

UC Irvine

Papers

Title

Navigating Value and Vulnerability with Multiple Stakeholders: Systems thinking, design action and the ways of ethnography.

Permalink

<https://escholarship.org/uc/item/1516g39f>

Authors

Cliver, Melissa

Howard, Catherine

Yuly, Rudy

Publication Date

2010-11-16

Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial-ShareAlike License, available at <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Peer reviewed

Navigating Value and Vulnerability with Multiple Stakeholders: Systems thinking, design action and the ways of ethnography.

MELISSA CLIVER

CATHERINE HOWARD

RUDY YULY

The Institute for Money, Technology & Financial Inclusion, University of California, Irvine

A growing cadre of organizations, corporations, NGOs and philanthropic foundations seek to address difficult global problems like poverty using social innovation and technology. Such problems are multivalent, deep-rooted, ever changing and culturally specific. Amid this complicated terrain, ethnographic tools and methods are uniquely suited and key to successfully addressing these large-scale dilemmas. In our project, we use dynamic combinations of research, strategy and creative thinking to develop scalable financial service prototypes designed to promote financial inclusion for the world's poorest individuals. Fostering holistic solutions in this arena requires new ways of conceiving, designing and delivering innovation. In this paper we describe our process and vision for navigating these complex environments with hybrid strategies and an embrace of systems thinking¹. We conclude with six imperatives for success in global social innovation projects.

INTRODUCTION: DEFINING THE TERRITORY (THE WAY OF SEEING)

In 2008, our team was awarded one of 17 initial grants from the newly-formed Institute for Money, Technology and Financial Inclusion (IMTFI) housed within the School of Social Sciences at the University of California, Irvine. IMTFI, funded by the Bill & Melinda Gates Foundation, aims to foster an “open-source” community of inquiry and practice on new forms of money and financial technology among the world's poorest people. IMTFI’s director Dr. Bill Maurer envisions the institute to be more than just a collector, analyzer and generator of data, insights and business ideas. IMTFI aims to also create persistent connection among a global network of researchers, designers, field sites, local institutions and companies.² Findings reported by IMTFI and its researchers are available for free download by anyone. This open-source monetary-thinking hub represents a disruptive innovation in financial services research and design.

We are currently in the second year of our three-year project, researching and developing creative solutions to address global poverty and the need for financial inclusion, focusing on the sustainable trade industry and its stakeholders, particularly farmers and cooperatives. This paper explores the use

¹ Systems thinking as discussed here is inspired by the work of Harold G. Nelson. He refers to Systems Thinking as the process of understanding the relationships between constituent elements and the resulting qualities of an emergent whole as it interacts in any given situation with larger contexts and environments (Nelson).

² The mission of IMTFI is to support research on money and technology among the world's poorest people: those who live on less than \$1 per day. “We seek to create a community of practice and inquiry into the everyday uses and meanings of money, as well as the technological infrastructures being developed as carriers of mainstream and alternative currencies worldwide.” <http://www.imtfl.uci.edu/>

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

of hybrid strategies to navigate the boundaries of a social innovation project with an embrace of systems thinking, and offers six imperatives for success.

SYSTEMS THINKING AND HYBRID STRATEGY

In the initial phase of our IMTFI project our goal was to gain understanding that could lead to financial management applications in the form of information communication technologies (ICT’s) and services for the poor³.

As a nascent field, social innovation is still defining its boundaries, with hundreds of methods and tools at play, ethnography among them. Many of these methods have developed through the creative blending and recombination of disparate elements and ideas.

The hybrid strategy we apply includes methods drawn from design, business and social science research. Our methods to date include: a participatory design session with 22 farmers in central Mexico; a work session at the Gates Foundation with international experts in telecommunications, agriculture, banking and behavioral economics; ethnographic field observations at a coffee farm in Zaragoza, Mexico; a town-hall meeting with day laborers from 97 farms in the region of Zaragoza; and in-depth analysis of current innovations in microfinance, mobile banking, local food movements, farming communication technologies and venture financing.

The ongoing process will include further observation, secondary research, co-design, concept validation and prototyping of our concepts for various stakeholders. These concepts, once validated by stakeholders, will be freely available through IMTFI⁴.

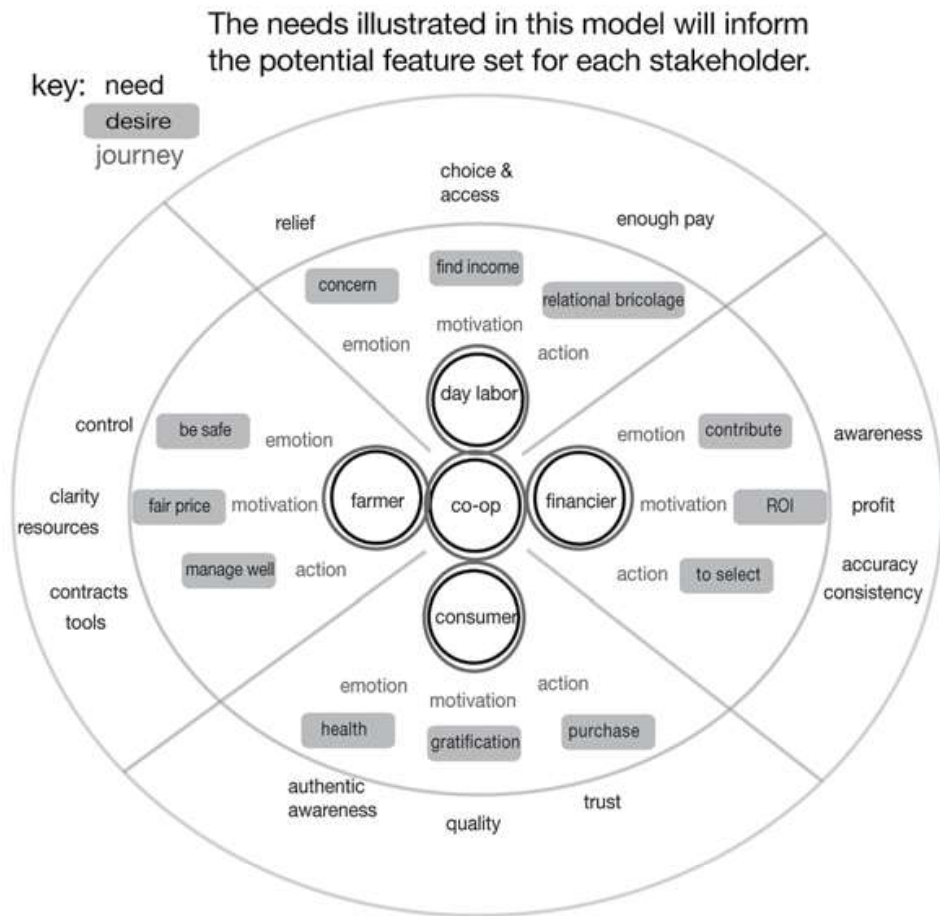
DEFINING “THE SYSTEM”

Systems thinking avoids solving for the needs of a single customer or “end user.” Instead, the “system” encompasses the many individuals and organizations forming an ecosystem, each with varying needs. Approaching social innovation projects like ours with systems thinking reveals a multitude of simultaneous drivers and reactions. We view these drivers and reactions as elements in relationship. Understanding relationships requires the ability to adopt alternate perspectives, observe potential and actual connections and the ability to interpret—reinforcing our desire to blend ethnographic and creative methods. Through understanding the complete landscape – frameworks, participants, industries and workflow – we begin to see what has been previously overlooked and perhaps then discover what is truly possible.

³ In Phase One “the poor” was defined by us as those earning less than one dollar per day. The Gates Foundation’s Financial Services Group’s mission is to provide formal financial tools to the billions of people living in the world who live on less than \$2 per day.

⁴ 2010 IMTFI Design Principles http://www.imtffi.uci.edu/imtffi_firstannualreport_design_principles

Behavioral Journey Model



Our insights indicate most systemic breakdowns occur because of indirect or non-existent communication and a lack of understanding.

As we develop ICT's how might we help stakeholders move from:
 Abstraction to understanding
 Indirect communication to true engagement
 - aiding financial inclusion

FIGURE 1. Behavioral Journey Model)

How might we assist the poor so they may receive meaningful financial services? One would think of the banking industry as a natural place for innovation in financial services. To the contrary, global innovation, particularly social innovation, is stifled within banks. In part, this is due to the current climate of shifting regulations particularly with regard to global outcomes, since regulations are specific

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

to most countries or regions. A scalable solution must be able to negotiate geographic and regulatory constraints.

Because of these limitations we chose a different industry with which we could build our research, think creatively and be strategic – the sustainable trade industry. Sustainable trade operates across every continent, touching many countries and affecting a chain of individuals from venture capitalists to day laborers, and everyone in between, including farmers and consumers. In practice, we believe that the sustainable trade industry will serve as the backbone for continuous innovation even after our project team moves on. While banks must be included in the solution, they will be a partner for a later phase, after the innovation has been welcomed, used, refined and rooted in the sustainable trade network.

We further noted that a key component of the sustainable trade industry are co-op coffee farms like the 21 de Septiembre Cooperativa. These co-ops are natural pillars in their community. They are culturally sensitive and deeply invested in the livelihood of not only their members, but the village as well, including day laborers (which in our case are unmarried women and the Mixteca indigenous peoples). The core values of the cooperative include shared accountability, shared planning for infrastructure and shared responsibility for the poorest individuals.

Can cooperative farms be a gateway for financial services that are culturally appropriate? We think so. Currently, it is common for microfinance solutions to earmark funds for individual women because the payback rates for female borrowers is higher, providing a better return on investment. However, we observed in Zaragoza funding women at the exclusion of male relatives disrupts the power structure of families. Disruptions to familial hierarchy may not affect the return on investment—but does affect the harmony of the community. Our insights led us to prototype ideas focusing on the cooperative rather than individuals, hoping to avoid this disruption in the cultural fabric of the family.

After defining the sustainable trade industry as our system, we defined key stakeholders within the system.

We are co-designing concepts with the following stakeholders:

- Sustainable financiers (the Finance Alliance for Sustainable Trade)
- Importers and retailers (Sustainable Harvest)
- Cooperative farmers (The 21 de Septiembre Coffee Cooperative)
- Farming day laborers (workers in the farming town of Zaragoza, Mexico)
- Consumers (coffee drinkers)

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”



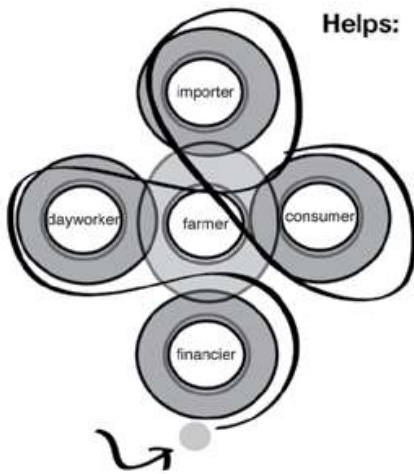
A truly holistic solution for financial inclusion should balance the needs of the stakeholders in the ecosystem. For example, one might assume that because one of our stakeholders, the Bill & Melinda Gates Foundation, has the mission to alleviate global poverty, and IMTFI’s goal is financial inclusion for the poor, we would prioritize solutions for the poorest individuals—and focus on these individuals as our sole “end user.” With a systems-thinking approach we have to weigh the impact of particular solutions for all stakeholders in a way that will work for the system as a whole. For example, here we see how one of our prototypes using MS Pivot will meet the needs of each stakeholder. Note that at this phase, concepts are intentionally broad, leaving details to be validated with stakeholder input.

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

sample concepts: conversation starter for co-design sessions

CONCEPT | MICROSOFT PIVOT DATA VISUALIZATION SOFTWARE | DATA LINKING

Each concept has a service model, interface prototype (mobile and web) and monetization features to test in co-design sessions.



Helps:

Importer

monitor data facilitates reliable partnerships

Farmer

set agenda and accomplishments feedback and requests

Consumer

visualize their member cooperative

Dayworker

apply for small loans through co-op visualized on Pivot page

Financier

perform an advanced search visualizations based on their criteria



See information in a customized context

FIGURE 3. MS PIVOT™ Visualization Software

HYBRIDITY: USING RESEARCH, STRATEGY AND CREATIVITY INTERCHANGABLY

We developed our team to include people who feel at home applying a mixture of seemingly disparate methods—in this case, to solve intractable problems in new ways. We apply the rigor of

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

social science, and at the same time, the creative intuitive and conceptual leap of art. Our team is thus able to draw upon many tools in a non-linear process.

The complexity of the project, along with significant time and budgetary restraints, means our team has had to tolerate a high degree of ambiguity, celebrate flexibility and shift roles as the project demands. In contrast to the limitations often inherent in projects undertaken for corporate clients, our leadership at IMTFI stresses “doing what is right for the project”.

If, for example, we had been working for a financial institution, we might have been constrained to develop innovations scoped by “financial management technology”—despite our reframe early on pointing to a more appropriate, alternate entry point for the discovery process, leading to our refined focus for one concept on innovations in “earning.”

In our research in Zaragosa, we discovered the limited cash funds received by cooperative farmers or day workers were spent in ways that had special relationships—“partnerships”—to the specific type of work that generated the funds. For example, “extra” money earned from small jobs like selling flowers (which was enjoyable) went to buying butter or cheese (enjoyable), while money coming back from the United States was seen as serious and painstaking, and went into building projects (cement or stone). Our observation is that these cash streams have “personalities”—emotional and habitual allocations based on where and how the money has been generated.

We realized that there is no “partner” cash stream dedicated to security or fending off the unforeseen—what we would commonly call “savings.” Putting a little cash aside here and there was common in the household, in addition to saving rice or cash for ritual celebrations—but the cooperative itself had no nest egg or emergency fund. The intangible, abstract, unthinkable future did not have a partnered cash stream. The obvious potential funding source for savings, money from coffee profits, had to be split fairly in a transparent fashion—immediately and to the penny. This was not surprising, considering that the farmers and day laborers (i.e. the cooperative members) have barely enough to make due each year with what they’ve stockpiled, material and financial, to guarantee their survival. No existing cash stream could be diverted to saving for the unforeseen, not coffee profits and not small job profits. There simply was not enough “extra” anywhere in the system to divert to savings, and if existing cash streams from small jobs were increased in order to go to savings, our observations indicate this would challenge the existing emotional “partnerships” between income and allocation. For instance an increase in flower sales would generate more income but that income would not naturally and emotionally flow to savings.

The treasurer of the cooperative, Pedro, shared his story of emigration to the US to find work. He traveled across a desert, nearly dying. He was lonely in a hostile and unkind environment, away from his community for years. Pedro was willing to exchange his life to build infrastructure in his community. Upon return to Zaragosa he spoke English and had financial acumen. Now he is the treasurer of the cooperative and considered a financial authority, based on his experience. Without risking his life and going through such trials, he said there would have been no way for him to build this life for his family or expand his options.

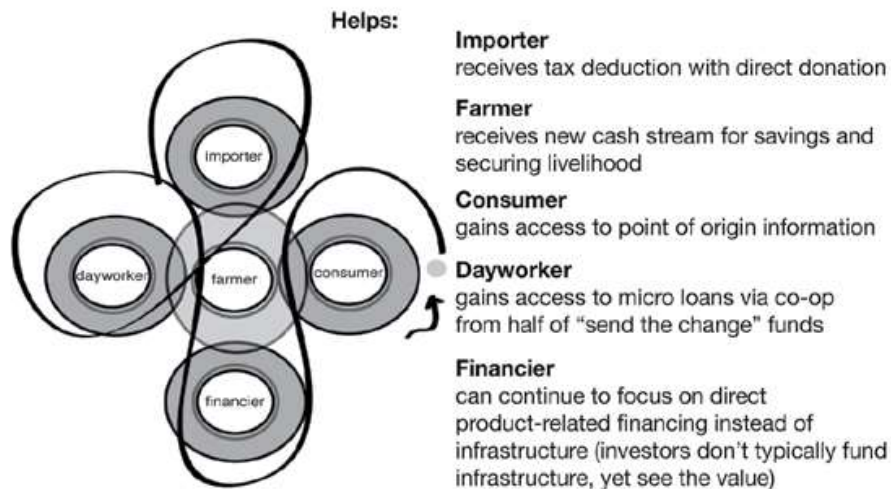
OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

“Financial management” took on a whole new meaning in light of stories like Pedro’s. Management is not simply moving money between accounts—but rather a complex human system, that takes into account life choices, emotion and sacrifice. We realized that finding a way to help the cooperative create emergency or contingent funds was crucial to successful, sustainable “financial management,” designing for livelihood. Such a solution would meet the needs and address the relationships of many of our system’s stakeholders. Therefore, for one concept we narrowed in on developing a prototype for an alternative, novel cash stream that could be earmarked for unforeseen circumstances, to have an emotionally dedicated savings stream.

sample concepts: conversation starter for co-design sessions

CONCEPT | **SEND THE CHANGE** | CONSUMER ROUNDS UP WHEN PURCHASING A POUND OF COFFEE

Each concept has a service model, interface prototype (mobile and web) and monetization features to test in co-design sessions



co-op receives novel, dedicated cash stream for infrastructure, savings and microloans



photo courtesy Bill Maurer

FIGURE 3. Send the Change concept

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

NEXT STEPS: STAKEHOLDER NEEDS IN HARMONY

IMTFI’s flexible program allowed us to reframe the entry point of our investigation. Stories like Pedro’s led us to put a new stake in the ground to design for livelihood and holistic outcomes—one important concept being the creation of new income streams.

In the final phases of this project we will prototype services and technologies to be shared in co-design sessions that take into consideration the cultural context of the cooperative. For example, inspired by the social norms of the community the cooperative will manage a new cash stream generated by consumers and investors via technology transfers. The ethnographic gaze will continue to enable us to uncover subtleties in behavior and emotion, and provide the cultural sensitivity and attentiveness to human interaction required for the success of each of these studies. Similarly to the cooperative, each other group of stakeholders in our system will participate in co-design sessions with outcomes intended to aid the flow, integrity and usability of the concepts. We envision our ICT-based adaptive system to be culturally mercurial.

In closing, we share six imperatives developed over the course of this project. These principles arose as helpful guides in our process, and may prove useful to other social innovators who want to take a systems- rather than user-centric approach to designing scalable, adaptable, sustainable solutions.

SIX IMPERATIVES FOR APPLYING SYSTEMS THINKING TO SOCIAL INNOVATION

1. Leverage existing structures and routes of communication and exchange (for our project – the sustainable trade industry)
2. Identify under-utilized relationships both overt and implied (for us the farmer and coffee-consuming customer are in an implied relationship, even though this connection today is abstract or obscure)
3. Align the team with powerful affiliations that allows for change (*Supportive leadership*, for us: Dr. Bill Maurer at IMTFI, Program Director at the Gates Foundation, Mohammed Mohammed, and Scott D. Mainwaring of PaPR Intel)
4. Consider all concepts in concert; resist the urge to favor one stakeholder’s outcome over another
5. Co-design with stakeholders at all levels to identify appropriate features for useful, useable and desirable outcomes
6. Be hybrid people: use business strategy, scientific research and creative thinking interchangeably

REFERENCES CITED

Collins, Daryl, Jonathan Morduch, Stuart Rutherford & Orlanda Ruthven
2009 *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*. Princeton University Press.

OBSTACLES AND OPPORTUNITIES ALONG “THE WAY”

Maurer, Bill

2010 *Monetary Ecologies and Repertoires: Research from the Institute for Money, Technology and Financial Inclusion First Annual Report: Design Principles.* School of Social Sciences, University of California, Irvine.

Nelson Harold G., Stolderman Erik

2003 *The Design Way: Intentional Change in an Unpredictable World: Foundations and Fundamentals of Design Competence.* Educational Technology Publications.

Patnaik, Dev

2009 “Forget Design Thinking and Try Hybrid Thinking.” Fast Company

Phills Jr., James A., Kriss Deiglmeier, & Dale T. Miller

2008 “Rediscovering Social Innovation.” Stanford Social Innovation Review, Fall 2008. Stanford, CA.