Framing humanitarian action through design thinking: integrating vulnerable end-users into complex multi-stakeholder systems through ‘Agenda Space mapping’

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Abstract: This article explains how design thinking was applied as a research approach for the purpose of framing ‘Humanitarian Action’. Insights from an initial study demonstrated the challenging experience of designing for humanitarian emergencies. Inability of the humanitarian market to integrate the perspective of the refugee as end-users results in stakeholders not working together. Through a design thinking research process, ‘Agenda Spaces’ emerged as a novel way of describing humanitarian action. ‘Agenda Spaces’ demonstrates each stakeholder’s interests mapped in relation to others based on findings from participatory processes. The ‘Agenda Spaces’ approach also allows for the vulnerable end-user to be located as an integrated part of the system. This is a starting point for discussing long-term solutions to the problems inherent in humanitarian action. This approach is of relevance to anyone working within multiple stakeholder systems that include vulnerable and/or hard-to-reach end-users.

Keywords: design thinking; humanitarian action; complex stakeholder systems; vulnerable user groups.

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1 Introduction

Deforestation surrounds large refugee settlements, creating a number of problems socially, economically and environmentally (Lyytinen, 2009). When hundreds of thousands of people remain in a temporary refugee camp for a long period of time, the environmental damage can be enormous and long lasting. This can jeopardise the chance of a sustainable future for the crisis-affected communities. The average time a refugee spends in a camp is 17 years. Since this estimation was made, the number of disasters and prolonged emergencies globally has increased. The destruction of forest and arable land in Sub-Saharan Africa is particularly acute and 90%-95% of the energy consumption is related to household cooking.

This problem sums up the resulting framework of a four year PhD research project that was finalised in 2015. The initial purpose of my research was to develop a method to design off-grid energy devices for emergency settings. Off-grid energy devices are technological products that rely on energy generation independently of the electricity grid. There is expressed agreement that this is a cross-cutting need in the humanitarian sector (Gunning, 2014). These products may be a solution to the environmental damage caused by humanitarian relief.

Yet, the first interviews found that the ‘real problem’ was not expected or relevant to product design. The interviews described a wicked problem; misalignment of stakeholder agendas and a mismatch of worldviews in which product-design currently has no impact on the humanitarian objectives. The mismatches identified create a situation where it is difficult to achieve impact through design and innovation.

This article describes a research path which recognised the humanitarian system as a wicked-problem, followed by a research path described as a design thinking process, ending with four conceptual frames for a new humanitarian mindset that may make it possible to deliver humanitarian impact through design and innovation.

2 Background on humanitarian action

The humanitarian system (ALNAP, 2012) is a shifting conglomerate of stakeholders, globally and locally (geographically closer to the affected) who work to relieve the suffering of populations affected by emergencies. Stakeholders in this study are institutions which fulfill needs created in an emergency. The main stakeholders of this system are humanitarian agencies and non-governmental organisations (NGOs), donor countries, service providers/enterprises (public and private), the host government and local partners where people seek shelter. Governments which host refugees have a responsibility to protect them. They determine the extent that a refugee can work, study or seek citizenship. The host government is a major stakeholder. These governments frequently receive official donor aid (ODA) and humanitarian relief assistance. They are referred to within the humanitarian system as beneficiary countries, while the donation receivers, such as refugees, are referred to as beneficiaries. Humanitarian action is framed as ‘the overall international approach’ that brings together these stakeholders and should ‘be motivated by the sole aim of helping other humans affected by disasters’ (ALNAP, 2012).
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3 Methodology

A collaboration agreement was set up with the Norwegian Refugee Council (NRC) in 2011 with the purpose of conducting a state-of-the-art study and insights into the energy-related needs of humanitarian emergencies. It was decided that the focus should be on refugee camps in Sub-Saharan Africa. The reason was to find improved energy alternatives, due to an extensive problem with deforestation and destruction of arable land surrounding refugee camps due mainly to the dependency on firewood for cooking. Currently the main source of energy for humanitarian operational staff is diesel-generators while the refugees’ energy need is covered by firewood which they gather outside the refugee camp. The introduction of cleaner cook stoves, solar cell panels and solar lanterns are solutions that not only mitigate negative effects but have been shown to improve refugee-host relationships, improve educational opportunities and add income-gathering opportunities. The initial research plan intended that I would conduct two or three field-visits, where I would identify energy needs and use the traditional prototyping, testing and conceptual modelling path to find out how to design for humanitarian emergencies.

3.1 Point of departure: a diagnosis of the humanitarian market

A diagnosing study was used at the beginning of the project. This study consisted of interviews with enterprises and customers within the humanitarian market. The humanitarian market consists of suppliers and humanitarian customers who are attempting to meet the needs of emergency victims. The study was aided by graphic elicitation tools (Bagnoli, 2009; Crilly et al., 2006). This process generated insights about knowledge flow and priorities during the design and selection of products for use in humanitarian operations. While ‘thinking out loud’ during this process the participants gave important information about where they lacked information from the humanitarian customers. They expressed their perception that humanitarian customers differed from other customers, and how this affected the design process. This study identified mismatches within the market (Nielsen and Santos, 2013a, 2013b). Instead of designing for end-users (refugees) the technologies were developed from an interpretation of the multiple agendas of the developers and stakeholders and restricted by the logistic and cost-focused humanitarian supply chain. Designs were also developed based on trend reports from the World Bank, etc., indicating a market opportunity for a certain device. These humanitarian market restraints collide with sustainability intentions documented by humanitarian actors to explain why ‘greener technologies’ must be introduced. The study found that products are stored in preparedness shelters, but the end-user has no influence on which product he or she receives. The humanitarian system supplies emergency victims in unknown contexts with universally fitted products and services.
According to participants, little is known about the experience of the end-user after product hand-over; something that leaves little data to inform best practices or requirements.

Figure 2 Diagnosis (see online version for colours)

3.2 Readjusting scope and research questions

The scope of the research project was redesigned in accord with findings from the diagnostic study which discovered that the humanitarian system did not focus on alleviating poverty. Instead, the humanitarian system in theory wishes to affect the move from a state of dependence and humanitarian assistance towards a sustainable, long-term, unknown future scenario; but priorities are driven by multiple agendas and a short-term focused humanitarian stakeholder system (Nielsen and Santos, 2013a, 2013b). The agendas of the humanitarian system limit the impact of current design approaches. The diagnostic study further revealed that existing design theory would not be useful in a humanitarian setting such as refugee camps.

Next, the understanding of ‘needs’ is central for the interpretation of design theory in this regard. Identifying these ‘needs’ broadly refers to understanding the end-user’s life and challenges. That information is used to deduce the types of products or services that would improve the well-being of the end-user and help them improve their opportunities. The diagnostic study showed that the refugee in the humanitarian system is not a customer in this sense. Instead it is the ‘needs’ or agendas of multiple stakeholders that determine the impact and selection of a design.

The research questions were developed based on the conclusion that humanitarian action needs to be reframed in a manner that can facilitate the bridging of means and intended effects of (energy) technology design and introduction in refugee camps. Since the product within the current dynamics of the humanitarian system cannot be designed
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in a way to contribute to the goals of humanitarian and development aid, the research approach had to be altered with the purpose of creating a different type of knowledge. The following research questions emerged from the above rationale:

a How can humanitarian action as a phenomenon be framed in a meaningful way for design?

b What target groups should be the focus of technologies designed and introduced in humanitarian relief?

c How can design thinking deduce relevant information from complex stakeholder systems that lead to more appropriate design practice and decision-making in humanitarian action?

3.3 Relevant literature and gap

There are a number of studies from different disciplines targeting the issue of safe and clean cooking stoves (Barnes et al., 1993; MacCarty et al., 2008; Takama et al., 2012). However, the diagnostic study had shown that the challenges designers and implementers of cooking alternatives meet are much deeper than the product and technology design issues. Lifting the research questions to a higher, more systems-level focus, meant that the technology and purely cooking stove focused studies were not relevant for answering the above-mentioned research questions.

When considering design theories for the research scope of refugee camps in the Sahel and Horn of Africa region, design for development was the first choice. Design approaches for low income settings have been developed through design for the bottom of the pyramid (BoP) scholars (Prahalad, 2006) and earlier appropriate technology (AT) movements (Schumaker, 1973; Carr, 1985). The AT movement and the following appropriate design direction (Nieusma, 2004), however, fails to consider community motivations and business models which are interested in creating sustainable markets, particularly under the limits of humanitarian action (Nielsen and Santos, 2013a). A more recent scholarly perspective regards the end-users at the BoP as consumers and an emerging market; this is referred to as the BoP approach. They believe this is a more ethical, non-imperialist approach than regarding them as passive recipients, and a more sustainable method than only highlighting the importance of creating technologies appropriate for the level of development. Other relevant theories are more general; Human Centred Design can also fit into development settings. Considering refugee end-users, design for marginalised groups (Nieusma, 2004; Hussain, 2011) including the capability approach (Oosterlaken, 2009), a focus on empowerment and capacity building provided useful advice on how to approach and empower marginalised end-users. But these do not sufficiently cover the power relations of the surrounding environment and institutions and what this means regarding the actual possibilities of an individual. Participatory methods also focus on empowerment, although they have been criticised for not being able to affect development goals. Critics point at their imperialist origin and that they are also unable to challenge power structures inherent in local and governmental structures in the long run (Cooke and Kothari, 2001). Finally, power conceptualisation is central to maintaining a critical view of the participatory processes and for understanding the preconditions necessary for the establishment of a useful participatory research process. This is also important to keep in mind during the interpretation of results.
Common design for development approaches and projects have an underlying intention of alleviating poverty for the end-user communities.

4 Design thinking as a research process

The diagnostic study leads to an image of humanitarian action as a ‘wicked problem’. It was decided to explore design thinking as a way to make sense of humanitarian action as a design setting. This novel research method is as much a part of the findings as much as the data. Therefore, the method will be explained chronologically, as the Framework evolves.

4.1 Identifying design for humanitarian action as a wicked problem

The humanitarian system is a wicked problem: it is unpredictable, constantly changing, and a solution cannot be based on a specific user-context or definable static requirement or needs. Approaching humanitarian action through design is dependent on deriving insights about the end user, and on understanding the relationship between multiple stakeholders, and how they influence each other and the objectives they are striving towards. The research questions required a new interpretation of the problem. The goal of this research was to improve understanding; and to determine the purpose of design within humanitarian action. Understanding (sense-making) and purpose are central in design thinking, which makes design thinking a relevant research approach for this question. ‘Design thinking’ (Simon, 1969) focuses on understanding ‘how designers think’ and how it could be appropriate in other fields. As the name implies it is ‘a way of thinking’ and is hard to describe as a ‘process’. Still, it can be useful to discuss ‘design thinking’ as a process. Reflective and strategic thinking during the performance of a task instead of being immersed in the task is central. Within the research topic, design thinking suggests that it is necessary to change focus from the technical and product design aspect of the question to follow the argumentation of the diagnostic study. The goals of humanitarian action will not be achieved by designing technologies the way the humanitarian system is structured. If a design method were prescribed, the technology would be impeded by the decision-making process and conflicting agendas. This would prevent the right product from arriving at a suitable end-user (or vice versa).

Instead of looking for design methods, we should focus on contextualising designs for end-users considering the global system, multiple agendas. Research approaches that seek definite and universal rules or insights are not relevant when unravelling a dynamic, complex system and interactions between problems and solutions. Design thinking does not provide laws but focuses on meaningfulness, organisation and the communication of ideas. This continuous process will contribute to more meaningful system interrelations.

Designing for multiple agendas within the humanitarian system (Nielsen and Santos, 2013a, 2013b) reveals humanitarian action as a system which is the core of the problem. Understanding the links between the system and the user-context, and viewing the end-user as part of the surrounding context rather than the system, makes design thinking an appropriate research method.
4.2 Making sense of humanitarian action through design thinking

Considering the refugee as a stakeholder, although not included in the dynamics of the humanitarian system, resulted in two paths to the research. One path was designed to understand the interrelations of stakeholders and the other path was focused on understanding the role of the refugee as end-user. These understandings were put into ‘frames’ that contributed to the conceptual framework.

A frame is understood as Dorst (2011) explains “a (novel) standpoint from which a problematic situation can be tackled […]. It is based on the key thesis: IF we look at the problem situation from this viewpoint, and adopt the working principle associated with that position, THEN we will create the value we are striving for”. The framework evolved through multiple iterations, stepping between insights from the humanitarian system and stakeholder perspectives, and contextual (end-user) perspectives. It is clear that systems within humanitarian action conflict and the development of a new frame(s) will require a shift of perspective during the development of this new frame.

4.3 Framing through design thinking

Dorst’s (2011) explanation of ‘frame’ together with Schön’s (1984) view of ‘framing’ are central to the development and selection of the final frames. Dorst explains that a ‘frame’ for designers encompasses the design equation from means to values. Design is concerned with affecting a value.

Figure 3 Framing

Source: From Dorst (2011)

The current frame of the humanitarian market did not include a discussion on reaching humanitarian goals; instead, the participants described it as a dead end. If the designer wanted to operate within this market, she had to make a list of trade-offs (Nielsen, 2014a) that jeopardised the sustainability of the products and impact on humanitarian goals.

To make sense of humanitarian action, one must ask **who should find meaning** in this new frame. First, the problem of the missing end-user perspective was approached. Interview participants explained that refugees are inaccessible due to practical, economic, ethical or security reasons. Who is the refugee? And how can her perspective remain the centre of design, when access to the field is complicated?

Trying to include the most relevant perspectives for the framing resulted in the data collection timeline illustrated in Figure 4.
4.3.1 Empathy

The first step in design thinking and sense-making is to identify end-user insights (Kolko, 2010; Kimbell, 2011; Brown and Wyatt, 2015) which are currently missing from the design process. Through a qualitative, semi-structured interview study in a Bhutanese family’s home a few insights into ‘refugeeness’ were uncovered (Nielsen, 2014b). The second insight was generated in a participatory workshop series that will be described under the next subheading. This second phase was conducted in Ethiopia, at the refugee camp Kebri Beyah in Eastern Ethiopia. Ethiopia is the largest long-term host of refugees globally. In total, seven families were interviewed, together with focus groups and participant observations. Additional interviews with staff provided more insights into the dynamics of a refugee camp. The data revealed issues central to the refugees. These included water shortages, a lack of medicine, and mismatches between training and opportunities to use their training. The use of improved cooking stoves and the health benefits of cleaner fuel. The ‘7 steps to safety’ frame emerged, by understanding the priorities of the refugees (as indicated in Figure 5) as levels of safety, the difference between refugees and ‘other’ development setting end-users were revealed. The data from the refugee camp Kebri Beyah supported the ideas uncovered in the interviews with Bhutanese refugees in Norway. Refugees exhibit a chronic feeling of safety-need, even when their stay in a refugee camp lasts for decades.

In response to the question, “what was the best thing about being in the refugee camp?”, All replied “that it is safe”. Even refugees who arrived in the camps when they were young children recalled their relief on arrival.

“The best thing about arriving to the refugee camp was, safety.” (Asking refugee to tell her story about her arrival in Kebri Beyah)

“The best thing about living in Kebri Beyah is safety.” (Refugee in Kebri Beyah after 20 years living there)

Secondly, staying safe for the refugees included a broad view of safety. It included achieving access to healthcare and water. The refugees in Ethiopia were not interested in discussing stoves or energy issues; instead they asked about water. In Kebri Beyah one family only received 15 litres of drinking water to last for three weeks, for a 14-person
household. Access to water and medicine were repeated before, during and after the interview questions about cooking and energy. The need for access to medicine and healthcare were also emphasised by the Bhutanese family. They were forced to work illegally, outside of the camp, in order to earn money for healthcare. The refugee families who lived in the poorer areas of the camp, with sick children, talked only about clean drinking water.

Figure 5  Seven steps to safety

The third safety step involved “getting the most for their money”, included identifying and using the most affordable fuel. Refugees explained that they traded the food they were given with others, to create the most nutritious diet for their children. They explained how they negotiated to get more for what they had, and for better services.

The fourth step comprised safety through connections. The Bhutanese, the Somali refugees, and the staff in Kebri Beyah explained that the refugees increased their chance of accessing better services through building networks and connections. This was one of the reasons that the refugee women were willing to be interviewed. They regarded it as an opportunity to be ‘seen’ and recognised as ‘helpful’ so when opportunities arose, they would be remembered.
The fifth step refers was safety through achieving social status. The women that owned houses made of concrete dressed in brighter clothes. They received a different treatment from the staff. The aesthetics of their house and garden seemed to be related to where their house was located in the camp. In one part of the camp, the houses were traditional Somali constructions made of branches. Some of the children wore dirty rags and had burn marks on their knees. In another area of the camp, the refugee women dressed in newer clothes and even changed the colour of their headdress before we interviewed them. They also had nicer homes and there were people moving to and from their compound with goats, laundry or just to see what was happening during our interviews.

The sixth step related to work or education. When women were asked what would they do if they had time and resources available to them, some of the women mentioned education and income gathering activities such as weaving. The final step in the pyramid was choice; the refugees said they did not believe they could make any decision that would improve their or their children’s opportunities. Day-to-day survival was their constant focus.

These findings are very similar to Maslow’s hierarchy of needs (Maslow, 1943). It highlights the disconnect between the focus of ‘Western’ designers who want to solve needs such as improved cooking methods, when refugee women are concerned about meeting more basic needs. Policy makers in donor countries and designers’ understandings of the fundamental challenges in humanitarian emergencies, are far from the reality of the refugees. This demonstrates that we must readjust our efforts.

4.3.2 Messy periods and restructuring through organisational images

The designer typically explores a problem through developing solutions. Often, a problem is not sufficiently understood, before a solution is suggested. The previous steps of gathering and structuring data revealed three different understandings of humanitarian action; Norwegian, Ethiopian and the refugee’s perspective.

In order to combine donor views from Norway, with beneficiary views from Ethiopia, stakeholders were gathered in two workshops. The tasks were chosen to reveal how stakeholders describe their goals and strategies. The overarching purpose was to identify relevant relationships in order to create a sensible and approachable image of humanitarian action.

Norwegian stakeholders including humanitarian agencies, NGOs, enterprises and designers were gathered in Oslo. Ethiopian stakeholders including ministry officials, humanitarian agencies and NGOs were gathered in Addis Abeba. The workshops were divided into two parts. First, a storytelling session allowed each participant to describe their most relevant experience in energy and humanitarian relief. Next, groups were selected and asked to analyse their stories by describing the relevant goals, strategies and obstacles. Next they were asked to select one goal (as a group). Then they were asked to construct a ladder to reach this goal. This scenario tool is commonly referred to as backcasting (Dreborg, 1996).

As Rowe (1991) describes, “periods in where the problem seems under constrained” are immediately followed by structuring processes. It is intuitive to follow the data gathering process of the first interview study (a messy period) with the creation of organisational images. This allows the designer to make sense of the findings and use them to mediate and communicate with the participants. Figure 6 illustrates how the
different interviews and workshops were connected and how the organisational images were used to make sense of the complexity and cross-disciplinary aspects of this research.

The two workshops revealed that stakeholder agendas influence their input during the workshop. While finding sustainable solutions depends on the collaboration of the stakeholders, the workshops showed that participants were motivated by different reasons. These agendas affected how they perceived concepts such as context and end-users. The workshops also revealed that country and local office agendas were not necessarily the same as the agenda of their headquarters. To understand whether it was possible for stakeholders in a donor country to combine these agendas and design products and solutions for the humanitarian market, a third workshop was created in

Figure 6 The design thinking research process (see online version for colours)
Oslo. In this workshop, groups were constructed with enterprises and humanitarian customers. They were asked to draw realistic and ideal scenarios to design and implement technology and to place this process on a map with an emergency timeline (Preparedness, relief, transition and long-term) and geographic location (in and out of context). The participants in this workshop had difficulty knowing how to bridge emergency needs with longer term needs. They would either aim at preparedness or design for the direct market outside the humanitarian system. This is known as the development market. Enterprises in Norway are familiar with the preparedness system, and design for the direct market. The design participants were interested in the context and end-user understandings. Participants representing humanitarian stakeholders worked within their area of relief up to this transitional line, but there was a gap that the individual stakeholders were unable to fill.

5 Result: understanding humanitarian action as agenda spaces

The research task still remained to compose a final image. “While the participants were unable to draw a holistic image of humanitarian action, what had the three workshops and field visits provided that could outline a combined perspective?”

The final process was one of deep reflection, what Schön would call ‘a reflective conversation with the materials.’ The gathered data and the abstract images are ‘the material’ which I combined in a way that made sense and could be communicated. By drawing multiple images of the participants’ findings from the workshops I found the matches and mismatches of humanitarian action could be categorised as Agendas. Figure 7 illustrates how a multiple agenda market can be understood in a way that makes it possible to design products and services for humanitarian action. ‘Agenda Spaces’ is a term that presents the complexity in a way that makes it possible for stakeholders to communicate their decisions and effects and to determine how refugees will benefit from the suggested interventions. Agenda Spaces can be regarded as an analytical tool for designers. But, it can also be used by other decision makers in humanitarian action to map their agendas for their goal. The frame presented represents the findings from the conducted research, and is an example of how the process may evolve depending on the goals of the involved stakeholders. Paying attention to and integrating safety concerns into activities through conscious use of knowledge flow would indirectly lead to a more sustainable humanitarian relief model. This organisational model is central to understanding the design frame, implementing technologies and appreciating the effects of stakeholder agendas on achieving these goals.

The process has demonstrated that stakeholder workshops are an efficient way of uncovering underlying agendas. Following this process, the map can be used to stimulate discussions on how to achieve the goals of a project. For example, if the intention is to provide sustainable energy alternatives for an end-user, the map reveals the motivating factor of improving opportunities requires the designer of the product or service includes the host community. Additionally, it requires local stakeholders benefit from the effort. If the enterprise desires a sustainable customer relationship, the agendas in the lower part of the map should be considered.

The findings about the refugee perspective revealed the refugee’s motivations were more limited to safety than those of other development end-users. The conversations in workshop two suggested that perceiving refugees as part of the host community sphere
(dotted line on Figure 7) is the best way to integrate them into humanitarian action. The designers expressed an interest in knowing more about the end-user and the host community. This placed the designer in agenda space AS6 which embraced both contextual spheres (‘Ethiopia’ and ‘Refugee camp’) and the refugee’s agenda space, AS5 Safety.

**Figure 7** Agenda space mapping of humanitarian action (see online version for colours)

Following the arrows that move between the agenda spaces, the successful enterprise gains knowledge through ‘context-connected approaches. Local staffs were employed to maintain and gather information about contextual challenges; this is an example of connecting contexts and creating sustainable learning systems.

Increased access to knowledge about solutions and decision-making was also the agenda space from which Ethiopian stakeholders argued. They wanted to harvest information and knowledge as the fruits of the technology transfers that took place within
humanitarian action. Acknowledging these motivations would ensure that host country efforts and humanitarian action goals become synchronous.

The most significant gaps identified at the beginning of this project were between the humanitarian action system, the technology developers and the refugees. Only the designers in the first Norwegian workshop or design students from NTNU in the second and third workshop attempted to connect the needs of the refugees with the interests of the local community. This is the link between the refugee and the host country interests. Ethiopia would like to develop their country and protect the environment on a national scale, while the larger view of serving refugee needs is not their priority.

As for Norway, some enterprises were absolutely disconnected from the agenda spaces that connected their actions with humanitarian needs in the field. Instead, they directed their efforts to financial opportunity and the first, short-term, preparedness phase of an emergency. Preparedness shelters regionally stockpile equipment for future emergencies, creating a window of opportunity for donor funding (Agenda Space 1 in Figure 7). For equipment aiming at improving long-term issues this strategy creates a disconnect between means and impact. However, if designing technologies or services involved the operational staff, this would not be a problem since their needs are more predictable and focus on cost-saving and efficiency. The introduction of Agenda Spaces provides a manner of addressing and discussing design problems in which multiple stakeholder agenda’s include a vulnerable user-group’s interest. These maps can serve as a starting point for a discussion between stakeholders and designers. There must be interconnections between agenda spaces for a solution to be sustainable.

From a simple image of ‘designing for humanitarian markets’ from enterprises and customers, each part of this study added new insights that revealed a more nuanced yet meaningful piece of the puzzle. After three stakeholder workshops and interviews with refugees in and out of the refugee camp-context, the Agenda Spaces concept emerged. Agenda Spaces restructured the differing ‘world views’ revealed in the data. Participatory design allowed the emergence of agendas and implications during the analysis of the workshops in Ethiopia and Norway. Challenges were identified that revealed the conflict between stakeholder interests.

6 Final remarks

While the ‘7 steps to safety pyramid’ was specifically developed for refugees, Agenda Spaces can be used as an approach to include any vulnerable user groups. In particular, in design spheres with multiple stakeholders, Agenda Spaces will be relevant to any actor aiming at a long-term impact within complex systems. The following design thinking ‘attributes’ were considered during the development of this sense-making tool: Framing, Sense-making, Structuring through organisational methods, Messy periods and reflective conversations with the materials. The researcher’s role is to understand the dynamics of the interaction and to identify issues of conflict and resonance. This process led to the final framing. The reflective conversation differs from a ‘direct participatory process’ in a design sense. Instead of frames being developed directly through a participatory process, the interpretive phases were dependent on the researcher connecting insights with questions and suggestions from other steps of the research. The participants were not asked to develop frames; they were deduced by the interpreting design thinker. It was this part of the analysis that turned into the messy/structured interdependence. The ‘Agenda
Spaces’ mapping relies on an active interpreter, who combines patterns; this is the *design thinker*. Designers will increasingly be faced with challenges where public-private partnerships are necessary and where multiple stakeholder interests must be met. The complexity of meeting multiple-stakeholder wishes, while creating solutions that improve the end-user experience, makes this research experience transferable to situations with less of a geographic span. While this study began with humanitarian action and the design of off-grid energy devices, the results are relevant to any setting where multiple stakeholders’ interests are involved in the creation of design.

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