

A customer perspective on performance measurement in humanitarian supply chains

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Abstract

The increasing importance of services in SCM leads to a stronger focus on the customer perspective. Donors and beneficiaries are two distinct customer groups of humanitarian supply chains. This paper will analyse how this impacts performance measurement for example in the commonly used balanced scorecard, which includes a customer perspective.

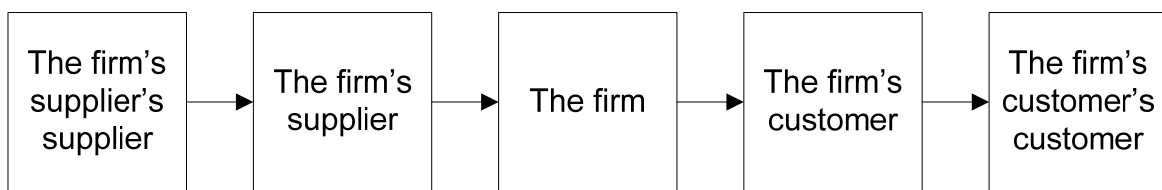
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Introduction

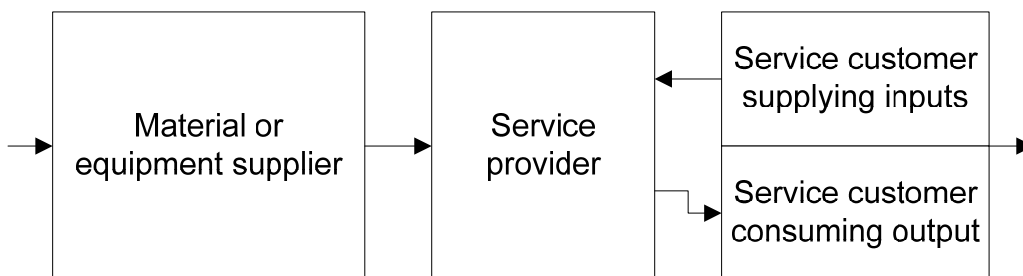
In humanitarian crises, a wide range of goods and services are needed to aid the recovery of the affected population. This might include items such as tents, food and blankets, as well as services such as medical attention or counselling. There is a growing recognition that humanitarian supply chains also include service provision as evidenced by the session on *Humanitarian Logistics & Service* that is part of this track. Humanitarian supply chain management (HSCM) spans the traditional divide of a service and a manufacturing perspective, as it has to be a combination of both, just like many of today's commercial supply chains (Chandes and Pache 2010). This adds complexity to the operations.

Nevertheless, the importance of services in logistics and supply chain management has long been recognised. The Council of Supply Chain Management Professionals (CSCMP) provides the following definition of logistics management: "Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements" (Vitasek 2010)p.114. This definition encompasses the three key flows of goods, services and information. The entire life cycle of a product or service from origin to consumption, also including reverse flows, is included. It focuses on efficiency and effectiveness in meeting the customers' requirements, which gives it a clear service orientation, but also a sense of striving for improvement. Efficiency and effectiveness are at the focus of much research into HSCM, however the customers feature less prominently, which is of particular concern in a service environment as their role is so important in service creation.

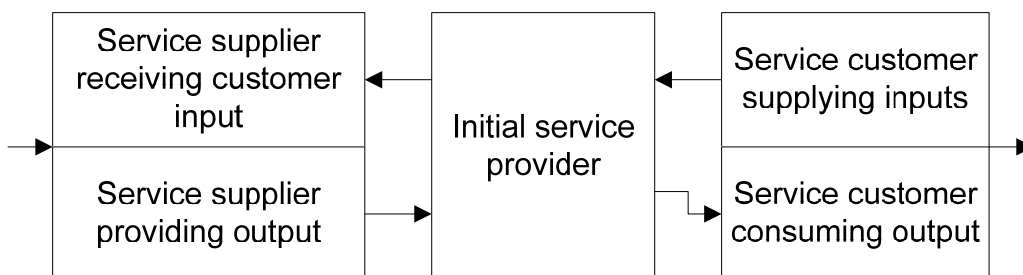
Customers play an important role in co-creating a service experience and influencing its outcome and their own experience (Bitner et al. 1997). This is a key characteristic of service supply chains. Nevertheless, a customer perspective and customer value has so far often been the sole responsibility or marketing (Graf and Maas 2008). Service supply chains are more complex than traditional manufacturing supply chains, as there is no unidirectional flow from suppliers through the organisations to customers. Rather, the customers are also suppliers, leading to a customer-supplier duality and bidirectional flows in the service supply chain (Sampson 2000). This increased complexity is illustrated in figure 1. The recognition of the importance of services SCs and customer participation is growing among the SC community (Baltacioglu et al. 2007, Maull et al. 2012, Sampson 2000). However, that recognition is still in its infancy in HSCM. As the demand structure differs significantly from that in commercial supply chains, practices might not be directly transferrable. For example, the services offered to beneficiaries by a humanitarian organisation are highly variable and the outcomes are influenced by a variety of external factors, only guided by a usually very broad goal that is stated in the organisation's mandate (Beamon and Balcik 2008, Charles et al. 2010). The research tends to take a view that is too organisation-centric to account for much of the customers' experience. This paper therefore aims to explore the possibilities and challenges a customer perspective would bring to HSCM, with a particular focus on its application in performance measurement.



Unidirectional manufacturing supply chain



Single-level bidirectional supply chain



Two-level bidirectional supply chain

Figure 1 - Customer-supplier duality in service supply chains (adapted from Sampson, 2000)

Humanitarian Service Supply Chains

As can be seen in Figure 1, the customer-supplier duality can add complexity to a supply chain both on the supplier and on the customer side. In a single-level bidirectional duality, the customer supplies an input and receives an output. In a two-level bidirectional supply chain, the initial service provider might have outsourced part of the service creation. Adapting this to the HSC situation, it can be seen, that it is a two-level bidirectional supply chain. Beneficiaries are not just inactive receivers of goods and services, but will, at least after the initial disaster response phase, provide feedback and demand more specific aid. On the other end of the HSC, donors are very active suppliers, as they critically evaluate where they spend their money, will often provide ear-marked donations for specific missions or areas, and increasingly demand detailed performance reports. Both customer groups are therefore involved in bidirectional interactions with the humanitarian organisation.

HSCs provide many goods such as food, medication and shelter, but many of their outputs are indeed services. Services are defined as interactions between organisations, service employees and customers (Bitner et al. 1997). This would for example be the field staff of a humanitarian organisation setting up a refugee camp or distributing food. In addition, services have the common characteristics that intangibles are difficult to store, to account for and it might even be impossible to identify who supplies them (Sampson 2000, Sampson and Froehle 2006). In a humanitarian context, this is the case for medical attention or counselling given to beneficiaries. On the other hand, there are also the donors who are the other important customer group. They hardly ever receive a tangible product, but act driven by moral standards and receive abstract intangibles such as satisfaction or social status in return. Therefore, a HSC can be seen to provide services to both key customer groups.

Customers participate in the business by either providing essential resources or by being part of the execution (Sampson 2012). There are three different levels of customer participation, *low* for services where the customer has to be present, *moderate* when customer input is required and *high* when the customer actively co-creates the service (Bitner et al. 1997). Table 1 provides more detail and examples of services on the three levels.

Table 1 - Levels of customer participation (source: Bitner et al. 1997)

Low	Moderate	High
Standardised service Service provided regardless of individual purchase Customer input might be limited to payment	Standardised service customised by customer input Service provided due to individual purchase Customer input is necessary for a satisfactory outcome, but not for basic service provision	Customised service guided by customer input Service nonexistent without customer participation Customer input co-creates the outcome
Airline travel Fast-food restaurant Pest control	Hair cut Full service restaurant Freight forwarding	Marriage counselling Personal training Management consulting

The customer can take on three roles that are not mutually exclusive (Bitner et al. 1997):

1. A resource for production: a company can decide to either try to separate the core service creation as much as possible from volatile customer input, or to treat customers as quasi employees.
2. A contributor to satisfaction and quality: Sometimes contribution is essential for a satisfactory service experience, and in many cases customers enjoy participating, but organisations can also encourage contribution, for example through price reductions.
3. A competitor to the organisation: Customers can in many cases decide to provide the service to themselves rather than creating an external demand for it.

In the case of HSCs, customer participation starts out as low in the immediate aftermath of a disaster, as beneficiaries are simply there to consume, but then increases as beneficiaries provide more input. Donors on the other hand display a very high level of customer participation, as they are providing the resources to create any sort of service and determine how it is being created. This is further complicated by the geographic reach of HSCs. Global SCs increase the physical distance between suppliers and customers, adding complexities in situations where the customer is also at least partially a supplier (Sampson 2000).

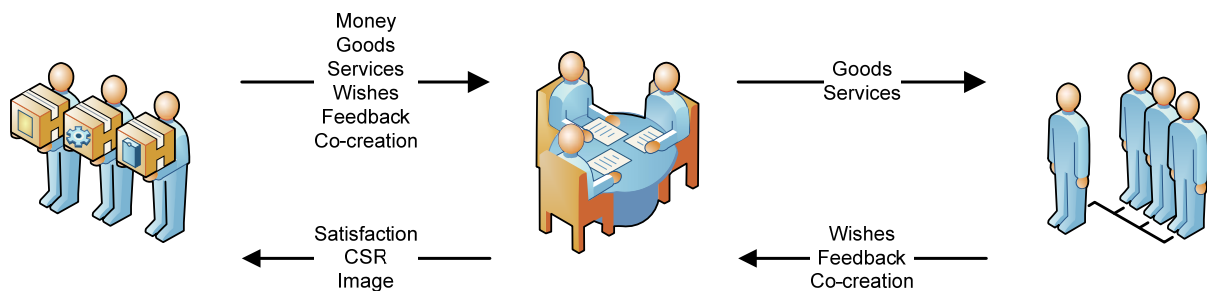


Figure 2 - Customer participation in a two-level bidirectional HSC with goods and services elements

HSCs are therefore SCs with a strong service element, high customer participation on at least one end, and two-level bidirectionality as illustrated in Figure 2. This is important to better understand their overall performance. Research has shown that a stronger focus on the service components of a supply chain can improve performance through more effective information flows (Youngdahl and Loomba 2000). The traditional view is that services are merely an addition to the actual physical goods in a SC (Stock et al. 2010). The focus of research has often been on products rather than the processes of an organisation, which makes services seem unimportant, however, when truly focussing on processes, products and services are of equal importance (Sampson 2012). The importance of services within a single company has long been recognised, but there remains a lack of understanding of its value across the supply chain, although both practitioners and researchers note the increased importance of services in modern global supply chains (Youngdahl and Loomba 2000). Nevertheless, the focus of SC theory and practice is still on manufacturing environments, although structural differences make the application of many models from that area impossible (Baltacioglu et al. 2007, Stock et al. 2010).

Services SCs are particularly difficult to manage due to the difficulties in visualising and measuring performance (Ellram et al. 2007). Service operation are no less scientific, but do not

always fit the models for non-service operations, for example when process times vary according to customer input, a phenomenon that does not occur in the production of goods (Sampson 2012). Services SCs do not fit neatly into the traditional approaches to SCM. For example, the SCOR model assumes 'source', 'make', 'deliver' and 'return' processes that cannot always be clearly distinguished with services, as their production is often synonymous with their consumption and intangibles are generally difficult to return (Baltacioglu et al. 2007, Ellram et al. 2007). So while the importance of services SCs is unquestionable in today's Western economies, they are under researched and can often not be appropriately addressed with tools designed for goods SCs. This is even more drastic in the case of HSCM, where the delivery of services and their respective SCs has not yet played any major role.

It has been outlined how important customers are, particularly in SCs with strong service elements, such as HSCM. However, the customer's ability to co-create a unique service experience is hindered by traditional company-centric SCs (Prahalad and Ramaswamy 2003). Interaction with and management of the relationship with the customer is a key feature that is different between service and goods SCs (Baltacioglu et al. 2007). The customer should be regarded as the centre of gravity of any service SC (Prahalad and Ramaswamy 2003). Customer focus, however, is not exclusive to services management, but rather a sign of good management no matter where (Sampson 2012). While there is a general acknowledgement that a customer focus is of importance to an organisation, it is seldom properly understood and integrated into the entire organisation and its supply chain (Vandermerwe 2004). A customer perspective is fundamentally different from an operations perspective as it is concerned with outcomes rather than outputs and experience rather than process (Johnston 2008). In HSCM, the importance of outcomes rather than outputs has already been highlighted (de Leeuw 2010, Tatham and Hughes 2011). Outcomes, however, depend mainly on the customer and might be influenced by a number of different elements that are not all within the processes of one particular humanitarian organisation, or even just one SC. This calls for different ways of viewing and analysing SCs in order to be able to assess their performance. Already a simple depiction such as Figure 2 shows that linear, sequential interactions are not to be expected in HSCM.

Customers in Humanitarian Supply Chains

A structured literature review of academic papers on "humanitarian logistics" was conducted analysing 93 papers. Out of these 79 discussed beneficiaries and/or donors. 82% discussed beneficiaries, and 56% discussed donors. Only 32% of papers referred to either group as customers. As stakeholders, both groups are important, although beneficiaries lack power to enforce their claim on the supply chain. Nevertheless, because of the moral mandate of humanitarian organisations, both customer groups are definitive when it comes to assessing performance. Taking a customer perspective on the issue of performance measurement in HSCM can help to make results relevant both regarding the financing of an organisation, and the output it achieves.

The literature review revealed that the notion of "customer" is not very common in the academic literature in this field. Nevertheless, the importance of building customer relationships has been emphasised by some authors (de Leeuw 2010, Oloruntoba and Gray 2009). Humanitarian organisations are accountable to a variety of stakeholders, although their *raison d'être* are the beneficiaries (Beamon and Balcik 2008). The bidirectionality further complicates the notion of customer and supplier in HSCM. The customers are both donors and beneficiaries; the suppliers are both donors and actual paid suppliers (Charles et al. 2010, Oloruntoba and Gray

2009). Donors are both suppliers of money or products, as well as customers that buy the service provided by a humanitarian organisation (Charles et al. 2010). This is a much more complex structure than in commercial SC where suppliers are being paid and customers pay for the good and services they receive. However, to meet the acute needs in the affected population, donors have to relate to beneficiaries, and all stakeholders have to work towards a common goal (de Leeuw 2010, Oloruntoba and Gray 2009).

The power of donors to increase, decrease, or withdraw their support makes them the stakeholders most humanitarian organisations focus on (Hilhorst 2002, Kovacs and Spens 2008). NGOs compete for donations from a limited number of donors that make decisions on the allocation of their resources based on their assumed or actual knowledge of the activities these resources will be spent on (Bilodeau and Slivinski 1997, Everett and Friesen 2010, Oloruntoba and Gray 2009). This plays a major role in the underlying morals of organisations. The increasing pressure by donors creates a competitive environment. Donors can be corporate, private or governmental institutions. Each of them has different demands and needs for transparency and reports, for example for tax purposes, or to appease their shareholders.

The recipients of aid, the beneficiaries are important, but often overlooked stakeholders (Oloruntoba and Gray 2006). As the relationship with them is non-contractual, they have no way to exit it and in many cases not even an option to voice dissatisfaction with the outputs they receive from a supply chain (Hilhorst 2002, Kovacs et al. 2010, Pettit and Beresford 2009). Nevertheless, their trust is essential to the safety and ultimately success of a mission (Hilhorst 2002, Lettieri et al. 2009). Beneficiaries cannot just be seen as passive stakeholders that have to be fed, sheltered and rescued, as they have at least one active role, that of evaluation of the humanitarian action (Kovacs et al. 2010, Lettieri et al. 2009). Assessment is usually done by the funders or governmental bodies that instruct NGOs, but hardly ever by the beneficiaries (Pérouse de Montclos 2012). However, keeping in mind the dual customers of HSCM, this assessment is one-sided. Ultimately, beneficiaries are in the best position to assess the performance of a HSC in terms of its output and impact (Hilhorst 2002). However, they are often difficult to reach. In a study in Uganda it has also been shown that satisfaction of beneficiaries actually declined when a HSC performed well, as their expectations were raised (Barr and Fafchamps 2006). This leaves a question of which stakeholder groups' views of performance are correct or at the very least helpful for the organisation.

While standards such as ISO 9001 for quality assurance in the eyes of customers and other stakeholders exist, they are rarely adapted to the non-profit sector (Hilhorst 2002). There are now initiatives such as ALNAP and HELP to encourage accountability and improvement in humanitarian organisations. Nevertheless, performance measurement is still an area of little academic research (Lettieri et al. 2009). Although performance has improved, humanitarian organisations continue to struggle with efficiency, particularly in HSCM (Maon et al. 2009, Whybark 2007). The increasing focus on preparedness and planning has actually encouraged performance measurement (Van Wassenhove 2006). However, a customer perspective is rarely taken in the evaluation of the performance of these highly specialised service supply chains. If it is, it almost exclusively is the perspective of only one customer group – the customers. Nevertheless, it has been shown that customers can have a significant impact on the performance of supply chains, for example in greenlining automobile supply chains (Simpson et al. 2007). Furthermore, taking a customer perspective can create valuable assets for organisations that aid the efficiency and effectiveness of its operations (Cegarra-Navarro and Sanchez-Polo 2008, Graf and Maas 2008). This is equally true for non-profit organisations (Mulyanegara 2010). The

following section will show the impact a customer perspective could have on performance measurement in HSCM.

Performance Measurement in Humanitarian Supply Chains

HSCM has many similarities to its commercial counterpart. Principally, performance measurement therefore follows the same lines (Van der Laan et al. 2009). However, there are some key differences. Most importantly, non-profit organisations, such as the ones active in humanitarian operations, do not have the financial bottom line as their primary performance measure (Kaplan 2001, Speckbacher 2003). There is no one key customer group that insists on the profitable operation of the business like the shareholders do in commercial entities. This complicates performance measurement as several stakeholder groups with varying definitions of good performance are involved in HSCM.

However, even for-profit organisations are moving away from purely financial indicators towards wider ones (Atkinson et al. 1997, Gunasekaran and Kobu 2007, Gunasekaran et al. 2004). The Balanced Scorecard (BSC) takes into account a financial perspective, as well as a customer perspective, a learning and growth perspective and an internal business processes perspective (Kaplan and Norton 1992). It has been applied in supply chain contexts (Bhagwat and Sharma 2007, Brewer and Speh 2000). Several studies of performance measurement in humanitarian supply chains have also taken it as a starting point (de Leeuw 2010, Schulz and Heigh 2009, Van der Laan et al. 2009). It will therefore form the basis of discussion here.

The BSC is used widely, but not without criticism (Neely 2005). For example, companies might also wish to include social and environmental factors (Epstein and Wisner 2001, Zingales et al. 2002). This would also be of particular importance in a humanitarian context. Another important topic in commercial SCs has been the need to implement measures that go beyond one company to reflect the growing importance of long-term strategic perspectives and SC partnerships (Atkinson et al. 1997, Epstein and Wisner 2001). Given the complex network of stakeholders in HSCs, this would be a prominent feature, particularly with regards to services. With this background, developing a performance measurement system for HSCM will not only benefit humanitarian organisations, but lessons from this research work might also be transferrable to other SCs.

As previously discussed, customer involvement is of particular importance in service supply chains. Previous research has shown that the customer perspective in a BSC for HSCM has to include both donors and beneficiaries to provide any reasonable means for performance measurement (de Leeuw 2010). However, the importance of the customer is not limited to this perspective in HSCM. The internal business process perspective also involves the customer groups as they provide important inputs as has been shown in Figure 2. Without the co-creation of services by customers, the supply chain cannot function. The learning and growth perspective should also be customer focussed, as customer relationship management is among the key skills for logisticians in this area (Kovacs and Tatham 2010, Kovacs et al. 2012). Finally, the financial perspective lacks the key measurement of the bottom line in comparison to for-profit organisations. Therefore it becomes more ambiguous. Organisations tend to have a variety of different approaches to financial management (de Leeuw 2010). However, the close interaction with donors features prominently and it is noted that finances are managed tightly to satisfy donor scrutiny (de Leeuw 2010, Schulz and Heigh 2009). At least one of the key customer groups therefore features in all four of the BSC's perspectives.

For performance measurement in humanitarian supply chains, particularly when recognising the importance of services, a customer perspective will therefore mean more than just splitting the BSC's customer perspective into two to satisfy both donors and beneficiaries. A true focus on customers will have to reach farther than that. In order to achieve that, a humanitarian organisation has to be aware of the way the supply chain looks from the customers' perspective (Maull et al. 2012). In soft systems thinking, the boundaries of a system from an actor's perspective are essential to their understanding of and role in that system (Checkland 1999). The relevance of this becomes apparent by considering what the customers see of HSCM performance.

The donors will see performance mainly through the organisation's reports and media reports on the overall disaster response, which may or may not feature a particular organisation. They are likely to get this information about many different humanitarian organisations and will base their donation behaviour on it. Performance measurement should therefore be done in terms of what the customer can see and is informed about, in order to ensure maximum donations in a highly competitive market. This could include outcome measures that show the improved situation of the beneficiaries, or input/output measures that capture the efficiency of the supply chain. However, it has to be kept in mind that a large part of the supply chain is invisible to the donors. The same is true for beneficiaries. They will have little awareness of or interest in the wider workings of the supply chain. They can in many cases compare the outputs of several humanitarian supply chains; however their sources of information can be unreliable and biased, for example due to a perceived association of a humanitarian organisation with a military force. Their performance measurement will be based on criteria such as the speed of the initial response, or the responsiveness to urgent needs. Taking a customer perspective on performance measurement will therefore involve consideration of their worldview and the constraints of the system from their perspective (Checkland 1999).

Conclusion and Further Research

Services SCs are not only little researched in a humanitarian context. Services have been mainly left to the management of marketing and sales departments, resulting in a lack of expertise from SC professionals in this crucial area (Ellram et al. 2007). Theories and approaches from the aforementioned areas could help improve services SCM (Stock et al. 2010). As has been discussed, the usual linear representation of supply chains is not sufficient for service supply chains due to their bidirectional, nonlinear flows, and the importance of the interaction between entities rather than just their existence (Sampson 2012). A more holistic approach is required, for example the use of systems thinking, which could help to structure performance measurement in HSCM according to a customer perspective, taking the customers' view of the system into account. To achieve a true customer focus, it is not enough to adapt standard tools of performance measurement such as the BSC by splitting the customer element into donors and beneficiaries.

This is a conceptual paper that proposes a customer focus in HSCM, particularly for performance measurement. The basis of this proposal is found in soft systems thinking, as well as the move towards more service oriented SCM in commercial contexts. Further research should address this issue empirically to analyse the way in which the different customer groups assess performance and to propose ways to introduce such performance measurements in practice.

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