State of the Science Conference 2014
"Revealing the Demand for Pro-Poor Innovation"
March 7, 2014 | Georgetown University

On March 7, 2014, the Development Impact Lab (DIL) held its first State of the Science Conference on "Revealing the Demand for Pro-Poor Innovations". DIL is a global consortium committed to advancing international development through science and technology innovations and is one of seven university programs supported by the US Agency for International Development's Higher Education Solutions Network.

The conference was hosted at Georgetown University in collaboration with the United States Agency for International Development (USAID), USAID's Higher Education Solutions Network (HESN), the Georgetown University Initiative on Innovation, Development and Evaluation (gui^{2}de), and UC Berkeley Institute of International Studies (IIS).

The conference provided a forum for over 120 engineers, social scientists, funders, practitioners and policymakers to discuss new approaches to accurately capture the preferences and needs of consumers in low and middle-income countries.

In his keynote speech, David Ferguson, Deputy Director of the Office of Science and Technology at USAID, addressed the need to increase the effectiveness of international development interventions. While many promising technologies have been invented, they are often unaffordable, inaccessible, or unable to meet the real needs of the poor. A large gap still exists between available innovations and the needs of beneficiaries. It is increasingly important to build partnerships across country borders to ensure that designers are able to take the political, socioeconomic, and cultural dynamics of low-income communities into account during the product design stage. Some of his points are also reflected in a blog he wrote for NextBillion.net on "Understanding Consumer Demand in Developing Countries."

Ferguson also emphasized the importance of collecting reliable and relevant data on product performance. "Everything is tied to metrics," he noted, adding that "monitoring and evaluation should be a part of every transaction, not just after the fact."

The conference's sessions on emerging tools for understanding demand and implementation case studies allowed researchers and practitioners to share their experiences to share their experiences of successful technology innovation in international development.

Session 1: Emerging Tools for Understanding Demand

The first of the two conference sessions featured presentations from a diverse group of engineers and social scientists who have developed new tools for revealing consumer demand.

Drawing on her experience conducting randomized experiments in East Africa, Pascaline Dupas, an assistant professor of economics at Stanford and affiliate of the Center for Effective Global

Action, shared techniques for estimating consumer's demand for new products and services. By revealing people's willing to pay at various price points, those techniques can go a long way in designing interventions that are financially sustainable at prices which still appeal to consumers.

Patrick Pannuto, a PhD candidate in computer science at the University of Michigan, examined the use of sensors to monitor uptake of new technologies and measure their impacts. Sensor technology has improved significantly in recent years, and is a good complement to (if not substitute for) traditional observation-based use studies. As he pointed out, the rise of durable, low-cost sensors means that "if you can think of something to measure, it can be measured."

Nathan Eagle, an assistant professor of epidemiology at Harvard University and the CEO of Jana, discussed parsing high-frequency data streams to identify areas of unmet demand for innovation. Jana focuses on the development of Android applications which allow companies to easily recruit respondents for market surveys in low-income countries.

Susan Wyche, assistant professor of telecommunication, information studies, and media at Michigan State University, provided insight on "user-focused design". When designing a development intervention, Wyche stated, "don't start with technology, start with people". Wyche emphasized the need for interdisciplinary design teams to observe and engage with project beneficiaries in a holistic way, in order to best understand their needs.

Session 2: Case Studies in Consumer-driven Technology Design

The second session featured case studies of technology deployment in low-income countries. Five start-ups from different sectors, including sustainable energy, sanitation, and agriculture, shared their experiences and discussed the advantages, drawbacks, and feasibility of applying different measurement tools to their work.

An interdisciplinary panel featuring Priya Jaisinghani, deputy director of innovation and development alliances at USAID; Catherine Wolfram, professor of business administration at UC Berkeley; and Amos Winters, assistant professor of mechanical engineering at MIT, provided feedback to each presenter on product design, marketing, and adoption by local communities.

Dennis Ochieng, operations director at Sanergy, a social enterprise that produces affordable toilets for use in Kenya's informal settlements, discussed the use of marketing interventions to understand the formation of sanitation habits. Through partnerships with academic institutions including Yale University and the Abdul Latif Jameel Poverty Action Lab, Sanergy is conducting a randomized controlled trial to help measure the demand for clean toilets in the slums of Nairobi.

GramPower, a non-profit started by a pair of UC Berkeley alumni, is currently collaborating with the government of India to set up energy efficient microgrids in remote areas which will provide

on-demand electricity through a prepaid purchase model. Yashraj Kahitan, GramPower's Co-founder and CEO, shared how the group uses sensors to track household energy usage in order to understand how energy use changes over time and how it contributes to higher standards of living.

Jeremy Gordon, CEO of Flashcast, a technology startup focusing on in-vehicle advertising in Nairobi, was also present to share experiences working in Kenya. Flashcast offers a unique opportunity for small and medium enterprises to reach urban commuters in an affordable way. The start-up captures data through interactive social surveys displayed on buses to measure the preferences of community members. One example Gordon shared is a partnership with Population Services Kenya, where they are working to understand to collect understand the public's perception of family planning practices.

Digital Green, a digital platform for community engagement on agricultural productivity issues, works with Indian government officials and smallholder farmers to create videos on best practices in farming. Co-founder, Rajesh Veeraraghavan, emphasized the importance of moving the language of development from "knowledge extension to knowledge sharing."

While all of the presenters were enthusiastic about the potential of innovative data collection to improve development interventions, they cautioned that obstacles still remain. One frequent comment was that the cost of obtaining accurate and reliable data remains a pain point. As Mitra Ardon, the CEO of Lumeter, mentioned, there may be a tradeoff between investing in data collection and investing in other aspects of product development or service delivery. Organizations must make sure that they have well thought out plans for the use of their data before collecting it.

Conclusions: Beyond Understanding Consumer Demand

Drawing on the insights from the earlier sessions, Ticora Jones, program director of HESN at USAID, moderated a panel to discuss next steps after "revealing demand." Echoing Dave Ferguson's welcome remarks on partnership building and the work done at Makarere University in Uganda, an HESN development lab, Jones emphasized the importance of co-creation. She noted that "co-creation prompts the role of innovation and provides strong insights on how to truly serve the needs of beneficiaries in developing countries. If products are co-created with beneficiaries, the potential for scale and impact is much higher."

Drawing on his own experience as former vice president at Consumer Reports, Jeffrey Asher discussed the applicability of consumer product testing in the United States to technology innovations in developing countries, such as fuel-efficient lanterns in Uganda. To cap off the conference, Bruce Baikie, executive director of Inveneo, and Laura Hosman, assistant professor of political science at the Illinois Institute of Technology, outlined five key factors to ensure successful technology implementation in developing countries: proper hardware, proper software

and operating systems, proper training, environment specific products, and proper support for maintenance in the region.

The first annual State of the Science Conference on Revealing Demand for Pro-Poor Innovation generated dialogue and provided a space for experts to discuss how to reveal demand, understand data, and better serve their beneficiaries. The hope is that these discussions will enable new technologies to rapidly evolve to meet the demand of consumers at the base of the economic pyramid.

All slide decks from the conference will be available online at the USAID Learning Lab website. For more information, visit http://dil.berkeley.edu/news-events/conferences.