Optimizing capacity utilization of freight transport through corporate-humanitarian collaboration -a new perspective.

Subtitle: An innovative solution to humanitarian logistics.

Master's Thesis submitted to the
Faculty of Informatics of the *Università della Svizzera Italiana*
in partial fulfillment of the requirements for the degree of
Master of Science in Informatics
Management & Informatics

presented by
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under the supervision of
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September, 2014

I certify that except where due acknowledgement has been given, the work presented in this thesis is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; and the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program.

Rik Choudhury
Lugano, 5 September, 2014

To my beloved mom

After a storm comes a calm ...

Matthew Henry

Abstract

In the field of human welfare, the two most important tasks includes generating enough funds and resources and the second is to securely deliver them to the people in distress in appropriate time. Many a times we manage to get a good grip on the first one but often fail to solve the second problem. In recent times the number of calamities as well as inflation rates has risen hand in hand giving no scope for a reasonable solution in reaching the resources to its destination. This long neglected issue requires sustainable and high quality solutions with expert hands to solve the problem on a large scale.

The aim of this thesis is to offer a conceptual model to deliver relief aid from the point of production to point of consumption in a efficient & cost effective way after the emergency period of natural or man-made disasters has subsided. As a first step towards the approach, the problem is researched & analysed before attempting to provide a customised solution. The study is based on an extensive literature review discussing the complexities of relief work & its associated logistics. It also reveals the differences between commercial and disaster relief logistics. The literature review also deals with the possibility of establishing collaborations within the framework of corporate social responsibility (CSR). A questionnaire investigates the respondants' point of view about the strenghts, opportunities and risks of donations for space, CSR as well as developing corporate-humanitarian collaborations. Case studies are also included in the thesis in order to discuss strenghts & weaknesses.

This conceptual thesis does not attempt to validate the model provided, but it proposes an approach by which this could be undertaken. Research finds that collaborations between corporations & humanitarian organisations, when successfully establised, provide their partners with mutual benefits such as knowledge transfer & sharing of resources and best practices. Also, the improvement of a company's public image and awareness can be achieved. Humanitarian organisations profit from cost-effective ways to deliver goods & faster movement of goods due to less bureaucracy. The findings also demonstrate that such collaborations are expected to show a moderate development in the future & rapid development in software solutions customised to serve this niche segment.

This thesis presents the conceptualisation of an integrated logistics strategy system for humanitarian relief work. The system integrates a conceptual and a technological component. The software system can be applied as a decision support tool for evaluating space availability, CSR score & cost savings. It generates optimal solution for collaborations between corporations & humanitarian organisation depending on their needs & objectives. Thus, the application affects the process of delivery of humanitarian relief aid as well as their response performance.

Research is solely based on collaborations between corporations and humanitarian organisations focusing on relief operations after the emergency period of disaster i.e. during the rehabilitation period. Further research is needed especially in the field of risk assessment & its management for including services during emergency conditions in the solution. The thesis provides the concept & architecture design of the software solution, implementation phases of the design are not included as part of the thesis.

Acknowledgements

It is a pleasure to express my sincere gratitude to the people who made this thesis possible.

I would like to express my profound gratitude to my advisor Prof. Paulo Goncalves for giving me the opportunity to do this thesis under his supervision and for approving my thesis proposal. He rendered excellent assistance, provided useful advice and information, and stimulating suggestions. His consistent energy and enthusiasm motivated and inspired me and his encouragement and interest in my topic assisted me in all stages of writing up my research.

I especially would like to express my gratitude to Prof. Nitin Joglekar. I was delighted to interact with him through attending his competition organised by ASTHLM group, Universita della Svizzera italiana, Lugano under the guidance of Prof. Paulo Goncalves. His longstanding experience in ideation and its conceptualisation makes him to an invaluable person to ask for advice. I am grateful for his constructive comments and important support at the beginning of this research.

My sincere thanks also go to the many experts of humanitarian organisations, corporations and logistics company for completing the questionnaire and providing me insights and up to date information.

I also wish to thank my friends for their help with revising the language and layout of my manuscript. Thank you for your detailed reviews, advice and constructive criticisms, as well as an “appealing” task. Thank you also for helping me getting through the difficult times, for all your emotional support, entertainment, companionship and caring.

Finally and most importantly, I wish to thank my parents Ranjan and Alpana for motivating and supporting me as well as for their perpetual encouragement and tolerance they provided me throughout my life and especially within these two years.

Contents

Figures

Tables

Chapter 1

Problems, Mission & Objectives

1.1 Background

The global societal impact of humanitarian aid is undisputed; humanitarian logistics, however, remains a largely underestimated area in research and practice. Similar to logistics in the corporate sector in the 1980s, the logistics function in the humanitarian sector is under-recognized, underutilized and under-resourced. With increasing numbers of natural and man-made disasters, organizations face challenges due to the limited number of available experienced and trained logisticians and a lack of up-to-date technology systems.

Defined as 'the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from point of origin to point of consumption for the purpose of meeting the end beneficiary's requirements' (Thomas 2005), humanitarian logistics is to 'design the transportation of first aid material, food, equipment, and rescue personnel from supply points to a large number of destination nodes geographically scattered over the disaster region and the evacuation and transfer of people affected by the disaster to the health care centers safely and very rapidly' (Barbarosog lu et al. 2002).

The needs are continuously increasing: '.. disaster relief is and will continue to be a growth market'... 'are expected to increase another five-fold over the next fifty years' (Thomas and Kopczak 2005). Disaster relief alone needs to cover more than 500 disasters annually that result in the loss of 75 000 lives and affect another 200 million people (van Wassenhove 2006). As logistics costs (from purchasing to the last-mile delivery of items) account for over 80% in any disaster relief operation (van Wassenhove 2006), increasing the efficiency of logistics is of great importance to the overall goal of alleviating the suffering of vulnerable people.

Whereas the research traditionally has focused on improving efficiency and reducing costs, i.e. on the leanness of supply chains (Lee 2004), the current trend is towards more innovative and responsive, i.e. agile supply chains that operate in highly dynamic environments (Towill and Christopher 2002).

Humanitarian aid operations are characterized by a myriad of different actors, from the public sector to non-governmental agencies, donors and third party logistics providers, the armed forces, and beneficiaries (KovÃącs and Spens 2006). Organizations recognize that failure to effectively manage the movement of supplies and services causes the supply and logistics chain to stagnate. Despite the exceptional work of humanitarian organizations, disruptions and bottlenecks in the receipt, warehousing transportation, tracking and delivery of relief remain common occurrences.'- Fritz institute. Thomas and Kopczak (2005) conclude that only a handful of aid agencies have prioritized the creation of high-performing logistics.

1.2 The problem & opportunity

Over recent years, an increase in the number of natural disasters, as well as their increasingly simulteneous occurrence and complexity can be regarded as an alarming fact, primarily in view of the limited resources that restrict the ability of aid agencies to respond to these events. The humanitarian organisation's objective is to provide aid in terms of water, food, medicine, shelter, security and other relief operations in case of emergency. Logistics play an important role in disaster relief operations as approximately 80% of the activity related to a relief mission constitutes logistics processes.

Logistics can be considered one of the most layed business operations due to the fact that it is conducted "all around the globe, 24 hours of everyday, 7 days a week, during 52 weeks a year" (Bowersox, Closs & Cooper, 2007) . The main task of the logistics is often described as providing the service of transporting raw materials or finished products to the predetermined place where they are needed. Logistics can therefore be defined as "the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organisation and its marketing channels in such a way that current and future profitability are maximized through cost effective fulfilment of orders" (Christopher, 2005) . The reverse flow, i.e. products that are being returned from customers or suppliers to their point of production, is also included. Thus, logistics can be regared as the connection between the market and the supply network.

Logistics does not solely play an important role in private sector operations; humanitarian organisations are likewise affected (Fritz Institute, 2007). Therefore, the supply chain management can be regared as an essential requirement to successfully co-ordinating the various stakeholders involved in relief operations.

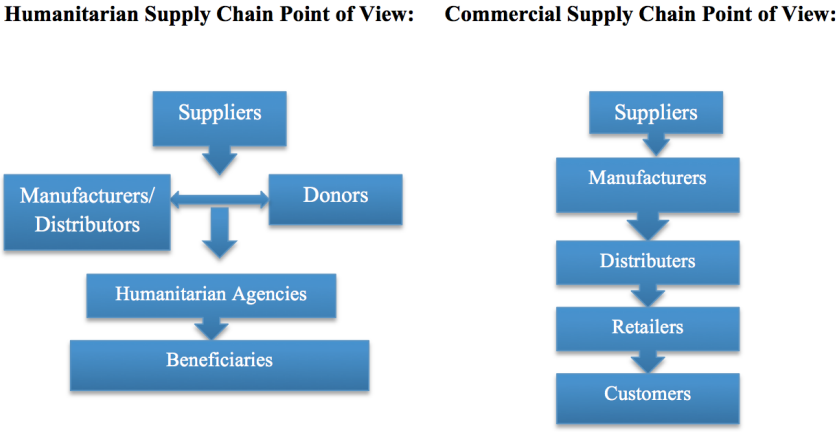


Figure 1.1. Distinction between humanitarian n commercial logistics

As illustrated in Figure 1.1 & 1.2, the main flows of business and humanitarian supply chains include material, information, finance, people and knowledge and skills. It is the flow of the people, and knowledge and skills that affects the humanitarian sector to the greatest extent. The number of natural catastrophes occuring each year has quadrupled over the past two decades (Oxfam, 2007); therefore, these rank highly on both policical and business agendas.

Additionally, the increasing importance of corporate social responsibility (CSR) in business strategies has given rise to cross-sector collaborations in the humanitarian field. Nevertheless, it is often argued that humanitarian agencies are about 15 years behind commercial logistics companies with regards to the development of supply chain processes (Van Wassenhove, 2006; Rickard, 2003). That creates a gap in performance at the optimal level for humanitarian agencies and a scope for the humanitarian aid providers & corporations to come together.

The thing that makes humanitarian supply chains most different from commercial supply chains is that humanitarian organizations seek a balance between cost and speed, whereas a commercial supply chain seeks profit. But humanitarian supply chains do also differ from commercial ones because of the limited capital & human resources, the high uncertainity levels, the often political environment and the ambiguous objectives. (Tomasini & Van Wassenhove, 2009)

Focusing on the logical aspects of relief operations, business and humanitarian aid organisations have cross-learning possibilities. Humanitarian organisations are experienced in building and coordinating supply chains in emergency areas, characterised by high uncertainity rates and limited resources. But they have little or no expertise or funds well enough to execute the logistics from the point of production to the point consumption, leaving them exposed to the risks of the market. On the other hand, the private sector companies can help in the improvement of relief operations by contributing capacity in their transit consignments by donating space in their resource carrier (shipping containers in case of sea transit, cargo space in case of air freight).

Finally, little research has been undertaken on the elements that commercial logistic com-

Figure 1.2. The Supply Chain Flows (Adapted Tomasini & Van Wassenhove, 2009)

panies and humanitarian organisations require for building successful collaborations. It is important to note that research efforts in this particular area suffer from insufficient reliable information. Since supply chain management in the private and humanitarian sectors can be regarded as a key element for coping with the current and future challenges, investigation into cross-sector collaborations is of utmost importance.

Regardless of the challenges that cross-sector partnerships implicate, it can be argued that the prevailing synergies between private-sector and humanitarian organisations can add value to both partners involved.

1.3 Theory of Change

Using the theory of change, thinking to explore the links between container space optimization to inclusive growth, this thesis applies the theory of change analysis to existing way of doing business in commercial logistics. In a situation where humanitarian logistics & corporations & its related business have been separate for years, both having different motives for operation, building a partnership to support sharing of knowledge and expertise, reducing costs of operations & limiting delay is a key priority.

The starting point was the honest research, which revealed that the corporate related humanitarian work comprised of charities, donations & one-time social work for maximizing brand image. There were loose collaborations but the absence of mutual benefits was distinct. No real partnership existed, like the relationships between partner firms in the business world where both the partners have similar motives. The problem could be looked upon from the highest level instead of the programmable logic level to fully explore the issues around the present scenario. Looking at the available research and current industry situation, will led to show that at times of emergency, some corporates have collaborations with humanitarian organizations to help during that period but post-emergency periods require an on-going work as the development of the disaster struck areas take long times to return back to normacy. During which the humanitarian organizations have to struggle alone. The fast and effective provision of disaster relief is highly dependent on the coordinated and successful execution of logistics activities. However a lack of knowledge and experience of humanitarians in this particular field of expertise inhibits the improvement of performance in disaster relief.

Nevertheless, corporate-humanitarian collaborations are still in its infancy and show dynamic potential in terms of the types of engagement after disasters and the social as well as economic value they may produce. Therefore, it is necessary to further explore the benefits, challenges and risks partnerships might face and when, as well as how, companies can contribute to the improvement of relief efforts and disaster preparedness and, to a certain extent, disaster mitigation. This thesis attempts to highlight a practice where corporate-humanitarian collaboration could be beneficial to all the parties involved in the process. A practice if understood & followed well will change into a norm, which in turn will promote inclusive growth.

Sometimes when a corporate makes an consignment to ship its good from the point of manufacturing to its clients, the goods may not be able to completely fill all the space (slots) in the containers or cargo space in the transport i.e. the ship or the cargo plane. Usually when a corporate makes a order like this, they book and pay for the slots that are occupied by their goods. But if the container or the cargo space is not filled up to maximal threshold (depends on the type of the container or the cargo ship, usually more than 80%), the ship or the cargo plane doesn't leave for its destination. It wait until the container or the cargo space is filled by the some new client's order, resulting into a delay.
Also, at times when the goods are delivered to the destination, the goods are unloaded, the empty container or the cargo space remains unutilized till the logistics company gets new order or the empty container or cargo planes are repositioned to the place where there is more demand for them. These repositioning costs are high and the time delay to the place of demand is long. This becomes a issue for the logistic companies.

To solve this issue, the corporates could donate the unutilized space to humanitarian relief work. If there is a humanitarian aid, which needs to be in the same or nearby destination as corporate goods in similar time of delivery, the private company could donate fully or partially for the empty space to relief work. The humanitarian logistics cost are ever increasing making it difficult for the relief workers to arrange for funds. By donating the space, the corporate contributes to a social cause, thereby improves its CSR value & brand image along with getting tax incentives from the government. The humanitarian organization gets an inexpensive way to deliver the goods to the place of disaster, approximately at right times without delays. And the logistic companies don't need to reposition its empty or partially filled containers or cargo spaces to places of high demand & they get more business. In this way, all the participants involved in the process benefit from the relationship. The collaboration ensures it not be a discrete/ one-time event. Slowly other corporates & shipping companies partners with humanitarian organizations & start to apply this practice. Industry best practices turn into norms encouraging majority elements in the business to follow it. Gradually the norm results into inclusive growth for the participants.

Figure 1.3. Pathway from donation for space to inclusive growth.

Growth that is not inclusive affects the society, the economy, and the polity. A lack of inclusive growth can result in real or perceived inequities, which has its own social ramifications. Inclusive growth promotes economic growth partly by broadening the base for domestic demand and partly by increasing the number of people with a stake in reforms and in a stable government. Partnership encourages sharing of knowledge & resources, making the system more sustainable, improving CSR for the corporates. CSR is becoming ubiquitous. On the one

hand, that's good news because it proves its business value. On the other hand, it's getting harder to distinguish one companyâĂŹs efforts from another's. CSR leaders develop proprietary approaches to drive measurable social change.

1.3.1 Assumptions

This section discusses some of the assumptions taken into account in developing this thesis.

1. One of the shareholders in the solution are the corporations. The corporations include all companies private or public which are engaged in shipping their goods from one point to another taking assistance from logistics companies like shipping companies, air freight companies, rail & road freight companies who are involved in physically moving the goods. The term 'corporation' used in this thesis are companies with motive of making profit i.e. commercial companies.

2. Another shareholder which is discussed in the thesis is the logistics company. By 'logistics company', it is meant to include all companies which are involved in physically moving the goods for their clients (may be corporates or humanitarian organisations) from the source to the destination as ordered by their clients. They are profitable companies who charge their client for transporting their goods.

3. The term 'space donation' used in the thesis is meant to be monetery donations from donor companies for the extra space which remains unutilised after all orders from private companies have been loaded in the container to be shipped. The space refers to the empty space in a partially filled container or an empty container that is not utilised due to unavailability of new orders.

4. The threshold for the empty space is assigned to be more than 5% to be usefull enough for loading relief aid. Usually on a global scale, the amount of under-utilized space in partially filled containers amount upto 20% of its full capacity. The focus of the thesis is attempt a find a solution to reutilize that space for humanitarian relief work.

5. The term 'capacity optimisation' refers to practice of complete utilization of full capacity of containers or freight carriers.

6. The term 'shipment' used in this thesis refers to the goods (both from corporates & humanitarian organisation) that needs to be delivered from one point to another. The shipment could be executed by any mode of transport i.e. sea/ocean freight, air freight, rail & road (in-land) freight. The thesis, when it refers to ocean/sea freight, it means cargo ships which carry contanerized goods from one point to another in containers. Liquid, pressurized gas containers & other solid containers with temperature & pressure controls are not part of the present solution the thesis proposes. In the same way, containers & solid cargo air freight carriers are included as part of the solution, excluding specialized types of containers. The cargo cars in rail freight & trucks & lorries which carry solid containers or 'container type' boxes are part of the solution.

7. Tax rebates discussed in this thesis refers to the discounts that corporation normally would obtain for humanitarian donations. Although the donation is monetery but it is been

utilized for buying extra under-utilized space in containers. These rebates are evaluated for the corporations who donate, doesnot include logistics companies which are involved in physically moving the goods.

8. The term 'collaboration' refers to corporate-humanitarian collaborations. Its a collaborative relationship between the corporation who are interested in donation for under-utilized space if available and the humanitarian organisation which needs to deliver relief goods to the disaster areas. This collaboration is mutual relationship benefiting both entities. The corporation has the advantage to monetery tax rebates, developing great corporate social responsibility ratings & public goodwill. Also the humanitarian organisation gets a inexpensive way to deliver goods to the disaster site.

9. The thesis assumes that source, destination & routes for both the corporations & humanitarian organisation are same or similar nearby places. The focus of the thesis is to take advantage of commerial logistics skills & used it to deliver humanitarian relief aid to disaster areas without distrurbing the regalar practices followed by commercial logistics. It aims to complement the existing system in a way to assist humanitarian relief work.

1.4 Objectives

The thesis is based on the following two main research objectives:

- **Objective One**: "To propose a new perspective to find a solution to the problem faced by humanitarian relief agents in their logistics operations when delivering relief aid"
- **Objective Two**: "To develop a conceptual design for a integrated software for the perspective"

1.5 Mission

The study is based on the idea that donations & collaborations by corporation with humanitarian organisations could benefit both of them even though their primarz motives are different. Collaborations could help bring the best of both the actors. Firstly, the thesis seeks to provide insights into the history of humanitarian logistics and disaster relief. It also highlights the way in which corporates used to participate in the humanitarian process. Particular focus has been given to shipping logistics and how humanitarian organisations take advantage of the same to serve people in distress. In addition, the qualities and critical factors required to make the solution to work and outlines an integrated software to facilitate the system.

1.6 Limitations of the study

This thesis is based on primany data which has been collected through the interviews conducted & completion of questionaire by employees of commercial logistics, corporations and humanitarian organisations as well as specialised theoritical information from academic literature.

This study focuses on the a concept of donation for space in freight transport to help humanitarian aid providers find a reliable and inexpensive solution for logistics by engaging in collaboration, particularly between corporations and humanitarian organisations. More specifically, corporate-humanitarian collaboration whose disaster relief operations are based on-going rehabilitation work.

The solutions initailly works for on-going humanitarian work but as the networking between the different actors & collaboration improves, the solution could be applied for sudden-onset of disasters (e.g. earthquakes, tsunami etc). Ongoing humanitarian aid work, such as the management of food & shelter in the disaster struck area, development of the sanitation in the area is relevant to this study. Conflicts & war related disasters are not presently part of the framework of the solution as it proposal involves taking assistance of civilian commercial logistics companies & corporation goods who are not allowed in war-inflicted disaster areas. Due to the complex range of actors (all external participants involved in humanitarian affairs) involved in disaster relief operations, it is not feasable for this study to illustrate the complete scope of practices and circumstances that prevail in real-life. The findings and solution offered are based on information from self âĂŞ administered interviews & questionnaires conduced during the preparation of the thesis and self-study of large no. of academic literature.

1.7 Research Questions

The following listed questions were used as a guide for the research process in order to achieve the above-mentioned objectives.

- What are the key challenges in humanitarian aid and disaster relief logistics compared with that of commercial supply chain operations?
- What are the major benefits for the parties involved, are there any challenges that need to be overcome and what are the risks to be tackled?
- What are the specific qualities that commercial logistics providers and humanitarian aid agencies require in order to improve each others processes in a partnership?
- Can there be an cost effective way of reutilizing empty or partially filled containers without repositioning them?
- Are Corporate Social Responsibility & tax benefits good enough factors for corporates to engage in humanitarian relief work (even though they have different motive of operation)?
- Does the commercial logistics company benefit from partnership between corpration & humanitarian aid organisation in context of humanitarian goods transportation?

1.8 Definitions

- Shipper/Consignee: The shipper and consignees are companies (manufacturing, trading or others) demanding for transportation of goods. In this case (see Figure) they are the ones loading and unloading the container.
- Inland transport operator: Inland transport operators are serving the different modes of inland transport: rail, road and inland waterway (IWW).
- Empty depot operator: Operators of empty depots are primarily offering a storage service for transport opeartors, often amended with services like maintainance, cleaning and repair. Either these depots are situated in the sea port area or in the area the port services: the so-called port hinderland. Due to te fact that the shipper- in case of carrier haulage-decide how to route empty containers, these depots play a rather passive role in the transport chain. Nevertheless these players have access to important information on empty container shortages and surplus. In times of increasing vertical or intermodal interaction of shipping lines, it is not uncommon that they are operating these terminals themselves, what also could be validated by the survey.
- Port authorities: The term port or port authorities is used in different ways. There are four different port types to distinguish, whereas port authorities play different roles in term of port management, ownership of infrastructure and suprastructure and service provision.
- Terminal operator: The (sea) terminal operator is responsible for moving cargo through the port and thereby creating port throughput. Depending of the portâĂŹs size and functions, one or more terminals can be settled in one port.
- Shipping lines: Shipping lines provide maritime transportation services. For the purpose of this thesis, the focus is on container operating shipping lines.Due to the vertical or intermodal integration shipping lines are furthermore involved by e.g. owning container equipment, operating terminals etc. In this context it is important to distinguish between carrier and merchant haulage the shippers themselves remain in control of organising the transport and subcontract all involved transport operators.
- Horizontal individualism: Collectivism emphasizes interdependent self-construals, communal relationships, norms, and in-group goals. Triandis & Gelfand (1998) published a revised measure of Horizontal & Vertical Individualism & Collectivism .

1.9 Research Structure

Chapter One: The purpose of this chapter is to provide an introduction to the research topic. The development of the concept of business logistics is demonstrated and is applied to the area of humanitarian aid. A comparision between the humanitarian & commercial logistics is highlighted. Further more, a brief overview of cross-sector collaborations in humanitarian aid and disaster relief logistics is provided. The background problem and the justification for the choosen topic, as well as the limitations of the study, and its research objectives are also pointed out in this section.
Chapter Two: Literature Review: This chapter provides the overview of the literature findings,

primarily on disaster scenarios, its phases, collaborations, main participants of the solution and their way of doing business.
Chapter Three: Present Market Practices: The chapters gives the present practices of the actors concerned with the solution.
Chapter Four: Case Study: Existing models are discussed here. It is focused on two existing relief work systems, namely the MedShare case and the collaboration between TNT and WFP (World Food Organisation). Firstly, an ovreview of the companies and organisations involved is provided, so that subsequestly the motivation for building the solution is demonstrated. Further more dynamic model of our solution is presented.
Chapter Five: Our Proposition: This section provides the step by step process for our solution. Also presented is a dynamic model of the solution.
Chapter Six: Finding and analysis: This chapter discusses the findings of the conducted questionnaire on the slutions, empty or partially filled containers, CSR, tax benefits and collaborations. The respondants' overall perceptions of the solution and possible barriers, are discussed in the chapter.
Chapter Seven: Logistics Strategy System Design: Softare design based on the needs of the dynamic model is discussed in this section.
Chapter Eight: Conclusions and future work: The final chapter provides closing remarks about corporate donations, trade imbalances and cross-sector collaboratins. It also gives recommendations for future research.

Chapter 2

Literature Review

2.1 Introduction

This chapter outlines and debates the concept of disaster relief logistics and the potential of cross-sharing possibilities through collaboration between businesses and humanitarian organizations. First, description of the need for a better solution to the problem of humanitarian logistics is discussed. Second, the perspective of the main participants of the solutions, the positives& the negetives are highlighed.

"Relief is the enemy of recovery following disasters, so minimize relief in order to maximise recovery" (Otto Konigsberger, Director Development Planning Unit, UCL, 1973)

More and more natural and man-made disasters are occuring and there is a constant need to respond to these disasters in more efficient ways (Schultz & Blecken 2010). Present literature (Beristain, 1999; Van Wassenhove, 2006; Maon, Lindgreen & Vanhamme, 2009) groups disasters into four main categories:

	Natural	**Man-made**
Sudden-onset	Earthquake, Hurricanes, Tornadoes	Terrorist attacks, Coup d'Etat, Chemical Leak
Slow-onset	Famine, Drought, Poverty	Political crisis, Refugee crisis

Table 2.1. Disaster categories

Humanitarian organisations accomlish their relief operations within the framework of three generally accepted principles, namely humanity, neutrality and impartiality (Tomasini & Van Wassenhove, 2009). Disaster-struck regions often lack basic resources, which are then provided by the humanitarian agencies for the purpose of helping people in need. In contact to business logistics operations, which are profit-oriented, humanitarians are focused on helping the victims of the catastrophes in their efforts for survival. A distinction needs to be made between logistics in disaster relief operations and logistics in ongoing aid work: for example , the management of refugee camps (Kovacs & Spens, 2007) compared with the provision of development aid over a longer period of time (e.g. education, building of roads, etc)(Scholten,

Sharkey-Scott, & Fynes, 2009).

Disaster relief operations have to be executed in environments characterised by defective infrastructures, for instance, often having a lack of power and water and only limited transportation capacities (Kovacs & Spens, 2007), which complicate the accomplishments of the supply chain processes. Continous aid work, in contrast, focuses more on logistical or material provision in order to support the development of a crisis region, the coordination of refugee camps, or famine relief.

Beamon and Balcik (2008) identify three main stages in relief operations that humanitarian agencies follow once a catastrophe has occurred:

1. Assessment Phase
2. Procurement of Relief Goods
3. Transportation of Relief Supplies

This thesis doesn't have the scope to discuss the first two phases but will explain the third phase, which is most relevant to the context. The relief supplies are shipped to the disaster-struck region depending on the availability of transportation assets, on the location where the disaster has occurred, and on the existence of pre-negotiated contracts with the suppliers. Also goods needs to be custom cleared upon arrival in the destination country and further transported to secondary and tertiary hubs.

2.2 Corporate-humanitarian collaboration

They are looking for better ways to respond at the same time as corporate engagement in the field has grown (Thomas & Firtz, 2006), in part because there are several cross-learning possibilities and benefits to gain from corporate-humanitarian partnerships (Van Wassenhove 2006). The most common form of corporate engagement in the field is still through CSR (Corporate Social Responsibility) activities and monetary donations. Humanitarian organisations such as the World Food Programme (WFP) or the International Medical Corps (IMC) put great effort into changing the prevailing circumstances by establishing collaborations with private sector companies for the purpose of exchanging best practices in the field of logistics.

Monetary donations are still the most usual kind of corporate eagagement with the humanitarian sector, but there are other options occuring for transferring expertise and creating mutual learning for both the corporate and humanitarian side (Van Wassenhove, Tomasini & Stapleton, 2008). In the literature concerning corporate engagement in humanitarian relief corporate engagement is mostly talked about in terms of CSR (Corporate Social Responsibility) or CSR-related engagements (Van Wassenhove & Tomasini, 2009; van Wassenhove et al, 2008; Maon et al, 2009). CSR is also ackonwledged to provide competitive advantage for a company (Porter & Kramer, 2006)

The resource based view (RBV) of the firm argues that a company's resources and capabilities are the source of its competitive advantage (Barney 1991). The RBV has primarily been used in the realms of humanitarian logistics when, for example, discussing risk management & how to manage disruptions in the humanitarian supply network (Kovacs & Tatham, 2009).

In discussion about the specific set of skills needed to be a humanitarian logistician (Tatham, Kovacs & Larson, 2012) the RVB has been proved to be useful tool.

On one hand, it can be observed that in the past few years supply chain management in the humanitarian sector has gained considerable recognition as organisations begin to modify their logistics activities, particularly in light of best practices developed for commercial industry. On the other hand, commercial logistic companies experience increased pressure from stakeholders & pressure groups as to their strategies and practices, which primarily results from today's financial market structure. Stakeholders demand that businesses improve their corporate image by operating in accordance with the approach of corporate social responsibility (CSR). Logistics companies, therefore, show extended interest in cooperting with humanitarian organisation within the context of CSR in order to benefit from the value added to their brands in doing so. Cross-sector collaborations can create mutual benefits by the way of knowledge transfer with regards to best practices, enhanced brand and public awareness, and improved organisational processes.

The simplest dimension and which affect the performance in particular logistics performance is to differenciate between efficiency and effectiveness (Gleason and Barnum, 1986) in performing logistics activities. Generally efficiency is doing the things right and effectiveness is defined as doing the right thing.

2.3 Main participants

The main actors who are related to the solution this thesis proposes comprises the corporate or the private company, the humanitarian aid provider or the NGO, non-profit and the logistics company. This subsection discuss the factors which matter to the participants most if the solution which is rather a practice comes into place. Also, an insight is provided into the way they currently do their business.

2.3.1 Humanitarian Organisations

The humanitarian organisations have been experts in the service for providing relief to people in disaster areas for years. Their expertise also expands to logistics with in the humanitarian areas, taking relief goods from the inventory to the affected area, moving to and fro. But problem arises even before the goods arrive to the port of the country of destination. The logistics from the point of production to the disaster area is a herculean task. Not only the costs involved are high but bureacratic formalities delay the process.

2.3.2 Corporations

A legal entity that is separate and distinct from its owners. Corporations enjoy most of the rights and responsibilities that an individual possesses; that is, a corporation has the right to enter into contracts, loan and borrow money, sue and be sued, hire employees, own assets and pay taxes.- as defined in Investoropia. For decades, companies have occupied a secondary presence in humanitarian relief, providing goods and services to dominant humanitarian actors contracting their assistance. However, recently, the business community has started to respond unconventionally to needs arising from humanitarian emergencies, offering more than just logistical support or the delivery of construction materials on a fee-basis. One new form

of engagement is partnership between companies and traditional humanitarian actors to improve disaster relief services. A second change in corporate engagement is the enlarged scope of traditional work. Companies no longer merely procure the goods and services for traditional humanitarian actors, but in a number of cases appear to compete with them for humanitarian budgets.While most donors expend humanitarian funds only to non-profit organisations, certain key donors have started to contract commercial providers directly for planning and implementation of humanitarian projects. These developments have given rise to much discussion within the humanitarian community regarding the role of the private sector in humanitarian relief.

2.3.3 Logistics Comapnies

One of the most preperfed mode of transporting good for humanitarian orga

nisations are the sea transport. Sea transport is convinient for bulky pre-planed consignments. It serves more to pre-position or serve post disaster and long term needs. In emergencies, and especially flooding and conflict situations where road access is difficult, air transport is often the alternative. If the organisation decides to aquire its own vehicles, there are a number of areas to be considered. The type of the vehicle, in terms of chassis-cab and the body type, needs to be determined. Finally, rail transport is a safe land transportation system when compared to other forms of transportation. Rail transportation is capable of utilizing high levels of cargo and energy efficiently, but is also less flexible and capital-intensive than highay transportation is, when low travel levels are considered. Rail transport cost less than air or road transport. It is very suitable for the movement of large load sizes over longer distances.

2.3.4 Empty/Partially filled shipping containers logistics

The fundamental reason behind the accumulation of empty containers at the terminals is seen in the imbalace overseas trade between individual markets, or in the prevalently export-oriented economy of the other markets. Even in highly developed countries, where import & export trades stand side by side, empty containers are being accumulated as well, due to imbalanced imports and exports by the container type. For instance, containers mostly used in the import of prevalently final products are the 40' standard and high cube containers, whereas in the export of raw and semi-raw materials the 20' standard containers are used most frequently. The condition when the goods can not fill a container is called Less than Container Load (LCL). These kind of goods are usually drawn from various locations and concentrated in container transport station or inland station. The carrier puts goods from different consigners into one container, and consign them respectively in the transport stations or inland stations of the destinations. This thesis deals with situation similar to this. When a corporate or private company makes an consignment with the shipping company to deliver its goods containerized but there are not enough goods to fill the container to full load. So the shipping company waits for other order from other campanies to deliver to the same destination in the similar time frame.

2.3.5 Rail Freight Empty Car logistics:

In railway systems, it often occurs that there is an imbalance in the fright flows, meaning empty freight cars must be moved in order to enable new transports. An efficient empty freight car

distribution process is vital for good utilization of the freight cars. A bad distribution process can result in delayed transports, good-will losses and unnecessarily largecar fleet with assiciated capital and maintainance costs.

Chapter 3

Present Market Practices

3.1 Introduction

The third chapter outlines and discusses the rationale and practices that are followed in the industry & related business presently. The main practices here as by gathering of primary data and review of secondary literature. Firstly, this section explains one of the most effective & reliable storage capacities the humanitarians and commerial logistics companies uses in delivering goods, containers. Containers are economical & has generous storage capacity. The containers are main storage carrier for sea & air freight. One of the problems faced by humanitarian logistics are the high rising costs of transport, fuel price and cost for ordering shippments. Second subsection focuses on budgets of humanitarian organisations, mainly donations. Corporation has been involved in contribution to humanitarian aid by donations and other support. This practice lacks the need for real involvement, doesnot bring together corporate-humanitarian partnership, benefiting from corporate social responsibility. Fourthly the section describes the CSR practices of current times by various countries. Not only CSR, the corporates could also benefit by tax deduction by donation for space. The section highlights the tax incentives that corporations get in different countries. Finally the necessity of developing a corporate-humanitarian partnership. There is also a subsection showcasing the stages of disaster, the humanitarian organisations serve & the transition between them. When considering the main players of empty container repositioning, there are different perspective to have a view on this:

(Empty) container transport chain: considering those players which are directly or indirectly involved in the handling of empties.

Container ownership: considering those players owning containers. An exemplified chain is portrayed in Figure showing which are the main players involved in handling of empty containers. The example shows a transport chain for over sea empty container repositioning.

3.2 Shipping process

3.2.1 Containerisation

Containerization is a system of intermodal freight transport using standard intermodal containers as prescribed by the International Organisation for Standardization (ISO). Once a container has been unloaded, another transport leg must be found as moving an empty container is almost as costly as moving a full container. Shipping companies need containers to maintain their operations and level of service along the port network they call. Containers arriving in a market, as imports must eventually leave, either empty or full. The longer the delay, the higher the cost. An increasing number of containers are repositioned empty because cargo cannot be found for a return leg. The outcome has been a growth in the repositioning costs as shippers attempt to manage the level of utilization of their containerized assets.

These can be loaded and sealed intact onto container ship, railroad, cars, planes and trucks. The containers are loaded from the source port, shipped and then un-loaded at the destination port. The movement of the container starts at the shipper where the container has been unloaded. From there the container is transported via road/rail/IWW to the port by the inland transport operator (rail, road, barge). Depending on the ports capacity, the depot can be on the port site. At ports where space is limited extra depots for empty containers are situated proximity to the terminal or in the portâĂŹs hinderland (operated by the depot operator). Cleaning maintaining or repair of the containers very often takes place in these empty depots. From the depot, the empty containers are transported to the terminal where the container is loaded on the vessel (by the terminal operator/stevedore). From the terminal in port A the container is transported further by the shipping line to the terminal in port B (oversea leg). From there, the onward transport is similar as before untill the empty container reaches the consignee to be loaded again. subsectionReasons for empty container logistics Several reasons for the transportation of the empty container have been identified. As transport is derived activity, economic developments and resulting trade volumes determine the direction and the volume of the empty transport. In the figure 8, the global flow of loaded containers on some of the main trading routes is displayed. It becomes evident, that especially between the Far East and Europe (ratio 2.5:1) and the USA (ratio 1.8:1) respectively, the imbalance is very strong. But also on other destinations a notable imbalance can be remarked: overall there seems to be a strong East-West and North-South divide.

Additionally seasonal effects have an impact on the flow of the cargo and the flow of empty containers. Another reason is the imbalance of equipment which results from different good types demanding for different equipment distinguished by dimension (e.g. 20ft, high cube, pallet wide) and the specific application possibilities (reefers, tankers). Further more there are some other aspects on empty movements. There are the repositioning costs highly depending on the distance to overcome and on the freight rates on the specific route. In case of high costs (for repositioning) this might lead to shortage of empty containers on the export markets. From the perspective of the shipping lines âĂŞ being ship and container owners âĂŞ also revenue generation play a role. Instead of parking the empty container somewhere waiting for an export load, the container is shipped back to e.g. Asia using spare capacities of their own fleet and by this it is sooner available for being loaded again. Another reason mentioned is the relation from manufacturing or leasing costs nd the cost for repositioning. If leasing an existing or buying a new container is cheaper than repositioning this will lead to an accumulation of empties in the sur-

plus area whereas inverse requirement has a positive influence on the repositioning. Further to mention are the usage preferences describing the fact that a specific container is always owned by e.g. a specific shipping line (or leasing company). In consequence, even if a shipper needs an empty container for a shipment with the shipping line A, an empty container of shipping line B in direct vicinity would not be of much help. Finally, due to increasing bunker prices and excess capacities (ship & containers) slow steaming has been favoured by the shipping lines. This measure leads to tight capacities and reduced availability of containers inland. This imbalance of trade takes place on a global but also on an inter-regional/regional and local levels. The global level leads to repositioning over sea from surplus to deficit areas. Repositioning on the inter-regional level means balancing on the continental level (eg. Repositioning in Europe, North America, etc.). The regional and local perspective is very close. Whereas regional empty container patterns balance empty container demands among importers, exporters and marine terminals, the local pattern aims to balance demands fron marine terminals and empty depots.

Commercial logistics process

Step 1: An athletic supply tore is running low on the season's hot, new shoes, which are manufactured in northern China. The shoe company works with freight forwarder to arrange transport from Chinese factory for the shipment of shoes.

Step 2: A trucking company arrives at the Chinese factory, loads the order, along with orders from many other retailers, into 20-foot or 40-foot containers, which is bolted shut and fitted with a high-security seal. The container will not open again until it arrives at a distribution warehouse in the destination country, unless customs officials decide to open and inspect it.

Step 3: The freight forwarder determines it is most economical to truck the container to the Port of Tianjin. The freight forwarder has contracted with a container shipping line, which must submit documentation about the shipment to

	government authorities in the exporting and importing countries. This "manifest data" includes information such as exact contents, the exporter, the importer and who is transporting the cargo.
	**Step 4**: Now loaded onto a container ship, the container of shoes is bound for discharge port on another continent far away. **Step 5**: A few days before the ship is scheduled to arrive at the destination port, the captain of the vessel provides a report to the government of the destination country that contains information about the ship, its crew and its cargo.
	**Step 6**: Having received proper clearance to arrive at the port, the container ship docks at the berth adjacent to large cranes that will be used to unload the containers of cargo.

Step 7: Many dockworkers – sometimes more than 100 per vessel – arrive to work the ship. They include crane operators, lashes, clerks and cargo equipment operators.

Step 8: Custom officials, armed with a careful evaluation of each container's documentation, may select specific containers for further inspection.

Step 9: Once cleared by customs, workers load the container onto special truck trailers or chassis. Now the container of shoes can be trucked to the distribution center. Containers are often transported by trains when the destination is a long distance from the port.

Step 10: The truck/train arrives at the import distribution center located not too far from the port, where the container is opened and orders by individual stores are separated and prepared for shipment. The next day, the athletic supply store receives its 1000 pairs of the season's most popular athletic shoes.

Figure 3.1. Commercial logistics practice

3.2.2 Impact of empty containers on the business of the involved players.

The repositioning of empty containers causes high costs and ties up transport and storage capacities. In addition to these potential negetive economic impacts, also environmental and socio-economic impacts can be observed. On the other hand empty containers are also beneficial part of some companies' business, e.g. for transport or terminal operators as long as there is free capacity. In the year 2013, from a global view there were 54.5 million TEU seaborne empty container movements, resulting in 109 million TEU port movements. According to Drewry Shipping Consultants $ 400 per movement can be accounted covering terminals, restows, hire, damage, storage transport, administration and agency. That leads to a total cost of $ 21.8 billion for the seaborne empty container movements worldwide. The cost for landside repositioning by rail, road or barge, have been $11.2 billion. Furthermore empty containers tie up storage capacities what might become a serious problem in places of high demand for limited available space. Around 10% of worldwide containers assets are empty and 20.5% of port handling can be accounted for empty movements. In the year 2011 for example one of the container terminals in Port of Rotterdam refused to handle empty containers due to space problems in the terminal area. Likewise empty containers tie up transport capacities. Depending on the transport mode, this might lead to an extra transport process for the road transport and to limited number of available container slots on mass compatible mode like sea, rail, IWW. This is the case even with partially filled containers. Partial ocean shipments sit for extended periods of time, waiting for enough freight to fill a container. The shipping companies take advantage of ocean shipping economies and provide available space on containers or combine one freight with other loads heading in the same direction to save time or money.

Different arguments call for deeper examination of container management around the world. The most important reason are:

1. Rising trade volume of containerised goods: All other influencing factors held equal, rising container volumes per se also mean higher absolute number of empty containers. In the long run, container flows around the world grew above previous average two year ago. Whether the global economic crisis will have a lasting impact has to be evaluated in the future.

2. High share of empty containers of overall container turnover.

3. Strong imbalances of containerised trade flows: Many countries and port around the world show large imbalances between inbound and outbound empty container flows. In most cases, the outbound share is larger than the in bound shar, i.e. those countries import more containerises goods than they export, hence âĂŸexportingâĂŹ excess empty containers.

4. Repositioning expenses: They include a combination of inland transport and international transport costs. If they are low enough, a trade imbalance could endure without much of an impact as containers get repositioned without much of a burden on the shipping industry. Repositioning costs can also get lower if imbalances are acute as carriers (and possibly terminal operators) will offer discounts for flows in the reverse direction of dominant flows. However, if costs are high, particularly for repositioning container inland, shortages of container may appear on export markets.

5. Revenue generation: Ship owners allocate their containers to maximize their revenue, not necessarily the economic opportunities of their customers. In view of trade imbalances and of the higher container rates they impose on the inbound trip for transpacific pendulum routes, ship owners often opt to reposition their containers back to Asian export markets instead of waiting for the availability of an export load. For instance, while a container could take 3 to 4 weeks in the hinterland to be loaded and brought back to the port and earning an income of about $800, the same time can be allocated to reposition the container across the Pacific to generate an return income of $3,000.

6. Manufacturing and leasing costs. If the costs of manufacturing new containers, or leasing existing units, are cheaper than repositioning them, which can be possible over long distances, then an accumulation can happen. Inversely, higher manufacturing or leasing costs may favor the repositioning of empty containers. Such a condition tends to be temporary as leasing costs and imbalances are correlated.

7. Usage preferences. A large number of shipping lines uses containers as a way of branding the company name and to offer readily available capacity to their customers. This observation combined with the reluctance of shipping lines and leasing companies to share market information on container positions and quantities for competitive reasons, makes it very difficult to establish container pools or to widely introduce the âĂŸgrey boxâĂŹ concept. Still, as demonstrated by the North American rail system (TTX rail equipment pool), it is possible for transport companies to distinctly separate container assets from modal assets so that the efficiency (such as the turnover rate) can be improved.

8. Slow steaming. Excess capacity and rising bunker fuel prices have incited maritime shipping companies to reduce the operational speed of their containerships from 21 knots to 19 knots, a practice known as slow steaming. The resulting longer transoceanic journeys tie more container inventory in transit, incite trans loading in proximity of port terminals and reduce the availability of containers inland.

The global full container trade reached 130.9 millions of TEU in 2011, with the port turnover (including handling of full, empty and containers in transit) of 522.1 million of TEU in the same year. Accoring to various sources as many as 2.5 million of TEU are being stored empty in different container terminals worldwide at the momoent, and 20.5% of the world total port turnover refers to empty container handling. Worldwide the share of empty containers is estimated to be around 20% at sea and 40% on land of all container transported. A vast number of players along with the container transport chain is facing the empty container problem. In principle, everyone who handles or owns containers is affected: ports, terminal and hinterland operators, shipping lines and other transport operators, shippers and consignees as well as container leasing companies. Thereby, the type and degree of impact variesfor each stakeholder. Furthermore regional public authorities (eg. Urban or transport planning authorities) or the port authorities themselves have an influence on issues relevant for empty container management as well as are affected by its effects. In summary, the empty container problem primarily emerges in terms of additional transshipment and transport costs as well as in higher requirements for storage facilities.

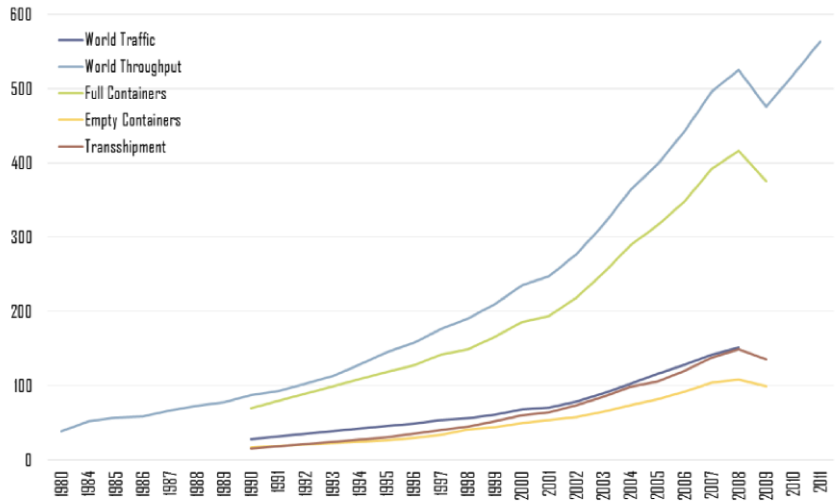


Figure 3.2. World empty container traffic (2011)

3.3 Tax benefits for corporations

Tax incentives for CSR in different countries: Numerous countries provide tax incentives for CSR activities initiated by businesses. This subsection reviews the CSR initiatives and the tax incentives provided by Commonwealth countries such as Australia, Canada, New Zealand, Singapore and the United Kingdom.

Australia: In Australia, tax deductions are given purely for public policy reasons to encourage philanthropy through the making of donations to specific industries. For example, the Australian Income Tax Act 1997 (ITAA97) provides deductions for certain gifts of money and property valued at AUD$2 or more that are made to specified charities, “public institutions” and “other eligible entities”. Examples of “public institutions” are universities, museums as well as public and non-profit hospitals.

Canada: The Canadian Revenue Agency (CRA) has identified “Responsible Citizenship” as one element of a sustainable tax system. A sustainable tax system is one where taxpayers appreciate that paying tax is a civic responsibility that enables them to enjoy all the rights that accompany being a Canadian resident or business. The CRA has considered the notion of CSR as a means of reinforcing responsible tax practices in Canadian corporations.

New Zealand: In New Zealand, making contributions in the form of donations are encouraged by the availability of a tax rebate for individuals and by a tax deduction for companies and Maori authorities. Singapore: Since the formation in 2005 of “Singapore Impact for CSR”, a national society committed to promote social responsible activities by corporations, there is greater awareness of its activities in this island nation. Gifts of shares listed on the Singapore Exchange (SGX) or of units in unit trusts that are ready to trade in Singapore, to approved IPCs are tax-deductible.

United Kingdom: In the UK, the government has an ambitious vision for CSR. The government advocates UK businesses to take account of their economic, social and environmental impacts,

and acting to address the key sustainable development challenges based on their core competences wherever they operate âĂŞ locally, regionally and international. Tax deductions is one of important factors for the big corporation to make the idea of humanitarian relief work to be attractive and profitable. Private business has the only motive for doing anything & everything they do, that is making profit. Allowing them for tax rebates aligns with their motives making it difficult for big corporations to reject contributions in social work. One of the main reasons, that humanitarian organisations have to look for corporation contribution is the limited budget they work in. Even though being in the humanitarian work, they manage to get consessions on many things but there are areas where the cost are too high with even a few rebates. The next subsection gives a breif insight to the small pockets the humanitarian logistics have to work with.

3.4 Humanitarian logistics funding system

The humanitarian logistics function encompasses a range of activities, including preparedness, planning, procurement, transportation, warehousing, tracking and tracing, and custom clearance. The transportation included in the function can be one of the most expensive parts of the relief effort. Aid agencies are the primary vehicle through which governments channel as much as$6 billion in annual aid targeted at alleviating suffering caused by natural and man-made disasters. Relief is, unfortunately, a growth market: the period from 1990 to 2000 saw total humanitarian aid from governments double in real terms from approximately $2.1 billion to $5.9 billion. In the aftermath of the Tsunami, it is estimated that the aid budget might actually have grown to $12 billion. While the largest aid agencies are global in scale, there are also many smaller regional and country-specific aid agencies. Most global aid agencies engage in a mix of development and relief activities on a large scale 7. The 2012 budgets of the top 10 aid agencies exceeded $24 billion. Relief refers to the emergency food, shelter and services provided in the immediate aftermath of a natural or man-made disaster. An example of relief would be the initial 90-120 days of services provided by the various humanitarian organizations to assist the people affected by the Tsunami in December 2004. By contrast, development refers to the longer-term aid aimed at creating self-sufficiency and sustainability of a community. An example of a development program would be the Area Development Programs executed by World Vision India to feed school children and teach women basic business skills in the slum areas outside Chennai in southern India.

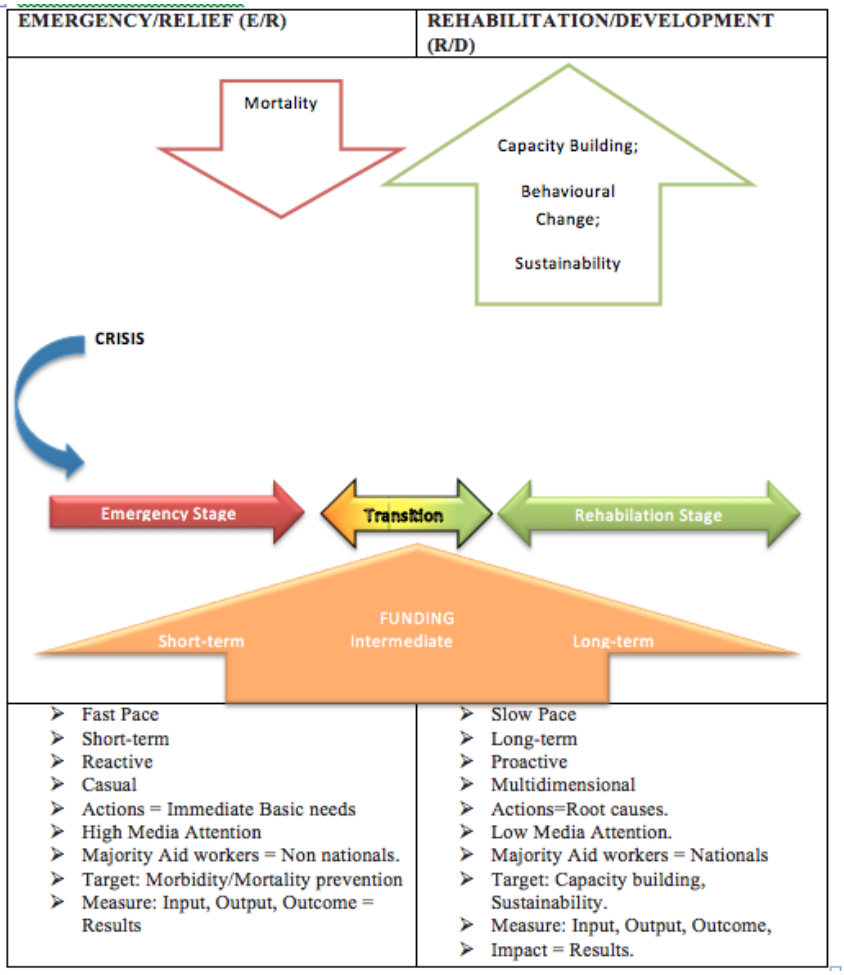


Table 3.1. Conceptual difference between emergencies& rehabilitation/development stages of humanitarian relief work.

3.5 Emergency stage

Aid workers must be skilled at rapid assessment and treatment under difficult environment conditions at times compounded by violence and/or lack of adequate essential resources. Planning & actions are designed to produce rapid results through immediate treatment. It is the stage at which through the media largely defines aid to the public & in turn translates into generous contributions from the govt. and the private, public and corporate sectors.

3.6 Rehabilitation stage

This stage is multi dimensional and proactive with broad & complex parameters that focus on the development of the vulnerable population. Building capacity is the key component of development and can be defined as the transfer of knowledge and resources through mentoring,

workshops, trainings, infrastructure development etc. Sustainability is the ultimate goal of all the development aid and the ability of the host country entities to continue to apply new and evolving capacities and sustain achievements through providing reliable resources generated from the country own efforts. Long-term successful impact is sustained empowerment of the government, community and civil society to need the populations aspiration and needs, leading to an improvement in quality of life without compromising future strategic plans.

3.7 Transition

Transition is a vital link between E/R and R/D and is carried out collaboratively between agencies and the host country. Transition must be flexible in response to changing situations on the ground that may require different services, personnel, knowledge and resources. In these respects E/R and R/D do not often move predictably in one direction but can move in opposite directions and at other times overlap. The underpinning that is vital to a successful transition is a seamless merging of all information from the outgoing to the incoming agencies and communication and collaboration in the case of an overlap. Both the stages of relief work require a lot of finances.

Most international aid flows from the world's wealthiest countries to relief efforts in developing countries, although countries like India are now both donors and recipients of aid. Large governmental donors exert a strong influence over the sector, as they provide the bulk of the funding for major relief and development activities. Prominent among these donors are the United States and the European Union, whose contributions have represented roughly 33% and 10% of total humanitarian aid, respectively, in recent years. Other western European countries, Canada, Japan and Australia are also major donors to aid agencies in the business of responding to natural disasters and humanitarian emergencies. In recent years, foundations such as the Bill and Melinda Gates Foundation, individual donors and the private sector have also become important sources of funds for aid agencies.

The international aid agencies receiving donations from this global community fall into three categories:

1. Entities operating under the United NationsâĂŹ umbrella such as the World Health Organization (WHO) and the United Nations High Commissioner for Refugees (UNHCR)

2. International organizations such as the International Federation of Red Cross and Red Crescent Societies (IFRC), which operate as a federation with country offices that are auxiliary to country governments, and

3. Global non-governmental organizations (NGOs) like CARE and World Vision. NGOs also maintain country offices, but their offices are not affiliated with the country governments.

4. The funding from donor governments to the populations affected by disasters in recipient countries flows through many different types of organizations before it reaches the end beneficiary. Donations from each country are channeled through the international aid agencies to local partners in the affected countries. In most cases, it is these partners closest to the affected population and of the same culture that provide the relief services to the affected populations.

5. Two main external factors impinge on the growth and operations of international humanitarian relief organizations. First, the number of disasters and the number of simultaneous operations around the world are increasing, stretching the existing resources of the humanitarian community. It is clear that the sector as a whole has to find ways to become more efficient in order to be able to respond to the needs of ever-increasing numbers of people.

6. Second, donors are becoming increasingly demanding with respect to performance and impact. With an increasing number of aid agencies, the competition for donor funding is getting more intense, and data-demonstrating impact is likely to be the differentiator. Further, donors are becoming less tolerant of obvious and expensive duplication of effort and are strongly encouraging aid agencies to collaborate around the creation of common services. As a consequence, aid agencies have become more aware of the need to strategically use their resources.

The needs for money by the humanitarian aid providers are opportunities for corporates to contribute. Corporation contributions have been in different ways for a long time & are evolving with time as they see the importance & value they create by joining hands.

3.8 Forms of corporate support for humanitarian activities

Typically, corporate support for disaster relief is provided immediately after the disaster, although there is an element of disaster preparedness in some corporate initiatives:

Forms of Support	Description
Cash	Cash is still the most important, and often the most appropriate, donation for humanitarian relief and recovery efforts. It enables humanitarian agencies to immediately purchase essential goods and services—mainly relief supplies— and transportation. Cash is easy to send and allows as many supplies as possible to be purchased in the affected region, helping to ensure they arrive as quickly as possible and reducing transport and storage costs and supporting local economies. From the corporate point of view, the advantage of cash is that the cost is defined. It also has other less tangible benefits in terms of return on investment. For example, fundraising activities organized by employees (and inspired by a corporate promise to match the money raised) can be more effective at team building than many other more conventional events. The downside of donating cash is that it requires a certain amount of due diligence on the company's part to determine that the humanitarian organizations chosen to receive the cash have a track record and local knowledge of the disaster area (capability), as well as a history of providing reliable data on their management of funds (accountability). To overcome this potential problem, some companies select one or more preferred humanitarian organizations with which to work on a regular basis to develop mutual trust and understanding and deliver an effective response when a disaster occurs. From the humanitarian point of view, cash is invariably preferred over materials, equipment, and services. According to a survey of 25 humanitarian agencies conducted in 2011, field managers rank cash as the most important corporate contribution following a disaster. Cash offers the liquidity and flexibility that humanitarian organizations need to respond quickly to requirements on the ground, and its value is often greater than the same value of goods.
Goods	When appropriate, in-kind donations may be a useful alternative to cash. *Ericsson, for example, provided mobile phones to humanitarian workers following the Asian tsunami, while Danone donated bottled mineral water.* Yet companies often fail to realize that in-kind donations should be based on demand, specified either by the government of the affected country or by a recognized humanitarian organization with existing operations in the disaster area, and not on what companies can supply. This mistake can cause bottlenecks in the disaster response effort and result in needless expenditures. *Unwanted donations received during Eritrea's 1989 war, including seven truckloads of expired aspirin, took six months to burn.* The key is for companies to work closely with humanitarian organizations, local embassies, or a supply chain partner in the region instead of launching their own mini-NGO.

Volunteers	Volunteers from the corporate sector, like in-kind donations, may also hinder rather than help relief efforts if those volunteering are not equipped with relevant skills, expertise, or knowledge. Technical skills and noble intentions alone are not enough. To be effective from the outset, corporate volunteers also need to be familiar with the local context, have experience with emergency situations, and if possible, be fluent in the language of the affected country.
Partnerships	Corporate-humanitarian partnerships that allow parties to share knowledge, expertise, and best practices can result in more efficient ways of responding to disasters, distributing aid, and especially preparing for and mitigating disasters. These alliances have significant potential to deliver across-the-board benefits to the partners and to the people and communities affected by a disaster. Setting up these partnerships and making them work effectively, however, raises many issues and challenges.

Table 3.2. Corporate forms of support

As the relationship between corporates & humanitarian organization is evolving bring out a different angle, to the corporates are starting to look at relief aid work. Now that it's established that companies which participate in humanitarian work not only benefit from tax deductions in their balance sheet but also build positive brand image in the eyes of their customer. Participating in CSR, improves their good will as well as competitive edge.

3.9 Corporate Social Responsibility

Corporate Social Responsibility is gaining more and more importance day by day. CSR is not only drawing the corporate magnates into its circumference, but is also luring educationalists, social activists, reformists,from all over the world to deliver deeper into it. Changing market scenario, globalisation, ethical consumerism all are adding heat to the CSR concept. More and more organizations are showing their commitments towards CSR either for enhancing their corporate image or to be in competition. Emergence of different marketing innovations demands direct linkage of corporate social responsibility practices with the business corporate strategies. The practices developed in some country towards some countries are as follows:

Country	Sector	CSR Practices
Europe	The role of govt. in CSR	CSR started out as a neo-liberal concept that helped to downscale govt. regulations, but that it has in turn matured into more progressive approach of societal co-regulation.
Indonesia	Consumer's perception of CSR	Consumers are often unaware and unsupportive towards CSR. But when consumers have to buy similar products with the same price & quality, CSR could be the determining factor. Eg. ITC notebooks.
Germany & UK	CSR view from big companies,	German companies could benefit more from demonstrating a broad, business driven understanding of CSR.
Asia	CSR Website reporting	Multinational companies are more likely to adopt CSR than those operating solely in their home country.
United States, Europe and Asia	Company stock market valuation.	European countries & United States are best characterized by horizontal individualism. Thus, there possible impact on socially responsible investing may be very different than the Asian investors.

Table 3.3. CSR Practices followed in some countries

3.10 Corporate-humanitarian Collaboration

"Increasingly the focus of NGO‘s eyes on companies is turning away from funding in isolation towards the issue of "humanising capitalism"-perhaps the key task of the 21st century"

Successful partnerships have the potential to :

1. Deliver fast, effective support during crisis;
2. Help build capacities between disasters; and
3. Foster the exchange of ideas and best practices that benefit both the businesses and humanitarian organisations.

The corporate-humanitarian partnership is a two way street. The corporates who once regarded one time cash as the useful corporate donation, are now recognising that business have more to offer in terms of resources, expertise and technology. As a result, they are becoming more open to discussions and are identifying their ideal partners and making their first approach. On the other hand, business are realizing that they may have something to learn from the humanitarian sector, particularly about being agile and adaptive in difficult circumstances-one of the main strenghts of humanitarian organisations

One of the top initiatives towards improving the logistics for humanitarian relief work comes from the establishment of the fleet forum, a joint initiative of three humanitarian organisations (IFRC, UN World Food Programme, and the World Vision International). They have brought together more than 40 UN agencies, international humanitarian organisations & NGOs to work on improving the efficiency of their fleet management operations. Untill the formation of the Fleet Forum, most humanitarian aid organisations' vehicle fleet management had changed little

in 20 years. Typically, these organisations acquired and disposed off vehicles on a crisis-by-crisis basis and drove them untill they broke down. They didnâĂŹt have the time, money or inclination to consider possible cost savings and efficiencies, even though vehicles represent the largest proportion of their capital assets and logistics represent their second highest expenditure item (after personnel).

"Humanitarian organisations are very conservative and reluctant to change their procedures.-" Rob McConnell, Fleet Forum's co-ordinator.

One of the main reasons as to why these organisations are so because these organisations main focus is-on saving lives- and rarely analyse how they might improve their operations and their performance. Yet the potential savings identified are significant. They amount to $100 to $200 million per year (comprises of depreciation, maintainance, fuel and insurance) for a fleet in excess of 80,000 vehicles

So far collaboration has been ad-hoc, typically involving one company and a single humanitarian partner, and most often in a natural disaster rather than conflict-related crisis. Substantive partnerships have been largely in technical sectors like logistics, transport, telecommunications and IT. The private sectors financial interest is minimal. Many companies provide non-financial support, such as knowledge and expertics, in addition to cash or in-kind donations. In other words, they are focusing on taking an active stance rather than being reactive.

Chapter 4

Case Study

4.1 Introduction

This section highlights few case study of organisations which works in the humanitarian relief sector in ways similar to the one this thesis attempts to propose. Since the solution the thesis advocates, is innovative and differs from the existing practices in the industry of humanitarian logistics, this section showcases situations which can be said to be close to the proposed solution. The first subsection describes a non-profit NGO, MedShare dedicated to improving heathcare & the environment through the efficient recovery and redistribution of the surplus of medical supplies and equipment to those most in need. Their shipments of medical supplies and equipment have decreased carbon footprint and brought healing and promise of better lives. The activities of MedShare which are similar to the solution, include using shipping containers to transport relief goods to disaster areas, provide a provision to donate a full container to their doners (corporates as well as individuals). Our solution encourages corporates & private companies to donate space in the shipping containers, air cargo containers, rail & road freights when which remain unutilized. The small portion of the container space that they donate for goes a long way for humanitarian relief work. As the containers are handled by professional logistics companies, the transit process is much faster, without unnecessary delay & inexpensive, thereby humanitarian aid providers experience commercial logistic service in transporting relief aid. The second case study talks about corporate-humanitarian collaborations-a prime example is the case of TNT & WFP-a commercial private logistics company with world's largest food related aid provider for disaster areas. The collaboration brought in benefits for both of them providing CSR & brand image for TNT and vast knowledge & expertise of the private sector for WFP.

4.1.1 Case study 1

MedShare is a top ranked non profit organization (NGO) dedicated to improving healthcare and the environment through the efficient recovery and redistribution of surplus medical supplies and equipment from U.S. hospitals and manufacturers to healthcare facilities in developing countries. They have two distribution and volunteer centers: firstly headquarters in Atlanta, GA and another in the San Francisco Bay Area. Since MedShare was founded in 1998, they

have shipped over U.S. $100 million worth of medical supplies and equipment in 1000+ 40-foot containers to 95+ countries around the world, improving countless lives and saving over 2.5 million cubic feet of space from U.S. landfills.

4.1.2 Container Program

MedShare ships 40-foot containers of medical supplies and equipment to hospitals and clinics in the developing world. The average value of a container is approximately U.S. $155,000 and contains 1,000 boxes of consumable supplies. The medical supplies available include masks, gloves, syringes, surgical instruments, drapes, IV sets, dressings, and thousands more. Containers include a small amount of durable medical and biomedical equipment, which may include hospital beds, anesthesia machines, ultrasound units, and examination tables. The advantage for the organization is that their designated beneficiary facility selects the exact medical supplies they need from MedShare extensive inventory.

As a charity themselves, they look for a sponsorship donation to help offset a portion of their direct operating costs, including the ocean freight shipping cost. Costs for transportation from the receiving port are the beneficiary's responsibility. MedShare's fundraising team is available to discuss strategies with corporates who might employ to securing funding for their project. They also have the capability of setting up an online fundraising webpage for the corporates' project if it meets certain criteria.

4.1.3 Tax exoneration & Customs clearance

The Ministry of Finance or Revenue Authority, depending on the country, conducts the tax exoneration procedure. The documentation often comes from the country of the destination. Every country around the world has different requirements and guidelines for importation of goods. There are also differences between importing commercial goods versus humanitarian aid. MedShare's shipments are considered humanitarian aid and, therefore, are allowed into destination countries without being charged import taxes in many cases. Obtaining clearance to import humanitarian aid can often be a challenging and lengthy process, especially for organizations that do not have previous experience with this type of work. This part of the process can take several months, depending on the country and circumstances. While MedShare and the corporate partner can support the beneficiary though detailed shipping documents, the beneficiary themselves often needs to conduct the tax exoneration process personally in country. MedShare's policy is not to release a shipment until we have received official documentation from the government authority of the destination country, which confirms that the shipment will be allowed to enter the country as duty-free humanitarian aid.

MedShare requires first-time shipping partners use the services of a local customs clearing agent in the destination country to ensure that there will be no issues related to getting the container into the country. These agents charge a fee for their service and are familiar with the process and documentation involved. MedShare programs staff can recommend clearing agents for beneficiaries.

4.1.4 Access to inventory

Their extensive database of approximately 10,000 items allows the container beneficiary to order exactly the supplies they need to deliver better care to their patients. A 40-foot container can hold approximately 1,000 boxes or 12,000 lbs. MedShare's system keeps a running total of both quantity and weight so that container space can be maximized to its fullest extent. Container measurements are as follows:

	English	Metric
Lenght	39 feet, 5 inches	12 meters
Width	7 feet, 8 inches	2.3 meters
Height	7 feets, 10 inches	2.4 meters

Table 4.1. Container measurements

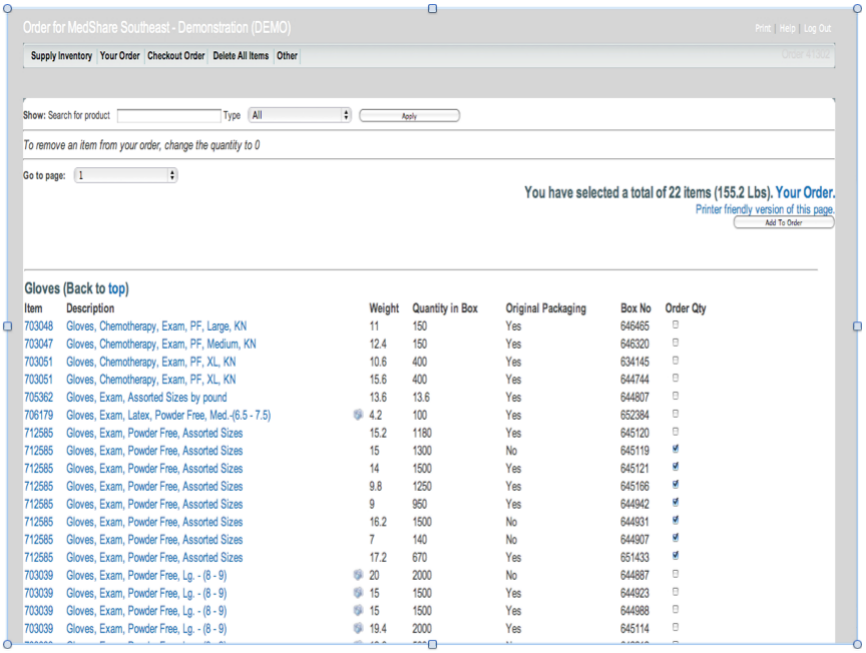


Figure 4.1. MedShare online inventory system

4.2 Case Study 2: TNT & WFP collaboration.

The partnership between TNT, the European market leader in express, logistics, and international mail delivery services, and the United Nations World Food Programme (WFP), the world's largest international food aid organization, demonstrates how two organizations can make a life-saving difference while increasing the corporate partner's competitiveness and improving its reputation. Formally launched at the end of 2002 and supported by a memorandum of understanding, the partnership was a year in the making.

Work started after TNT's chief executive, Peter Bakker, supported by senior managers, decided it was time TNT shifted from small and disparate philanthropic programs to a more strategic approach that capitalized on the company's core competencies and reinforced its position in the market and in society.

4.2.1 Deciding on a Cause

The company considered both internal and external environmental and people-oriented initiatives before it finally decided to concentrate on external humanitarian projects that would position TNT as a people-focused company capable of making a difference in society. It would also give TNTâĂŹs employees a stronger sense of belonging and pride. In addition, it was a way of broadening the companyâĂŹs relations with the different stakeholders that could affect its business, including NGOs, advocacy groups, government, civil society, and the press.

Finding a suitable partner was the next challenge. In the nonprofit sector, each organization has a different structure, funding mechanism, mandate, ideology, and modus operandi. TNT realized that it was not possible to compare humanitarian organizations in a fair and objective manner using standard business indicators. Therefore, to filter suitable candidates, TNT focused on reputation and ideological neutrality. A potential partnerâĂŹs reputation had to be commensurate with TNT's global scale and have a similar tone and message. It was important that the new partner reflected TNT's international presence without inhibiting its ability to do business globally.

Having narrowed the field, TNT then considered the remaining candidates' organizational fit to determine how their core competencies and future strategies matched those of TNT. At this stage, TNT had invested about four months in the selection process but, before it would commit to one partner, it spent even more time confirming candidates' emotional fit-their values, vision, and enthusiasm-and organizational readiness to engage in a large-scale, long-term partnership.

TNT finally chose WFP as its partner, but still had to secure support from TNT's board. An hour-long presentation was given explaining the need for the partnership, the candidate search process, and the potential benefits of choosing WFP. It stressed that the partnership would be based on an exchange of capabilities and expertise that would improve TNT's own long-term competitiveness in the industry. While it was difficult to even estimate the return on investment, the presentation focused on potential gains from the program. The boardâĂŹs response was positive enough to move forward with rational skepticism. Members even agreed to personally adopt an initiative and to devote time to its development.

4.2.2 A Five-Year Commitment

Both TNT and WFP committed to a minimum of five years working together in three key areas:

Hands-on support (e.g., sharing assets)

Funding and awareness

Knowledge transfer (e.g., on fleet management)

The first joint project was the reorganization of WFP's warehouse in Brindisi, Italy. TNT optimized the space by redesigning the layout, transferred its best practices, and trained personnel in inventory management. The annual savings to WFP were approximately âĆň400,000. The project was also instrumental in building mutual trust and confidence between the partners.

4.2.3 Investment

Between 2003 and 2006, TNT invested more than Ćň 32.3 millionâĂŤĆň 7.3 million in hands-on support, Ćň 9.3 million in funding and awareness, Ćň 8.7 million in knowledge transfer, and Ćň 7 million in matching donations from employees. In 2007, it invested more than Ćň 8 million.

4.2.4 Main Benefits for TNT

1. Enhanced reputation: In 2005, TNT ranked third in the Netherlands in terms of corporate reputation according to a reputation quotient survey undertaken by the American Reputation Institute in cooperation with Rotterdam Erasmus University and Harris Interactive. In 2001, before the launch of the WFP partnership, it was ranked 26. For two years running, 2005 and 2006, TNT was the industrial transportation industry leader in the Dow Jones Sustainability Index, a global index tracking the financial performance of the leading sustainability-driven companies worldwide. The company believes its partnership with WFP influenced its positioning.

2. Positive publicity: At the outset of the WFP partnership, TNT agreed not to issue any independent press releases (other than one announcing the partnership) and not to use the partnership for advertising purposes. Despite this relatively under-the-radar approach, the company and CEO Peter Bakker have attracted considerable media coverage.

3. Employee pride: A 2005 employee satisfaction survey showed that, as a result of the partnership with WFP, 68 percent of employees find TNT a more attractive company to work for. Greater employee morale often leads to greater job satisfaction and improved performance, says TNT.

4. Knowledge and experience gained: By working with WFP, many of TNTâĂŹs employees who have been involved in the partnership, either in disaster preparedness or disaster response, have gained new competencies by being faced with new and different experiences.

   While many companies and agencies choose to formalize their collaboration through partnerships, there are numerous other ways to create value. For some companies and agencies, it makes more sense to focus on donations or projects demanding less investment from both sides. The main idea from TNTâĂŹs experience is that companies should not compete with humanitarian organizations to save lives. On the contrary, companies should work together with humanitarian organizations to provide their knowledge, expertise, and resources to help humanitarian organizations save lives. As Peter Bakker has

said,

"It is important to remember that 'businesses are not humanitarian organizations but they can make a difference.'"- Peter Bakker.

Chapter five follow, which looks at the solution that this thesis proposes to address to the capacity utilization of storage space in the containers by donation for the space by corporations & individuals. It also introduces a new entity, namely the agency, in a need for developing corporate-humanitarian collaboration.

Chapter 5

Our Proposition

5.1 Introduction

Chapter five provides a insight into a unique opportunity that corporate-humanitarian collaborations could offer. Despite various differences in motives between the corporations and the humanitarian sector, collaborations based on CSR & tax benefits provide advantages for both partners. Fistly, this subsection draws inspirations from the practical models for cross-sector collaborations from the previous sections, perparing the stage for detailled explaination of the solution, this thesis attempt to propose in the second part.

5.2 Inspirations drawn from MedShare case study

Humanitarian organisations prefer shipping goods for on-going developmental stages of the disaster areas. The costs associated for ordering containers for the transport of the relief aid is expensive & humanitarian organisations themselves cannot pay for the same themselves at the time (through donations they receive). They have to arrange for donations from private companies & individuals to make the transportations happen. This delays the process further untill they arrange for adequate donations. This is the case, not just focused on sea/ocean mode of transportation but air freights that are very expensive but on the good side they are more faster & reliable. During the logistics process, the documantation & clearing customs is bureacratic & time consuming, delaying the relief work a great deal although humanitarian aid providers don't have to pay any customs when entering the port of the destination country.

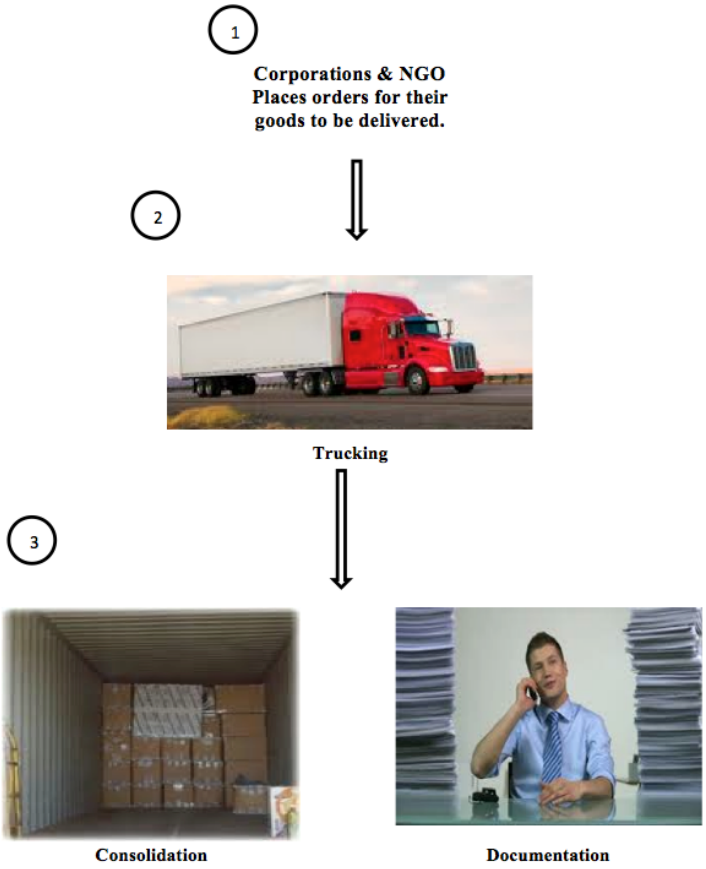
These difficulties calls for a more effiecient & professional way of dealing with these problems. Corporations & private companies which transport their goods all the time by various modes need to go through the same process but are successful in finding efficient & effective ways to deal with them. Since the corporates are profit-oriented the process takes much lesser time than humanitarian logistics. But the problem arises with the

quantity of load to deliver. Many a times the loads that corporations provide the logistic companies, are not enough to fill the container completely. These situation arises when there is a small order or the last part of the goods to be delivered. Some capacity remain unoccupied & the shipping companies need to arrange for new order going to the same destination to fill up the leftover space and utilizing the full capacity of the container. In reality, many times the containers are booked by corporates as per the space they need in the container, so if the container is less that full load, they pay for only the space they occupy. The rest remains empty. Majority of the time, the shipping company arranges for new order for the same destination & fill up the empty space. But if they can not arrange in time, the shippment leaves for destination keeping the load less than full container capacity. Thereby the logistic company losses potential revenue. This calls for a solution for the problem of capacity management utilizing the full capacity of the containers.

5.3 Inspirations drawn from TNT & WFP collaboration

Corporate-humanitarian partnership help share experise & resources, creating a mutual symbiotic relationship. The corporate benefits from CSR, better reputation, increased competitiveness, increased business and tax benefits for humanitarian work as well as for the huanitarian organisations take advantage of the knowledge & resources sharing, cost savings & faster service in their relief work. This calls for a better integrated relationship between the two partners. The solution this thesis suggests is building a partnership to help make humanitarian logistics faster & inexpensive. The solution is easily scalable & would help in situations where the humanitarian aid to transport in large numbers. Multiple containers containing partially or completely filled humanitarian aid through commercial logistics will make the relief work easier.

The next subsection gives a brief overview of the humanitarian logistics process step by step.


1
Corporations & NGO
Places orders for their
goods to be delivered.
2
Trucking
3
Consolidation
Documentation

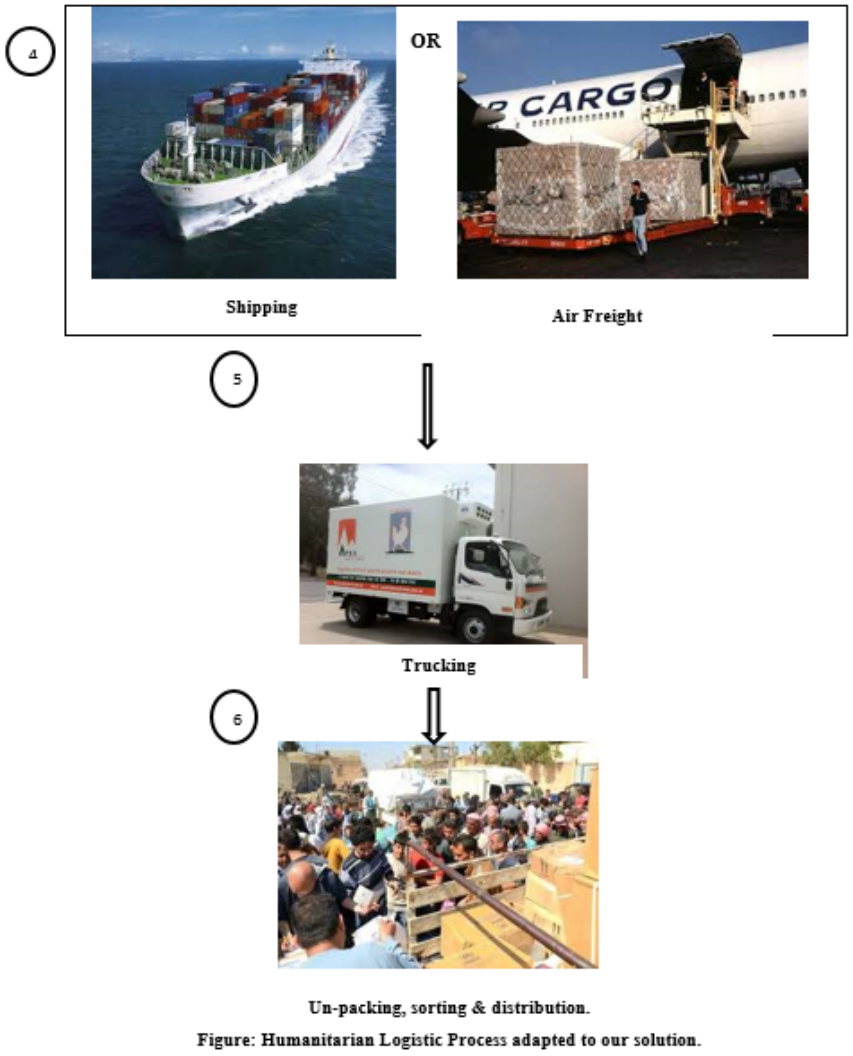


Figure 5.1. Humanitarian Logistics Process adapted to our solution

The idea is to optimize any space unutilised in the container/goods carrier such that the space inside reaches it maximum potential before leaving for the point of consumption. The problem of unoccupied capacity in goods transport is well known and is applicable to all forms of transport âĂŞ air freight, ocean freight, rail & road freight. The concept of conterisation is mainly used for ocean & air freight. This thesis has been oriented towards approaching the solution in the domain of the ocean freight. All thought it could be modified to fit the situation for any mode of goods transport. ItâĂŹs been estimated that almost 20.5% of the worlds total good capacity remain unutilized in container industry. The goods carrier doesnot reach its full capacity. This thesis highlights the issue & bring about a solution to utilize it for the people in distress.

The solution is provided on two frameworks based on the capacity of the containers and the stage, the containers are in. The two framework establish the situations in two dif-

ferent ways:

First, a scenario in which some corporation orders a consignment to (a) logistics company (ex. shipping company) (b) freight forwarder to transport their goods from point of production to point of comsumption. After getting the order, the logistics company arranges for the delivery. The goods are trucked (or through in-land water ways) from the production unit to the terminal. The goods are loaded in the containers to be delivered. When loading, its evaluated if the conatainer have enough orders to fill up its full capacity.

The options available for the shipping company are (a) wait for some new order to come it to fill up the rest of the space in the container (b) Let the shipment go with the unoccupied or partially empty for the destination. This state of the container is known as less the container load (LCL). Most of the times they opt for second or both (a) followed by (b).

Second, the scenario in which the containers in transit, are delivered to the destination port. After unloading the goods from the containers, the empty contaners are stored in the depot at the terminal. The empty containers remain there untill the logistics company finds a new order to deliver to a new destination. The options available with shipping companies are (p) wait for a new order to come-by (q) reposition the empty containers to a place of demand. The current trends show that in mojority of the cases the shipping companies opt for the second option or both. The repositioning of containers is expensive & logistics company has to bear the expenses to get more businesses.

This situation requires a solution in which repositioning of containers can be potentially reduced. The solution requires an intermediate agency to organise for freight for humanitarian organisations. The agency functions very similar to a third party logistics (3PL) company. A 3PL company organises shipments for individuals or corporations to get goods from the manufacturer or product to a market, customer or final point of distribution. The company contracts with a carrier to move goods. It doesnot move the goods but acts as an expert in supply chain management. Freight can be booked on a variety of shipping providers, including ships, airplanes, trucks and railroads.

The agency works towards smooth transportation of humanitarian aid using commercial logistics providers. It remains in contact with corporations who are interested in humanitarian relief work. They take orders from these corporations and organises their transportation to the destination. They contract the logistic company for the deliver & maintain all the documentation required for the transit (including customs). After the evaluation of the load and the space oppucied in the container, if there is scope of unutilised space to be than 25% of full capacity or about 3/4 th portion, the agency contacts the corporation for donation for space to deliver humanitarian relief aid. The agency maintains a integrated logistics strategy software which takes inputs like orders from corporations & humanitarian organisations. Then the analytical software makes a evaluation of the best match between the corporation and humanitarian orders taking into account the destinations, routes, load size, weight, height, dimensions, date , time of the consignment. The result shows the best possible match between the corporate & the NGO needs. The agent prepares to request for donations from these corporations for space in containers for the

NGOs.
The solution is mainly applicable to initial phases from the point of getting orders from corporations & NGOs to the point when the goods reach the destination. In case of corporation, the goods are delivered from the port to the customer. On the other hand humanitarian relief goods, the next step is taken by the benficiaries.

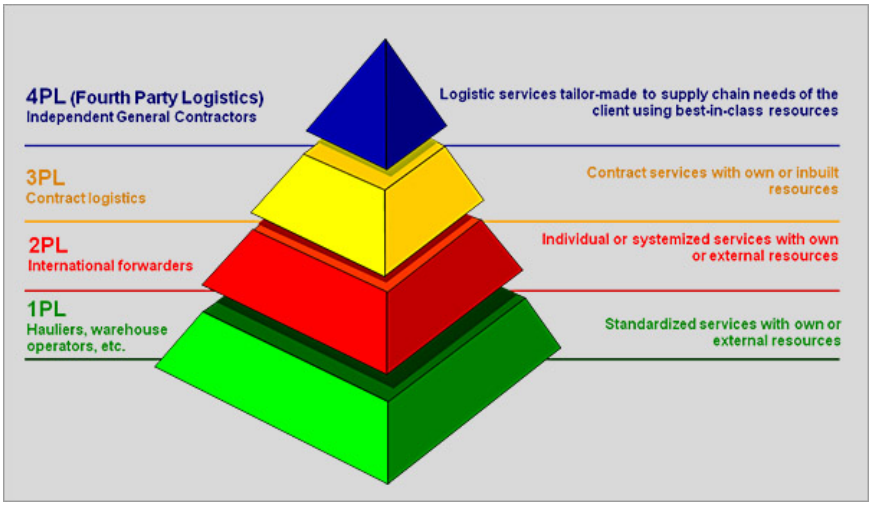


Figure 5.2. Logistics players

The next subsection presents the steps of the solution:

5.3.1 Step 1: Evaluation

After the emergency period of natural or man-made disaster like earthquake has subsided, the relief workers assess the damage caused at the site & amount of the resources needed for rehabilitation stage. The relief workers at the disaster site make a list of relief aid that will be required by the affected & vulnarable people. This phase is the major part of the rehabilitation stage. After they have formed a formal list of the resources required, they contact with other humanitarian organisations and relief aid provided in collaborations with them. These NGOs are responsible for arranging for relief aid.

It is important to note that while suppliers are pushed through the supply network in the immediate response to a catastrophe, a pull approach is adapted in the reconstruction phase of the disaster relief operations (Long & Wood,1995; Kovacs & Spens, 2007). A pull supply chain, however, considers real customer demand instead of sales forecasts to determine the amount produced items (Womack & Jones, 1996; Christopher, 2005). Hence the customer pull the products through the system, resulting in lower inventory levels and a potentially higher capacity of existing resources to meet the specific needs of customers within budgetary constrains.

5.3.2 Step 2: Arranging for orders

The NGOs from different countries contacted, arrange for relief aid. There are many NGO who have inventories themselves, accumulated for the whole year. They check their inventories for supplies and in case they don't have it, they ask for donations. After arranging for the relief aid, The NGO places order to deliver humanitarian aid and arranges for logistics. At this stage in our solution, the humanitarian needs are informed to the agency which then arranges for logistics. The agency orders consignment to a logistics company (ex. shipping company) for the quantity of relief aid to be delivered, with the dimention, size and weight. They also give details of the time period and destination to where these aids are supposed to be delivered. In the same way, the agency are in contact with interested corporation in donation for space in containers. They also take orders from the corporation to arrange for shipment of their goods. So the agency acts as a third party logistics company. The agency also feeds the needs of the corporations into the software just like it does for the humanitarian organisations.

5.3.3 Step 3: Optimal Collaboration: Match engine

The agent checks their integrated logistics strategy system for corporate & humanitarian orders for the same destination & the same time period. If there is an order that matches the specifications, the software generates an optimal collaboration between the corporation & the humanitarian organisation. This matching engine produces result based on the needs of both shareholders, taking into account the corporation's CSR, tax benefits & brand image development depending on suitable humanitarian organisation it collaborates with. After evaluation, the shareholders are informed and the agency makes a contract with the logistic company for the delivery of both the orders.

5.3.4 Step 4: Physical logistics

The goods are trucked to the port at the delivery from which they are loaded into the ships/vessels. The goods maybe loaded into the containers before trucking them to the port or the goods could be loaded at the port. After loading, they leave for the destination by shipping. The consolidation & documentation is taken care off by the agency.

5.3.5 Step 5: Custom's clearance

Customs fee & clearances, port fees are taken care of by the agency for the corporation goods. Since the goods delivered by the NGO are humanitarian relief they donâĂŹt have to pay custom tax. They can clear the customs without monetary transaction.

5.3.6 Step 6: Transport to points of consumption

The loads arrives at the destination port. The agency again arranges for the delivery of the corporation goods to be transported to the customer by trucking/ railways. The humanitarian goods received at the port is handled by the beneficiaries of the NGO & delivered to the point of demand by them.

5.3.7 Step 7: Sorting

After delivering the loads to the camps of the disaster areas,the relief aid is un-packed & sorted.

5.3.8 Step 8: Distribution

The relief aid is distributed to the people in need.
The next section presents the dynamic model of the solution. It showcases the relationship between the major shareholders of the solution along with the agency. The agency takes the role of the moderator.

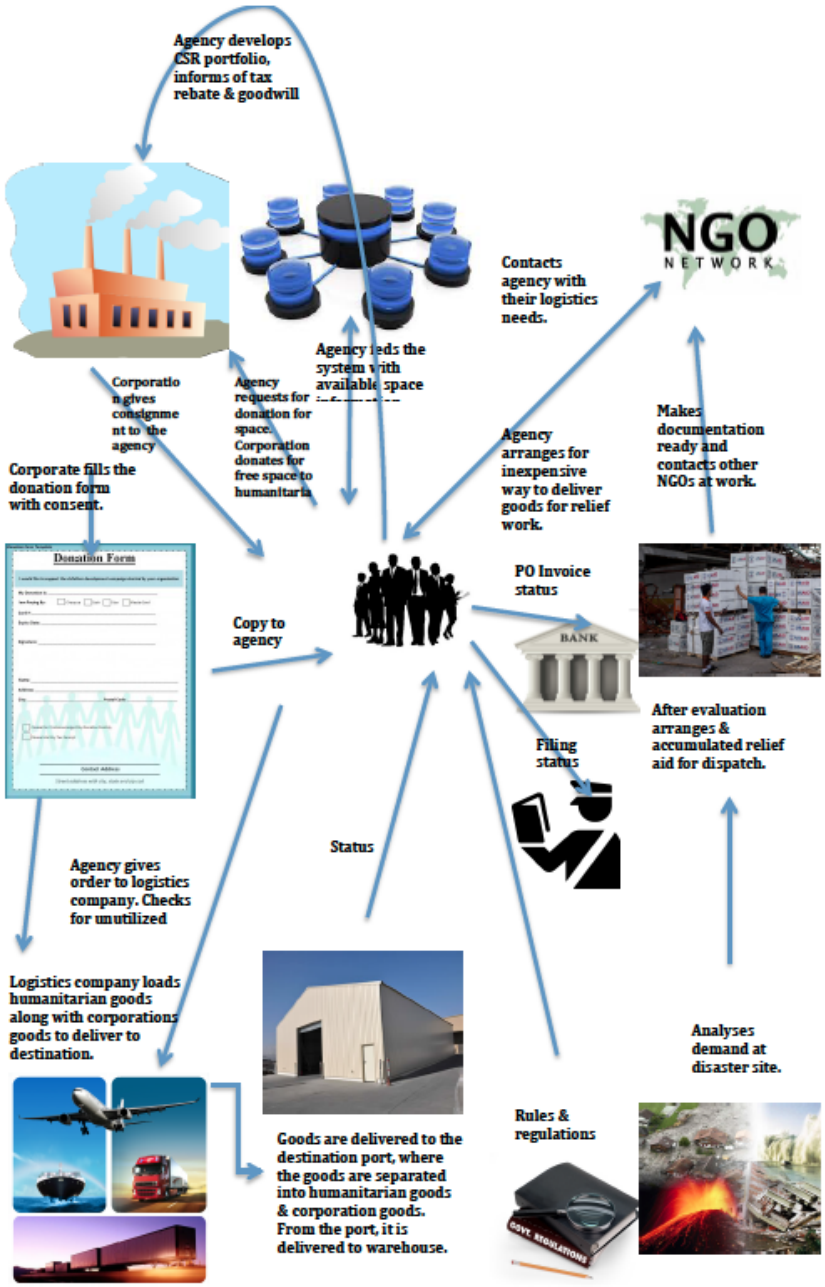


Figure 5.3. System model of the solution.

5.3.9 The Empty container/cargo carrier frame work:

This scenario takes place when the container reaches its destination port. The goods delivered are unloaded & the most of the times trucked to the customer. After the unloading of goods, the container is empty and stored in the dockyard for maintainance & repair

for its net journey. The empty container is loaded again when the logistics company, get new orders to deliver from that port to some other destination. Most of the cases, this waiting time is too long & the container stays idle occuping space in the depot. In such a scenario, the empty containers could be utilized for humanitarian relief work. There can be two cases for this scenario:

5. Case 1: The logistics company who owns the containers, even after waiting for enough time for some order to come in, finally decides to reposition the containers to a place of demand. In such a case, insead of incurring expenses due to repositioning of containers, they could possibly donate the containers for humanitarian relief work. The empty containers could be loaded with humanitarian goods and delivered to the place of choice of the relief agents. The logistics company bears the expenses in the transportation process.
6. Case 2: Corporations who are interested in humanitarian work could donate for the containers & its transit from the location of the container to the point of consumption. The corporation could even share the costs of the delivery with other corporations or logistics company.

Chapter 6

Finding & Analysis

6.1 Introduction

Analysis of the results of the questionnaire on optimization of containers, CSR, donation for space & collaboration in humanitarian relief work is presented in this chapter. First, an overview of the participants of the survey and their perceptions about the logistics problem & the proposed solution in provided. Second, parameters that are essential for the proposed solution & corporate-humanitarian collaboration is illustrated. Additionally, the chapter outlines possible points necessary for the development of an integrated logistic strategic solution. Finally,

6.2 Questinnaire results

6.2.1 Participants

The questionnaire was distributed to a total of 64 people, whereof 24 were employed by humanitarian organisation from WFO, UNICEF, ICRC & World Vision International and 21 were employed by corporations such as Tata Steel, Titan Industries, ITC, Sony, Microsoft & 19 were employed by logistics company such as DHL, TNT Express, UPS, FedEx & Aggarwal Movers. The questionnaire was conducted worldwide such as Switzerland, India, Germany, Singapore, Nigeria & United States of America. The response rate reached a total of 36%, whereof majority of people working for either a corporation or a logistics company or a humanitarian organisation were male. Only 18% of corporations staff respondents and 9% of humanitarian respondants were female. A total of 19 participants from logistics company & 24 participants from humanitarian aid organisation was achieved. The majority, which accounts for 46% of respondents working in the logistics industry, have a managing position in the company. followed by supervisor and assistant. The final 17% belong to the category"Others", which includes"Regional Head of Department and Clerical Assistant. In the humanitarian sector, all most majority respondants were lead leaders close to 43 percent. The next best set of people who responded in a corporations were supply chain managers, about 24 percent. Looking at the age of

the participants, most of them were younger, 52 percent. The second best respond was received from the experienced people with ages more than 50 years with a percent of 33.

6.3 Statistics

Among all the respondants, 37 percent of the logistics company employees think that the major routes for commercial line align so about less than 60 percent with the humanitarian routes for delivering humanitarian aid. Around 26 percent believe that sometimes the routes match upto 90 percent with the major commercial shipping routes.
Fifty nine percent of the respondants believes that the period for cross-collaborations should be long enough for its true value to generate. About 23 percent believe that it is important factor when we consider cross-collaborations between corporations and humanitarian organisations. More than 86 percent believe that with regards to empty container, the corporates should donate them with NGO's establishing a strong cross-collaboration. Also more than 80 percent of the respondants, believe that corporations in collaboration with humanitarian organisations should donate for the containers.
Close to 88 percent of the participants believed that ther is a need for a moderator like an agency dsecribed in the thesis which will be responsible for all matters related to donation for space, CSR development, tax rebates information and reliable delivery of the goods. The agency functions similar to a third party logistics agent with the main function of freight forwarding.

In the development of the software, the respondant's value capacity optimising savings (financial saving as the most important parameter in degining the software. About 32 percent people choose this followed by empty or partially filled space availability information with a high percent of 28 percent.
But there is a concensus decision which the respondants believe a software of this nature should in place with about 72 percent people agreeing for it. All statistical graphs and vulues are presented at the Appendix B for reference.

Chapter 7

Logistics Strategy System Design

This section of the thesis is concerned with the development of the software for the optimal solution between humanitarian organisation's & corporation needs. The software takes the basic description of the shipping consignment as the input criteria. The output generates a optimized solution for the best match possible, comparing it with different . The following feature describe the software better.

Information management is a tool to support logistics analysis and decision-making during times of disaster management. It incorporates the collection, analysis and dissemination of logistics related information which serves as the foundation of decision-making for a co-ordinated and effective response. The agency is responsible for consolidation and disseminating up-to-date logistic information making use of information gathered from multiple sources. These include

1. Customs information;
2. Operational logistic information;
3. Contact list
4. Standard forms;
5. Datasets;
6. Gap analysis;
   Compilation of key contact information, including suppliers, customs agents and governmental departments as well as other humanitarian organisations. For managing information and producing optimal solution presents a scope for an integrated software solution. The integrated logistic system (ILS) described in this thesis integrates the niches of CBR with OLAP technology to assist logistics service providers on formulating strategies resulting in the achievement of the highest possible customer satisfaction level with optimal operating costs. ILS operates by first taking raw data, discovering hidden data pattern, evaluating an optimal match for the collaboration and then transmitting in the CBR engine to retrieve past similar cases with accurate and valuable knowledge for supporting logistics strategy planning.

Knowledge gained during the field missions is frequently lost, due to a high turnover of field logisticians, often as high as 80% p.a. (Thomas, 2005). A further reason is the lack of sufficient knowledge about development processes, such as the utilisation of the analysis tools (e.g. key performance indicators), central database with data of former operations (Lee & Zbinden, 2003), and ongoing training programmes, especially in the field of logistics (Maon, Lindgreen & Vanhamme, 2009). For these reasons, retaining knowledge within a humanitarian organisation faces significant obstacle and this makes the development of robust logistics strategies even more difficult. The absence of appropriate information & technology at time of need often forces field logisticians to switch from electcronic resources to paper (Gustavsson, 2003), a practice that can impair the process of data recording, tracking and ultimately analysis and preparation for future logistic solutions.

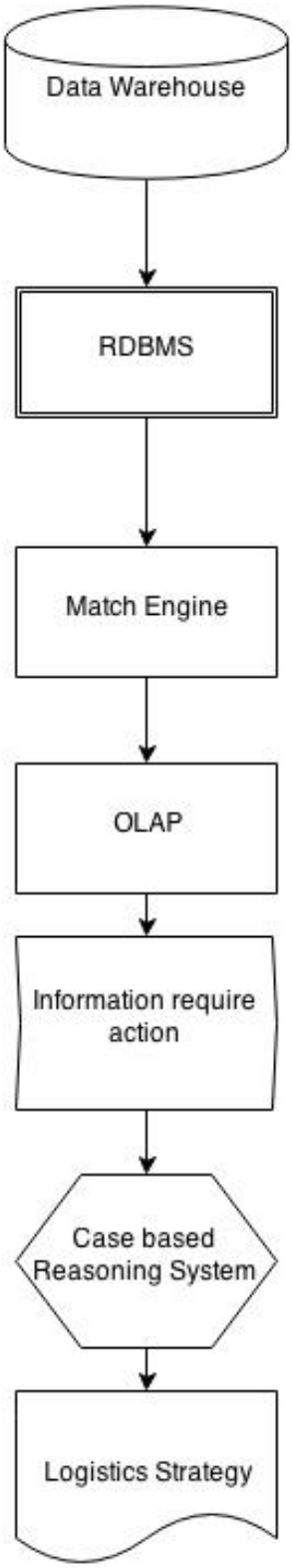


Figure 7.1. System Architecture.

7.1 System architecture of integrated logistics system (ILS):

The architecture of ILS composes of five modules to perform four stages of developing clients' logistics strategy as illustrated in the adjoining figure 7.1. The optimal strategy means for a demand and supply, discovering the optimal match between the corporate ordering a consignment to a commercial logistic company and the humanitarian needs. The attributes require to evaluate optimal solution includes client's logistics service specifications such as the parameters of stock loading in containers units (type, size, color, quantity, dimension and weight), source, destination, prefered routes, and relevant logistics service requests. The logistics system is developed focusing on a display for the agency administrator to view the following entries after the clients have feed input into the system in the web-based platform. The parameters which prioritises to be part of the software solution is as follows:

(a) Corporations interested in donation for space in containers or freight carriers and their consignments.

(b) Availability of under-utilized space in containers after goods of corporations have been loaded or an estimation of the same.

(c) Details of the goods from the corporations & from the humanitarian organisations to be delivered. Also the source, destination, route & time of delivery.

(d) List of logistics companies which operate for different routes for corporations, price for ordering, available containers, size & mode of transport available at the time of contract.

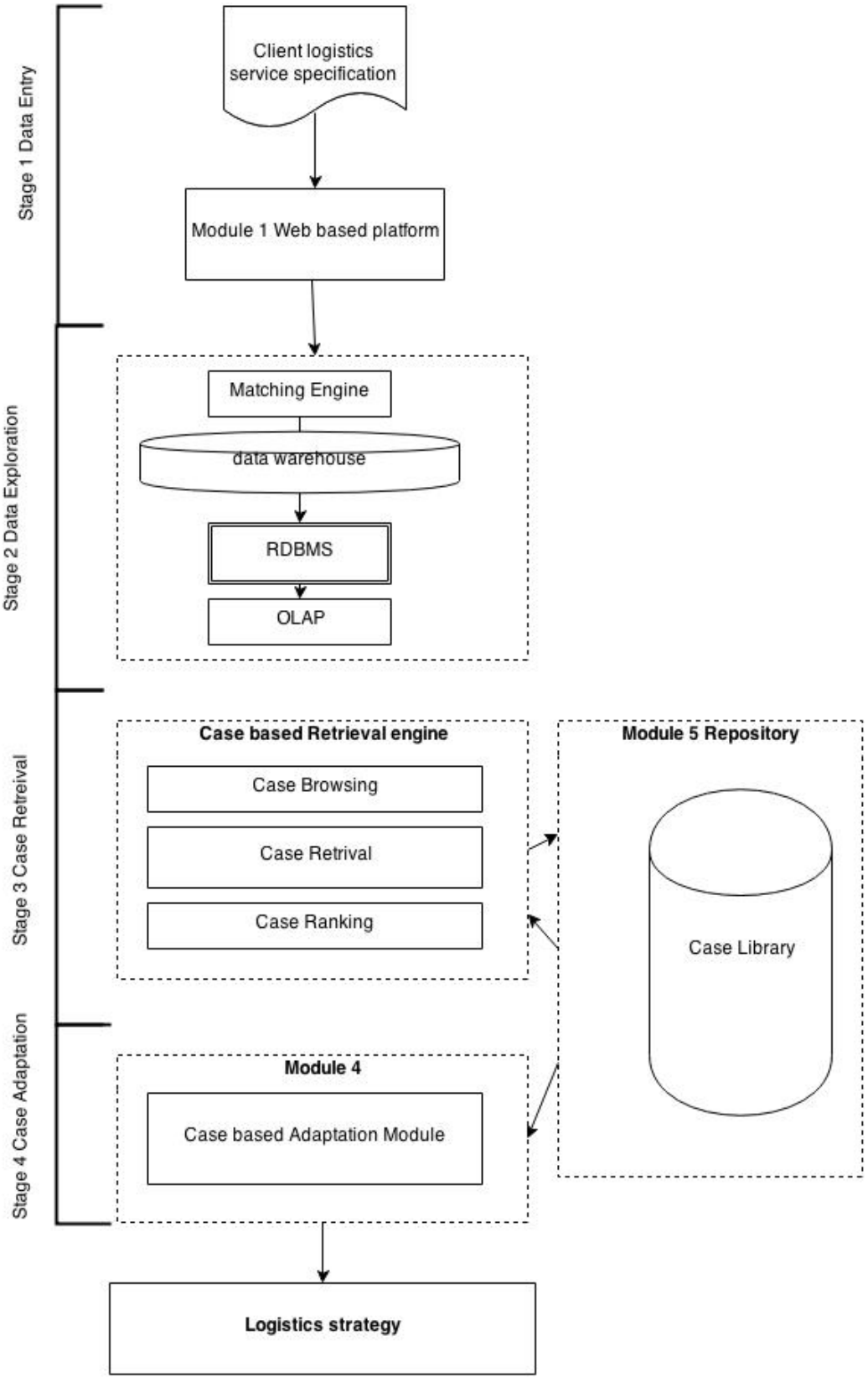


Figure 7.2. System Modules.

Module 1 is a web-based platform for data entering and system access function. Module 2 is composed of matching engine for evaluating optimal collaborations. The match engine results are feed into the OLAP software and data warehouse which support valuable data for potential case retrieval purpose. The case retrieval engine in Module 3 plays the role on retreiving potential case against the input case specification. The new logistics strategy case creation is performed by case adaptation module in Module 4. The case repository in Module 5 composes a of case library to store a number of previous stored cases and new successful cases.

7.1.1 Module1: Web based platform

The web-based platform is the user interface of the system to enter logistics specification and access logistics service function.

7.1.1.1 Data entry

Logistics service specification & unutilized space availabilty entry. The client's logistics service specifications such as the parameters of the goods to be delivered (type, size, color, quantity, dimension and weight) and relevant logistics service requests are transfered through the web-based platform to the data warehouse.

7.1.1.2 Accessing system function & output display

The function of OLAP, case-based retrieval engine and case-based adoption module are operated through the web-based platform. Besides, it also displays the output of the system, such as new cases of logistics strategy. The web-based platform contains a number of web pages which are constructed by HTML language. As HTML is a programming language that represents static information only, a server scripting language named ASP (Active Server Page) is added into the web page to make it dynamic and interactive. In such case, data is transmitted through the web-based platform to the data warehouse.

7.1.2 Module 2: Match engine & OLAP

This modules comprises of a matching engine which generates optimal solutions for collaborations. The engine using the user feed data to find hidden patterns to generate a solution. It takes into account the corporation's CSR stategy, how much tax benefits are they looking for, what is their strategy for developing brand image, which countries do they supply goods to, in what quantity, which are the humanitarian locations in the routes the corporation dominate, all these inputs taken from the user is analysed to obtain best matching solution. The results are feed into the data warehouse. This module is also responsible for supporting potential attributes for the case retrieval process. It is done by three embedded sub-modules including data warehouse, OLAP software and relational database management system (RDBMS).

7.1.2.1 Data warehouse

It is a large database that stores all data from different operating systems in an enterprise The data stored in this database belongs to integrated data which is obtained from internal and external data sources. The internal data is extracted from the enterprise's operating system, while external data comes from the enterprise's business partners such as suppliers and clients. In general, the data of performance index and specifications made by customers extracted from the data warehouse and used as attributes for case retrieval purpose.

7.1.2.2 OLAP software

It is used for retrieving 'attributes' from the data warehouse. According to the logistics service specifications, the OLAP software retrieves, analyzes, filters and extracts relevant data without predetermined query.

7.1.2.3 Relational database management system

It supports the OLAP software operation. Fig. shows the data which are stored in relational data warehouse is first extracted by RDBMS and then located into the multidimensional data structure like n-dimensional cube format. This database cube can facilitate a large amount of data analysis and explore the hidden relationship of data. The extracted data is used for attributes for case retrieval.

7.1.3 Module 3: Retreival engine

The case-based retrieval engine retrieves past cases for solving current problems. This module consists of three submodules to extract relevant case, namely, case browsing, case retrieving and case ranking module.

7.1.3.1 Case browsing

In this sub-module, after receiving userâĂŹs enquiry of specifications, the tree structure of the case library is browsed for suitable cases. These cases contain a set of attributes, indexed as a checkpoint, matching the specifications of the input case. As illustrated in Fig. 7.2, the case is structured in the form of a tree with different layer from top (general operation area) to bottom (specific operation of workflow). The case retrieval engine searches the specific workflow diagrams through these indexes. Once a new case workflow is created, it is saved in the case library.

7.1.3.2 Case retrieving

In this sub-module, a list of potential cases is retrieved after matching with the specification of new input case by means of the kâĂŞd tree indexing method.

7.1.3.3 Case ranking

In this module, a pre-determined weight (w) is added to the factor (f) using the nearest neighbor method.

7.1.4 Module 4: Logistics Strategy

The process of new case creation such as edition, combination, detection or addition of past cases is performed in this module. For example, a new logistics strategy is created by modifying the existing workflows in the retrieved case. By changing the design of its workflow, the demand for manpower is adjusted correspondingly. In doing so, a new logistics strategy is created.

7.1.5 Module 5: Case Repository

This module is for storing cases of logistics strategies in free data format. Normally, a case contains a set of attributes represented in words and numbers to describe an affair or a problem. The case of logistics strategy not only contains word and number descriptions, but also allows workflow diagrams. It stores a number of past cases in the form of a tree structure case database. Cases in the library are made up of three parts: case number, case indexes and strategy sets. The case number assigned by the ILS acts as a unique identification of cases in the case library. The case indexes are built up by a set of attributes that describes the affair in the case. This set of attributes is an identity for the case retrieval engine to match and retrieve cases.

A good logistics strategy is important for logistics service providers to facilitate an organisation to succeed while minimizing current assets usage and maintaining high customer satisfaction level simultaneously. However, formulating good logistics strategy is always a challenge to logistics service providers. It is common that even experienced logistics planners always spend excessive time in seeking appropriate knowledge to formulate logistics strategies. This is mainly due to a lack of useful information or relevant support. In this thesis, an integrated system which incorporates matching engine and CBR with data mining techniques to assist logistics service providers on logistics strategy development is introduced. Through integrating CBR and OLAP techniques in formulating logistics strategy, useful information and knowledge can be retrieved at right time, thereby planning time is greatly reduced.

The capabilities and advantages of ILS could be demonstrated by implementing it in real time. The ILS operates by initially capturing raw data, discovering hidden data pattern, matching attributes and then transmitting into CBR engine to retrieve past similar cases with accurate and valuable knowledge for supporting logistics strategy planning. In addition, the hybrid CBR system is capable of selflearning capability. It learns from new stored case and reuses the experience gained in past cases. The continued improvement characteristics of CBR system can enhance the quality of logistics strategies.
In conclusion, by applying ILS in logistic service provider, the goal of formulation of logistics strategies, which is enhancing competitive advantages through utilizing resource to enhancing customer satisfaction, is achieved.

Chapter 8

Conclusion & Future Work

8.1 Introduction

This final chapter provides closing remarks on the space donation and corporate-humanitarian collaboration in the field of disaster relief and humanitarian aid. The main findings are pointed out and compared to the initial goals of thesis. This chapter also highlights how the findings are related to aspects i the greater world beyond the limitations of this work and provides recommentations on how this research can contribute to imrpovement of disaster relief practices worldwide. Finally, ares for further research are suggested.

8.2 Summary of the thesis

8.2.1 Research objectives and research approach

The study was based on the following two objectives.

- **Objective One**: "To propose a new perspective to find a solution to the problem faced by humanitarian relief agents in their logistics operations when delivering relief aid"
- **Objective Two**: "To develop a conceptual design for a integrated software for the perspective"

This thesis was based on an in depth literature review highlighting the current state of research in the field of trade imbalances, shipping containers, containerizations and collaborations. Due to the relative newness of this phenomena only a limited range of academic articles could be found, meaning that additional information from the various newspapers and corporate articles, which mainly describe rather than analysis concepts close to the solution provided, were included. Primary data was gained by conducting of a questionaire investigating the resondant's point of view regarding different concepts related to te solution. In order to achieve a braod scope of opinions a large and diverse set of corporations, commmercial logistics and humantarian organisations were included in the study.

The research has showed that corporate-humanitarian collaborations provide their partners with mutual benefts in the form of knowledge tranfer (best practices), sharing of resources, the broadening of each partner's network. On top of the mutual benefits, a specific avenue of profi for corporations ia that enhancement of their public image and public awareness of their company. in a positive light; where as humanitarians take advantage of inexpensive commercial sector logistics service.

The survey also gave out that collaborations, however, will only be sucessful if all the parties involved are awre of each others strenght and weakness. In accordance with the academic literature findings, collaoborations need to be in clear terms that determines the scope of involvement and each partner's capability and their aims and objectives.

Responses showed that all parties involved need to make sure sufficient motivation is available to contribute to the positive development of the collaborations and show a degree of flexibility to adapt to changes in demand or organisational culture. Companies must be aware that cooperating with humanitarian aid agencyinvolves a great amount of time and substantial investments, as well as risks, and is therefore not manageable for all firms.

The initial theoritical framework proved to have some deviations if to be applied to emergency setting. Since the emergency relief context is of global nature, the findings of this thesis can contribute to the society on a larger scale if more efficient response to disasters can be achieved through applying elements of the framework presented. Still the framework would generally function as a tool for any supply chain partnership building process, especially if the partners which to focus on resource allocation & capacity building.

The first framework was, however not suitable for humanitarian emergency relief setting & therefore a revised framework has to be developed that provides a tool for corporate-humanitarian-logistic partnership with focus on the disaster relief process.

As concluded already in the introduction of this thesis, more and more disasters happen and there is a need for more efficient response to these disasters, both from the humanitarian organisations and the companies. The result of this study is a small step towards a more efficient global response to disasters since the framework for corporate-humanitarian partnership building can be used as a tool with regards to capacity allocation. All the actors, the corporate, humanitarian organisations & the logistics can find some relevance in the findings presented and when it comes to corporate-humanitarian-logistics partnerships, the essence is the relief they are bringing to people affected by the disasters.

Appendix A
Survey questions

Optimising capacity utilization in freight transport through corporate-humanitarian collaboration.

Cross-sector collaboration in humanitarian logistics: Can capacity optimisation in freight operations utilising full load for containers & freight carriers benefit all the entities (private companies/corporations, humanitarian organisations and logistics companies) and gradually progress into establishing strong collaborations?

Companies order consignments through air, sea and in-land freight to deliver their goods from point of manufacturing to the point of consumption. The logistics companies plays an important role in physically moving the goods from the source to the destination. Sometimes, the carriers /containers are not utilised to its full capacity before its being despatched from the source. Also when the containers reach the destination, the goods are unloaded, the containers remain empty till the logistics companies receive new orders to move them to new destination. If they don't find new orders, the empty containers are repositioned to the point of demand. This is the result of the trade imbalances which accounts upto 20% of capacity under-utilisation around the world. Research focusing on the problem of trade imbalances around the world has experienced a significant increase in importance over the last few years. The issue of the empty container/freight carriers has been well acknowledged. Presently the solutions for the problem turns out to be very expensive for an industry whose competitive edge lies in cutting costs.

On the other hand, relief operations in disaster struck areas demand a greater need of reactiveness, competence & adaptability from the humanitarian aid workers. The unpredictability of the demand, the

Figure 8.1. Page 1: Survey Introduction & motive

rapid change of circumstances and the suddenness of the events exacerbate the process and puts the staff in enormous stress. Private logistics company has the resources to assist aid organisations by providing space in partially filled and empty containers donated by corporations/private companies. Thus the private logistics companies might be able to contribute to the process of improving relief operations with regard to efficiency, speed and cost. Our solution provides benefits for all the share holders, the corporations gain by having better brand image, better corporate social responsibility rating and tax rebates for their donations, humanitarian organisations get an inexpensive, reliable and faster way to deliver goods to the disaster areas and the logistics companies take advantage of more business and cutting losses due to repositioning of empty containers. This solution is developed keeping in mind on-going developmental stages of disaster areas after the emergency period. Currently, the solution doesn't focus on emergency situations & war-inflicted disaster areas.

This survey is being carried out in order to learn about your opinion or experience with regards to the corporate-humanitarian collaborations. The questionnaires focuses on the capacity optimisation provided by corporate donations for space. The questionnaire is part of the research survey conducted by Rik Choudhury as part of his master thesis at the Universita della Svizzera italiana, Lugano, Switzerland. This project is supervised by Prof. Paulo Goncalves, Professor, Faculty of Economics. Please answer the questions freely. You cannot be identified from the information your provide. All the data will be treated with the strictest confidence. Under no circumstances will your individual replies be made available to anyone except the researcher.
The questionnaire will take 10 mins to complete. Please try to answer the questions when you are free. Your answers are essential in building a picture of the issues that are important for the research project and will contribute towards the process of improving humanitarian logistics.

Please return the completed questionnaire by (various dates).

Thank you for your interest and participation in the study and assistance through completion of questionnaire.

*Required

Figure 8.2. Page 2: Our solution

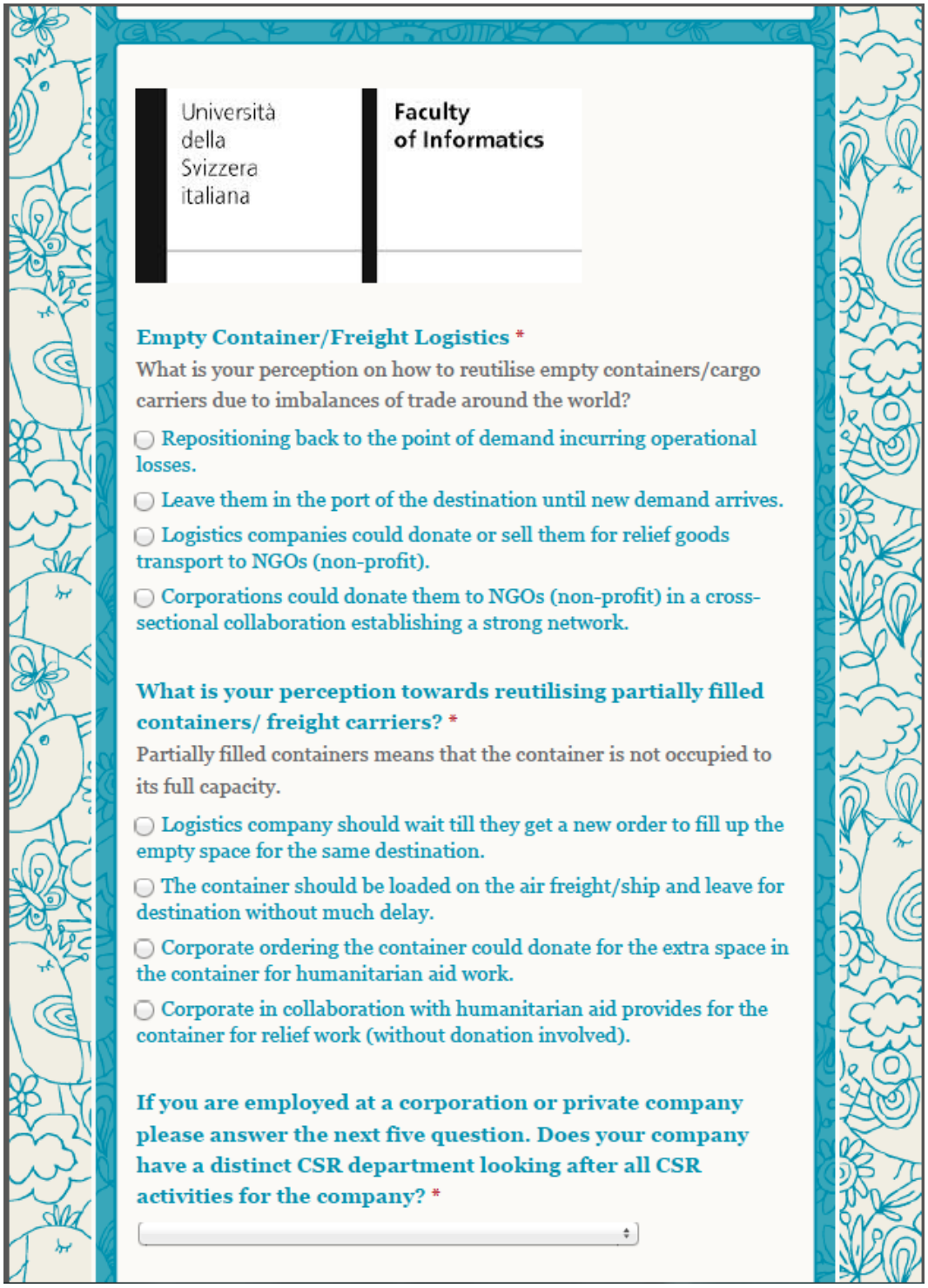
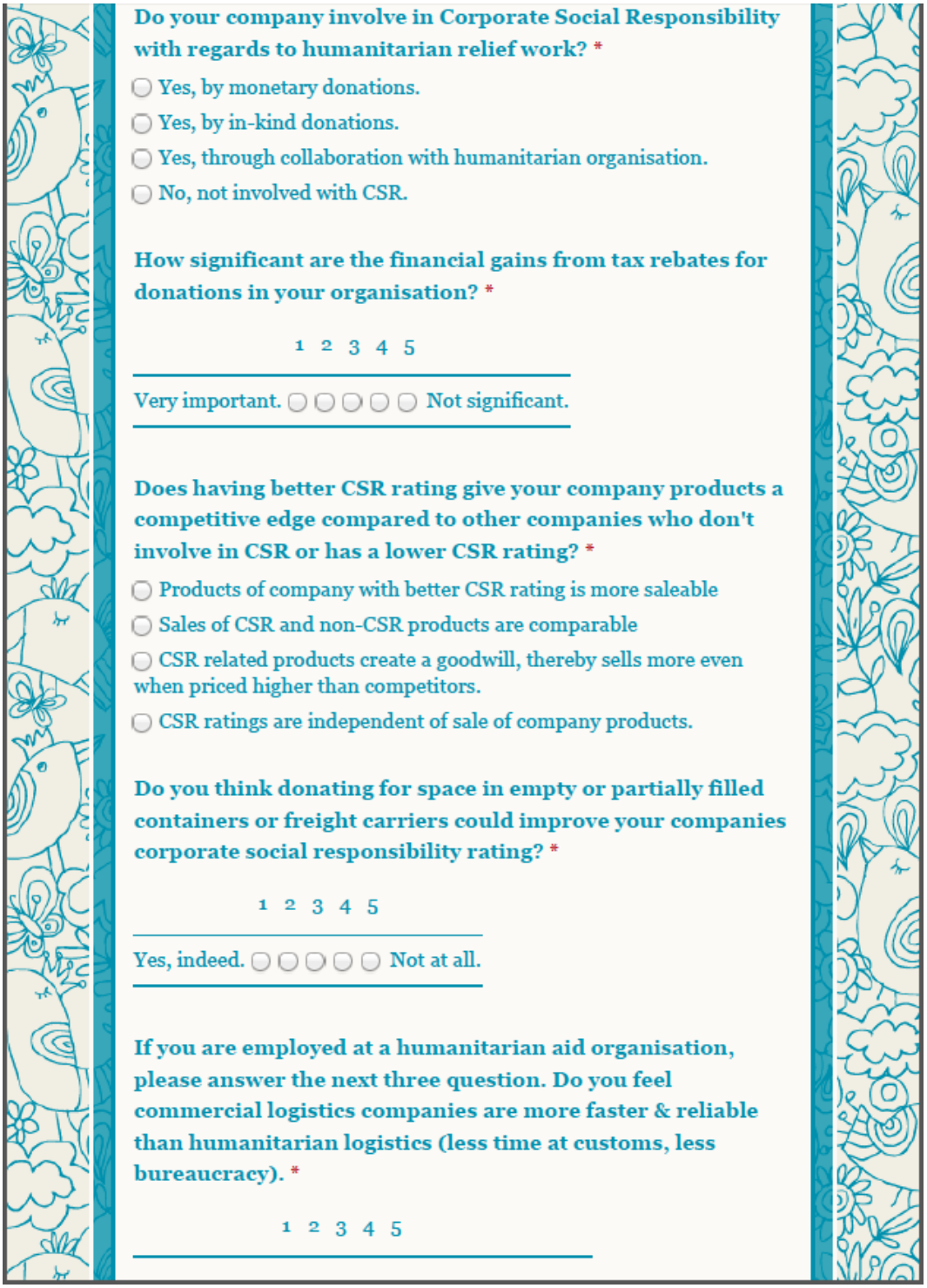


Figure 8.3. Page 3: Empty or partially filled containers and CSR



Do your company involve in Corporate Social Responsibility with regards to humanitarian relief work? *

- ○ Yes, by monetary donations.
- ○ Yes, by in-kind donations.
- ○ Yes, through collaboration with humanitarian organisation.
- ○ No, not involved with CSR.

How significant are the financial gains from tax rebates for donations in your organisation? *

1 2 3 4 5

Very important. ○ ○ ○ ○ ○ Not significant.

Does having better CSR rating give your company products a competitive edge compared to other companies who don't involve in CSR or has a lower CSR rating? *

- ○ Products of company with better CSR rating is more saleable
- ○ Sales of CSR and non-CSR products are comparable
- ○ CSR related products create a goodwill, thereby sells more even when priced higher than competitors.
- ○ CSR ratings are independent of sale of company products.

Do you think donating for space in empty or partially filled containers or freight carriers could improve your companies corporate social responsibility rating? *

1 2 3 4 5

Yes, indeed. ○ ○ ○ ○ ○ Not at all.

If you are employed at a humanitarian aid organisation, please answer the next three question. Do you feel commercial logistics companies are more faster & reliable than humanitarian logistics (less time at customs, less bureaucracy). *

1 2 3 4 5

Figure 8.4. Page 4: CSR and tax reabte

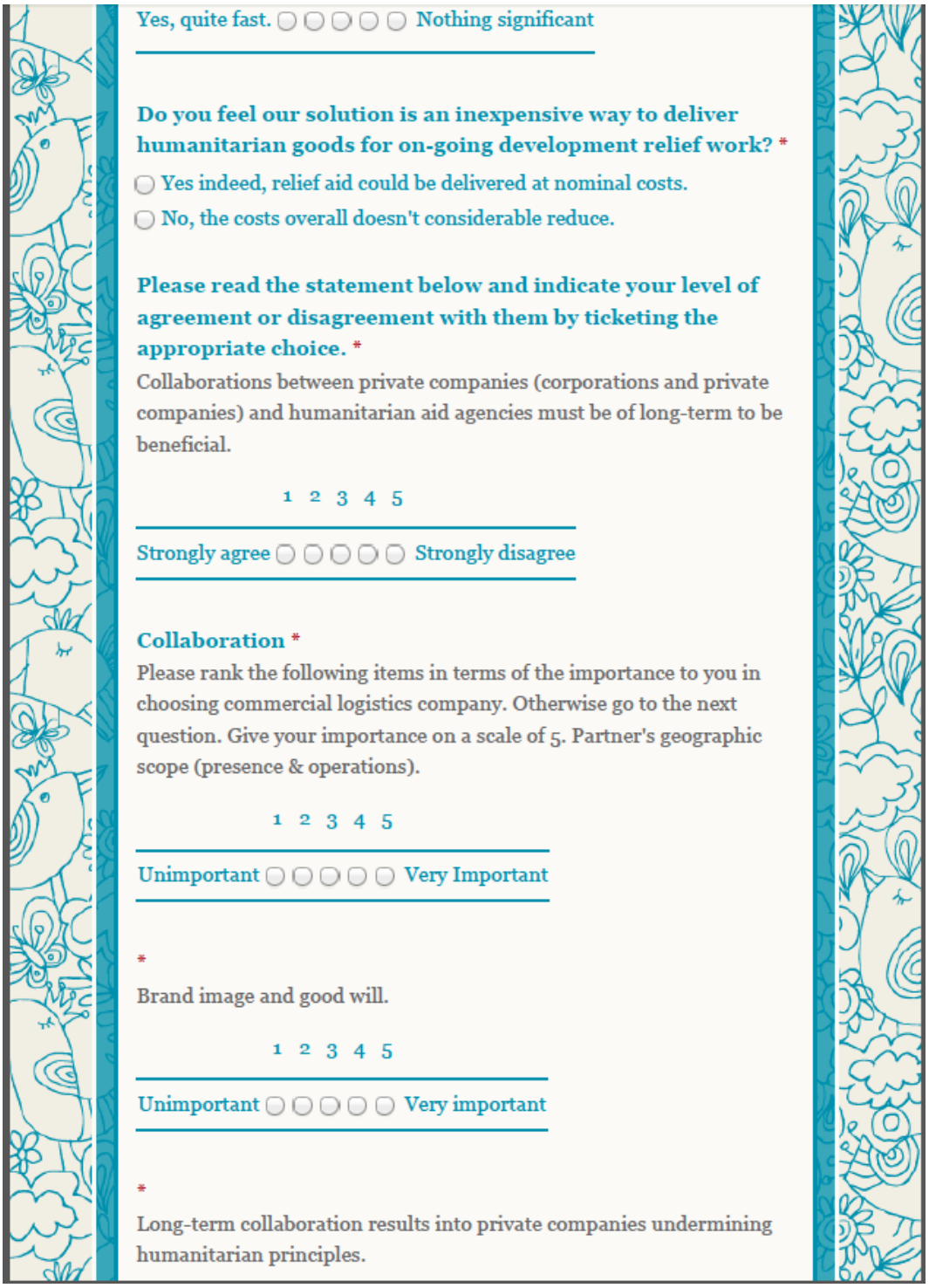


Figure 8.5. Page 5: Corporate-humanitarian collaborations

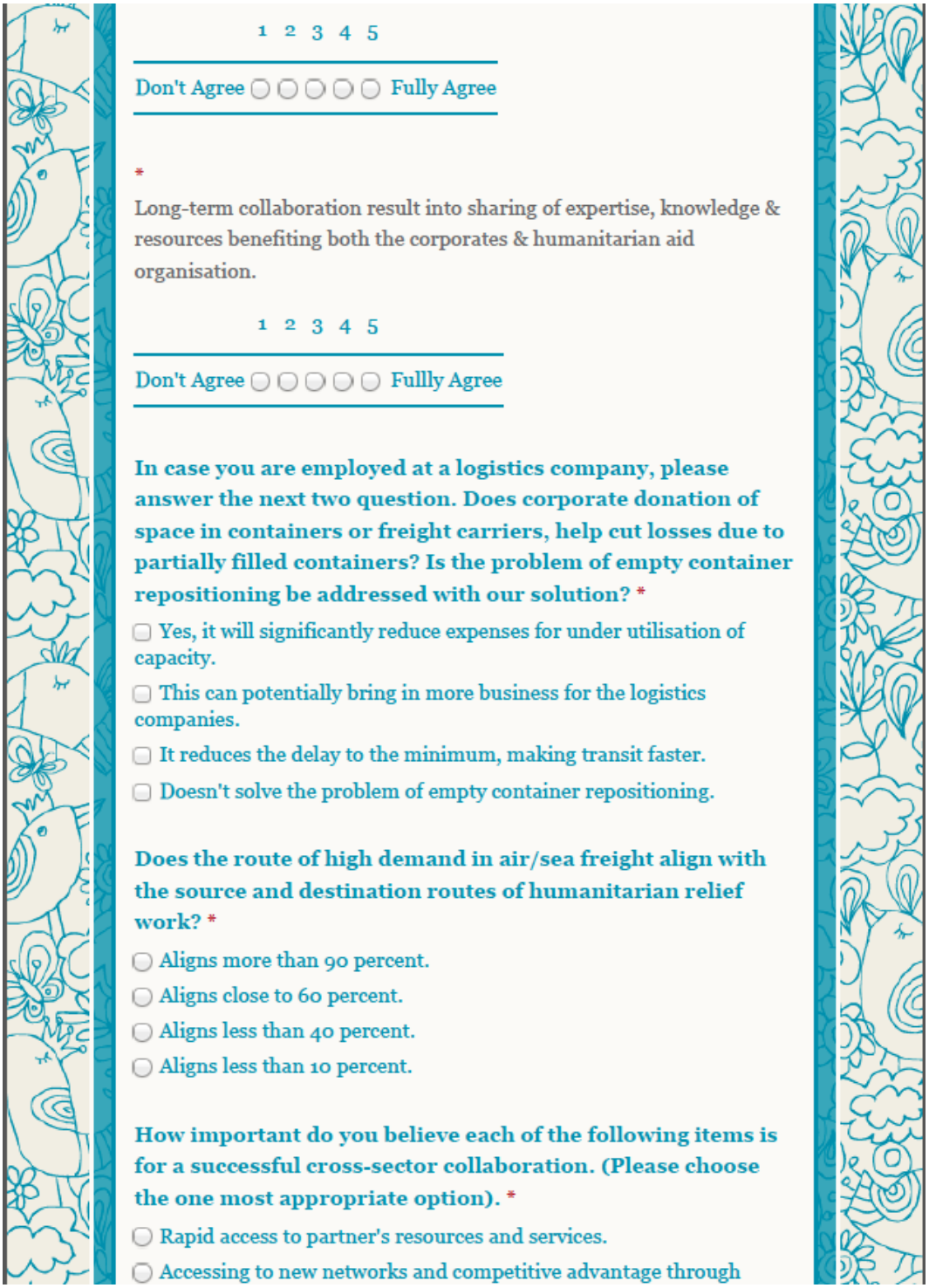
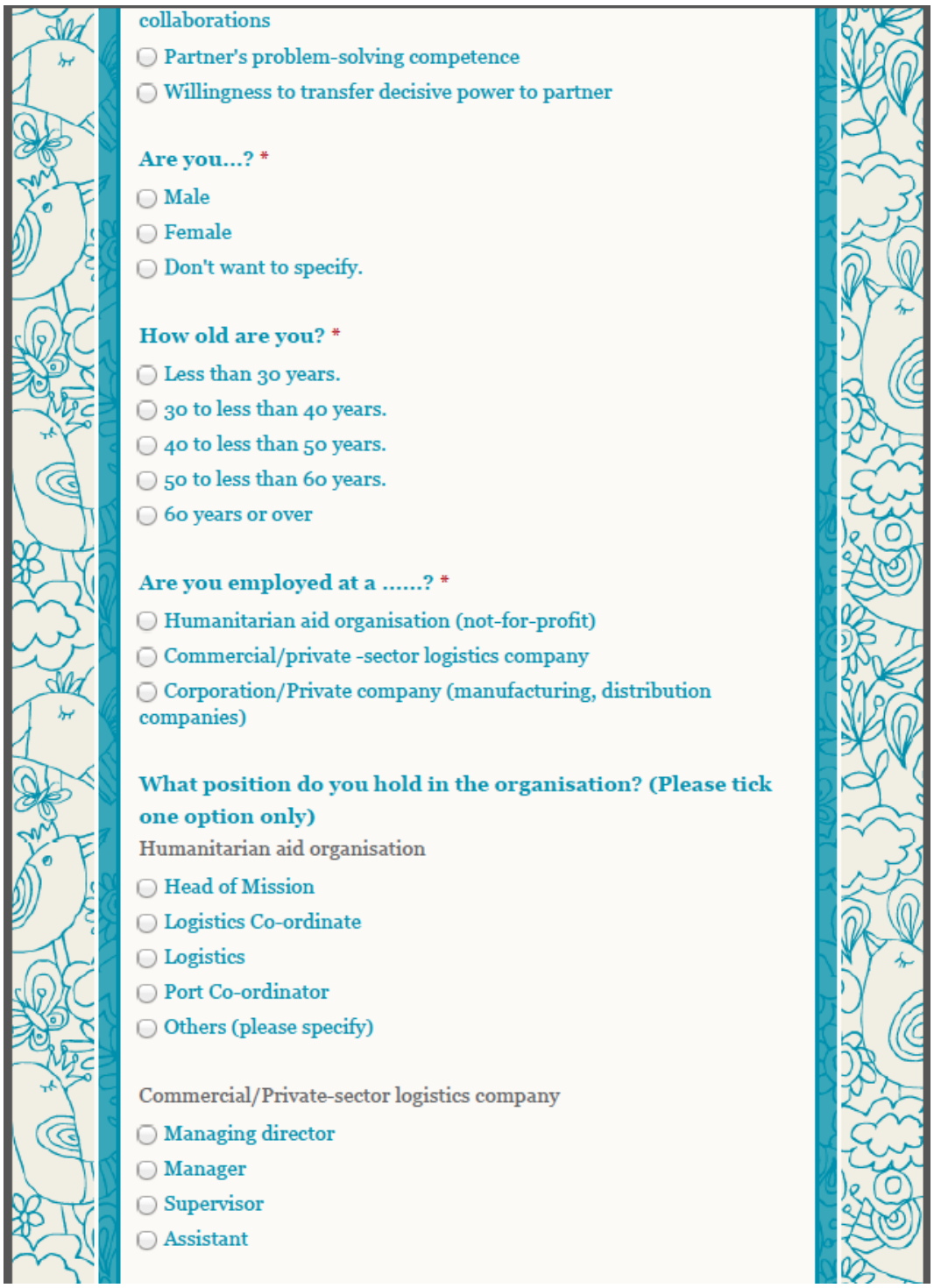


Figure 8.6. Page 6: Cutting losses and route alignment


collaborations

- Partner's problem-solving competence
- Willingness to transfer decisive power to partner

Are you...? *

- Male
- Female
- Don't want to specify.

How old are you? *

- Less than 30 years.
- 30 to less than 40 years.
- 40 to less than 50 years.
- 50 to less than 60 years.
- 60 years or over

Are you employed at a .....? *

- Humanitarian aid organisation (not-for-profit)
- Commercial/private -sector logistics company
- Corporation/Private company (manufacturing, distribution companies)

What position do you hold in the organisation? (Please tick one option only)

Humanitarian aid organisation

- Head of Mission
- Logistics Co-ordinate
- Logistics
- Port Co-ordinator
- Others (please specify)

Commercial/Private-sector logistics company

- Managing director
- Manager
- Supervisor
- Assistant

Figure 8.7. Page 7: Respondant's age and position

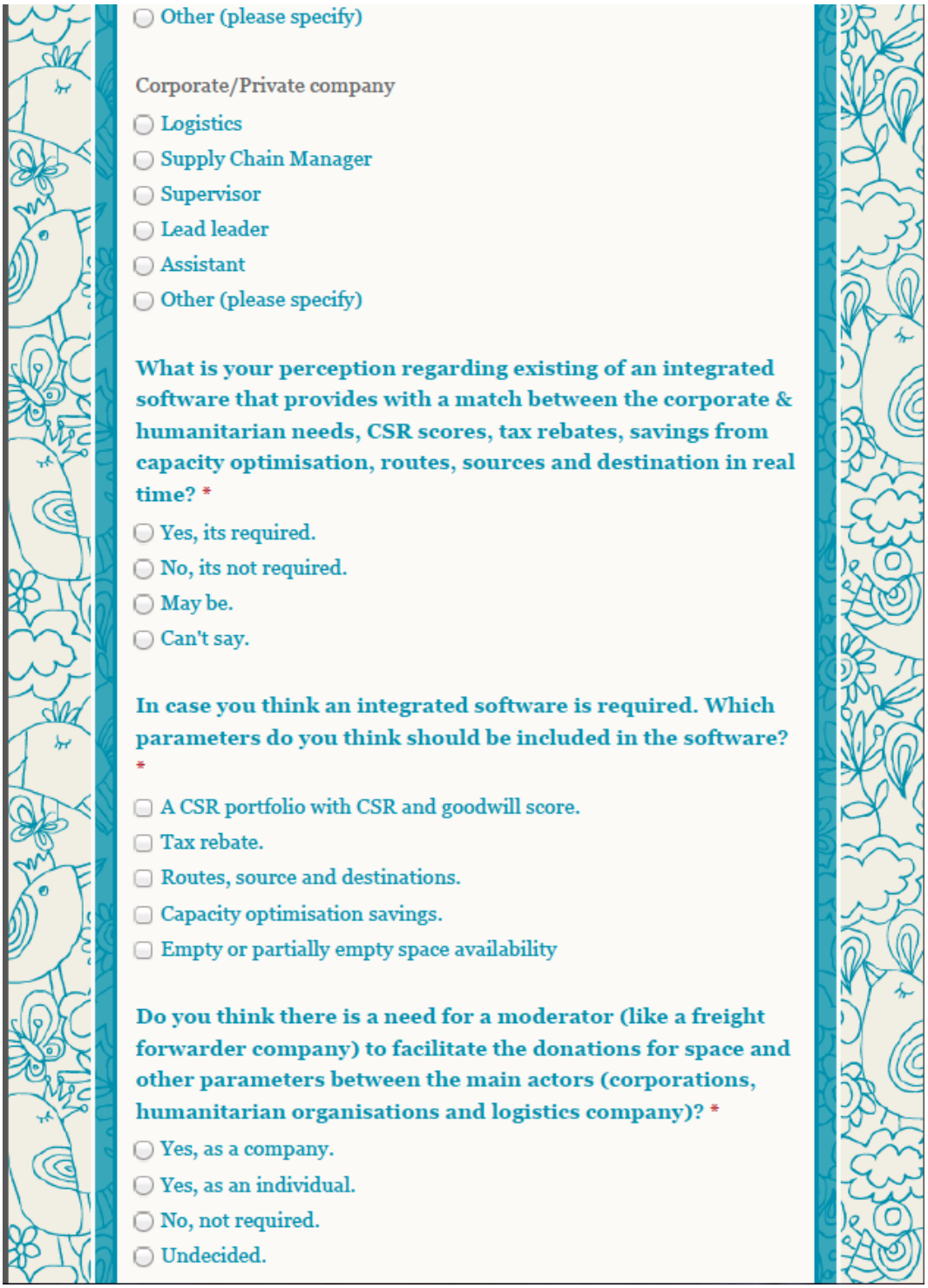


Figure 8.8. Page 8: Integrated software and agency

Appendix B
Survey results

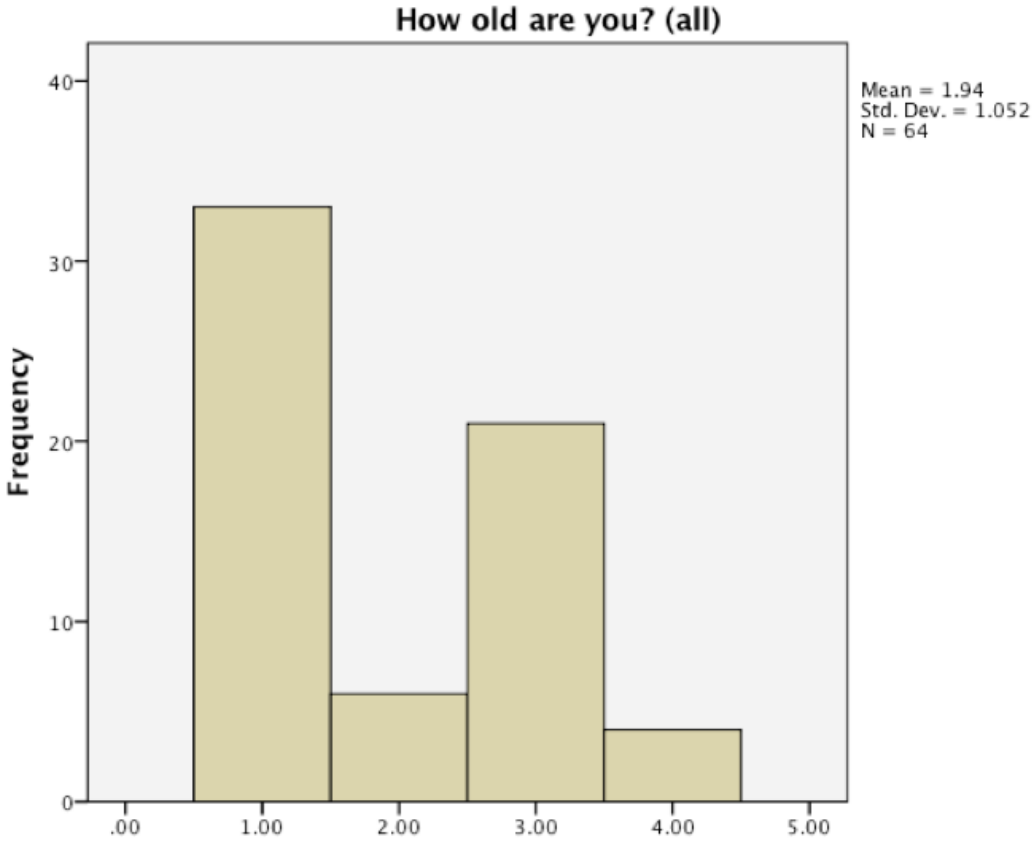


Figure 8.9. Age group of the respondants. 1= 30 to 39 yrs, 2= 40 to 49 yrs, 3= 50 to 59 yrs, 40= 60 yrs and above(all respondants)

Figure 8.13. Job profile of the respondants, 1= Humanitarian organisation, 2=Logistics company, 3=Corporations.

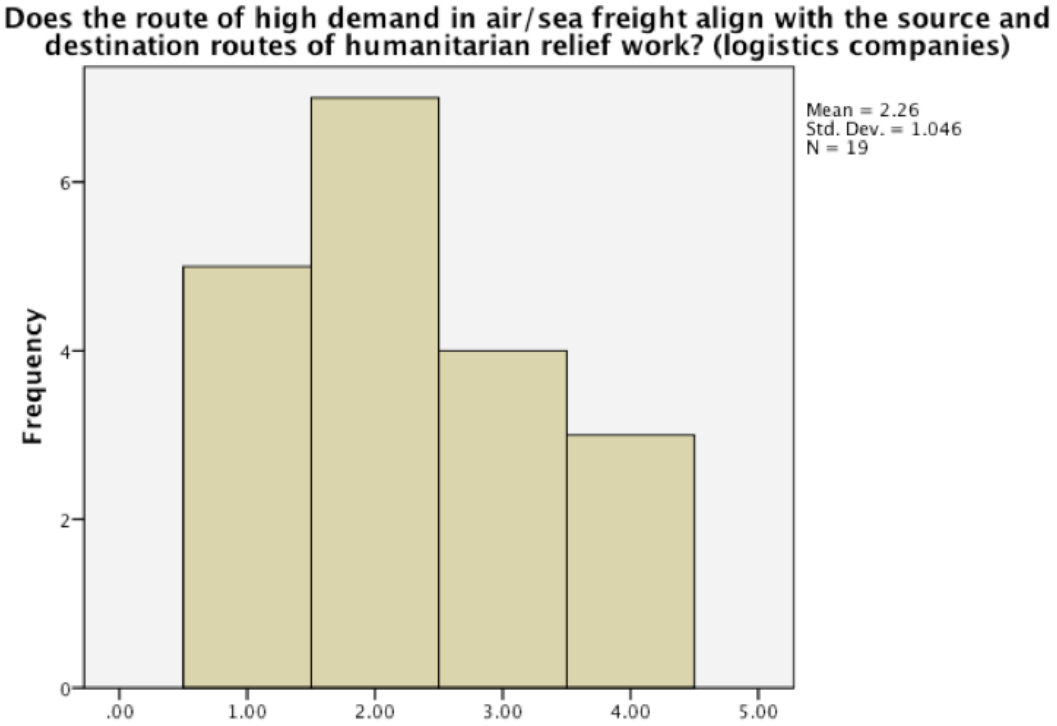


Figure 8.10. Routes alignment between corporate & humanitarian needs. 1= more than 90 percent, 2= less than 60 percent, 3= less than 40 percent, 40= less than 10 percent (all respondants)

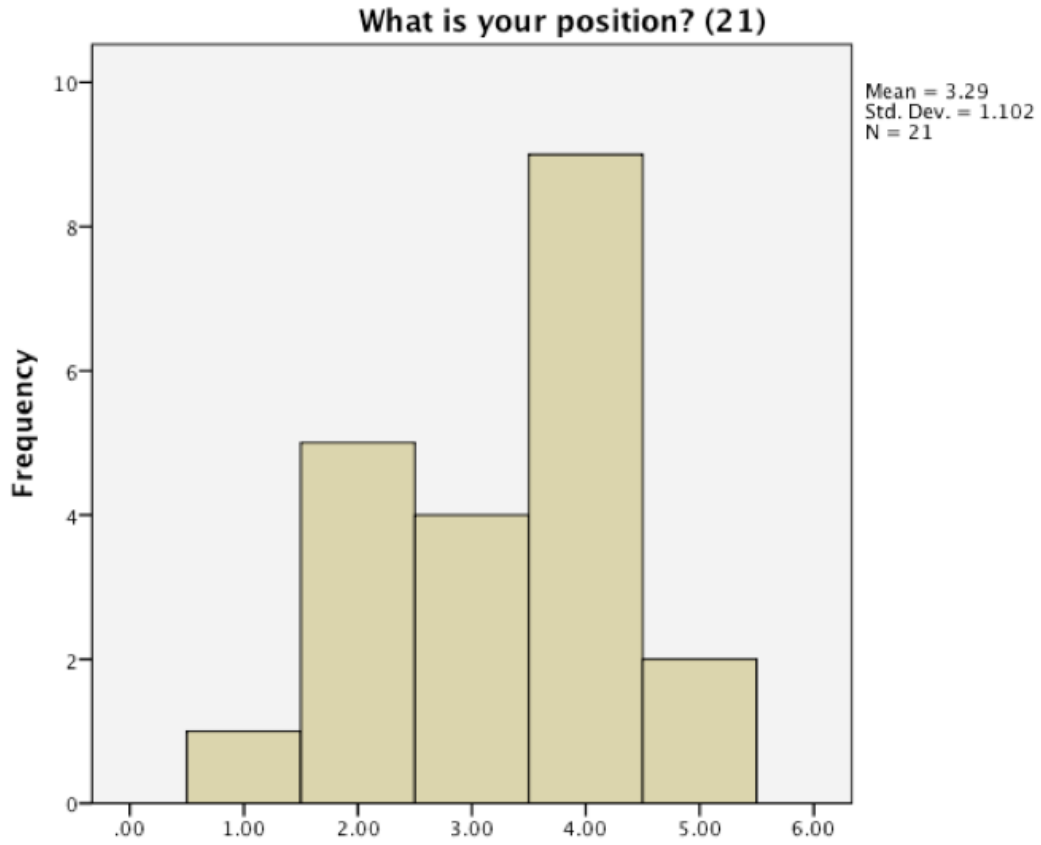


Figure 8.11. Position at the corporation. 1= Logistics manager, 2= Supply chain manager, 3= CSR supervisor, 4= lead leader 5= Others(only corporates)

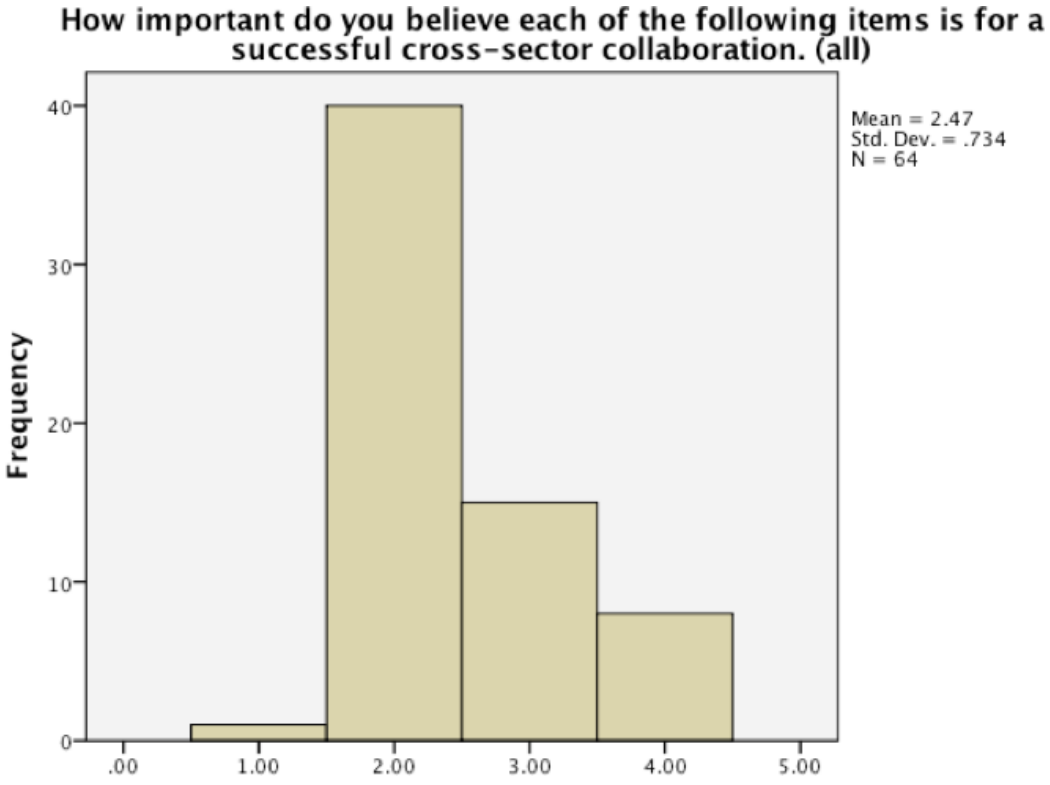
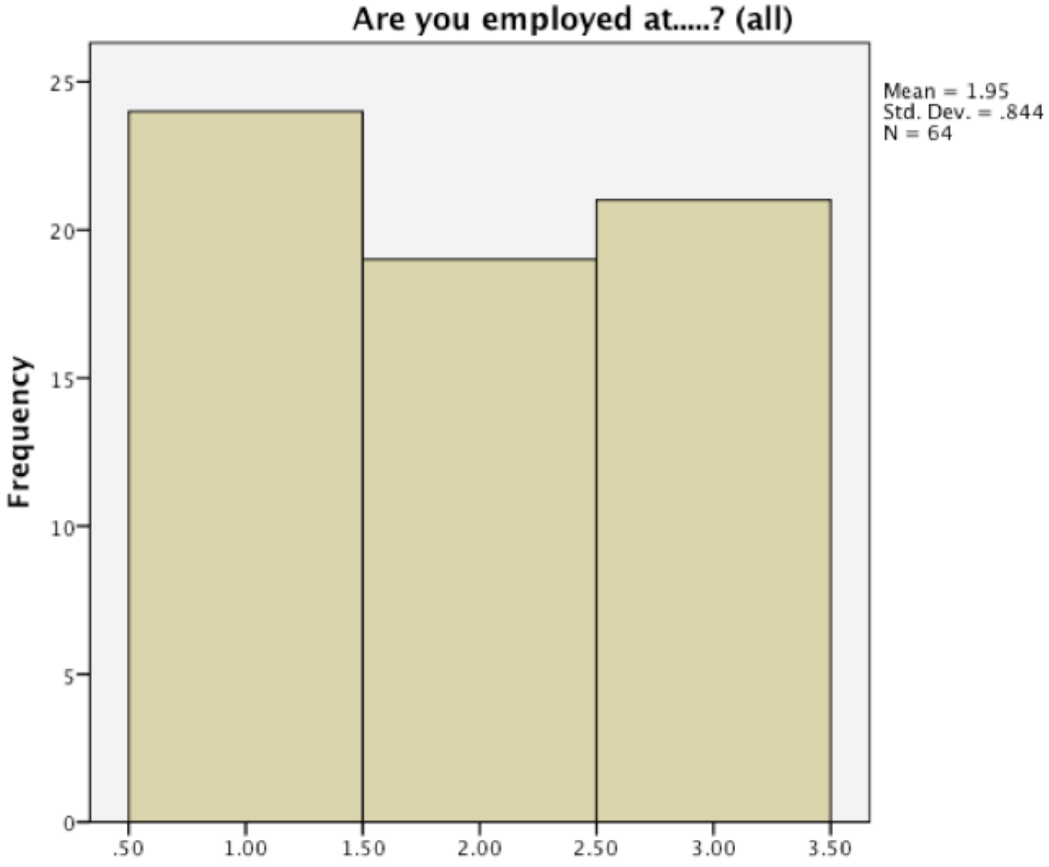


Figure 8.12. Long period of cross-sector collaborations,1=Very important, 2=Important, 3=Neural, 4=Sort of important, 5= Unimportant.


Are you employed at.....? (all)
Mean = 1.95
Std. Dev. = .844
N = 64
Frequency
25
20
15
10
5
0
.50
1.00
1.50
2.00
2.50
3.00
3.50

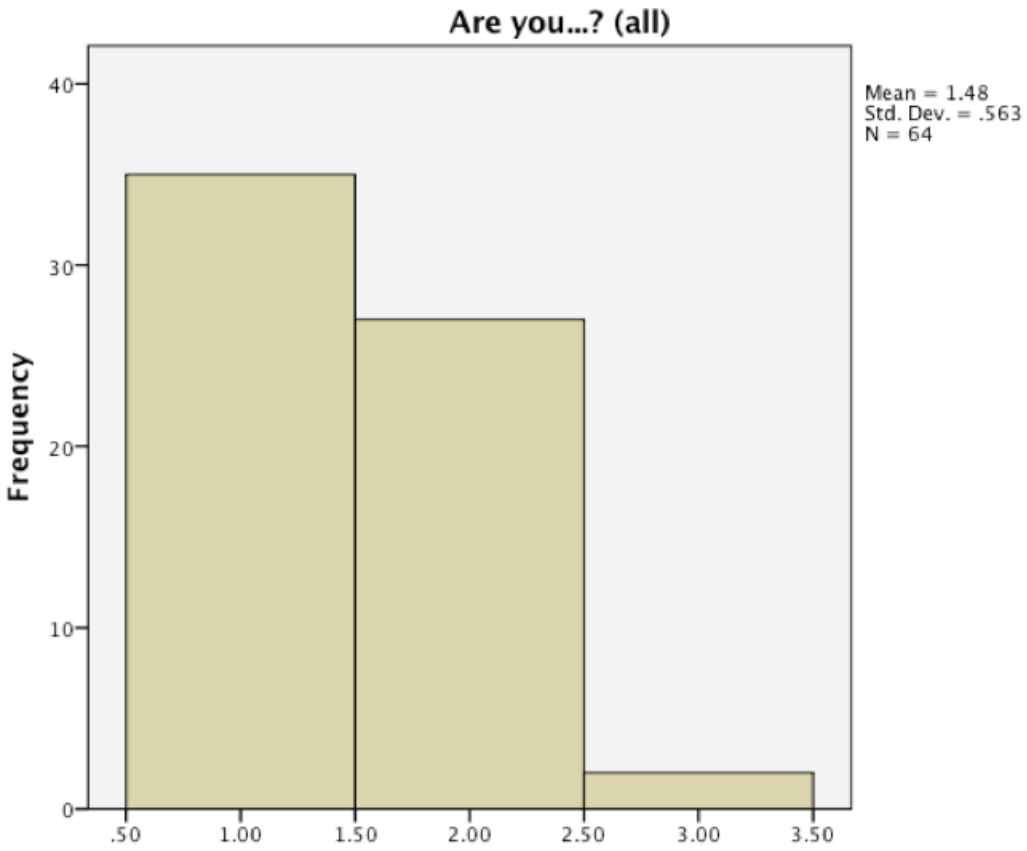


Figure 8.14. Gender of respondants, 1= Male, 2= Female, 3= Not want to specify.

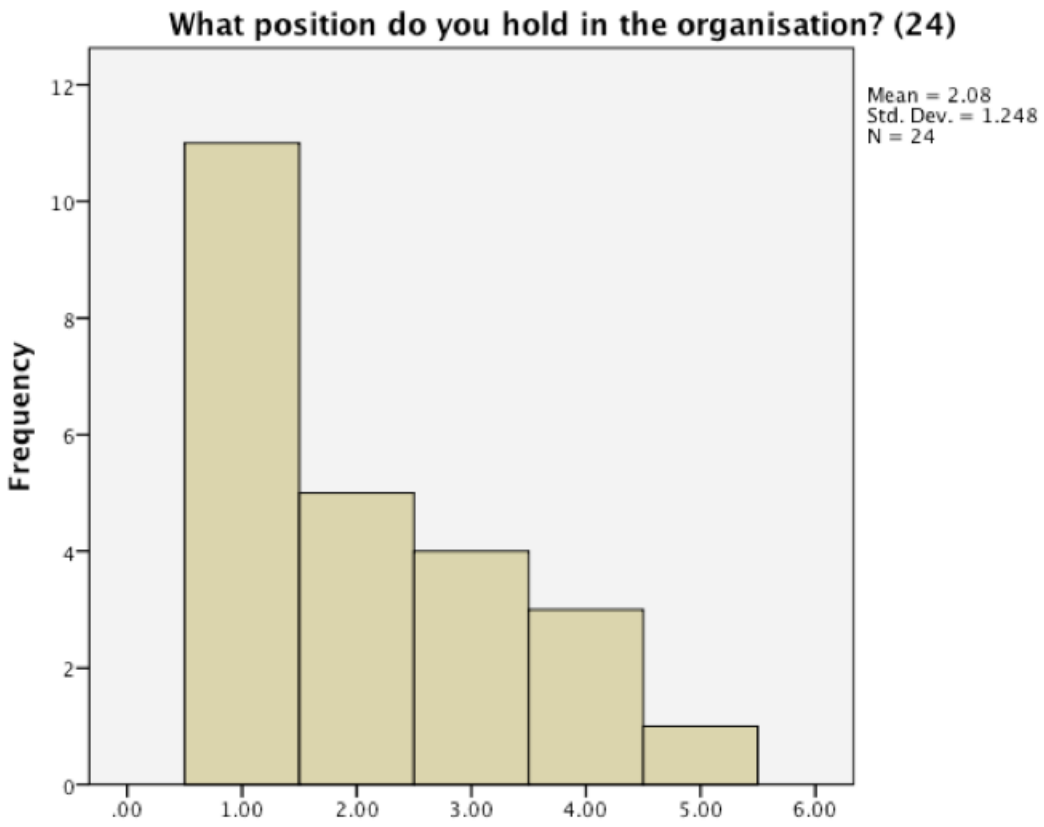


Figure 8.15. Position in a humanitarian organisation, 1= Head of missions, 2= logistics co-ordinator, 3= logistics manager, 4= port co-ordinator, 5= Others.

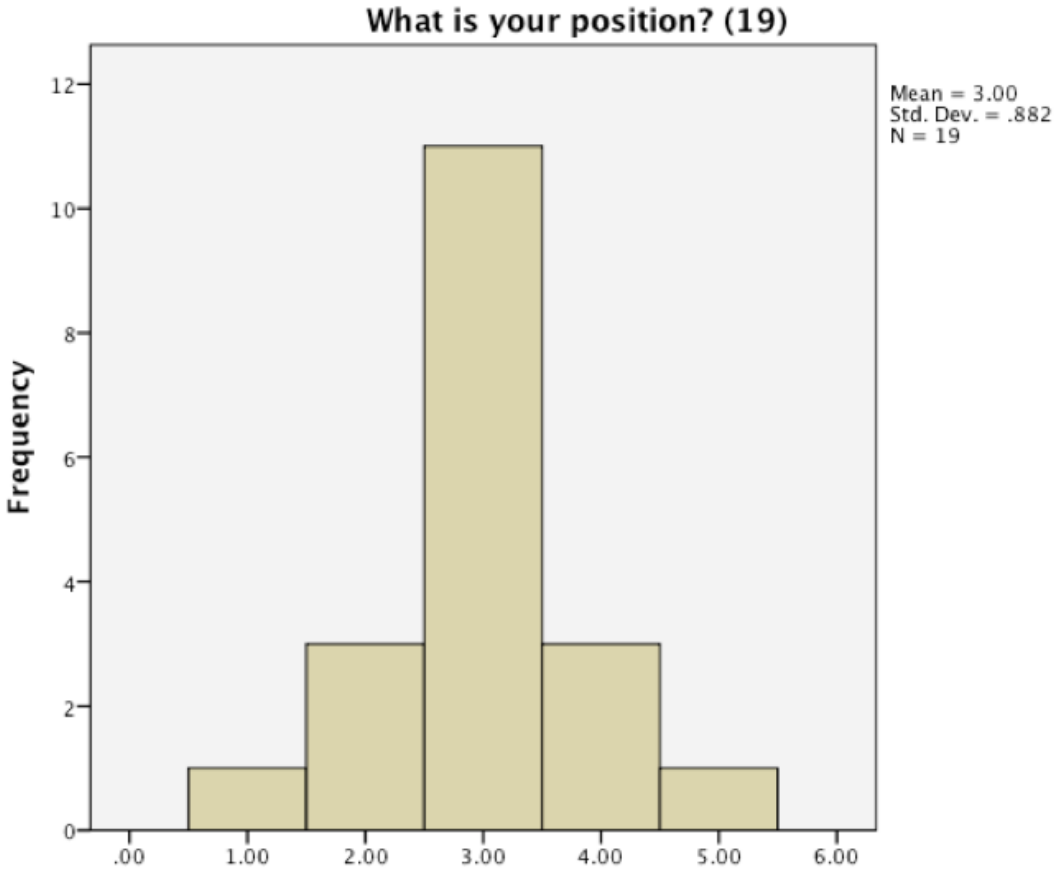


Figure 8.16. Position in logistics company, 1= Managing director, 2= Logistics manager, 3= CSR Supervisor, 4= Assistant, 5= Others.

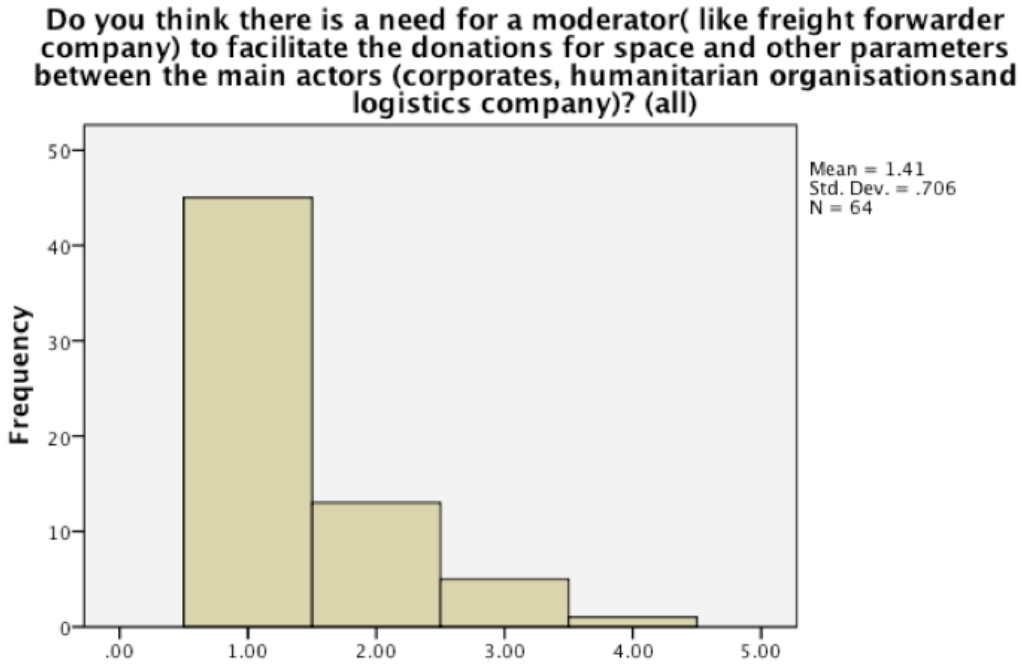


Figure 8.17. Needs for a moderator agency, 1= Yes, 2= No, 3= Neutral, 4= Can't say.

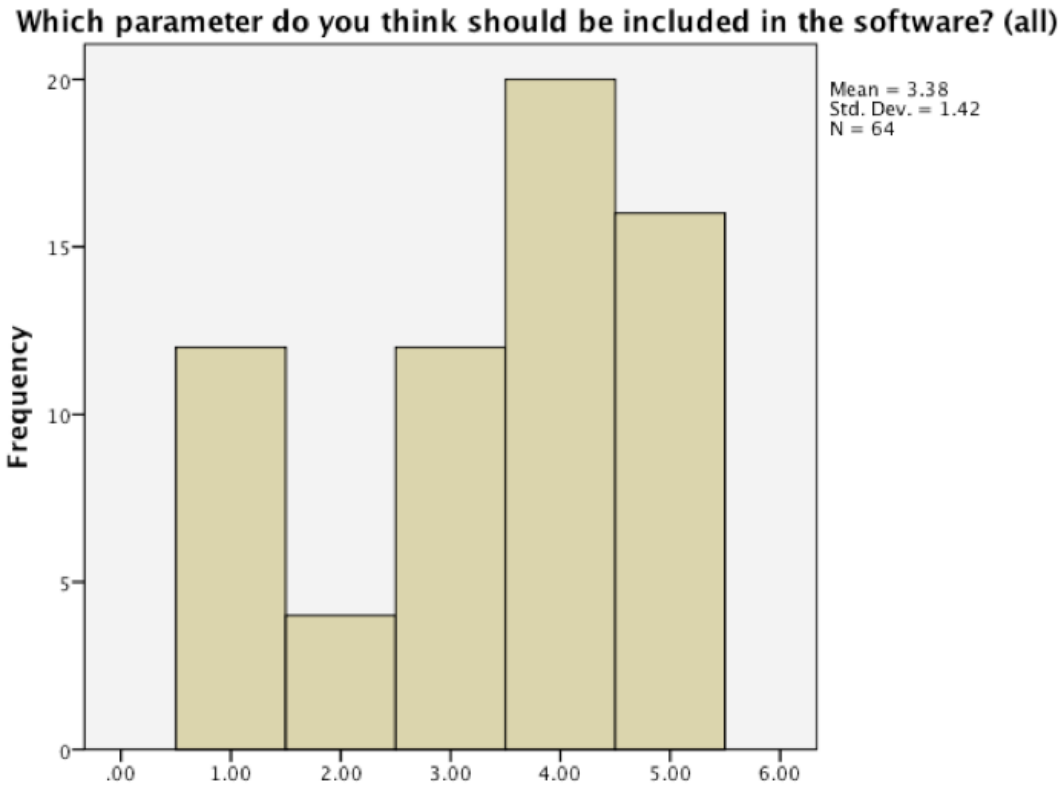


Figure 8.18. Parameters relevant to ILS, 1= A CSR portfolio with CSR and goodwill score for corporations., 2=Tax rebates, 3= Routes, Destinations and sources, 4=Capacity optimisation savings, 5= Empty or partially empty space availability in containers.(more than one choice possible)

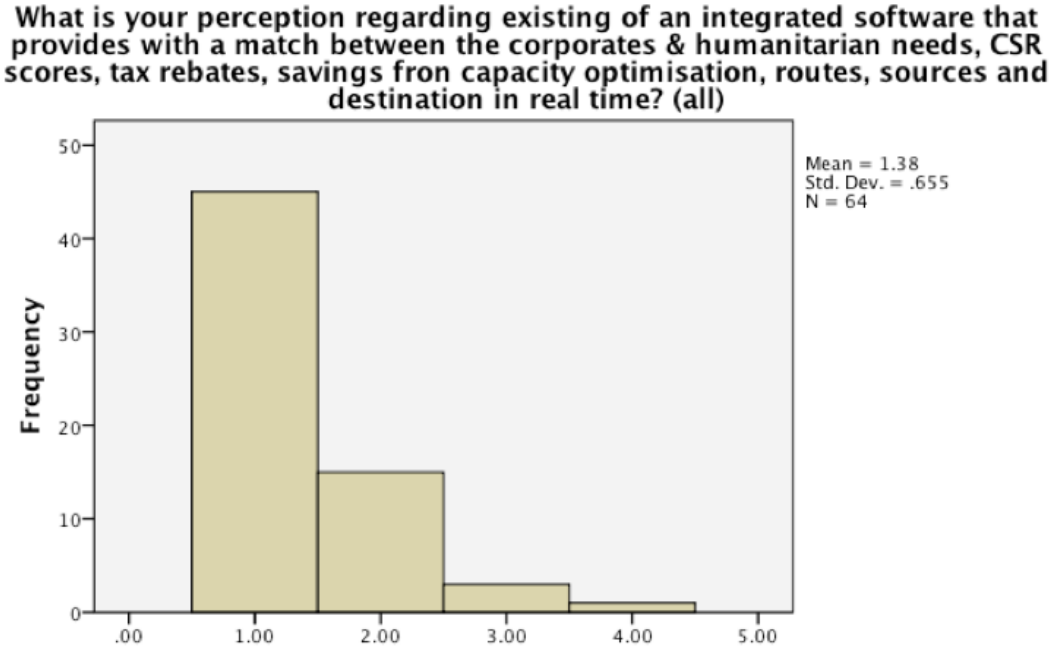


Figure 8.19. Software perception, 1= Yes, 2= No, 3= Maybe, 4=Can't say.

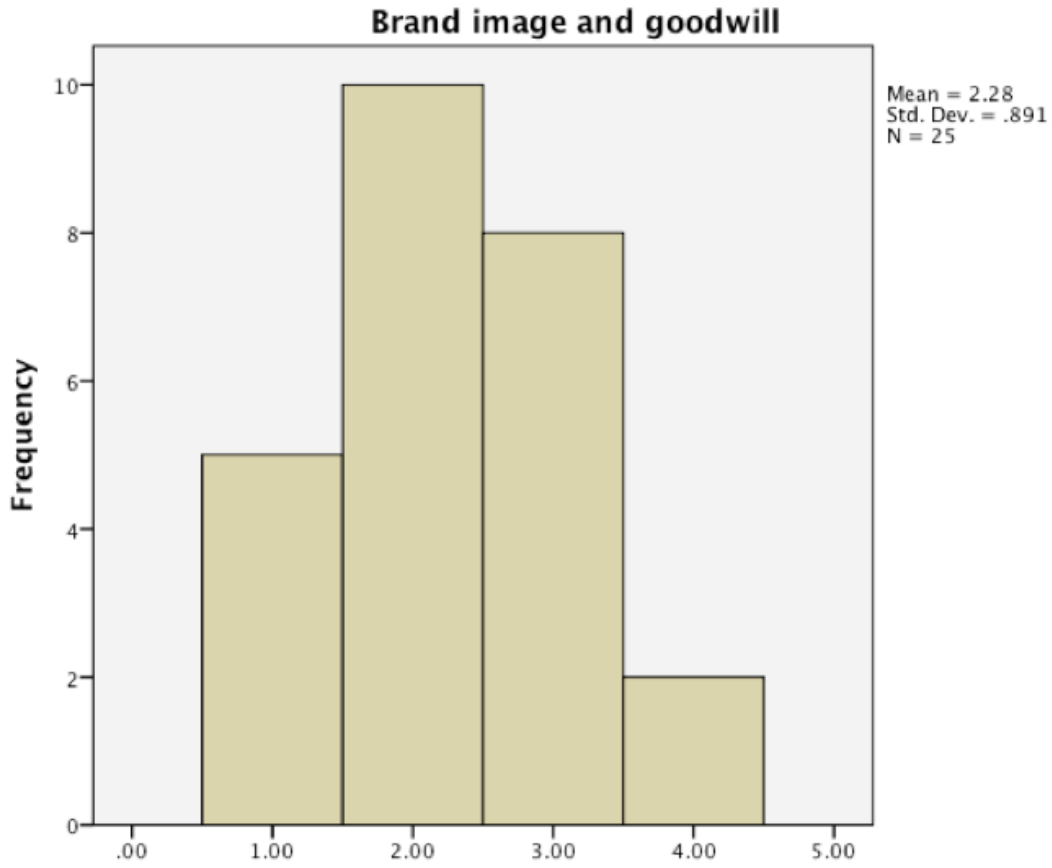


Figure 8.20. Brand image and goodwill, 1= Very important, 2=Important, 3=Neutral, 4=Somewhat important, 5= Unimportant .

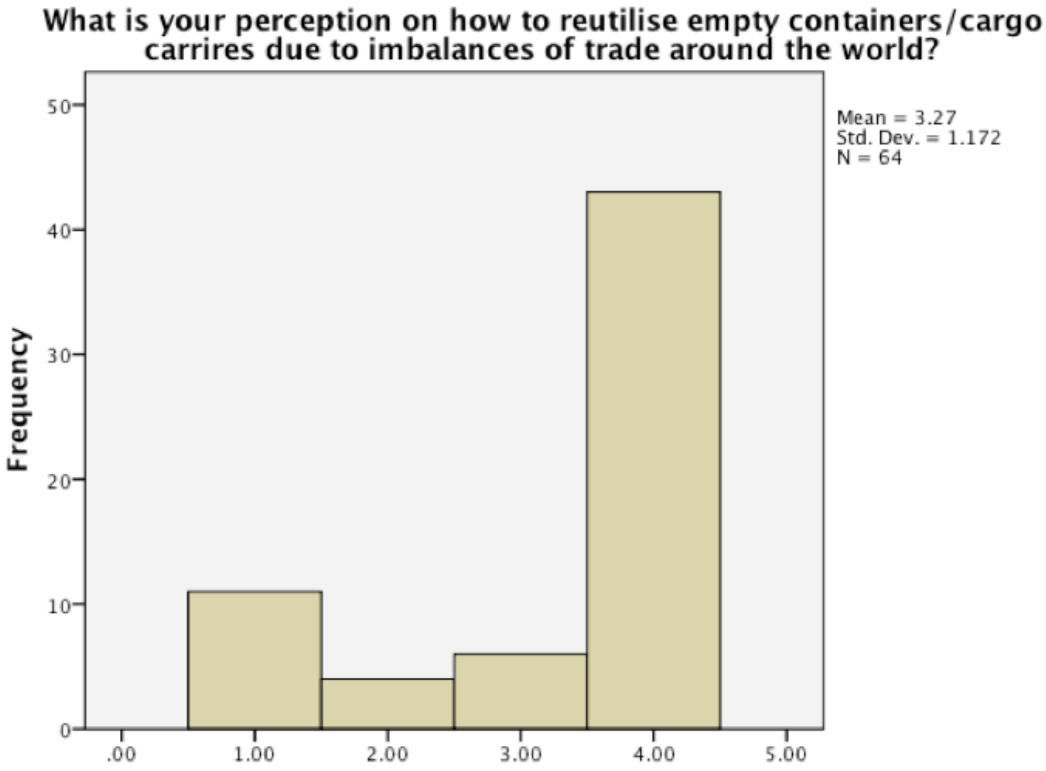


Figure 8.21. Empty container persception, 1= Repositioning back to the point of demand incurring operational losses, 2=Leave them in the port of destination untill new demand arrives, 3=Logistics companies could donate them to NGOs (non-profit), 4= Corporations could donate them to NGOs in cross-collaboration establishing a strong network.

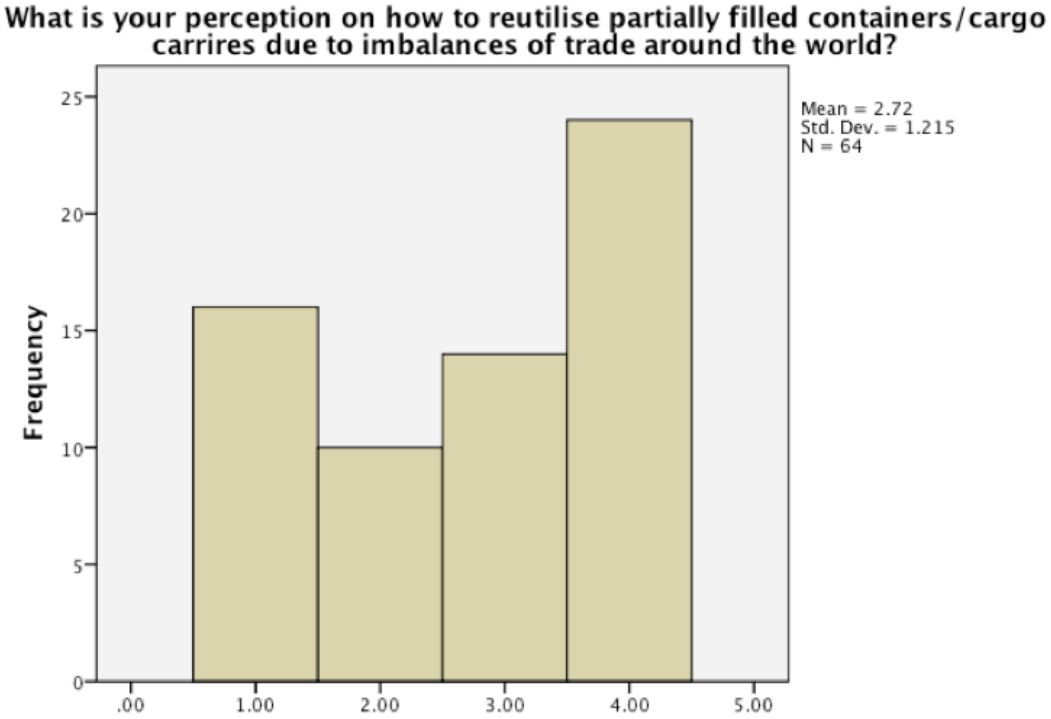


Figure 8.22. Partially filled container perception, 1= Logistics comapny should wait for new orders to fill up the under-utilised space for the same destination,2=The container should be loaded on the air freight or ship and leave for the destination without much delay, 3=Corporations ordering the containers could donate for the extra space in the container for humanitarian relief work, 4=Corporations in collaborations with humanitarian aid provide for the container for relief work (without donation).

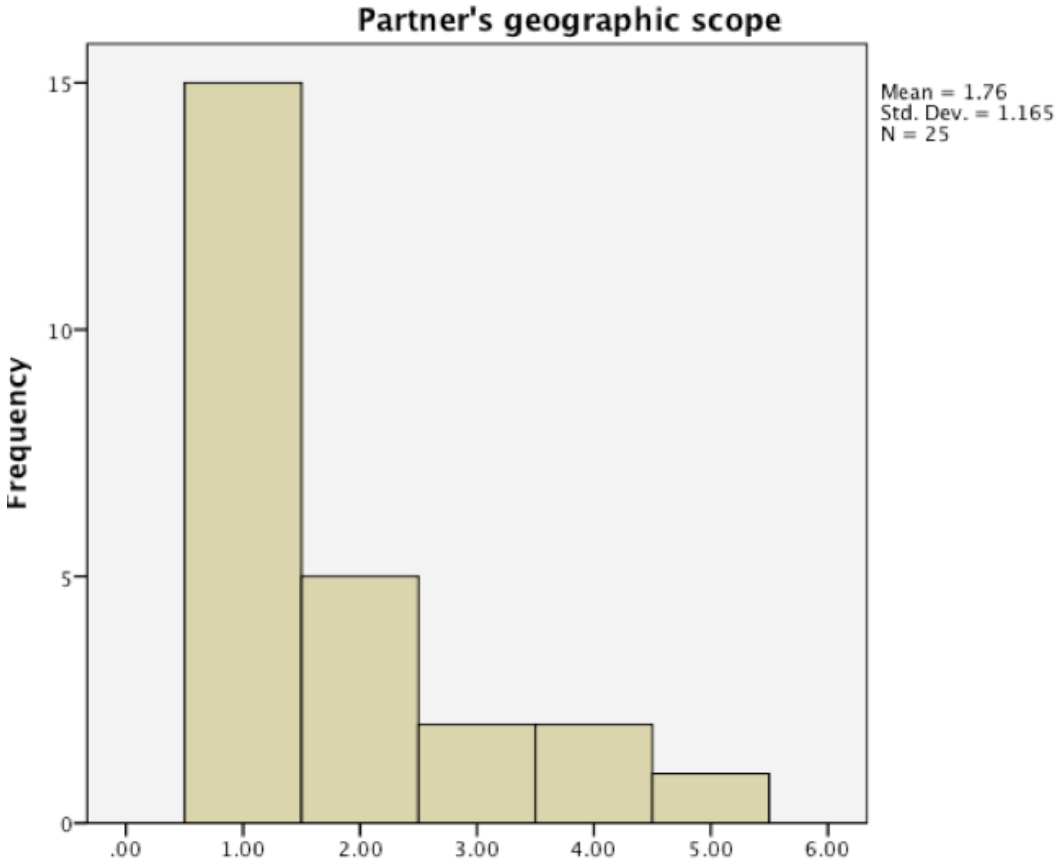


Figure 8.23. Partner's geographic scope, 1=Very important, 2=Important, 3=Neutral, 4=Sort of important, 5= Unimportant.

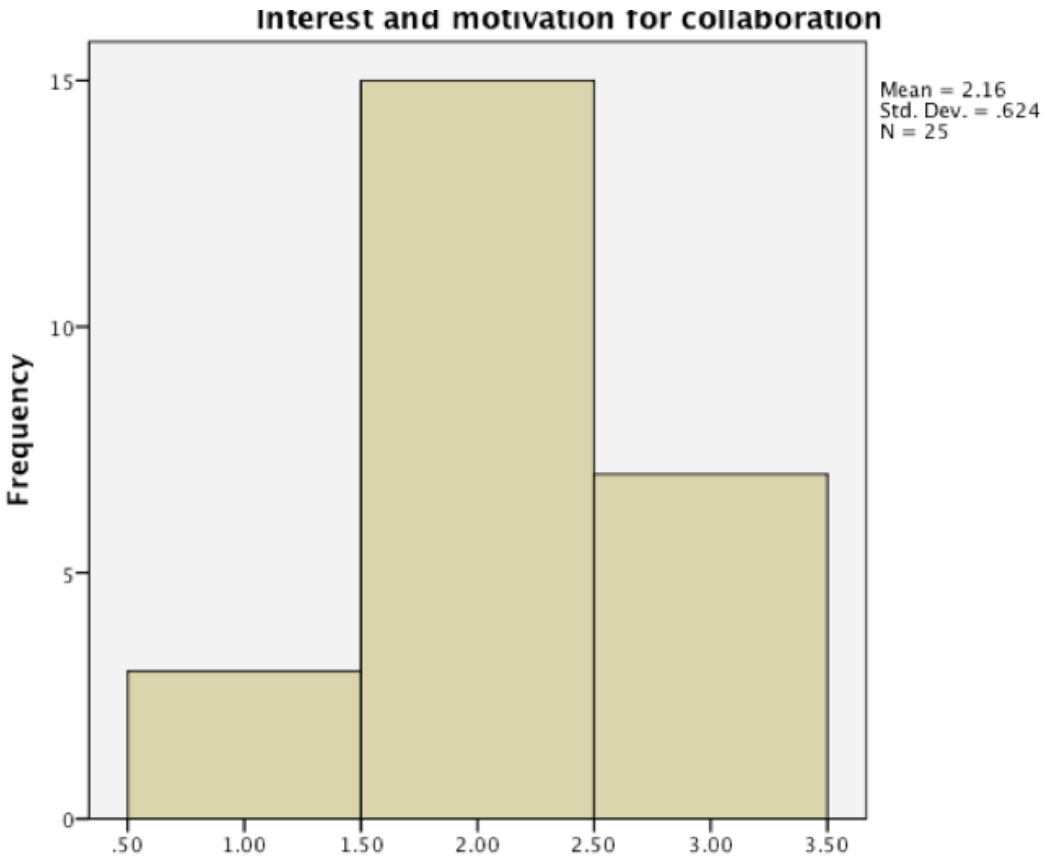


Figure 8.24. Interest for collaborations,1 Sort of important, 2=Important, 3=Essential

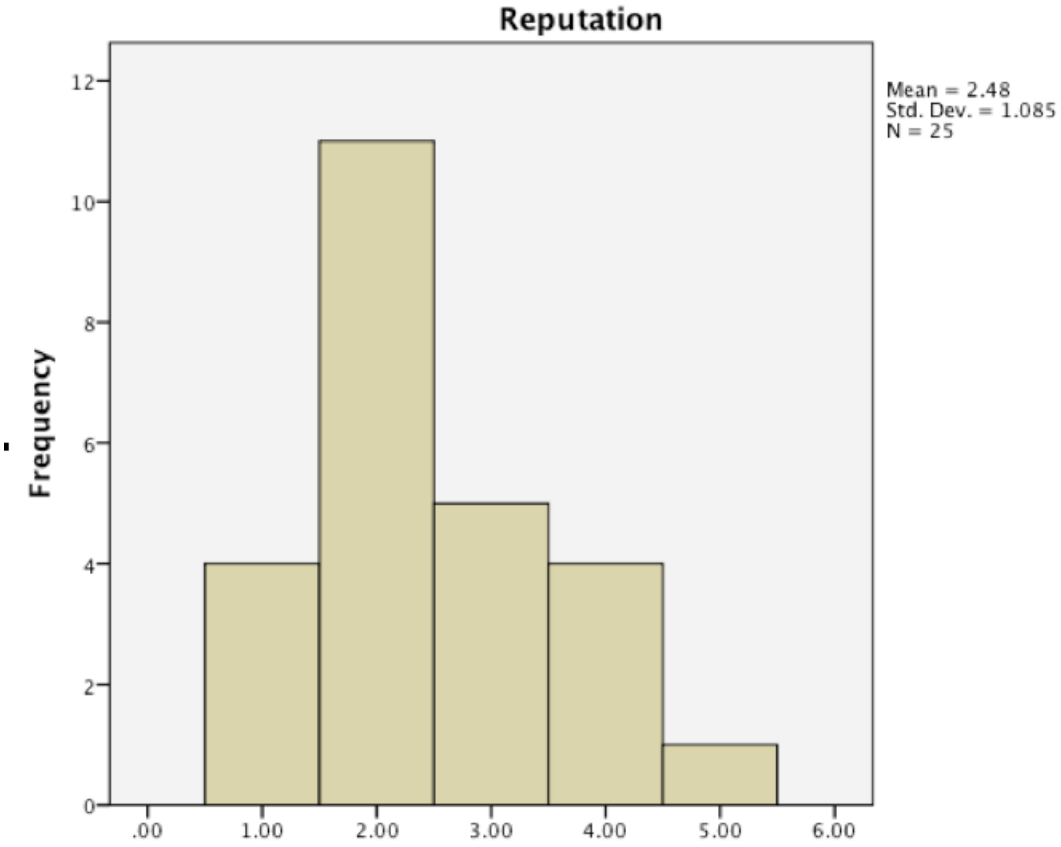


Figure 8.25. Reputation, 1=Very important, 2=Important, 3=Neural, 4=Sort of important, 5= Unimportant.

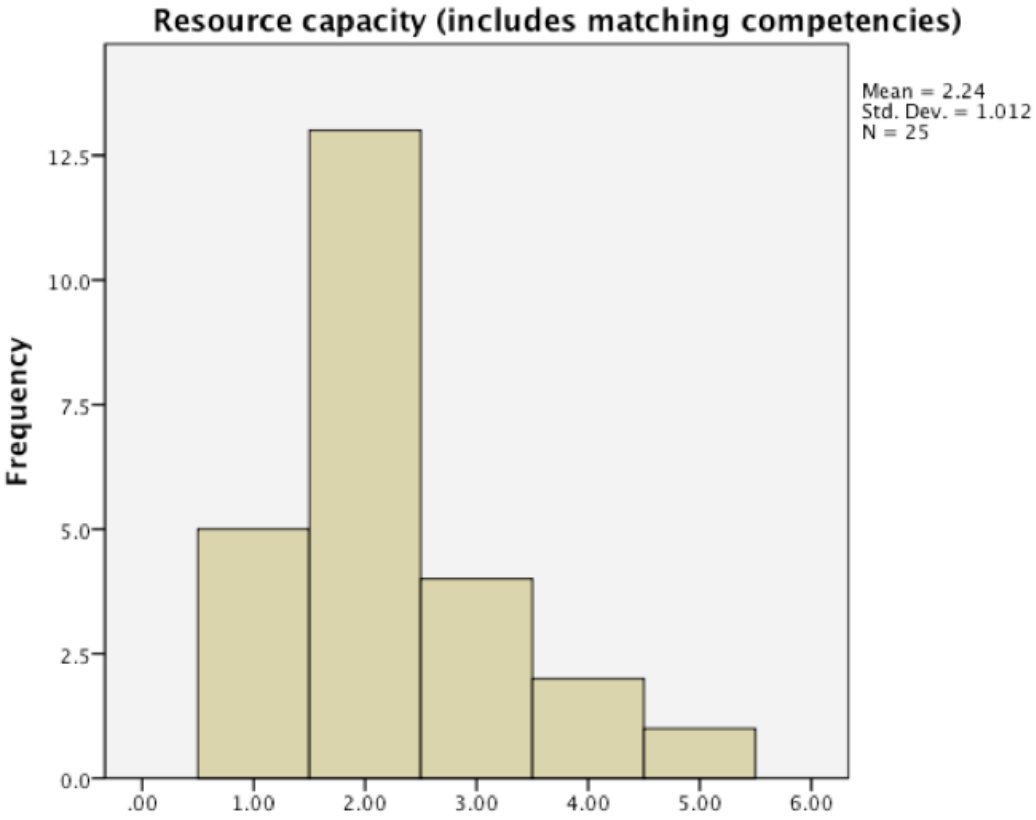


Figure 8.26. Resource capacity,1=Very important, 2=Important, 3=Neural, 4=Sort of important, 5= Unimportant.

Glossary

% - percent & - and RBV - Resource Based View
CSR - Corporate Social Responsibility
LCL - Less the Container Load
IWW - Inland Water Way
ISO - International Organisation Standardization
HOG - Histogram of Oriented Gradients

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