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Disaster relief: Technology can help get aid where it is needed

By Sarah Murray

Getty

Hand to mouth: aid administration is often still managed in paper-based systems

International agencies delivering emergency supplies to remote parts of the world hit by war, famine or disease, turn to anything from 1960s-era cargo planes to donkeys and camels.

Low-tech transport is often essential to delivering aid.

But innovations in communications technology are helping enhance the efficiency and effectiveness of delivery.

Given declining food aid resources, growing populations and the increasing number of emergencies, improving efficiencies in emergency food delivery is becoming more critical.

When a huge earthquake hit Haiti in 2010, the addition of Haitian Creole – spoken by 8m people in that country – to Microsoft's online translation engine, which was achieved in just five days, helped humanitarian workers who needed to be able to translate quickly.

As well as tackling language barriers, in the wake of a disaster, aid workers and relief agencies need to work in unfamiliar surroundings amid infrastructure that has often been severely damaged.

Local communications systems, if not actually destroyed, can present a further challenge,

says Michael Donlan, managing director of government, national security and technology at Microsoft's global public sector division.

Here, technology can play a critical role. Mr Donlan gives the example of Eagle, a suite of software applications and services for crisis management.

Developed with Geodan, a Dutch geo-information consulting company, and ESRI, a company that produces geographic mapping software, the Eagle system enables relief workers to build a single operational picture of a disaster.

The system allows them to share information, such as the location of the disaster and the range of people and organisations involved.

Workers can also receive real-time updates on what is happening in the affected area.

Another Microsoft product, Twisted Pair Wave software, allows humanitarian professionals to communicate anywhere, on any device by connecting disparate networks and devices.

Relief workers can locate and speak to teams of peers and colleagues around the world, regardless of whether they are using two-way radio systems, cellular networks, mobile devices or laptops.

Once aid supplies have arrived, the next challenge is managing its distribution.

Otto Farkas, director of resource development and collaborative innovation at World Vision Canada, a Christian relief agency, says: "At World Vision we move anything up to $300m of food through our aid pipeline each year, so solid accountability systems, such as rationing, are critical to allow us to report back to donors."

To do this, agencies use rationing systems that involve signatures or thumbprints as a proof of receipt from every individual receiving food and other aid.

Aid administration is often still managed in paper-based systems, with information recorded by hand. "This method can be inefficient and labour-intensive, not to mention prone to human error and fraud," explains Mr Farkas.

"And it can be painstakingly slow, especially for the person who has waited in the hot sun for hours to reach the front of the queue."

Instead, World Vision uses a system called Last Mile Mobile Solution (LMMS).

Field workers use handheld devices to take pictures of aid recipients and record details such as names, birth dates, geographic locations and individual vulnerabilities that make household members eligible for help.

Beneficiaries receive photo ID cards with bar codes – verifying their identity and eligibility – that are scanned each time they return for additional food rations or other supplies,

allowing the correct amount of food to be distributed to the right people.

"This calculation is done accurately in seconds and because the updated data are wirelessly uploaded, field workers do not have to reconcile distribution lists manually," says Mr Farkas.

He says the system is popular among crisis-hit populations, since they do not have to be fingerprinted.

"They also spend less time waiting in queues, which reduces tension and personal security risks at distribution sites, while freeing time to care for children and do other critical household and income-generating activities."

The system also saves time and money for relief agencies.

In Haiti, manual processes for registration, distribution and basic reporting for food distributions took about 50 hours and cost $901 per 150 households for a single programme and one distribution, according to Accenture Development Partnerships, the non-profit consulting arm of Accenture.

When LMMS was used, reporting and distribution took 30 minutes and cost $63 for 150 households, saving almost 50 hours and $839.