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Supplement

Banking on the Poor

By Dennis Price

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dents took advantage of the app, and most community colleges didn't have the time or budget to launch the product properly.

Still, the company had delivered on program and operational goals, and the Gates Foundation stood by its investee. Two subsequent investments, for which the foundation received commitments that aligned with its programmatic objectives, totaled $1.75 million. The last infusion was in a "down" round that valued Uversity at less than the previous investment, effectively wiping out the foundation's previous equity investment.

Members of the Gates Foundation's team did make efforts to ameliorate the conflict between its charitable goals and the company's business goals. They allowed some four-year colleges with large numbers of low-income students to be counted against Uversity's charitable commitment. They made introductions to community colleges and other potential customers. They featured the company and the research at conferences and panels and pushed the notion that social media could benefit students in higher education. "We became in some ways proselytizer of the potential of this," Ratliff said.

Mohr says the new crop of mission-driven investors bears some resemblance to "strategic" corporate investors who also dabble in funding startups to identify technologies or products for acquisition. Impact investors are similarly looking for approaches that fit into broader strategies.

"The parallel is that they both have objectives that are totally unrelated to the company," Mohr says. "As a venture capitalist, I want the manager to make a lot of money on the deal. That doesn't matter to the Gates Foundation or the corporate investor."

Despite the difficulties, Mohr said he would do the deal with the Gates Foundation again. The foundation brought considerable value with its perceived endorsement of the product and access to customers and partners. "Having the Gates Foundation as an investor was quite valuable."

Glenn agrees. He says the zigs and zags were just part of the startup game. "Ultimately the product evolved and was no longer a fit for community colleges, as the company found more opportunity by focusing on the recruitment challenges faced by four-year traditional institutions," he says. "Startups move much faster than a foundation, and they need to realize this and be more fluid when things change on the ground." ◆

Banking on the Poor

Using the off-grid solar revolution to unlock credit for low-income customers in Africa.

BY DENNIS PRICE

Leah Talam, of Eldama Ravine, Kenya, uses M-KOPA solar lighting to help her child do homework at night.

The convergence of low-cost solar technology, nearly ubiquitous mobile phones, and increasingly robust systems for mobile payments has unleashed a wave of entrepreneurship and investment across Africa and Asia. Off-grid solar electric systems are leapfrogging decrepit utility grids in much the same way as mobile phones leapfrogged landlines.

And solar power is just the start of an even bigger revolution in consumer finance. Pay-as-you-go financing is making electricity accessible and affordable for low-income households where the power grid is unreliable or nonexistent. By demonstrating that low-income customers can pay for high-value goods and services reliably, the new business model has the potential to bring products and services even to villages at "the last mile."

Indeed, it was finance, not solar, that attracted the Bill & Melinda Gates Foundation to M-KOPA, one of the hottest off-grid solar startups. The foundation turned down a chance to invest in 2011, when the Nairobi, Kenya-based M-KOPA was raising money from impact investors and venture capitalists. Worthy as it was, solar energy solutions had plenty of other sources of capital.

The Gates Foundation, however, was interested in demonstrating something perhaps even more powerful: that low-income consumers, making affordable payments for products and services that improved their lives, represented a new financial asset class safe enough to qualify for commercial bank financing. The test was whether commercial

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PHOTOGRAPH BY GEORGINA GOODWIN, COURTESY OF M-KOPA

banks in developing countries themselves would be willing to provide regular business banking services to companies providing life-changing products, such as toilets, irrigation systems, and cookstoves, as well as electricity. Overcoming supply bottlenecks when underlying demand is strong would constitute system change on a meaningful scale.

"We don't invest in solar at all," says David Rossow, who helps manage the Gates Foundation's $1.5 billion portfolio of program-related investments (PRIs). The foundation doesn't even have a clean energy program. But it does have a program called Financial Services for the Poor. "We care about asset-backed lending for the last mile."

BANKABLE COLLATERAL

M-KOPA offered a useful test of a new category of such financial services. The startup had been incubated by Signal Point Partners, the mobile-services accelerator co-founded by Nick Hughes. As Vodafone's head of global payments in 2004, Hughes helped launch M-Pesa, the wildly successful mobile payments system now used by more than 15 million Kenyans to pay bills and transfer money. Its two million daily transactions add up to more than half of the country's gross domestic product.

For about $200, paid in daily installments of 50 cents, M-KOPA customers can replace dirty and expensive kerosene with clean sun-fueled energy, enabling children to do their homework, shops to stay open at night, and individuals to save the cost of charging their mobile phones at the village kiosk. M-KOPA's customers pay for the solar kits themselves, without a subsidy, by making payments digitally from their M-Pesa mobile money accounts.

By January 2016, the three-year-old company had connected more than 300,000 East African households to solar power, adding more than 150,000 households in the past year. For the average household using the solar system, savings on kerosene and cell-phone charging amount to roughly $750 during the first four years. For the customers, 80 percent of whom live on less than $2 a day, that's a lot of savings.

M-KOPA's customer accounts are essentially an asset-backed loan. With affordable payments for a valuable product, regular payment rates were high. Grouped together, the company's collection of accounts might not be any riskier than the collateral used by businesses targeting more affluent customers. The Gates Foundation's team saw in M-KOPA an opportunity to demonstrate that mobile financial services could help businesses get more such valuable products into the hands of a new market of eager consumers: poor people.

In Africa, more than 600 million people still have no access to electricity. Many do not have access to a sanitary toilet. And only 4 percent of crops are irrigated. Low population densities, poor transportation, and limited communications infrastructure contribute to a shortfall in supply, not demand, across Africa.

Companies like Greenlight Planet (solar lights), EcoLoo (toilets), and Kickstart (irrigation pumps) are driving down the costs of the products that can overcome these challenges. But even affordable goods are still out of the reach of most Africans, with more than 130 million households living on less than $2.50 each day. Purchasing a $200 solar kit with cash is out of the question. And fewer than 35 percent of Africans have access to formal financial services and credit.

"We don't invest in solar at all. We care about asset-backed lending for the last mile," says David Rossow, a senior investment officer at the Gates Foundation.

If poor customers can't pay, companies providing even high-value goods and services can't finance their own expenses, and recent technological advancements won't reach those most in need of financial, social, and environmental solutions. Bridging the capital gap that has kept many African businesses starved for financing could enable them to build distribution channels for affordable goods to low-income customers. "To us, M-KOPA was more of a data service company that enables poor people to acquire something valuable" via the power of mobile money, says Tamara Cook, part of the Gates Foundation's Financial Services for the Poor team at the time.

The key was helping M-KOPA turn its customer accounts into bankable collateral. Other investors were taking equity positions in the startup. The Gates Foundation instead made a $5 million loan, alongside the Commercial Bank of Africa. The thesis: if M-KOPA could successfully pay back the loan, local commercial banks would see the payments from pay-as-you-go financing schemes as a reliable revenue stream. That would create a new lendable asset class.

FINANCING SOLUTIONS

M-KOPA came to market in 2012 with a nifty solar system that customers could take home for a relatively low down payment (about $29). Designed for small rural households, the kits come with a solar panel, two LED ceiling lights, wall switches, a rechargeable flashlight, a radio, and a phone charger.

The pay-as-you-go feature is enabled by embedded machine-to-machine technology that allows M-KOPA to receive payments through the M-Pesa mobile money platform. M-KOPA can turn off the device remotely if the customer falls behind on payments. After a down payment, a customer pays roughly 50 cents for each of the next 365 days. After one year, the customer owns the system, and M-KOPA turns it on permanently.

The M-KOPA business model overcomes a number of barriers that poor people face in accessing financial services. Small, digital payments better fit the unpredictable cash flow cycles of low-income households. The down payment encourages poor people to save for asset purchases. Repayments create a credit history for poor consumers that may give them access to other financial services.

For M-KOPA, the portfolio of customer accounts and the associated cash flow represented an additional opportunity. If the company's consumers could establish a digital track record of repayment, the collection of customer receivables, or commitments of future payments, might be used as an asset against which M-KOPA itself could take out a loan.

If M-KOPA's accounts receivable could qualify as high-quality collateral, local commercial banks could make loans for inventory and expand M-KOPA's ability to extend credit to low-income customers. Asset-backed lending to the poor could emerge as a bankable proposition, unlocking capital for businesses serving low-income customers across Africa and throughout the world.

CAPITAL CYCLE

Two years after it passed on the opportunity to invest in M-KOPA, the Gates Foundation team looked again. The Gates Foundation team spotted a financing gap. It could be 15 to 18 months from when M-KOPA inventories and then sells the solar systems to when customers complete repayment. During that time M-KOPA required a significant line of credit to be able to purchase new inventory while it waited to get repaid on current accounts.

The Gates Foundation found a misalignment of risks with M-KOPA's cost of capital. The higher-risk "product in transit and inventory" stage of the cycle was largely being financed by a $2.25 million loan from a number of social lenders. Though this stage of the cycle is shorter, the risks are higher because of potentially poor demand forecasting, excess stock, and shipping and customs delays. M-KOPA's lenders weren't interested in expanding the financing facility.

The longer, safer stage of the cycle is the yearlong "customer payback" stage, when thousands of customer payments are made into an M-Pesa account. M-KOPA was financing this stage, in part, with very high-cost equity from its investors that should instead be financing future growth.

Access to commercial bank loans would significantly reduce the company's costs. To the investors on the foundation's PRI team, M-KOPA's accounts receivable, repaid in the latter stage of the working cycle, represented predictable, transferable, and discrete cash flows that looked like attractive collateral. Lending against it would also demonstrate to commercial lenders the high quality of M-KOPA's customer receivables, paid with mobile money.

To lower M-KOPA's capital costs, the company and its investors structured a loan backed by the "pay-as-you-go" lease payment stream from M-KOPA's customers. Under its terms, M-KOPA could borrow up to 70 percent of the value of the "performing" receivables. That weeded out new customers without credit experience and customers whose loans were performing poorly. For the first time, M-KOPA's M-Pesa receivable account could be used as collateral. This was a breakthrough. M-KOPA's critical asset was its receivables, not its solar systems, which could be turned off but not repossessed.

One more piece was needed to complete the model—a local commercial co-investor. "We didn't want to finance M-KOPA forever," says Vidya Vasu-Devan, the Gates Foundation program investment officer who led the M-KOPA deal and later spent a four-month temporary assignment with the firm in Nairobi. "We wanted to be catalytic and make this a proof of concept."

LOCAL BANK

Prepared to make a significant loan, the Gates Foundation sought a local commercial bank to handle the facility, to be denominated in Kenyan shillings. The best partner would be a bank that might refinance the loan on its own when the initial term was up. The foundation expected that it would have to make a guaranty, a pledge to cover the losses of the commercial co-investor if M-KOPA defaulted.

The Gates Foundation and M-KOPA approached three banks. Because of the foundation's reputation for due diligence, the Commercial Bank of Africa (CBA) was willing to make the loan without seeking a guaranty from the foundation. CBA also agreed to administer the loan.

"We're very impressed with M-KOPA Solar's technology platform, which allows them to extend credit to customers who are otherwise lacking formal collateral or credit histories," Jeremy Ngunze, CEO of CBA, said at the time of the investment. "And it is clear that there is an enormous, creditable market that wants to be empowered by cutting-edge energy, telecommunications, and financial solutions."

To test the actual market, the Gates Foundation let CBA dictate and negotiate the investment terms. The bank approached the investment conservatively—it was financing a new asset class and was preparing for an eventual refinance. CBA negotiated interest of its base rate less 0.50 percent and set the rate. CBA syndicated a $10 million debt facility: $5 million from the Gates Foundation, $2 million of its own funds, and $3 million from other social lenders. All received CBA's negotiated terms.

The Gates Foundation also made a four-year, $4.6 million grant to support M-KOPA's operations, research and development for new products (both physical and financial), and expansion to new geographic areas, including Uganda (where M-KOPA had a pilot under way) and Tanzania. The UK's Department for International Development and the Shell Foundation made their own grants, for a total of $10 million in grant funding.

With $20 million, M-KOPA had working capital and operational support to fuel significant growth. CBA is now M-KOPA's banking partner in Kenya and Uganda.

"The idea of bringing in a local partner on commercial terms was wise on [the Gates Foundation's] side," says Chad Larson, co-founder and chief credit officer of M-KOPA. "We have access to working capital that we didn't have before."

DEMONSTRATION EFFECT

The success of M-KOPA and other pay-as-you-go systems has been credited with unlocking off-grid solar in Africa. That represents a new market worth an estimated $300 million annually, according to a recent report. Sales have tripled in the past three years, providing affordable, clean lighting for 35 million rural Africans.

By taking on real and perceived risk and providing a loan at terms negotiated by its local bank partner, the Gates Foundation set out to build a viable market for products and services needed by poor and underserved customers while demonstrating that these customers can be served on a commercially sustainable basis.

The Gates Foundation sought to create a new market rather than simply see a single organization succeed. To demonstrate the success of the pay-as-you-go model, the foundation needed to provide the right type of capital. By making a PRI loan at a rate set by a local bank (along with the accompanying grant) the foundation hoped to inspire copycats and establish a new asset class able to attract new investors to markets that serve the poorest in Africa. "Debt at 1 percent wouldn't have proved the market," says Cook.

The copycat effect is under way. "Pay-as-you-go business models have emerged as the investors' darling," according to Itamar Orlandi and Nico Tyabji of Bloomberg New Energy Finance. "With them, the sector's financial tool set is progressing from the equivalent of a simple cash wallet to a first credit card."

In December 2015, M-KOPA announced a $19 million equity round led by Al Gore's Generation Investment Management. Sir Richard Branson, Jean and Steve Case, and existing investors joined the round.

The big test will come in 2017, when M-KOPA aims to refinance the facility with a local commercial bank. Already, with receivables as bankable collateral, capital is flowing. Every day in East Africa, more people are gaining access to electricity. ◆