



An Entrepreneur Tackles the Logistics of Disaster

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Mounting frustration over inefficient relief operations following recent disasters in South Asia and the U.S. Gulf Coast region is highlighting relief agencies' pressing need for sophisticated logistics management systems like those wielded by powerful global corporations such as United Parcel Service (UPS) Inc. and Wal-Mart Stores, Inc.

Lynn Fritz is tackling the problem with entrepreneurial skills he honed as chairman and CEO of the Fritz Companies Inc., a firm that was one of the world's leading freight forwarding, customs brokerage, and logistics concerns when it was acquired by UPS in 2001. At the time, the Fritz Companies' 10,000 employees worked in 120 countries, earning \$1.6 billion in gross annual revenue serving a broad range of industries including mass retailing, computer retail and services, telecommunications, and pharmaceuticals firms.

After selling his company in 2001 to UPS for more than \$400 million, Fritz founded the Fritz Institute, a San Francisco-based citizen sector organization whose Humanitarian Logistics Software (HLS) software helped the International Federation of Red Cross and Red Crescent Societies (IFRC) reduce the time required to collect donations for its Indian Ocean tsunami relief from months to just ten days. By making its entire relief supply chain transparent, HLS cut typical delivery times for getting goods to victims from three days to one.

Fritz has built a career on understanding the complexities of shipping products and packages to the far-flung

reaches of the globe. But he says he never truly understood the human side of that logistical science until he saw it applied to the world of disaster relief.

One of the first trips he made after selling the Fritz Companies was in a mud-splashed truck as part of a convoy that crossed crocodile-infested rivers and bounced up and down mountains in order to reach one of the poorest regions in the world. "We were headed for a particular village in Lesotho that really needed corn grain by a certain date," he recalls. "The dry weather had destroyed other harvests, so if this grain wasn't planted on time, there would be no harvest again and the famine would only increase."

The convoy arrived in time and Fritz will never forget the looks on the villagers' faces as they welcomed his group. "When you see the impact of humanitarian aid efforts in their lives, the emotion you feel is extraordinary," Fritz says. That moment is one of many that has reinforced his decision to spend his "retirement" applying the business know-how he gained in logistics to some of the biggest problems facing mankind—natural disasters.

Different Problem, Same Skills

Since he founded the Fritz Institute, Fritz has devoted himself full-time to building an organization that develops logistics management software tailored to relief organizations, allowing them to respond more effectively and quickly to crises where saving time means saving lives. "I thought the best way to make a difference was to use my own acumen, my skills, and my network and to apply them in a very

targeted form to help the center of humanitarian aid," says Fritz.

The Fritz Institute has invested \$1 million and more than 3,000 hours to develop its Humanitarian Logistics Software (HLS) by gathering information from and reviewing the logistics needs of the largest humanitarian aid organizations in the world. The IFRC is its biggest customer, having used HLS for every emergency operation since the software became fully operational in September 2004 for earthquakes (Morocco), hurricanes (the Caribbean), and war-related famine (Sudan).

When Hurricane Jeanne struck Haiti in October 2004, the IFRC used the software to mobilize goods and services for 50,000 affected people in Gonaives, the hardest-hit coastal town. Eighty tons of medical equipment and material were brought in to set up a 100-bed hospital and water treatment plants. Forty plane loads of hygiene kits, collapsible fuel canisters, and food parcels were included in the lifesaving supplies airlifted to the Gonaives area to cover needs for six months.

While the know-how of business-based logistics helps in humanitarian aid efforts, it's also true that the complexity of a natural disaster response is several orders of magnitude greater than the logistical challenges most businesses face, says Edgar Blanco, research associate for the Massachusetts Institute of Technology Center for Transportation and Logistics.

"Relief organizations face various



challenges that business does not," he said. "Business can plan ahead, look forward, and know exactly how to execute on a regular basis. Relief organizations traditionally are in a crisis mode. They have to mobilize resources and provide the best service they can under extremely difficult circumstances. Also, businesses can use technological advances on their supply-chain efforts and reap the benefits, which is harder to do for relief organizations because the conditions they work in are usually 'low tech' and they usually don't have the profits that businesses do [to invest in] frequent upgrades."

Businesses also don't design their logistics systems to operate only at peak demand and then sit idle for the rest of the time. Yet disaster relief agencies, whose efforts are roughly 80 percent logistics, face this problem on a global scale and at a magnitude that few, if any, businesses will ever encounter.

Limited technology and transportation infrastructure also contribute to a frustrating lack of coordinated information on the ground. For example, after the Indian Ocean tsunami last December, the Colombo airport in Sri Lanka didn't have the equipment needed to unload donated goods from airplanes.

When they were finally loaded, the boxes were uncoordinated and unmarked so that nobody knew their contents. They were pushed aside, and because of the lack of warehouse space, many goods were lost, stolen, or damaged. Hundreds of citizen sector organizations suffered delays or losses of shipments because they had no idea what or where the donations were. That was one reason why agencies called for cash instead of goods after the tsunami, in order to procure as much as they could in the affected

areas and avoid the cost and waste of moving tons of supplies thousands of miles.

An Improvement But Not a Panacea
Software alone simply can't solve all of these issues. But the Fritz Institute focuses on the gains that can be made by working with the supply chain. Some of the software's features have made a significant impact in this area. For example, the software was designed to store key information in a central database, accessible through the Internet, where both relief-aid administration at headquarters and field workers on the ground can have immediate access to the information needed to get specific supplies quickly to affected areas.

Using sophisticated logistics management practices that are standard for major corporations, HLS's system incorporates data about a relief agency's organizational structure, its relief supplies database, currency exchange rates, delivery and payment terms, and geographic information. The system tracks supplies from donation to delivery to an affected country, giving the organization an online overview of the relief pipeline and allowing it to quickly direct resources (food, water, shelter, medicine, power generators) to critical sites. Web-based supplier lists, prepurchasing agreement details, and catalogues of items allow orders to be made directly online.

HLS is not the only aid software on the market. The Pan American Health Organization launched the Humanitarian Supplies Management System, which has been used for disaster relief since 1992, and I2 Technologies, a publicly traded, supply-chain technology company, created Aidmatrix software in 2000 to link donors with nonprofit recipients.

HLS received its largest application to date when the IFRC used it after the December tsunami in its largest relief operation ever. From its Geneva headquarters, the logistics team used HLS to assess needs, create a list of requirements for the entire relief operation, and then coordinate the shipments with emergency response units in the seven countries affected using 298 cargo flights, 53 shipping vessels, 111 trucks, and 70 warehouses.

HLS was also the technical basis for making donation appeals, so that the IFRC was able to broadcast its post-tsunami needs to all 181 Red Cross and Red Crescent chapters, as well as publicly on its main website. The result: IFRC's appeal, which usually takes months to cover, had 130 percent of its requests met in just 10 days.

Once the IFRC knew how much was pledged, HLS provided information about up to 7,000 emergency items that could be mobilized, and then tracked them all the way to delivery in the affected country. The entire supply chain became transparent, and relief workers on the ground could see with a mouse click what had been promised and when it was due to arrive. Workers could then make local arrangements to transport the relief items to where they were most needed.

By significantly improving the speed of mobilization, HLS has cut the typical delivery time frame of goods to victims from three days to one, says Hugh Peterken, head of the IFRC's information systems department.

"Before HLS, we did not have a way to measure how quickly we deliver goods. Now when someone in the field has a requirement, we put the requests in a mobilization table and look for donors who can meet those



needs. We've seen a huge improvement in delivery timeframes as well as efficiency because the information moves more quickly from the field to our mobilization table to the donor."

The Fritz Institute licenses HLS for free, but implementation costs range from \$125,000 to \$250,000 for a customized version like the IFRC uses. Besides its high cost, Peterken says another HLS flaw that prevents it from

being the sole logistics software used by the IFRC is that it only tracks goods through their delivery to a country and lacks integrated software for warehousing and delivery to the ultimate beneficiary. The Fritz Institute is working with the IFRC to address those issues in the launch of a Web-based version of HLS later this year.

"Over the last ten years, business has realized that logistics and supply man-

agement are not just a cost function to deal with, but an important topic of discussion in the corporate boardroom," said MIT's Blanco. "What Fritz is trying to do now on the nonprofit side is bring logistics management into their boardrooms and their governance groups so that it is at the top of their agenda. That is one of the biggest contributions Fritz has provided to this community."
