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**Innovations in humanitarian supply chains: the case of cash transfer programmes**

**Abstract**

Cash transfer programmes (CTPs) are revolutionizing humanitarian supply chains (HSCs), yet just how CTPs are to be understood as innovation, and how they impact on HSCs, remains unclear. Innovation in the humanitarian context more often than not stems from outside humanitarian organisations – that is innovation occurs in their supply chain. The aim of this study is to further the understanding of supply chain innovation (SCI) in the humanitarian context. Based on empirical evidence this article suggests a supply chain innovation model (SCIM). This SCIM is useful because it allows different processes to be understood and compared, by providing guidance on how innovations progress. The contribution of this research is threefold: First, the research presents a SCIM for the humanitarian context. Second, this is the first application of a SCIM to the humanitarian environment. Finally, the research is field based and grounded in empirical observations thus adding to the literature and offering insights to practice.

**Keywords:** supply chain innovation**,** humanitarian supply chains, cash transfer, diffusion, supply chain design

1. **Introduction**

An increasing body of research and empirical evidence (Cozzolino et al., 2017; Jahre et al., 2015; Balcik and Ak, 2014; Holguín-Veras *et al*., 2012a; Rawls *et al*., 2010; Barrett *et al*., 2009) has started to question the economy, efficiency and effectiveness of a “one size fits all” approach to the diversity of humanitarian situations and logistics solutions. Delivery of humanitarian aid can encounter unpredictable logistical and bureaucratic challenges at every step, and adaptations are needed simply to deliver assistance (Heaslip, 2013). From this perspective, humanitarian agencies could be said to innovate on a daily basis. The process of getting assistance to where it is needed, as quickly and effectively as possible, is a constant process of creative adaptation and problem-solving in the humanitarian community (Chiappetta et al., 2017; Kovács *et al*., 2012; Balcik *et al*., 2010; Ramalingam *et al*., 2009). Importantly, innovation in the humanitarian context more often than not stems from outside humanitarian organisations, i.e. occurs in their supply chain – and even innovations that are brought on by humanitarian organisations themselves have vast consequences for humanitarian supply chains in terms of the network of actors involved and the way processes are designed.

Recognising the weakness of delivery options, and the resulting cost to both their taxpayers and the beneficiaries (Heaslip et al., 2015; Barrett *et al*., 2009), some of the main humanitarian donors and organisations including the International Committee of the Red Cross (ICRC), Oxfam, and the World Food Programme (WFP), amongst others, have started systematically experimenting and learning by funding cash and voucher-based innovations instead of delivering finished products to beneficiaries (Heaslip et al., 2018; Ramalingam *et al*., 2009). Numerous types of cash transfer programmes (CTPs) have been experimented with in the name of innovation in the past years (see Table 1), and to systematically change how humanitarian aid operates. The use of cash transfer programmes (CTPs) is on the rise, for example, between 2009 and 2014, the use of cash by the World Food Programme (WFP) increased from US$10 million (less than 1 per cent of total aid) to US$3 billion (IRIN, 2014) and by the start of 2016 it was estimated that cash-based programming accounted for more than 25 per cent of WFPs total spend on assistance (WFP, 2017). In 2000, UNHCR implemented 15 programs that relied on cash and cash-alternatives; by 2015 that number had increased to 60 programs, with a budget of approximately $465 million (UNHCR, 2015). CTPs arguably speed up the delivery of aid, reduce the need for inventories and transportation capacity, and even allow beneficiaries to make their own choices rather than humanitarian organisations making these for them. Table 2 summarises various reasons for cash-based interventions, while listing examples for them from the humanitarian context.

<Please insert Table 1 here>

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In the humanitarian contexts, CTPs speed up the delivery of aid, reduce the need for inventories and transportation capacity, and even allow beneficiaries to make their own choices rather than humanitarian organisations making these for them (Heaslip et al., 2015). For example, Ugandan mobile network operators MTN and Airtel are partnering with NGOs including Danish Church Aid (DCA), Mercy Corps and the International Rescue Committee to deliver digital cash to refugees. After the 2004 Indian Ocean tsunami the Sri Lankan Government made people open bank accounts to facilitate a CTP as did the Iranian government after the Bam earthquake in 2003 (Doocy et al., 2006).

There are a range of mechanisms used to deliver cash based responses to recipients, however, cash transfer programmes utilising mobile money can take one of three forms, a) fund transfer directly into the beneficiary’s mobile account, b) fund transfer via a mobile voucher for the beneficiary to redeem (or cash-out) and c) fund transfer from a pre-determined purpose, such as buying food. In other words, CTPs are set out to revolutionise humanitarian supply chains (HSCs). Yet just how CTPs are to be understood as innovation, and how they impact on HSCs, remain little understood.

1. **Aim of the study**

The aim of this study is, therefore, to further the understanding of supply chain innovation in the humanitarian context. In order to do so, we evaluate, apply, and further develop current models of supply chain innovation to the humanitarian context, and in particular, to the examination of the use of cash transfer programmes. In this paper, the concept of bottom-up supply chain humanitarian innovation is developed by drawing upon and integrating two core bodies of literature: supply chain innovation theory and innovation theory. As for the latter, we highlight user innovation, and bottom of the pyramid (BOP) innovation. The rationale for this is as follows:

First and foremost, supply chain innovation (SCI) focuses on innovation that occurs on the dyadic, chain, or network level, with the aim of such innovation being to create value not just to the firm, but also other stakeholders including suppliers, buyers, and end customers (Arlbjørn and Paulraj, 2013). The stakeholders in the humanitarian supply chain (HSC) includes donors, governments, logistics service providers, and suppliers – as well as of course, the beneficiaries, whom the HSC aims to serve (Kovács and Spens, 2008). CTPs involve many of these simultaneously - donors, humanitarian organisations, and beneficiaries – not to speak of altering the very supply chain in incorporating new, financial service providers in the delivery of aid.

Secondly, innovation and particularly, SCI is little understood in the humanitarian context, in spite of various endeavours in this context to innovate, from product innovations such as new ready-to-use therapeutic foods, to the shift from delivering materials to cash transfer programmes (Heaslip et al., 2018; Ramalingam *et al*., 2009). In recent years, discussions of humanitarian innovation have emerged as a way of potentially transforming humanitarian practice. A range of humanitarian international organisations (for example, UNICEF, UNHCR, WFP and OCHA) and NGOs (for example, Save the Children, and ALNAP) have embraced innovation. However, a significant proportion of existing approaches to humanitarian innovation have focused mainly on a ‘top-down’ approach (Ramalingam *et al*., 2010), designing solutions that can improve organisational responses within the humanitarian context. This approach is valuable and offers opportunities to re-think responses across the range of sub-sectors that comprise humanitarianism. However, it is not the only way to approach humanitarian innovation. Alternatively, this paper argues, there is a different and complementary approach to humanitarian innovation that can be grounded in community participation, engaging the skills, talents and aspirations of so-called beneficiary populations, in essence a ‘bottom-up’ approach.

Thirdly, local ownership and partnership and beneficiary participation’ are underlying principles for humanitarian agencies (Bealt et al., 2016; Holguín-Veras *et al*., 2012b; Pedraza Martinez *et al*., 2011; Kovács and Spens, 2007). However, it is widely recognised that these principles are rarely executed in humanitarian and development interventions, and the ideologies which are documented struggle to come to the fore (Akhtar, *et al*., 2016; Altay and Pal, 2014; Holguín-Veras *et al*., 2013).

Govindarajan and Trimble (2012) view ‘bottom of the pyramid’ (BOP) markets as one of the greatest potential sources of growth and innovation for businesses. The BOP market defines the majority of the world living in developing countries, estimated to be made up of over four billion potential consumers (Prahalad 2012), where these people are not traditionally targeted for consumer products by global businesses. The concept of bottom of the pyramid highlights how innovation in these emerging markets happens, and can provide opportunities for innovation that can subsequently be applied even in developed economies (Govindarajan and Trimble, 2012). Consequently, the BOP may be seen as a source of innovation, which is better targeted at the consumer (Prahalad, 2012). Prahalad (2012) has expanded the notion of ‘appropriateness’ of innovations for the poor to look beyond the ‘design of the technology’ to ‘the design of business models and delivery mechanisms’ incorporating the interests of both innovation providers and potential end-users.

The remainder of this article is structured as follows. We start by discussing innovation management, particularly user innovation and bottom of the pyramid innovation. We then review the supply chain innovation literature and conclude this by presenting a refined SCI model. The research method is then explained before the SCI model is applied to the case of CTP in Palestine. The contributions of the research are discussed in the next section followed by conclusions and suggestions for future research.

1. **Innovation management**

The innovation management literature can be characterised not only in terms of its huge volume but also by an evolving understanding and sophistication in the conceptual and practical models describing how innovation takes place (Tidd and Bessant, 2013). There are many similar models of the innovation journey, and representations of the key stages and different management challenges associated with them (Champan and Corso, 2005; Van de Ven 1999). Typical stages in this process/journey are, search, select, implement and capture value (Goffin and Mitchell 2010). This process is shaped and influenced by key contextual factors such as: strategic direction and targeting; and enabling and supportive organisations (Tidd and Bessant 2013; Trott 2011; Bunduchi, 2013; Berasategi *et al*., 2011). The spectrum of innovations typically runs from incremental to radical. Most innovation is viewed as incremental in nature and has its impact through accumulation (Figueiredo, 2014). Radical innovation is higher risk and requires different approaches to search and selection (Leifer *et al*., 2000).

Innovation theory however, also offers concepts of user innovation and bottom of the pyramid innovation, which make use of existing local systems and innovation from the ground up.

**3.1 User innovation**

‘User innovation’ is acknowledged to be an important part of maintaining organisational ‘edge’ (Hall and Martin, 2005). It recognises that the observation of users and their involvement in innovating new ideas within organisations is needed (Tidd and Bessant, 2013). Consumers are no longer seen as passive users, but are understood to actively adapt innovations (Rogers, 2003). Users are becoming more and more integrated into innovation systems and processes, and may interact with innovations in different ways, creating innovations, modifying or even resisting ‘official’ innovations (Flowers and Henwood 2010). According to Flowers and Henwood:

“the boundary between producers and consumers of technologies has become less distinct and users play important roles throughout the entire innovation process, potentially developing or extending technologies or applying them in entirely novel and unexpected ways”. (Flowers and Henwood 2010:3)

Flowers and Henwood (2010) describe how different approaches to innovation in literature perceive the role of the user. They explain that in innovation studies, the supply side is a central focus, maintaining users as ‘customers’ or ‘contributors’ and in some cases rejecting users in the innovation process. However, in science and technology theories the users are seen as being integrated into the whole process as active shapers, and within innovation management users are seen to help develop growth for the business.

Recent trends, especially around social networking and internet-enabled communications have accelerated the importance of user innovators; one UK study suggests that a high proportion of hidden innovation by users actually takes place (NESTA, 2010). Examples like Linux, Wikipedia, Mozilla, Apache and Propellerhead (Dahlander and Wallin 2006) serve as reminders of the considerable potential of user communities as a source of innovation and rapid diffusion and improvement.

Moving on to another perspective of innovation from a local level, by users, consumers or organisational employees, the following section looks at the bottom of the pyramid innovation.

**3.2 Bottom of the pyramid (BOP) innovation**

BOP innovation presents an opportunity to recognise potential in places not seen before, and create opportunities for marginalised market players and new potential consumers (Hall *et al*., 2014). The concept supports the idea that markets play an integral role in innovation at all levels and may aid scalability (Hart and Christensen, 2002).

Ray and Kanta Ray (2011) found that early integration with local suppliers in the design phase substantially lowered costs and helped identify useful features for mass markets and eliminate those that were unnecessary (see also Lim *et al*.,2013). According to Halme *et al*., (2012), a dominant perspective regarding innovation within the BOP is the disruptive innovation concept. London and Hart (2004) and Ahlstrom (2010) argue that BOP markets provide an ideal learning environment for developing disruptive innovations, which are typically driven by outsiders. Examples include providing inexpensive internet and telephone services (Kabra *et al*., 2017; Prahalad and Hammond, 2002) and Hindustan Lever’s (the Indian affiliate of Unilever) efforts to provide opportunities and training to local entrepreneurs in low income markets (London and Hart, 2004). Bower and Christensen (1995) and Christensen (1997) introduced ‘disruptive innovation’ as new designs of products, processes or business models whose quality and performance do not match their high end counter parts, but which nevertheless can drastically change the organization. By re-aligning existing products along an innovative business model or delivery system, entrants start by catering to ‘non-consumers’ or ‘low-end customers’ neglected by incumbent firms and then expand to include mainstream consumers (Calder, 2003). However, a similar focus on BOP innovation is rare in the humanitarian sector, even though the usability and appropriateness of innovative products and processes are often questioned in light of local customs and culture.

The variety and unique contexts that BOPs present mean that there is no ‘monolith’ solution and that each solution must be specific to an industry and to a particular target within the BOP (Prahalad, 2012). This perspective on innovation does offer exposure to and a focus on local innovations, leveraging local capacities and systems.

1. **Supply chain innovation**

Innovation management concepts define innovation as a process that goes from problem identification to development to adaption and then, finally, to diffusion of the product or process (Ramani and Mukherjee, 2014; Prahalad, 2012). These concepts have focused on innovation for businesses, predominantly in the global private sector. There has been no shortage of these models and concepts developed in management theory, which are widely used to influence practice in creating competitive advantage and to help businesses build and maintain a profitable space in the global market (Francis and Bessant, 2005; Iyer and Davenport, 2008; Tidd and Bessant 2013).

Supply chain management literature distinguishes between supply chain design for innovative vs. functional products. According to this distinction, innovative products require a (market-) responsive, or agile, flexible supply chain, whereas functional products can be dealt with in lean supply chains (Fisher, 1997). Yet in spite of the rather ample discussion of agility, responsiveness and flexibility of supply chains, which are designed to manage innovation, innovative products, and innovativeness overall, there is no single agreed definition of supply chain innovation, not least because of the different disciplinary stances (political, economic, sociological and managerial/ organisational) from which innovations are viewed (cf. Arlbjørn *et al*., 2011; Wagner, 2012; Blome *et al*., 2013; Oke *et al*., 2013).

Research on innovations is complicated because they influence and are influenced by so many factors and actors (Laosirihongthong *et al*., 2014; Alexander and Childe, 2013), and there are multiple dimensions which deserve consideration in any systematic investigation. Arlbjørn and Paulraj (2013, p.4) put forward the following definition for supply chain innovation, being “an incremental or radical change in process, structure, and/or technology that takes place in the supply chain network so as to create value for all stakeholders”. This definition highlights several important characteristics of innovation in the supply chain network in that it “(1) could range from incremental to radical; (2) although innovations could take place at the intrafirm level, the main focus of our definition is those innovations that occur at the dyadic, chain, or network level; and (3) the aim of these innovations is to create value not only for the focal firm, but also other stakeholders including suppliers, buyers, as well as end customers” (Arlbjørn and Paulraj, 2013, p.4).

**4.1 Stages of Supply Chain Innovation**

Arlbjørn *et al.* (2011) suggested the first model for innovation beyond the focal firm. In their supply chain innovation model (SCIM), they suggest three consecutive phases of innovation that are linked together in a loop: to (1) recognize a need for change in business model (performance gap), (2) develop solutions for new business model, and (3) implement the new business model. Whilst this model extends the typical five-stage innovation models from the focal firm to the supply chain, it also reduces the number of stages. At the same time, numerous authors in innovation literature (Hamel, 2000; Christensen and Raynor, 2003; Francis and Bessant, 2005; Markides 2006; Tidd and Bessant, 2013) agree on two more stages of innovation, adding the elements of user involvement, and diffusion to SCIM.

Engaging with user innovators can help reduce the often considerable economic risks involved in launching new products (Shaw and Burgess, 2013; Ogawa and Piller 2006; von Hippel 2005). Users, working on their own time and often with the support of a community, generate ideas, develop prototypes, and evaluate their creations (Jeppesen and Frederiksen 2006), activities the firm would typically undertake as part of product development (Bunduchi, 2013). In this way, picking up user innovations can save development costs. As a bonus, user innovations typically emerge in response to real needs, problems, or desires, reducing the risk of product failure by identifying the potential market in advance. Extant innovation literature suggests that diffusion is the end-state of the innovation process and is the result of activities that progress the innovation through the post-adoption stages (Hazen et al., 2012).

As an overlap between SCIM and other innovation models, there is an agreement that innovations can be framed as incremental and continuous improvements to existing products or services which might enable either cost reductions and/or improved features. Similarly, Ramalingam, *et al*., (2009) point out that “At the other end of the scale, some innovations can be far-reaching and involve new and radical shifts in thinking about a particular product or service, or even an entire industry” (p14). Ramalingam, *et al*., (2009) further argue that “Such radical – or discontinuous – innovations can lead to obsolescence of existing organisations, and the process of innovation is often viewed as being at the heart of the ‘creative destruction’ embodied by capitalist economic development” (p.14). Overall, successful innovations are those that result in improvements in efficiency, effectiveness, quality or social outcomes and impacts (Hamel, 2000; Christensen and Raynor, 2003; Chapman and Corso, 2005; Francis and Bessant, 2005; Markides 2006; Bessant and Tidd, 2011).

The differences between the number and essence of stages are encapsulated in what other innovation models highlight in the stages of user involvement, and diffusion. First, as part of the innovation process there must be willingness to include the user and the resources to invent and experiment or take risks, in other words user involvement is necessary (Agarwal and Prasad, 1997; Patterson *et al*., 2003; Hazen *et al*., 2012). User involvement is the second stage after a problem has been recognised, and as such would lie between the SCIM stages of the recognition of the performance gap and the development of solutions. Involving the user is a new way of doing things (Christensen and Raynor, 2003; Bessant and Tidd, 2007), which is usually through some combination of analysis, interpretation, discussion and the generation of ideas.

Second, there is the difference in an emphasis, vs. omission of the stage of diffusion. Diffusion can be seen as the embedding of an adopted innovation within an organization (Hazen *et al*., 2012 and 2014). Diffusion is crucial for adaptation on the market, and also, for setting *de jure* or *de facto* standards. Examples range from bicycle chains, operating systems, the MS Office package, SMS and MMS standards, to name a few. Diffusion of innovation seeks to explain the process and factors that influence the adoption of new innovations (Rogers, 2003). Rogers defines diffusion as “a process in which an innovation is communicated through certain channels over time among members of a social system” (Rogers, 2003, p21). Peres *et al*., (2010, p.91) suggest that innovation diffusion is "the process of the market penetration of new products and services that is driven by social influences, which include all interdependencies among consumers that affect various market players with or without their explicit knowledge”. Innovation only has real impact when it can be scaled across a population of users (Alexander and Childe, 2013; Iyer and Davenport, 2008). The key to scaling has been identified as adoption and diffusion (Hall *et al*., 2014) of the innovation. Importantly, innovation diffusion ensures the wider adoption of an innovation for benefits outside the original setting. This could be less important from a supply chain perspective due to two distinct reasons, whether it is that diffusion focuses on the supply chain and is hence encompassed in the supply chain focus of SCIM, or whether the focus outside of the supply chain is on competition only. In any case, in the humanitarian context the aspect of a wider benefit is of high relevance, hence we suggest refining the SCIM for the humanitarian context in a way that includes this stage.

**4.2 The Focus of Supply Chain Innovation**

The same SCIM identifies three interacting content elements of supply chain innovation: (1) supply chain business processes, (2) supply chain network structure, and (3) supply chain technology (Arlbjørn *et al.*, 2011). Taking the process view to the level of the supply chain is an integral element of SCM literature overall. Prominently, the supply chain management framework focuses on various processes that link, and run through various companies in the supply chain (cf. Lambert *et al.,* 1998). The element of supply chain network structure is most important, as the focus here is on innovation that occurs beyond the focal company alone. Last but not least, SCIM focuses on technology innovation, hence also supply chain technology here being the key element.

There are though also other alternative focal areas of innovation. Innovation can be targeted at new *products* and *processes* to a new *position* of an organisation (changes in the context in which the products/services are introduced), and new *paradigms* (changes in the underlying mental/business models) (Hamel, 2000; Christensen and Raynor, 2003; Francis and Bessant, 2005; Markides 2006; Bessant and Tidd, 2007), or several of these at the same time, sometimes referred to as the 4P model.

In this 4P model, the product focus is the most obvious. In the process focus, the range is from incremental improvements in key performance parameters (time, cost, quality) through mechanisms such as improved supply-chain management or lean production introduced in many manufacturing industries (Ramalingam, *et al*., 2009). Christensen and Raynor, (2003) highlight that new processes can bring about entirely new ways for an organisation to develop products to market, for example, the growing use of internet banking as an alternative to the previously dominant model of high-street branches.

Position innovations can change the characteristic of a market or create a market that does not exist (Francis and Bessant, 2005), although the act of re-positioning may require incremental changes in these areas (Ramalingam, *et al*., 2009). Paradigm innovations change underlying mental and business models, these can be evolutionary changes in the way the business activities are undertaken that provide the opportunity for incremental innovation (Francis and Bessant, 2005). Ramalingam, *et al*., (2009) explain that “Paradigm innovations almost always require supporting innovations in the other areas of position, process and product. However, paradigm innovations always require some form of re-positioning, whereas positioning innovations can occur without a paradigm shift” (p.15). Overall, these 4Ps offer a structure for examining space for innovation in any organisation or sector (Francis and Bessant, 2005; Bessant and Tidd, 2007). These multiple pathways are important because they move attention from products (what an organisation offers the world) and processes (how it creates and delivers those offerings) to other ways in which innovation can create value and other groups from whom this can take place.

The 4Ps provides a structured approach to examining innovation, and can help innovators to find a more balanced approach to improvements across all four categories. Francis and Bessant (2005) note that product innovations tend to get the most attention in the private sector, and that this narrow view can hold back important innovations. The 4P model has been usefully applied in a range of sectors and industries. Table 3 introduces the 4Ps and applies them to the humanitarian context.

<Please insert Table 3 here>

Again, this model differs somewhat from its adaptation in SCIM. SCIM introduces the element of supply chain network structure. Supply chain network structure divides the structure of the supply chain into three distinct factors: (1) members of the supply chain; (2) structural dimensions, and (3) different types of process links. Yet supply chain network structure does not quite capture the importance of the *position* of an organisation and its work in relation to key stakeholders (Markides 2006; Francis and Bessant, 2005; Grawe, 2009). Furthermore, in terms of *paradigms,* innovations almost always require supporting innovations in the other areas of position, process and product (Hamel, 2000; Christensen and Raynor, 2003; Bessant and Tidd, 2007). As identified by Ramalingam, *et al*., (2009) this could include “… mental models such as organisational rationale, assumptions and frameworks or business models including organisational and business strategies and designs, and the workings of the relationship between deliverers and recipients” (p. 37), in other words, supply chain design. Also from the perspective of humanitarian supply chains, it is not the network structure alone, but the design of the humanitarian supply chain that is in focus. Humanitarian supply chain design includes network structure in pre-positioning problems or the integrative role of channel captains (Akhtar *et al*., 2012), for example, but widens it with questions of integrating local actors and resources as to support local economies (Matopoulos *et al*., 2014) and of reducing supply chain complexity (Jahre *et al*., 2012).

Humanitarian supply chains require unique configurations of supply chain resources and investments (Kovacs and Spens, 2009; Tatham and Spens, 2011), which are enabled through supply chain design (Holguín-Veras, et al., 2012a). Supply chain design has been defined as:

Identifying the desired strategic outcomes for the firm and developing, implementing, and managing over time the resources, processes, and relationships (within the firm and across the supply chain) that seek to make the attainment of such desired outcomes inevitable over time (Melnyk *et al*., 2014, p. 1889).

The important characteristics of supply chain design include: agility, adaptability and alignment (Dubey and Gunasekaram, 2016). Supply chain agility relies on dynamic sensing, dynamic speed and dynamic flexibility to respond to humanitarian crises (Dubey and Gunasekaram, 2016; Holguín-Veras, et al., 2012a) and can positively impact a supply chain to recover from external forces (Holguín-Veras, et al., 2012b; Altay and Ramirez, 2010). Supply chain agility can reduce costs through structural flexibility, for example, outsourcing activities to improve responsiveness. Dubey and Gunasekaram, (2016) found that “… due to adaptable capabilities like collaboration with 3PL and other supply chain partners can reduce lead time and improve delivery of products/services” (p70). Transparency amongst supply chain members is important, especially in humanitarian crisis (Bealt, et al., 2016). Supply chain alignment enables the supply chain to flexibly adjust its configuration to align the objectives of all members.

By replacing supply chain network with supply chain design, issues such as, distribution centre (DC) locations, capacity at DCs, transportation modes, local resources, and supplier selection are now included. Incorporating supply chain design in the humanitarian supply chain innovation model (HSCIM), facilities coordination decisions across multiple locations and tiers. Decisions that influence where investment should be made by humanitarian organisations are now addressed. These decisions affect the operational capabilities of the humanitarian supply chain, the degree of supply chain visibility, and the overall vulnerability of the supply chain (Melnyk *et al*., 2014).

In conclusion, we widen the Arlbjørn *et al*. (2011) supply chain innovation model (SCIM) with insights from innovation literature, as seen fit for the humanitarian context, and suggest a model as illustrated in Figure 1. The model incorporates the stages of user involvement and diffusion, and widens the scope of the focus of innovation beyond technology to capture all four elements of the 4P model and include supply chain design.

<Please insert Figure 1 here>

The revised model will now be applied to the most discussed innovation in the humanitarian context to date, the use of cash-based assistance, or cash transfer programmes (CTP). We will continue with an overview of various CTP options before the application of the model to a specific case. In further refining and applying SCIM, we answer Arlbjørn *et al.*’s (2011, p.14) own challenge that they outline as follows: “the next step is to refine the model for SCI by conducting empirical qualitative and quantitative studies”.

1. **Research methods**

The methodological approach of grounded theory study was chosen for this inquiry because it allowed the researchers to generate a general explanation for the process of cash transfer programmes in emergency situations based on the views of a number of participants interviewed (Strauss & Corbin 1998). Humanitarian operations (HOs) in emergency situations are fundamentally based on, and enabled by the networks that facilitate the connections and interactions vital to these operations. Therefore, this approach enabled the research team to ‘ground’ the data collected in the “actions, interactions and social processes of people” (Creswell 2013, p.62). Grounded theory enabled the research team to inquire into and interpret from the perspective of the respondents of the study. This is an essential aspect of this project as CTPs are all unique and therefore the perceptions, thoughts and attitudes of the informants are crucial to gain an insight into CTPs.

Palestine was chosen as the case to examine since Palestine has received cash transfers since 2010 funded by the World Bank in collaboration with the European Union, in other words, this case can be considered one of the longest ongoing cash transfer programmes (CTPs) to date. These World Bank-funded CTPs had until May 2013 reached almost 100,000 households (WB 80247, 2013). What is more, this is in fact the only CTP on which also procurement plans were published, increasing the visibility in the supply chain. In spite of this being the case, there are only a few documents published with regards to this CTP as well, ruling out more complex analyses of the data. Thus, the case should only be regarded as an illustrative example of CTPs. Also, no prior frameworks exist for CTPs, hence we turned to the innovation literature as the basis of our analysis.

Cash transfer programmes have been recently evaluated by the Global Humanitarian Initiative (GHI, 2015) but in spite of the numerous examples given in the previous section, are still not very common in humanitarian aid. Upon having reviewed different methods of cash transfer programmes, we selected the rather well documented CTP of Palestine for in-depth analysis. Our documentary analysis (see Table 4) enabled us to develop an understanding of the complex operating environment of HOs in humanitarian disasters. This facilitated a sensitization to the context, language and operations of the interviewees and permitted the development of appropriate interview protocols. Secondary data is often used in the area of humanitarian logistics and supply chain management due to limited empirical access (see Banomyong *et al.,* 2009, Altay and Ramirez, 2010; Matopoulos *et al.,* 2014) – which is a prime reason for the use of archival and secondary data in supply chain management research (Rabinovich and Cheon, 2011).

< Please insert Table 4 here>

The partner for implementation of the program is the Palestinian Ministry of Social Affairs. The background reasons for the implementation of the cash transfer program was that in spite of high levels of donors funding, there was a lack of coordination and a non-effective poverty-targeting mechanism to promote the health and well-being of Palestinians. The CTP aimed at targeting the first and foremost the extremely poor households (WB 80247, 2013). According to CTP documents (WB AB7257, 2013), 26 percent of Palestinians lived in poverty in the year 2011.

To gain further insights into CTPs we contacted logisticians in HOs involved in Palestine. In the end, semi-structured interviews were conducted with eleven logisticians in humanitarian organisations (HOs). The interview participants represented a range of HOs in terms of the type of relief involvement, which included multi-country, food, water, shelter, education, and health (see Table 5). Criteria for inclusion in the study were that participants had experience of cash-based interventions in Palestine; however participants from the commercial sector were also sampled as their experience of cash interventions, particularly in delivery mechanisms, was broad and insightful. A second requirement was that participants have the capacity to provide a full and descriptive account of their experience, the ability to express them with ease. Respondents were selected by the means of stratified sampling, i.e. in a way as to cover organisations across different types of operational mandates.

Further background information concerning the interviewees is not included in this paper as anonymity was a condition of involvement. The interviews covered a range of general issues relating to the organisation, including history, size and a description of the specific role of the manager. The interviews were followed up with informal discussions which provided additional context for our analysis and formed the basis for interview checking.

<Please inset Table 5 here>

The interviews focused on current practices of supply chain management (SCM) in HA organisations in order to build a picture of the impact of CFPs on humanitarian logistics, enabling us to analyse the data in the context of humanitarian relief.

The interviews, three face-to-face and three by Skype, were approximately 1 hour in duration and were recorded and transcribed verbatim to enable subsequent inductive analysis (Miles and Huberman, 1994). The Skype interviews were recorded using Skype recording software. There were some technical difficulties experienced with the online interviews but they had little effect on the interviews themselves. The six participants proved to be very experienced and all held senior management appointments within the humanitarian community. The participants were all employed in a logistics/supply chain management function.

Next, we will address innovation in the humanitarian supply chain, particularly we examine the process of cash transfer programs and analyse them from the perspective of the revised SCIM.

1. **Findings**

CTPs bring together various aspects of innovation: (1) product innovation (cash or vouchers), (2) process invocation, through new processes for distributing cash, (3) a new position in terms of what humanitarian organisations shall do in emergencies, and (4) a paradigm shift in how humanitarian assistance is undertaken, in particular in that beneficiaries are not seen as passive receivers of aid but rather, active participants in decision-making who are re-attributed purchasing power. In other words, CTPs relate to all 4Ps of the 4P model of innovation. Next, we discuss them through the various stages of the innovation process, identified in Figure 1.

**6.1 Recognition**

The traditional humanitarian supply chain pushes items first and gradually moves towards a pull strategy once more information becomes available, however, beneficiaries needs were not always being met through this strategy (Heaslip et al., 2018). This recognition was in response to a particular problem and systemic weakness in the humanitarian supply chain (WFP, 2008; Heaslip, 2013; Kovács, 2014). Recognising this challenge, an opportunity for innovation arose through conversations between a variety of people working inside and outside the humanitarian sector. Interviewee K remarked:

“We were approached to provide commercial solutions to the dual problem of reducing the humanitarian organisations (HOs) logistics costs and if possible engage beneficiaries in having an input into the goods they receive. HOs were conscious that their costs, which include, transportation costs, logistics, and customs costs were more than what the goods were valued at.”

CTPs enable a pull strategy to be implemented from the beginning. This facilitates meeting the needs of beneficiaries quicker and more accurately. Ramalingam, *et al*., (2009) note that “… recognition involves not just perceiving the problem but also re-framing it in a way which led to the process of seeking or creating possible solutions” (p51). Interviewee D noted:

“Customs clearance does not apply to cash. When you don’t have a physical goods coming in you don’t have to worry about clearance and invoices and that stuff and each time you bring in goods you have to go through the same thing for each and every consignment and recipient. The good thing about cash is that you don’t do that every time as once they are an established person you can just maintain the system.”

In the case of Palestine, there was recognition that implementing agencies had limited institutional capacities, which could be overcome through cash transfer programmes (WB AB7257). Interviewee E noted:

“Especially now that there is crowdfunding out there where people are prepared to put cash into these [humanitarian] projects that are starting up or gamers who are sending a little money for a coffee to another gamer, this has changed so many things. Young people view these things differently and they are all about cash whereas older people are starting to understand that it can be easier. I think that will be a no-brainer in a very short time and I think that it is more a communication issue. Explaining to people that we do not want to use our funds for goods when we can use cash in country to get these goods or just give cash and that is a marketing issue. They will understand when they know the situation as most people never consider the process and the costs involved.”

**6.2 User involvement**

Involving the local community to find a new way of doing things (Christensen and Raynor, 2003; Bessant and Tidd, 2007; Tidd and Bessant, 2013) is the next step. User involvement through the local community assisted in reducing uncertainty and provided the UN agencies with a more accurate picture of user requirements. Cash transfer offered greater flexibility to the beneficiaries allowing them to choose the goods and services that are most appropriate to their personal situation. Interviewee B remarked:

“CTPs facilitates beneficiaries, they have more freedom to choose how to spend their funds. Cash transfers reinstate the purchasing power of beneficiaries and hence changes their very role in the humanitarian supply chain.”

Cash transfers adhere to the oft cited principles of empowerment, dignity and choice for the beneficiaries (Heaslip *et al*., 2018). The beneficiaries need to be consulted and given a participatory role in CTPs (Ramalingam *et al*., 2009; Heaslip, *et al.,* 2015; Heaslip *et al*., 2018), similar to the role of customers in a commercial supply chain. Interviewee F agreed with the importance of user involvement:

“We are sometimes based in remote areas and we deal with small, family owned businesses so you need to work with their current system and help them to build the new system into their existing business. A lot of times it is a trust factor. They will deal with you and listen to you a lot of times if you know someone that they know or they trust you or see you as not looking down on them.”

**6.3 Development**

Peppiatt *et al*., (2000) observed that the application of cash-based programming was limited for many years, this is despite longstanding theory and positive field evidence. Cash transfers can be viewed as a challenge to the traditional roles established by humanitarian sectors such as nutrition, shelter, etc., as cash can address any of these needs as long as there is market supply (Altay and Ramirez, 2010; Matopoulos *et al.,* 2014; Heaslip *et al*., 2018). Aid agencies already have the staff and systems in place to deliver in-kind relief items effectively and efficiently, whereas, cash transfer initiatives can often raise the question of capacity. Cash transfers shorten the logistical supply chain, simplify procurement and remove or lessen the need for transport and warehousing consideration, which may shrink the humanitarian sector considerably (Heaslip *et al*., 2015). Interviewee J:

“You do have points here where the supply chain managers need to be. You have the decision phase where the local market sustainability and the job of the supply chain manager is to know the local market and know what is available there and how sustainable is it. It is a clear factor in the decision making and if it is yes then we progress to “how?”. How advanced is it, or how will we do this; who are the likely providers if we are using mobile or debit cards or even vouchers. In all these steps I see that there are clear information paths where the supply chain needs to come in and deliver important information which must be a part of the decision making basis.”

In the case of Palestine, a joint task force was developed between the field office of the funding body and the implementing partner to develop the cash transfer programme (WB AB7257). Interviewee C observed:

“More and more humanitarian organisations have communicated the fact that when you send goods you have the transportation costs, logistics, the customs costs and at the end of the day your costs become more than what your goods are valued at. People are starting to educate their customers as to what these costs are and that cash can be so much smarter.”

**6.4 Implementation**

In the distribution of CTPs, there is a shift from the main activity in providing goods, commonly facilitated by local partners such as local NGOs or local authorities, towards that of an actor who can better handle a financial flow. A pre-condition is still that there are functioning markets on location and that the beneficiary has access to that market. This form of humanitarian assistance has since become more popular and new telecommunication solutions for cash transfers such as “mobile money” have been launched. For example Safaricom has enabled the use of “mobile money” in various African countries (Kovács, 2014). Mobile phones can be used to transfer cash to nomadic or hard-to-reach beneficiaries (Heaslip, 2013).

Elsewhere, Ramalingam *et al*., (2009) reported that “…international responses have included cash as an alternative to food aid or to temporary shelter in camps, or as support for families hosting displaced people” (p.56). Large-scale cash-for-work projects and cash grants have been used to enable people to rebuild livelihoods (Harvey, 2007; ECHO, 2012; Kovács, 2014). In the case of Palestine, cash transfer programmes were also perceived to increase the flexibility of programming, in this being more responsive to the current situation (WB AB7257). Also, the existent banking system supported the possibility of implementation in this case. Interviewee A remarked:

“Mobile, over time, is going to be amazing because of the convenience level. If mobile can get to the point where they are not utilising bank and they can use their own network of small local business which could be a real strength. If you can grow a network that can meet the cash flow needs and allows these on your network to redistribute the funds and where you can find networks where you can be in those corner places then you are going to be so much more convenient than banks.”

Interviewee D further noted:

“...the one thing that can be of benefit is if you have someone who has previously worked for Western Union or MoneyGram who are in over 200 countries, they will know or they will have the experience to know and understand what the requirements are and that can bring you up to speed a lot quicker.”

Interviewee G observed:

“When it goes on the phone and people accept that their money is on their phone then people will make those transfers without needing to take the cash out and so therefore the agent commissions, the cost of transfers is gone and the phone people will need to look at how they can generate a rate of interest on their phones so they don’t use it all at once. That will then diverge and I will be able to pay your phone bill or I will advance you the money so you can use the phone for cash. How long will this all take? Well lets’ see, so I would say about 2020 you will see 30% of all remittances on the phones. I think you will also see about 20% using alternative vehicles and only about 50% using cash to cash”.

**6.5 Diffusion**

The spread of cash-based programming demonstrates a particular facet of the dissemination process: that an innovation is constantly modified and shaped as different groups adapt it for their needs or circumstances (Peres *et al*., 2010). Innovation diffusion is an important aspect in humanitarian assistance, and subsequently in humanitarian supply chains. Not surprisingly, since original pilots now cash transfer programmes are becoming more commonly accepted and adopted. Interviewee C remarked:

“The logistics guys don’t like dealing with cash, so how can we make it easier? I mean, it’s here. It’s not going away. It is a more efficient, effective way of doing things.”

Diffusion sets standards (Hazen *et al*., 2014). In the Palestine case dissemination of the results has been key to other agencies replicating the process and protocols. This has seen CTPs being scaled up across multiple agencies. Interviewee H noted:

“Agencies used to have cash mentioned in their strategy or it is vague sort of stuff where they say that it is a key humanitarian tool in their programmes. We moved to formalising a policy on cash that says, this is how we define cash, this is how we use cash, this is when you don’t use it, these are the preconditions that need to be in place, and this is how we will build our capacity around it if we are going to do it; we are seeing more and more agencies follow our lead”.

Ramalingam *et al*., (2009) observed that “…the spread of cash-based programming demonstrates a particular facet of the dissemination process: that an innovation is constantly modified and shaped as different groups adapt it for their needs or circumstances” (p.24), or as identified by Peres *et al*., (2010) network externalities exist. Interviewee I observed:

“For us, cash transfers are a means of delivery. So it is tool or delivery mechanism rather than a programme so you would expect your field operatives as much as your programmers to be familiar and competent in that (cash transfers) as they would be in traditional in-kind aid”.

1. **Contribution**

The proposed humanitarian supply chain innovation model (HSCIM) addresses three gaps in the supply chain innovation literature. Two of these gaps relate to the consecutive phases of innovation and the final gap relates to the content element of supply chain innovation. Through a detailed analysis of the different innovation and supply chain components the HSCIM facilitates an effective innovation process. The interactions of the HSCIM have a clear bearing on how innovations get supported, and the processes they go through to get selected, tested and diffused.

Starting with the consecutive phases of innovation, the HSCIM incorporates the phases of user involvement and diffusion which have previously been ignored (see Table 6). By using the example of CTPs this research demonstrates that CTPs alter the design of humanitarian supply chains in that humanitarian organisations become brokers of financial flows and the distributors of cash, instead of the provider of materials. By adopting a ‘bottom-up’ user-led perspective innovations, such as cash, have proved radical because they emerge through consideration and inclusion of end-users and their needs. Prahalad (2012) observed that “…development of markets at the BOP is not just about serving an existing market more efficiently. It is often about creating a new market” (p.11). CTPs have created a new market, forcing HA organizations to look at alternative methods to deliver financial products and services to the poor. Contrast this to developed markets, where access to financial institutions is readily available.

<Please insert Table 6 here>

Diffusion seeks to understand the spread of innovations, this includes communication channels by which the innovation is shared, the social system within which it is disseminated, and the process through which innovation is continually developed and refined (Bessant and Tidd, 2011; Prahalad, 2012; Champan and Corso, 2005). The spread of CTP demonstrates that the innovation is being modified and shaped as different groups adapt it for their needs or circumstances. CTPs are challenging traditional humanitarian logistics and fundamentally questioning the paradigm and positioning of HA organisations.

Figure 2 highlights the third gap in supply chain innovation literature. As innovations can be targeted at new: products, processes, positions and paradigms (Hamel, 2000; Christensen and Raynor, 2005), applying the 4P model highlights that the innovations of position and paradigm are ignored in the accepted supply chain innovation model of Arlbjørn *et al*., 2011. To address this point supply chain design replaces supply chain network. By including supply chain design the HSCIM provides a better understanding of the necessary and sufficient conditions that indicate which local resources could be included in the humanitarian supply chain, and how to include them in the design of the supply chain. Supply chain design refers to the way the supply chain is structured and organized with regards to some key elements such as the number and type of organizations involved, the source locations and products, the make production sites and methods, the logistics activities (e.g., delivery channels, inventory deployment), and the financial flow (Matopoulos et al., 2014).

<Please insert Figure 2 here>

Supply chain design accommodates the innovations of position and paradigm. For example, the CTP case highlights the re-positioning of cash to create new market segments. By incorporating paradigm innovation into the HSCIM the recipients of aid and their perspectives are now heard. Distribution mechanisms lack transparency and fairness (Kovács, 2014; Altay, & Ramirez, 2010) and methods of aid distribution often deprive people of their basic dignity. The CTP demonstrates how a paradigm innovation is directed towards the aid recipient as an active consumer rather than a passive victim.

1. **Conclusions**

This study has examined a case of CTPs in Palestine in the light of the SCIM by Arlbjørn et al. (2011) and has identified that the SCIM needs refinement. The revised SCIM presented in this paper, reintegrates the stages of invention and diffusion, and widens the scope of the focus of innovation beyond technology (Francis and Bessant, 2005) to capture all four elements of the 4P model (Markides 2006; Bessant and Tidd, 2007) and include supply chain design (Hazen et al., 2014; Matopoulos et al., 2014). The proposed SCIM presents broad and overlapping phases through which many innovations pass. This model is useful because it allows different processes to be understood and compared – helping organisations to ‘repeat the trick’ – by providing guidance on how innovations progress.

The spread of cash-based programming can function as an example of the dissemination process: innovation is constantly modified and shaped as different groups adapt it for their needs or circumstances (Peres *et al*., 2010). Dissemination is particularly important for the humanitarian context where innovation should not be a matter of single organisations, nor even just specific supply chains, but the sector as a whole. The research has demonstrated that supply chain design not only includes network structure, but widens it with questions of integrating local actors and resources as to support local economies (Matopoulos et al., 2014) and of reducing supply chain complexity (Jahre et al., 2012).

Some innovations can be extensive and involve radical shifts in thinking about a particular product or service, or even an entire industry. In the presented case of CTP´s product innovation could be identified to occur, as a change in what is offered from supplies and services to cash. Furthermore, process and position innovation occurred since there was a change in how the product or service was deliver, and a shift in position of actors and their roles in the supply chain network. In humanitarian CTP the role of traditional service providers is diminished. Since incremental change in humanitarian business models towards beneficiary participation, local ownership and capacity development could be observed, one could argue that innovation to redefine dominant paradigms is occurring. Exploring these ideas in the context of humanitarian work gives a new way of understanding and harnessing organisations’ creative potential. Innovation theory is based on individual firms aiming to develop new products through investment in research and development (R&D), or exploit new markets (Hamel, 2000; Christensen and Raynor, 2003; Bessant and Tidd, 2007). This ‘closed’ model of innovation has been central to the maturation of industrial capitalism. However, as information technology grows in importance (Patterson *et al*., 2003), and users become less passive, this closed model is being replaced by more ‘open’ strategies based on recognition of the fact that the sources of ideas and the drivers of the process have become increasingly diffuse (Markides 2006; Francis and Bessant, 2005; Grawe, 2009). In particular, open innovation models suggest that many of the most radical innovations come not from experts and specialists in R&D but from front-line staff, consumers, users and suppliers – those traditionally excluded from innovations processes (Hazen *et al*., 2012).

Innovation has rapidly emerged as one the most widely discussed themes within the humanitarian world. However, in many of the existing debates, innovation is poorly understood or based on limited research. Furthermore, existing work on humanitarian innovation can broadly be considered as occupying two very different ‘worlds’ of innovation: one ‘top-down’ and the other ‘bottom-up’. The overwhelming majority of humanitarian innovation work occupies the former of these worlds. It focuses mainly on how to improve organisational response, making it more efficient, effective, and sustainable. This is crucial work, with a significant contribution to make, not least in improving responses during the emergency phase. However, it is not the only approach to humanitarian innovation. Instead, this paper has argued that it is possible to conceive of an alternative, ‘bottom-up’ approach to humanitarian innovation.

Attempting to move beyond the rhetoric of ‘bottom-up’ language, this paper has begun to elaborate what bottom-up innovation means in general, but for the humanitarian context in particular. The aim is not to replace the role of external interventions but to offer ways in which an enabling environment can be developed that better facilitates and works within the existing adaptive capacities of communities and their wider networks.

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Supply Chain

Business Processes

Supply Chain

Technology

Supply Chain

Design

Recognition

Diffusion

Implementation

Development

User involvement

**Figure 1: The humanitarian supply chain innovation model**

Innovation can be targeted at new:

* Product
* Process
* Position- gap not addressed by any element
* Paradigm- gap not addressed by any element

Includes SC Network, e.g. pre-positioning and role of channel captain but widens to include actors and resources to support local economies.

Addresses position and paradigm innovations

**SC**

**Design**

**SC**

**Processes**

**SC**

**Network**

**SC**

**Technology**

**Figure 2: Content elements of supply chain innovation**

|  |  |
| --- | --- |
| **Type of cash transfer programme** | **Definition** |
| Unconditional cash transfer | People are given money as a direct grant with no conditions or work requirements. There is no requirement to repay any money, and people are entitled to use the money however they wish |
| Conditional cash transfer | The agency puts conditions on how the cash is spent such as reconstructing a home. Alternatively, cash might be given after recipients have met a condition, such as enrolling children in school or having them vaccinated. This type of conditionality is rare in humanitarian settings. |
| Vouchers | A voucher is a paper, token or electronic card that can be exchanged for a set quantity or value of goods, denomination either as a cash value or as predetermined commodities or services. Vouchers are redeemable with preselected vendors or at 'voucher fairs' set up by the implementing agency. |
| Cash for work | Payment (in cash or vouchers) is provided as a wage for work, usually in public or community programmes |

**Table 1: Types of CTPs in emergencies (ODI Good Practice Review)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of intervention** | **Type of cash transfer programme** | **Examples** | **Objective of intervention** |
| Providing beneficiary with cash or vouchers as a direct grant with no conditions or work requirements | Unconditional cash transfer | * UNHCR grants to Chechen refugees in Baku, Azerbaijan (primarily to cover a portion of rental expenses) * Cash for host families (UNHCR Kosovo) * Transport allowance for families returning to Liberia from Ivory Coast (UNHCR, IOM and NRC) | Avoid refugee camp dependency, sustainability of aid. |
| Paying beneficiaries in cash for taking part in a public works programme | Cash for work | * Palestine job creation programme (SC, Mercy Corps, UNRWA and others); * Creation of jobs among traders (PU Palestine) * Road clearance (ACF in Afghanistan) * Road construction/rehab – DR Congo * Water and sanitation projects Somalia | Empowerment of beneficiary, enhancing feeling of belonging to society during/after complex disaster to avoid continuous fitting, sustainability of aid. |
| Paying beneficiaries in vouchers | Cash for work | * Vouchers for work, Oxfam Mali and Niger | Empowerment of beneficiary, sustainability of aid. |
| Providing a cash grant during training | Conditional cash transfer | * Medair, Afghanistan: cash was provided to encourage trainees; the trainers were elderly women with craft-making skills which risked being lost to the community | Support gender equality, empowerment of beneficiary, secure cultural heritage. |
| Paying beneficiaries to repair their own houses or rehabilitate farm land | Conditional cash transfer | * ACTED Afghanistan * ICRC Liberia (clearing of cash crop farm land for returnees) | Empowerment of beneficiary, sustainability of aid. |
| Providing beneficiaries with cash on condition that they do something (attend school, plant seeds, demobilise)  Destocking. | Conditional cash transfer | * UNHCR grant for Afghan families returning to Afghanistan from Pakistan and Iran (provision of cash at transit centres in country of return) * Livestock purchase – CORDAID Ethiopia | Sustainability of aid, avoiding pro-longed refugee camp dependency. |
| Providing beneficiaries with vouchers for a particular type of good (e.g. seeds) or a bundle of goods | Vouchers | * Seed voucher fairs in DR Congo (AAA, PU) * Seed/fertilizer/tools voucher schemes by FAO/CRS in Lesotho * Seed/tuber replication (e.g. Sweet Potato replication (WV Zimbabwe) * Donkey vouchers (Oxfam Sudan) * Water vouchers (UNICEF Madagascar – *proposed* for 2007) * Vouchers for food (PU DR Congo, ICRC Palestine) * Vouchers for fuel – DCA and French Red Cross, Lebanon * Vouchers for seed (exchanged through market traders) – ICRC Liberia | Sustainability of aid, climate change adaptation, securing means of livelihood, empowerment of beneficiary. |

**Table 2: Examples of CTPs (selection of DG ECHO-funded projects)**

|  |  |  |
| --- | --- | --- |
|  | **Definition** | **Examples from the humanitarian context** |
| **Product** | Innovation to introduce or improve products/services | A change in what is offered, such as improved cooking stoves or food products to counter malnutrition – e.g. ready-to-use therapeutic foods (RUTFs) |
| **Process** | Innovation to introduce or improve processes – changing how a product is created or delivered. | Methods for stockpiling goods, improved coordination, or improving learning and quality assurance – e.g. the service delivery processes through the Logistics Cluster. |
| **Positioning** | Innovation to (re-)define the positioning of products, organisations or sectors – or a change in the context and way in which a product/process is applied. | Changing a humanitarian organisation’s profile or mandate, or changing attitudes to various clusters (water and sanitation, shelter…) – e.g. linking relief to rehabilitation and development and hence. |
| **Paradigm** | Innovation to (re-)define the dominant paradigms of an organisation or sector – changes in the underlying mental and business models. | Calls for paradigm shift in the humanitarian context are for business models towards beneficiary participation, local ownership and capacity development. |

**Table 3: The 4Ps of innovation in the humanitarian context**

|  |  |  |
| --- | --- | --- |
| **Document name** | **No.** | **Type of document** |
| West Bank and Gaza- Cash transfer project: procurement plan | WB 81387 | Procurement plan |
| Project paper on a proposed additional gran in the amount of US 4$ 10.0 million to the Palestine liberation organization for the benefit of the Palestinian authority for a west bank and Gaza cash transfer project | WB 77503 | Project paper |
| West Bank and Gaza - Additional Financing for the Cash Transfer Project : procurement plan | WB 80238 | Procurement Plan |
| West Bank and Gaza - Cash Transfer Project : additional financing | WB AB7257 | Project Information Document |
| West Bank and Gaza - Cash Transfer Project : additional financing | WB AC6884 | Integrated Safeguards Data Sheet |
| West Bank and Gaza - Additional Financing for the Cash Transfer Project : procurement plan | WB 81384 | Procurement Plan |
| West Bank and Gaza - Cash Transfer Project : restructuring | WB RES10379 | Project Paper |

**Table 4: Data sources (all documents are from the World Bank regarding CTPs in the West Bank and Gaza, and are available from** [**http://documents.worldbank.org/curated/en/docadvancesearch**](http://documents.worldbank.org/curated/en/docadvancesearch)**).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Organisation** | **Code / pseudonym** | **Position held** | **Years involved in humanitarian logistics** | **Type of relief involvement** | **Personnel employed in organisation** | **Expenditure**  **US $** |
| United Nations Organisation A | Interviewee A | Supply chain manager | 16 years | Over 75 countries  Emergencies, livelihoods, food, education | 11,500 employees | 2.97 billion |
| United Nations Organisation B | Interviewee B | Procurement and logistics  coordinator | 20 years | Over 125 countries  Emergencies, livelihoods, legal, protection, education. | 7,600 employees | 1.8 billion |
| United Nations Organisation C | Interviewee C | Supply Chain Manager | 25 years | Over 150 countries  Emergencies, livelihoods, legal, protection, education. | 10,800 employees | 2.6 billion |
| International Humanitarian Organisation A | Interviewee D | Supply chain manager | 11 years | Over 189 countries  Emergencies, shelter, livelihoods, legal, health. | 100,000,000 volunteers | 394.2 million |
| International Humanitarian Organisation B | Interviewee E | Logistics manager | 12 years | Over 20 countries  Emergencies, livelihoods, legal, protection, education. | 2,500 employees | 150.3 million |
| International Humanitarian Organisation C | Interviewee F | Logistics manager | 10 years | Over 15 countries  Emergencies, health, livelihoods, education | 1,500 employees | 35.8 million |
| International Humanitarian Organisation D | Interviewee G | Supply chain manager | 8 years | Over 15 countries  Emergencies, health, livelihoods, education | 2,500 employees | 60.3 million |
| International Humanitarian Organisation E | Interviewee H | Logistics manager | 8 years | Over 15 countries  Emergencies, health, livelihoods, education | 1,200 employees | 30.8 million |
| International Humanitarian Organisation F | Interviewee I | Logistics manager | 5 years | Over 15 countries  Emergencies, health, livelihoods, education | 1,400 employees | 36.2 million |
| Commercial Organization A | Interviewee J | Supply Chain Manager | 15 years | Over 12 countries  Emergencies, logistics service, air transport | 200 employees | 12 million |
| Commercial Organization B | Interviewee K | Logistics consultant | 10 years | Over 10 countries  Emergencies, logistics services | 15 employees | 2.5 million |

**Table 5: Interview group**

|  |  |  |  |
| --- | --- | --- | --- |
| **Consecutive Phases of Innovation** | | | |
| **Supply chain innovation phases** | **Authors** | **Innovation phases** | **Authors** |
| Recognition | Arlbjørn et al., 2011  Arlbjørn et al., 2013  Grawe, 2009  Singhal and Singhal, 2002  Wagner, 2008 | Recognition | Bessant & Tidd, 2007.  Bessant & Tidd, 2011.  Govindarajan and Trimble, 2012.  Hall and Martin, 2005.  Hall et al., 2014  Ramani and Mukherjee, 2014.  Tidd and Bessant, 2013. |
|  |  | User Involvement | Berasategi, Arana, Castellano, 2011.  Bessant & Tidd, 2007.  Bessant & Tidd, 2011.  Champan and Corso 2005.  Flowers and Henwood, 2010.  Hall and Martin, 2005.  Hall et al., 2014  Prahalad, 2012.  Ramani and Mukherjee, 2014.  Tidd and Bessant, 2013. |
| Development | Arlbjørn et al., 2011  Arlbjørn et al., 2013  Autry and Griffis, 2008  Flint et al., 2005  Krabbe, 2007  Sebastiao and Golicic, 2008  Wagner, 2008 | Development | Bessant & Tidd, 2007.  Bessant & Tidd, 2011.  Govindarajan and Trimble, 2012.  Hall and Martin, 2005.  Prahalad, 2012.  Tidd and Bessant, 2013. |
| Implementation | Arlbjørn et al., 2011  Arlbjørn et al., 2013  Bello et al., 2004  Flint et al., 2008  Haner, 2002  Srai and Gregory, 2008  Wagner, 2008 | Implementation | Bessant & Tidd, 2007.  Bessant & Tidd, 2011.  Govindarajan and Trimble, 2012.  Hall et al., 2014  Shaw and Burgess, 2013.  Tidd and Bessant, 2013. |
|  |  | Diffusion | Alexander and Childe, 2013  Bessant & Tidd, 2007.  Bessant & Tidd, 2011.  Champan and Corso 2005.  Christensen and Raynor, 2003  Hazen et al., 2012; 2014  Iyer and Davenport, 2008.  Peres et al., 2010.  Prahalad, 2012.  Tidd and Bessant, 2013.  Shaw and Burgess, 2013. |

**Table 6: Consecutive phases of innovation**