

Feb. 15, 2017

# Design thinking, empathy and adaptive management



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All blogs

**What do design thinking and empathy have to do with adaptive management? How do these concepts inform our use of qualitative data? And how does all of this improve our market systems development work?**

These are big questions with long answers. In this blog I will share some of the relevant insights we have gained from iDE's work on the USAID-funded Cereal Systems in South Asia - Mechanization and Irrigation (CSISA-MI) project - in collaboration with the lead partner, CIMMYT - and how we apply those insights in Bangladesh.

One of the goals of CSISA-MI is to work with private, public, and financial sector partners to facilitate the adoption of targeted agricultural machinery. In the first year, we hit the ground running. We were working with machines that had performed well in the research of previous projects and the Government of Bangladesh (GoB), but had not yet gone to market in widespread fashion. Among other challenges, the iDE team needed to figure out potential barriers to the adoption of these technologies in the market and to use this learning to adapt and refine strategies.

## Discovery through Design Thinking

To overcome these challenges we leveraged one of our preferred methodologies: the human-centered design (HCD) approach. HCD goes beyond initial questions of feasibility (What products/services can companies produce?) to questions of desirability (What products/services do customers want? What features should they

include? What should the user experience be?) and viability (What products/services are profitable in a given market?). Solutions are found in the "sweet spot" where a product or service is desirable, feasible, and viable.

One of the keys to HCD is to start with the people and asking the desirability questions. This can give us insight into the value propositions that incentivise people to try something new or continue with a solution that they feel is right for them. The "right" value proposition for a particular person or group is not always monetary, but are often more social and emotional in nature. The HCD approach allows us to empathise with market actors to learn about their problems, behaviours, attitudes, aspirations, and pain points. This empathetic learning hints at the underlying value proposition(s) through which we can connect our solutions promoted to people's needs and desires.

These HCD insights have helped drive our design work on products (agricultural technology, **toilets**, **ring pakas**) and services (access to finance, **farm business advisors**, after sales service), and they contribute to our work in market systems development. As HCD is an iterative process, we gain new insights over time, which then allows us to practice better adaptive management in our projects.

## Insights through Empathy

In CSISA-MI, our key pathway to commercialisation and scaling of target agricultural machinery are entrepreneurs we call Local Service Providers (LSPs). In the CSISA-MI model, LSPs purchase the machines from local dealers and provide mechanisation services on a fee basis to smallholder farmers in their local communities.

Facilitating the commercialisation of agricultural machinery and the popularisation of the LSP business model was, and is still, challenging. Early on we decided to perform HCD research along the supply chain, with a particular emphasis on LSPs. We knew that there was latent demand amongst smallholders for agri-machinery services. But we had a hunch we were missing key insights related to the perceptions and feelings the LSPs had about the targeted technologies.

We first focused our HCD research through a series of "**deep dives**" to the field, asking questions, playing out experiential games, and directly using the machines with the LSPs themselves. Recording the actions and words of the LSPs and smallholders through tools such as an **empathy map**, our team tried to organise this behaviour into different categories that could tell us what really motivated LSPs' use of the machines. What did LSPs say, do, think, and feel about the machines and machinery services? The deep dive included other market actors in the ecosystem surrounding the LSPs. We encouraged our team to "follow the lead" and triangulate ecosystem touchpoints.

Ultimately, the deep dive revealed some crucial insights on some of the ways in which we were likely missing the mark in formulating and communicating a relevant value proposition to LSPs:

**Power Tiller Operated Seeder (PTOS).** Previous research had verified the agronomic utility of the PTOS. Farmers liked that they could till and seed their land simultaneously - saving time and money. But HCD helped us better understand the user experience. For example, LSPs didn't like the way dust flew up into their faces as they used the machine, and the majority of LSPs longed for a seat to reduce physical stress. When it came to purchasing the machines, dealers often unpacked the machines to display them in their shops and save space. But we found LSPs preferred buying machines packed in wooden crates as it was a sign of import and quality.

**Axial Flow Pump (AFP).** The low lift centrifugal pump (LLP) has been a popular technology for irrigation in Bangladesh. But CSISA-MI focuses on the AFP as the discharge rate is higher and the fuel savings for farmers is tremendous. We knew the AFP would save farmers time and money, so it seemed like a winning value proposition. HCD research helped us understand that there were other values at work. Farmers perceived the LLP as long-lasting and sturdy, which is important to an LSP whose reputation is at stake when it comes to providing a reliable supply of water during rice season. When CSISA-MI introduced AFP, our private sector partner imported the first batch of 4' diameter pumps from Thailand. These pumps had a lighter gauge steel than the LLP. Our deep dives helped us understand that although LSPs were excited about the greater discharge and the fuel savings, they were deeply nervous about a pump they perceived as flimsy and unreliable (when compared to the LLPs they had used for so many years).

## Management through Adaptation

So what do you do with insights like the ones above? Our team decided to re-direct a combination of people, time, and money to focus on improving the design and marketing for the machines. For the PTOS, this meant finding clever ways to retrofit a batch of dust flaps. For the AFP, we worked to reverse engineering the Thai pump and create a prototype with locally available materials - the new, domestically manufactured pump would need to be thicker and convey reliability, among other features. In both cases, we worked with our private sector partners collaboratively to address these challenges, while retaining the ability to keep our design solutions open source.

Most recently in the project, our private partners have built on HCD-generated insights to influence design choices in the PTOS that they import. Three companies now domestically produce AFP and continue to iterate in design. As the project

nears its final year, we'll be working with our partners to support their ability to generate HCD-style insights without us.

At iDE, we believe that by utilising design thinking to empathise with market actors, we can uncover socio-economic incentives that make up the market system's value proposition. Understanding this value through perspectives such as journey mapping is key not only to unlocking better pathways to market sustainability and scalability in our project models, but also providing us with an ability to adapt our strategies, resources and people to an evolving market context. For CSISA-MI, at least, doing so has given us a greater ability to step back, unpack the challenges we are facing, and pivot to a modified direction with the best chance to deliver desirable, viable and feasible solutions to the people we are trying to help in the market system.

(For more on CSISA-MI, please see USAID's [case study](#) written by scaling expert Richard Kohl.)

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