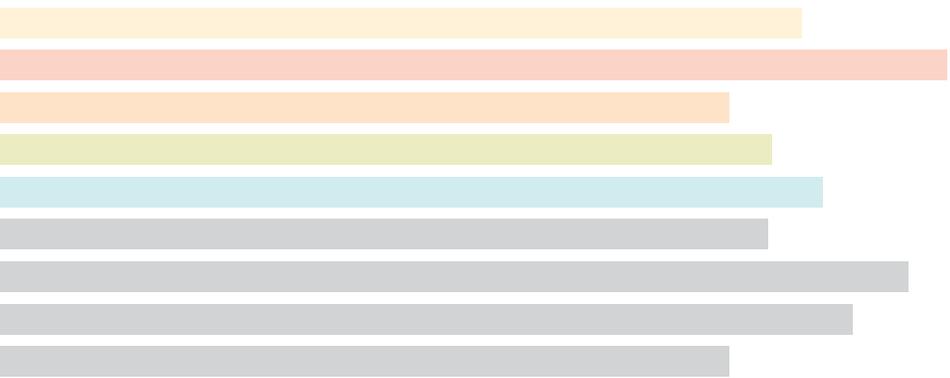


EMERGING  
LIVELIHOODS *Thinking design practice  
through engagement models*



# ABSTRACT

**PARSONS THE NEW SCHOOL FOR DESIGN**  
**MFA TRANSDISCIPLINARY DESIGN**

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New York City, 2015

This study presents how design methods and knowledge brokering are combined to create engagement models that can influence emerging livelihoods. It explores how situated junctions work, how they develop emerging livelihoods and whether the engagement model could be used to propose situated interventions, imagining new possibilities for the future. It was developed through the analysis of nine case studies in which the engagement model concept was designed to different situated junctions in five countries (Brazil, China, Fiji Islands, India and Indonesia). These projects have been developed by students at Parsons The New School For Design, within the discipline of Designing for Billions, between 2012 and 2014. During the class, students have used design methods and knowledge brokering as the core methodologies to engage with local contexts (through situated partnerships), frame opportunities and propose designed interventions. By breaking down the elements of the engagement model through knowledge brokering, we observed the urgent need for new organizational models that can better respond to the complexity of our challenges.

**KEYWORDS:** engagement model, knowledge brokering,  
emerging livelihoods, situated junctions

# SUMMARY

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# RE-FRAMING POSSIBILITIES FOR THE FUTURE

Terms in *italic* (in their first appearance) are explained in the taxonomy on page 52.

For this research's purpose, students have used design methods and *knowledge brokering* as the core methodologies to engage with local contexts (through situated partnerships), frame opportunities and propose designed interventions. We started by mapping what key methods and activities the students have performed to reach at the designed interventions they proposed. Then, we framed our units of analysis as nineteen principal components forming three *clusters*: situated junction, *engagement model* and emerging *livelihood*. We followed by analyzing each project's principal components in terms of the quality (strength) of what was proposed. The components were ranked as weak, medium, strong or very strong depending on whether they satisfied or not the *criteria* established. The qualitative rank was then transformed in quantitative, by assigning numerical values to each principal component. In that way, we could observe the overall strength of each project. We also combined projects by year (2012, 2013 and 2014), which allowed us to compare the different methods used in class and what final results they lead to.

As a result of this model, these project proposals highlight a new possibility of engaging with local contexts through a design-oriented approach based on knowledge brokering, lean methods and *innovation* approaches. It proposes a perspective shift from problem solving to problem finding through re-framing. That means the project proposals are not final but rather open solutions, inviting for more in-depth conversations on the issues and opportunities raised. For instance, the proposal developed in the Amazon region was not looking for specific solutions for issues of deforestation or local economic disempowerment, but it was rather raising the question of whether developing community resilience through sustainable tourism could be a

viable *opportunity* to shape future possibilities in that area. These future possibilities are what we are calling emerging livelihoods. The nine projects have worked on contexts where issues such as small-scale entrepreneurship, fragmented *supply chains* and low-income communities were coming together locally and giving rise to very specific situated junctions. The designed interventions presented in this research are calling for a system-oriented outlook to the way we work in local contexts and showing a possibility on how we could engage with these issues in order to envision and propose new ways of living for the future.



FIG 1. Ideation workshop. Source: Reid Henkel

## WHAT'S EMERGING IN THE WORLD?

Similar conditions of degrading environment, increased number of small and medium enterprises and fragmented socio-politics can be found in many places, including East Africa, South America, and in other areas of Southeast Asia. Potential is embedded in each of these locales. Each of these places would benefit from a *framework* combining design-led methods with local needs to leverage technologies that find specific and viable uses for new models that approach complex problems. In these contexts, delivering *products* is different from delivering *services* in the sense of how the transaction chain is created. In the case of products, we have a supply chain. In the case of services, we have a *value chain*. Value chains are far more flexible, customized experiences. Primarily what is shaping people's life today is the interaction with the value chain. The question, then, becomes how can we design large-scale value chains that can make a significant impact on global livelihoods?

Value chains are processes or activities through which an organization adds value to an existing commodity by using different *service offerings*. It is easier for an organization to enter a value chain rather than a supply chain – as the former is more dynamic and customized, while the latter is more rigid and harder to introduce innovations. That is why so many start-ups are now offering services rather than only products. Today people pay more for services than for products in their daily lives. It is not about the shoes, but the experience of engaging in a healthy lifestyle. In the value chain, the customer can possibly select what to pay for. This report aims to showcase some of what we are designing in the value chains and speculate on what are the kinds of livelihoods that are emerging out of them. How interrelated are they?

Looking at nine different situated junctions, we have mapped nineteen forces that are shaping those contexts. For instance, it becomes very clear that the issues of poverty, poor education and overpopulation are present in all nine studied cases. Rural areas of India and China have large populations if compared to rural areas of Brazil or Indonesia. The issue of migration is also very present in most cases, showing an increased pressure to urban areas. The degrading environment of most cases show the current challenge these cities/ regions have in adjusting to these inflows/ outflows of population and increased industrial development. A recent trend for some of these junctions is their rapidly growing economy, with particular growth of the middle class and increased Internet access. That trend is more strongly present in major urban centers like Jakarta, São Paulo, Rio de Janeiro and Bangalore. In other cases, *trends* are very particular to a situated junction. For instance, India is still far behind other junctions in terms of its fragmented agriculture and very early-stage rural industrialization. On the other side, places like Chongqing have an advanced industrialization process, now threatening its historical preservation and natural environment.



FIG 2. Food park under construction in Bangalore, India. Source: Reid Henkel

## 02 WHAT IS EMERGING IN THE WORLD?

	AMAZON	TUMKUR	HELIOPOLIS	JAKARTA	CHONGQING	CHINA	BANGALORE	RIO DE JANEIRO	FIJI
Biodiversity / Degrading environment	.	.	.	.	.	.	.	.	.
Industrial development / Scientific innovation	.	.	.	.	.	.	.	.	.
Strong government dependency	.	.	.	.	.	.	.	.	.
Poverty / Overpopulation / Poor education	.	.	.	.	.	.	.	.	.
Migration	.	.	.	.	.	.	.	.	.
Poor transportation	.	.	.	.	.	.	.	.	.
Fragmented agriculture	.	.	.	.	.	.	.	.	.
Limited financial services	.	.	.	.	.	.	.	.	.
Informal housing	.	.	.	.	.	.	.	.	.
Government corruption	.	.	.	.	.	.	.	.	.
Rapidly growing local economy / Increased middle class	.	.	.	.	.	.	.	.	.
Increased internet access	.	.	.	.	.	.	.	.	.
Low prepared workforce	.	.	.	.	.	.	.	.	.
Limited food transparency / safety	.	.	.	.	.	.	.	.	.
Large young population	.	.	.	.	.	.	.	.	.
Social inequality	.	.	.	.	.	.	.	.	.
Violence issues	.	.	.	.	.	.	.	.	.
3rd sector civic participation	.	.	.	.	.	.	.	.	.
Geographical fragmentation	.	.	.	.	.	.	.	.	.

FIG 3. Situated junctions.

These different junctions present us challenges and opportunities for re-thinking the way we engage with them. For instance, the industrial development combined with strong government subsidies in the Amazon lead to an environment of local communities' disempowerment. They become overly dependent on subsidies while in the long term the forest exploration leads to its own extinction. When these forces come together in a situated junction, how do we decide to engage? At the same time, India's agriculture is undergoing

a process of early-stage industrialization raising the question of how smallholder farmers are included socially and economically. These different combinations of forces in situated junctions present us with an aspect of urgency – if these forces are shaping an emerging future at this moment in time, it also requires us to take immediate action. If rural industrialization is undergoing in India right now, it makes this the most appropriate time to propose new models of engaging locally – that could, in turn, propose us with new possibilities for the future.

## SITUATED JUNCTIONS

Religious extremism, climate change and weakening governance are some examples of issues acting in local contexts around the world. They all share a similar characteristic of being like forces acting across multiple countries, but when they come together in a specific locality or city, they form situated junctions: systemic issues, but grounded in a local context. When you situate these issues, you start seeing how they are shaping local realities. From the perspective of design, we are not interested in macro challenges (like climate change at the global scale) but we are rather focused on local solutions (micro challenges) - because design is situated. However, it is not possible to deal with a topic in isolation (like climate change or weakening governance). While situating the topic in a context, you cannot deal only with the topic. There are multiple forces acting together. From the design perspective, we are addressing complex things but always situated in a particular context. We believe that in these situated junctions, it is where the emerging livelihoods are happening.

However, many of the livelihoods have not been “designed” – which means they simply happened as a consequence of the interaction of multiple systemic issues in a local context. While designing for large scale, we are interested in identifying these systemic forces, discuss how situated junctions are happening today and how they could happen if we bring design into it. What could be the possible contribution of design? For example, we might look at the emerging livelihood defined by the sharing economy (car, house and other goods sharing) and then extrapolate: what if everyone in the planet had access to car sharing, what would happen? We believe design can possibly help us have more control over emerging livelihoods by allowing us to invert the logic of always trying to solve problems for one of creating the situations we wish for. Here, the logic of problem and solution is not applied – but it is, rather, one of system intervention that creates a reaction.

People start to see new possibilities, exactly because an intervention has been made.

As part of our research, we looked at 9 cases that were developed in the past years at the MFA of Transdisciplinary Design (at Parsons The New School for Design). These cases have built on renowned precedents (the work of organizations/projects such as The Future Group, Idiom, Amazon Foundation, etc.). They are at the micro challenge level - this means that project teams have situated their interventions in local contexts while keeping in mind the systemic forces acting across that locality. Our purpose is to understand how design methodologies can do the knowledge brokering that is required for large-scale innovation. In that context, the projects we developed acted as a background for students to understand & learn design methodologies, develop concepts and make relevant propositions in a period of 15 weeks (per project) – not in a linear way but through cycles of iteration that included design research, sensemaking of data, opportunity framing, finding *insights*, developing MVPs and prototyping.

The solutions these projects have come up with are simple in their nature but they are deep in complexity, addressing important insights and opportunities. However, they are not finished and complete solutions. This report is rather an invitation for dialogue and a possibility for communicating the new, which is in many cases unfinished and unpolished. We are not seeking for solutions because we believe things do not get solved – as we deal with complex and new situations, it is not possible to have finished solutions. We also do not wish to compare the solutions of our present with the ones from our past – because we believe past and present are both complex. However, the logic here is that, to a large extent, we are still using the tools and methodologies from the industrial design era to deal with challenges that we cannot even name.

The industrial know how already exists in our society. To create a product today is something we have overall mastered, but creating a system is a new thing. Two centuries ago, we learned how to produce in large-scale. Today, the question of how to have a sustainable city is something we yet do not know. A sustainable supply chain, for example, is something organizations and governments are now looking for ways to deal with. In the 18th century, it was common practice to send children to work in factories. As large-scale production increased, we developed new systems – including one for education through which children are expected to attend school rather than work. Today, a portion of our society is reaching university without having ever worked in their lives. This is a consequence of a system we created (comprised of an industrial revolution, taxes, schools, etc.). However, our current education system is from the industrial age. That means we are now dealing, at a large scale, with new complexities but still using tools from the past.

As in education, we can see other issues adding complexity to our emerging livelihoods. For instance, there is an emerging rise of consumer empowerment affecting global supply chains. We know how to build supply chains from the point of view of production, but the moment the consumption dictates the supply chain and the voice of the consumer gains power, then it impacts the supply chain in ways we are still learning how to approach. The very fact that people start seeking new types of food and healthy lifestyles can drastically influence the way we organize our supply chains in the future. Meanwhile in Rio, we can see cultural complexity connected with issues of fragmented geography, violence, and discrimination. In that context, conversations go around providing and expanding transportation. But is that the most effective option for Rio? By observing different situated junctions, we can also see patterns. For instance, in Fiji and India, a world



FIG 4. Santa Marta community in Rio de Janeiro, Brazil. Source: Ricardo Dutra

of NGOs are currently competing for resources and acting in fragmented ways.

In designing for billions, we need concrete situations. While they manifest complexity, we see that the apparatus we have is limited. Then we have many problems being born there. That is where design is most needed. Old tools will not solve current issues. It will not present alternatives of future. In this a gap, we have the opportunity of developing new methodologies and tools. What methodologies and approaches that are most appropriate here, we yet do not know. This report seeks to explore one methodology in particular: the engagement model.

## ENGAGEMENT MODEL

Given a specific context; that is unique in the sense of what forces and trends are present. We can choose to make an intervention. The way the intervention is done is through an engagement model. This engagement model is made of 1) knowledge brokering and 2) design methods (leveraging the know-how that already exists in the design field and also creating new methods - examples include field trips, ideation workshops, MVPs, etc.). The design methods are tools that provide us means to connect with a context and derive outputs (information, ideas). In the meanwhile, the knowledge brokering is the management of the flows (of information and ideas) in ways that potentialize the intervention's impact. It includes how problems are framed, how insights are chosen, how arguments are crafted, etc.

The engagement model is always about doing something to get to the next step. It is not a linear logic, but a cycled process. It is also a flow and a collective work; hence, not centralized in one person. The engagement with the context (partners, clients, beneficiaries, etc.) might change from project to project and it is the designer's responsibility to manage it accordingly. In that context, design is not about understanding; design is about changing. The key process is ideation: the ability to create new possibilities for what exists, not taking the world for granted. Design is about *speculation* – the “what if” question. Leaders shape directions by speculating alternative futures in different ways. However, how much of our education is about deconstructing things? Manipulating things in speculative ways?

The model can run in both ways: from sense making to a finalized idea or from a finalized idea to sense making. Going in a reverse way is useful when we have a solution and wish to navigate and understand the logics behind it. The point here is that there is no sequence and by

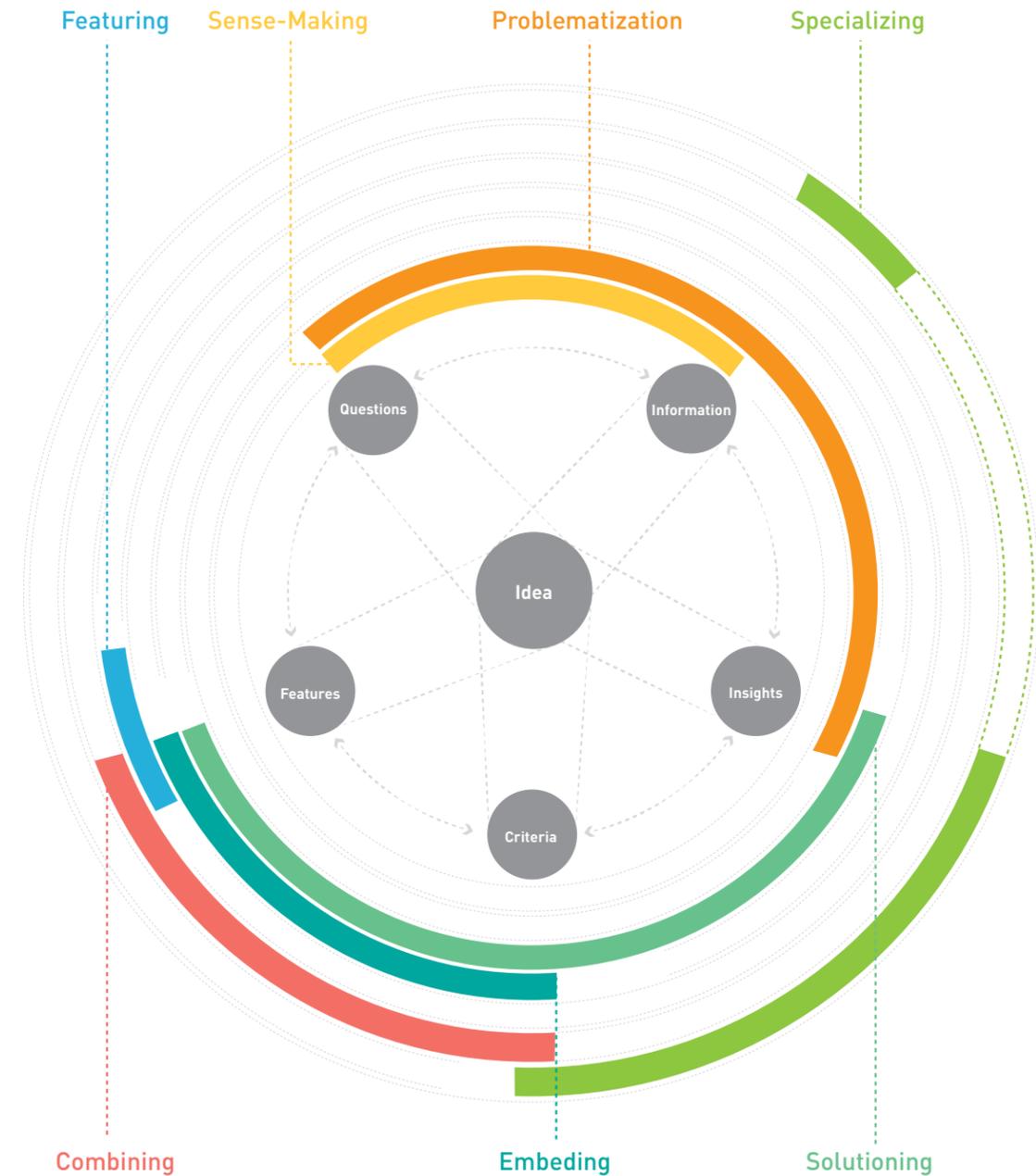


FIG 5. Engagement model. Source: Leah Cabrera

using the engagement model, one should break away from the notion of linearity and consider the logics of *diminishing returns*: as we add more iterations to the process, the relative increments we get (demonstrated in the proposed solution) are diminishing over time.

The model must have an element of reliability. Once a machine is built, we can assume a certain output (a product) will be guaranteed. In the same way, once the designer builds the “engagement model” machine, can he/she make sure the output is reliable? Creating an engagement model is like creating a thinking machine: in which, the process of design happens in the system (not in one single person). For example, we could compare the existence of a system of social entrepreneurship (through incubators, investments & grants, benchmarks, etc.) as being an engagement model versus the traditional view of the single social entrepreneur as being a hero. In order to build this “thinking machine”, a lot of effort is invested. This is why doing *open innovation* is hard: because it is done little by little through *building blocks*. For example, in Rio de Janeiro, the current public transportation (buses and subway) and the cultural scene (pop-up events, concerts, street performers, etc.) are existing elements that act as building blocks for ideas to flow in and out of the city, which is a the basic requirement for innovation to occur.

The startup scene today in New York City is another example of how building blocks come together to create conditions for open innovation. Out of the financial crisis of 2008, there is a flow of talent moving into the startup scene. With the abundance of talent, other companies (such as Google and IDEO) also feel attracted to come to the city. In this context, everybody is struggling to innovate. A lot of international companies are opening an innovation technology center. The economy is

moving to be a creative economy and, as a trend, this seems not to be going back. In this new context, engagement models must also be lean. Here, we need to introduce the concept of *transaction cost*, which takes in consideration the amount of effort put into a process and the outputs gained from it. The model must be lean in the sense that it must preserve a low transaction cost of all activities and phases performed within it.

Our research seeks to understand what kinds of outputs can we get from applying such model and evaluate whether and how these outputs could contribute to emerging livelihoods. The engagement model is the infrastructure that allows knowledge brokering to be performed. Breaking it down in parts, it is comprised of:

- Sense making: knowing the context
- Problematization: framing the project (what is it about?), defining insights and design criteria
- Solutioning: diagramming the system and developing an open-ended vision
- Featuring: using insights and criteria to develop product/service *features*, exploring opportunities based on defined design principles
- Combining: clustering, mixing and matching features to create a minimum viable product (MVP)
- Embedding: contextualizing through scenarios, personas and user interactions brought together
- Specialization: when features are combined and embedded in a scenario, we create a specific meta solution that is tailored to a context

# KNOWLEDGE BROKERING

Knowledge brokering is the process through which you transform information in ideas. It is the algorithm. How methodologies phase by phase create content? What parts were eliminated? How and when did they connect? It is not a linear process though. Knowledge brokering is the design process through which insights are generated, and then transformed in criteria and features of a project solution. It runs like the engine of our engagement model. The process requires people to feel comfortable with seeing, analyzing and de-constructing things. It is about engaging with the unknown and through that process, developing ideas. However, the degree of the “known” is questionable - but reaching there is a process of reducing the risk and getting people to think: how had I never thought of that before?

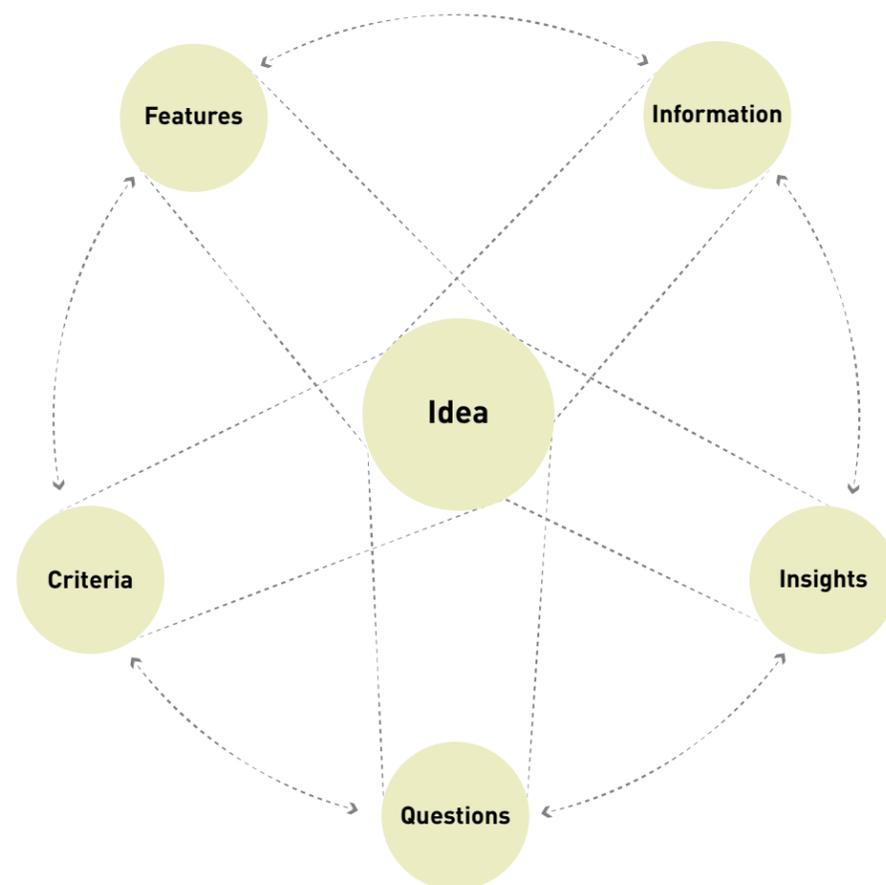


FIG 6. Building blocks of knowledge brokering. Source: Leah Cabrera

The efficiency and quality of the knowledge brokering can be measured by the output achieved at each of the stages. A designer can manage a team working on a specific intervention only by observing the outputs the team is coming up with at each stage. For instance, that can be seen in the quality of the questions they ask to partners, the simplicity of the features they come up with, etc.

**a) Working with questions:** the beginning of engaging with the unknown is a process of asking good questions, through which one can understand the key elements of a system – such as WHY, HOW, WHEN, etc. The designer might as well develop a portfolio of questions beforehand and use them in conversations and meetings with partners, clients, beneficiaries, etc. Questioning is a mindset and it is used as a field to collect the needed information. Like a filter, allowing one to make sense of the messy world. The questions are already loaded with concepts and understanding. Hence, the importance of accumulating experience and doing research before engaging with stakeholders. For instance, when we engaged with partners in Rio de Janeiro to develop an intervention around cultural mobility, there would be a difference in asking our partners what is culture versus asking how people share information across informal settlements in the city? The latter is loaded with information, while the former is naïve. Asking good questions is also important in the sense of not holding others back (in meetings and other engagement opportunities). The rule here is that basic questions can always be answered in advance.

**b) Structuring the information:** analysis takes part once we have data sets from the researches. You can always come back to the data sets once you have new information. Sometimes the data will be quantitative; sometimes they are qualitative. This process is about categorization, as if it was a taxonomy. The most disruptive innovations come from organizing data in very new ways. Hence, it is very

important for the project team to go in depth and even create their own taxonomies. For instance, when we speak of different social classes in India – classifying it as upper, middle and lower classes is very weak to showcase the complexity of Indian society. It requires more depth and sophistication of analysis.

**c) Having insights:** this happens when the team is discovering the rules behind the logic of something. This is one of the most valuable and fundamental elements of ideation. That is seeing the context reality for what it is. Why things are the way they are? And how they work the way they work? These are like the principles of the system. It is like a software – bringing in the rules behind the operating system. Here, one needs to be careful and structured to bring insights into parts in a very clean and simple way. When an insight is very well written and structured, it tells the whole story. And when people read or hear about the insight, they can understand. The insight shows a relationship of cause and consequence. By giving insights, we empower people to touch and understand the main driver of a situation. Good insights can completely drive the entire conversation.

**d) Developing criteria:** the process of transforming insight into criteria is one of understanding how something works and then imagining how they should work – crafting the terms and being careful not to frame it in an impositive way. At many times, criteria might create divisions – for instance, satisfying one group versus the interest of others (such as saying “our project should benefit the small farmers versus the interest of large scale retailers”) – which is a very weak form of developing criteria. The project team must work to satisfy multiple and paradoxical criteria (instead, it could be saying “our project should be inclusive of small farmers and large scale retailers”). The most successful projects can satisfy the highest number of criteria. The solution can be measured by how many criteria it can satisfy. Can I create a solution that pleases large-scale retailers and farmers?

This is called an elegant solution: the notion that you are satisfying multiple criteria.

**e) Creating features:** a solution is a combination of multiple features. Features move beyond project concepts, they exist in the world and make criteria a reality. In that way, Amazon’s growth and need for home delivery impacted the creation of Fedex. The same happened when online shopping boomed, impacting the market of credit cards. A project team should not try to build the solution by thinking the whole – no one can handle that complexity. The process is done by building a feature, little by little, and then assembling them together.

The knowledge broker is someone who maps and understands the process. It involves speculation, ideation, cross-pollination, visualization, scenarios and argumentation. It is about transforming information and findings into a vision, by manipulating the process and managing the flow. Knowledge brokering is needed to build the system. Building organization infrastructure (practices, processes, competencies, routines and environments) is key for innovation. It requires a team to understand that successful solutions are not because of an individual super star. Apple was not successful because of Steve Jobs himself, but because of the organization infrastructure he built.

One of the challenges of design today is to imagine how New York, Mumbai, São Paulo, etc. will become creative systems? Can we, as a community, produce ideation as a public artifact? Design today is still a luxury. However, in developing countries we cannot afford paying millions for one design project. We need methodologies that are cheap, reliable and systemic on a daily basis. Could governments, for instance, invest in knowledge brokers as public goods? Today people are building the infrastructure (roads, comfortable houses, etc.) – this is like the hardware we have. We need to start putting the software in place. The flow is key in this process and there seems to be a pattern in the importance of sequencing/ intensity/ clustering in the right moment/way/purpose. This is the role of knowledge brokering.

## DISCUSSION

The findings of this report highlight some of the possibilities we might encounter when deciding to engage in local contexts through a design-oriented approach. All nine projects have been evaluated on a scale from weak to very strong. The evaluation was made across 1) their situated junction; 2) their engagement model and 3) the emerging livelihoods. Each of these three sections were broken down into smaller parts (the building blocks) and then assigned a respective value (from weak to very strong) depending on how they were fulfilling the pre-established criteria.

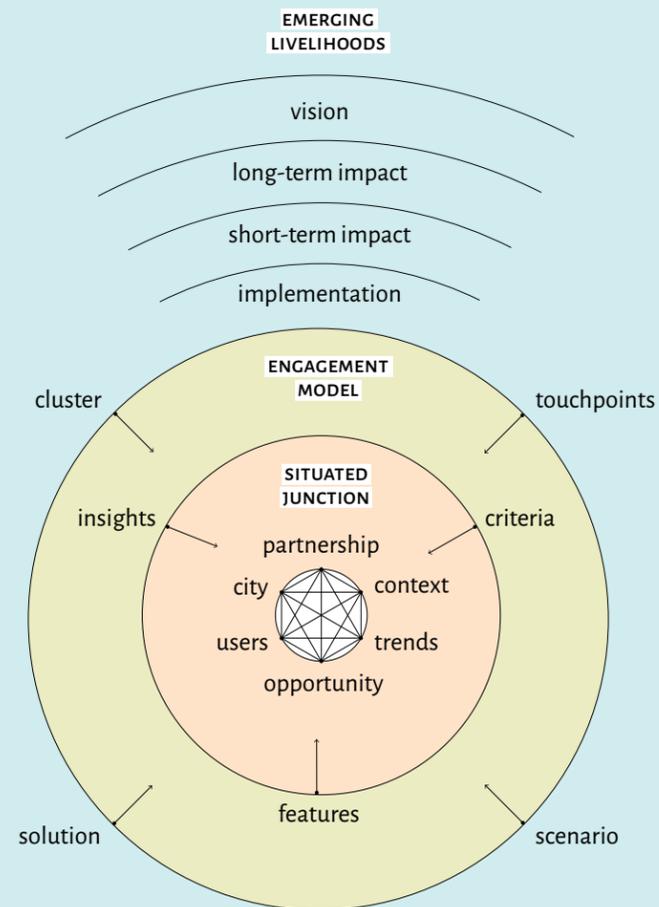


FIG 7. Emerging livelihoods as a result of an engagement model.

Once all projects have been evaluated, we could observe that the work presented for the situated junctions indicated an overall quality that was going from medium to strong, while the engagement models were overall medium and the emerging livelihoods were medium but tending to weak. By looking at the numbers in more detail, we decided to evaluate our design approach in terms of the design practice and the ideation flows (resulting of knowledge brokering).

#### The design practice

The problem-framing aspect of the design practice is core in developing an intervention in a situated junction. From our research, we observed that the strongest proposals were built upon an adequate framing of context of a particular junction. In terms of users, we noticed a shift from single users to the notion of stakeholders, broadening the concept of user-centered design to one of multiple-users-centered design. In terms of trends, macro historical analyses are fundamental to understand the *plasticity* of a situated junction – designers might use, for example, timelines as tools to understand what context they are acting on, what has historically worked or not worked and develop a notion of legacy versus potential.

From the perspective of creating an engagement model, a solution is built based on the capacity of the designer to articulate the logic of new possibilities. In that process, the design of features depends on ingenuity and deep design expertise applied to issues and aspects of human behavior. The interaction design is applied for the development of social material assemblies, which are comprised of systems of offerings of products and services. This is where specialization comes in and the project teams start realizing the limitations of their knowledge. Another design practice aspect in the engagement model is the clustering, which is the designer's ability to integrate features into optimum

		AMAZON TOURISM	FARMING IN TUMKUR	STUDIO HELIOPOLIS	JAKARTA ONLINE	CHONGQIN MUSEUM	CHINA EATS FRESH	KHANACHALE	BARULHO LAB	GO FIJI GO	OVERALL	OVERALL	OVERALL	OVERALL CLUSTER
Situated Junctions	Users	3	3	2	0	3	0	4	2	3	20	Medium	2	Medium tending to strong
	Partnership	3	2	3	2	3	0	0	3	3	19	Medium	2	
	Context	4	3	2	3	2	0	3	3	3	23	Strong	3	
	Trends	4	0	3	3	2	0	3	0	2	17	Medium	2	
	Opportunity	4	2	2	3	3	0	4	3	2	23	Strong	3	
Engagement Model	Insights	4	3	3	3	4	0	3	3	3	26	Strong	3	Medium
	Criteria	4	3	3	2	4	0	3	3	3	25	Strong	3	
	Features	4	2	2	0	4	0	3	2	3	20	Medium	2	
	Cluster	3	3	2	2	4	2	3	2	3	24	Strong	3	
	Touchpoints	3	3	3	2	4	0	2	2	2	21	Medium	2	
	Scenario	4	3	2	2	4	2	3	2	3	25	Strong	3	
	Solution	4	3	2	0	4	0	3	2	3	21	Medium	2	
Emerging Livelihood	Implementation	3	0	0	0	0	2	2	0	2	9	Weak	0	Medium tending to weak
	Short-term impact	3	3	2	0	4	2	4	0	3	21	Medium	2	
	Long-term impact	3	3	2	0	4	2	4	0	3	21	Medium	2	
	Vision	3	3	2	0	4	2	2	0	3	19	Medium	2	
	Overall	4	3	2	2	3	0	3	2	3	22	Medium	2	

**POINTS CLASSIFICATION**

- 0 weak
- 2 medium
- 3 strong
- 4 very strong

FIG 8. Evaluation of case studies.

configurations of social material assemblies to create new value propositions in the situated junctions. In our research, we also observed the need for identifying touchpoints, which requires an ability to situate ideas, and the role of scenarios, which demand an ability to re-frame contexts to re-arrange value exchange, consequently articulating a vision.

As the design teams developed new possibilities for emerging livelihoods, we noticed low-point evaluations of the projects in aspects such as roadmaps, short and long term impact. Our analysis is that the design practice

requires practitioners to move away from the linear notions of planning followed by implementation. The design practice in creating emerging livelihoods requires the understanding of the cycles of transformation being fragmented, non-linear and interdependent as the result of continuous development and strategic thinking. That means designers are constantly prototyping, embedding through scenarios and building narratives for their interventions. We also learned that there is a need for the designer's capability to build consequential scenarios and warrants. This logic comes in multiple cycles, potentially empowering more ambitious visions.

### The ideation flows

The building blocks forming the situated junctions, engagement model and emerging livelihoods are highly interdependent. Knowledge brokering allows ideas to flow through the design process. From our research, we observed that partnerships are key for accessing local knowledge (or human centered knowledge) – in projects in which the partners were highly engaged and opened access to local contexts, the teams were much more empowered to search for relevant insights. We also learned that opportunities for intervention emerged from exploring the plasticity of situated junctions, when teams delved into historical contexts and considered legacy and potential.

Adequate ideation flows are core to building strong engagement models. In our research, we learned that the best insights are re-interpretations of causation (cause and consequence) in a situated junction and they lead to new directions and logics. We also learned that insights and criteria are tightly interdependent, they are like the two sides of the same coin. When the design teams moved from insights to criteria, they reached a turning point: from a descriptive to a prescriptive mode that defined focus and guidelines for their intervention. These criteria triggered a vast universe of possibilities and were the seeds for development of features.

As features were developed, the design teams were challenged to cluster them. The integration of features was regulated by a value system (in the sense of what value the service or product creates) and the plasticity of situated junctions (in terms of communicating new ideas in ways that fit historical context and future possibilities). Touchpoints also allowed for experimentation and evaluation of the compatibility of features and their ripple effect in junctions. In the meanwhile, scenarios



FIG 9. Ideation process. Source: Reid Henkel

demonstrated the value-added of ideas in a re-framed context. By observing all projects, we learned that solutions were a speculative logic that articulated the potential and possibilities of new value propositions.

As ideas flow into concepts of new emerging livelihoods, we observed that “implementation” is inadequate for speculative logic because it assumes a progressive linear, control, centralized model of organizational change – while in the design process, this is mostly happening in cycles of transformation. As teams approached a linear logic at this stage, we could observe that visions were less ambitious if compared to the potential of the solutions presented in the engagement models.

CASE STUDIES



AMAZON TOURISM —

BARULHO LABS — STUDIO HELIOPOLIS

KHANACHALE — FARMING  
IN TUMKUR

CHONGQING  
INDUSTRIAL —  
MUSEUM

— CHINA  
EATS  
FRESH

JAKARTA ONLINE —

GO FIJI GO —

**SITUATED JUNCTION** Biodiversity / Degrading environment / Industrial development / Scientific innovation

Strong government dependency / Poverty / Overpopulation / Poor education / Government corruption

Geographical fragmentation



**LARGEST STATE**  
1,570,000 KM<sup>2</sup>

**MANAUS:**  
LARGEST CITY AND CAPITAL OF AMAZONAS

**TUMBIRA IS LOCATED**  
1.5HRS BY BOAT FROM MANAUS



# AMAZON TOURISM

**YEAR** Fall 2012  
**LOCATION** Tumbira, Brazil  
**TEAM** Aly Blenkin, Fernanda Alcocer, Mike Varona and Sean Baker  
**ENGAGEMENT MODEL**  
 How might we build community resilience in the Amazon region?

**CONTEXT FACTS**

- Largest, most biodiverse region on earth (“Lungs” of the planet)
- Industries include Oil & Gas Development, Hydroelectric Energy, Logging, Roads & Pipelines; Mining, Cattle Ranching, and Small Scale Agriculture
- Some 120 prescription drugs sold worldwide today are derived directly from the region

**INSIGHTS**

- There is a vulnerability in the local economy because the monocultures practiced in the region are highly vulnerable to weather conditions and market fluctuations
- The current model of sustainable development in the Amazon (based on monetary allowance) is not sufficient because it does not leverage the forest resources in ways that could create more economic opportunities while preserving the forest
- Tourism by itself is a pretty impactful activity because it goes on creating large amounts of waste, treading into unauthorized territories, and consuming resources en masse
- Skills are often shared through observation, participation, and repetition because there is lack of traditional models of education

**DESIGN CRITERIA**

- Allow for some prudent use of resources without penalty
- Nurture the community’s own skills and entrepreneurial spirit
- Prepare the community to handle the tourism flux
- Safeguard environment and culture
- Improve economic prosperity
- Reduce community’s dependence on outside influences

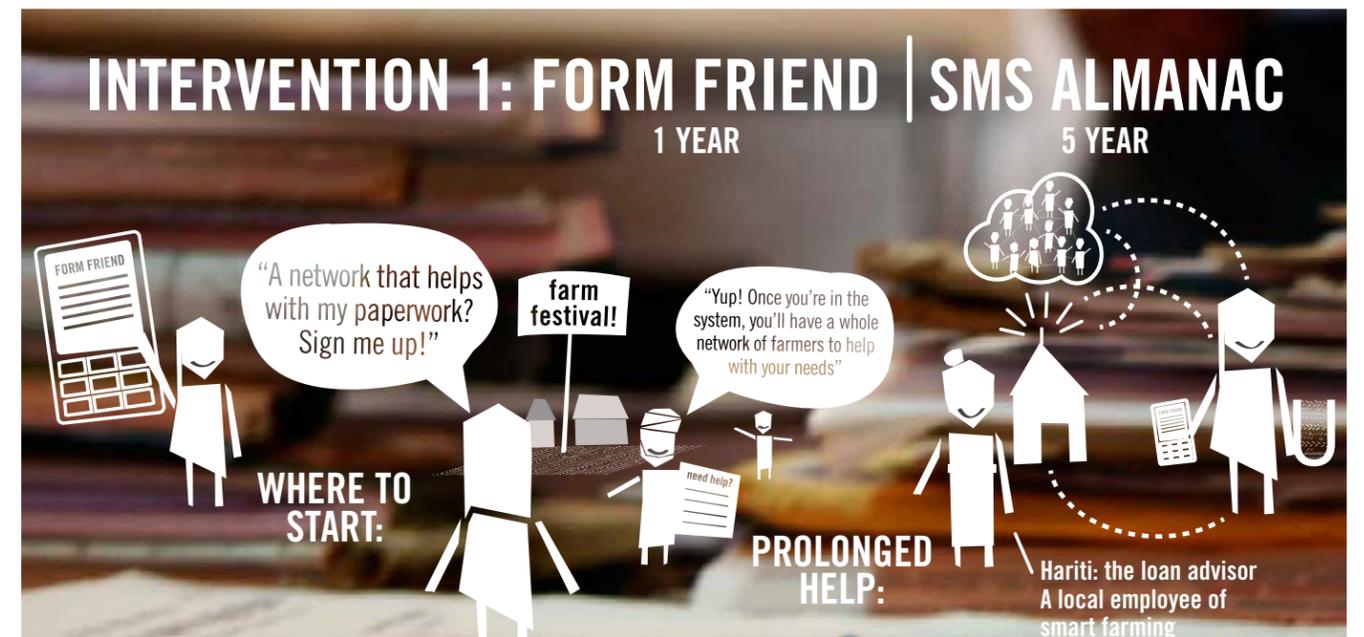
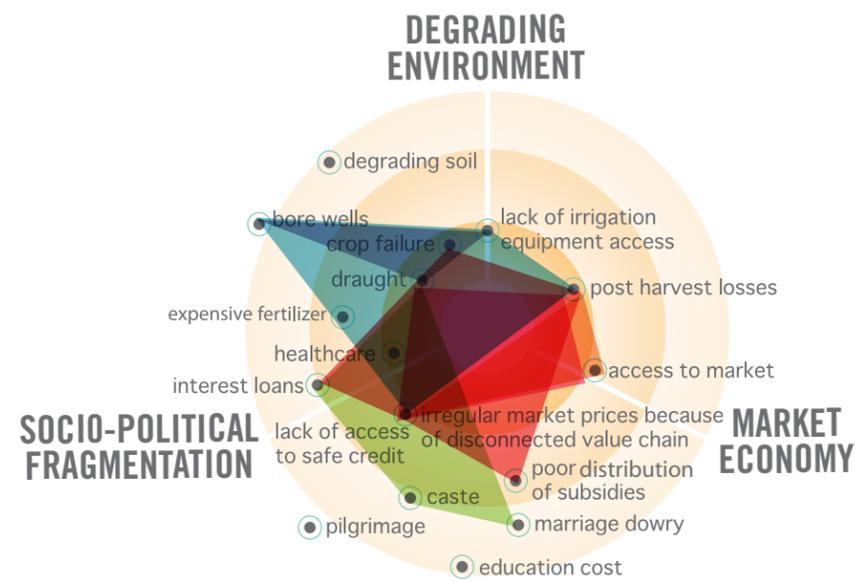
**OPPORTUNITY FRAMING**

- The current model of rewarding locals for the upkeep of the Amazon Rainforest needs to be reexamined
- High profile, global events coming to Brazil in the next 3 to 4 years
- Increasing number of tourists going green in the near future
- Charging a premium for businesses participating in ecotourism could quickly lead to profitability of the system

**CONCEPT PROPOSAL**

- Incubator acting as a local venture capital to invest in local businesses that are fostering sustainable tourism in the region

**SITUATED JUNCTION** Biodiversity / Degrading environment / Poverty / Overpopulation / Poor education  
 Migration / Poor transportation / Fragmented agriculture / Limited financial services / Government corruption  
 Limited food transparency / safety



# FARMING IN TUMKUR

**YEAR** Fall 2012  
**LOCATION** Tumkur, India  
**TEAM** Bridget Sheerin, Bernd Reidel, Maggie Ollove, Rie Watanabe and Taylor Kuhn  
**ENGAGEMENT MODEL**  
 How might we strengthen the existing but unorganized network of farmers of Tumkur?

**CONTEXT FACTS**  
 · 230 million people go hungry in India everyday  
 · 500 000 inhabitants  
 · Low-level of education and poverty among farmers  
 · Farmers have localized understanding of their farm  
 · Droughts and water scarcity are strong environmental pressures

**INSIGHTS**  
 · The typical farmer in Tumkur is cut off from the market economies and potential profit from consumers in nearby Bangalore because of an inability to access knowledge about the market system, caste issues, religion, illiteracy, and distance  
 · Farmers do not access a fair amount of what they sell because middlemen are retaining large portions of their revenue  
 · The cycle of poverty among farmers is made stronger because of the high loans and debts that farmers get into

**DESIGN CRITERIA**  
 · Allow farmers to add value to their crops  
 · Position small-scale farmers to respond to high demand  
 · Include new forms of organizing and producing  
 · It must be guided by the local farmers

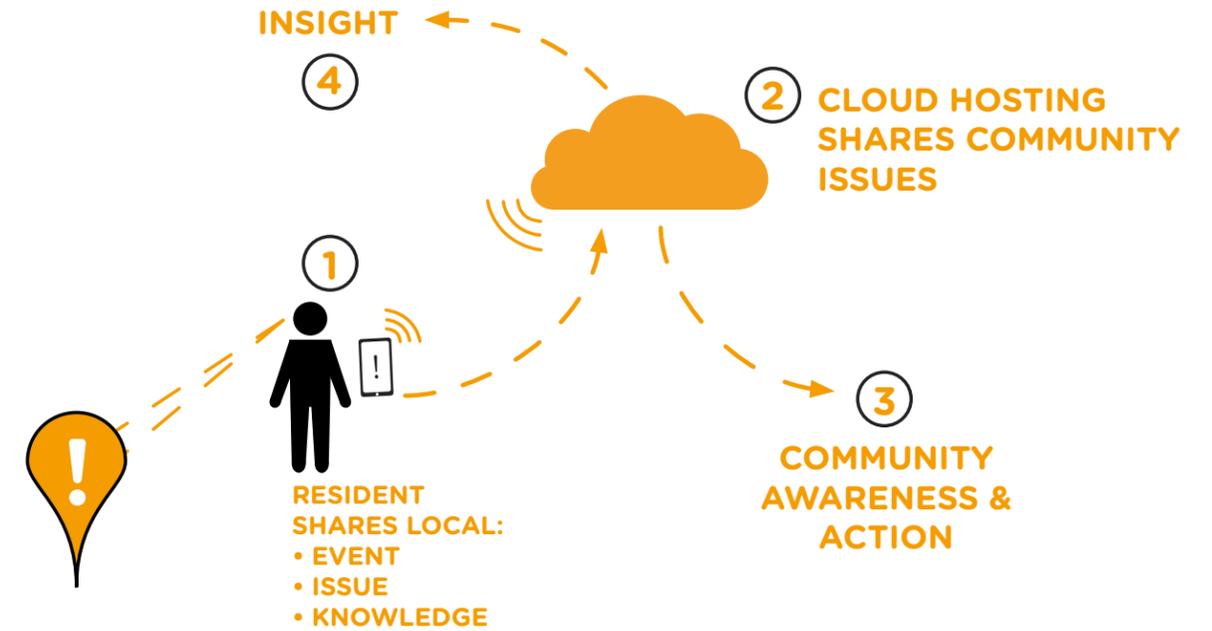
**OPPORTUNITY FRAMING**  
 · A context of fragmented farm production and stronger cycles of poverty for small farmers call for a possibility to organize production while reducing waste of food.

**CONCEPT PROPOSAL**  
 · An innovative framework that re-organizes the community of farmers to have the capacity to incubate locally-designed solutions to the local needs of farmers

**SITUATED JUNCTION** Biodiversity / Degrading environment Poverty / Overpopulation / Poor education

Migration Informal housing Government corruption Rapidly growing local economy / Increased middle class

Increased internet access Low prepared workforce Large young population Social inequality Violence issues



# STUDIO HELIOPOLIS

**YEAR** Fall 2012

**LOCATION** Heliopolis, Brazil

**TEAM** Namkyu Chun, Meagan Durlak, James Frankis, Luke Keller and Patrick Schlafer

## ENGAGEMENT MODEL

How might we leverage the economic growth within informal settlements?

## CONTEXT FACTS

- Informal settlements are home to 1 billion people in the world
- Heliopolis is the largest informal settlement in São Paulo with 95,000 residents
- Residents prioritize regularization above other things such as sports & leisure, culture and sustainability
- Higher standard of living compared to other informal settlements around the world
- Over 30 community organizations are operating locally
- 69% with elementary education level or less
- Complex bureaucratic systems, lack of quality labor, inadequate resources, haphazard infrastructure, new cultures, language barriers, impenetrable communities and untrustworthy or unavailable information sources

## INSIGHTS

- Informal settlements exist because of rapid urbanization, national inequalities and insufficient housing conditions
- The conditions (of informal settlements) have improved over the last 25 years because of government assistance and infrastructure
- Informal settlements are resilient communities because they can teach valuable lessons in sustainability
- Investment in markets like Heliopolis is more feasible than in other informal settlements because of improving access to services, income and infrastructure
- Businesses are successful in emerging markets in part because they partner with local organizations
- The business transactions happening in informal settlements are limited because business owners and residents cannot easily connect with broader audiences

## DESIGN CRITERIA

- Allow for flexible, locally-oriented services that augment existing transactions
- Serve as a tool for civic engagement and civic action
- Increase the exchange and the speed of exchange of goods and services
- Open up greater access to local and global markets
- Allow businesses to invest in infrastructure improvements for informal settlements

## OPPORTUNITY FRAMING

- Businesses investing in services that empower informal settlements is an opportunity to tap into one of the largest emerging markets in the world. Informal settlements like Heliopolis are the next frontier of expansion of mobile technology usage. Improving the capacity of these economies to grow will eventually create new opportunities for business ventures. These ventures will inevitably come in the form of new mobile technologies as access to better mobile infrastructure and the cost of mobile devices decreases. The project seeks to provide a scalable framework for how businesses might meaningfully invest to create one billion business opportunities

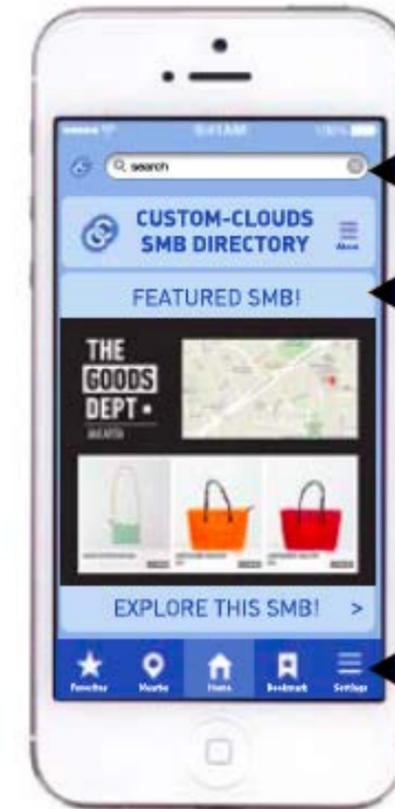
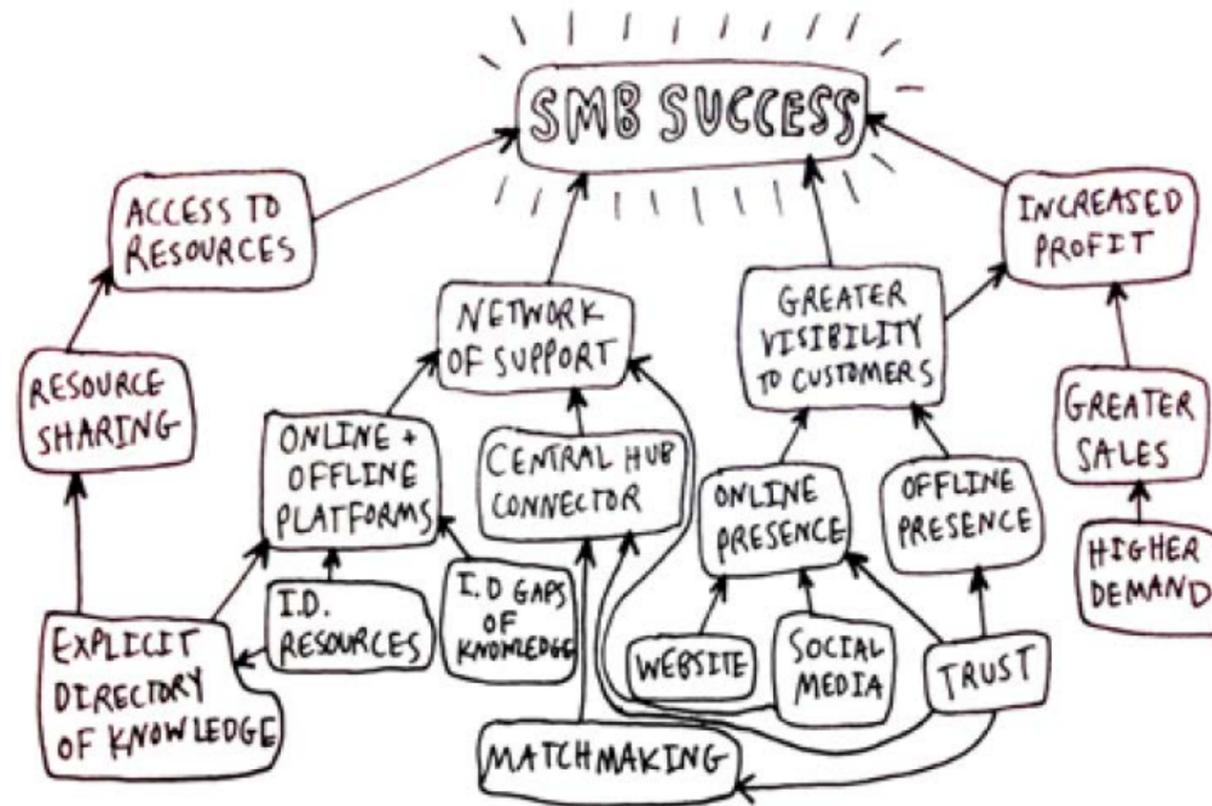
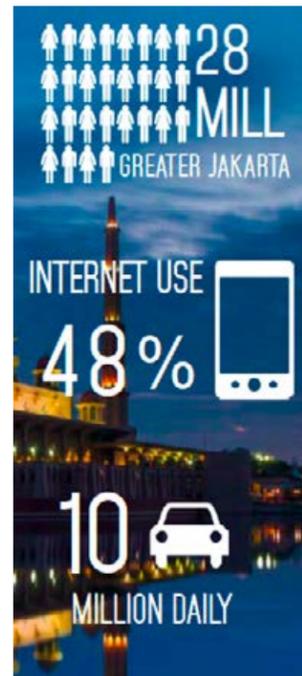
## CONCEPT PROPOSAL

- The final concept is comprised of 2 elements – one is a map that allows residents to post issues they see in their community and the second is a platform that allows young people to produce objects (at a physical community center) and sell them online

SITUATED JUNCTION Biodiversity / Degrading environment Poverty / Overpopulation / Poor education

Migration Informal housing Rapidly growing local economy / Increased middle class Increased internet access

Large young population Social inequality



[C] smart phone platform

search option for directory

spotlighted SMB pictures and map



# JAKARTA ONLINE

**YEAR** Fall 2013  
**LOCATION** Jakarta, Indonesia  
**TEAM** Chisun Rees, Lauren Wong and June West

**ENGAGEMENT MODEL**  
 How might we facilitate the process in which small and medium businesses in emerging markets succeed through online and offline platforms?

- CONTEXT FACTS**
- 28 million people
  - 48% are internet users
  - 10 million people on traffic jams daily
  - Current business channels are dominated by print, referrals and foot traffic
  - Most of the economy is made of SMB

- INSIGHTS**
- Most internet users are mobile phone based because of the affordable data plans available
  - Indonesians are not shopping online due to a lack of sophisticated payment system
  - SMBs in Jakarta may not be able to adapt to the rapidly changing economy of an emerging market with their current resources because there is a lack of connectivity to tools/knowledge/resources

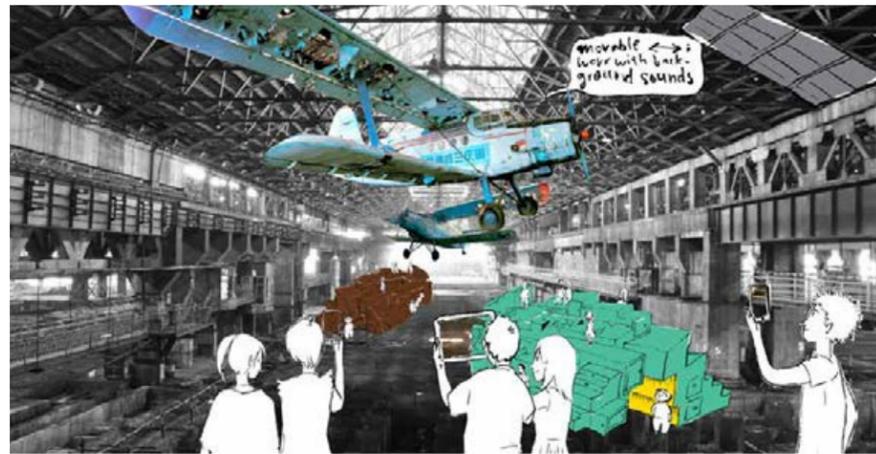
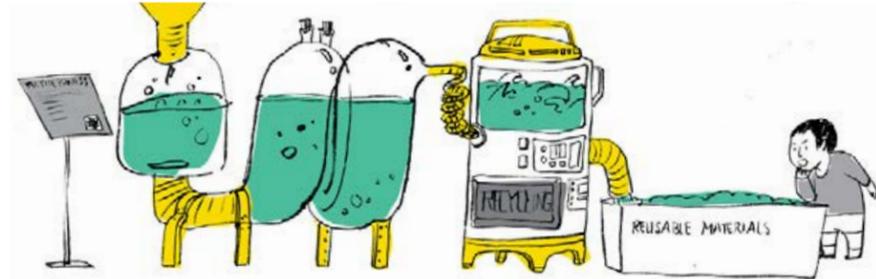
- DESIGN CRITERIA**
- Allow for increasing trust among SMBs
  - Allow SMB to leverage their growth through sharing their resources
  - Take in consideration the local behavior of shopping by reference/word of mouth

- OPPORTUNITY FRAMING**
- A large market (28 million people) addressed by a high number of SMB – that are still limited in their resource sharing and use of online marketing. That context is combined with the rise of internet use and sharing economy to address the opportunity of making the SMB sector stronger by fostering resource sharing and collaboration

- CONCEPT PROPOSAL**
- Online & offline support network with resources & information for SMB to collaborate and grow

**SITUATED JUNCTION** Biodiversity / Degrading environment / Industrial development / Scientific innovation

Poverty / Overpopulation / Poor education / Rapidly growing local economy / Increased middle class



ACCESSIBILITY	IDENTITY	DESTINATION	EXPERIENCE	IMPACT
Transportation	Branding	Target Audience	Education	Environment
Online	Conservation	Amenities	Interactive	Education
Physical	Narrative		Rotational	Community
Global Connection	Experimental		Technology	Maintenance
Flow & Convenience	Complementary Partnering			Innovation & Research
Convenience				

# CHONGQING INDUSTRIAL MUSEUM

**YEAR** Fall 2013

**LOCATION** Chongqing, China

**TEAM** Siri Betts, Jinghang Huang, Mollie West and Anze Zadel

## ENGAGEMENT MODEL

How might we establish, maintain and advance the capacity to preserve Chongqing's resources for the benefit of present and future generations?

## CONTEXT FACTS

- Industrial city, on the verge of becoming super populated and lacking shared public spaces
- Several factories being moved out of the main urban core
- City becoming more and more industrialized

## INSIGHTS

- Chongqing is not attracting tourists because it lacks an unique/authentic space of its own
- Stewardship provides lower maintenance cost of public spaces because people feel responsible for taking care and participating
- Chongqing has an increased need for a shared public space because the city is becoming more dense

## DESIGN CRITERIA

- Inspire stewardship in local residents of Chongqing
- Inspire people to take a closer look at Chongqing
- Promote equity & ownership among local residents as well as visitors
- Promote Chongqing nationally and internationally as a traveling destination
- Educate the public about Chongqing history
- Strengthen and share the identity of Chongqing workers and factories
- Be exciting and reflective; traditional and modern

## OPPORTUNITY FRAMING

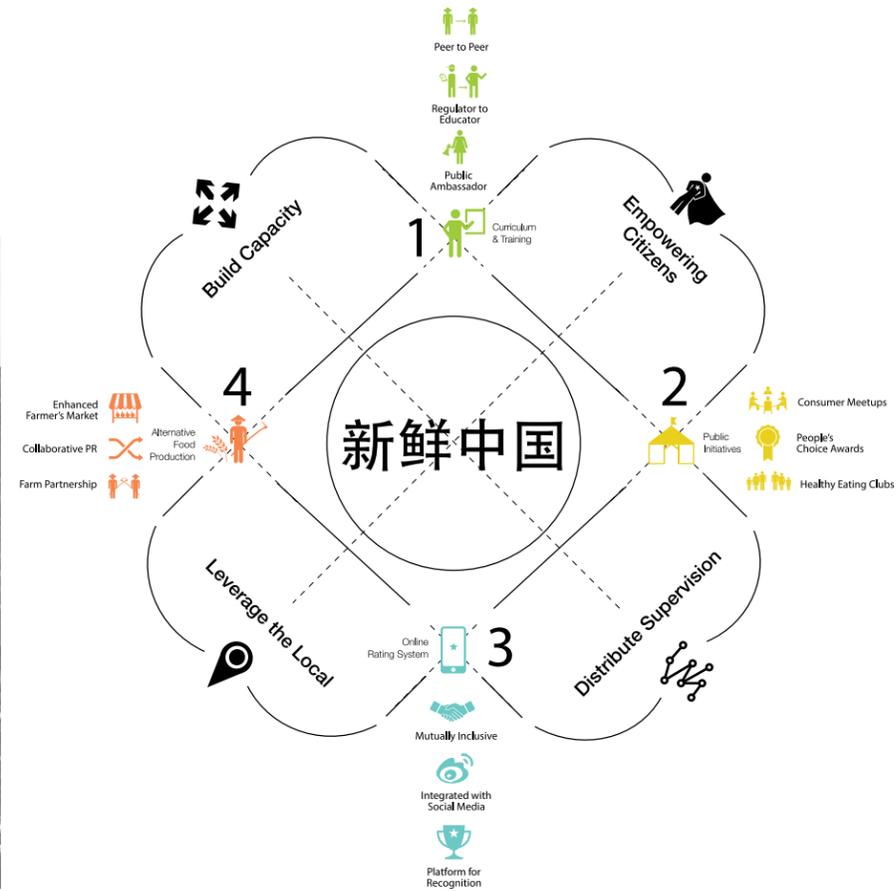
- As factories are moving out of the main urban center, empty buildings could be re-used for repurposing the common space - by using it in a way that inspires the city to be technologically advanced, sensitive to its own past, environmentally aware, and a cultural and creative destination for China and the world. It also taps into China's current rising in the global economy and the national interests in leading cutting-edge initiatives

## CONCEPT PROPOSAL

- An interactive museum fostering local ownership and stewardship

**SITUATED JUNCTION** Poverty / Overpopulation / Poor education Migration

Rapidly growing local economy / Increased middle class Limited food transparency / safety



# CHINA EATS FRESH

**YEAR** Fall 2013

**LOCATION** China

**TEAM** Ashley Graham, Martin Storkholm Nielsen, Min Chung and Sophie Lan Hou

**ENGAGEMENT MODEL**

How might we build trust & transparency in the food system?

**CONTEXT FACTS**

- 50% population living in urban areas
- Largest population in the world
- Agriculture import/ export has grown exponentially in the last 10 years

**INSIGHTS**

- Food safety in China is a world concern because China is one of the largest players in the global agricultural market
- Food is the cornerstone of the social fabric because China has a long history/tradition of culinary and arts
- Trust in the Chinese food safety is decreasing because of a litany of food scandals
- Monitoring the food safety is an increased task because of the highly dispersed nature of food production

**DESIGN CRITERIA**

- Empower stakeholders with responsibility for safeguarding food safety
- Build trust and transparency across multiple relationships
- Ensure a participatory process

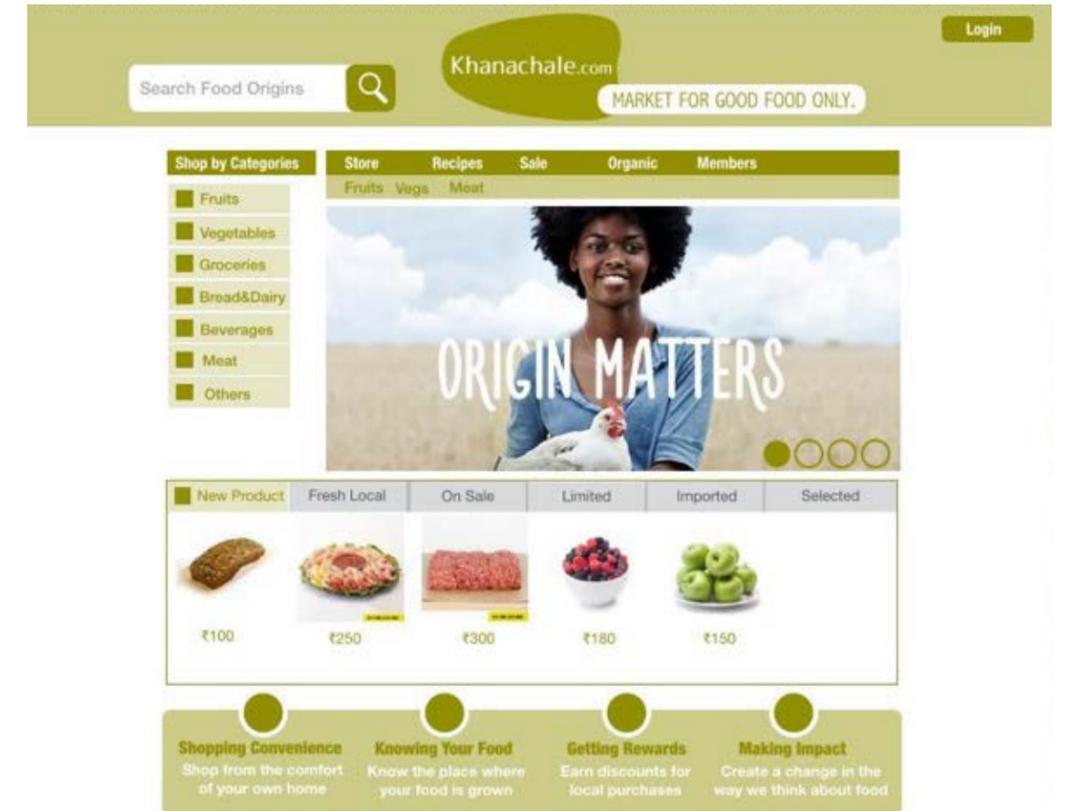
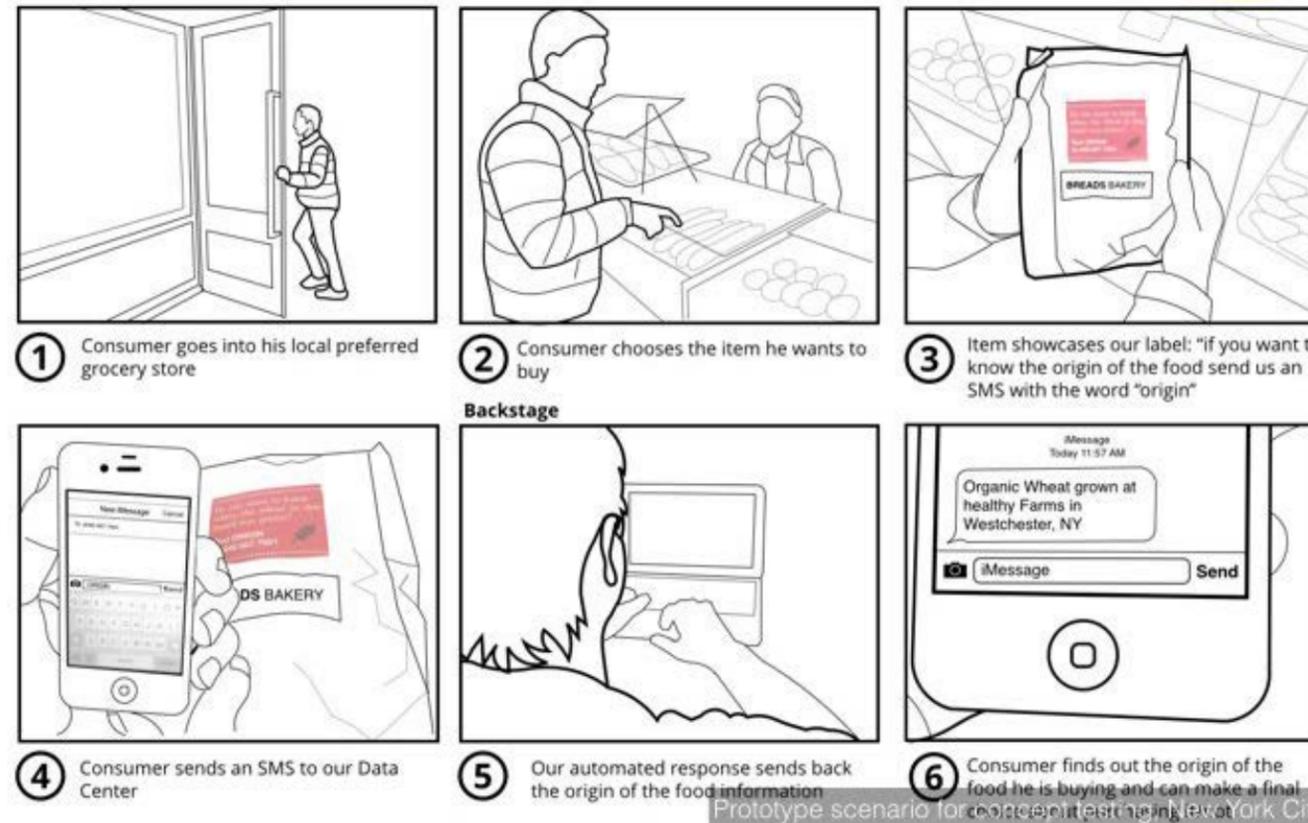
**OPPORTUNITY FRAMING**

- Growth of China and its important role in global agriculture (exporting food) makes the need to address food transparency urgent

**CONCEPT PROPOSAL**

- China Eats Fresh! is a platform of strategies focused on building trust and transparency amongst a diversity of stakeholders, capacity across the system, empowering citizen action, distributing the responsibility for safeguarding food and leveraging local movements of alternative sustainable food production.

**SITUATED JUNCTION** Biodiversity / Degrading environment / Industrial development / Scientific innovation  
 Poverty / Overpopulation / Poor education / Migration / Poor transportation / Fragmented agriculture  
 Limited financial services / Government corruption / Rapidly growing local economy / Increased middle class  
 Increased internet access / Limited food transparency / safety / Large young population / Social inequality



# KHANA CHALE

**YEAR** Fall 2014  
**LOCATION** Bangalore, India  
**TEAM** Reid Henkel, Ricardo Dutra and Sichun Song  
**ENGAGEMENT MODEL**  
 How might we better connect the people of Indian urban centers to the origin of their food?

## CONTEXT FACTS

- Agriculture based workforce (50%)
- Low efficiency in food production (19% GDP)
- Fragmented agricultural production
- Poor transp. infrastructure (20-40% food gets lost)
- Middle Class growth
- Healthy Food Consumption growth
- Industrialization of agriculture
- Online shopping growth

## INSIGHTS

- Many people still buy their food from local shops or carts because they trust the vendor
- There is an opportunity for the agriculture sector to become more efficient because of large scale processing and big retail
- Consumers do not know the origin of their food because there is an information gap

## DESIGN CRITERIA

- Educate about the origin of the food
- Engage rural farmers and urban citizens
- Empower consumers to make informed food choices

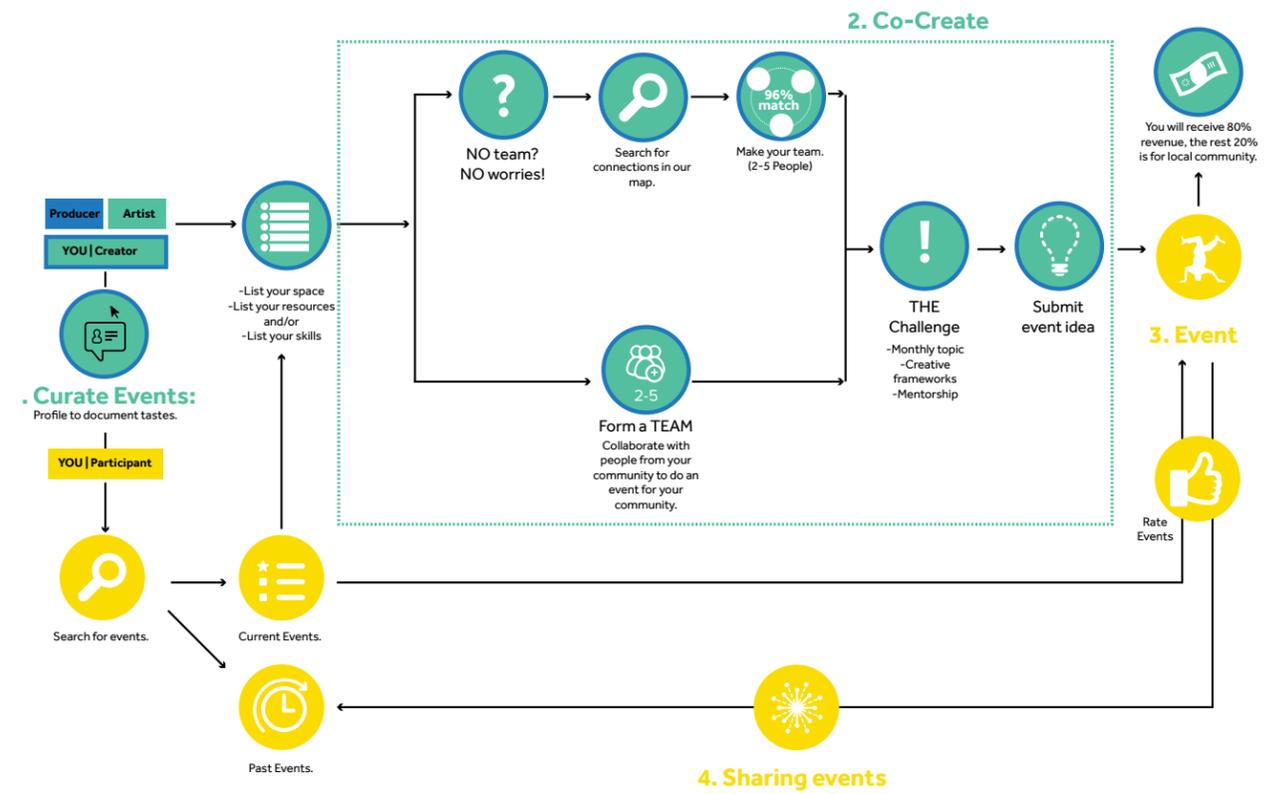
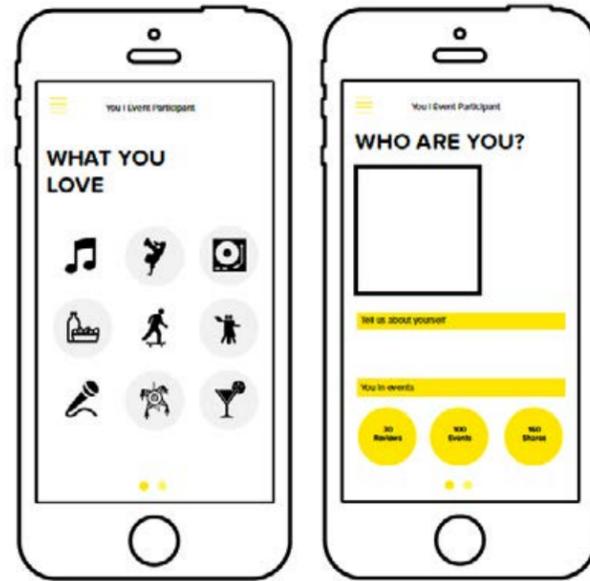
## OPPORTUNITY FRAMING

- Growth of China and its important role in global agriculture (exporting food) makes the need to address food transparency urgent

## CONCEPT PROPOSAL

- Online shopping platform that allows consumers to shop healthy products and know their origin. As a consequence, we empower the market to make more informed choices

**SITUATED JUNCTION** Poverty / Overpopulation / Poor education Migration Informal housing Rapidly growing local economy / Increased middle class Increased internet access Large young population Social inequality Violence issues Geographical fragmentation



# BARULHO LABS

**YEAR** Fall 2014  
**LOCATION** Rio de Janeiro, Brazil  
**TEAM** Andrea Morales Coto, Janson Cheng and Leah Cabrera Fischer  
**ENGAGEMENT MODEL**  
 How might we co-create cultural networks that foster social mobility?

**CONTEXT FACTS**

- Young population (25% between 20 and 40)
- Social inequality (20% amass 80% of the wealth)
- 4th highest economic purchasing power in Brazil
- 15% of population living in informal settlements
- Geographical habitational, economical, transportational and emotional fragmentation

**INSIGHTS**

- Exchange among diverse communities is limited because of city fragmentation
- Neighborhood stigmas are perpetuated because of lack of purposeful exchange among neighborhoods
- Resources constrain the experience of art, because accessibility becomes condition by income and distance to the city.
- Cariocas are proud because of their local community identities
- The inner workings of the city's festivities are weak because of a system of disconnected actors
- Current forms of gatekeepers are disrupting collaboration between artists and audiences due to economical restraints / outdated business models

**DESIGN CRITERIA**

- Leverage and share local identities
- Help communities express and learn their uniqueness and the value that they have
- Visualize connections and commonalities amongst Rio de Janeiro's people
- Use digital communications to break down stigmas
- Make the most out of local existing resources
- Foster direct networks of exchange and economical empowerment

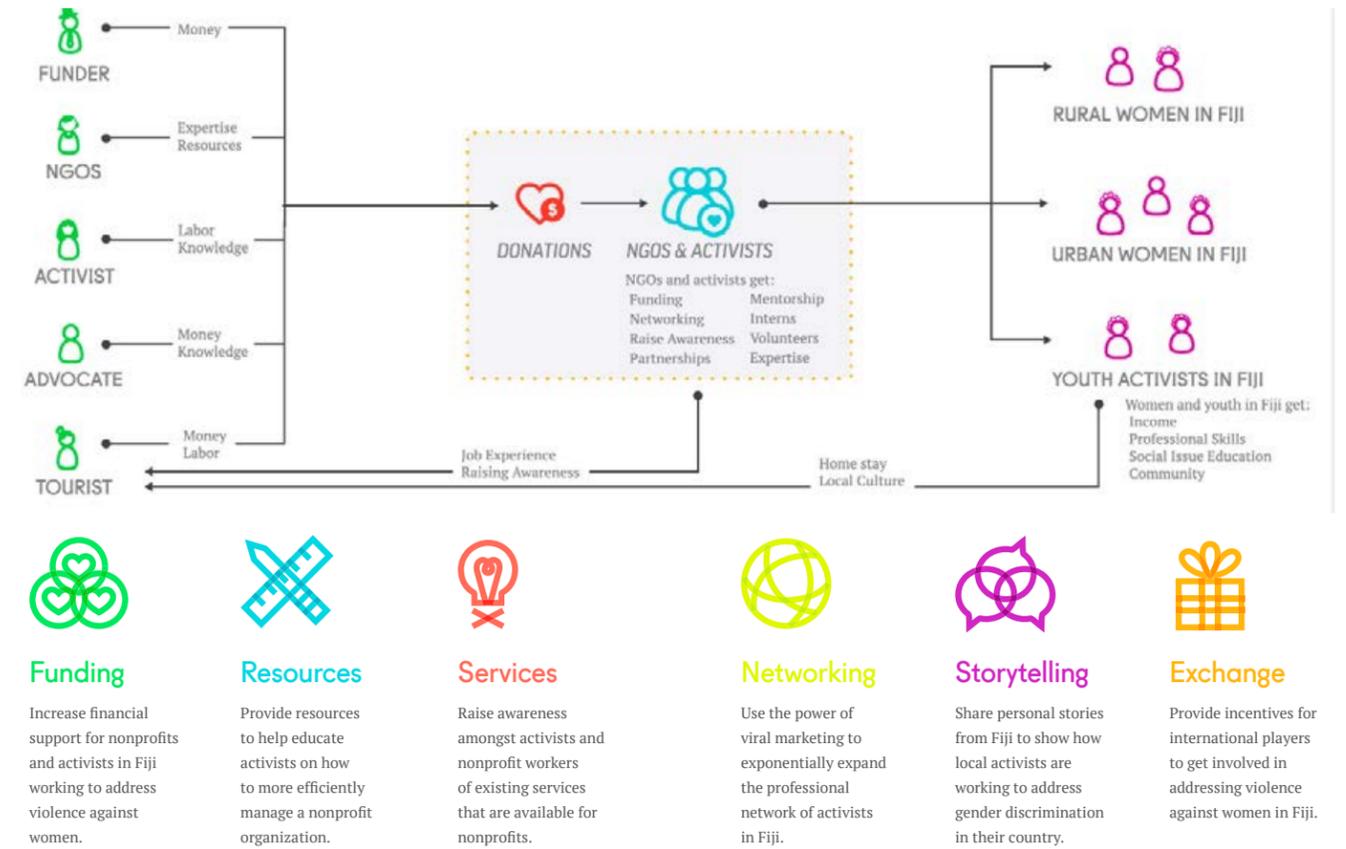
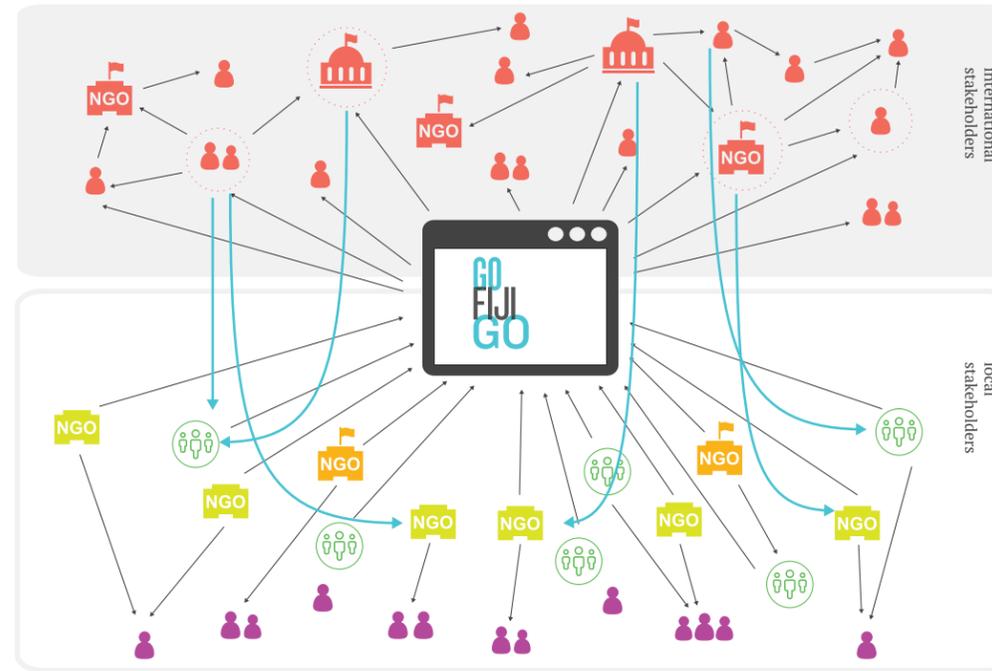
**OPPORTUNITY FRAMING**

- Rising purchasing power combined with a young population, interested in festivities and using more digital communication is an opportunity ground for promoting social mobility. Festivities are particularly a touchpoint among higher and lower income groups

**CONCEPT PROPOSAL**

- Online and offline platform that encourages Rio de Janeiro's artists and audiences to co-create festive events through creative challenges.

**SITUATED JUNCTION** Poverty / Overpopulation / Poor education Limited financial services Increased internet access Large young population Violence issues 3rd sector civic participation Geographical fragmentation



- Funding**: Increase financial support for nonprofits and activists in Fiji working to address violence against women.
- Resources**: Provide resources to help educate activists on how to more efficiently manage a nonprofit organization.
- Services**: Raise awareness amongst activists and nonprofit workers of existing services that are available for nonprofits.
- Networking**: Use the power of viral marketing to exponentially expand the professional network of activists in Fiji.
- Storytelling**: Share personal stories from Fiji to show how local activists are working to address gender discrimination in their country.
- Exchange**: Provide incentives for international players to get involved in addressing violence against women in Fiji.

# GO FIJI GO

**YEAR** Fall 2014  
**LOCATION** Fiji Islands  
**TEAM** Joe Wheeler, Lillian Tong and Stephanie Lukito  
**ENGAGEMENT MODEL**  
 How might we end sexual and gender-based violence in Fiji?

## CONTEXT FACTS

- 64% women report abuse
- 30% report repeat abuse
- 13% report being raped
- Rise of interest of micro loans as an option for funding

## INSIGHTS

- A lot of laws have passed but implementation is the challenge
- Options for funding are limited because the market is flooded with non profit organizations disputing the available grants
- Collaboration among nonprofits is diminished because they are competing for funding

## DESIGN CRITERIA

- Increase financial support for nonprofits and activists in Fiji working to address violence against women
- Provide resources to help educate activists on how to more efficiently manage a nonprofit organization
- Raise awareness amongst activists and nonprofit workers of existing services that are available for nonprofits
- Use the power of viral marketing to exponentially expand the professional network of activists in Fiji
- Share personal stories from Fiji to show how local activists are working to address gender discrimination in their country
- Provide incentives for international players to get involved in addressing violence against women in Fiji

## OPPORTUNITY FRAMING

- With high rates of women violence, an ecosystem of limited financial resources and many non profit organizations disputing for funding. In the meanwhile, crowdfunding has grown as an investment opportunity around the world – with the rise of interested people in giving micro loans/ donations. The opportunity was perceived to be in providing a support platform to enable the third sector to thrive

## CONCEPT PROPOSAL

- Online platform that pools existing resources, GO FIJI GO can offer nonprofits and activists in Fiji a full range of invaluable services, breaking down the hierarchy and expanding the network of local NGOs into a broader international context through micro-funding.

## CONCLUSION

An overpopulated planet turns every locality into a complex web of value creation and exchange. Due to this extreme local complexity, situated junctions then shift the paradigm of thinking globally to thinking locally. Here, solutions are not thought of from a global headquarter and then channeled down for implementation. In our research, we learned that every situated junction has its own complexity that cannot be resolved from one-disciplinary perspective and are calling for new tools and practices of action.

We need new organizational models that are capable of engaging with these issues and challenges locally - not from a perspective of problem-solution but one of building the capacities of a system that can deal and continuously engage with local issues. This is a possibility for shifting the leverage point from individuals to organizations, a model in which we are no longer solely reliant on the capacities of an individual but on the *dynamic capabilities* of a system (in the form of organizations, groups, etc.). That model has the capacity for continuous development in which the emerging livelihoods are not temporary solutions but they are rather working to present continuous outputs.

From observing these nine case studies and testing different design approaches, we came to understand that the complexity of our challenges demand a certain urgency in our action. For engaging with our current issues, new tools and models are needed. This is a big challenge for which we do not have yet an answer. Therefore, the design field needs major overall strategies for continuing relevant given the challenges that it is facing.



FIG 10. Workshop in progress. Source: Reid Henkel

# APPENDIX TAXONOMY

- B BUILDING BLOCKS:** smaller elements that, once combined together, allow bigger and smoother leaps in the system.
- BUZZ (LOCAL BUZZ):** noise, local broadcasting such as face to face contacts, co-presence, co-location of people and firms in the same industry place or region. Buzz does not require investment. Buzz is received unavoidably so it is frequent broad and automatic. Better developed pipelines between clusters and the higher the quality and value of buzz. Buzz is beneficial to the innovation processes.
- C CLOSED INNOVATION:** in closed innovation, a company generates, develops and commercializes its own ideas. This philosophy of self-reliance dominated the R&D operations of many leading industrial corporations for most of the 20th century.
- CLUSTER:** a geographically proximate group of interconnected companies & associated institutions in a particular field linked by commonalities and complementarities. These clusters could span a single city, state, country or neighboring countries. A group of elements that share similar characteristics.
- CODIFIED KNOWLEDGE:** easily transferable knowledge from person to person.
- COMPETENCE:** knowledge that is applied on a routine basis.
- COMPETITIVE ADVANTAGE:** value proposition that differentiates a product/ service from others.
- CO-OP:** an association that is owned and operated by their employees or by their users. It can include non-profit organizations and businesses that are owned and managed by their users (a consumer cooperative), by the employees (a worker cooperative), by the people who live there (a housing cooperative) or a hybrid model (such as the credit unions).
- CRITERIA:** a design requirement that a project needs to satisfy in its execution.
- D DYNAMIC CAPABILITIES:** the ability to shift and respond. Compared to a profession, dynamic capability refers to the capability that serves at demand dynamically.
- DIMINISHING RETURNS:** a fundamental principle of economic theory; it states that in all productive processes, adding more of one factor of production, while holding all others constant, will at some point yield lower incremental per-unit returns. [1]
- E ENGAGEMENT MODEL:** the model through which an intervention is made in a specific context, contributing to a final project solution or output. The final solution could, then, influence a larger system of an emerging livelihood.
- F FEATURE:** a distinctive attribute or aspect of a project solution that makes a significant contribution to its final social or economic impact.
- FRAMEWORK:** process or system structure that allows users to engage in more efficient manners, breaking down hierarchies and power dynamics.
- I INNOVATION:** the creation of viable new offerings.[2]
- INSIGHT:** an understanding of cause and effect that explains a specific behavior of a system, user or stakeholder.
- K KNOWLEDGE ASSETS:** an intangible asset. Information, know-how or skills within a business that make it more competitive or valuable. The knowledge capital of any organization is based on the knowledge, skills, and competencies held by its members. Ex: Lawyer practicing law.
- KNOWLEDGE BROKERING:** design process that turns insights into criteria and features of a project solution.
- KNOWLEDGE MANAGEMENT:** design process that makes sure information is flowing in a disciplined and organized manner.
- L LIVELIHOOD:** the unique configuration of one's life represented by the ways and means that one uses to secure his/her life necessities; including working conditions, food, education, relationships, etc.
- M MOMENTS OF CRISIS:** when an old system cannot deal with current realities.
- MOMENTS OF DEVELOPMENT:** when you understand the situation and a solution is being developed, people march towards building a new system.
- MOMENTS OF STAGNATION:** things are moving without big crisis or big development, nothing revolutionary.
- O OFFERING:** products and services, acting as concrete manifestations of the relationships among actors in the value-creating system[3]
- OPEN INNOVATION:** the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. This paradigm assumes that organizations can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology[4]. We design in the value chain through open innovation.
- OPPORTUNITY:** point of intervention in the system that allows the leverage of resources (human, financial, natural) in order to achieve a particular positive result.
- P PLASTICITY:** where it came from and where it can go (legacy and potential).
- PLUGIN:** a possibility for a business or organization to connect itself to an existing value chain.
- PRODUCT:** physical commodity that gets produced and commercialized in a supply chain.
- S SERVICE:** the activity of serving a stakeholder's need by providing flexible and customized assistance, support and experiences that go beyond the commodity.
- SOCIAL-MATERIAL ASSEMBLIES:** assembly of social-material components that constitute the offering of a product/ service and its value creation.
- SPECULATION:** process through which new scenarios and ideas are proposed for a design intervention.
- SUPPLY CHAIN:** commercial chain that allows commodities to be produced, processed, transported and delivered to wholesalers, retailers and consumers.
- T TACIT KNOWLEDGE:** knowledge that is difficult to transfer to another person by means of writing it down or verbalising it.
- TRENDS:** building blocks of opportunities.
- TRANSACTION COST:** ROI of a specific action or intervention; it takes in consideration the amount of effort put into a process and the output gained from it.
- V VALUE CHAIN:** the process or activities by which an organization adds value to an existing commodity through different service offerings.

# APPENDIX REFERENCES

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