FROM LOGISTICS TO
SUPPLY CHAIN MANAGEMENT:
THE PATH FORWARD IN THE HUMANITARIAN SECTOR

Fritz
Institute

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INTRODUCTION

On December 26, 2004, the earthquake in Sumatra and the destructive Tsunami that it unleashed riveted the attention of the entire world. Each day for the first two weeks, the toll of the dead and missing crept higher and heart-wrenching stories of devastated families beamed into the living rooms of people in every country. The response was immediate and unprecedented amounts of relief money were collected.

While the drama unfolded on television, the disaster relief infrastructure at the local, national and international levels sprang into action. Volunteers from the affected communities began to clear the dead, and relief agencies began to provide food and shelter to those made vulnerable. International relief agencies activated their assessment teams, and supplies to provide the basic necessities to large numbers of people across a broad geographic span were ordered and transported from locations around the world.

Unfortunately, disaster relief is and will continue to be a growth market. Both natural and man-made disasters are expected to increase another five-fold over the next fifty years due to environmental degradation, rapid urbanization and the spread of HIV/AIDS in the developing world. According to the Munich Reinsurance group, the real annual economic losses have been growing steadily, averaging US$75.5 billion in the 1960's, US$138.4 billion in the 1970's, US$213.9 billion in the 1980's and US$659.9 billion in the 1990's.

One of the notable aspects of the relief efforts following the 2004 Asian Tsunami was the public acknowledgement of the role of logistics in effective relief. In the immediate aftermath of the Tsunami, as relief goods flooded airports and warehouses in the affected regions, aid agencies struggled to sort through, store and distribute the piles of supplies while disposing of those that were inappropriate. In Sri Lanka, the sheer number of cargo-laden humanitarian flights overwhelmed the capacity to handle goods at the airport. Downstream, relief agencies struggled to locate warehouses to store excess inventory. In India, transportation pipelines were bottlenecked. In Indonesia, the damaged infrastructure combined with the flood of assistance from the military representatives from several countries and large numbers of foreign aid agencies created a coordination and logistical nightmare. As a European Ambassador at a post-Tsunami donor conference said, "We don't need a donors conference, we need a logistics conference."[1] Similarly, a spokesman for Doctors Without Borders, announcing their decision not to accept any more money for the relief operations, said "What is needed are supply managers without borders: people to sort goods, identify priorities, track deliveries and direct the traffic of a relief effort in full gear."[2] Humanitarian logistics, the function that is charged with ensuring the efficient and cost-effective flow and storage of goods and materials for the purpose of alleviating the suffering of vulnerable people, came of age during this Tsunami relief effort.

Our research has shown, however, that only a handful of aid agencies have prioritized the creation of high-performing logistics and supply chain operations. For most aid agencies, environmental factors, such as the unpredictability of disasters and the nature of funding, have resulted in operations with high employee-turnover rates, fragmented technology, poorly-defined manual processes, and a lack of institutional learning over time. As a result, relief operations are not as efficient and effective as they could be and relief to beneficiaries is delayed or reduced.

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[1] New York Times, January 6, 2005.
[2] Economist.com Global Agenda, January 5, 2005.

This paper provides background on the current state of logistics in the humanitarian environment and the factors that have limited the evolution of knowledge and the performance of supply chains for humanitarian relief. We consider the external pressures that aid agencies are feeling from donors, local humanitarian organizations, governments and corporations, as well as the internal limitations that have impeded progress in logistics. We then recommend five strategies that together define a path forward for aid agencies with regards to logistics.[3]

The Scope, Importance and Challenge of Humanitarian Logistics

Humanitarian Logistics is 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 the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, and customs clearance[4].

Humanitarian Logistics is central to disaster relief for several reasons. First, it is crucial to the effectiveness and speed of response for major humanitarian programs, such as health, food, shelter, water, and sanitation. Second, with procurement and transportation included in the function, it can be one of the most expensive parts of a relief effort. Third, since the logistics department handles tracking of goods through the supply chain, it is often the repository of data that can be analyzed to provide post-event learning. Logistics data reflects all aspects of execution, from the effectiveness of suppliers and transportation providers, to the cost and timeliness of response, to the appropriateness of donated goods and the management of information. Thus, it is critical to the performance of both current and future operations and programs.

The importance of logistics to humanitarian relief can be illustrated by the efforts of the International Federation of the Red Cross and Red Crescent Societies (IFRC) to provide assistance to the Indian Red Cross after the Gujarat earthquake. On January 26, 2001 a 7.9 Richter earthquake struck Gujarat, where 41 million people were preparing to celebrate Republic Day in India. Thousands of people were killed, the local airport was destroyed, the infrastructure severely damaged, and very little information was available in the early stages of the disaster. Nonetheless, within the first 30 days of the earthquake, along with the assistance of 35 partner organizations, the International Federation of the Red Cross's Logistics Emergency Unit arranged the delivery of 255,000 blankets, 34,000 tents, 120,000 plastic sheets, and large quantities of other items such as kitchen sets that were distributed to beneficiaries by the Indian Red Cross. More than 300 other global, national, regional and local NGOs and UN agencies similarly mobilized their staffs and resources.

Thus, the supply chain for relief is the ultimate sense-and-respond supply chain. Once a disaster occurs, an aid agency sends in a team of experts to complete an initial assessment of the extent of the damage and the number of people affected. The assessment forms the basis for an appeal that lists specific items and quantities needed to provide immediate relief to the affected populations. Emergency stocks of standard relief items are sent in from the nearest relief warehouses. Calls are made to traditional government donors and the public and commitments for cash and/or in-kind donations secured.

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[3] The views presented here are based on extensive research conducted by Fritz Institute over the past three years, including case studies, interviews and conferences with the leading humanitarian relief organizations, technology and process development with select aid agencies, and surveys conducted during the Tsunami relief operations in South Asia.
[4] The definition and tasks of logistics was based on a Fritz Institute sector-wide survey of humanitarian logisticians from headquarters and the field that worked with a broad range of humanitarian organizations.

Suppliers and logistics providers are lined up, and the mobilization of goods from across the globe begins. When supplies arrive, local transportation, warehousing and distribution have to be organized. This is a tremendous feat to accomplish, given the remote places in which disasters tend to occur, the uniqueness of the requirements for each disaster in terms of both expertise and goods, and the fact that the disaster site is often in a state of chaos. Physical infrastructure such as roads, bridges and airports are often destroyed. National and local government, through which humanitarian organizations must often coordinate their activities, may be severely impacted, or even uprooted in the case of a conflict situation. Transport capacity may be extremely limited, or non-existent.

The Humanitarian Context

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 manmade disasters[5]. 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[6]. 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 2004 budgets of the top 10 aid agencies exceeded $14 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 and school children and teach women basic business skills in the slum areas outside Chennai in southern India.

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: entities operating under the United Nations' umbrella such as the World Health Organization (WHO) and the United Nations High Commissioner for Refugees (UNHCR), 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 global non-

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[5] Financing International Humanitarian Action: A Review of Key Trends, Humanitarian Policy Group briefing paper, November 2002.
[6] Financing International Humanitarian Action: A Review of Key Trends, Humanitarian Policy Group briefing paper, November 2002.
[7] For purposes of this report, the focus will be on disaster relief in the aftermath of a natural disaster or humanitarian emergency. Although we acknowledge the critical importance of development, the dynamism and velocity of the relief scenario present specific exigencies which merit investigation.

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

As Figure 1 indicates, 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.

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.

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.

Figure 1. Humanitarian Sector Funding Flows[8]
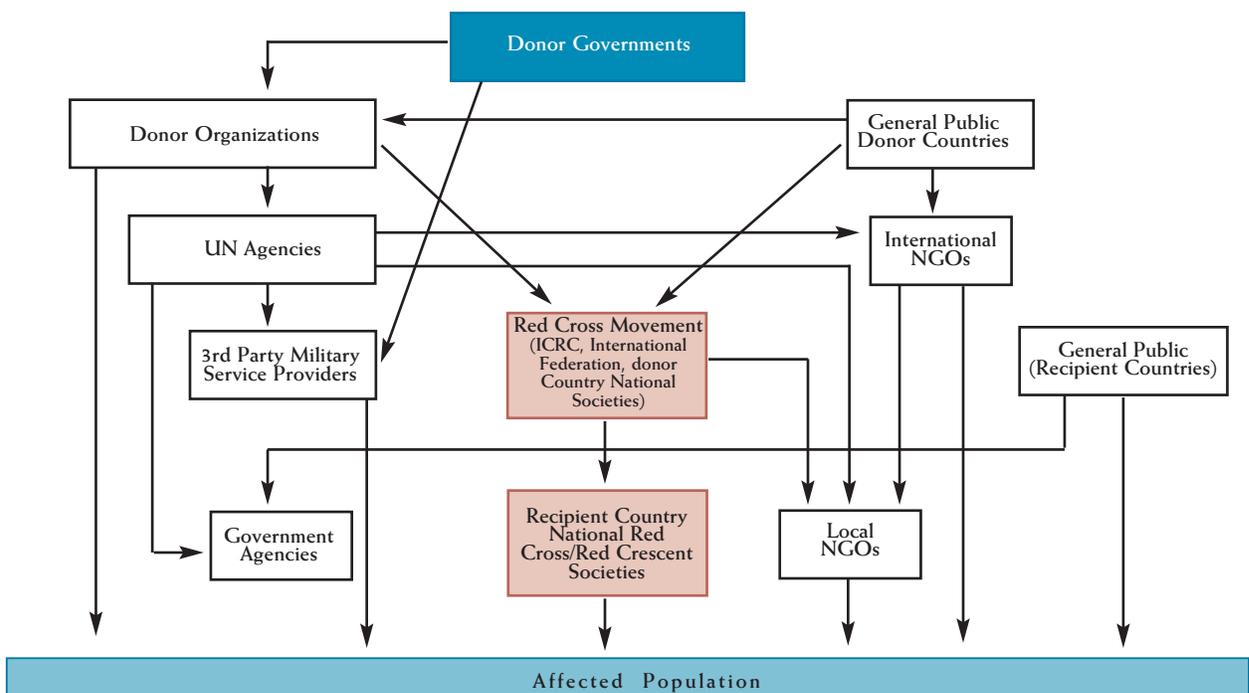
[8] Source: DAC report on the sector.

HUMANITARIAN LOGISTICS: CORE CHALLENGES

Our research over the last four years suggests that certain common challenges face the field of humanitarian logistics.

Lack of Recognition of the Importance of Logistics: Most humanitarian organizations have two broad categories of activities: programs and support services. Programs refers to the front-line activities in relief and development, the provision of services such as food, water, shelter, sanitation, etc. Support services refer to the activities of the "back room", which support the front line: logistics, technology, finance, communication, human-resources, etc. Funds are usually allocated by donors to programs with a certain percentage allowed for administration, which includes support. Thus, the focus is on short-term direct relief rather than investment in systems and processes that will reduce expenses or make relief more effective over the long-term. As a consequence, logistics and other support services may not have adequate funding for strategic disaster preparedness, and investing in infrastructure, such as information systems, is discouraged.

A related challenge has to do with the fact that most decisions during a relief operation are made by the program staff who control the budget. The assessment team sent to determine the needs of the population affected by a disaster or humanitarian crisis often does not include a logistician. Based on the assessment, the program staff determine the supplies that need to be procured in order to provide relief services, and then inform logistics that they are responsible for the immediate procurement and transport to the field. Our survey of the largest aid agencies after the Tsunami showed that 42% of the assessment teams did not include a logistician. Since, as seen in the Tsunami response, logisticians are often not consulted in the decision process, some of the logistics bottlenecks are not anticipated and planned for causing unnecessary delays in delivering relief.

Lack of Professional Staff: In general, humanitarian organizations are defined by their personnel, who share a common value system based on alleviating the suffering of those affected by disasters and humanitarian emergencies. People who choose a career in this world come from diverse and varied backgrounds and are driven by a desire to resolve crises and do good in the world. They achieved their positions by trial and error and have honed their valuable skills through experience in multiple disaster theaters over several decades. However, the vast majority of people with logistics responsibilities do not have training in logistics. While this is changing in large multilateral organizations, the trend toward the "professionalization" of logistics has been slow to take hold as field experience is considered much more valuable than formal training in logistics.

Also, as the operations of international humanitarian organizations expand to simultaneously include multiple geographies, organizations are struggling to find people who can manage the complex supply chains of relief. For example, in order to effectively respond to the Tsunami, 88% of large aid agencies surveyed had to pull their most qualified staff from the ongoing humanitarian operations in Darfur.

In conjunction with Erasmus University and APICs, a widely recognized training and certification body for commercial logistics, Fritz Institute conducted a survey of approximately 300 humanitarian logisticians at the field, regional and headquarters levels of major humanitarian organizations. The purpose was to identify existing training and certification programs and the range of logistics functions that they encompassed. Respondents to the survey (92 respondents) represented a wide variety of organizations including the UN, the Red Cross movement and international and regional NGOs from headquarters as well as the field.

Over 90% of the respondents indicated that they felt training was directly linked to performance on the job and that standardized training would be useful in the field. However, only 73% had access to any logistics training while 27% had no such access. For those with access, training was most often provided by co-workers on the job or by in-house training staff. However, respondents noted that job training within organizations tended to be non-standardized, with the content largely dependent on the trainer. The respondents indicated frustration with lack of consistency in training, lack of ways to measure the effectiveness of training, lack of funding for training, and lack of specific training in humanitarian logistics.

Inadequate Use of Technology: Our survey of logisticians that participated in the Tsunami relief operations showed that only 26% of the respondents had access to any tracking and tracing software. The remainder used Excel spreadsheets or manual processes for updates and tracking of the goods arriving in the field. Despite this, 58% stated that they received accurate and timely information of what was in the pipeline!

In the private sector, supply chain technology has enabled the transformation of the logistics function from a peripheral to a strategic one. By accumulating data about the supply chain, decision makers have new ways to create efficiencies. Historical data also allows greater effectiveness through the tracking of supplier performance, cycle times, inventory levels and turns, etc. In the humanitarian sector however, logistics and supply chain management is still largely manual. The inability of IT staff at headquarters to understand the imperatives of the field, the primacy of financial managers in decisions about software used in organizations, and the need to keep networks secure are the main reasons that humanitarian logisticians cite as the cause of the slow evolution of IT.

Lack of Institutional Learning: The intensity of relief efforts, high turnover and the crisis-oriented nature of disaster response creates an environment in which there is a lack of institutional learning. Once a crisis is dealt with, aid workers are immediately assigned to the next mission, rather than taking the time needed to reflect and improve. Or they leave. Input from the organizations we interviewed suggested that turnover of field logistics personnel was as high as 80% annually. Thus, while logisticians have a remarkable track record for getting the job done under the most adverse and extreme circumstances, the lessons learned from one disaster to the next are often lost. The experience of the occasional veteran logistician is largely tacit and difficult to communicate to the next generation, nor is it transferred from one field context to another.

Limited Collaboration: With the emerging competition for funding among major relief organizations, the heads of logistics tend to each fight their own battles with little collaboration. Although many of them face the same challenges and know each other, or of each other, they do not often meet or talk to one another except during an actual disaster response operation. For example, we found that several of them were thinking of deploying a regional warehouse structure for faster response. Coincidentally, three were actually talking with warehouse providers in the same city. Similarly, two others had commissioned expensive analyses to select a fleet management system and three were wrestling with the idea of a training program for field logisticians. None knew that their counterparts had the same objectives and, therefore, there was little collaboration or resource sharing. Similarly, in the Tsunami relief operations we found that just over half the logisticians (56%) reported working with other agencies in setting up their supply chains.

Today's underdeveloped state of logistics in the humanitarian sector is much like corporate logistics was 20 years ago. At that time, corporate logistics suffered from underinvestment, a lack of recognition, and the absence of a fulfilling, professional career path for people performing the logistics function. Over the last 20 years, corporate logistics has found its voice with top management. Under the rubric of supply chain management, it has established itself as a core discipline whose best practices are taught and researched at top business schools and promulgated by leading consulting firms.

In our conversations and convenings we ask logisticians from global, national and regional organizations about their aspirations for themselves and their function. It is not surprising that their most significant priority is a knowledge-based field with a clear career track, collaboration with peers across organizations and the ability to demonstrate the value of logistics with unambiguous measures and metrics that tie with organizational strategy. The way for logistics to strengthen its power and be recognized is by showing results and systemic improvement by clearly demonstrating over time how it is contributing to the aid agency and responding to external pressures.

The Five Strategies

This section details five strategies we recommend for moving forward to improve humanitarian logistics. For each strategy we detail ways in which humanitarian logisticians can learn from each other, but also where they can draw upon the increasing interest in humanitarian logistics by academics and the corporate sector. Figure 2 and Table 1 show the relationship between the challenges and the strategies and how each strategy addresses particular pain points. The five strategies each contribute as follows:

Creating a **professional logistics community** will enable humanitarian logisticians to share knowledge and experience on common issues and to create a consistent, powerful voice with all the stakeholders in the sector.

Investing in **standardized training and certification** will help build a pool of logistics professionals that share common processes and vocabulary, promoting professionalism and collaboration.

Focusing on **metrics and performance measurement** will empower logisticians to demonstrate and improve the effectiveness of the humanitarian supply chains.

Communicating the strategic importance of logistics will enable logisticians to create awareness of the contribution that logistics makes and to obtain needed funding and resources.

Developing **flexible technology solutions** will improve responsiveness by creating visibility of the materials pipeline and increasing the effectiveness of people and processes. Furthermore, advanced information systems will create the infrastructure for knowledge management, performance measurement and learning.

The remainder of this section discusses each of the five strategies in more detail.
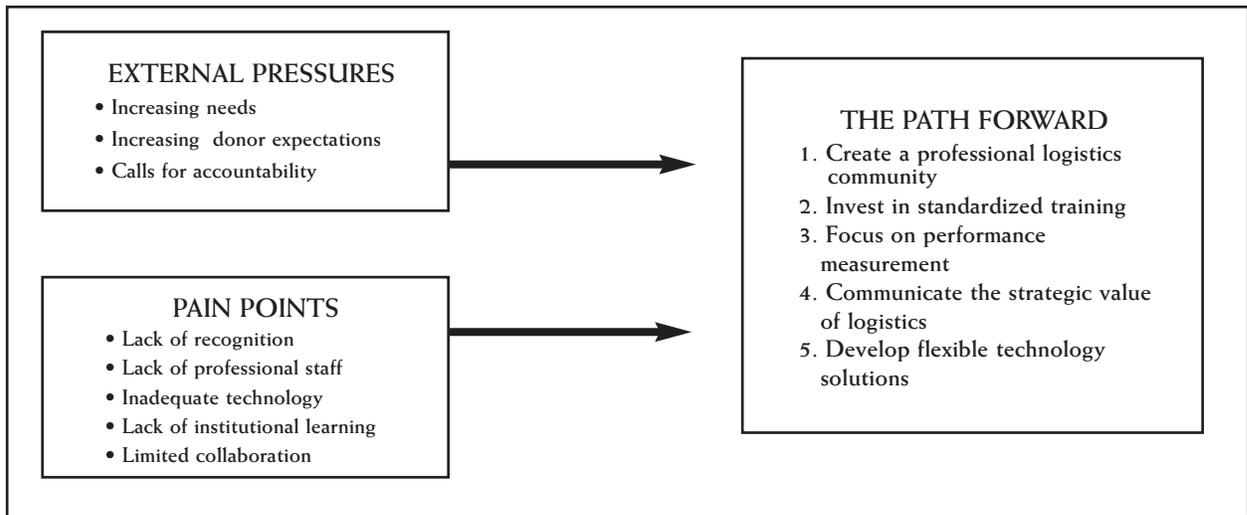
FIGURE 2. Development of a Path Forward

EXTERNAL PRESSURES	THE PATH FORWARD
• Increasing needs	1. Create a professional logistics community
• Increasing donor expectations	2. Invest in standardized training
• Calls for accountability	3. Focus on performance measurement
PAIN POINTS	4. Communicate the strategic value of logistics
• Lack of recognition	5. Develop flexible technology solutions
• Lack of professional staff	
• Inadequate technology	
• Lack of institutional learning	
• Limited collaboration	

Table 1. How the Five Strategies Address the Pain Points

	Lack of Recognition	Lack of Professional Staff	Inadequate Technology	Lack of Institutional Learning	Limited Collaboration
Create a professional logistics community	●	●		●	●
Invest in standardized training		●		●	●
Focus on performance measurement	●		●		
Strategically communicate the importance of logistics	●		●	●	
Develop flexible technology solutions		●	●		●

Creating a Professional Logistics Community

Creating a professional logistics community will provide logisticians from different organizations the opportunity to share knowledge and experience. A community of logisticians coming together consistently will also increase the recognition of the function.

The annual Humanitarian Logistics Conference, sponsored by Fritz Institute, has been active for 3 years. Through the conference, high-level logistics managers from over 40 aid agencies have exchanged ideas and fostered initiatives in areas of common interest such as information technology,

performance management, and training. This group has now expressed its desire to expand into a professional association where members will identify priorities for the field and methods to collaboratively address those priorities.

A professional association can act as a clearinghouse for innovations by:
1. Engaging the skills of a network of academics, humanitarian logisticians and private sector professionals with experience in back-room operations
2. Building a repository of accumulated research and knowledge about logistics and supply chain management in the humanitarian sector
3. Creating common standards, guidelines and/or service requirements that can then be communicated with one voice to donors, technology partners, suppliers, and logistics service providers

Humanitarian logistics managers must work actively to make the association a useful, vital network. In particular, they must choose initiatives for the association to work on that are critically important. They must then invest the time and effort needed to support and gain from the initiatives while leveraging the expertise and resources of the group. This will require more frequent, intense communication and coordination among group members. It will also require a continual reflection about how the group can be used to support an individual organization's goals. This is especially true of long-term initiatives, for which the group must spend the time needed to ensure that goals and direction that are established up front are truly in line with the needs of individual organizations.

Corporate logisticians have long participated in multiple communities of practice. The biggest and best known is the Council of Logistics Management (which recently changed its name to the Council of Supply Chain Management Professionals (CSCMP)), which hosts an annual educational conference that is attended by 5,000-7,000 people from a broad range of industries. Other examples of communities of practice include academic roundtables or forums, councils led by particular logistics providers or consulting firms, and industry-specific groups. Based on this experience, corporate logisticians can contribute not only by sharing logistics knowledge and best practices, but also by sharing successful approaches to interacting as a community as well. There may also be opportunities to connect the humanitarian logistics communities with corporate logistics communities such as CSCMP.

Academicians can also contribute by supporting the association's role as a clearinghouse for academic research relating to humanitarian logistics. As detailed in the Appendix[9], academics have written a number of teaching cases and articles that document and create awareness of the concerns and practices of the sector, thereby increasing the visibility and understanding of the field to new audiences.

Investing in Standardized Training
It is also clear to the community of logisticians with whom we collaborate that progressive training and eventually a standardized, externally recognized certification program are needed to create a marketplace of professionals able to meet the requirements of organizations in the humanitarian sector.

The benefits of a comprehensive, sector-specific logistics training and certification program are numerous, including:

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[9] The Appendix lists selected recent articles and teaching cases related to humanitarian logistics.

- Improved communication and cooperation across agencies and with donors as a result of standardized catalogs, terminology and processes
- Increased career mobility and job satisfaction for logisticians in the sector
- A pool of trained logisticians whose skills have been externally verified, providing agencies and donors with greater hiring flexibility and options

Formalizing knowledge will overcome, to some extent, the lack of institutional knowledge that occurs because of high employee turnover, by capturing and disseminating knowledge in an organized way. To the extent that the various multinational aid agencies face similar logistics tasks and similar challenges, it seems natural to approach knowledge management through a community of practice. Common training and the use of tools like e-learning would open up the possibility of creating a cadre of logisticians in the field, and so promote standardized logistics practices and in-country logistics capacity.

The logisticians who have participated in Fritz Institute's Humanitarian Logistics Conference have embarked on an initiative to create and implement a certification program in humanitarian logistics. The group has identified the following topics as relevant to all international aid agencies: managing a humanitarian response, humanitarian supply chains, procurement, warehousing and inventory management, transport, fleet management and import/export procedures.

This is an ideal area in which to collaborate with corporate and academic partners, who have already established formalized logistics training programs within their companies and at universities. By working together, the community can leverage previous development of course content, as well as delivery processes, to the greatest extent possible, while customizing as needed for the humanitarian sector. Corporate logisticians and academics may also take on the training itself, by hosting e-classroom sessions on their servers and by providing live trainers. Last, academics may help by developing training materials unique to humanitarian logistics. Electronic technology providers may develop unique delivery mechanisms that work well in remote areas and at or near response sites.

Metrics and Performance Measurement

In general, humanitarian relief organizations have focused on "getting the job done" and have put little effort into performance measurement other than reporting to donors on the amount of relief and usage of funds for a given relief operation. Furthermore, learning has been approached on an ad-hoc basis, through post-operation evaluations, rather than through a structured process of continuous improvement, as has been used successfully in the corporate sector since the 1980's. The transformation of logistics from a peripheral function to a strategic one in the private sector can be traced back to the time when logisticians began to be able to measure and communicate their value. The Plan-Do-Check-Act improvement process that is commonly used in the private sector could be quite useful when applied to humanitarian logistics.

As backbone information systems are implemented, aid agencies will have the capability to measure performance across operations and to use measurement information in the same ways that information is used in the corporate world. If the use of metrics is leveraged, aid agencies will be able to:
- Use actual performance as input into future operational plans
- Identify and eliminate causes of performance breakdowns

- Use analysis of current performance to inform continuous improvement of processes
- Use actual data to strengthen voice with donors, suppliers and logistics service providers
- Report performance to donors and the media to enhance the reputation and image of logistics and of the aid agency

Since aid agencies execute their work as a series of projects (operations), performance measurement best practices from corporations that also operate in project-based environments could be examined as starting points for developing performance measurement at aid agencies. In any case, work must be done to create measurement across relief projects (operations).

Academia has broad literature and much experience with performance measurement, project management and continuous improvement. Academics could partner with corporations and aid agencies to help tailor corporate approaches to the humanitarian environment.

Communicating the Strategic Importance of Logistics

Having created an organizational environment in which performance is measured, knowledge is built and kept, systemic improvement occurs rapidly, and communities share and leverage their capabilities, logistics managers must take their story to all stakeholders – donors, their own organizations, corporate partners and the media – regularly and with pride. This will allow the logistics organization to showcase its contribution and garner continued support and resources to further develop and improve.

Within an individual aid agency, Logistics must update the logistics team, the operations managers and top management regularly about its performance and the initiatives that it is taking to improve performance. Logistics must position its initiatives within the context of what other aid agencies are doing. This will demonstrate to top management that Logistics is taking advantage of all available ideas and technology and is setting the organization up to compete against other aid agencies based on a competitive advantage in logistics.

Similarly, the logistics community in the aid sector must find ways to paint a picture for donors and the public demonstrating how timeliness and cost-effectiveness of relief delivery is improving over time, insuring that donations are well-spent. Logistics must detail how improvement initiatives have translated to increases in efficiency, so that donors become increasingly motivated to fund not only operations, but improvement initiatives as well.

Agencies should use communication strategies that highlight success stories. This may be done through internal presentations or through written articles and case studies that engage the media or academic world. The recent issue of Forced Migration Review[10] that focused on humanitarian logistics highlighted the importance of logistics and presented many vivid examples that illustrated the role of logistics in speed and effectiveness of response. It also showcased how aid agencies were using post-event learning to shape debate about allocation of resources to logistics.

The private sector can help the humanitarian logisticians communicate the importance of logistics by sponsoring and participating in joint conferences. Humanitarian logisticians can use these venues as ways to explore new approaches and find examples to convey to their own management the strategic potential of logistics. The participation of academics can also be crucial in validating the value of

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[10] Forced Migration Review 18, September 2003.

logistics through the publication of articles and case studies.

Developing Flexible Technology Solutions

Humanitarian relief organizations have a common need for integrated information technology (IT) solutions that support procurement, distribution through a pipeline, tracking and tracing of goods and funds, flexible and robust reporting, and connectivity in the field. Procurement involves global sourcing, drop shipment, using commercial transportation and third-party logistics firms, chartering aircraft or procuring local transportation such as mules and donkeys, tracking shipments, and monitoring prices for commodities around the world. The IFRC/ ICRC catalog of relief items includes 6,000 items from cranial drills for surgery at disaster sites to plastic sheeting for shelter. The UNICEF warehouse in Copenhagen includes an inventory of US$22 million in relief supplies at any given time; these supplies are procured from over 1,000 vendors worldwide.

Despite the complexity of humanitarian logistics, manual processes still dominate and IT resources that could enhance information availability, reporting and learning are often not effectively leveraged. Some of the deficiencies of current systems include:

- Data must be written out onto multiple forms and keyed into multiple spreadsheets
- Budget control is inadequate; funds may be misspent as a result
- Usage of funds is not tracked to the extent that donors have requested
- Procurement procedures are difficult to enforce; integrity is lacking
- Tracking and tracing of shipments is done manually using spreadsheets
- There is no central database of history on prices paid, transit times, or quantities received/purchased
- Reports are done manually, therefore little reporting and performance analysis is performed, other than reporting to donors on quantities of relief items delivered for a given operation

Developing flexible technology solutions will improve responsiveness by creating visibility of the materials pipeline and increasing the effectiveness of people and processes.

Furthermore, advanced information systems will create the infrastructure for knowledge management, performance measurement and learning. Information systems can be used to provide online catalogs for correspondence and communication with suppliers and other partners, for performance measurement based on transaction history, and as a basis for collaboration.

While existing ERP and track and trace information systems may not be directly used for humanitarian relief, many individual transactions and operational processes do carry over directly. Previous work done by the corporate sector to standardize transaction, processes, and information systems may be helpful to the humanitarian community. Approaches to specifying, developing, implementing and measuring the performance of information systems also carry over. Thus, corporate logisticians and IT professionals may contribute by sharing experience and best practices, and by donating time to managing development of information systems for the humanitarian context. Corporate IT professionals may also share their experiences with communications technology used in remote areas with minimal infrastructure.

CONCLUSION

Learning as the Basis for Strategic Contribution

Humanitarian logistics has the opportunity to increase its contribution to disaster relief and to be recognized for that contribution by implementing initiatives in the areas of knowledge management, technology, measurement, community, and positioning. While moving relief items to disaster sites will continue to be an important role for logistics, the strategic focus must be on providing timely information, analyzing that information to garner insight as to how to improve operations, and learning internally and with others. Establishing a community that shares and invests jointly in advancing the field can leverage each logistician's efforts many-fold. It is through these two mechanisms of information and community that humanitarian logistics can find its voice and create its future, rather than limit itself to responding to the present.

Case Studies on Humanitarian Logistics

Managing Information in Humanitarian Crises: The UNJLC Website, Rolando M. Tomasini & Luk Van Wassenhove (April 2005)

Can Heroes be Efficient?, Laura R. Kopczak & M. Eric Johnson (October 2004)

The TPG-WFP Partnership II - Learning How To Dance, Ramina Samii & Luk Van Wassenhove (April 2004)

Genetically Modified Food Donations and the Cost of Neutrality: Logistics Response to the 2002 Food Crisis in Southern Africa, Rolando M. Tomasini & Luk Van Wassenhove (March 2004)

Moving the World: The TPG-WFP Partnership I - Looking for a Partner, Rolando M. Tomasini & Luk Van Wassenhove (February 2004)

Coordinating Disaster Logistics after El Salvador's Earthquakes, Rolando M. Tomasini & Luk Van Wassenhove (October 2003)

Logistics: Moving the Seeds of a Brighter Future (UNJLC's Second Year in Afghanistan), Ramina Samii & Luk Van Wassenhove (September 2003)

The United Nations Joint Logistical Center: The Afghanistan Crisis, Ramina Samii & Luk Van Wassenhove (May 2003)

The United Nations Joint Logistical Center: The Genesis of a Humanitarian Relief Coordination Platform, Ramina Samii & Luk Van Wassenhove (April 2003)

Choreographer of Disaster Management: Preparing for Tomorrow's Disaster, Ramina Samii & Luk Van Wassenhove (2002)

Choreographer of Disaster Management: The Gujarat Earthquake, Ramina Samii & Luk Van Wassenhove (2002)

Articles on Humanitarian Logistics

Forced Migration Review 18:

Why Logistics?, Anisya Thomas (September 2003)

The Academic Side of Commercial Logistics and the Importance of this Special Issue, Ricardo Ernst (September 2003)

Humanitarian Logistics: Context and Challenges, Lars Gustavsson (September 2003)

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