, the capital of Africa’s most populous country. On December 23, they started transplanting tomato seedlings from their bare-bones greenhouse to a model plot on a hectare of leased land. Just as they began irrigating the plants, their new well collapsed, and they had to divert supplies and use storage to deliver 80,000 liters of water a day while a replacement well was drilled. Seven weeks after transplanting, voracious borers began to prey on the plants; Mehta and Kiernan had to scramble to get licenses to import traps for the pests. Although their own demonstration field was guarded, the plots of other smallholders, whom they hope to enlist in their venture, were not; nomadic Fulani tribesmen drove their cattle over those fields unhindered, complicating the pair’s plans to expand planting.

After the fraught growing season, Kiernan said later, processing the harvest presented “an equally fascinating learning curve.” When he and Mehta sought to turn the fruit into tomato paste (a national cooking staple) packaged for retail sale—the key to boosting farmers’ income—their second-hand packaging machine, bought in Lagos, did not work. Parts and service were unavailable during Nigeria’s heated elections, so the produce had to be sold fresh, for low market prices. Once the machine began running, after the growing season, early paste samples were submitted as part of the process to register as a Nigerian food-processor. Said Kiernan, “It’s crazy.”

But despite its ambitions, their modest enterprise, Tomato Jos (www.tomatojos.net), is not crazy. Nor are the adventurous co-founders, Mehta, M.B.A. ’14, and Kiernan, who plans to complete his last credits for a master’s in health policy and management from the Harvard Chan School remotely this year. Both have finance experience. Both worked in Africa for the Clinton Health Access Initiative (Mehta in Nigeria, Kiernan in Ethiopia). In preparation for a Harvard Business School (HBS) new-venture competition, and the harvest presented “an equally fascinating learning curve.” When he and Mehta sought to turn the fruit into tomato paste (a national cooking staple) packaged for retail sale—the key to boosting farmers’ income—their second-hand packaging machine, bought in Lagos, did not work. Parts and service were unavailable during Nigeria’s heated elections, so the produce had to be sold fresh, for low market prices. Once the machine began running, after the growing season, early paste samples were submitted as part of the process to register as a Nigerian food-processor. Said Kiernan, “It’s crazy.”

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with their $25,000 runner-up prize, they studied the transporta-
tion bottlenecks and market asymmetries that kept farmers from
selling their crops at a fair price, and the resulting waste of fruit,
despite obvious demand. (Even with ample tomato supplies, Nigeria annually buys $360 million of paste. A June report in The
Economist highlighted the country’s dysfunctional agriculture, cit-
ing the perverse imports of tomato paste.) They learned about the
technologies used by the world’s most efficient paste producer, in
California. They identified where they might farm, ways to raise
growers’ yields, and how to start funding the business.

For Tomato Jos is a business, not an aid organization. Mehta and
Kiernan are entrepreneurs with an acute tolerance for discomfort
and risk. They have raised capital and plan to raise more, while
aiming to earn revenue by penetrating a large market—generat-
ing returns to finance reinvestment and growth.

Equally important, the business is deeply rooted in a social mis-
sion. Mehta keeps in mind an image of driving along roads “lit-
erally full of tomatoes” drying in the sun, for local use, because
markets are inaccessible and farmers have no means to process
their perishable harvest for sale later. With the country poised for
economic reform and investment, will those people in Nasarawa State partic-
ipate, or be shoved aside? Articulating her company’s goals, Mehta aims high:
“If we can set up something sustain-
able that’s good for the smallholders
before the multinational companies
turn their eyes to Nigeria, which they
will in five years, we’ll be in a position
to change the conversation.”

Tiny and entrepreneurial, Tomato Jos is at one end of a spec-
trum that extends to multibillion-dollar, multinational corpora-
tions. What they have in common is pursuing profits and social
objectives at the base of the economic pyramid—a pursuit full of
promise and new challenges for businesses worldwide.

Beyond the Fortunate, Familiar Few
Imagine a simple triangle diagram of the planet’s population. A
fortunate couple of billion upper-income people—in the United
States and Canada, much of Europe, Japan, Australia, and prosper-
ous urban centers in parts of Asia and Latin America—occupy the
apex. The invisible hand of market capitalism supplies this promi-
nent minority with bountiful goods and services. But that leaves
a lot of people out. At the very bottom of the pyramid, a billion or more
humans live in poverty (on less than $1.25 per person per day), often

Photographs courtesy of Tomato Jos
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depending on government programs and charitable aid to subsist.

In between, pointed out V. Kasturi (universally, “Kash”) Rangan, live the low- and low-middle-income majority of mankind: perhaps four billion people who are entering or are already in the cash economy—but barely, with incomes of up to $15 per day. In a conversation, he compared the lives of these people, the base of the pyramid, with those at the top. Because they likely do not own property, and lack rent or tax receipts, they are not bankable, so they turn to exploitative money lenders for credit to stock a shop or start a small business. For medical care, they choose among local healers, vendors of patent nostrums, or queues at public clinics (where it may take a bribe to advance in line). Their labor, often interrupted by those queues or long bus trips to remit cash to a rural family, may be seasonal, itinerant, and legally unprotected.

Functioning markets, he noted, imply a level playing field between consumers and producers, but most of these people aren’t getting a remotely fair deal. It is as if the broad base of the pyramid were an alternate universe where familiar rules don’t apply.

Rangan quickly credited the late corporate strategist C.K. Prahalad, D.B.A. ’75, of the University of Michigan, for saying (most prominently in The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits, published in 2004) that the same rules ought to apply. Shortly thereafter, Rangan, who is McNair professor of marketing and co-chair of HBS’s social-enterprise initiative, began drawing on his own interests and expertise, colleagues’ perspectives, and the experiences of alumni active in developing economies to refine and deepen Prahalad’s ideas.

For example, he has collaborated closely with Michael Chu, M.B.A. ’76, who returned to HBS in 2003 as a senior lecturer to think systematically about business and poverty, after years of founding and leading microfinance institutions that lend to the poor. In a 2007 essay, “Commercial Returns at the Base of the Pyramid,” Chu examined “why the bulk of humanitarian responses to poverty alleviate its effects while failing to significantly reduce it,” a Sisyphean outcome. Even that may be generous: as Rangan has observed, development aid worldwide totals perhaps $135 billion per year—enough to support the people at the base of the pyramid for a few weeks.

“To actually win against poverty requires interventions that can simultaneously” reach hundreds of thousands of people, sustain themselves, improve operations to assure efficacy, and apply resources efficiently, Chu wrote. Philanthropic and development agencies tend not to scale or sustain themselves, he found, and public entities often fail to assure efficacy and efficiency. In contrast, “Through the ages, one actor has proven consistently able to satisfy these criteria: competitive private industries. But that powerful “protagonist...traditionally has stood by the sideline.” Engaging business at the base of the pyramid requires overcoming “strong prejudices” about a sector “so closely associated with social work and philanthropy.”

To dispel that prejudice, Rangan applied his scholarly perspective to suggest inverting the telescope through which companies view prospective lower-income markets. “Typical marketing sells the organization to the customer,” he and research associate Arthur McCaffrey wrote a decade ago. (Need a car? We at GM/Mercedes/Toyota make good ones.) Within the base of the pyramid—devoid as it is of cash, roads, and gas stations—there are no such customers. But enormous demand exists for carts to ease the burden of hauling loads along muddy paths or cheap pumps to irrigate fields. Here, the proper paradigm is to “sell the customer to the organization.”

In a 2011 Harvard Business Review article, Rangan, Chu, and Djordjiga Petkoski of the World Bank extended the analysis further, explaining how businesses might segment the developing low-income market by needs and resources. They noted that companies might even have to view their lowest-income prospects as co-producers: hence Tomato Jos’s aspiration to introduce new growing and sales systems in order to knit farmers into a more rewarding economy. As base-of-the-pyramid consumers, people “often turn out to be paying premiums for, and wasting a great deal of time on, products and services that are shoddily at best” (those money lenders and healthcare queues), so openings exist for better, profitable businesses. In fact, scarce funds make the poor highly receptive to better quality, lower cost, time-saving offerings—but such products and services must be designed for customers who may differ significantly from those at the high-income apex.

How to Address Basic Human Needs

Beyond journal articles, these issues have been aired during the past decade in conferences on economic development and philanthropic impact, and in businesses’ engagement with new markets. One important locus for exploring how this framework informs practice, and is in turn enriched by managers’ decisions, is “Business at the Base of the Pyramid” (BBOP), an elective HBS course created and led by Rangan and Chu. The expanding co-hort of M.B.A. students who enroll—one-fifth of the class of 2015, in three sections taught by Rangan, Chu, and professor of business administration Shawn A. Cole, from HBS’s finance unit—suggests wide interest in applying the power of capitalism to this unfamiliar domain. The course is pertinent not only for entrepreneurs (Kiernan enrolled), Rangan noted at its first meeting last September, but also for investment and finance professionals, consultants, and managers in global corporations that increasingly do business from Mumbai to Johannesburg.

The general-management course explores business models for successful operation in a vast, emerging, underserved market. “Thirty years from now,” Cole noted in a conversation, “when these M.B.A.s are at their career peak, the [combined] Indian and Chinese economy will be three times the size of the U.S. economy. The U.S. will really be a special case, rather than the standard or default then.” Whatever the students’ motivation, he continued, “Even if all you care about is success or getting rich, this is still the class for you”—it doesn’t deepen finance or other skills, but it introduces students to ways to use them in “the two-thirds of the world many knew nothing about, going in.”

Conditions in these emerging markets are not the only unfamiliar content they encounter. As the course progresses (from considering how to meet basic needs like sanitation or access to medical healers, vendors of patent nostrums, or queues at public clinics), students contend with unfamiliar content they encounter. As the course progresses (from considering how to meet basic needs like sanitation or access to healthcare, to financial inclusion for the poor and financing socially oriented businesses, and ultimately to corporate efforts to reach beyond high-income consumers), students contend with existential questions. What are fundamental needs versus consumer satisfactions? Are there trade-offs between social impact and financial return? Is a business’s social benefit intentional, or tangential? The course does not adopt a position on such issues. Nor do students—whose perspectives range from strict return-on-investment principles to a primary focus on social welfare—
converge on a point of view. But in discussing cases, and engaging with visiting managers from the subject organizations, they address issues that rarely arise so vividly in business education.

- Privatizing basic services. For instance, is it useful to privatize a basic good, like the supply of water, and if so, how? In the guise of a case about a potential expansion, the class explores the successful privatization of much of Manila’s water system. The hallmarks of Manila Water Company’s model are close collaboration with community groups to install common taps and communal billing; debt operations that cut off thieves who stole water and peddled it to the poor by the jerry can, at exorbitant prices; and higher rates for more affluent, larger users to subsidize the cost of supplying the rest of the population—while improving service for all. It is a clear case of creating significant social value and profits.

As a chastening counterexample, students dissect New Yorker writer William Finnegan’s “Leasing the Rain,” a report from Colombia’s model of a generic-drug manufacturer, and co-located with physician clinics.

**A Founder’s Dilemma**

Sustaining a start-up social enterprise

Last fall, after a lively class dissection of a nonprofit organization’s options for earning revenue and securing funds to grow, McNair professor of marketing V. Kasturi Rangan, head of “Business at the Base of the Pyramid,” called on Saima Hasan, M.B.A. ’15, who told her fellow students she was living the same dilemma.

As a Stanford undergraduate, Hasan explained in a conversation, she conceived and began piloting Roshni (www.roshniacademy.org), a program to enhance the skills of secondary-school girls in India through a free or low-cost, 110-hour supplementary course of instruction in basic employment and academic skills (from English and computer proficiency to workplace etiquette and interviewing and résumé support). The goals were simple: to enhance their prospects for jobs or higher education—one on the way to boosting their families’ incomes and, in turn, ability to afford medical care, schooling for siblings, and more. It is a small front in a larger battle; as The Economist recently put it, “South Asia is one of the worst places in the world to be female.”

Having developed a training model, Hasan, by then a graduate and resident in India from 2009, had to call at schools, without introduction, to find a risk-taking principal who would give Roshni access to the building to pilot its after-hours curriculum (it took 20 cold calls to gain initial entry)—and then persuade parents to allow daughters to participate. A hard-won government endorsement in 2009 (India’s human resource development minister told a nervous Hasan, “Good for you!”) has eased expansion. To date, Roshni has reached some 15,000 girls, and has measured their gains in getting jobs and rising from poverty. Compared to peers, Roshni trainees have also deferred their age of marriage, an important social change.

Roshni weathered its transition to a new CEO, once Hasan enrolled at Harvard in 2013, but its finances still depended on philanthropy from Silicon Valley’s Indian-American community. And so, during her M.B.A. studies, Hasan worked after hours to explore other options: fee-based partnerships with U.S. high schools and universities sending students abroad for global experiences; job-placement fees from local employers who recruit Roshni trainees. But those were insufficient. “There are lots of paths we can take,” she said. Might a Roshni for-profit affiliate for higher-income students subsidize the core program? Could the occasional field-immersion experiences become a bigger, corporation-focused business? Perhaps Hasan’s own planned, post-M.B.A. mobile-technology startup could underwrite Roshni, or rely on it for its workforce?

In the end, Hasan said this spring, a partial solution emerged: Roshni has partnered with Tata Group (among India’s best-known global enterprises) for funding and expansion to 20 new schools, with a curriculum broadened to include vocational and entrepreneurship training currently unavailable in rural areas. If this pilot, extending into next spring, succeeds, and Hasan’s planned company can meet her hiring aspirations, she will have found a way to sustain Roshni—and perhaps to train successor social entrepreneurs in India.
ics that offered 2 doctor visits—made huge inroads in the nation’s health system. By combining these services, Farmacias offered cost savings on medicines and invaluable time savings for customers who might otherwise have to invest a day to visit a distant clinic, and then find it difficult to fill a prescription elsewhere.

Juxtaposing two such cases, on financially robust companies, invited BOP students to weigh the social value created by each enterprise and to think about the social intent, if any, embedded in their business plans. In his classes, Michael Chu offered pragmatic rules of thumb for sorting among proposed enterprises. First, he suggested identifying the need being addressed: for low-income people, access to pediatric primary care, for example, comes before access to Mozart. Second, invoking psychologist Abraham Maslow’s hierarchy of innate human needs, how might the proposed intervention affect an individual? Fulfilling survival needs (primary education) precedes self-actualization (purchasing soft drinks). Finally, as he reiterated in a conversation, “Will it be able to lead to systemic change?” A slum school might have a dramatic effect on an underserved neighborhood, “But it’s a one-off”: high individual scores, low systemic ones. Given the urgency of reaching most of the world’s population, Chu suggested focusing on ideas that score high on all three criteria, not just businesses that promise high ROEs by monopolizing its market, one executive explained, “[W]e want more competitors to enter,” with their billions of dollars of lending capacity, to bring less expensive financial services to millions of low-income people—a goal far beyond Compartamos’s reach. (Evidence on attaining such effects is mixed.)

- **Capitalist conundrums.** But businesses with a strong social mission prompt further questions. Several BOP cases involve microfinance institutions (MFIs), lenders that provide small, short-duration loans to low-income groups (which assume collective responsibility for repayment) and individuals. Alongside a critique of MFIs’ efficacy in supporting nascent businesses like village stores or repair shops (a major goal of such loans), class members contend with their operating costs. One of these is simply outreach: where people are widely dispersed, making and servicing loans is expensive. A vivid video shown in class follows a lending officer visiting a borrower who raises guinea pigs (a Peruvian delicacy), conversationally eliciting data on sales, prices, and other elements for a de facto income statement.

Another real expense for such lenders is their cost of funds. A case on the 2007 initial public offering of Banco Compartamos, the pioneering Mexican MFI, disclosed that its average interest rate on loans at mid decade was 87.5 percent, the highest in Latin America, and that it earned more than 50 percent on its equity. Was this usury—or something else? The rates, the discussion revealed, reflected Compartamos’s costs; they should go down as its access to cheaper funds grows and its operations become more efficient. The costs were acceptable to its more than 600,000 clients: they could use the money well (the bank had minimal nonperforming loans); and their alternative was infinite cost (no loan, and thus no inventory or working capital) or a loan shark who might charge that rate monthly (and make collections coercively)—vividly demonstrating Rangan’s advice to see the market as customers do. Moreover, this bank professed a very untraditional capitalist goal: rather than trying to monopolize its market, one executive explained, “[W]e want more competitors to enter,” with their billions of dollars of lending capacity, to bring less expensive financial services to millions of low-income people—a goal far beyond Compartamos’s reach. (Evidence on attaining such effects is mixed.)

- **Failing to scale.** Students also contended with the constraints on nonprofit enterprises. A case about ApproTEC portrayed a social entity that helped subsistence farmers and small entrepreneurs enter the cash economy by providing them with inexpensive, locally made equipment: an oil press; a construction-block press; and foot-powered irrigation pumps—enabling farmers to grow multiple cash crops, and use the time formerly required for hauling water to market their produce directly instead. (Many nonprofits distribute such pumps; see “Sowing Seeds,” January-February 2014, page 18, on Myanmar.) On a $2-million annual budget, ApproTEC had helped 28,000 families, principally in Kenya, raise their incomes an estimated $500 to $1,500 per year.

Yet it was stymied. Sales contributed only one-quarter of revenue, and donors were averse to risk and unwilling to support the long-term investments ApproTEC needed to expand to lift many more people out of poverty. (See “A Founder’s Dilemma,” opposite, on funding a social enterprise.) Absent recurring revenue, ApproTEC’s options seemed counter to its mission: outsource production to a cheaper supplier, rather than develop local ones; or raise the price of the pumps sharply, to reflect their
When Everything Goes Right Until...

A successful business’s growing pains

On paper, as students encounter the Harvard Business School (HBS) case about Día Día Practimercados (DD; day-to-day shopping for practical goods, rendered in a Spanish neologism), it is the model of a successful business at the base of the pyramid. The company, established in 2005 by José Vicente Aguerrevere, M.B.A. ’02, with his wife, Lucia Brower (an MIT Sloan School M.B.A.; both have consulting experience in retailing), and colleagues, had become a fast-growing chain. Its stores offered lower-income consumers reliable, clean access to essential food and other consumer goods, at fair prices, with convenient hours and locations. Remarkably, DD had prospered in Venezuela, one of Latin America’s most inhospitable environments for private enterprise. (For example, DD had to secure permission for every shipment of goods to its distribution center, subject to weekly audits.)

“Poor people were paying the most,” Aguerrevere said in a recent interview—a recurrent theme of “Business at the Base of the Pyramid.” They shopped most often at bodegas: family-run mom-and-pop stores, with limited merchandise and hours, and prices far above those at Walmart-style retailers. But doing so was “entirely rational for small purchases,” he continued.

Why? “It’s not price. It’s the total transaction cost”—including the time to travel to a distant discounter and the fares for transportation. “Time is money for low-income people, because they have to sell their time,” he explained. Big-box stores’ lower prices don’t offset those costs for customers whose incomes limit them to daily shopping for small quantities of goods. In effect, “Your competition is the bus.” The customers are “buying on a day-to-day basis because they are earning on a day-to-day basis,” he said: Día Día’s concept.

DD deployed the tools of modern retailing—central distribution, efficient supply chains, information technology to manage inventory—in attractive neighborhood stores (each staffed with 14 employees), with lower costs and better stock than bodegas. Customers responded to its business model: by 2009, there were 32 stores, with sales on a $45-million annual pace.

But from the start, DD was stretched for capital, particularly given its ambition to serve the market with hundreds of outlets. Absent bank loans or other sources of funds (unavailable to a company of its size and relative youth), Aguerrevere and his colleagues considered acquiring another chain of stores—the financial decision at the heart of the HBS case.

Although the deal seemed fine on paper, the result, as he described it, was almost suicidal. Within weeks, the enlarged company was nearly bankrupt, as the newly acquired units, with inferior systems and controls, were “bleeding money.” The local business environment foreclosed what would be an automatic response elsewhere: there is no provision for a bankruptcy reorganization, Aguerrevere said, and when management approached authorities about laying people off or closing stores, they were told, “If you do that, you will go to jail.” Grinding years of asset sales and slow improvement in operations followed, restoring DD’s health, even as planned growth that would have benefited low-income consumers was deferred.

In recent years, cash flow recovered enough for DD to open one new store every two months. Aguerrevere hoped to raise that pace to 10 in 2015.

But heightened business risks are not the only challenge at the base of the pyramid, where the rule of law, he noted, cannot be taken for granted. In a cruel coda, political challenges emerged vividly last winter. As the price of oil fell by half, Venezuela’s petroleum-dependent economy neared collapse, making essential goods like milk powder and corn flour scarce. Amid political rhetoric about an “economic war” being waged on Venezuela, elans from abroad, the government called in DD’s local leaders (Aguerrevere and Brower now live near Boston, and he was commuting to Caracas), declared its inventory evidence of hoarding, and placed the senior manager under arrest.

Día Día has somehow operated under these extreme circumstances, Aguerrevere said (in part because customers demonstrated to keep the stores open), but “on a whim”—at the government’s pleasure. Although the chain was not nationalized, he said, it has functioned “under occupation,” with his partner still detained six months later. As Aguerrevere ran DD from abroad, his partner’s status casting a dark pall over the company’s tenth anniversary, he now knew that the enterprise could be “expropriated at any time”—compromising, if not destroying, its prospects for expansion, and its value to founders and customers alike.
true value to users. The latter plan, readily understood by HBS students who can easily calculate the present value of future cash flows, seemed likely to be a much harder sell in Kenya.

**Financing Frontier Businesses**

Like its plants in central Nigeria, Tomato Jos is a seedling of a company, financed to date by the winnings from the HBS competition; a Kickstarter campaign; and individual angel investors. That’s appropriate for a new venture of its scale. It faces large business risks compared to those assumed by, say, a U.S. biotech startup. The rural African ecosystem would bewilder most developed-world entrepreneurs, who take roads, banking, and overnight-delivery services for granted. (See “When Everything Goes Right Until...,” opposite, for a Latin American retailer’s experience.) Mehta and Kiernan will face further hurdles in securing the larger sources of capital they need to get from the greenhouse to the grocery store.

That layering on of external operating risk, atop the usual challenges for business success, raises real obstacles to financing base-of-the-pyramid enterprises. BBOP introduces students to examples of “impact” investors who aim for varying degrees of social benefit and financial return despite such hurdles. Among them: Bridges Ventures, a private-equity firm that makes investments in enterprises with social missions; Omidyar Network, created by eBay founder Pierre Omidyar, to make impact investments; and new tools like social-impact bonds, used to address such public problems as prisoner recidivism while yielding a return to investors (see “Social Impact Bonds,” July-August 2013, page 11). All are promising in theory, but their current scale is imperceptible. And at least some early analyses suggest that high social impact is at odds with high financial returns (the latter more often in the upper layer of the base of the pyramid)—implying continued reliance on philanthropy to meet social goals.

Other cases in the course touch on internal strategies to finance service to lower-income people. For example, the world-renowned, nonprofit Aravind Eye Hospitals have treated millions of indigent Indians’ cataracts at little or no cost to patients. How? Aravind provides its world-class service to upper-income patients on a fee basis, and then applies the revenue to subsidize pro bono care.

Still, if the sector is to flourish, proven financing techniques will have to be adapted to make capital more readily available. One of the most interesting, IGNIA (www.ignia.com.mx), a base-of-the-pyramid venture-capital firm operating in Monterrey and...
Mexico City, is not part of the course curriculum, but its experience is at hand; BBOP teacher Michael Chu is a co-founder.

Launched in 2007 and initially funded with $102 million from private individuals and institutional investors, IGNIA aimed from the start to be a “proof of concept to bring capital to this area,” said Álvaro Rodríguez Arregui, M.B.A. ’95, managing director, in a telephone interview. Some 70 to 80 percent of the population in emerging economies, like Mexico’s, live daily lives “very, very foreign” to those at the top of the pyramid: “It’s not a good recipe for attracting capital.” Most investors, he said, are “more comfortable investing in a building on Madison Avenue than investing in a project in Queens,” even if the latter is more profitable. By seek-

### Measuring Impact in the “Missing Middle”

New metrics for a mixed business model

In an idealized business transaction (ignoring restraints on competition and marketing blandishments), willing shoppers choose

the products and services they want, and companies measure their sales, cash flow, profits, and return on capital—financial metrics that managers and investors alike can assess.

But how should social impact be evaluated? In “Business at the Base of the Pyramid” (see main article), students contend with the relative worth of enabling lower-income people to exercise consumer sovereignty (buying a television) versus securing their access to medicines. They consider research suggesting that microfinance—a high-profile tool in development economics and a vehicle for base-of-the-pyramid “financial inclusion”—often appears to bolster consumption more than it enables entrepreneurship, arguably a higher-impact goal.

A broad, deep effort to develop methods for measuring social impact exists in Cambridge’s Central Square, just down Massachusetts Avenue from Harvard Yard. Root Capital (www.root-capital.org), a nonprofit founded in 1999, lends to small agricultural enterprises—for example, Latin American coffee cooperatives—that need funding beyond the smaller loans offered by microfinance institutions, but are not yet served by commercial banks. Such enterprises provide vital rural services to hundreds of member growers, but are financially stuck in the “missing middle.” To date, Root Capital has disbursed more than $900 million in loans, focusing on producers of high-value, traded products such as coffee, cashews, and cocoa, but also extending of late to smaller growers of local, staple crops in Africa.

Does Root’s lending make a real difference? Brian Milder ’01, M.B.A. ’07, the senior vice president who oversees strategic planning, financial advisory services for clients, and innovation, also directs impact assessment. He outlines three principles. The deepest in-field assessments (see below) ought to be client-centric: not merely generating information for external parties, but engaging clients in a process that results in better growing and operating practices. Assessment also aims at determining “additionality”: measuring the real impact from, say, Root’s agricultural lending versus what would happen in the market were Root not making funds available. Finally, in Root’s vision, there ought to be a balance between impact and financial investment decisions, with both considerations playing a role at a loan’s inception. (For Root, that balance has been shifting in interesting ways; as its clients have grown to need larger and longer-term loans—not just to finance a season's crops but to build processing facilities, for example—hoped-for bank financing has not been forthcoming, so Root has stepped in. On such loans, it aims to make a profit, following the commercial model, in order to subsidize lending to smaller borrowers—where it is not able to cover its costs.)

Mike McCreless, M.B.A.-M.P.A. ’10, director of strategy and impact, says those principles shape the criteria loan officers use in the field. Given Root’s goal of supporting rural entrepreneurs and rapid economic growth, he said, “We had to figure out how to direct money to where it has the most impact” on local investment: boosting farmers’ income by obtaining higher prices for their produce, and so on. Root’s website and quarterly and annual reports display data on the number of producers affected, women farmers benefited, acreage under sustainable cultivation, and so on—alongside accounting for loan balances and performance.

Of late, those analyses have been supplemented by deeper, almost ethnographic studies. Impact officer Asya Troychansky ’07, for example, visited four Root client coffee cooperatives in Guatemala, interviewing their managers and staff, and training four local consultants who in turn surveyed 407 farmer-members and 233 nonmembers, seeking to tease out their relative incomes, pro-
ing out high risk, even for venture capitalists, and creating "extraordinary returns," he continued, IGNIA hoped to have a demonstration effect on other investors: "Once you are able to show the numbers of a successful endeavor, then you can open people's eyes" about the sector.

Finding entrepreneurs has "been the least of our problems," Rodriguez Arregui continued: IGNIA made 11 investments in its first fund, choosing from among 300 opportunities. But those entrepreneurs' profile could not differ more from the prototypical American coder in a garage. The average founder in whom IGNIA invested is 45 years old, with at least some experience serving the base of the pyramid. A successful IGNIA CEO is not the "polished M.B.A. with the perfect PowerPoint and funding model," as principal Christine Kenna, M.B.A. '05, put it in a separate interview. That seasoning is crucial, Rodriguez Arregui said, because "The opposite of the word 'frictionless' doesn't exist, but that's the environment you operate with in Mexico."

Investments range from a chain of optical centers where customers can get exams and low-cost eyeglasses within 45 minutes, to a company that buys groups of foreclosed homes in low-income developments and revitalizes them with community groups to stabilize the neighborhood. IGNIA is also backing a kiosk-based, online, correspondent-banking system that serves customers in the small stores where base-of-the-pyramid customers do most of their shopping—banking without branches, which increases the stores' traffic. The rapid rise of smartphones (which Rodriguez Arregui estimated are now used by 20 percent of lower-income customers in Mexico) "opens a whole set of windows" for entrepreneurs, he said, even since IGNIA began committing funds in 2008.

Emerging opportunities aside, IGNIA has learned from failures, too. Two of three investments that did not work involved agriculture, where—as Tomato Jos recognizes—business risk and the risks of the underdeveloped rural ecosystem may be complicated by the need to change partners' behavior: how growers farm; how they pack produce for sale. "Business models that have an underlying assumption that 'If people only did this, everything would be great,' can work, Rodriguez Arregui said, but need more time to do so than the financing horizon allows. "Facebook changed the way we interact," as he put it, "but it didn't have to build the Internet."

Although it is too early to know the returns on IGNIA's initial portfolio, the companies are "performing very well," he said, and the firm is raising a second fund. Mexican venture capital remains in its infancy, but indigenous pension funds are considering investing—a first for such institutions. Nonetheless, after traveling the world to promote the idea of high-return investing in businesses with a large social impact, Rodriguez Arregui cautioned about progress to date. Compared to the wave of investors in 2007, he said, "There's basically nobody new." Philanthropists and backers of social enterprises remain interested, but the finance industry overall still views "impact investing as a spin-off of not-for-profit activity." Nonprofit organizations, short of capital, have naturally tried to present themselves as pursuing "market solutions to social problems," but unconvincingly.

Nor have measurements of social impact evolved to the point that they can be applied as usefully as metrics like profit margin and ROE (see "Measuring Impact in the 'Missing Middle,'" opposite). Mariana Mazon Gutierrez, who directs IGNIA's industry and institutional relations, noted that prospective portfolio companies undergo "social due diligence" before investments are made, and comply with annual reporting requirements such as those developed by the Global Impact Investing Network. Compliance is time-consuming for the entrepreneur-managers, she said, and it is still difficult to know.
LETTERS (continued from page 6)
officers are paid like superstars—10 times what the president of the University is paid. Does the Board of Overseers not have access to the same data as Harvard Magazine (Brevia, July-August, page 33), or do they choose to ignore it?

CHARLES RESNICK ’48, LL.B. ’50
Longboat Key, Fla.

THE FOREMOST RABBI?
The July-August obituary for Rabbi Aharon Lichtenstein (Ph.D. ’57) characterized him as “a rabbi considered to be the foremost intellectual and spiritual guide of Modern Orthodox Judaism.” Although he certainly ranked up there among the leading lights of non-haredi Orthodox Judaism, I seriously doubt that he would be universally regarded as the foremost among them. Indeed, there are even some who would not associate him with the “Modern” strand of Orthodoxy altogether. What, then, was the basis/source/rationale for this exalted wording?

STANLEY COHEN, G ’81
Baltimore

Obituaries editor Deborah Smulian replies: I fear I accepted uncritically the appraisal of the gentleman who submitted Rabbi Lichtenstein’s obituary. He did refer me to two websites for corroboration, containing the obituaries in Haaretz and the Jerusalem Post, which certainly didn’t cast any suspicion on his exalted assessment. But I must remember to be cautious in accepting the opinions of others. Thank you for keeping me honest.

ERRATA
“Surgery for all” (July-August, page 26) misidentified the affiliation of Lars Hagander, who is at Lund University, in Sweden.

Susan C. Seymour writes that the Off the Shelf item describing her biography of Cora Du Bois (July-August, page 68) incorrectly stated that Du Bois conducted fieldwork in Sri Lanka; that work took place in India. In addition, although the Zamurray chair that Du Bois held was funded by Radcliffe, the professorship was at Harvard.

The title of a work in “The Young T.S. Eliot” (July-August, page 54) should have been The Complete Prose: The Critical Edition; the text inadvertently rendered it as the “Collected Prose.”

BUSINESS FOR THE OTHER BILLIONS (continued from page 39)

what to measure and its value to the company. A customer who can now afford prescription eyeglasses surely benefits; but can the impact on her income be quantified?

IGNIA’s experience to date suggests that affecting the lives of lower-income people by financing base-of-the-pyramid businesses that serve them “takes time,” as Rodriguez Arregui put it. “The biggest element is patience. It’s hard.” (It may be even harder in rural Africa and Asia, where the challenges are more daunting than those in urban Mexico, IGNIA’s base.)

Moreover, given the business risks and external challenges in the sector, deep knowledge of local circumstances matters—as Rangan’s marketing insights and the experiences of IGNIA’s entrepreneurs suggest. “This is not an activity about writing checks,” Rodriguez Arregui said. “That’s the easy part. It’s about how you support entrepreneurs in their endeavors.” Impact investors can no more “defy the laws of gravity” than can their strictly financial peers. Global social-impact investors, he observed, are based in Geneva and financial centers where it is easy to access funds, “but they are investing in Pakistan, Nairobi, and Peru. No venture-capital investor in the world does that. In Cambridge, a VC investor thinks a deal across the river in Boston is too far from his office.” Base-of-the-pyramid investing will mature, he said, when people “raise the money in Nairobi to put it to work there.” Paraphrasing a Spanish proverb, he said, “Under the eye of the owner, the horse is healthy.”

How to Create Value

WHAT BUSINESS MODELS, then, can work at the base of the pyramid? Anyone who delves into the debates about impact investing, or peruses a course like BBOP, learns that such models are a work in progress. Entrepreneurs may approach the base of the pyramid with an innovative idea, only to founder financially. Developed-world pharmaceutical giants differ on how to deploy their research when applied to diseases endemic in low-income, developing nations. (Students in BBOP encounter both Novartis, which has distributed billions of tablets of a malaria drug at its manufacturing cost, but struggles to develop revenue to sustain further research, and Sanofi’s vaccine unit, whose dengue vaccine is embedded more deeply in its business operations.)

Given that sense of flux, it is not surprising that the three faculty members who taught the sections of BBOP last year hold distinct views of this nascent field. By design, HBS professors principally guide student discussion of cases during class meetings, but in conversation and in their writing (cited earlier), they open up about their perspectives.

Michael Chu, who more than his academic colleagues professes from practice, approaches the problem pragmatically. “I find it interesting,” he said, “to apply commercial models, particularly high-impact ones, to enable people to live closer to their potential.” He proceeded from that almost spiritual tone to a bright line, with clarifying appeal for the financially minded.

Among his fellow teachers, Chu said, “I’m the most aggressive in saying, ‘If you’re achieving high impact and high financial returns, that’s the magic combination…’ Because if you want to move the needle for billions of people, the way to guarantee it is to create an industry via an economic activity with above-average returns.” In this view, “A 60 percent return on equity is better than 50 percent, and 50 percent is better than 40 percent”—not because it is an extraordinary profit margin that rewards investors, but because “That’s when you can really disrupt and reinvent an industry.”

Eye-popping profitability, in other words, is the way to attract competition into markets where the low-income majority of humanity today is served poorly, if at all, with intolerable consequences. “Competition is precisely what reconciles profitability and the creation of social value,” he wrote in 2007. “The social role of profit is in fact creating an industry,” he said now.

The faster that can happen, the better life will be at the bottom of the pyramid. But as Bechtel learned in Bolivia, that approach might not always be politically palatable. As IGNIA’s investments have shown, the work of identifying and nurturing those pioneering companies can itself be difficult and time-consuming (and the universe of possibilities for extraordinary returns may be limited). Still, applied to urgent social needs, Chu argued, the animating incentive of profitability—part of HBS students’
The challenge of advancing most of mankind economically, Rangan thinks, depends on business students and leaders finding new ways of doing business—with a positive impact on meeting social needs, profitably, at the center of corporate strategy.

of finance and marketing; and of long-term partnerships with government, the public, and nonprofit entities to build an ecosystem for enterprise (the public goods that low-income countries can't afford).

The work is not easy, he cautioned, nor are the circumstances for success universal. Given the required investment and the knowledge of local conditions that so many of the cases highlight, Rangan said, “There is no fortune lying on the ground waiting to be picked up.” The optimism in Prahalad’s famous title has been tempered as evidence grows about the problems from which much business research and teaching, and many CEOs, have heretofore kept distant. But the challenge of advancing most of mankind economically, Rangan thinks, depends on today’s business students and leaders, and tomorrow’s, finding new ways of doing business—with a positive impact on meeting social needs, profitably, at the center of corporate strategy.

Tomato Jos is a long way from profitability, let alone market-altering scale. But its founders’ motivations remain clear. Mira Mehta recalls vacationing on the Kenyan coast when she was working in financial services, and realizing that she wanted to do something “more impactful than handing out pens” to children orphaned by HIV/AIDS. After her nonprofit experience in Nigeria, she enrolled in business school because she was eager to pursue “being a good employer and providing jobs and increasing incomes.”

Animated by that vision, as CEO she necessarily returns to the realities of achieving it through Tomato Jos, the business: ballyk machinery, tender seedlings, farmer partnerships, money. Like any good manager, she says, “There are tons of moving pieces.”

John S. Rosenberg is editor of Harvard Magazine.