Microfinance in the digital age
By Anthony Randazzo
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According to the World Bank, two billion people in the world today lack access to financial services. Disruptive technology is helping to change that.

While information technology has always been critical to the work of microfinance institutions, technology is profoundly changing the way financial services are being delivered in the developing world with potentially game-changing implications.

First, technology is making it possible to reduce or even eliminate the use of cash in operations, resulting in significant cost savings. In countries where cellular networks allow money to be sent and received through a mobile telephone, microfinance institutions are using these payment networks to disburse loans and receive repayments directly via a customer's "mobile wallet." This saves time and money for both the borrower, who no longer has to wait in line at the branch, and the microfinance institution, which can reduce expenses related to bank tellers, security guards, cash counting machines and other costs associated with maintaining a physical branch.

Second, mobile-enabled devices, such as computer tablets, are eliminating the need for paper loan applications. Loan officers can now complete an application with a client in a remote village using a handheld device. Client data is captured digitally and sent directly into the IT system rather than being manually typed into a computer back at the branch. This results in lower operating costs, faster loan approvals and increased loan officer productivity.

Finally, non-traditional data (also referred to as big data) is now being used to develop the credit profile of a client when making lending decisions. Whereas microfinance institutions traditionally look at business cash flows and household expenditures to determine creditworthiness, there are now companies that have developed software that can analyze information directly available on a customer's mobile telephone for this purpose. These algorithms analyze, for example, how frequently a customer tops up his or her account with additional credit, or the average top up amount, and use this and other information to make a credit decision, sometimes within seconds before disbursing the loan directly to the customer's telephone. These consumer loans are typically quite small (less than $25) resulting in the use of the term "nano-credit" to describe them.

Microfinance borrowers in India. Much of the industry is still cash-based, but technology is changing that. (Photo by Anthony Randazzo)

So, if loans can be made without the need for cash, paper or even people, what are the long-run implications for the microfinance sector? The scope for change is potentially huge. For sure, these technologies are already creating competitive pressures on microfinance institutions. Those that can reduce or eliminate paper and cash from operations will be able to reduce operating costs and reach clients that were previously too expensive to reach. Two measures of social performance are depth and breadth of outreach, expressed in terms of average loan size and percentage of rural clients, respectively. The poorer the client, typically the more

modest the borrowing needs and so a small average loan size is a proxy for how poor a typical microfinance borrower is.

Unfortunately, the smaller the loan, the higher the cost per loan. Similarly, "breadth" of outreach refers to how widespread a microfinance institution's clients are. Rural areas have higher poverty rates but are also harder and more expensive to reach. So, if technology can make it cheaper for microfinance institutions to serve poorer clients with smaller loan sizes in more rural areas, this could be very good for the market.

In addition to depth and breadth of outreach, lower operating costs should ultimately translate into lower interest rates to clients. If technology can reduce these operating costs, this should ultimately translate into lower interest rates and more money in the pockets of the poor. Technology should also make it easier to collect data and measure social performance and demonstrate the positive impact microfinance has on poverty.

Are there any limitations or potential downsides to this new technology? The human element has always been important for microfinance. This is particularly true of group lending, where micro-borrowers self-select into small solidarity groups to guarantee each other's loans. Similarly, for individual loans, character assessment can be a useful, but labor-intensive exercise involving fact-finding conversations by loan officers with an applicant's friends and neighbors. Can someone's character be assessed based purely on his or her cellular telephone data? Will reduced person-to-person contact also reduce client loyalty, or solidarity group cohesion? All of this remains to be seen.

What is certain is microfinance will witness some significant transformation. While it is unlikely technology will completely eliminate the need for human interaction, some convergence between what is being called "fintech" and microfinance is likely. Already microfinance institutions are looking for ways to analyze their borrowers' demographic data to improve their credit decision-making. Smaller, highly-automated nano-loans, will likely be used to reach the poorest of the un-banked, making it possible for them to develop a credit history for the first time. These same technologies are being used to encourage saving as well. This is important because savings can often be more beneficial than credit for smoothing out cash flows and mitigating income shocks for the poor. Ultimately, technology should make it easier for microfinance to achieve its double bottom line of social impact and commercial sustainability, while delivering more value to its customers.

Anthony Randazzo, CFA is an investment officer on the Social Enterprise Finance Team at OPIC. He recently attended The Social Capital Markets Conference "SOCAP15" in San Francisco, where he was asked to represent OPIC on a panel discussion entitled "Innovative and Disruptive Technology in Microfinance" sponsored by Deutsche Bank's Global Social Finance group.