

## THE VALUE OF COLLABORATIVE DESIGN TO ADDRESS THE CHALLENGES OF THE HUMANITARIAN SECTOR

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**ABSTRACT:** *This paper proposes an innovation approach based on collaboration and design thinking to address the challenges faced by international aid organizations in humanitarian disasters, through the co-development of products and services. The proposed approach was iteratively designed and used in two international workshops. The results show that collaboration and design thinking tools can empower the humanitarian sector to identify opportunities for innovation and create a shared vision for a more sustainable and efficient aid.*

### INTRODUCTION

International aid organizations such as Médecins Sans Frontières or the International Federation of the Red Cross are increasingly involved with innovation. With the growing number and complexity of humanitarian disasters and the pressure to professionalize, the humanitarian sector is driven to reinvent itself by adopting business management approaches involving a more sustainable and efficient use of resources through more standardized and formalized work practices. The need for transparency and accountability are key values for organizations to be competitive amongst the sector. At the same time, the increase in visibility of high-profile emergencies such as the Indian Tsunami (2004) or Haitian earthquake (2010) has led to an emerging humanitarian market, in which the private sector participates by providing complementary services (i.e. logistics) or making in-kind (i.e. immediate aid supplies) or monetary donations. This is a highly asymmetric market formation where the

consumer (i.e. the aid recipient) and the producer have an indirect relationship since the transaction between them is not financed (nor chosen) by the customer but by public or private donors. Furthermore, there is a strong focus on high profile emergencies rather than chronic emergencies or development aid. The distance to the customer and end-beneficiary leads to a forced adoption and dependency on a specific brand or technology at the cost of focusing on real needs. Although there is little research in this field and no conclusive evidence of the drivers and strategic aims for the engagement of private sector in humanitarian crises, Binder (2007) suggests four drivers behind this engagement: build a positive brand, involve and stimulate staff; gather business intelligence; and, finally, a desire to ‘do good’. In their analysis of corporate engagement cases, there is a trend among companies in the field towards a more strategic and long-term planning, and a recognition of the need for consistent learning. Nonetheless, recent reflections from business experts suggest that the sector is changing

towards a demand driven sector, in which the beneficiary of aid plays a central role in defining how aid is provided (Sanders, 2009). Innovation initiatives such as the Humanitarian Innovation Fund<sup>1</sup>, the Shelter Centre<sup>2</sup> and S(p)eedkits<sup>3</sup> accentuate the relevance of the collaboration between humanitarian and industry stakeholders to address these challenges. These innovation initiatives range from the development of appropriate technology to process and service redesign. They rely on an information network of humanitarian organizations with different focuses and make use of different but mostly unsystematic or not reported approaches to bring innovations to implementation. However, these initiatives face several challenges, inherent to the humanitarian sector that inhibit their capacity to effectively innovate. Firstly, the unpredictability and diversity of possible emergency scenarios and the different disaster locations makes the response systems very complex. Humanitarian organizations have strict operational programs relying on their own experience, often not flexible for process change. Furthermore each organization belongs to a hierarchy within the sector and each owns individual, non-standard regulations (Brigaldino, 1996). Companies in the field have expressed difficulties in supplying this market because they often face conservative and contradictory conditions regarding the formulation of requirements and testing conditions, required for the innovation process (Nielsen, 2013). This is the result of a complex network of stakeholders including international and national organizations, donor entities, governments and local partners, that have different and often conflicting mandates, and that depend on media attention and funding to operate. The humanitarian principles are also often mentioned as a limitation for a long term involvement since, being associated with - and thus favouring - a determined supplier or

organization, could mean compromising neutrality and impartiality. Finally, the lack of required expertise within the sector makes them have a reasonable reluctance in dealing with the involved risk and a strict budget allocation that limits any parallel or tentative activities (Ramalingam, 2009).

## THE CONTEXT OF HUMANITARIAN TRANSITION

This research proposes an innovation approach that focuses on a particularly challenging phase of humanitarian interventions: the 'transition' phase. This phase is bounded between short-term focus interventions (i.e. the international response to a sudden earthquake) and long-term focus interventions involving reconstruction efforts and the empowerment of the beneficiary community. This 'transition' is critically important and often troublesome. It is characterized by unclear boundaries in terms of time and responsibilities, and it involves a complex process of transferring services between multiple stakeholders.

Fig. 1 shows the case of varying healthcare quality as an example of aid provided in humanitarian crises to illustrate the process of humanitarian 'transition'. Humanitarian crises are defined as sudden events that disrupt on-going systems with a variable scale and frequency. The degree of socio-economic development but also factors such as political stability and infrastructure development affect the capability of a country to withstand the impact of such a sudden event. When e.g. a natural disaster or flee from conflict occur in the capital of a developing country such as Haiti or Sudan, the quality of healthcare services decreases drastically due to several systemic factors that lead to disruption and overwhelming of on-going services: Urban overcrowding, poverty and inequality, poor building and road infrastructures. These circumstances are shared by several countries, which in addition, are often located in disaster-prone regions, making them particularly vulnerable to the imminence of a crises.

1 ELRHA & ALNAP, 2010 ([www.humanitarianinnovation.org/](http://www.humanitarianinnovation.org/))

2 Shelter Centre, 2006-2011 ([sheltercentre.org/](http://sheltercentre.org/))

3 EU, FP7/2007-2013 ([www.speedkits.eu/](http://www.speedkits.eu/))

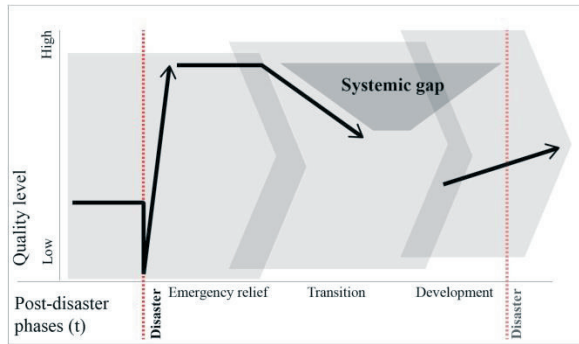


Fig. 1. Time-line and transitions in post-disaster humanitarian aid (specific case of healthcare)

The intervention of international emergency relief organizations is mandate driven and mostly dependent on donor financing with a specific end. These interventions are short-term focused and aim at the immediate life-saving operations but can also be sustained if a sudden crisis becomes chronic due to continuous instability, disorder or if local entities do not take over responsibilities. In order to operate, international emergency relief organizations must raise the quality of healthcare much above the previously existing one by deploying and setting up a resource-full yet temporary reinforcement or replacement system. High quality care can be provided by international teams with experience to deal with the emergency medical and logistical challenges (Emergency relief in Fig. 1). When, and if, the normal circumstances are re-established after the emergency (period that can take months to years), the international emergency relief teams retrieve and most often donate the initially deployed products to local organizations or authorities. Several systemic context factors regarding this one-sided transfer are not taken into account. First there are environmental and economic implications that hinder the proper adoption of these products. Second the products will have a handicap of relevant services that are not established or are malfunctioning e.g. maintenance and respective tools, supply. These services are impeded by the lack of technical knowledge, responsibilities and regulations. This is particularly relevant in healthcare where donated medical devices pose safety threats when misused, not maintained or

missing disposable supplies. Consequently this results in a progressive decrease of the quality of healthcare. In the next phase of the time-line (Development in Fig. 1) it is up for development agencies to support the affected populations to reconstruct their livelihoods. These organizations generally work with a long-term perspective and are focused on goals to build sustainable healthcare structures.

The amplitude of the changes in quality, in this case of healthcare, to which populations are subjected to throughout this time-line and the loss of potential resources and opportunities by organizations is what is addressed as 'transition' between the emergency relief and development. This phase involves not only a technological gap but also an organizational one, where several systemic context factors play an influence, including policies, socio-technical infrastructures and knowledge (Systemic gap in Fig. 1). Exit and handover strategies, responsibility and funding are some of the key issues subject to currently on-going discussions (Lloyd-Jones, 2006; United Nations, 2006). Similarly to healthcare, the same issues can be broadly highlighted in the fields of e.g. education, water and energy provision, shelter and food.

## CHALLENGES FOR INNOVATION IN HUMANITARIAN TRANSITION

### *Humanitarian collaboration*

The complexity of humanitarian collaboration is related with the involvement of many stakeholders for the planning, implementation and monitoring of humanitarian projects, in any intervention phase. Different organizations must rapidly coordinate to fill in the gaps of services, properly manage resources and avoid double work. For this communication, sharing information and working in consensus is essential. The required logistic and organizational knowledge of these organizations is mostly based on their past experiences and therefore have established logistic mechanisms to cope with uncertainty. Because this knowledge is complex, diverse, and unsystematic it becomes difficult to share

it. In addition to their number and size there is also the variety of geographic locations, of cultures and languages, which can difficult collaboration. Often this collaboration involves political negotiations (Hehenkamp, 2013) which are not determined by the same humanitarian principles, this increases the degree of uncertainty and efficiency of aid. The effort to make a smooth and sustainable transition between phases lays at the intersection of very complex humanitarian activities, and therefore a high level of collaboration is required.

#### *The need to define transition*

The humanitarian transition phase described above is poorly understood, and therefore poorly addressed, in terms of the needs and barriers of transfer of products and services. There is a difficulty in defining requirements for this phase and understanding the different perspectives of the multiple stakeholders involved. Furthermore given that there is no allocated budget for this phase, responsibilities tend to blur and evolve unsystematically. Nevertheless, understanding this phase is essential condition to assure the impact of humanitarian interventions and a positive reputation of aid as an activity focused on real needs. Intervention in the 'transition' phase should not solely rely on relief organizations, whose scope and expertise is limited, but also in the efforts of local governments and organizations to take over responsibilities, and of companies to deal with risks such as liability and staff security. The initiative behind this research is focused on identifying opportunities in transition to address issues such as product lifecycle and handover of products and services by adopting a systems perspective to understand the context, involving stakeholders from both short- and long-term focused aid phases.

#### *Competitiveness driven aid*

Academic research about humanitarian work has mainly focussed on describing logistical factors and supply chain management within

humanitarian systems while there is little information available about the context of transfer of products and services on the long term. Although the "humanitarian market" is an emerging field, there is no description of a systematic approach for the development of products and services for the humanitarian context (Ramalingam, 2009).

This paper aims to contribute to the dialogue on 'humanitarian innovation' by offering a space for discussion about transition through innovation. The authors describe a systematic approach to product and service development focused on needs identification, exploration and recognition of opportunities. The triangular grey area market in Figure1 (Systemic gap in Figure 1) intends to demonstrate the scope of possibilities, overarching different systemic context factors, to ideate a solution, inherently adequate for both approaches. This approach is intended for the use in collaborative initiatives involving humanitarian organizations, field practitioners and aid beneficiaries, academic and professional design experts.

## **METHODOLOGY**

In order to overcome these challenges and explore innovation opportunities in the humanitarian field, the Design for Sustainability Research Programme at the Faculty of Industrial Design Engineering from Delft University of Technology (DUT) (Delft, Netherlands) and the D-Lab from the Massachusetts Institute of Technology (MIT) (Boston, United States) joined forces to develop and test an approach based on the design and engineering experience of both Universities: "Rethink Relief" (RR).

Three main goals were defined to address: 1) Facilitate discussion between stakeholders with different perspectives of aid, creating a platform for interdisciplinary collaboration, 2) use design thinking focused on specific problem solving and evaluation of trade-offs to enable the co-creation of a shared mental model of "humanitarian transition" in which consensus is reached from both sides of

transition and finally, 3) create a systematic process focused on the development of combined products and services to explore competitiveness added value of the resulting solutions that promote a discussion of whether and how design thinking can contribute to the improvement of humanitarian aid.

Consequently two international workshops were organized in sequence (2011 in Delft and 2013 in Boston) in order to iteratively develop, evaluate and improve the proposed tools. Both were attended by twenty-five experts from both the design engineering field and from emergency relief and development organisations. Amongst the different backgrounds and nationalities there were also participants who experienced the humanitarian transition phase themselves. The participants were invited to reflect on the unmet needs in the humanitarian technology space, and to address specific problems using the proposed approach. During a full week, they exchanged practices and experiences, guided through mediated discussions and a design process that includes activities from problem analysis to detailed concept development. The expected outcomes were a series of concepts that represent the basis for a discussion about transition.

#### *The role of collaborative design*

The proposed innovation approach is based on systems and design thinking and is focused on problem framing for needs identification during the development of products and services. It uses a collaborative design methodology for co-development of products and services. Design methodologies use a holistic approach to problem solving and involve an in-depth understanding of complex socio-technical systems, combining existing practice standards and policy with life-cycle and user-centred design. With the actual broadening of the design practice to follow up with societal demands of the present such as environmental and social driven design, design practice has turned towards integral human activities, wishes and experiences (Buchanan,

1992; Dorst, 2006). This leads to an increase in the relevance of participatory approaches, involving and empowering new and different stakeholders as decision makers throughout the design process, allowing them to influence the end product by sharing their experience and perspective as experts in use. Nowadays, the management of communication and collaboration became a critical quality in design (Kleinsmann, 2008; Mattelmäki, 2011). Another key aspect of design is the way a problem is re-framed, since the designer does not work with the problem as given but elaborates on a higher and more abstract level and reviews objectives (Cross, 2011). The complexity of the emerging focus of design in social problems demands that design broadens its scope of action to more than redesigning products to overcome certain barriers (e.g. energy consumption or affordability) towards a scope focused on a combination of systemic changes that, combined, result in more sustainable and effective value for stakeholders. Developing products and services in parallel and in collaboration with multiple stakeholders leads to strategic integrated solutions (Lockett, 2011) in which e.g. products are configured in a way to facilitate the efficiency and future transition of a supply chain, and that have a larger potential to create more change.

Fig. 2 illustrates an outline of the proposed approach and its main characteristics:

#### *Interdisciplinary collaboration*

- Exposing a diversity of stakeholders with different backgrounds and expertise to new perspectives and practices that have the potential to create impact in the improvement of current practices.
- The collaborative format allows gathering divergent opinions from the discussion of parties rather than independently consulting them. Its interactive character and its focus on specific problems of technology life-cycle, as opposite to policy-level issues, enables the stakeholders to effectively share and disseminate their knowledge.

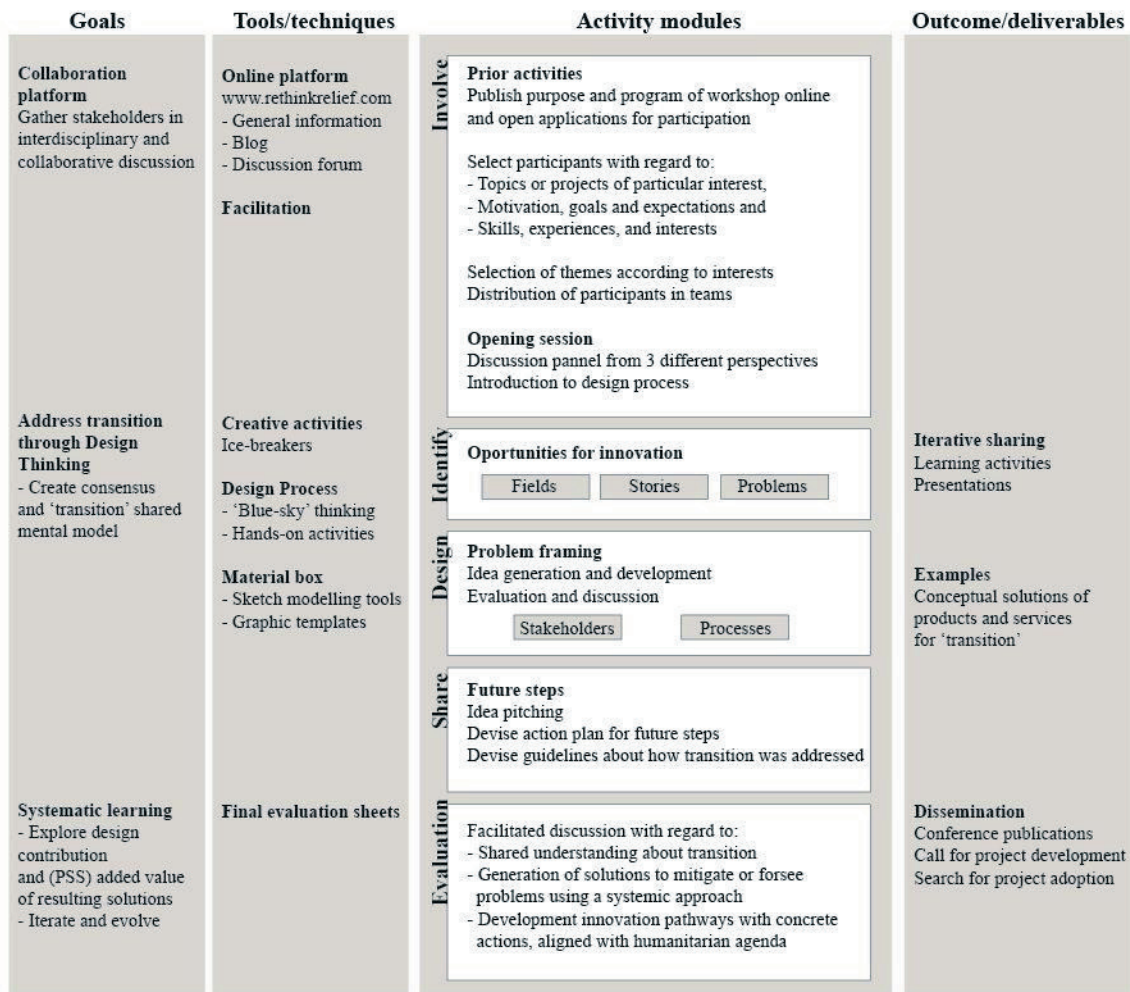


Fig. 2 Rethink Relief innovation approach

### Design thinking tools

- The followed process uses design tools to come to consensus when framing problems. The process is initiated with a “blue-sky thinking” approach, strongly focused on the understanding of a problem rather than being constrained by re-design of pre-existing technological solutions.
- “Hands-on activities” such as the materialization of ideas in small-scale models (i.e. mock-ups and prototypes) allow participants with different abstraction capabilities to understand each other and discuss openly.
- Designing a tangible solution within a team composed of different stakeholder perspectives allows participants to iteratively building a shared mental model of the aid system by collectively choosing the necessary trade-offs to come to a solution.

- This collaboration places the recipient of aid in the centre of the discussion and innovation process. The resulting concepts of products and services have therefore an added value given that they are demand driven and result from a bottom-up approach to understand barriers from different systemic context levels.

### Experimentation character

- The chosen approach can be systematically followed by facilitators and repeated in different contexts.

## RESULTS

Eleven concepts of new product and services have been developed based on the shared visions from the participants of the two international workshops (Santos, 2013). Table 1 provides an overview of the resulting projects, organized by theme. These projects

represent pilot concepts that embody the concerns expressed during the interactive sessions regarding the role of humanitarian technology in the transition phase of humanitarian interventions. They are meant to sensitize the different stakeholders and facilitate the discussion amongst emergency relief and development. In order to illustrate how the resulting concepts addressed transition, one example is described in Box 1.

Table 1. Overview of projects from RR 2011 and 2013

Project Theme	Description
Water	System for rainwater collection and distillation
Water	Versatile installation water duct and flexible piping system

Water	Tap stand design with spillage collection
Healthcare	Compact and modular concept of hospital stretcher with storage and hanging space
Healthcare	Alert system to mitigate loss to follow-up in patients with mobility aids
Protection	Personal portable lighting solution developed to protect the vulnerable in the dark
Energy	Customizable energy platform collected from multiple sources from community practices
Transport	Low cost, modular and scalable transportation unit, coupled to multiple means of transportation
Packaging and waste	Solar water disinfection box as a solution for the waste accumulation in post-disaster settings
Education	Educational game about how emergency prevention
Economic power	Co-creation centre to generate awareness within community about use of resources and skills

Box 1. Water Related Well-being in Relief (Rethink Relief, 2013)

<p align="center"><b>RR'13.W01. Water Related Well-being in Relief - RR 2013</b></p> <p align="center">by Chanthan Hel, Joos Van Den Noortgate, Mogboluwaga Olubunmi and Swarnika Prakash</p> <p><b>Problem Focus:</b> In refugee- or internally displaced people camps, aid organizations typically provide 15 to 20 litres of water per day per person, out of which only 2 to 3 litres are used for drinking. However, about 10-20% of water is wasted due to inefficient usage. This quantity of water is provided by quickly deployable kits composed of a piping system and taps that need to provide it in a safe manner to reduce risk for contamination in highly populated settings like refugee camps.. Poor access to – drinking and washing - water has serious public health impacts</p> <p><b>Aim and shared vision of transition problem:</b> Optimize water consumption in order to generate improved health and well-being.</p> <p><b>Solution description:</b> The team created a simple solution to optimize water consumption through collection, that follows the standards of Médecins Sans Frontières and can be integrated in existing emergency kits. A tap and articulation filling arm were designed to be attached to the existing piping system that requires no contact with hands (potential source of contamination). The original crate used to transport the emergency kit is used as a spillage collector which allows the water to be reused for numerous purposes such as flush latrines and agricultural fields and prevents the formation of a puddle under the taps. The concept also involves the conversion of water distribution points into communal zones where different water related activities can be carried out such as hygiene, laundry and dishes.</p> <p><b>Problem framing addressing transition:</b> This concept has been developed with different priorities in mind: Firstly, the core of this concept is a tap designed to fit in the existing crate, in accordance with emergency relief practices, logistics and standards. It is modular and because it uses existing resources (crate) it can be set up very quickly, as opposite to the currently used concrete tap stand and spillage container. The new system saves water by re-thinking usage practices and it has an added value for safety, reducing risk of contamination on the tap and on the floor. Regarding the transition phase the concept “grows”. It allows the installation of different ways of using spillage water, and it is flexible to take into account cultural diversity, offering choices about how to shower. It is located in community place stimulating sense of ownership so that maintenance is assured. For the development phase the concept has in consideration the creation in the future of complementary solutions such as irrigation for vegetable gardens using high quality water (filtered) to reduce the dependency in food related aid and eventually allow the generation of income by garden owners.</p> <p><b>Competitive added value:</b> This concept has focused on the reuse of existing resources and usage optimization rather than on solely technological solutions. As such it represents an incremental step, organizational wise, to the current practices of Médecins Sans Frontières implying low financial investment. Relocating and re-purposing the water-related activities, creating a recreational area allows people to make part and responsibility of the change, which is assumed to facilitate the adoption process. This focus has allowed the group to create a product that offers more than water, but offers opportunities.</p>	
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In order to establish a learning mechanism for the systematization of the proposed approach, an analysis was made of the eleven resulting concepts to derive recurring issues at both solution and process levels and translate them into key attributes or strategies to address humanitarian transition (Table 2). The list

presented in Table 2 is not intended to be extensive but to illustrate the interdependencies in the discourse of the participants. They do not cover issues such as manufacturing or business profit although their value for the humanitarian market stakeholders are discussed in the next paper section.

Table 2. Common threads at solution and process level of RR concepts

Solution level (Product/service characteristics, identified opportunities or strategies)	<b>Well-being of disaster victims</b> was highlighted by the participating partners as an emerging priority issue since many intangible needs from affected communities might have long term negative effects therefore the focus must be on people rather than products.
	<b>Community shared places</b> (i.e. refugee camp) and social function (i.e. education) offer opportunities for product innovation.
	<b>Whole aid system and life-cycle of products</b> considers interdependencies and implications around product use/adoption of social, organizational and infrastructural nature. In this case, the life-cycle of products includes the phases of product design, manufacturing and distribution, the use phases linking relief to development (and development to relief) and the end-of-life of the products.
	<b>Value of existing coping mechanisms</b> allows to create products that reinforce instead of replacing existing solutions, reducing therefore dependency on aid solutions.
	<b>Disaster specific characteristics</b> such as climate and geographic location affect the usability of products (e.g. type of water type of sun exposure, type of terrains) and must be taken in account when focusing a problem.
	<b>Culture, value sets and common practices</b> such as religious believes, behaviours and practices, family size, scale of community integration and specification of individual users influence the potential of a product, deployed/donated by emergency relief to be used.
	<b>Logistics and standards</b> should be integrated within solution to increase the chance of success in both short and long term interventions since those management practices and knowledge is already established.
	<b>Functional modularity</b> is a strategy to design versatile and compact products where the same components serve different purposes (e.g. lighting, hanging).
	<b>Component modularity</b> results in products that can be phased in or out between phases, allowing its transformation/conversion into locally made.
	<b>Embrace growth</b> is a property that allows users to expand or use products for their own interest/purpose.
	<b>Scalability</b> is a property that allows a product to be purchased/acquired accordingly to income, size and type of household/community.
	<b>Materials</b> used in product manufacturing matter, not solely in terms of environment resistance and endurance but also products that can be recovered locally and reused after one or after multiple uses.
Process level (Challenges)	<b>Life span</b> is a property of expanding the value of the product either by increasing its durability, robustness, ergonomics (handicaps), recycling or upgrading.
	<b>Establish clear goals and tasks.</b> This is needed in order to manage expectations and to help participants focus on their tasks. Participants and teams are highly dependent on a process roadmap and group dynamics management.
	<b>Understanding and framing the problem.</b> One obstacle identified by the designers was the complexity and dynamics of the system around one product in the context of the humanitarian gap. There is a high discrepancy in the terminology and definitions used by participants, and an overwhelming quantity of issues regarding products used in the humanitarian field. Taking the time and elaborating on the problem framing phase of the design process had a direct impact on the self-confidence of participants about their solutions.
	<b>System focus.</b> The design of combined products and services needs to be aided with specific tools that improve decision making and guide participants along the integration of different systemic context factors in their solution.
	<b>Cultural differences:</b> Besides the different professional background of participants, cultural background and nationalities enriched the process and discussions. However, there is a tendency for people to be more or less assertive when it comes to express ideas or take control of the process. The use of “hands-on” activities helped to balance participants to be engaged at a more equal level.
	<b>Technical and creative divergence:</b> To the most technical participants the creative exercises during the design process represented a challenge due to differing capability of participants to deal with abstraction. The constant provision of examples and sketch modelling exercises had a great impact on the ability of the teams to visualize, discuss and come to a consensus regarding their ideas.
	<b>Academic and professional divergence in design:</b> Whereas non-designers have benefited from the simplified language to present the design process, others considered the given information superfluous or not objective. As such designers must assume the lead of the team and independently choose the design tools they are most comfortable with. The diverse design cases presented throughout the workshop provided, in an inspiring manner, a good overview of design process alternatives and constraints.

## DISCUSSION

The mismatched allocation of resources by emergency relief and development organizations leads to large changes of amplitude of quality of life of communities affected by disasters and to an unsustainable use of resources. Technology has proven to have an essential role but not when it is considered in isolation of other organizational and human aspects. The results of the proposed approach to bridge the 'transition' phase of humanitarian disasters and use of design thinking during the RR activities provide evidence that this approach can effectively accomplish the following points:

### *A needs-centred approach*

Using beneficiary needs in the 'transition' phase as central focus and a design approach with simple terminology, empowered participants from multiple cultural and professional backgrounds to create tangible and new solutions to address unmet needs. Participants from multiple backgrounds were able to communicate their ideas and concerns through the hands-on activities and above all, be exposed to the different perspectives about transition. In addition, participant teams created broad problem statements and solution visions based on the insights from the interdisciplinary collaboration. The teams successfully addressed the problems with a rich perspective, involving considerations for different phases of aid intervention and highly focused on goals rather than technology. This is reflected in their in-depth list of criteria for evaluation of concepts and the social and organizational components of the presented solutions. The designer played an important role during RR as central mediator of humanitarian innovation. Expertise in creative thinking and idea materialization can effectively facilitate the combination of different perspectives into a coherent knowledge base.

### *The common threads*

The identified common threads provide a framework to systematically approach the opportunities and challenges of the humanitarian transition context. Relevant context issues such as the importance of existing coping mechanisms and social environments were revealed and characteristics such as scalability, function and modularity are recurrent in several concepts. The authors suggest exploring the value of these issues as guiding criteria to iteratively evaluate and select ideas during the design process, activity which was until now left up to each individual group to create. Furthermore, the list of common threads works as a tool to systematically collect relevant information that contributes to the continuous focusing and improvement of the approach. The analysis made to generate it lead to interesting insights and raised multiple questions that have the potential to be researched further. How do the challenging conditions (i.e. cultural and professional discrepancies) of a collaborative design process influence the output of that design process? Can cultural discrepancies in the teams contribute to more cultural-aware solutions? What does innovation literature mention about the key positive features of collaboration, and how are those compared with these findings? This research is relevant because its results might have implications that are applicable to similar approaches involving multiple stakeholders.

### *Impact of presented concepts*

The role of 'champion' beneficiaries and the industry sector are essential to assure adoption and follow up of initiatives. The experience of participants representing the beneficiary group is fundamental to understand the implementation challenges of each technology, knowledge which should also be included in the design process. The RR initiative has focused on the perspective from users and has intentionally excluded donors and the private sector. The approach was developed to explore unaddressed needs as a way to understand transition challenges from the operational field

perspective. Future engagement with the private sector is acknowledged to be important in terms of their understanding of value in markets and potential role as financiers. However challenges such as profit focus and operational timelines need to be overcome. Both DUT and MIT are dedicated to find private sector partners to explore possible collaborations and help develop the concepts further, using their available resources such as student projects and research platforms.

### *Future steps*

The projects developed in RR are dependent on the open mindfulness of all participants. It should be clarified in the humanitarian agenda that product development is a process and not an end. In the future the same approach will be used locally but include a stronger module of business and strategy thinking. This requires continuously rethinking the roles of ex-participants and creating a structure using academic resources: A finance structure for different phases of the projects and to support further development of prototypes and a long term commitment translated in time and availability to promote such design activities and assuring the continuation of tools being developed for this context

## CONCLUSIONS

In line with the trend mentioned by Sanders (2009), the humanitarian sector has the chance to become more competitive and efficient by engaging with local partners as a long-term commitment. This requires international organizations to rethink their structure and practices, from providers to transferor. Donors and governments need to acknowledge these efforts and align their agendas with broader societal goals. Through the involvement of the humanitarian field, academia and industry, collaborative design can offer the humanitarian sector a neutral, yet differentiating space for discussion about humanitarian innovation and also contribute to establish a lasting commitment for an effective co-development of suitable product and services.

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