The only constant is change

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Advances in information and communications technology are offering new solutions to a range of operational challenges experienced in the field. But can the humanitarian community's providers of telecommunications services keep up with the pace of change – and the pace of demand?

Emergency responders rely on IT and telecommunications for numerous aspects of their operations, from reporting, coordination and communication, to ensuring the security and safety of staff in the field. Because of this, it is essential that IT emergency responders are among the first on the ground in a disaster situation to set up these essential networks. As lead agency for the Emergency Telecommunications Cluster[1] (ETC), set up as part of the 2005 Humanitarian Reform initiative), the UN World Food Programme (WFP) is responsible for providing IT and telecommunications services from the onset of a disaster response, working closely with a range of partners including UNICEF, UNHCR, UN OCHA, Télécoms Sans Frontières, World Vision International, Ericsson Response and the Government of Luxembourg.

Back in 1994, during the Great Lakes emergency, WFP set up the first regional technical support unit in Kampala, Uganda, to assist relief workers. At this time, WFP also pioneered the first mobile messaging system within the humanitarian community, enabling emails to be sent and received through HF (high frequency) radios. In 2004, when the Indian Ocean earthquake and tsunami killed over 227,000 people and displaced more than 1.7 million, the Cluster Approach had not yet been formalised so each organisation was responsible for its own IT arrangements. The benefits of operating in collaboration with other agencies, however, were obvious and sectors had already begun to loosely organise themselves, with WFP assuming responsibility for security telecommunications by establishing a network of 24/7 radio rooms. The technology available

to the humanitarian community, as well as expectations, had already increased significantly since the Great Lakes response.

Now, voice, data and security telecommunications services are provided by the ETC in emergency operations. Voice services include wired and wireless phone calls from a central location using satellite terminals. Data services include wireless internet access points, also using satellite terminals, as well as printing facilities. Best efforts are also made to link individual organisations operating in remote locations to the central site. In terms of security communications, the ETC also establishes and maintains VHF (very high frequency) radio networks to cover the operational area, as well as other related services including training of IT and telecommunications staff.

Catalysts for change

Humanitarian emergencies are becoming increasingly complex in regard to the number of people who need assistance and the physical size of the areas affected. Both of these factors require a greater number of aid workers to be deployed to assist in the response. More personnel operating on the ground means increased demands on the networks and infrastructure established by the ETC; this in turn means greater bandwidth requirements. And because the physical distribution area for relief supplies is also expanding, the ETC must ensure that wider areas too are adequately covered by security telecommunications services.

To support the IT needs of emergency responders, WFP has developed what is a called a 'fly-away kit' – small and light enough to travel with the responder on a commercial flight, yet containing all the equipment necessary to set up a functional office, including satellite phone, laptop and satellite terminal to enable communications to be established immediately upon arrival.

Coordination between the huge number of humanitarian organ-isations operating in emergencies

Port-au-Prince, Haiti

can present a challenge for the ETC. Following the earthquake in Haiti in 2010, for example, there was an estimated 1,300 NGOs operating across the country, many of which could have benefited more from ETC services. ETC NGO Coordinator positions (hosted by NGOs) have since been established to encourage and sustain collaboration between UN agencies, NGOs and the ETC.

With a considerable increase in recent years in the number of humanitarian workers killed in the line of duty, it is more important now than ever before that additional measures be taken to monitor the security and safety of staff in the field. This has also been a major catalyst for change in IT and telecommunications systems. Vehicle and commodity tracking mechanisms have been developed as well as other tools which allow the physical position of individual aid workers to be located on mapping applications.

The expectations of aid workers themselves are evolving in parallel with technological advances. Despite operating in some of the most remote places on earth, there is increasing demand for high-level IT services. Aid workers arriving at emergency situations expect Wi-Fi connectivity for their smartphones and handheld devices; wireless connectivity to laptop computers is no longer sufficient. The photo and video capabilities of these new devices place further pressure on bandwidth requirements. In the same way, teleconferencing facilities – increasingly used by the humanitarian community for coordinating activities – are now expected to provide video functions, not just voice.

The ETC complies with IT and telecommunications laws and regulations stipulated by host countries. Because technologies deployed in emergencies are becoming increasingly advanced, however, use of equipment or certain applications may be restricted in countries in which they are needed. In such situations the ETC will negotiate with governmental bodies, on behalf of the humanitarian community, for more flexible arrangements.

In the face of these changes, the ETC is constantly evolving, and new tools and technologies continue to be developed and piloted.

Digital radio, for example, is being piloted in the Philippines as a potential substitute for the old analogue radios. The key advantage of digital over analogue radio is that all sites are linked to each other. When travelling across a country, the transition between radio frequencies using the digital system is much the same as the 'roaming' facility on a mobile phone; the operator does not need to manually change channels according to coverage

area. Digital radios also contain GPS (Global Positioning System), enabling tracking on map-based platforms, and have the capability to send text messages. All these functions contribute to enhanced security for aid workers in the field.

An initial partnership for humanitarian emergency response has been established between the Government of Luxembourg and WFP in its position as lead of the ETC. Together these partners are working on the design and roll-out of a new solution called 'emergency.lu'.[2] This new approach will include prepositioned satellite bandwidth to cope with the increasing demands of the response community. A further key element will be a new version of the fly-away kit with 'voice over internet protocol' (VoIP) technology enabling voice calls to be provided at lower cost. By early 2012, these new kits will be prepositioned across the globe for deployment in emergencies.

Corporate organisations, in particular those within the IT and telecommunications fields, are increasingly participating in the development of new solutions as part of their corporate and social responsibility (CSR) initiatives. Ericsson Response,[3] for example, has been working closely with the ETC in the design and development of 'WIDER' (Wireless LAN in Disaster and Emergency Response), a mechanism designed to enable humanitarian workers to access the internet from any suitable device in any emergency-affected area. Functioning in a similar way to Wi-Fi registration procedures at a hotel, for example, WIDER will allow the ETC to better manage access to the network, addressing the challenge of increased bandwidth requirements, and ensuring users are provided with the best services possible.

The last decade has witnessed unprecedented growth in IT and telecommunications in terms of both technology available and services provided in the field. While advances in these areas have enabled new solutions to be applied in emergency response operations, they have also placed greater demands on the ETC to provide more robust services for tools that were not even available in the past.

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1. http://ictemergency.wfp.org/web/ictepr/emergency-telecommunications-cluster

2. http://emergency.lu See article by Antoine Bertout, Marc du Bourcy and Mohammad Faisal on p17.

3. A CSR initiative of telecommunications equipment and services provider Ericsson www.ericsson.com/article/ericsson-response_20100329133348