

# **The Role of the Designer Facilitator**

*A field based design  
approach towards facilitating  
a collaborative technology  
for a health care project*

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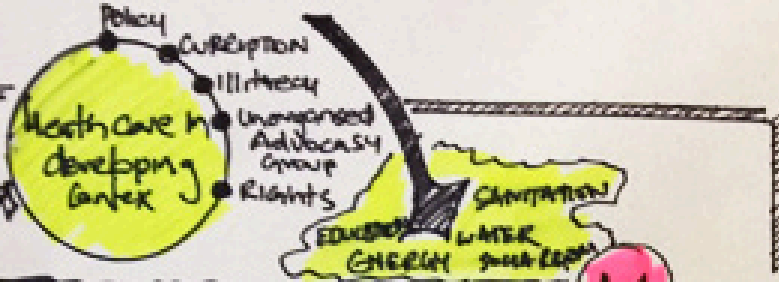
The fieldwork with the GloCal team in India has been most memorable to me. I would like to thank Teija Lehtonen and Professor Marja Mutanen as this thesis would have been impossible without the collaboration between Aalto Global Impact and the University of Helsinki. Trusting my work and giving me the opportunity to work for the GloCal project is highly appreciated.

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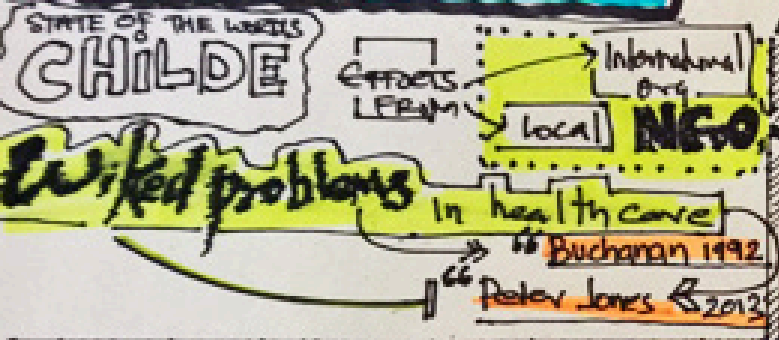
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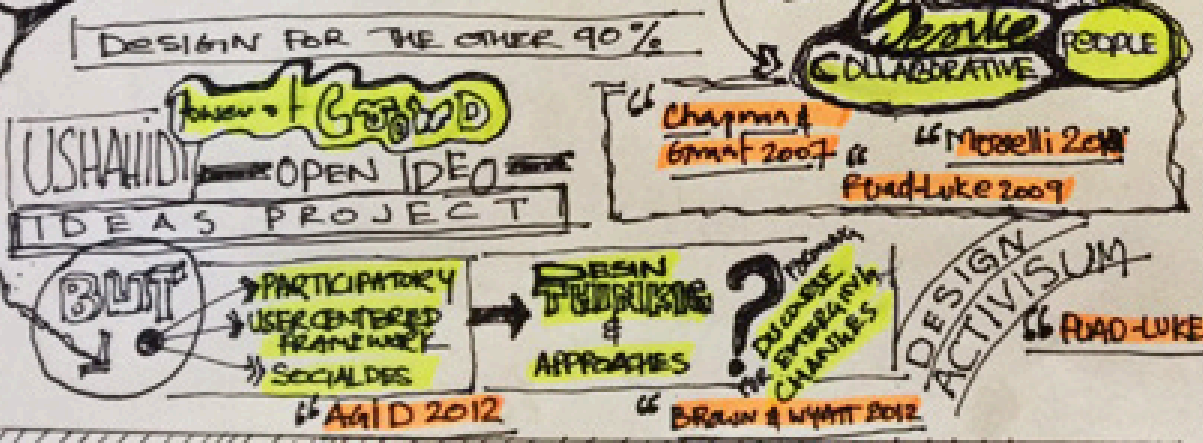




1.1 What is not seen in everyday news

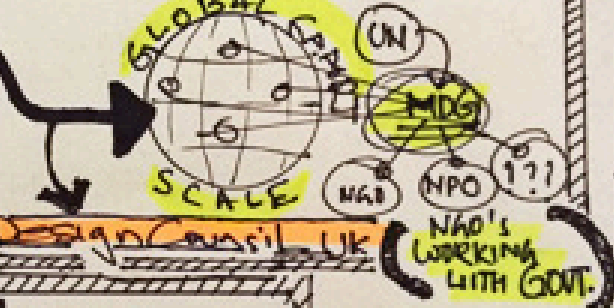


1.3 How is Design Changing



1.2 FRUGAL vs TIME COST

Working with Social Sustainability Sector NGO & NPO's



1.4 are professional actions of any consequence to a Sustainable future?

2 SITUATION & CIRCUMSTANCE HOW DESIGN

Design as a Collaborative practice

COMPLEXITIES OF SOCIAL POLITICAL ECONOMIC CHALLENGES

Design has the ability to envision and also to integrate into the process for achieving positive societal transformation.

Based on participating in **tec 4 HEALTH CARE PROJECT GLOCAL** ... PRESENTING A FIELD BASED DESIGN APPROACH

4 facilitating a **DESIGNERLY APPROACH** leading to **COLLABORATIVE** (NGO's, UNIVERSITY RESEARCH, TEC DEVELOPER)

CAN BE USEFUL IN BRINGING TOGETHER USER RESPECTIVE & NEEDS AND MULTI-DISCIPLINARY TEAM

ROLES OF A DESIGNER FACILITATOR TOOLS SET = INCLUSIVE PARTICIPATORY ITERATIVE



# Introduction

## What is not seen in everyday news

Numbers on the state of the world's children<sup>1</sup> is not something we see in the everyday news. There are about 2.5 billion people children lacking access to improved sanitation. About 1 billion children are deprived of one or more services essential to survival and development. We have about 148 million under 5 year old's in developing regions who are underweight for their age. There is about 101 million children not attending primary school, with more girls than boys missing out. About 22 million infants are not protected from diseases by routine immunization. Roughly 7.6 million children worldwide died before their 5th birthday in 2010. 4 million newborns worldwide are dying in the first month of life. 2 million children under 15 are living with HIV. More than 500,000 women die each year from causes related to pregnancy and childbirth. This kind of information is not something we see in the everyday news. We come across such news or coverage during summits, awareness campaigns by NGO's or part of large international efforts initiated by institutions like the United Nations. As readers, we are largely disconnected from how these issues can be tackled. These events are part of larger systemic problems the world is facing with unknown implications for society, difficulty in having stakeholders' consensus, and a lack of awareness with regard to how far their effect could extend into the society. The problems are wicked that we face globally.

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1

State of the World's Children, 2010. UNICEF, p.18-19



*Children from the Nachinanmpatty Village, Salem, Tamil Nadu — The NGO working in this community has programs covering child care, day care, skill development, health camps, women transformation and their key work was grounded in what they called a holistic project with emphasis on community development programs.*

In *Design for Care*, Peter Jones, (2013: 21) addresses issues of wicked problems<sup>2</sup> in health care. He states, “*They occur at a scale that can have devastating financial and societal impacts that increase over time.*” Healthcare, in general, has many intertwined problems with no clear signs of immediate resolutions. With issues such as the aging population, the needs are urgent and these rapid changes need constant updates to research making these health care issues harder to resolve and also expensive. In emerging countries with several ongoing complex problems like lack of favorable policy, corruption, illiteracy, unorganized advocacy groups, issues of rights; when intertwined with large wicked problems of education, energy, water, sanitation and social reforms it is hard to know if the situation could be solved. What is possible though is an effort to minimize the risk with greater engagements with end user and awareness. In emerging countries like India, the need for health care for the rural population is also undertaken by many Non-Governmental Organization’s (NGO’s) and Non-Profit Organization (NPO’s). They become an avenue to listen to the voices and engage with issues of large sections of the populace.

## Workings of the social sustainability sector: An overview on the workings of NGOs and NPO’s

NGO’s and NPO’s can be considered to be working to bring about positive societal change. They engage with broad areas of needs concerning children, women, senior citizens, and environment to name a few. On a global scale, organizations like the UN work at the global level work towards influencing policy change. They also engage with NGO’s at the grassroots level to implement a lot of programs like that of Millennium Development Goals (Brinkerhoff, Smith, and Teegen 2007; “UN-NGLS Millennium Development Goals - MDG Summit +5” 2015). NGO’s also engage with the local governments, for reforms that otherwise do not reach

<sup>2</sup> Wicked problems are a “class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing. Buchanan, Richard. 1992 original reference - The first published report of Rittel’s concept of wicked problems was presented by C. West Churchman, “Wicked Problems,” *Management Science*, (December 1967), vol. 4, no.14, B-141-42. His editorial is particularly interesting for its discussion of the moral problems of design and planning that can occur when individuals mistakenly believe that they have effectively taken the “wickedness” out of design problems. Buchanan, R. (1992). *Wicked problems in design thinking*. *Design issues*, 8(2), 5–21. doi:10.2307/1511637

due to lack of infrastructure or sometimes even due to complex communal issues. They work with the research institutions like universities and private organizations that need access to communities and social sectors. In the recent times the NGO’s engagements with business is also noticeable as a process of customer development or then for corporate social responsibility efforts or to even discover opportunities for new products or services.

While NGOs have their strengths they also have their challenges to work with. To a large extent NGO’s work with funding received from donor organizations, government grants, or then they raise their resources to include human capital, and financial assets thoughts charitable offerings from public and private supporters. While NGOs have checks and impact measurements practices, for eg. as a requirement from their donor organizations; within the processes and priorities of an NGO measuring the impact of its work cannot be challenging and complex.

One of the strengths of the NGO is their know-how gained from long-term commitment to the communities they engage with. Such accessibility makes them the gatekeepers to needy communities. This allows them to be better positioned to envisioning a service, product or systemic interventions to make positive change in areas they work in. However, this is not the case that they are the equipped with the skills or the capabilities needed to take all the vision and make it practicable. This capability is compensated through sometimes highly collaborative or acquired services. Even at this stage they innovatively deliver the product or services because of their know how of the context.

In such a context, I argue that the NGO’s could gain by applying design centric processes that widely used in larger institutions such as corporations, and now even by governments ( Design Council UK, 2015). While some of the innovations the NGOs envision (like Aravind Eye Care, Jaipur foot, and the Aakash tablet) are often considered frugal (Bound and Thornton 2012: 15-19), then there are a lot that could be considered to be as trial and with errors. Even though the marginalized cannot invest on the basic needs it is critical that the solution demands to be highest of standards. The NGOs understand their capabilities and they also understand there is a need to sustain the work they do. In a recent Indian news report<sup>3</sup>, it was stated there are NGOs for every 400 people in India. With such a large presence, NGOs

<sup>3</sup> Mahapatra, The author has posted comments on this articleDhananjay, TNN | Feb 23, 2014, and 01 08am Ist. 2015. “India Witnessing NGO Boom, There Is 1 for Every 600 People.” *The Times of India*. Accessed March 1. <http://timesofindia.indiatimes.com/india/India-witnessing-NGO-boom-there-is-1-for-every-600-people/articleshow/30871406.cms>.

can be considered fertile to try emerging approaches from design, which goes beyond the shaping of communication, products or services. This could bring in a different role for designers one that is collaborating with the NGO's and working towards amicable resolutions. In this wake, designers could go beyond finite solutions of scenarios, platforms, and operative strategies, to co-produce the solutions with NGOs. (Morelli 2012: 08) The quest here is what could design offer to the NGOs and also what can design learn from working with the NGO's? While there is no general answer to such a query, in my thesis I present my approach, working and reflections as a designer from one such collaborative project with multiple stakeholders.

## How is Design Changing?

By now we know that the solutions for global problems are more than just well-designed products (Morelli 2012). The larger emphasis these days is in better understanding the problem and only then aim for a better design. To go beyond product driven to solutions based on shared understanding of people and culture is the need of the hour (Chapman and Gant 2007; Fuad-Luke 2009). As we encounter more complicated social issues there is a need to find means to solve it more effectively and democratically.<sup>4</sup> From health care to education to infrastructure to finance, to politics to policies; our trusted institutions and social contrast are opening to be opportunity spaces for designers and their new approaches. These are areas that design can address and could offer a lot to offer to these issues. Initiatives like that of the Design for the Other 90% by Cooper-Hewitt foundation<sup>5</sup> has raised some of these issues. We also see initiatives driven by open innovation, crowdsourcing and co-design. Projects like One Billion Minds helps people from all walks to solve peoples concerns, like harnessing the minds of the crowds to source "Problems

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4 Reflecting to the statement; "Collaboration is insufficient - We truly need new ways of working, deciding, and organizing." Re-Vision by Peter Jones.

5 Of the world's total population of 6.5 billion, 5.8 billion people, or 90%, have little or no access to most of the products and services many of us take for granted; in fact, nearly half do not have regular access to food, clean water, or shelter. Design for the Other 90% explores a growing movement among designers to design low-cost solutions for this "other 90%." Through partnerships both local and global, individuals and organizations are finding unique ways to address the basic challenges of survival and progress faced by the worlds poor and marginalized. (Cooper-Hewitt, 2007)

Worth Solving"<sup>6</sup>. Few of the other projects that work by crowdsourcing are Open IDEO,<sup>7</sup> Ushahidi,<sup>8</sup> and the Idea Project.<sup>9</sup> Even with so many initiatives, large portions of the world are still struggling with the larger issues and solutions for health, sanitation, supply of drinking water and electricity.

Design is actively looking to engage in community based engagement. There are many projects that show the shift in *designer's interest from individuals and systems to groups and communities*. (Koskinen 2011, 84). Utilizing the approach of action research and service design prototypes the projects explore co-designing business models that would keep alive small-scale food productions in a community in Milan.

Closer to my own topic of health and hygiene issues, Koskinen discusses the work of Andrea and Judice work in a former village that Vila Rosario now a part of the vast metropolis of Rio de Janeiro. Along with issues of low literacy rate, poor sanitation, and the high poverty level the community also suffers from. Additionally, high rates of mortality in infancy, a high incidence of diarrhea, tuberculosis, and many tropical diseases, including yellow fever. Their initial perspectives of using IT technology would change due to the efforts they made in understanding the real context of the community. They utilized cultural probes in the form of cameras, letters, diaries, and involved local volunteer health agents working in the community to gain the realities of the community. To validate their understanding from the cultural probes, they conducted several workshops with the community. Hygiene and early diagnosis of tuberculosis became the main targets of design as a result of the study. The community intervention came in the form of IT-based information systems and low-tech approach with an aim to raise awareness on health

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6 One Billion Minds — Uses the power of the crowd sourcing. "Mobilize and Unleash the minds of individuals on challenging Science, Technology, Design, Business or Social Innovation problems faced by Companies, Non Profits and other Individuals. They connect Challengers and Solvers in a powerful new way. A connection between a Challenger, and a Solver is like a Lock and a Key, coming together. When that happens, doors can open into amazing new possibilities." <http://www.onebillionminds.com>

7 OpenIDEO Community worked with Principles of Inclusive, Community Centered, Collaborative, Optimistic, Always in Beta - <http://www.openideo.com>

8 Ushahidi uses the crowd to source information for democratizing information, increasing transparency and lowering the barriers for individuals to share their stories. Anon-profit tech company that develops free and open source software for information collection, visualization and interactive mapping. <http://ushahidi.com>

9 Ideas Project provides an online platform to exchange of ideas between users and developers around innovation powered by Nokia. <http://www.ideasproject.com>

resulting in the behavioral change among children and teenagers. The main effort came in the form of comics for example describing ways to use water, cooking utensils and incorporated posters suggesting important facts of hygiene, cleaning fingernails and kitchen knives and stories specifically for children. The low-tech solution telenovela-like make-believe world with characters recognizable to the inhabitants in Vila Rosario represented and remained true to cultural context. With a better contextual design, the community would retain the health awareness from the characters that they could relate to than regular health-related information would otherwise provide. The probe gave a considerable amount of information to keep the designs remain true to the social structure and cultural understandings of Vila Rosario. The designers used this information to design a local look and feel and produce materials locally and distributed this with the help of local health agents. Koskinen points to the importance of field-based practice in design. He writes the projects understanding and commitments to the context the need is arising from keeps the solution closer to meeting the needs of the community. Knowing habits, beliefs, and social structure helped the design adhere to the context and be well-understood by the villagers.

On the other side it can be argued that there have been many shortcomings in design as a profession. Yet as long as the intent is of bettering the lives of people, there will be a need to consider the impacts and consequences of the actions as a discipline. People today still think of Design being for good taste, embedded in all sorts of professions, and institutional thinking. While designers will have a role in the aesthetic, visual, visceral appearances of things, solutions and services; lately within business, science or humanities, design thinking has seeped into the ways these professions are functioning. It has seeped into forms of strategic design in management, institutional design in governance, human factors and usability in science and engineering. There is no doubt that Design is evolving with the demands of societal change. Evolving from commercial products and services, design practice and education is focusing in participatory and user-centered frameworks to social design (Agid 2012). Design thinking and approaches are actively questioning and forming discourses to the emerging changes (Brown and Wyatt 2012). There is also design practice that falls within Design activism (Fuad-Luke 2009) Such variations within design as an academic and professional practice shows that design not only evolves with its entangling with issues it still has the need and capacity to evolve for a sustainable human endeavor.

## Design as a collaborative practice

Design can shape our lifestyles and consequentially impact the world we live in. Design has led the way in providing people with their needs and wants. Design has also been successful in coming up with ways to understand the user, and shaping what they use and how they use things. Design considers ecology and environment and has paved the paths for innovations and traditions. As a profession Design that has to deal with other professions to culminate to benefit people at large. There is no denying that Design is acting, and trying to accelerate for a sustainable future, but this is also what every other domain claims to do today. Do designers need to be different from who they already are; and take more challenging risks?

As a designer I believe the fundamentals of any profession, institution, or individuals should start with this very question — Are the professional's actions of any consequence for a sustainable future? The very nature of design as a catalyst for change is of a substantial consequence within such a framing. This I believe should be a principal means to start any design education or profession today.

Design to me seems to evolve with the situation and circumstances transforming how I practice Design. I find that my design practice has improved with training and interactions with peers and in practice much of it has been intuitive. It is hard to explain its rationales at the end of completion of a project but yet still is rewarding as a reflective process. Design for me is highly contextual and so my thesis can be better understood if I share a bit of my own background.

Prior to my studies at Aalto University the frame of thought about design resulting in positive social transformation had grown out of my experience during the six years I lived in the United States. With the economic crash in 2008 I saw people losing homes, worrying about mounting personal debt, an expensive thus dysfunctional health care system, exorbitantly priced higher education that seemed a luxury and then within this context hundreds and thousands of job losses. It seemed that the systems had failed the people and there was little anyone could do to change things. As a person, I am not against consumerism, or capitalism, or globalization as such but I am bothered about the complex reality because of the haplessness that emerges from the political, social and economic arrangements. While individual disciplines are exploring solutions to issues in their own fields and

domains there is a need for gathering such a multi faceted transformations. This then could only take place when various disciplines come together and work together. My interest in multidisciplinary studies is grounded in such thinking, that a better future can only be achieved by combining knowledge, skills and efforts of people from different disciplines. This has been the reason why I have focused on a project that allowed me to explore through designerly-means processes that are inclusive of the end user and also disciplinarily collaborative in the larger process of finding a solution.

Then, as a designer my concern has also been on “solutions for basic needs”. It seems that being poor or marginalized is a growing phenomenon around the world. The basic needs, services like that of drinking water, shelter, sanitation, literacy, renewable energy, and opportunities for better livelihood should be the rights of every individual. I believe that such immediate societal issues needs attention and addressed as a priority.

## Design agenda

Design has the ability to envision and also integrate into the processes for achieving positive societal transformation. Based on my participation in a University based technology for health care project, called project GloCal, I will present about a field based design approach for facilitating a collaborative process and understanding. I present that a designerly approach can be useful especially in bringing together the users perspective and needs into a multi-disciplinary working team. I highlight my learning from working with NGO's, university researchers and a technology developers involved in the project. By presenting the role of the designer in such process, in reflection I will finally share what evolved as a toolset for me during the project. In this manner the thesis will explore the role of the designer as a facilitator for an inclusive, participatory and iterative process in a technology for healthcare and development project.

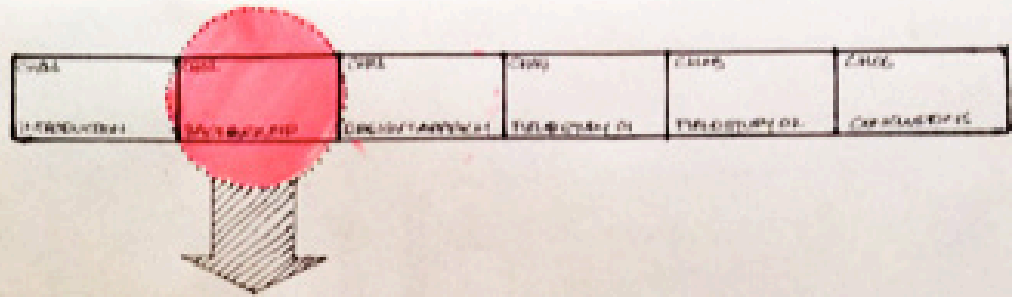
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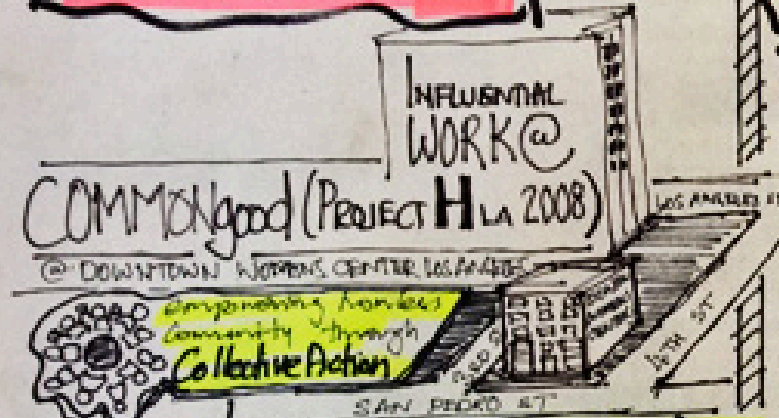
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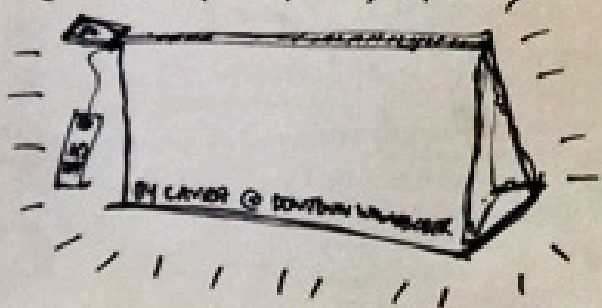


**2.1**  
Working with NGO's  
ABJECT OBJECT LOS ANGELES



moving from hand out 2 **HAND ON APPROACH**

**PARTICIPATORY PROCESS**  
"Design designed by the USER & Empowering with skills but also OWNERSHIP."  
Facilitation 4 SKILL BUILDING, PROWERSHIP, TOOLS & METHODS

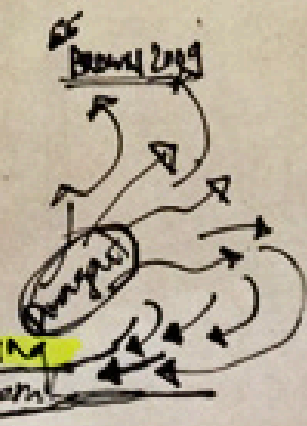


**2.2**  
Design practice & Social Sustainability  
SOME CURRENT APPROACHES

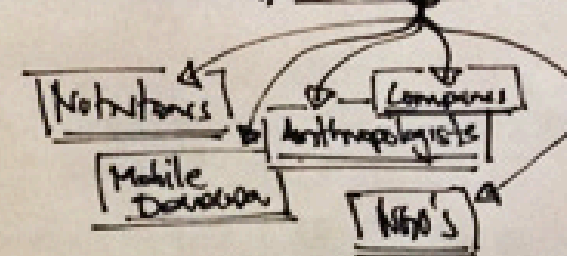
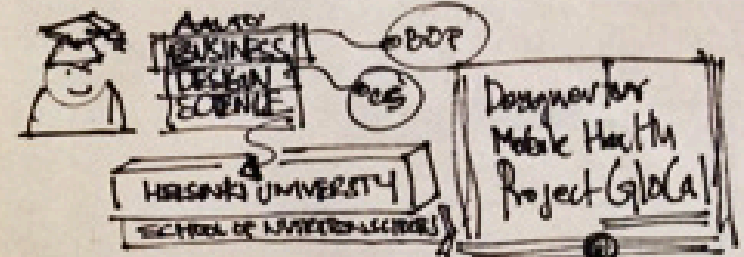
What to do OR Not 2 do  
Procedure of Design!

**BUT** Common elements  
Used by Prof. NGO's  
**BUSINESS, Health & Service Sectors**

- ★ PARTICIPATORY DESIGN
- ★ Co-Design
- ★ Co-CREATION
- ★ Measurable Outcome
- ★ Design Thinking (concepts)



**2.3**  
CREATIVE SUSTAINABILITY  
@ AACU UNIVERSITY



Collaborative Multidisciplinary Learning Experience



# Background

## Working with NGOs — The Abject Object project, Los Angeles

One influential work I got to be a part of was for a project called Abject Object<sup>1</sup> with COMMONgood (formerly Project H Los Angeles.) The project was initiated in 2008 by a group of volunteer designers in Los Angeles who wanted to empower the homeless community through collective action. This idea was significantly different from conventional design practices from that time. Design for social change mostly involved designers working for the needs of people in the developing world by coming up with solution half way across the world — for example solutions for the lack of clean water would be conceived or designed by a team working in the United States; outside of the local context and leaving little room for participations of the end user. In most of these cases, because the process of design was removed from the context to which it being designed for the solution became another temporary attempt without solving the real issue. This was also about unexplored opportunities; surely there were needs of societal change in the very community we lived in. The Abject Object project focused on serving the local community through design within the local community. The project identified the social issue of homelessness and partnered with a local non-profit (Downtown Women’s Centre) to find means to improve their livelihood. It was estimated that 48,000 people were homeless Los Angeles in 2010 that is the largest homeless population in the United States and the country spends 875million annually to fight homelessness.

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1

Commongood Website. "Abject Object." COMMONgood. <http://www.commongood.cc/abject-object.html>.



Carol at the Sunday workshop | Image © Michelle Pullman 2009



*Hammock Pack — A large bag that is worn around the body that is ideal for the farmers market, laundry, or camping. When you need a comfortable clean resting space you can simply untie the strap and transform the bag into a full-size hammock. The Hammock Pack is made from old parachutes, bike tire liners, fabric, rope, and grommets. Image © commongood.*

The project through creative skill building began to collaboratively develop and produce functionally simple, easily made objects from inexpensive, recycled or readily accessible materials. The designers worked with the women in exploring ideas to create products that they would find valuable and use themselves. The goal of the project was to create an adaptable model for social outreach by means of creative skill building such as sewing, weaving and pattern making. Working with the Downtown Women's Centre and members of the homeless community as co-designers the team collaboratively developed and produced functionally simple, easily made objects from inexpensive recycled or readily accessible materials. Moving from a hand out to a hands on approach<sup>2</sup> to rehabilitations, as the project puts it. What began as sharing designers' skill sets for community in need was to evolve into a process of co-design.

There were aspects of the project that was unique to me, like the level of involvement of designers, and the kinds of work that was not usually done by designers. The project also did not restrict non-designers to create product solutions; instead they were exploring a series of creative processes that was to evolve while working with the women at the center. Processes like exploring the right solution based on what the women needed, and kinds of material that would be easily available to them was being introduced as we learned

through iteration. The ideas of transformative textile raised up the ways these women utilized everyday objects with multiple uses. What helped most was the design being facilitated for working closely with the partners and the actual end-users. The process evolved to become highly collaborative. The end user was involved in designing for their needs, and at the same time they were learning livelihood skills that enabled them make products that could be sold. Most of the team at the time were product designers, but there were also architects, fashion designers, engineers and others bringing an array of design skills, multidisciplinary and process of co-design. On some occasions experts were brought in to training sessions like sewing and pattern making, which was also something the team itself needed to learn. The team independently explored ideas but the most fruitful stages were when the women were learning basic skills to make the products and started to comment on several issues and needs, leading to better products that they could use. The process was *participatory* — design being designed by the user and empowering them with not only with skill but also of ownership. There were also stages where the process of facilitation was taking place, like linking the garment and upholstery industry for scrap or unused fabrics, scouting right partnerships where the products could be sold, and even looking for tools and supplies.



*The Hood Bag — On cool days the Hood Bag can be used as a warm and fashionable hood, scarf, and gloves. When warmer it can be transformed into a messenger bag suitable to carry books, water bottles, or any other belongings. The Hood Bag is made from fabric, zippers, and donated clothing. Image © commongood.*

I would like to reflect on my participation in the Abject Object project and the processes of design in it. Abject Object was based on the collaborative effort of all the people involved. It is this collaboration that allowed us to be in a much more personal space that we otherwise would not have had access

to. Which brought to the next factor that in being with the people for months allowed for a closer look into their lives that we were trying to improve. Another important aspect was that iteration and failing was a very important part of the process. What was also a defining factor was to establish partnerships and collaborations that allowed for a viable and sustainable business model. Finally the designers' skills of visual communication, aesthetics and usability was highly important in taking the project to the level it has reached today. The project exploration was founded on the principle that design should ultimately give an opportunity to empower a better livelihood.

## Design Practice and Social Sustainability: Some Current Approaches

There has been an enormous surge in people acting on changes and reflecting the need for positive societal change. Some examples include the recent works of Young Foundation<sup>3</sup> identifying the importance of well-being when making local decisions for an inclusive impact on people's lives. They have worked on measuring well-being at a local level empowering localism by building awareness in local communities and residence. Their work<sup>4</sup> has also focused on the importance of social innovation and how people globally are realizing new and more effective ways to solve some of the biggest challenges of our times like resolving poverty, keeping people happy, and how to be ecologically sensitive and sustainable. An example used in the project was that of Honey Bee Network in India, which collaborated with farmers, scientist and researchers to traveling by foot to get a better understanding of the issues faced by farmers. They have unearthed, shared and disseminated sustainable solutions to local issues including conservation, organic farming, and biodiversity, as well as health and nutrition.<sup>5</sup> There are

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3 Nina Mguni, and Nicola Bacon 2010. Taking the temperature of local communities. The Wellbeing and Resilience Measure (warm). [http://www.youngfoundation.org/files/images/YF\\_WARMREPORT\\_Screen.pdf](http://www.youngfoundation.org/files/images/YF_WARMREPORT_Screen.pdf)

4 Murray, Robin, Julie Caulier-Grice, and Geoff Mulgan. 2010. The open book of social innovation. London: National Endowment for Science, Technology and the Art. [http://www.youngfoundation.org/files/images/Open\\_Book\\_of\\_Social\\_Innovation.pdf](http://www.youngfoundation.org/files/images/Open_Book_of_Social_Innovation.pdf).

5 Murray, Robin, Julie Caulier-Grice, and Geoff Mulgan. 2010. The open book of social innovation 25

other social sustainability initiatives that have surfaced in the recent news. Scientific American featured on February 21, 2012 the Gates Foundation-Funded low tech toilet-design initiative for the Developing World.<sup>6</sup> Such initiatives bridge a huge social gap for sanitation needs for a large portion of the world. Another project which featured in CNN<sup>7</sup> on February 22, 2012 is about mobile phone journalism. It attempts at empowering the voices of remote parts of India's rural poor. Design projects and collectives too are well taking a human-centric approach. Initiatives like Desis Network focus on Design for Social Innovation towards Sustainability. They work with an aim to promote sustainable change and are integrated into a network of Design Labs based in Design schools and Universities. With a basis of Design thinking, DESISNetwork with partners locally and globally aim to co-create relevant programmes to promote Social Innovation and Open Design.

With such projects as examples I find it challenging to assign a set of what to or what not to do procedures for design, and call it a process. What is become relatively easy is in hindsight I find a lot of the common elements that can be addressed as what the design process was. In talking about the Design Process, I would like to discuss how these terminologies feature in the Design Community. Working as a designer in such situations, what I have come to learn is that in most circumstances design language is often not understood outside of its profession and there is a bit of unlearning in order to communicate to the people we work with. An example is the terms Co-Design, Co-creation, Participatory Design are widely used by other professions(Holmlid 2009; Mattelmäki and Sleeswijk Visser 2011; Steen et al. 2011) like NGOs, Business, Health, and especially service-oriented sectors. Their intentions and goals maybe are similar and address similar ways of working but more often they might mean differently in different domains. I will try to frame about my work using the some terminologies that are popular within the Design Community and some outside of it.

So some of the processes I have come to identify in designing solutions for Social sustainability are from the design domain and some outside of it. Considering an across the-sector role of a designer as facilitator it is important to consider a wider base of knowledge. Depending on the kinds

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6 Jim Nash. 2012 "Wasting Away: Can a Gates Foundation-Funded Toilet-Design Initiative End a Foul Practice in the Developing World?": Scientific American." <http://www.scientificamerican.com/article.cfm?id=gates-toilet-tech-challenge>.

7 Tim Hume. 2012 "Phone Journalism Gives a Voice to India's Rural Poor - CNN.com." CNN. <http://www.cnn.com/2012/02/22/tech/mobile/india-mobile-citizen-journalism/index.html>.

of collaborations, — multidisciplinary, interdisciplinary and transdisciplinary processes is eased by facilitation (Hall et al. 2008). A central aspect of social sustainability is the need for the solution to arise from participation of all parties involved in facilitating the solution along with the potential users. This gives importance to Participatory Design (Björgvinsson, Ehn, and Hillgren 2010; Manzini and Rizzo 2011; Gregory 2003) — has its origins from 70s Scandinavia widely used or joint decision-making and work practices focusing on empowering — ones who are affected by the design should have a possibility to influence the design. The other is Co-Design (Brandt et al. 2010; Binder et al. 2011; Mattelmäki and Sleeswijk Visser 2011) based on user-centered design and empathic design with a focus on the user experience for early on in the design process. The process helps create reference points for the design team early on in a project from the users and stakeholders being invited to contribute to the design process. The designer, in this case, is mostly a facilitator but also participate in the process. The aim is to gain insights to new directions, design ideas and solutions to inspire the design process. Co-creation (Prahalad and Ramaswamy 2002; Mattelmäki and Sleeswijk Visser 2011; Verma et al. 2012) on the other hand is about the users given the opportunity to take the role of the designing. In this case various tools are provided to the user to create new ideas and the designer or researcher facilitates this process. In this case the user can be an information provider, a creative mind, or an evaluator of new ideas but mainly creating these ideas themselves. (Mattelmäki and Sleeswijk Visser 2011) As a result the process of co-creation can happen within the process of co-design. In such situations the materials for co-design events needs to be designed so that it invites and facilitates co-creation. (Mattelmäki and Sleeswijk Visser 2011) All three concepts are connected in that they are helpful for collaborative work that involved different disciplines and what is common to both Co-design and Co-creating is the designers' role as a facilitator.

If the three above concepts are familiar within the design academia the next concept I wish to discuss is a bit away from the design field. This concept is about measuring outcomes. Establishing a **Measurable Outcome** (Starr 2015) from early on is a critical tool; since the success of the solution of social sustainability and should be based on a measurable outcome. This is something the NGOs tend to keep a better focus on and I would like to incorporate it into the process of my practice. The project or solutions must find ways to progressively measure the impact on the people or community that can be benchmarked to a baseline data. This would also help to refine and iterate based on the impact. Here impact would mean not only of how well or how widely the solutions are used but also its impact on people and environment.

Finally I find design to be highly subjective and situational in the way I see it as practice. I would like to think of my first part of the process with this analogy of getting rid of all the books on my bookshelf on to the floor and then putting them all back up, one at a time. Getting every thing onto the floor is the first stage of understanding the situation, framing a context. The books on the floor are all the things including information, people, and other factors I have gathered without any classification. As I start placing them in order, I personally get to know each situation, people or context and this allows for creating means of taking the next step. At this point I can only know what is back on the bookshelf and not necessarily about a solution. As the shelf begins to fill up there might be possibilities of patterns and leads to the next step. This stage is common in most design professions like Industrial Design or Strategic Design. As it develops from this stage we move into more complex systems of environments of people be it working, playing or learning. I have found that at this stage the complexities of human behaviors are better addressed with design thinking along with tools for design for services.

As we enter the area of human behaviors, this links to what these behaviors are influenced by — social, economic, environmental and cultural systems. This level of understanding requires a series of iterations and failures that will bring in knowledge and perspective from other domains. Design Thinking can be a critical part of this stage of finding solutions. Design Thinking as Tim Brown (2009) describes is a human-centered process and something that can be easily adopted by any one. It is a process that relies on our intuitive ability to solve complex problems, by organizing complex patterns both of emotional and functionality. He describes this as an integrated process that balances feelings, intuitions, and emotions with that of rational and analytical aspects. While I agree and support with the notion of democratizing design process, it is not the same as what a trained designer is capable of. With issues of social sustainability there is a need for the role of the designer as a facilitator because design is more than thinking. In the project Abject Object one of the key aspect was the ability to facilitate the process. While groups can get self-organized and collaborate, the designer has the advantage of visualizing and communicating the process. Some of the things we did weekly in the Abject Object project was also to reflect and bring back more ideas onto the field,<sup>8</sup> which were based on conversations we had had in previous sessions with the people. In this case Design in itself was more than the thinking or tools. It took the shape of a process that kept evolving.

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Process of co-design in real space and context helps the process. Brown, 2009. Change by design. 35

In the project<sup>9</sup> as a team what we did was emphasize this process and it is in this iterative process that gave potential to new possibilities. In this context it is heavily vested on the journey and guiding of the journey rather than the solution itself. Solutions for societal transformation needs to be born out of the collaborative process and it is this collaborative journey that needs to be facilitated and designed. The other aspect of the design process was to have multiple variation of ideas (concepts). This helped to benchmark or push for better outcome. Based on these ideas and variations there were more to choose and compare with and iterated further. Brown explains this process as Convergent and Divergent thinking,(Brown 2009, 66–68) in which the convergent part is the drive toward a solution and the divergent part is to have alternatives and choices. Another aspect in such a process is that, the designers are not the center of the project or the process; they help in the process of synthesizing what is needed in order to get to possible solution through collaborative processes such as participatory and co-design.

These approaches are not a fixed blue print nor does it work uniformly for all situations. A well designed solution is inclusive of thinking, research, iterations, actions, values and capacity to change and evolve. The designer as a facilitator can help such collaborative process during each of those stages. One of my key arguments is that the designer as a facilitator is a function that needs to be present from the start to the end. Such a role is useful for solutions to the nature of social inclusion. I stress that the main focus is about designing better and it is not necessarily about making more things, but better-living conditions, better opportunities for livelihood and enhancing the relations of what is already available. My focus is to rethink the ways we need to reach solutions for social sustainability. From the material nature of designing a solution to the service nature of a solution, both tend to disconnect the designer at some point from the process of finding the completely appropriate solution. For social sustainability, a role as a facilitator would enhance the collaborative process to solve social issues. As social sustainability requires multidisciplinary alliances, this process is often unpredictable and a design process can add value to better illustrate what is often difficult to explain. In this case, collaboration between people or different domains does not guarantee success but a facilitator can bring the design skills to invent or reinvent new design process and ways to communicate. The designer as facilitator is an emerging need for the rise of service-oriented societies. Design as a profession is also in need of redefining its own role to this changing world. With the growing need within organizations and institutions working toward a solution to social sustainability, the role of a designer facilitator as I discussed above can be a valuable asset.

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9 There is a shift from how product designer look problem to that of project as whole. Brown, 2009. Change by design. 21

## Creative Sustainability at Aalto University

As a student of the master's degree programme in Creative Sustainability (CS) at Aalto University, I got the opportunity to work a collaborative project called GloCal. This collaboration was between the University of Helsinki's School of Nutrition Sciences, the School of Economics' Base of the Pyramid (BoP) project(Nakata 2012) and the Aalto Global Impact department. As a student studying CS and someone who values the importance of multidisciplinary collaboration, this was truly exciting. Plus, the chance to work with another layer of academic discipline, like working with the University of Helsinki's School of Nutrition Sciences, has been a truly rewarding experience. As part of my master's thesis and through the support of Aalto Global Impact, I have been contributing as a designer on the GloCal project. Led by the University of Helsinki, the GloCal project brought together nutritionists, anthropologists, e-learning experts, private Finnish companies and local NGOs in India. With the goal of improving the nutrition of young children globally, GloCal aims to provide human-centred mobile solutions to transform the training and know-how of rural healthcare workers, helping them better serve their communities. The long-term goal of the project has been to improve maternal and young child nutrition and health by creating a scalable and cost-effective mobile phone platform for the use by communities in emerging markets.

This was also about the time when I had been thinking about what are the kinds of thesis project I wanted explore. I was at the time interested in food shortage issues in India and how the challenge of wastage and preservation was seen as a hurdle to overcome. While looking for a project that dealt with this issue I got to hear about the mobile nutrition health project, and naturally I was excited about this project. First, because I wanted to focus on issues related to basic needs(Sen 1999)<sup>10</sup> in India and further more I wanted it to have a trans-disciplinary approach. With GloCal, what the project was trying to tackle on a long term was the issue of 10 million children dying each year in the developing world, in which, according to World Health Organization about 60% of the deaths are preventable(“WHO | Child Mortality” 2015). Admittedly, a predetermined solution that of a mobile device was something

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10 Amartya Sen says social and economic factors such as basic education, elementary health care and secure employment are important not only in their own right, but also for the role they can play in giving people opportunity to approach the world with courage and freedom. Sen, Amartya Kumar. 1999. Development as Freedom. Oxford University Press. 129

I questioned my self in dealing with such systemic issues. What attracted me most about the project was the story behind it. “GloCal” idea is being built around the successful and unique Finnish Neuvola-system, the mother-child advisory system(Lantto, Renko, and Uhari 2008).<sup>11</sup> The idea is to bring the content of this advisory system to the wide rural areas in transitional and developing economies by using a personal mobile phone. This was something that intrigued me from the time I heard about this project. My interest was in how such a solution could have a systemic impact in solving important issues of child health in rural India. In September 2, 2011 Teija Lehtonen, the Director of Aalto Global Impact interviewed me for working as a designer with the Helsinki University project. We spoke about my role and working for the project. She arranged a meeting for me with the GloCal team, from the Helsinki University. First, I got to meet with Marianne Prasad the project manager who gave me detailed over view of the GloCal project, the key stakeholders and time periods for the project. Marianne arranged a meeting for me with the head of the Project Professor Marja Mutanen on October 4, 2011, and discussed my role and the scope of my thesis in more detail. At this point I had to decide on the period of my thesis and how much I could contribute to the project and what I wanted out of it for my thesis. I imagined that my contribution as designer could be beneficial to the project and it also afforded a possibility to learn in a highly collaborative and multidisciplinary project. I also knew I could be looking at the contribution to my thesis from an experimental perspective. I was interested in identifying what would be the ideal situation for a Designer Facilitator in development projects, and this project provided a good opportunity to study such a role. Next in the coming chapters I will explain more about the details and my participation in the project.

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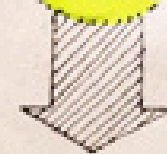
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11 With several factors for its success result it was one of the best examples from around the glob. This research shows the impact on childhood mortality states “The annual neonatal mortality declined from 11.13% in 1969 to 2.46% in 2004.” Lantto, Marjo, Marjo Renko, and Matti Uhari. 2008. “Trends in Childhood Mortality from 1969 to 2004 in Finland.” *Acta Paediatrica* 97 (8) (August 1): 1024–1029. doi:10.1111/j.1651-2227.2008.00856.x.

CH1	CH2	CH3	CH4	CH5	CH6
INTRODUCTION	BACKGROUND	DESIGN FACILITATION	FIELD STUDIES	EVOLUTION OF	CONCLUSION

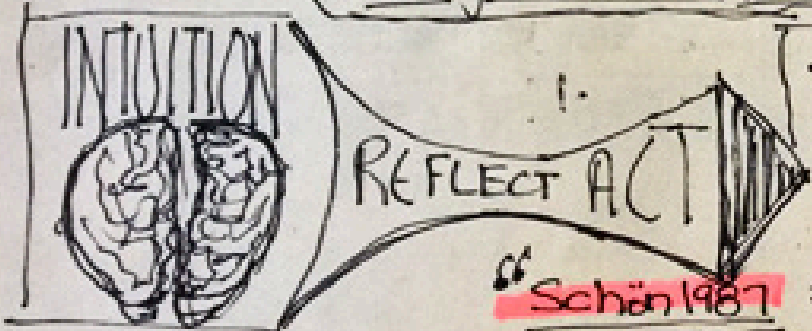


Role of a Designer facilitator is NOT  
 cf Manzini 2009 A NEW IDEA

Considering Design facilitation  
 as an approach.

I can affirm believe the Artists & Designers has a real role  
 to play as leaders in Innovation in this Century.  
 cf March & Benoit 2015

Link between Design Education & Practice  
 April 2012



cf Schön 1987

Reflection without  
 group conformity.

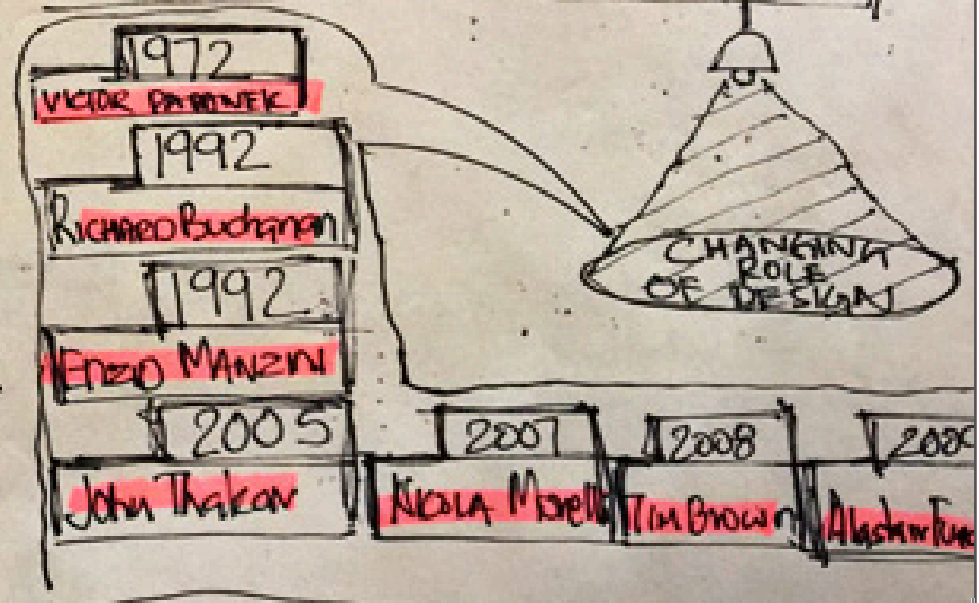
cf Ulrich 2000



cf Kohn & Kramers 2015

Design facilitation  
 ↑ Social change

Shift to Systemic Approach to  
 design through facilitated collective  
 actions CO-DESIGNING &  
 CO-CREATING VALUES IS  
 EMERGENT IN LARGE PARTS  
 OF DESIGN FRATERNITY





# Design approach

## Considering design facilitation as an approach

The role of a Designer Facilitator is not a new idea. John Maeda, the former President of Rhode Island School of Design and now the design partner at Kleiner Perkins Caufield & Byers has said, *“I am a firm believer that artists and designers have a real role to play as leaders in innovation in this century.”* Then in a recent article in The European Business Review, a leading business intelligence magazine Maeda with Becky Bermont(2015) make a compelling argument for the role of artists and designers. They explain the way artists and designers are trained as professionals, they work and attain goals together with others. Their work and creativity often moves others to follow them – be it in the working of a neighborhood, a social movement or even community dialogues; the artists and designers do it with the skill developed through training in their work as professional inspirers and provocateurs. One could easily simulate the processes and activities that a designer goes through to achieve their goals. What is often ignored is that the inherent skill of a designer is something that comes with years of practice and training. There is growing interest in the link between design education and practice says Shana Agid,(2012) She goes on to say that, – *the specific notion that design education prepares students both for design practice and increasingly for other forms of making and doing.* When a designer makes an intuitive decision it is because of the artistic license that they have gained and which comes with much discipline in understanding one’s own creative processes. By accounting for intuition design goes beyond theories and statistical data. When an artist or designer goes through their first year of foundation studies; these skills come with rigorous repetition of being able self evaluate



*A child picking up his morning nacks before heading to school — Nachinanmpatty Village, Salem, Tamil Nadu*

and be openly critiqued for their work until they are able to tap in the gained agency. Beyond the intuitive element the designer also is someone who is able to reflect on the actions that results in a designed solution. This self-questioning (Schön 1987) act is something that comes with the design education. The agency and self-identity without *merely submitting to group pressures toward conformity* (Ulrich 2000) is what makes the designer take on challenging situations with confidence, because they are good at handling the unexpected. Instead of finding solutions analytically, the creative discipline is able to take chances and is not afraid to miss the target. This is something that creates unexpected outcomes; though it is often considered impractical — I believe it is highly necessary for systemic solutions for social transformation that will look beyond current “Business as Usual” conventional practices. This is one of the reasons that I believe design thinking and the designer facilitation is different from other disciplinary approaches. The design approach becomes an asset for any challenging situation that needs to be solved, an asset that cannot be replaced by books or merely replicating design process.

Another critical aspect to consider is the need for organization dealing with social change. Large-scale social change requires broad cross-sector coordination, yet the social sector remains focused on the isolated intervention of individual organizations. (Kania and Kramer 2015) Often work done for social change remains isolated from collaboration and in the hands of nonprofits and NGOs. In order to have a collective impact, processes should take into account that there needs to be centralized infrastructure, a dedicated staff, and a structured process that leads to a common agenda, shared measurement, continues communication, and mutually reinforcing activities among all participants. I explore the role of a designer facilitator in this context for nonprofits and NGOs that are dealing with issues of social sustainability. With a design framework suggested by me the designer facilitator is able to emphasize on collaboration and open up possibilities to understand the larger issues bringing disciplines together to work for a common goal. The emphasis here is the capacity to bring different disciplines together. Such a role could also help to decontextualize the situation and find new solution by redefining the problems through a process of co-design. The facilitator in this context is able to bring a human centric approach to finding solutions to social transformation.

Addressing the larger social sustainability issues invariably requires new approaches. These new approaches involve new modes of collaboration and facilitation. The designer as a facilitator can bring on board the following elements that could lead to a new approach. First, organizing thoughts and ideas into visuals that can be commonly understood and discussed

collaboratively becomes a very useful tool. It allows for understanding of the larger picture by means of process visualization that is done together with other involved team members. The picture emerges out of a collaborative discussion with the people involved in the project. This should also be visualized with a collaborative effort. It allows for the team to begin and set a collaborative understanding of the group context and dynamics. Visualizing as a collaborative process allows for new ideas to arise during the process. The designer in this situation not only facilitates the process, but also brings the designerly skills to visualize data and patterns to a more communicable language. Communication being a critical mode of facilitating collaboration helps the project and the processes within it. Building upon this process also requires facilitation on the ground with observation and research utilizing local people in a given community. This is needed to gain a deep understanding of the social context. In this situation the designer facilitator can provide designed tools for the specific situation helping on the field research. These tools should be understood and used for building credibility and trust not just amongst the working team of the project but also with the community with whom the project members engage. An example could be facilitation through designed artifacts and early prototypes to gain insights and views of the within the group for the field research and localizing this process to the context (Koskinen 2011, 6–7). Localizing this process allows for the given community, their knowledge, perceptions, ideas and priorities to shape the solution. Such methods not only go beyond conventional field research but also allow for better group and community collaborations through design facilitation. Finally, real-time learning, prototyping and iteration by keeping the community in the center of the process enables a reasonable solution to emerge that gets to be more acceptable by the community. In this case, the designer facilitator becomes a link for community collaboration and for facilitating a participatory design process. One-way to look at this is as a process that can go a step beyond the idea of bottom up and top down approaches. The facilitator becomes a conduit linking knowledge and perspective from top and bottom. Making a unified and holistic process top to bottom and vice versa. The following analogy would help understand this situation. It is similar to driving on a road with no signs or direction. The signs ease the process of getting to the destination. In this same manner, well designed activities not only ease the envisioning process but also constantly provides better visibility to a direction to take in finding solutions.

There is a need for designers as facilitators because the designers receive training in thinking in micro and macro aspects of a given situation. They are system thinkers, and are also trained problem solvers. Another aspect of designers as the facilitators is that design is too important to be left only

in the hands of designers. While designers can be the catalyst for change, in order to become change makers they need to embrace working with different disciplines and with issues of design for sustainability and societal transformation. The solutions require inclusive, collaborative and iterative processes. Taking the process out of the hands of the designers; to getting more people involved and using systems as means to look at solutions becomes necessary. At this level, design thinking makes it possible to go beyond the conventional practices. Designers are trained to creating solutions for human needs with consideration to desirability, technological feasibility and economic viability. More importantly focusing on people<sup>1</sup> and redefining the value of a designer is towards an improving the lives of underserved populations of our world. Principles of human dignity with environmental sustainability is captured well by the words of Buckminster Fuller — *“All of humanity now has the option to “make it” successfully and sustainably, by virtue of our having minds, discovering principles and being able to employ these principles to do more with less.”*(Blockstein 2010) Their value is in working together in a collaborative manner, collaborating with other disciplines but mostly collaborating with the people to achieve social sustainability. While this comes with some level of difficulty, it is in the friction that emerges which allows for the facilitating new modes of thinking to come into being. What we see in working with people and development is people attaining a meaningful life with limited resources. This frugality to me is inspiring and is a learning that can be brought back from the developing to the developed parts of the world — Doing more with less.

## Design for facilitating Social Change

The need to shift to a systemic approach to design through facilitating collective actions, co-designing and co-creating values are emergent in large parts of the design fraternity. In this process we work with different actors, with different backgrounds, skills, knowledge, and cultures<sup>2</sup>. There has been a lot written putting a spotlight on the changing role of design. As early as

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<sup>1</sup> Tim Brown talks about design thinking and why designers should go beyond generalized standards and expectation. They are able to bring insight through Empathy, the ability to forget your self and stand in the shoes of others. Brown, Tim. 2009

<sup>2</sup> Morelli, Nicola. 2007. In his paper about relocating design competence in a new industrial context, talks about role and challenges for designer. Also goes on to add that with the new demands, would be about co-producing solution to the clients need. In which case such actors have very little knowledge of what is the designers' skills.

1972 — Victor Papanek's book *Design for the real world* (Papanek 1972) has been a convincing voice on the role of the designer. At a time when social sustainability nor design thinking were in the limelight Papanek stressed on designers moral responsibility to society — that people should have equal importance in the development of solutions that they will live with. This was alluding to fundamental shift in the way designers functioned at the time.

Writing on *Wicked Problems in Design Thinking* by Richard Buchanan in 1992 mentioned of four areas in which Design is explored in contemporary world — the symbolic and visual communications, the design of material objects, the design of activities and organized services, and the fourth being the design of complex systems or environments for living, working, playing, and learning. It is this fourth area that he highlights emerging shift in the role of a designer. He describes this area as important in the context of integrating human beings to sustaining, developing, and integrating human beings into broader ecological and cultural environments.

Then Ezio Manzini's *Towards a New Ecology of the Artificial Environment* (Manzini 1992); *Design within the limits of possibilities and the possibilities of limits* in 1992 talk about environmental limits, product saturation, and how consumers are changing the relationship with material things. In this complex society one resulting change he suggests would be how we look at what are the possible qualities of a well-balanced world and how it could result in a new culture of design moving from tangible to intangible elements.

Understanding the complexities of living in the technology-enabled world John Thackara (2005) points to the importance of working with people and to make them equally partake in the design process. He suggests a deep focus on responding and sensing the context the designer designs in, bringing attention to service and people than to products.

Nicola Morelli in his paper on *Social Innovation and New Industrial Contexts* asks that Can Designers “Industrialize” Socially Responsible Solutions? In this article he takes on an optimistic view of sustainability and resource constraints. He recognizes the contrasting shift from the mainstream industrial production and the operative strategies of global companies. While the mainstream is moving towards the most aggressive model of globalisation; the operative strategies he suggests are forced to work in a more local context with innovations at the local level and for individual people. In this context, he suggests the designers to work with the people to co-produce their own solutions — moving away from finite solutions to scenarios, platforms, and operative strategies to help co-produce solutions. Here the

designers are not working with a problem of the customers but instead the customers work as resources, bringing in capabilities that considerably improve the lives of underserved populations. In this case “*design also becomes a facilitating tool for suggesting to people ways of satisfying their own needs, thus providing solutions for a lifetime.*” (Morelli 2007)

In *Design Activism: Beautiful Strangeness for a Sustainable World* by Alastair Fuad-Luke in 2009, addresses the rise of social and environmental crisis that has led to grassroots movements where people take action for change. In this situation, he suggests designers take up participatory design approaches like co-design as a key tool for a community-based or a community-inspired project in the process of collaborative design. He identifies three large areas that co-design includes; first with collective understanding and exploring, then collective design and decoding, and finally collective auctioning. In this, the key role of the designer in the process of co-design includes planning, inspiring, leading, and facilitating.

Such ideas and thoughts from a variety of design thinkers’ with varied backgrounds shows that the nature of design as a discipline will always keep changing according to the needs of people. The emerging conditions and constraints are how design as a profession is adapting and in this light how new roles of the designers can evolve with the shared understandings of people and culture. It is in emphasizing the ability of people to participate and contribute to these emerging new roles of design, is also what brings design closer to people.

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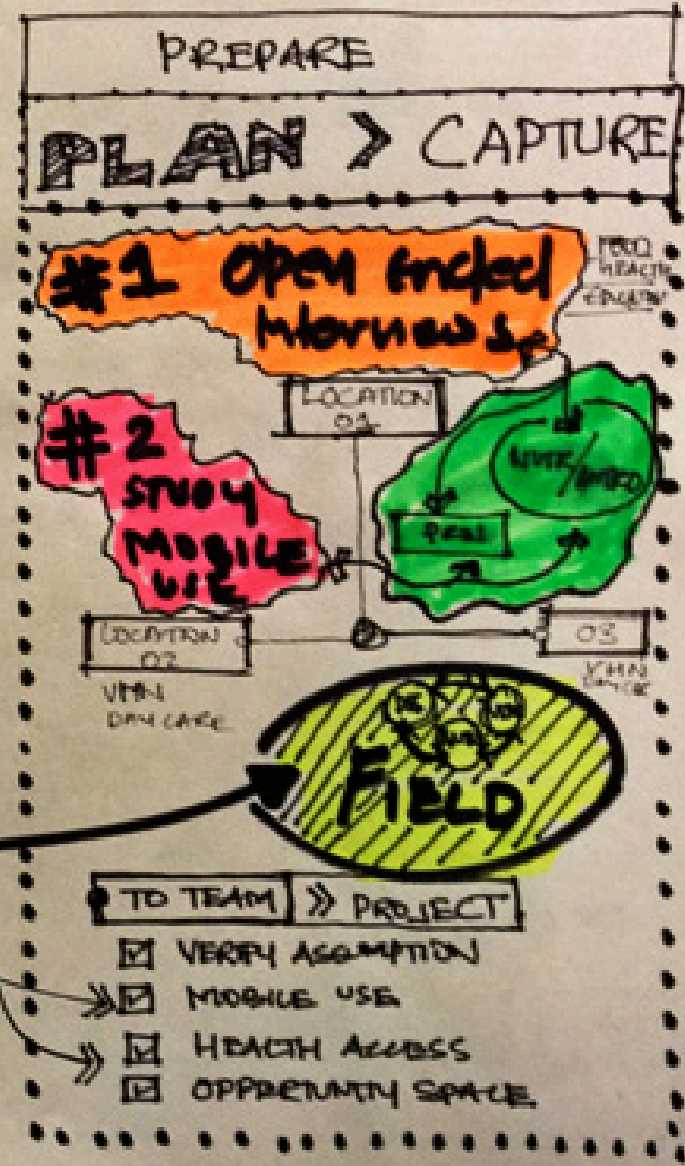
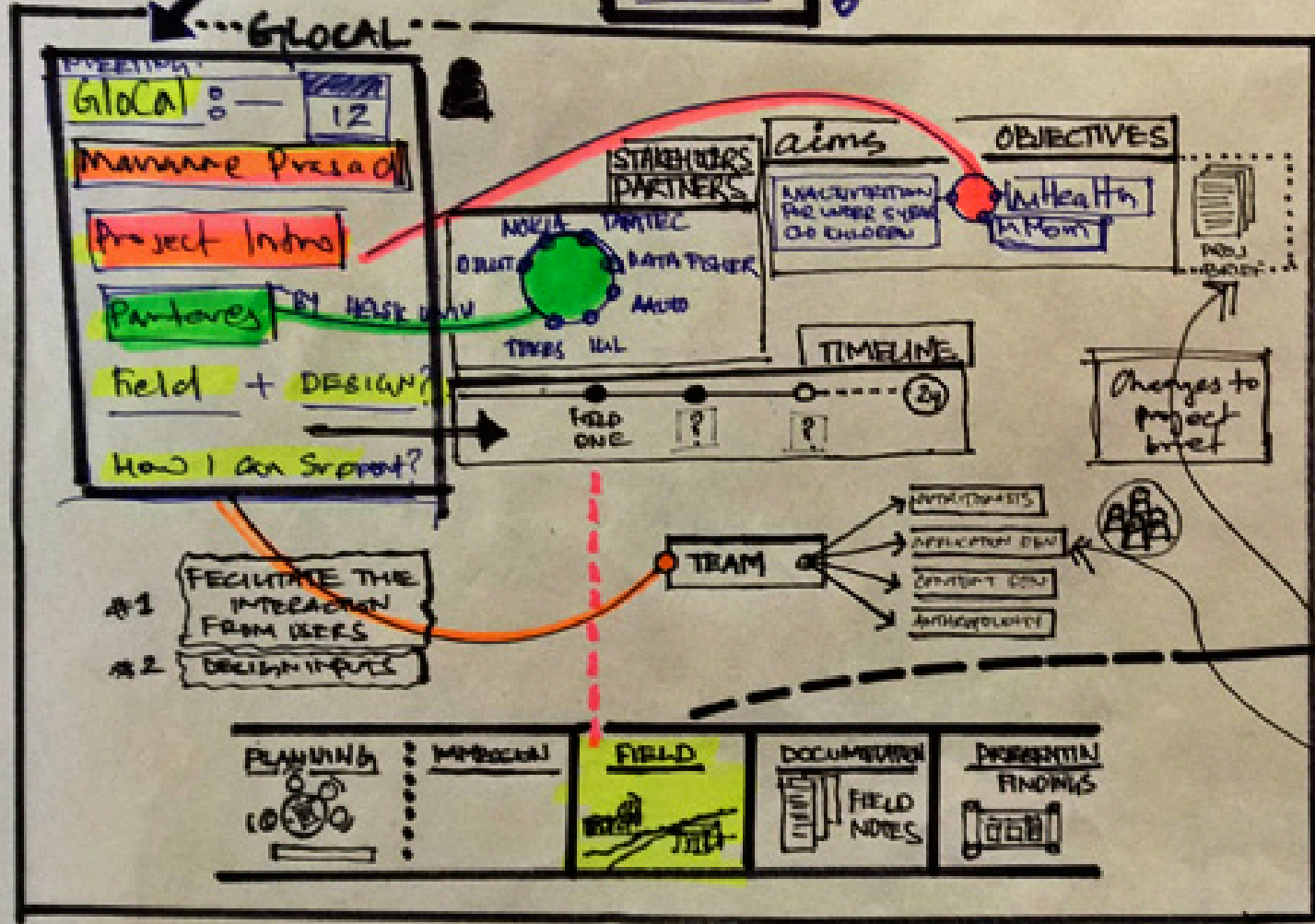
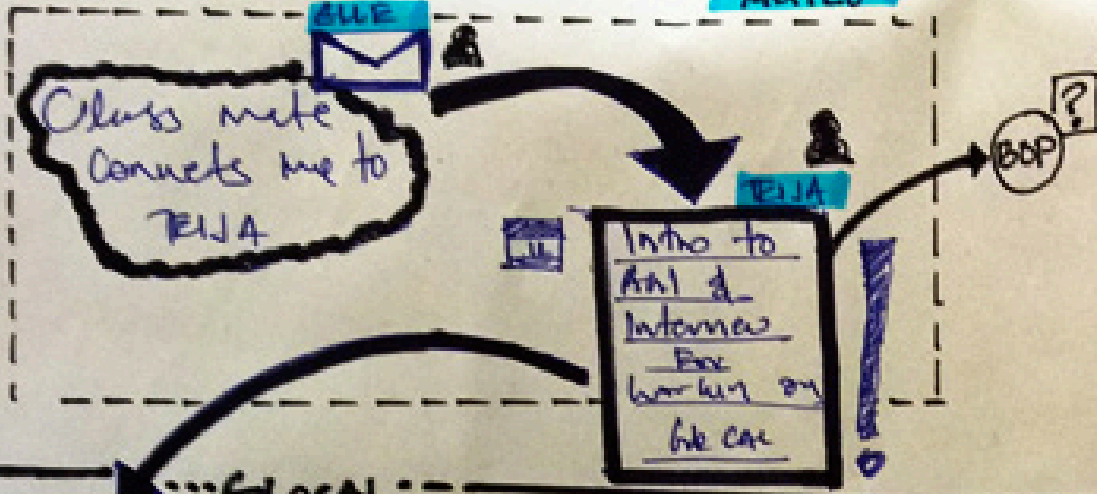
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INTRODUCTION TO GLOBAL @ MITO **Aalto**

INTRODUCTION	BACKGROUND	DESIGN APPROACH	<b>FIELD STUDY 01</b>	FIELD STUDY 02	CONCLUSION
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# Field Study One

## How I came to know of the GloCal project

My first knowledge of the project GloCal was through a classmate in Creative Sustainability, Elle Yli-ojanperä who recommended me to Teija Lehtonen, the Director of Aalto Global Impact. In meeting with Teija, I learned of the pilot mobile health project initiated by Professor Marja Mutanen and her team from the university of Helsinki. Teija shared with me her work with the BoP Service Collaborative Network and other projects that had pilots for Base of the Pyramid Markets (Nakata 2012). She explained the long-term goal of the project is to improve maternal and young child nutrition and health by creating a scalable and cost-effective mobile phone platform for the use of communities in emerging markets specifically in the areas of economically weaker populations in rural India. She was at the time identifying students who would be interested in doing masters thesis related to mobile nutrition health project in India. She suggested if the topic interested me I could take up my thesis and support the project team as a designer. Following this meeting Teija also sent me the GloCal project plan with initial timeframes and further introduced me to Marianne Prasad, the project manager for the GloCal project at the University of Helsinki.

The meeting with Marianne Prasad increased my interest in the project. Mobile solutions for rural India were the initial idea that sank into me and this was not too appealing. I felt technology could intervene to a certain extent and then to a large part it was left upon society, people; and what mattered was their attitudes and behaviours. At the core of the project, Marianne explained was the idea of that was built around the unique Finnish Neuvola-system that significantly helped in decreasing the Finnish infant



*A child holding a one rupee phone booth, lots of people in the village still uses the booth daily — Nachinanmpatty Village, Salem, Tamil Nadu*



mortality during the 20th century. The system consists of a network of advisory places where pregnant women and mothers of newborn babies and schoolchildren were monitored and advised (Wood-Ritsatakis 2000, 27–38; Dunn 2007). It was the concept of simulating this unique Finnish social innovation, the Neuvola system by modern mobile technology that was inspiring as a creative challenge. Another aspect that made working with project exciting was the possibility of working in collaboration between academia, the private sector and the NGOs. Undoubtedly, working towards bringing positive social change in India excited me.

There were four key aspects that Marianne discussed during our meeting. In the following text I will share them in the following order — the background, aims and objectives of the GloCal project, the structure of the GloCal project and its partners, time frame of the project, and lastly as Designer how I could support the project.

## Emerging need for technological intervention in healthcare in India

Mobile technology has become a life-changing tool for everyday life all over the globe. With its vast impact on communication it offers immense opportunities in healthcare, especially in developing countries, like India. It has the potential to link millions of people to health care access and health care providers. In India, healthcare does not reach to millions (Gragnotati and World Bank 2006) in the rural and remote areas. A mobile health solution could become a means to social inclusion relieving the burden (Gragnotati and World Bank 2006) on the strained public health systems.

India has grown rapidly in past two decades and maintained a growth of 7% in the last decade (Poddar and Yi 2007). This is also visible in growth of the telecom sector, a major contributor to India's growth that contributed nearly 3.6% of the total GDP in the year 2010 (Ernst and Young 2011). Today India is the second-largest telecom market with subscribers reaching to 723.3 million in September 2010. The mobile registration has shown a monthly addition on fifteen to twenty million subscribers. The growing subscribers are largely due to the Department of Telecom's success in providing world-class services with some of the lowest tariffs in the telecom market. Within this population a large numbers of people use low-cost mobile handsets. This has reduced the

digital divide (Ernst and Young 2011) by mobile connectivity reaching some of most rural otherwise unconnected areas. This growing telecom market makes India an ideal market to develop and test mobile-based tools and solutions.

While India has shown stable growth, the country still has not been able to provide basic health care service to around 70 % of her 1.21 billion inhabitants living in rural and semi-rural area. The 2007 Human Development Report (HDR) notes that although India is growing economically this have not translated to preventing malnutrition issues (Watkins 2007). One-half of the rural children in India are malnourished for their age. In January 2012 a report from survey conducted by a coalition of non-government organizations (NGOs) was released in India. The report called Hangama ("HUNGAMA Survey 2011" 2015) found forty-two percent of Indian children below five years to be underweight (Spears, Ghosh, and Cumming 2013). On the release of the report the former Prime Minister Manmohan Singh called malnutrition "a national shame." (Jayachandran and Pande 2012) He urged planners to "understand the linkages between education, health, sanitation, hygiene, drinking water and nutrition". The report also states that besides poverty there was also wide spread faulty infant and child feeding practices. Ignorance was a common factor contributing to high malnutrition rate. One of the key aspects in child health is the first two years for a child as is most critical period in a child's development. The right interventions during this period would have clear life-long impact on their educational, working life, reproductive health and livelihood (Victora et al. 2008; Swaminathan 2009).

## Aims and objectives of the GloCal project

The main aim of "GloCal" is to lower child morbidity, and ultimately, mortality worldwide, by creating a scalable and cost-effective mobile phone platform for global use. GloCal will be used for data collection and information dissemination in order to improve child nutrition worldwide. It will be adjustable according to local needs with minimum efforts. The applications will be designed to be socially and culturally acceptable, and to meet the needs and requirements of the target population. There will be additional focus on creating an appealing and user centric interface, and special features that will attract the sustained interest of the end-user.

Built around the unique Finnish Neuvola-system, GloCal's ultimate aim is to bring a similar advisory system (mAdvisory) to the wide rural areas in transitional and developing countries through the use of a personal mobile phone. GloCal's two year pilot phase has tried to answer two main questions — Could we simulate parts of the neuvola in a mobile phone application? Second, could we modify the neuvola concept to suit very different cultures and countries?

The first application, 'mMom', was designed for the mothers of young infants. It contained a learning environment for the promotion of exclusive breastfeeding for 6 months, and information on safe complementary feeding for the young infant. The learning environment contained a combination of visual and audio interfaces. The application also allowed data collection on breastfeeding and young infant feeding. Special features included an embedded learning environment that helped the semi-literate and illiterate users acquire some language literacy.

The second application, 'mCare', was for the healthcare personnel. It contained the basics of nutritional requirements for infants, and the importance of breastfeeding and nutrition for infant health. The application also featured a data collection function designed for inputting customer data quickly and efficiently, and with large storage capacity. Both applications were designed through open source principles so that they could be used as a platform for other healthcare projects for data collection and information dissemination/health promotion in India and other similar markets.

The project GloCal was a collective effort between the public and the private partners making it a highly collaborative project. The strengths of project were grounded on local people's knowledge of their everyday realities, on multidisciplinary academic research, the localized capability of NGO's, and innovative capacity of companies. This setting allowed designing participatory means to co-create with the stakeholders and potential users that aimed for an inclusive solution to improve child wellbeing.

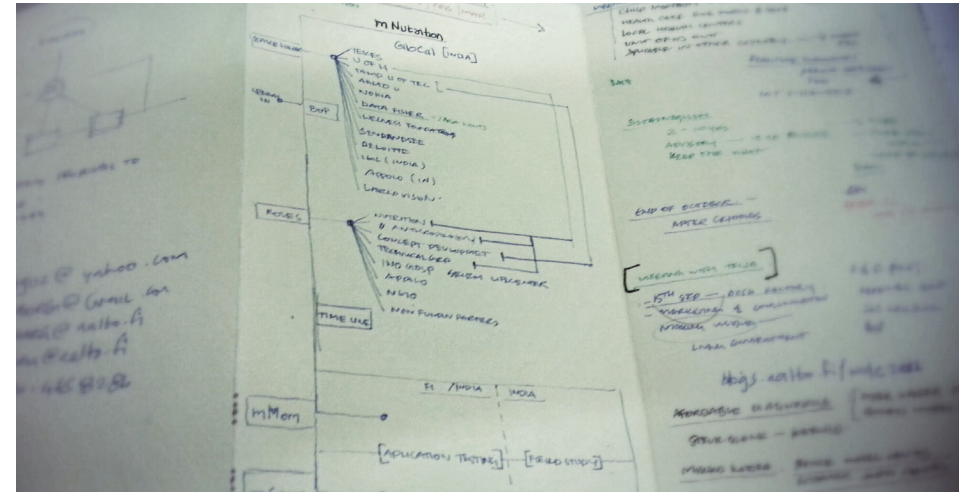


Image 01: Sketch notes of partners and collaborators mapping to aid conversation with project researcher

## The structure of the GloCal project and collaboration partners

GloCal was a two year Tekes-funded research project. Tekes is the Finnish government initiated funding body that funds research, technology and innovation to support their piloting and commercialisation. The GloCal team consisted of the nutrition group, the nutritional anthropology group, the concept development group, the technical group, and the NGO; Indian Gospel League (IGL) did the field facilitation for duration for the fields work in India.

The first stakeholder meeting helped establish what were to be the objectives of the field research with regards to all the different stakeholders. This helped the next phase of mapping the roles and requirements of the project to create details of what sort of information would be necessary and to determine the level of involvement within the team for each individual.

At this stage the GloCal partners, collaborators and their roles were also identified and mapped to get an understanding of expectations and deliverables. The following is the list of stakeholders that was mapped prior to the first field research stage of the project based on the TEKES project plan in 2011.

The two-year project was divided into two phases. The first phase was to define the basic requirements of the applications jointly by the Nutritional, Nutritional Anthropology and Concept Development Groups. The first field trip would be in this phase involving both the Nutrition researchers and Nutritional Anthropology group. In the second phase, the field-testing of the applications, and the data analysis were planned. The following timetable were the scheduled activities during the initial months.

The project also arranged a series of meetings that became immersion into the project and the preparations for the first field trip. These meetings included, my meeting with by Professor Marja Mutanen, the introduction of the process of conceptual design, workshop on ethnographic methods

## GloCal team

<b>Nutrition Group University of Helsinki, Finland</b>	<i>The nutrition group is headed by Professor Marja Mutanen from the University of Helsinki, Division of Nutrition.</i>
<b>Nutritional Anthropology Group University of Helsinki, Finland</b>	<i>The Nutritional Anthropologic group is headed by Professor Sirpa Tenhunen from the University of Helsinki, Department of Social Sciences.</i>
<b>The Concept Development Group</b>	<i>This group is led by Professor Jari Multisilta (MSc in mathematics, Dr Tech), Director of Cicero Learning Network, University of Helsinki, Finland and Professor of Multimedia in Tampere University of Technology, Information Technology at Pori, Finland. Masters' level students at Aalto University Creative Sustainability program.</i>
<b>The Technical Group, Tampere University of Technology, Finland together with e-learning experts</b>	<i>PhD, Tampere University of Technology, developer working to refine the software for the mMom and mCare applications as part of the Technical Group.</i>
<b>Indian Gospel League (IGL), Salem, Tamil Nadu, India</b>	<i>The project field work and the selection of target population relies on IGL. The IGL facilitates the field research groups in their work by providing staff members with local language skills and to work with the anthropology and nutritional groups.</i>
<b>Business Partners</b>	<i>various services and funding included; Nokia, Finland, Datafisher, European School of Swordmanship, Datafisher, Sendandsee, Finland and Deloitte</i>
<b>Non-Governmental Organizations included:</b>	<i>World Vision India</i>
<b>Non-funding Partners included</b>	<i>Network for sustainable and user-driven innovations at base of the pyramid (BOP) market, The Foreign Ministry of Finland, FinNode Innovation Network India, Dhaval Josh, Senior Researcher: Design &amp; User Experience, Jarmo Haapalainen - art gallerist and Nokia Consultant.</i>

## Activities Schedule

<b>Sept-Dec 2011</b>	<i>Field study in India and application development in Finland</i>
<b>Jan-July 2012</b>	<i>Development of the applications, field-testing and getting feedback from the users</i>
<b>Aug-Dec 2012</b>	<i>Refining applications further based on the feedback</i>
<b>Jan-April 2013</b>	<i>Field testing of applications for a period of four months</i>
<b>May-August 2013</b>	<i>Analyzing the feedback data, final report, defining the requirements for future versions</i>

in the BoP markets, GoCal concept development meeting, meeting with the Aalto students involved in the BOP projects in India, and the GloCal field-trip planning. These discussions and meetings were to become the grounds of my understanding to the upcoming field trip and how I could contribute to the project. (Activities Schedule table on teh )

## The role as designer on the GloCal project

The discussion with Marja Mutanen and Marianne Prasad gave plentiful insights to my role on the project. The discussion during our meeting was fruitful and we agreed that I could support with gathering information needed for the field research aiding the application development for both the technical group and concept development groups. This would compliment the information that was gathered by the nutritionist and nutrition anthropology study on the field.

In this upcoming section I will list and discuss a few of my thoughts after the initial meetings with the project leaders.

Design I thought should be an integrated process for a project that aims at solving societal needs. Such solutions need to be designed to sustain. The solutions should not only improve child health but also a lot of emphases should be given to making the solution socially acceptable and economically viable. I discussed that as a personal outcome, my thesis work on the project GloCal would be a case study to illustrate the advantages of integrating design process in collaborative projects. My Indian origin would also be an added advantage in bringing cultural and local views to the project. Additionally, with the role of a design facilitator, I could try to facilitate an inclusive, participatory and iterative process — aiding the synthesis of information from and between the groups of nutrition research, anthropology research, concept development group and technical group. Such a role could explore beyond the traditional design practices of being involved in the stages of just styling or prototyping. Design, in this case, could be a tool for a collaborative process within a multi-stakeholder context. In working with social development related solutions and, in this case, a pilot project, I felt it was important for the designer to be involved in a seamless top down - bottom up process. The aspect of social sustainability could be a driver in studying predictable outcomes and consequences of such a project.

With such a background, for the first field trip we agreed on the scope of my working on the project, which was decided to be in two parts. First, to look for influences that could make a mobile technology solution sustain. Second, to trace drivers from a user perspective by means of design observation. This would be the basis for defining user needs and based on their insights we could create a series of visualizations and storyboards to aid concept development further. This was the broad scope of my role as a designer that emerged with the project GloCal during the first field study.

In my own research for the thesis I saw my role as an experimental one, one being able to analyze and synthesize from being immersed in the field and the project process, and through this to make a comment on role of the Designer as a Facilitator. I imagined that I could start by studying the role of the designer, especially that of design observations in social research. The designer observer, within the role of a designer facilitator began serving as a starting point for this thesis, which over a period of time led to the evolving of two other skill sets, that of visualization and then of composition which will be elaborated in the next and concluding chapter. Integrating such a role of the designer in development project was something I wished to understand and learn from. Furthermore, I wanted to facilitate a blending of perspectives and knowledge from the end-user and the people involved in developing the solution. There was already enough discussion on this

matter in the design community, especially through design activism in trying to provide for social change and developmental work(Fuad-Luke 2009). I wanted to focus on my own work, in inquiring my role as a designer in field research. I had decided that I was less interested in the visual or aesthetics of the designed outcome of a product, but more keen on matters of questioning the role of a field based design practice in a social development project. The focus here was also on the holistic process of working with other disciplines and design having a role of also being a facilitator.

The basis for starting my work was founded on the following questions:(Starr 2014).

*Is it needed? — Is a mobile-based solution for the rural India providing nutritional and health information needed?*

*Does it work? — Does mobile solution if implemented solve the issues of child health if so to what extent? How can we measure this?*

*Will it get to those who need it? — Who would own, maintain and update such a mobile platform? Most importantly can it get to the people who really need it crossing the Last mile issue?*

*Will they use it right? — Will the mobile solution be easily understood and used? Can it transcend cultural, socio-economic boundaries?*

The research team would be conducting an ethnographic field study for a period of five weeks with the main objective to learn about health practices, and especially nutrition, of children under the age of 2 years.<sup>1</sup> The group consisted of five members including myself and was lead by the University of Helsinki. The Nutritionists and Nutrition Anthropologists from the University of Helsinki would do quantitative and qualitative aspects of nutrition for mother and child, focusing on children under two years. This phase of the field study would involve the team gathering information from the target groups through various methods like individual interviews and observation of maternal and child food use and feeding practices. The five of us would be working in the same village during this period. The fieldwork was divided into three areas; Quantitative, Qualitative and on my part the Design based would focus on field research looking at the possible systemic influences of such a solution. This included studying mobile use by the villagers and its influences on the

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GloCal Field Work 1 Study Plan, October 21, 2011.

# Fieldwork one – Process

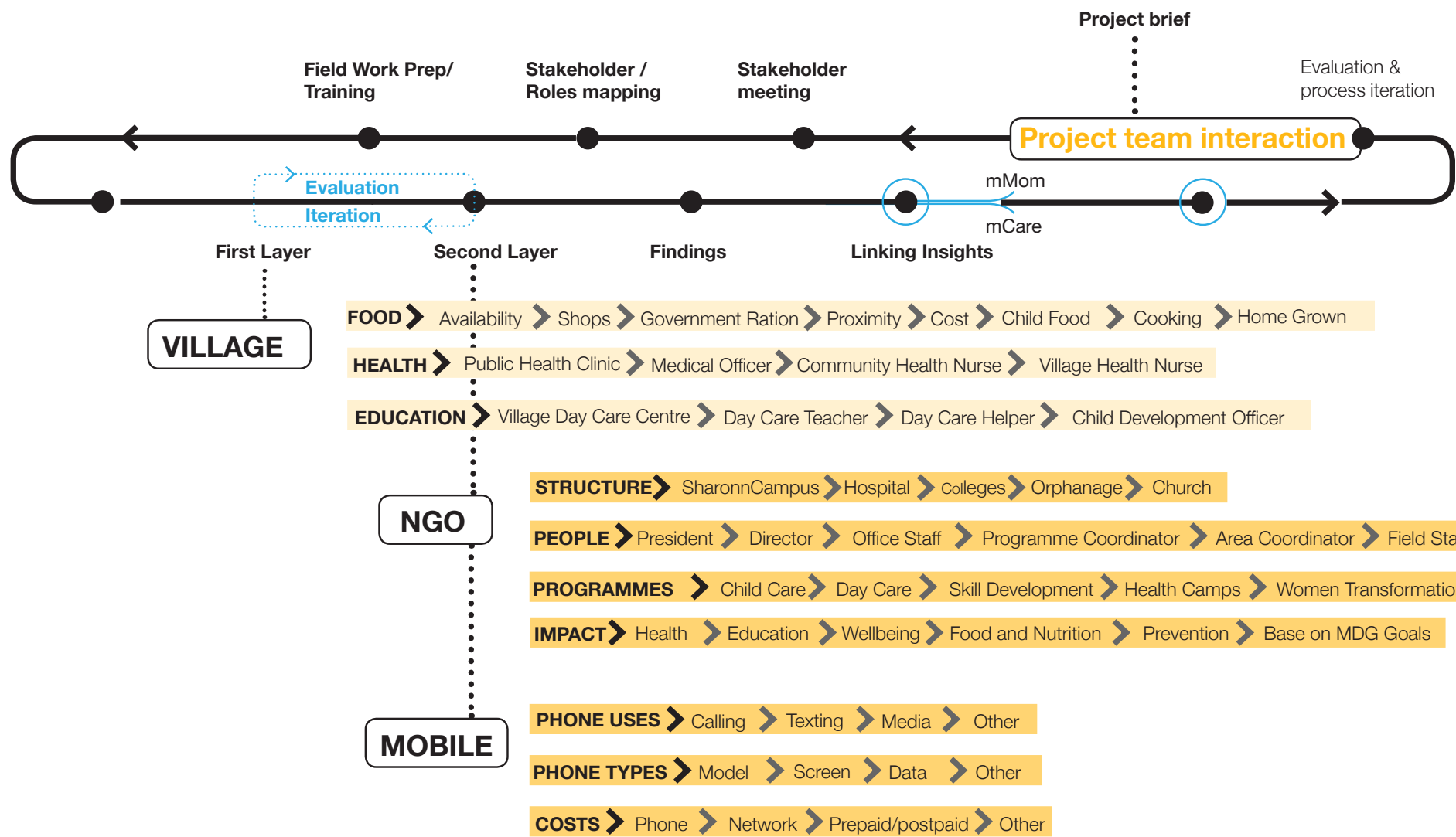
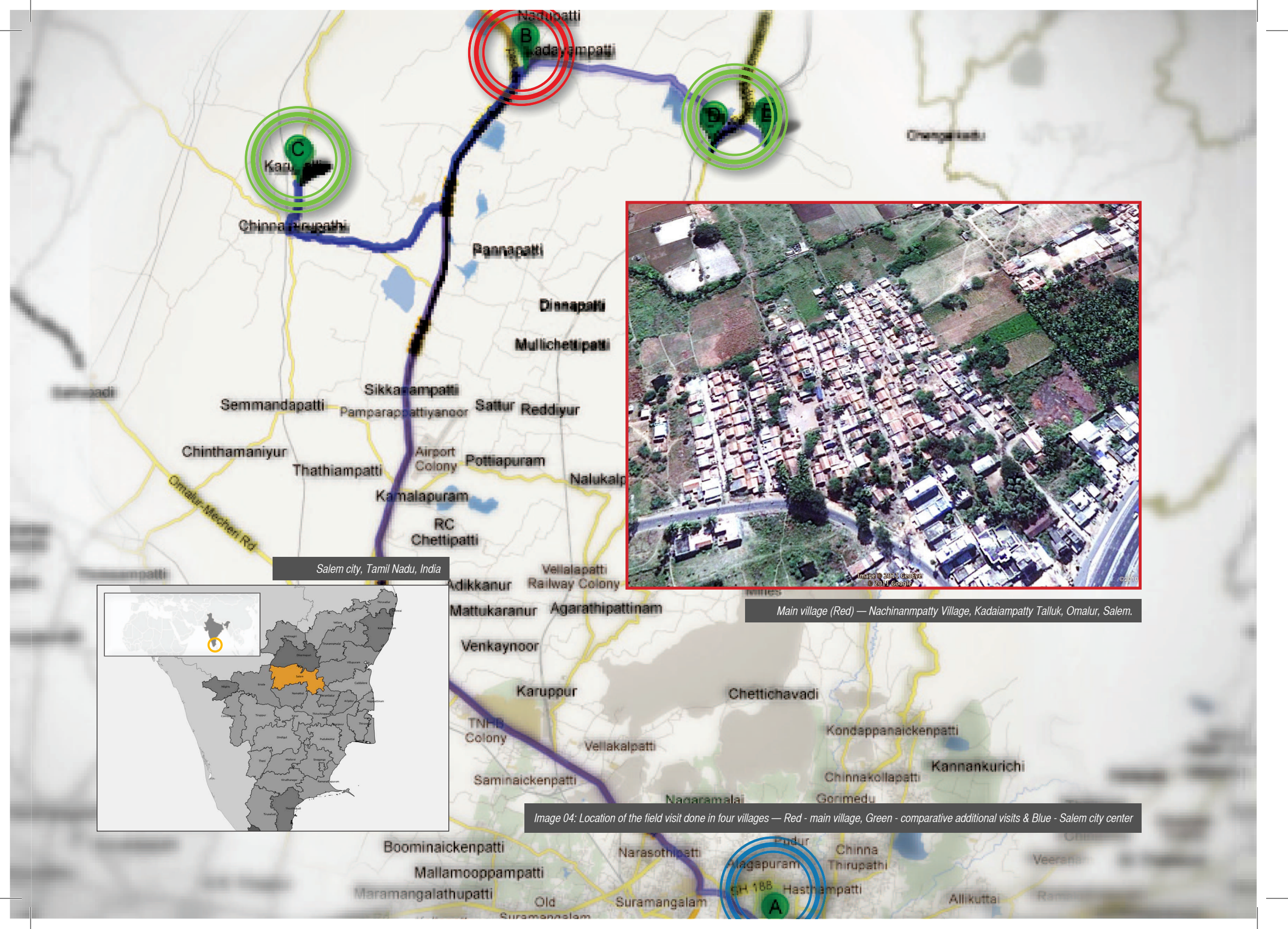
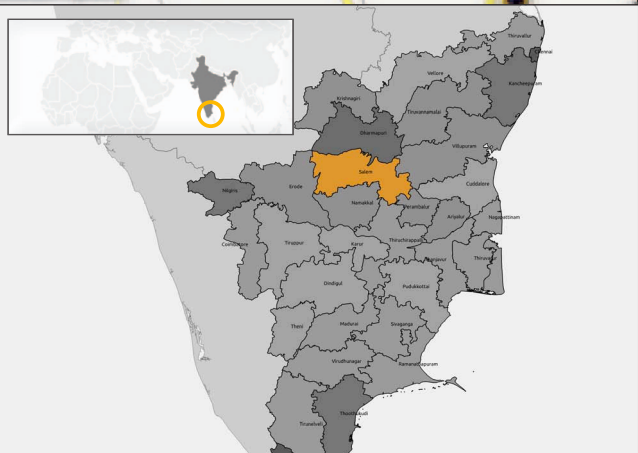


Image 0-3: Fieldwork one – Process



Salem city, Tamil Nadu, India

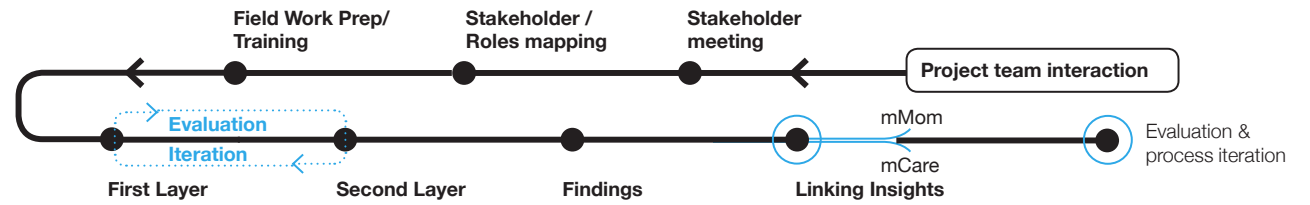


Main village (Red) — Nachinanmpatty Village, Kadaiampatty Taluk, Omalur, Salem.

Image 04: Location of the field visit done in four villages — Red - main village, Green - comparative additional visits & Blue - Salem city center

## Actors Identified

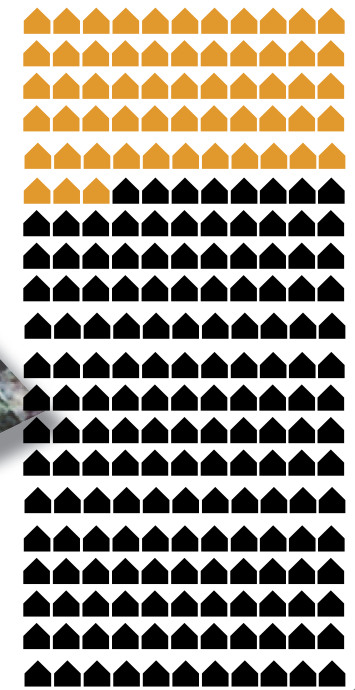
1. Mother with Child Under Two years
2. Community groups and Organisations
3. Local Government / Authorities
4. Business / Entrepreneurs



- Village Centre
- Day Care centre
- Shops
- Government Ration



~ 200 Houses  
 300 - 350 Families  
 53 Interviews



- Education
- Health
- 31 Mobile Use Cases
- 3 Network Providers

Image 05: Field visit overview

community. Further to study of the macro socio-economic environment – Process, Communication, Power Structure, Programs from Government and role of local actors like NGO's. Understanding these different systems would help in the developing a solution that could possibly fit into a given context and then to explore the right ingredients to sustain in a long run.

The **field work preparation and training** stage involved a meeting with other researchers to exchange ideas of on how we collect our data and what areas we could work together and use each others expertise. The project had organized a seminar on “Ethnographic Methods in the BoP Markets” given by Sara Lindemann. Sara shared her knowledge on BoP research project at Aalto since their research groups had conducted ethnographic field research in India, Russia, Tanzania, and Brazil. She gave insight on methodology, tools like stakeholder mapping, practice theory, gathering deep insights and shared her own experiences in practice from the field. Her reflections on her own field trip that stayed with me were the importance of clearly understanding the overall aim of the project versus your own aims within the scope of the expectations for the project. This input resonated with me and grew with my own work over the course of the field trip.

The fieldwork took place for five weeks from October to November 2011. Next I will discuss the process, and chart important highlights from the field research that occurred over discussions, meetings resulting in iterative processes with the team and stakeholders.

## Field Reflections

I began the field study firstly by exploring and trying to understand the needs of the given community. Second was to understand the community's lifestyle and behaviors. The third was to decipher the roles of individuals, organizations and institutions and their systemic influences. The focus was on getting as much as groundwork from the community while in India. This would mean working with the local partner NGO, Indian Gospel League (IGL) and getting their support to the maximum. IGL has had considerable experience locally, working with the people and is locally active. IGL would help establish names of people and organizations to talk to in Tamil Nadu. As an NGO, some of the activities of IGL have helped reduce infant mortality rate in Salem district in Tamil Nadu where the NGO is active. The work was initiated by finding out what has IGL done previously to reduce infant mortality rates in various villages. This was done by talking to individuals involved in IGL to get as

much information as possible through in-depth interview processes, and this would further help in establishing more contacts for further interviews.

The interviews I did in the village were mostly open-ended. The initial lack of clarity and understanding of community made this beginning stage open-ended in nature. Observation was key and looking for opportunities to do interviews on everyday matters of the people and their lifestyle helped to validate the community lifestyles. The term observation will be widely used, but the process was hardly limited to observation alone. It involved to the large part listening to people, getting a feeling of what is going on and processing the conversation to reflect and ask questions that were relevant to their local context. The first few weeks will be referred to as the **first stage** of fieldwork. This stage was to mainly acquire a sound knowledge of the village, people, and institutions that shaped their lives and behaviors. The initial approach was shadowing the researchers conducting qualitative and quantitative studies in the nutrition and the nutritional anthropology group. Listening and picking

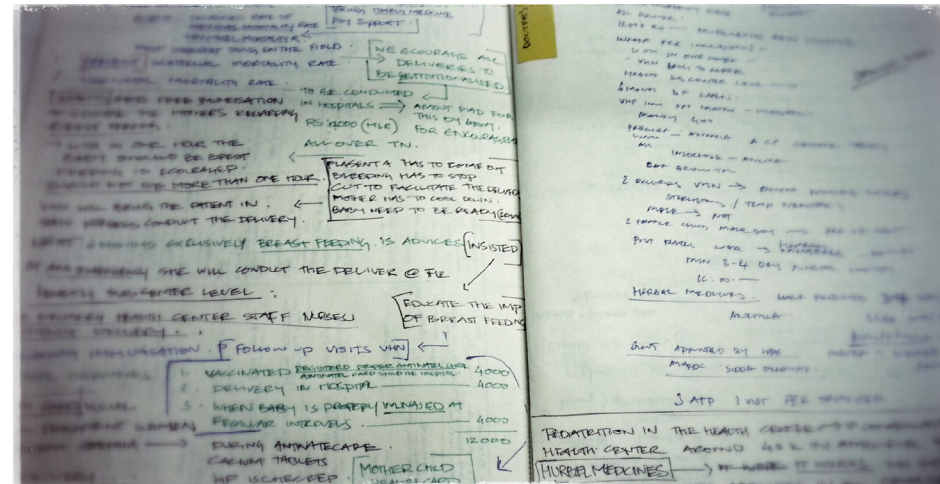


Image 02: Example of field notes

up on local issues while researchers were doing interviews was not easy, but something that was adapted after the few initial days. Firstly because of the language barrier and secondly the translators were new to this process themselves we soon began to realize there were things lost in translation. The field notes (**Image 02: Example of field notes**) from shadowing would later be further developed into points of discussion and in-depth interviews. After each of these shadow sessions, interviews on some basic questions about mobile use by the users were conducted. Interviews with mobile



use were done after the session by the researchers in order to prevent any influence the research regarding the nutritional studies. There were no specific patterns to this process but as the days passed a collective understanding was allowed to emerge from discussions and conversations daily with the research team. A lot was left to evolve naturally as the discussion and feedback from nutritionists and nutrition anthropologists helped further add areas that needed better understanding while being present in the village.

The image (**Image 03: Fieldwork one – Process**) represents first field study process. The following text will use the terms used in the figure and is highlighted in bold.

In the **first layer** was the outer shell of the field study and this was done to get into the everyday lives of local people and community. This called the first layer because it was the groundwork for finding out information that lead to other in-depth interviews for the next stage and was carried out in an open-ended way, through shadowing that involved following other researchers in the field and observing the situation, conversation, people, and interactions to understand local dynamics. This stage included photos, videos, field notes, and audio recordings that gathered a broad overview of the everyday lives of people in the village. The focus was on what they shared about their health, practices, childcare, school, mobile use etc. and created the basis of scouting for people to talk to in the next phase. **Second layer** was a more in-depth interview of people belonging to the larger systems of health, education, NGO, Mobile Store and Network providers. The questions were prepared based on the first layer and were audio recorded and then converted to notes. **Findings** were based on analyzing the field materials with their visualization into story format presentations to communicate the knowledge from the field to the rest of the team. It involved linking insights and information into visual mapping of events that took place to be able to share the knowledge with the team and stakeholders. **Linking insights** was about taking the insights from the analysis and synthesizing with various field data, people's needs, other similar mobile solutions etc. to the original GloCal proposal. **Evaluation and process iteration** was done in working with the rest of the team. In this stage, we needed to reassess which aspects needed to be rethought, ignored or introduced and this was based on the information we had already uncovered.

In the **second stage**, the feedback and discussions based on the understanding gained from the first stage aided to create in-depth interviews questions. This was also gradually iterated over skype / email conversation with the project researcher and the field research leader. The dinnertime

conversation with the research team eased in gaining better understanding of the village from the team's perspective and to plan ahead appropriately. The constant exchange of field learning with the research group helped frame the materials for the second stage. During this stage there was enough knowledge of what information needed to be collected through in-depth interviews from the IGL (management, administrative and field staff), Day Care Teacher, Day Care Helper, Public Health Clinic (PHC) – Medical Officer (MO), Village Health Nurse (VHN), Local Mobile Shops and Local Mobile Network Operators. The fieldwork was done over a period five weeks. I will focus on the key findings and share the process of getting to the findings.

The first village we worked in was about 30 kilometers north of Salem City in Tamil Nadu. The village was called Nachinanmpatty (**Image 04: Location of the field visit done in four villages – Red - main village, Green - comparative additional visits & Blue - Salem city center.**) This was the primary village we studied in depth. The village consisted of approximately 200 homes, with 350 to 400 families living in this village. This information was not available from IGL and is based on a rough estimate from the locals. The houses were verified with a Google satellite image by counting number of houses in the area we covered. (**Image 05: Field visit overview**) This was also verified with 2006 India Census. Interviews were conducted at 53 homes. These were also open-ended interviews and depended on the availability of the household members. The interview focused on general information to break into a conversation with the members. Through this process, I had Identified average house expenses on food, where they got their daily food and the amount they spent every day for food. I was looking into family practices of everyday life and the number of family members and their social economic status. The employment and income were recorded during this process thirty-one mobile use cases was also recorded.

The questions asked at the interview consisted of – Information on the family including age, number of children and members living in the house. Some of the other information covered were occupational information like how far they commuted, nature of work, income earned, food habits, were they brought their food and how much they spent on buying them. The questions were asked through the interpreter who transliterated it to the people interviewed. I used the question for information gathering, but I found it as starting point to engage in the in-depth conversation. For example asking about food prices brought up issues of affordability and issues of not having a stable job making life difficult. This eventually led to being in a very personal space of the people and in many ways created an opening into individual and personal issues of the village residents.

These interviews led to verifying this information, like that of the food costs, with the local shops, availability of the food etc. A quick scouting for what was available in the local shops and how much the daily vegetable cost was also done. Based on information from the nutrition researchers I also had started to look into the availability of green leafy vegetables since the Village Health Nurse (VHN) recommended them to postnatal and antenatal mothers. Knowing the availability and price of food was important to better understand why the women did or did not follow the VHN recommendations. In the village, most streets had the shops and most households could access them in less than five minutes. Learning about the shops had helped to understand the daily activity and habits, like buying of vegetables, meat, kids supplementary food, and nearby access to pharmacy and phone shops. As part of this I also looked into the Village Ration shops (Subsidized food positions stored by the government).

**The Village Day Care Center** – This involved in-depth interviews with the Daycare teacher and the helper primarily at the base village. Later on, two more village day care was visited giving a comparison of the base village. The process involved taking field notes, photos documentation, videos of supplementary nutrition food preparation, and midday day meal cooking sessions. This led to insight of current practices of training as the day care was an instrumental part of awareness and health related systems that work in benefiting people.

An open-ended interviews interview with the Child welfare worker was also conducted. One of the last days at the village I happened to run into Child Welfare Organizer working for the Child Development Services Scheme. This was the organization that is in-charge of the Preschool and the day care center. On her suggestion, I checked a village nearby which was few kilometers away called Denishpettai. This is how I came to know of the third daycare, which according to the officer the center was functioning very well and wanted me to get the comparison with the village we were at. She mentions the daycare we were at had not been renovated in eleven years and was in need of a lot of improvements. She spoke of the teaching resources used for training and said the resource books helped the teachers to inform Antenatal and postnatal (ANC and PNC) meeting at the daycare center. I got some good information in comparison to the village we were at and how drastically better it was in the nearby villages even though it was only a few kilometers away. Highlighting a stark contrast with the conditions the residence who were mainly lower cast with a low rate of literacy in the village the study was originally conducted in. The preschool seemed to work well in other villages as a means to communicate, educate, and bring awareness

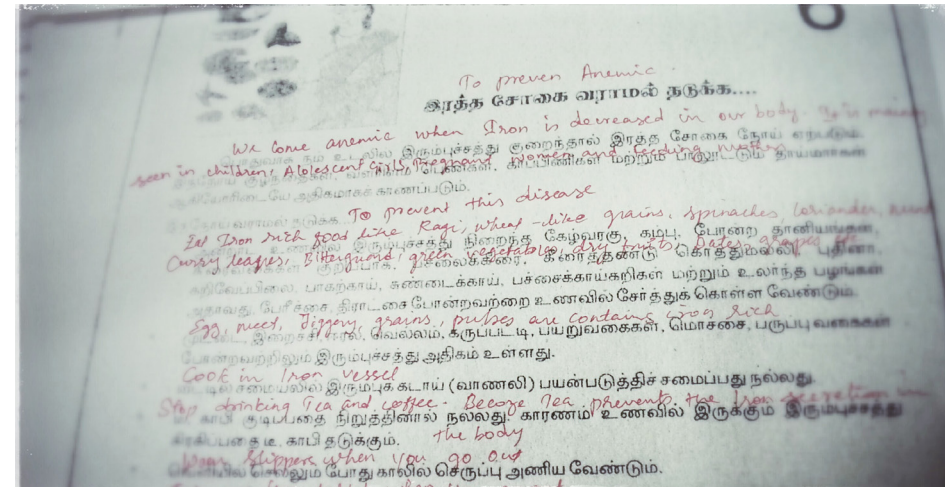


Image 06: Translated teaching materials for ANC/PNC shared by the VHN at Denishpettai

to ANC/PNC and young adolescent girls. The teacher in that village was very active and courteous to allow me to take pictures and document all the teachers teaching materials including the materials they use as guides in these classes. They were mostly in Tamil and I got help from our interpreter to help translate what was in the pictures to English (**Image 06: Translated teaching materials for ANC/PNC shared by the VHN at Denishpettai**).

**Health Systems** – The visit to the Primary Health Clinic (PHC) included an in-depth interview with **Medical Officer** (MO) at the PHC. The interview was a walk in interview without a prior appointment and officer was very helpful and gave insightful information. The interview was documented using an audio recoding and later transcribed into notes. Most of the information was about the kinds of services available to the village community and how easily accessible they were. The following are few topics I had asked the MO – Maternal Health, Child Health, Family Planning, Adolescent Health/ ARSH Initiatives, Medical Officers Training, Infrastructures & Human Resource, Mother-child care card Information, Education & Communication (IEC), the field visits to the village, about Antenatal Care & Postnatal Care offered to the villagers and about the meetings with VHN and Village head mistress.

The MO shared the following information during the interview – The primary concern for the PCH and the state government is to institutionalize every delivery and this has helped prevent and reduce maternal mortality rate considerably in the state of Tamil Nadu. Deliveries he said needed to be

done in the hospitals. To encourage them, institutionalized deliveries were incentivized in the form of money to the family. Other efforts were made to support pregnant mothers via birth companions — someone from the family would be trained by the VHN on how to take care of the pregnant mother (how to breastfeed, how to avoid infections, nutrition aspects, timely medicine, and psychological support.) The mothers were advised to breast feed within one hour of the delivery and should not wait more than the said hour. The mother was also asked to breastfeed for the next six months exclusively and was educated on the importance of breastfeeding.

With regards to immunization, there were follow-up visits by the VHN and these visits were also incentivized by the remunerations to the mothers. This process was done in three stages — at the stage of vaccination registration and proper ANC check Rs.4000 was presented. Second, Delivery in the Hospital Rs.4000, and third on completion of the baby's proper immunized in regular time, Rs.4000 was presented. In this way giving a total of Rs.12000 to the mothers incentivizing institutionalized childbirth. While the MO explained this, on checking with villager later very few people knew of these schemes. The second and the third village did have couple of women who said they received money that was offered as bank transfer to their bank accounts. Few other things mentioned were about incentives for family planning and trimester visits by VHN. Mobile phone was offered to the VHN and the VHN had the phone calls with the mothers through this mobile. He also mentioned it would be good to have an application on the mobile that could automate these reminders. He recommended — *“immunization schedules can be programmed and sent to the mothers as reminders.”*

***Village Health Nurse (VHN) at the PHP*** — One in-depth interview with the VHN for the near by region was conducted because the base village did not have a VHN at the time of our study. The interview also confirmed what the MO had mentioned, as the VHN spoke of most of the same topics almost in a repetitive manner. She also spoke of difficulties about enormous area she has to cover. She said along with visiting different villages she was also entering this data at the Community Health Center. She said that the local government were working on ways to sending text messages to women in PNC / ANC. I also got to interview few mothers in the same village to understand how the VHN helped them. The mothers mentioned the VHN helped with vaccination reminders for doctor's visits and also were helping in process of setting up bank accounts that was necessary for monetary incentive by the government.

The VHN was also responsible for holding meeting with the village Antenatal and Postnatal mothers. Much of the States work done from the government's side to reach the people at the grassroots level is through the VHN, and Friday meetings at the village day care center were conducted to build awareness and information to mothers. Few key elements in these meetings were — Health, Nutrition, Anemia prevention recommendation, Breast feeding, Pregnancy registration, Food habits for adolescent girls, Vaccination for mother and child, Proper usage of mother-child health card, etc.

***Interview with IGL*** — An in depth group discussion with the NGO involved participants at three level of the organization — Management, Administrative and Field staff. Their core work was as a mission for evangelical church planting; along with this their campus had a cancer center, a general hospital, a children's home, a primary school, and an industrial training center. The interview was done with different ranks of staff to allow for discussion and gathering of information at all levels. Few of their programs involve child care, day care, skill development, health camps, women transformation and their key work was grounded on what they called a holistic project with emphasis on community development programs. A lot of this work is done under the umbrella of community development programs trying to reach the needs of the people. The key staff involved in this work, are called the field staff. This staff has the direct reach to the community and are actively involved in the particular village they are assigned to and mostly come from these villages or neighboring areas. They are involved in mobilization, including helping with government initiatives in an informal way. One thing that came up was about the village infant mortality rate and its availability in this village. The VHN had not been active in this village since two to three years. Due to difficulties in working in this village she had resigned. There was not much actual data about this village; much of the village data about birth and mortality as such would have to be accessed from Government census if available. This would be important to have to have a base-line to measure further progress or impact of the solution. Most of the materials used for educating and awareness building by the field staff was based on what the state recommended. The field staff was not usually involved in ANC/PNC meetings nor meetings organized by VHN.

***Mobile Use*** — Interviews was conducted in 53 homes and from these interviews of the villagers about ninety five percent homes had mobile phones and mostly used it only for incoming calls. There were very little or no text messages being used by the villagers mostly because of the low literacy rate.



Image 07: Mobile user - One of the few cases of women owning a phone in the village

In the village the average mobile recharge is about Rs.10 - Rs.30 a month. To give comparisons of the money spend on phone use — average income for these users are Rs.200 a day (approximately three Euros). An average household expense on groceries is Rs.50 a day (thirty cents). Almost all of the men I interviewed said their wife used or knew how to use a mobile to call but did not use it for anything else like texting or listening to music. In general; the men in the house owned the mobiles with few exception women also owned one where the income level was much higher or the women were educated (**Image 07: Mobile user - One of the few cases of women owning a phone**).

Most of the people in the village were using prepaid phone cards. They moreover do not know what their phone plans were called or any specific information about the network offerings or kinds of operation platforms. The data package use was not known to any one interviewed, the people only knew of prepaid or post paid. This was because these phones are basic models without data capability. There were also about five cases where mobile phones were used for entertainment — for listening to music or few for watching videos of local movie songs or in one case watching full-length movies. The amount was loaded from the near by mobile phone shops referred to as recharge store for Rs.100 for 2GB of music. Some of the people updated to new music every month. I conducted brief interviews to verify with the mobile shop and tried to

buy music myself. I realized it was not particularly safe because I lost all the data I had on my phone. I was charged Rs.50 and was told that I would get 2GB of music (Tamil movie songs) and got 250Mb of music and lost my own data in my phone. The safety of private or personal digital data on phones in the hands of these unauthorized dealers is probably not a good thing.

**Mobile operators** — Towards the last weeks I had a good idea of different kinds of mobile operators the villagers were using. Based on this knowledge I conducted in-depth interview with two of the main mobile network providers the villager's mentioned was using (Aircell and Airtell) and one randomly selected (Vodafone.) These were walk-in interviews and conducted to identify possible similar application. It was also to understand if the local mobile operators provided any mobile services to pre-paid customers, like the large numbers of rural population and villagers I interviewed. One of the common factors that rose was that these services are mainly text based and the large rural pre-paid customers were illiterate. This eliminated the possibility of text-based services to these particular customers segments of the mobile operators. There were a few audio-based services and some provided mass text forwarding capability like services for university informing parents of college students of monthly attendance.

## Findings

### Analysis

One of the key information from the household interviews for mobile use were that only a few women in the community had a mobile phone. As a device solution for the mother — lack of ownership and access to mobile phones would hinder viability of the mMom concept for mothers. It would be a challenge to implement based on the fact that the phones were used mostly by men and was taken with them to work. While it is not the case that women don't use phones outside of this community, it was a matter of the cultural norm within this community. Predominately this community being lower caste strata factors for such limitation of phone use by women. Lower caste could be the reason the community had low literacy rate, customs and taboos that were obstacles in general for progress. In talking with the rest of the research team, we also realized the mobile phone use by women in the family had caused conflicts within the family. The phone would have to be presented to have much more added advantage or usefulness for the

mothers than to use for an application that provided nutritional information only. The mothers who mostly stayed in the village had no use for a phone apart from contacting their husbands. Unless it had other benefits the phone usage would have been a challenge in itself at this time in the community.

Despite the level of poverty, some villages seemed to be working better than others in dealing with mother–childcare. They seemed to be working well when a village health nurse is able to reach the people in communicating and educating mothers about antenatal care, postnatal care or childcare. She directly worked with mothers in providing not only a knowledge base for health and food practices but also followed up on vaccinations and scheduling for antenatal care postnatal care offered to the villagers. So the village health nurse becomes one of the primary gatekeepers of information if she can get to the people and vice versa. The challenge is when she is not able to get to these villages for example like that of the village we worked in, a lack of information and sometimes misinformation about antenatal care or postnatal care seemed to be what needed to be solved.

Another finding that is of importance was the role of the village day care center and a primary link from the state government services to the people. The village day care center, when studied carefully, works like the heart of the village. It not only has programs like mid-day meals to keep children in school, but also links to Antenatal Postnatal mothers' to weekly activities. They did this by creating group gatherings that educate the women about right practices. This is supported by the government's child welfare organization. Every village day care is supposed to have teaching material for the teachers and is also provided with tools and education materials to run and host week's meetings and classes for antenatal care, postnatal mothers, and adolescent girls. There was information about immunizations, nutritious food, focus on green leafy vegetables, correct breastfeeding practices, preventions methods for diseases, and a variety of information was covered in their sessions. The problem arises when the day care does not work in this manner, as the government is not able to reach all sections of the society as reasserted by a recent report from Nandi Foundation (HUNGaMA Survey 2011). This has been the most important finding of the systems that currently works but is not able to reach all strata of the society. On further analysis of my data, there is a need for a solution that can link and facilitate the existing systems that work. The system that can replicate is the knowledge from VHN, Day Care, and Teacher's group sessions, which could then be spread in a centralized manner through a mobile-based technology.

One of the reasons these villages have had very little impact is it is tied to the lower caste taboos and norms that are still hard to erase off. This coupled to the low literacy rate becomes a huge challenge to work with. Talking to IGL staff confirmed a lot of similar villages in this same area are stuck with no state welfare reaching them. It is important to consider beyond a stand-alone solution like food and health information on mobile application because it becomes irrelevant if it does not take account of other systemic factors. This is also evident in the work done by IGL applying to a broad area of societal needs within the community. The organizations' community development program is essentially based on the idea of reaching all the needs of the community with long-term commitments to the community they are established in.

## Synthesis

In contrast to the possible obstacles to introducing mMom in the village, we had been convinced about the need for a solution to support the important role of the healthcare worker in the village. In this light, it is easy to prioritize the mCare application for the health workers.

The study in the village and the brief scouting done the neighboring villages emphasized the importance of the device for the Health Worker in two ways — one, this could be test-bed to further understand the need for a mobile based solution for the mother. Second, there was a possibility of connecting the mothers through a well-designed application. The women in the village were highly social and interacted with each other and the village worked as a large family. If the health worker has an application that engaged these women we can assume that it would also allow for platform to communicate their issues collectively. To engage people you need to make the environment appealing, but most importantly feedback and response with regard to their engagement is what would make the application effective for behavior response. In my opinion, the main reason that we should focus on the health worker is because there seems to be a missing link between public services to grass root level populations. The link of the existing public system and dissemination of critical mass awareness on health issues seems to be lost in villages like the ones we worked in. These villages were mostly slum villages and often have a series of issues, like unemployment, illiteracy, health, sanitation and the other cultural dynamics of caste is also prevalent. The issue also seems to be that the already burdened health system is not able to reach the most needed. At that level a tool that enables and eases the work of the Village Health Nurse can have a greater impact. The social or communal gathering nature of women in the village also highlighted the opportunity that an application that

has the capability providing not only ANC or PNC information but engaging with the issues these women had. This could make it much more effective with a wider scope of meeting community needs and cultural integration.

Community needs and cultural integration are indeed another opportunity with regards to the contents of the mCare application. One of the key findings from the research team was a need for adding a wider topic into the contents on the mobile phone. The solution should be inclusive of factors like, food nutrition information but also some touching up on factors of sanitation, health, education, wellbeing, and their rights - making the solution become locally active and important. We might not be able to design all this into one application, but the platform should be able to accommodate these in the future as an open system. For example this could even be applicable to another context like the middle class; where everyone would want to eat right if they know how much they would save in the long run by eating good and healthy. Not just save on health care costs but also keep updated with good health practice and know how of preventative measures. The question here was figuring out “How can we provide that thinking through a mobile application?” To change behavior is hard unless people feel like being a part of a larger system they want to belong to. The villager knows what is good health, what is healthy food and what not to eat yet they still do end up practicing unhealthy habits. An example is the village kids buying snacks on the way to school and this was a common practice, not an occasional indulgence. In such cases can the application help them make a better choice and save money? What we are trying to change is behavior; can we show clear benefits through a choice architecture. I believe what would benefit a lot is having the field findings from this first phase turned to workshop with experts from — technology, nutrition, business, design, anthropology, etc. to create what could have been a potential model or few different service ecosystems which could then be tested and prototyped to get feedback and further iterate.

One topic that could be considered in the educational content could be about incentives and free institutionalized delivery as part of their rights. Most people are unaware that this is their right to avail this public service. This could be introduced in an easy to follow step-by-step procedures on the mobile replication what is already in practice by the VHNs when she visited the expecting mothers. The state’s efforts in providing monetary incentives to promote institutionalized childbirth have directly reduced the

number of maternal mortality in Tamil Nadu<sup>2</sup>. In some instances some of the mothers did not know much of the process. The VHN had shared such examples — like following up with mothers to create a bank account to have direct transfers for these monetary incentives was tedious process as the people were not aware of practicalities in how to get it done.

The current information materials used by the day care centers could be useful references or used as a baseline for building an application that has similarities and respectful to the local context. Furthermore, this could help in giving design guidance to the system that seems to work when it reaches the people. For example, the current system reaching out to mother and child care involves, the village health nurse who is the immediate health personnel linking to the health system to the mother; daycare teacher or the Anganwadi (using the educational materials at the Anganwadi center) and the Medical officer at the Public Health Clinic. There is a possibility of utilizing the information used within this structure that can be digitized. **(Image 08: Current Health system reaching the rural areas)**. This can further become information that could guide us on the kind of application visuals or aesthetics for the mobile application as something that could work locally. Adapting the design and visual aesthetics to the local context would enhance the comfort of the local community to engage with the solution and making it one key aspect of having the solution be sustainable.

While first layer of the fieldwork were open-ended, in retrospect it gave opportunities for looking at things that was emerging. Like project researcher and nutritional anthropologist questions were easily adapted to the field work while on the ground. It allowed room for exploration and going outside the boundaries of the original plan in forms of design thinking. This highlighted the difference between a generalist and specialist that find its ways in the process of exchanging and bouncing ideas with specialist.

Example: Looking at the TV shows watched in the community was a question added on for looking into existing nutritional programs and campaigns on TV introduced by the state to help with malnutrition issues. Similarly scouting the different kinds of business in the community was also added on to think new opportunities of providing everyday beneficial dealing in their community — like buying vegetable everyday at the best price or finding best offers for other basic necessities.



Few things I would do differently in hindsight are creating probes through a process of co-design for the field study by collaborating with the rest of the field research team. Have tools designed for the translators to make better use of their local knowledge. Spend first few days on co-designing the field process with the ground staff and possibly people of the village; I feel making them participatory and engaging with the collaborating to solve their own issues would be much inclusive when inquiring into their needs.

One key aspect that was very helpful through the fieldwork was the open communication with the field team and they follow up calls via Skype, phone and email communications with the team in Helsinki. This different form of communications was indeed much necessary to navigate in the ever-changing field environment. Interactions with the team sometimes pushed towards looking too broadly, but most of the time it was becoming iterative cycles of verifying and validating. Visual tools for mapping with Google images helped to map number of homes in the village and idea of the kind of village and context in comparison to others nearby was also aided by this visual and technical aid. Most importantly, being able to listen to all parties and especially the community cannot be more emphasized. The most essential takeaway has been the ability to be translating ideas, thoughts, feelings and emotions of the community into needs that could be translated to constructive conversations with the team to grasp the local context and eventually aid the application development. At the core of it all was building the ability to listen, empathize and listen more to the community about their needs and interpreting their everyday context of local life.

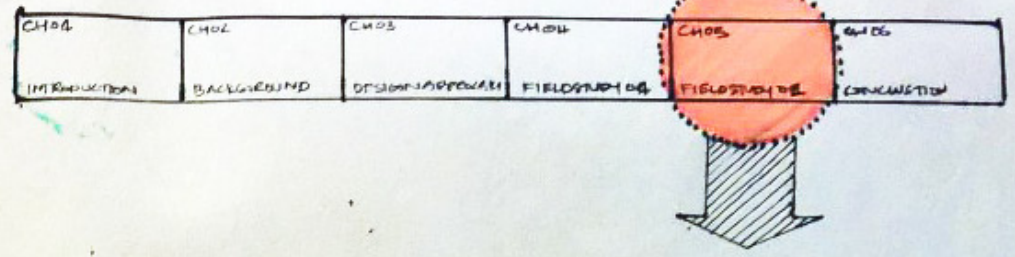
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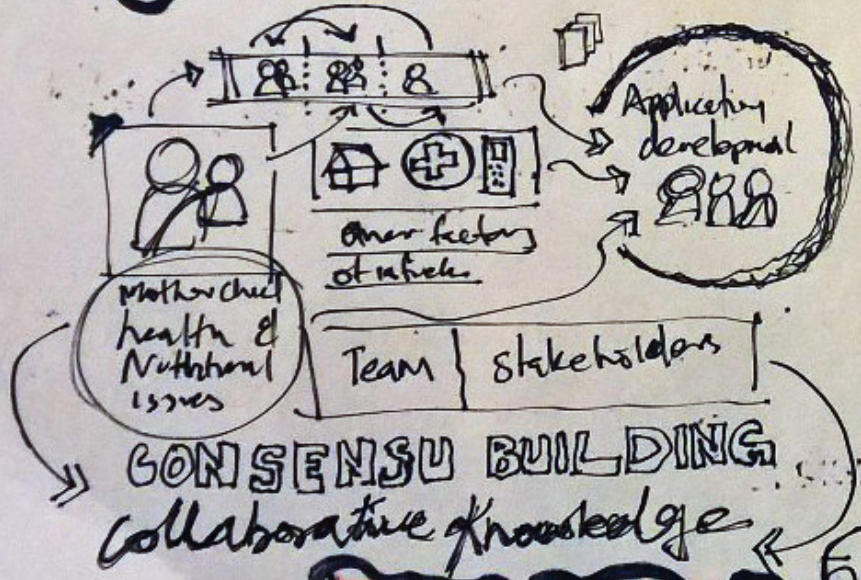
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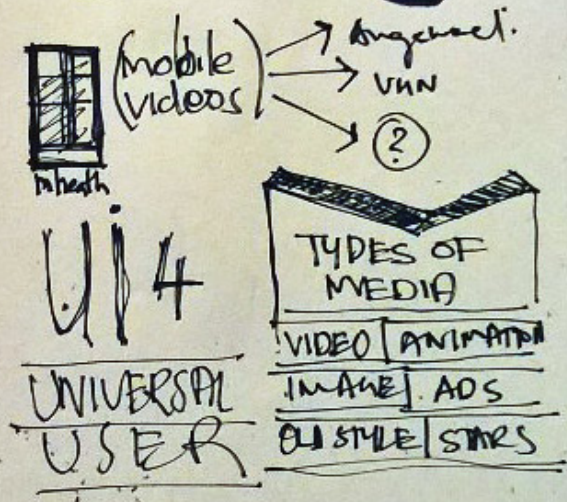




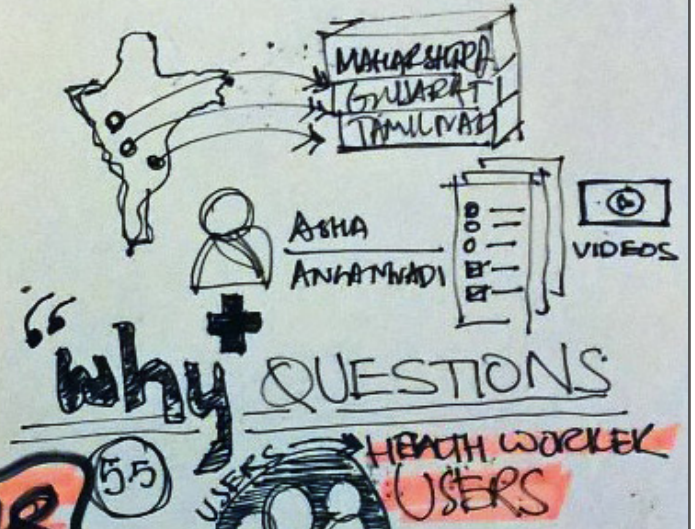
## 5.1 Composing the Collective Understanding of the Local Context



## 5.2 Mockup & Prototyping



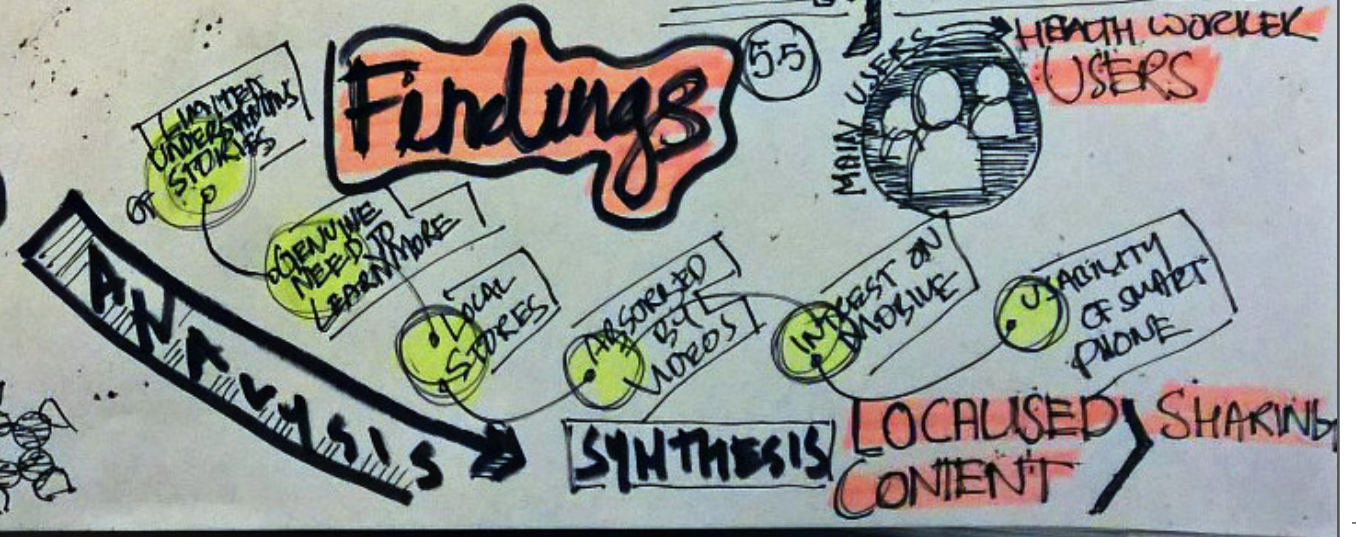
## 5.3 Planning field Works



## 5.4 Field Reflections

- 1 NASHIK MAHARASHTRA  
X7 ASHA  
+ NGOs
- 2 BHARUCH GUJARAT  
70-80% TRIBAL ASHA & ANM  
X5 DOCTORS WORKSHOP
- 3 PODUKOTTAI TAMIL NADU  
GROUP MEETING WITH ASHA | ANM | ICDS + MOTHERS

## 5.5 Findings



# Field Study Two

## Composing the collaborative understanding of the local context

On returning from the field trip, there were few meetings where we shared and presented our findings. These discussions helped in forming a joint understanding of the context supported by the visual representation of the local context. The visual representation aided in bringing the people involved, the teams and stakeholders who had not been to the field, get an empathic view of the local community and its context. As a collaborative activity, this mode of visual composing further aided the message from the groups knowledge into a form of consensus building. The knowledge from nutrition group, nutrition anthropology group, and from a designer's perspective aided the decisions for application development. Some joint decisions of what kind of content was something that gained a lot of importance. There was consensus on going beyond the topics of food and nutrition to add sanitation, health education, physical and physiological wellbeing, as topics to the content. Another consensus was the decisions on the need for an application for health worker and its priority versus that for the mother this was achieved in these discussions. Behavior change as a key element meant to work with existing support mechanisms that of the health care workers who were the key gatekeepers of the mother and child when it came to their health and wellbeing. What was added to the rest of the team from the design perspective was navigating from collaborative knowledge generated by the group to possibilities in developing the application. Comparing the information we agreed on toward something that could be tested and understood better, was what we began our efforts onto the next stage, of mockup and prototyping.





Image 09: Left Image, UI Mockup of videos on the phone to get feedback on mobile videos. Right Image, visual mock up for growth curves

## Mock-up and Prototyping

Concluding the first field trip ushered in parallel activities for the team back in Helsinki that included the field research team, content development, application development and concept development. We began to work on making sense of the different field data to plan for the next steps in line with what would be needed to build a prototype. At this stage we began working with the team to creating mockup concepts based on the contextual field understandings. Some of the challenges we recognized at this point were how to disseminate

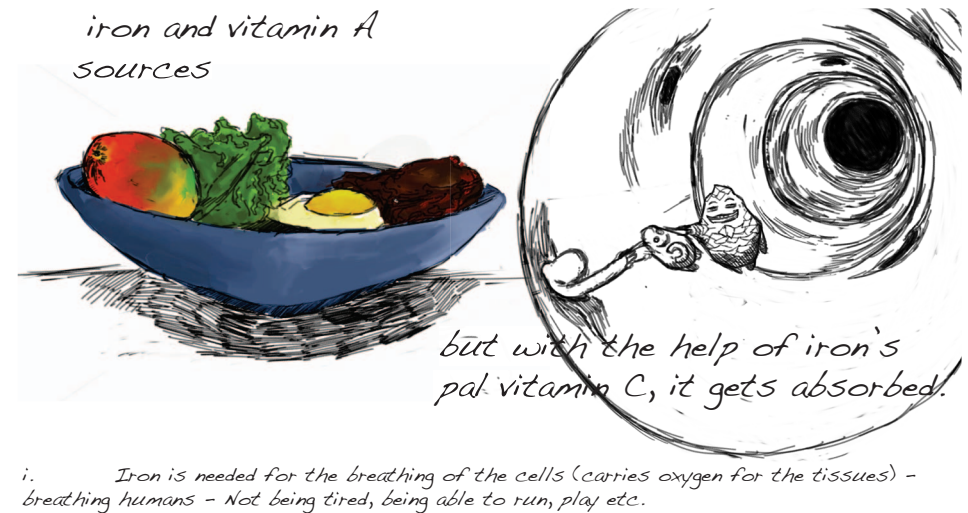


Image 10: Story sketches supporting the why questions to health workers —sketches by Juho Lemmetyinen

the right information from the nutrition group for the mother and child health in the rural context. One question that challenged the team was narrowing down on the types of content needed or useful to the health care workers. Keeping in mind that the improvement of health for the mother and child as the first and foremost priority we narrowed down what was really needed in order to make the most basic prototype on mobile phone. This bare minimal prototype would share educational health content or information. We all agreed that it was too early to make a mobile software version, instead what we needed was to validate how and if they will use a mobile phone to share any kind of content, be it text, visual static images or videos. For this work we began to come up with a set of images and videos representing stories of food and nutrition habits, which were compiled with the help of the content development team.

Another parallel activity that came after concluding the field trip was with the technical development of mobile device. Knowing there had been extensive data collection by health care workers possibilities on being able to deliver an added value to the mobile application to ease this process of data collection was explored. The developer had begun working out ways to be able to collect data on the phone, the same kind of data that is usually filled with a several sheets of paper by the health care workers. The experimentation was to bring in the original data into an excel format into a mobile application. There were complications to achieving this as there were too many varied fields to be filled and the challenge was being able to design it in a way that the health care worker would save time in collecting the data on the mobile instead of spending more time on it. We agreed that we leave this for a later stage of development. As the team's priority was being able to have visual content to be available on mobile phones to the health care workers so that the health care works were able to use it with ease. All of this had to be done keeping in mind the local context or mobile use, access to right content, kinds of mobile available locally and their knowledge of using a new device.

A minimal prototype phone was made ready. The phone we had used was a Nokia Lumia 800 as suggested by our industry partner. We agreed that the interface needed to be only minimized to icons so that would lead to the media content with nothing else on the home screen. So to start with, we focused on the user being able to handle the mobile phone for one particular activity of being able to view the content and comment on the different kinds of content available.

## Planning the field work

The field research had given us a good understanding of what kinds of issues were prevailing in the rural context. We knew that the missing knowledge on the ground needed to be shared with the health care workers. Within this knowledge, we did not know the depth or understanding of the health care workers of what they were advising as the practices and recommendations to the mothers or pregnant women. One of the key components that I felt added a lot of consistency in this field study was the Prof. Marja Mutanen's emphasis on "Why" questions to the health care workers and mothers. For example, we know that there was fair knowledge in the community about the importance of iron in food. Health care workers recommended eating green leafy vegetables especially for pregnant women and adolescent girls in order to have a balanced iron in daily diet. But we were not sure of how



*Image 11: Tools for the field: audio recorder, camera for video and photos, notebooks, writing materials, camera/ devices batteries, spare camera batteries and charger, memory chips, portable USB drive, laptop, travel / local power adapter, headphones, emergency medical supplies*

much knowledge did the Healthcare workers, mothers or the community knew of why the iron was necessary for their daily diet. This became a key element that needed to be understood in order to narrow down what kinds of content we can test on the field. The "Why" questions meant — asking why they thought it was necessary to take food rich in iron. OR why they thought pregnant women should take iron rich food. A set of topics was finalized by the nutritionists regarding general knowledge about three topics — Breast milk versus cow's milk, importance of Iron, and finally about Vitamin A. We prepared stories for each of the three topics accompanied by a set of why question. For example after giving the information about the importance of breast milk we would ask the health workers and the mother if they knew why this was important and why it was important. Similarly for Iron and of Vitamin A- Validating the "Why" questions, along with the basic use of mobile device to view content, and then being able to get feedback on the content became the three clear intent for the second field trip.

In planning the second part of the research and field study, we started with recognizing the need to establish a link to the community level. On narrowing down the focus areas, it was left to figure out the practicalities of the field trip. This process prior to the field trip involved identifying appropriate organizations (NGO's) that has had working history and knowledge in the areas of mother-child health in rural India. To get a wider contextual perspective and verify our assumptions so far, three different NGO's from three different wider

regions were selected to get an understanding of similarities or differences in practices to help better the mother-child health through studying and improving the health care workers intervention. Observing the field workers in different regions would help open up different issues and perspectives.

With the help of the team, I was responsible for planning of the groundwork, as I was to do this field study by myself. We made sure the NGO's were chosen from rural areas serving the mother-child health related issues. They are working with child health issues like malnutrition and improving mother and child health, in general. While selecting the NGO's care was taken to select the once working closely within the village area or locality for several decades' so there was enough existing data on the community. We had to make sure they knew the local community well and work closely with the local government body. The following were the NGO's that were narrowed down after a process of looking for the right match for the process of field research:

1. *Vachan located in Nashik, Maharashtra. (Focused in working in rural tribal areas)*

2. *Gram Vikas Trust (GVT) located in Bharuch, Gujarat. (Mother NGO for implementing government scheme of Reproductive Health & Child Care)*

3. *Rural Development Organization (RDO) in Pudukkottai, Tamil Nadu. (Working in child health care where they have health workers at the field level for day to day services)*

## Field Reflections

The field trip took place from 30.04.2012 - 21.05.2012. The three NGO's in the three different states facilitated the fieldwork with the local communities. Design observations were conducted to look into the cultural, technological and cognitive factors of a domain we intended to design a sustainable solution. The needs from a user perspective, how community functions socially was a critical aspect of the design of sustainable solutions. Developing a user-driven solution that could meet the immediate needs over the wants required active collaboration with local community and clear understanding of different stakeholders. The second field trip was to further understand viability and usefulness of the solution that was being developed.

The design observation in collaboration with the NGO's was to identify what sorts of mobile-based solution could be developed to support the NGO's (usually local staff who is trained to advice on health issues) or other rural health workers. The process involved working closely with the NGOs to come up with the best ways to approach the local health workers. Interviews of the health worker in the local areas were carried out to understand — how they currently worked with the community, and then find out how the mobile-based solution could be helpful for them.

The focus was on studying the field staff and working with the people in rural areas. Observing on how they did their daily work to look into use scenarios, settings and the needs to better design the mobile application were the objectives. In this process the idea was not only to do an interview but also give priority to the health workers reflection on what they did and how they did their work. At the core of this stage was the approach to use empathy by design in connection with the local context. This further allowed gathering insight and novel developments for how we could deliver designed solutions that met the health workers needs. Each interview started with the health worker sharing what a day in their lives was like. It involved introductory questioners but largely focused on observing them work and understating and empathizing with their local context. The process also included an interview with government health nurses, doctors, and other staff to get their feedback on what their opinions and ideas were on a mobile solution to improve the knowledge of a rural health worker.

One of the key objectives was to understand who are the users and who would have primary access or ownership of the designed service in question. Emphasis was on research for user-centered design to derive contextual basis for such a designed solution. The process involved research by means of ethnographic study that was design process supported to understand local society/people to help in the process of user-centered design. This involved close work with the rural health-care workers we had identified from the first field study in Tamil Nadu.

Further work in this field study was to help the process of identifying who were the right type of health-care workers to narrow down as the appropriate user of the mobile service: Ashas, Angenwadis or NGO health-care workers. The idea was to identify relevant steps through the field study with each of these health workers to understand their level of knowledge in the advisory practices they were providing to rural mother-child health care. It involved trying to grasp if a mobile service could fill an existing gap in knowledge using the education content on the phone.

An important aspect of this study was presenting the user with a series of designed artifacts that represented possible medium by which we could communicate with the user. The artifacts were single pages that represented — illustrated drawings with text with stories on the topics of Vitamin A, Iron and Breast Milk. After showing the illustrations on the each topic, the local interpreter interpreted the story in the local language. After which a series of questions was asked with the help of the interpreter to understand their level of the grasp of each story.

Another artifact used was different kind of movies (both animation and videos) on the mobile device that could activate their knowledge of the three health topics. A brief introduction was provided on how to use the phone since smartphones operating only with touch screens were largely new to rural areas. The process was done to have the health worker experience using the phone with the content in it. Then to allow the health worker express their thoughts and ideas of using this within their own context. The method was used to understand which kinds of mediums of educational content could help the user in such contexts allowing for the better understanding of educational topics they wish to learn.

Further emphasis was given to understand who could be the gatekeepers of such solution, like organizations or parties with the capability of working with the community and further innovate such solutions. Identifying such organizations could enable people at the community level, whereby such meaningful activities deployed with very limited resources could also add value to ownership of such solutions.

The following are a summary of events that took place within the fieldwork done in three different states. As a part of the planned activity the NGO's visited in the three states included Vachen in Nashik, Maharashtra, Gram Vikas Trust (GVT) in Bharuch, Gujarat, Rural Development Organization (RDO) in Pudokottai, Tamil Nadu. Other visits during this period included — to the District Programme Office's (DPO) Integrated child development services (ICDS) Bharuch, to the Anganwadi training center at the Jai Mataji Education Trust, Valia, Baruch, to the Center for Health Education, Training, and Nutrition Awareness (CHETNA) Ahmadabad, to the Self-Employed Women's Association (SEWA) Ahmadabad and to the Transnational Alternate Learning for Emancipation and Empowerment through Multimedia (TALEEM) at Ahmadabad.

### *Nashik, Maharashtra 02.05.2012 — 05.05.2012*

**General Information:** The village in Nashik was a tribal group Yesti referred to as Takur, Muhadev or Koli. The village was about few hours drive, through mountains and valleys. We attended a monthly meeting of the Asha and NGOs meeting at this village. Two field staff from Vachan accompanied the trip. On the first day, there were also there was also the Doctor from Vachan who worked closely with the community. On the third day a meeting with Dr. Dhurve was made along with the Vachan office visit. It was the off-season with regard to farming, so it was easy to find people in the village to talk to. Seven ASHA workers were interviewed; the location was remote mountain areas with limited transportation access to communities living there. The people belonged to the tribal class and were dependent on seasonal farming. Interviews were specifically about the stories we had created as part of the field study. The field staff translated the stories to the ASHA and also gave feedback. Most of the stories (Vitamin A, Iron and Brest Milk vs. Cows milk) were not well comprehended by the ASHA workers. While they understood the concept of each topic, the questions regarding why deficiency would be harmful to the baby was not clearly evident.

### *Bharuch, Gujarat 06.05.2012 — 13.05.2012*



*Image 12: The Asha and Anganwadi workers watching the videos on the phone, Bharuch, Gujarat*

**General Information:** This area we worked was in the Jagadia block in Bahruich an industrial city in the state of Gujrat. The populations here were 70-80 percent tribal and the nearest hospital was approximately



25 kilometers away. The Gram Vikas Trust (GVT) was involved in data collection for measuring the impact and worked closely with both ASHA and Anganwadi and the local government. The GVT facilitated interviews with both ASHA's and Anganwadi workers together in each village. In-depth interviews were conducted with two villages and through the stories made for the field study (Vitamin A, Iron, and Breast Milk vs. Cows milk). The public health center (PHC), in Dahej, was also visited. There were about five doctors here. The grasp of the stories was considered to be good. There were five health nurses and the Medical Officer (MO).

### *Pudokottai, Tamil Nadu 14.05.2012 – 21.05.2012*



*Group discussion with Integrated Child Development Services officer (ICDS), Asha, Anganwadi workers involving pregnant women and young mothers — Pudokottai, Tamil Nadu.*

**General Information:** This NGO was based in a village called Naisam in Tamil Nadu. The first interview was at the local PHC in Kadiyanpatti with the Senior Health Nurse (SHN). A permission was also granted by them to attend their weekly Tuesday meeting for their staff including one Block level MO, fifteen Village Health Nurses (VHN), and two SHN. The level of knowledge of these health workers seemed to be more advanced than what had been noticed in previous two states. The focus was also quite different since the dominant problem dealt here was of people with HIV. An interview was also done in one Balwadi Center (a pre-school run in rural areas by the government approval by an NGO's). A group discussion consisting of VHN, two Anganwadi workers from the different villages, and ANC and PNC mothers were also included

in this discussion. Another aspect that was functioning was the women's Self Help Groups (SHG) in the village to support the local community with social and economic activities supported by small loans from a local bank. There was also availability of an ambulance and toll-free 108-phone service (a free of charge telephone number for emergency service operational in 17 states in India.) They also mentioned that the practice of mid wife was abolished and for institutionalized delivery. The NGO also ran a Child Line programme to stop drop out from schools for preventing child labour.

## Findings

### Analysis

In traveling to three different states and about 2,380 km. provided a glimpse of the vastness India and the many differences among the three states. In order to get a comparative view, the interviews had been done in a consistent format. The study started with an easy introduction of what we were there for. Then letting the health care worker share their life to build a certain level of empathy for their context and life in that community. This moved us into three sets of stories that were shared with the help of a translator and after which a set of 'Why' questions were asked about the stories. We then introduced the mobile phone with the content and how to view the content on the phone. They were asked to freely look for the different content. Then the feedback and comprehension of the content was noted. The process in the field second trip was to take the fragmented, mixed and unclear data and understand and to synthesize the information. This allowed for discovery and to further action. The following were the key points from the data analysis from the second field study. It was such content and information in its part that provided the future direction and development of the GloCal project.

**Limited understanding of stories:** The interactions with the health care workers proved there was low comprehension of the stories about the 'Why' question concerning the information in them. Sometimes understanding of the stories and the corresponding answers was also very different. Even though the stories was designed with information to the why questions, there was still limited comprehension. Most ASHA workers knew about the importance of breastfeeding until six months to a year. For questions like *Why is breast milk better for babies than cow's milk?* They would comment for example "*first milk has power for child and it is what improves immunity*" OR "*it is like vaccination... it is good*" The difference between breast milk

and cows milk with regards to why it was different was not well understood even though the story could have specified "*Cow's proteins are too big & milk is too strong for a baby so the Baby cannot digest it properly and hence resulted in stomachache etc.*" Some of the answers to the question "*What is the difference between cow's milk and breast milk?*" could be "grass is eaten by the cow so the milk is also different from that of the mother" but there were also occasional few clear answers like "*Mothers milk is lighter to digest than the cow's milk and cow's is heavier so it does not digest properly*" showing that they could understand the stories and gain some information out of it.

There seemed to be a good knowledge of the importance of iron in general. The sources of iron rich food were also known. For example one ASHA worker, as we shared the story about iron, promptly said "*if you are anemic you should eat meat.*" Only a few could understand from the stories the relation between iron and oxygen to tissues OR lack of iron and protein body cannot build hemoglobin and thus low hemoglobin level in the blood results in anemia. Some answers were close to what was being shared in the story for example "*gives strength and avoids tiredness*" but without knowing why or how iron functions in the body.

The stories on the importance of Vitamin-A were understood relatively better. Not much information about vitamin-A's importance was known to them but when the story was shared "*We need to get the vitamins from food / Colorful fruit & vegetables & meat are good sources of vitamin A / Vitamin A is fat soluble and fat helps it enter the body/ Vitamin A is needed for sight and helps prevent mild deficiency to night blindness and long lasting deficiency to total blindness*" they grasped some aspects and in most case would answer "*helps in night blindness.. and prevent lack of vision.*" Further details of how fat helps vitamin-A enter the body seemed to be more difficult to comprehend in most cases.

**A genuine need to learn more:** In almost all of the instances irrespective of location, language, socioeconomic conditions or other factors there was a clear indication of the health worker wanting to learn more about the topics they are helping their community with. They all have been trained at some point and not had any updating of their knowledge or skills. The eagerness to know more and improve about the advices that they have been giving to their community is only understandable — they all wanted to be able to answer more and be able to have access to answers to the questions that they otherwise could not do unless they reached out to the nearest health center. Knowing that such information could be learned from a mobile device was something that excited all health workers.

**Local stories:** Health health workers in several areas used a method of utilizing local analogies to teach local people about health awareness and issues. Some of the prominent topics were analogies from farming and nature. There was a lot more of this practice in the village in Pudokottai, Tamil Nadu. The women would use examples crop rotation in the field in order to say that women should wait for two years for a second childbirth for explaining it is better for the health of the mother. Another one would be about their needs for enough water in the pond for the fish to survive in the



Asha and Anganwadi workers learning the navigating of the video player on the mobile to watch the videos

pond to explain that the mothers need to be healthy for the child in the womb to be healthy. Such localizing was happening in different ways. This was also happening in the forms of using the local example from experiences. One of the ASHA workers, responding to the story question "*Why is an anemic child tired & not playing in the cartoon?*" would explain the weak and sleepy child in her own village as an example to explain the implications of low iron and resulting in anemia. Such stories in most cases had much more impact and people tended to follow this recommendation as opposed to what was directly prescribed to follow from the public health care system.

**Absorbed by the video:** The content in the form of video was much more interesting to the women than visuals in the print or as still images on the phone. In some villages watching videos itself was a new experience, as they did not seem to have televisions in their homes. This was the case in the tribal village around the remote mountain areas in Nashik. A mobile phone with a huge touch screen in itself was absolutely a new experience and then watching videos and being able to control things at their fingertips brought out much laughter and happy faces with giggle among the women. The videos on the mobile were easily capturing health workers attention during all the meetings conducted. They were immediately giving instances of how and when they could use it. From conventional uses of making calls in emergency situations of a baby with high fever to self-help group meetings were all part of the discussions. They were able to understand most topics presented on the video. The PHC health nurses in Dahej said all people would understand cartoons. *“One of the doctor explains that people are not reading and are too busy, if the children watches cartoons they would the go on to explain to the parents.”* Still there was not a clear indication of whether they preferred movies to animation. They spoke of a variety of topics that could be beneficial. They seemed to have been interested in health related videos and could explain a lot better with better-illustrated videos, comparing it to still images. For example in the case for hygiene they would respond by saying *“wash hands video was important, it would be easy to show and explain to the villagers and children”*. They mentioned that it would be easier to *show people and make them do as seen on the video*. One of the Anganwadi worker’s who was a bit older commented on some reservation to adopting new technology saying that *“the video could be used for discussions but the interaction on the video could be learned faster by younger girls.”*

**Interest on Mobile:** One of the key elements to be noted again was that all of the health care workers had a mobile phone. They had been in contact with the ANC and PNC mothers with the information that was provided by the public health care systems on importance of vaccinations or even institutionalized delivery. In all the meetings with health workers, (public and NGO’s) and other parties they showed genuine interest in a mobile educational solution. Most of them also expressed interest in collecting information through the phone that could reduce the workload of ASHA or VHN nurses. As a priority they all mentioned the use for contacting others during an emergency through the 108 calls. Then they also suggested it would be good to get information on the various programs for pregnant women like the Janani Suraksha Yojana where pregnant mothers were provided monetary incentives for institutionalized delivery. There were also incentives to follow family planning

if the family decided to go through family planning after two girls in a family. There was a comparison to information sent on SMS about agricultural and information's relevant to farming. That this could be also done for health related issues. They mentioned that even though they could not read there would get the help of some one educated in the village to read such information.

### **A brief note on the use of a smart phone — Nokia**

**Lumia :** In all cases, the women were able to easily navigate the phone after showing them first on how to use it. On some occasions, the touch screens had issues,. Occasionally the screens would not respond to some of the health care workers fingers. This was distinguished as in most cases there were several women sitting together to operate the phone and doing it together. In such cases, there would be another woman who would do the navigation on the screen and say, “yes like this.” There were instances where the children of the health care workers would pick up the gestures much faster and then show their mother on how to navigate it correctly. In all cases on showing the navigation on the home screen to click on mHealth icon and then to choose images or videos — then moving from watching one video back to video folder to keep watching the rest of the videos was learned easily. They thought it was simple and could repeat this steps without much help.

### **Synthesis**

Based on the visit to three different states and having carried out the interviews, it can be said that different places had different needs and a gaps in knowledge too. For example, the ASHA workers in Tamil Nadu came across as being better informed and responding to the questions.

Then there was already a need to have a broader area of content as the issue of malnutrition is systemic and would require a multi-forked approach from looking at sanitation, hygiene, health, cultural issues, rights or the people and so on. As there had been work going in the team to understand and utilize the strengths of the existing Finnish Neuvola advisory system it would be very important to consider those strengths and develop content that are contextually relevant to local needs. In order to cope with such variables localized content was in need.

Another aspect that came to be evident was the ability of the health care worker's to come up with contextual stories after watching some content we had shared with them. So, for example, the farming analogy or the

local example of child who is weak because of anemia was clearly already showing opportunities for localized content. If the videos could be created by crowd-sourced means or if we could explore possibilities of user-generated content this would benefit the cause at large. This could direct us towards a potentially sustainable solution with regard to new and localized knowledge being generated and then being able to monitor such knowledge in the forms of stories that can have local impact. In one way this could enable learnings of the good and the bad practices in different parts of the country and systematically efforts could be made to remove or edit out the bad practices by a routine intervention by qualified nutritionist and health care professionals. Ethical use of such content needs to be carefully studied and share-ability of such local information is still unclear with regards to scaling up from one local context to other. In looking at benefits to larger population, such information should remain open and transparent. To take it further could there be opportunities to have real time data visualization of the content in forms of stories? Can it take further help to predict health epidemics if the data is coupled with health information collected by the health-care workers? Can the system constantly learn and evolve with needs and feedback from the users? Technologically all of this is already happening in different domains. Can this be synthesized into an affordable mobile device is the question worth exploring.

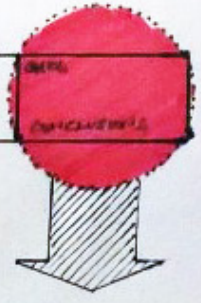
A narrowed down target user group would also have to be thought through a similar process to be able to connect with the local community in a deeper and more meaningful way. We so far connected to the local community with the help of NGO's. In this scenario, we now know the user is the health care worker. The direct beneficiaries are the local women whose health if maintained would result in a change for the better in issues of malnutrition and infant mortality. This systemically would affect not only the local community but the nation too, in reducing the costs and consequences of a future generation that is struggling to grow to become healthy adults. In an indirect manner the beneficiaries are also the empowered mothers, who could do well as an example in their own community, and also the health care workers who become gatekeeper's to positive local change with a reduced workload. Additionally, we would also need to consider what would be the nature of ownership — public-private-partnership versus social start-up in partnership with an NGO's or other formats. In such cases, there would need to be a careful break down on the ownership of content. Content generated locally versus content that is of professional quality communicating international health standards are two different things. In that too there needs to be a clear breakdown of who will manage such content. Lastly, if all of this were to be sorted out — will the solution sustain with regards to the local community using the solution? Then consider sustainability with regards

to the ability to have a sustainable model if it is not funded and supported by the public sectors. In that situation could be a sustainable business model with a reasonable impact. This is also the model we have been discussing with the NGOs and it seems to be a reasonable alternative to initiate as a test-bed or pilot in partnership with NGOs for raising funds.

Within the context of India at large, there are several factors to consider with competitiveness and sustainability of a solution. Fast changes in the use of technological adoption, the declining price of mobile devices, government incentives, and national level rolling out of Digital India are all important factors to consider. With the current stage for further developments on the GloCal application, the NGOs we have been partnering should be a good start to consider for partner organization for testing or prototyping. As these NGOs have good data and connect with the local communities this would help with easier formulation of designing a baseline for the measurement of impact at a pilot stage of such atechology deployment.



CH01	CH02	CH03	CH04	CH05	CH06
INTRODUCTION	BACKGROUND	DESIGN APPROACH	FIELDSTUDY 01	FIELDSTUDY 02	CONCLUSIONS

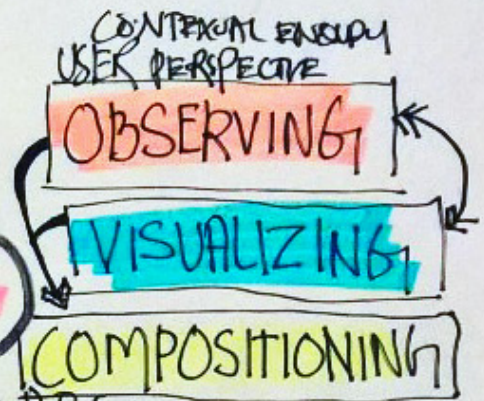


# From & For COLLABORATION

A toolset 4 the fieldbased  
DESIGN facilitator

↳ BUXTON (2007)  
↳ BRUNO LATOUR (2010)  
6.2

## A toolset 4 the design facilitator



## Learning from the Collaboration team

6.1



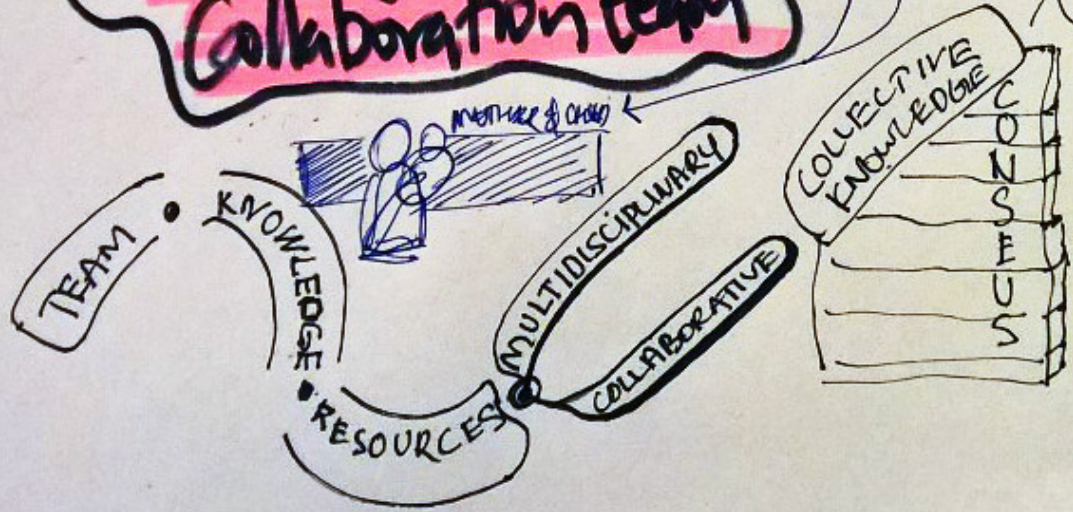
EMERGENCE  
COMPOSITION

ITERATIVE  
VISUALIZATION

COMPOSITION  
NEW  
CONCEPTS

6.3

## Reflection from practice



# From & For Collaboration:

A Toolset for the Field based Design Facilitator

## Learning from the collaboration team

As a key summary and learning from the project I now feel that it is important to pool in the knowledge and resources from different parts of the project, the teams, partners, stakeholders and most importantly the end users. The process is forced to become multidisciplinary and collaborative — for example relying on field facilitation with the support of NGO's who have a sound knowledge of the community. The project would need resources that are available for all parties involved and mutual collaboration is necessary. To uncover new ideas through multidisciplinary collaborations is unstable by nature; there are no previous expertise or knowledge of how to do this. This forces the team to invent new design process and ways to communicate. Breakthroughs happen when we mix disciplines. I have felt that as a designer, what has helped is a role, that of a visual messenger. In the collaboration, someone actively becoming a messenger and consolidating all the information from various teams and linking to needs of the user and context of the users becomes a way to navigate in uncertainty. This consolidation aids in moving forward. When this is happening though visuals of the local context the discussions remain relevant to the need and context the solution are designed to. What has helped to ease the communication and collaboration is the composition of photographs and visuals from the field findings like geographical location, number of houses, where people live, how far the stores were, location of schools etc., and into visual story presentations. The design training has had a great deal of influence in this process. It has helped communicating the research context and field leanings to others in a multidisciplinary setting.



*Women in the village playing a traditional game — The village is a very tight-knit community, in a way it's like one giant family — a well-designed solution in this context must sit seamlessly with the community — it must itself become an accepted family member*



The most important of the learning is learning from the different teams in the group. The key to facilitation with a multidisciplinary project is learning from your team and being inclusive of the different knowledge when presenting, visualizing and composing ideas and thoughts. Often the knowledge from nutritionist about the right food or the learning from the nutrition anthropologists when put out as a visual, representing a solution to the end user in the local context, the discussion evolves into new ideas and consensus on how to move forth in the project. In this situation constant reminders of what the people on the ground are saying help to stay within the context of the community. What has helped in hindsight is to show the emerging possibilities when the knowledge and findings of the nutritionist, nutrition anthropologist, application developer into a visual synthesis of product and service that the user envisions to meet their needs.

The most important contribution as a designer on the project has been the process of facilitating the movement of thoughts, ideas and knowledge. Moving from individual observation to a collective consensus through visualization helps to form a new knowledge — that is observed as a group; a collective knowledge through consensus. Further taking this collective knowledge through iterative visualizing with the feedback of the team gives emergence to a composition of new concepts. In this process, the key field-based knowledge of end-user their context that has been captured is constantly emphasized throughout the designerly approach of bringing together user perspective and their needs into a multidisciplinary team.

In summing up, I would like to end with sharing the toolset for a designer facilitator for inclusive, participatory and iterative process of facilitating a collaborative process. This should not be seen as a summary of my learning from the project, rather it is only a way to organize and communicate to others, that which could possibly be of use in handling a similar process of learning and practice by design.

## A Toolset for the design facilitator

In reflecting on the work done on the project GloCal and what the mind set of what I understand led me to think of my role as Designer Facilitator I would like share the three lenses I have used for taking the mindset into what it translates into practice. What I have narrowed down might not be very novel but I find it nevertheless fundamental to every design practice and helps aid design thinking. Additionally in facilitation I am grounded in going beyond the process of a dialogue for a desirable future to bringing skills

of a designer that helps build not only the creative confidence but also in composing actions to accomplish the solutions both things and processes. (Buxton 2007) In this view, I have used the following skills as a Designer Facilitator — Design Observation, Design Visualization and Design Composing.

### Observing

The act of observation would be first key aspect as a toolset of the designer facilitator. This concept could be used frequently as part of field research, and the value and can add to a project internally. A designer working as a 'keen' observer helps to understand the needs from a user's perspective. A keen observation is key to empathy. It helps finding a balancing of separating the needs from the wants. Observation is necessary for contextual enquiry and ethnography that brings forth the humanness to the design process. Understanding how a community functions socially is a critical aspect in designing sustainable solutions. Keen observation addresses the rules and behaviours that make up a community. Within the context of rural communities, a new solution to a given problem is like bringing a new member into a community, so the right ecosystems have to be created. The ecosystems in this context are the consideration or integration of whole systems that influence the use, ownership and sustainability of the solution. Thus observation by design helps build a strong human and emotional perspective for an empathically designed solution.

### Visualizing

The second toolset is that of the designer as visualizer. One who uses the potential of visual thinking in tandem with Observing by design. The visualizing process is one that brings the gained insights from design observation and then aligns to communicate it within the scope of the goals and expectations of the project. At the field level the visualization can aid experimentation with the end user through introducing mock-up of the solutions in use scenarios. The process then further helps gain better feedback from the team and then facilitates the iterative cycles of designing end solutions. Visualizing the thought process of a diverse group adds value to the project, in part or as a whole. The process of visually mapping and presenting information allows the designer to contribute as the translator of various bits of knowledge and diverse perspectives to gather a common goal. Focusing on the needs and directing to the end solution visually helps building consensus within the group to synthesize the knowledge at hand. The visualization could involve,

use of stories, visual reflections on local context, design development timeline and resource mapping. With an emphasis of the design thinking the designer as a visual thinker helps to prototype concepts in the form of storyboards, re-defining roles, iterate processes and documentation. The outcomes could involve converting long presentation and reports to easily understandable visuals in from of PowerPoint to delivering storyboards and concept boards for product development. This process can help identify what works and needs fixing. Lastly, designer as visual thinker helps build a common vision for internal groups, external stakeholders and again most importantly, end users.

## Compositioning

The third toolset is that of the ability to compose. This process is a synthesis of design observation and visualization to derive up on a set of constraints that helps the process finding solutions collectively. It helps to move from a divergent to the convergent form of design thinking. It helps in understanding the goals, gathering information and turning ideas closer to solutions that can introduce to the context. Designing a composition for me includes the process of arriving at prototypes, and designed artifacts that bring the solutions closer to applicability within the identified societal need. It also involves compositioning on the ground and in teamwork. Taking the meaning from the arts it could be understood as perfecting the inter-relationship of things and people that form a two-dimensional or three-dimensional art (Beuys 2004). I would like to compare this in the practice of design as refining the interconnection of different elements in a project by shedding light on the nuances emerging from within collaborations.

This terminology is not new. I have borrowed it from Bruno Latour(2010) who says that a composition is something that can possibly fail too. Putting together what is not there or merely there, merely visible like in the word composure having its roots in the painting, music, theater, dance, and thus is associated with choreography and scenography — everything can be reassembled piece by piece. Most interesting, of his take on the term Composition in his writing — An Attempt at a “Compositionist Manifesto” that I find relevant is his concept of a type of creation as, “something that has to be slowly composed instead of being taken for granted and imposed on all” (Latour 2010).

## Reflections from practice

This thesis has been, for the most part, an exploratory work with the right project and the right settings within the project. I have been lucky in finding just the specific ingredients; a multidisciplinary, collaborative project with aims of a positive social transformation. There is a basis for the thinking of every individual; their worldviews are formed by their cultural background, social settings, academic exposure, professional expertise, and experience of trying things differently.

While writing this within the academic framework I have also taken the liberty to explain through the first chapter the construct of my worldviews with things that matter to me. The things of the everyday events that we ignore are, in fact, the wickedness of global problems. Sustainability matters at this basic level of perception change, in how we see the everyday. The first chapter helped me understand the larger boundaries of my worldviews with thoughts on; the workings of the social sustainability sector that narrowed down as the domain that interested me. It has helped me to compare how design is changing to a collaborative to social activism, and emerging approaches that bring people into the heart of design process. Finally, it helped me introduce my thesis topic; the role of the designer facilitator — a field based design approach towards facilitating a collaborative health care project.

In the second chapter, I moved into details of my own experiences that helped my commitment to the social sector. I shared the project Abject Object as influential work leading you to introduce some current design practices relevant to the social sustainability sector. I looked at the participatory design, co-design, co-creation, Design thinking and then suggested the importance of measuring the impact — a process that can be learned from the social sector. I then talk about the opportunity that was brought about through my studies in Creative Sustainability program with a multidisciplinary teamwork with the project GloCal. The third chapter aided to build knowledge of design facilitation and importantly on emerging approach to design that is about facilitating collaborative actions through co-design for social change.

To the most part, my learning through the master’s thesis has come from my involvement with the GloCal project that I have used as a case study. This was mentioned as an experimental case because of the nature of my role as a designer facilitator. I think there are several learning aspects of the project that I was involved in. I was mainly involved in the project through my participation in two field studies where I employed a designerly

understanding. I have tried to make the best out of this time and found ways to be involved with the team. Having participated in the project one of the key roles of facilitation is also the access and interaction that is made possible with the group inside project, then with the stakeholders of the project and also very importantly with the users of the technology for whom the solution is proposed. Fortunately, there were plenty of such interactions and opportunities with my involvement in the project.

The collective work and the interaction with different actors have given the possibility of reflecting the three designerly lenses that I have synthesised as Observing, Visualizing and Compositioning. These lenses are what I have used during the project in hindsight; what is important is the ability to understand how the lenses have aided me in design facilitation. The observational lens gives credibility to the context of the user and opportunity to involve the users in decisions about what solution they will need and use. The visualizing lens is already a process of consensus building. It links and brings in the users within the project team and the stakeholders. This is a critical stage to get the users context right for the project as a whole. The views of the project group on how we collectively envision a final outcome becomes a process of further consensus building. This discourse allows for compositioning, a balanced choreography of interactions between people, integrating the right resources and orchestrated into a series of iterations to contribute to the designing of the solution. Acknowledging these designerly lenses as capabilities to grow with has been worthwhile and an ongoing learning process.

## References

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