Development's last-mile logistics challenge

How NGOs and agencies are adopting innovative solutions to overcome aid distribution problems

Les Roopanarine

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Ensuring humanitarian supplies and personnel reach the people they are intended to benefit, however remote and inaccessible their communities, is fundamental to any successful aid intervention.

Yet, outside professional development circles, the logistical challenges involved in covering the so-called "last mile" receive scant attention.

There's an obvious reason for this: supply chain logistics simply aren't seen as sexy. People might be interested to read about the announcement of a new aid initiative, or the impact it has on the ground once underway; the nuts and bolts of how aid actually reaches beneficiaries, not so much.

That's a shame, because it's an area in which NGOs and agencies are adopting increasingly innovative solutions to some of the most common distribution problems.

"The commercial sector has shown good advances in the use of technology in that last mile, and it's something NGOs are now starting to become actively involved in," says Sean Barton, head of supply operations for Oxfam.

A case in point is Last Mile Mobile Solutions (LMSS), a digital system conceived by World Vision and developed in collaboration with private sector companies including Field Worker and Intermec.

The system, which is designed to streamline and simplify aid delivery, consists of a handheld computer with an integrated touch screen, barcode scanner and camera, and a laptop that acts as a roaming server. It uses a local ad hoc wireless network that does not depend on connectivity though the capability is there. Since information is exchanged wirelessly - without the need for mobile phone networks, internet connections, or electricity - the technology can be used anywhere.

"It's about linking data collection with service delivery in the last mile," says Otto Farkas, World Vision's director of resource development and collaborative innovation. "Most automated systems stop at the warehouse; once you get into remote locations they're disconnected from the main networks, so you have to work offline and enter data manually. But we've been able to combine beneficiary identification with [information about] costs, entitlements, and delivery."

The advantages for those receiving aid are clear. Before, they had to queue for hours, fill in forms, and provide fingerprints before receiving relief items. Now, on completing initial registration, they are furnished with an ID card bearing a photo and barcode; a swipe of the card confirms their identity and entitlements.

"There's a visible improvement in their sense of dignity," says Farkas. "You're essentially providing them with technology that is afforded even to the rich; it makes them feel like a client as opposed to a beneficiary."

Nor do the benefits stop there. Able to reference information in digital format rather than leafing through reams of documents, aid workers can spot fraud more easily and devote more time to quality assurance and delivery monitoring. A more streamlined distribution process limits the scope for confusion over registration and entitlements, improving security and minimising the possibility of aborted distributions. And reports, which previously took anywhere between four hours and four days to produce, can now be completed in two minutes.

The advantages of a system that the International Data Group named among the year's top five IT innovations in human services are not lost on other organisations.

"In terms of efficiency savings, it's dramatic," says Barton. "Rather than having groups of people typing out hundreds of names and printing out spreadsheets, you have the technology to do it all instantly. It's very exciting stuff and Oxfam is very interested in it; we are going to do a pilot with World Vision to see if we can adopt it."

Crucially, the World Vision technology - built on industry best practices and already rolled out in 15 countries, a number expected to double by the end of 2013 - was designed with just such adaptability in mind. The software works on a range of devices and can be tailored to meet the needs of individual clients. In Oxfam's case, that would mean deploying LMMS in tandem with Helios, the organisation's existing software.

"There is big potential in terms of sharing LMMS with Oxfam and others," says Farkas. "All of us go round interviewing beneficiaries, collecting almost the same information, but the data isn't shared. So we have no idea how many people got what, only what each of us distributed. We want to make what we have available to the entire industry; to create, almost, a customer database."

World Concern, a Seattle-based NGO, is using technology to approach last-mile logistics from another direction. The organisation has improved the efficiency of distributions, supplier payments and reporting by combining its voucher system, which enables beneficiaries to purchase locally procured food, with a mobile phone app developed by ScanMyList, a local startup company.

The app, originally designed to keep track of inventories in a small business setting, has been piloted in recent months in areas of Somalia where World Concern already had beneficiaries and local food merchants registered. Barcodes on the vouchers are scanned at the distribution stage, linking them with specific beneficiaries; then, when merchants return the vouchers for payment, they are scanned again, triggering payment and creating a complete distribution record.

"We're a small organisation, especially when you compare us with someone like World Vision, and [before] we invested a lot of time into processing all of the paperwork" says Chris Seach, deputy director of disaster response at World Concern. "By doing things more efficiently and effectively, we hope to provide more support."

A full impact assessment will be undertaken next year, but the initial signs are encouraging. Food has reached beneficiaries four days faster than previously, while merchants are being paid a week earlier.

As with LMSS, adaptability is key: the app, which works on any Android smartphone, can be tailored to meet a range of project requirements including beneficiary registration, rapid needs assessment and inventory tracking.

The technology also has wider possibilities. When a cholera outbreak occurred in southern Somalia just as the pilot project was about to launch, World Concern rapidly incorporated a query about standard indicators of the disease into its beneficiary questionnaire.

"Because we already had the beneficiaries registered with their point of origin, we were able to track the level of incidence and where it was coming from, mapping the cholera spread," says Seach. "We did that in a day, adapting to needs on the ground."

An app that can chart a disease outbreak? Anyone who imagines last-mile logistics lack allure needs to think again.

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