Australian Government

Department of Broadband, Communications and the Digital Economy

STANDING COMMITTEE ON ENVIRONMENT AND COMMUNICATIONS

Inquiry into recent trends in and preparedness for extreme weather events

Submission by the Department of Broadband, Communications and the Digital Economy

INTRODUCTION

The Department of Broadband, Communications and the Digital Economy (the department) aims to develop a vibrant, sustainable and internationally competitive broadband, broadcasting and communications sector through policy developments and program delivery, which promotes the digital economy for all Australians.

In performing its functions, the Department aims to support and encourage the development of a world class communications infrastructure over which consumers can access a diversity of services that are competitively priced, widely available, provided on fair and just terms, are reliable and innovative.

The provision of mobile telephone and fixed voice services is the primary responsibility of a number of private sector carriers. The Department supports such provision where necessary, principally through regulation and community awareness.

The recent natural disasters in Australia highlight the essential role of communication technologies during an emergency.

TERMS OF REFERENCE

Comments against specific terms of reference are provided below.

c) An assessment of the preparedness of key sectors for extreme weather events, including major infrastructure (electricity, water, transport, telecommunications), health, construction and property, and agriculture and forestry;

Telecommunications/Broadband

While the Government monitors developments, the maintenance and resilience of the commercial telecommunications networks is ultimately a matter for the telecommunications carriers.

In recent years, the telecommunications carriers have dealt with a number of extreme weather events, including bushfires, floods and cyclones. The carriers consider that they have learnt a great deal from successive events and that these learnings are being progressively built into their response measures. In this contest, the carriers advise that they are continuing to

enhance their capacity to anticipate damage to their networks in order to restore service as quickly as possible after a natural disaster occurs.

In response to events, carriers are routinely choosing to deploy temporary communications infrastructure where infrastructure has been damaged, or additional capacity is required. Relevant infrastructure deployed during recent natural disasters such as the Queensland floods, Cyclone Yasi, and the 2003 Victorian bushfires, includes:

- Mobile Exchanges on Wheels (MEOW) which are portable ADSL 2+ enabled exchanges that can provide temporary landline and broadband services.
- Cells on Wheels (COW) which are portable mobile cell sites that consist of a cellular antenna tower, electronic radio transceiver equipment and a generator on a truck or trailer, designed to become a temporary part of a cellular network where cellular coverage was either never available or has been compromised by an event.
- Satellite Cells on Wheels (SatCOW) which use satellite transmission to connect terrestrial networks and provide coverage to surrounding areas.
- Satellite phone handsets.

During the January 2013 bushfires where some power outages occurred, carriers acted quickly to reconnect affected services, including through the use of generators.

Telstra's regular updates during the Tasmanian bushfires details the lengths the company went to in order to provide continuity of service for customers.[1] Optus has advised that they made available loan phones and pre-paid sim cards.

The carriers also had in place a number financial assistance measures to support customers who have lost services as a result of the bushfires. For example, both Optus and Telstra[2] offered an assistance package for customers in Tasmania.

Telephone-based emergency warning system – Emergency Alert

Emergency Alert sends voice warnings to landline telephones and SMS text warnings to mobile telephones based on the registered service address of the handset.

Location-based enhancements to Emergency Alert, rolled out to Telstra's networks in November 2012, allow SMS warnings to be sent to mobile phones based on the location of the handset at the time of the emergency. The location-based enhancement to Emergency Alert will be launched on Optus and Vodafone Hutchison Australia networks by November 2013.

The Australian Government has contributed close to $60 million towards the development and enhancement of Emergency Alert. Emergency Alert is owned and operated by the states and territories.

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[1] Telstra News, *Customer Service Update – Tasmanian Bushfires* *http://exchange.telstra.com.au/2013/01/05/customer-service-update-tasmanian-bushfires/#comments*

[2] Telstra Media Release, *Telstra assistance package for customers affected by fires in Tasmania* http://www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-assistance-package-for-customers-affected-by-fires-in-tasmania.xml published on 5 January 2013.

In the case of an emergency or natural disaster, it is recommended that people have more than one means of communication available and do not rely solely on receiving a telephone warning.

National Broadband Network

Broadband is becoming increasingly important to emergency services, as it is across the economy generally. From the outset, NBN Co has designed and built the National Broadband Network (NBN) to offer high levels of availability and redundancy. For example, in almost all cases, key pieces of NBN infrastructure are connected by fibre 'loops', which ensure that equipment remains connected to the network even when a link becomes unavailable. This means that a break in one cable will not isolate a Fibre Access Node (FAN) from the parent Aggregation Node (which holds the Point of Interconnect (PoI) for the Retail Service Providers).

NBN Co has specified high availability and reliability targets for its Long Term Satellite System (LTSS). These targets have been apportioned to each of the individual LTSS contracts, specifically: space segment (satellite), ground segment (Gateway and VSAT User Terminal) as well as the terrestrial backhaul network.

At a system level, NBN Co is utilising two satellites such that in the unlikely event of a satellite failure, service could be maintained through a single NBN Co satellite. Additionally all user links will incorporate the ability to dynamically vary their transmission attributes (uplink power level and waveform characteristics) in order to maximise availability during degraded weather conditions.

Other measures include a Disaster Recovery Gateway station which can assume full traffic loads from any of the nine primary Gateway stations, carrier class network architecture and infrastructure at the data processing and network management centres, and Customer Premises Equipment that is designed to withstand the wide range of adverse conditions, for example, temperature, dust, vermin, corrosion and wind.

Broadcasting

The key responsibility of the broadcasting sector in a national emergency is to facilitate the distribution of authoritative information to the public in a timely manner.

The Australian Government has developed the National Guidelines for the Request and Broadcast of Emergency Warnings in consultation with State and Territory Governments and all peak broadcast media bodies. The objective of this work is to improve the effectiveness, clarity and consistency of arrangements between all broadcast media, and all emergency management organisations, for the request and broadcast of emergency public warnings. The Guidelines have in-principle endorsement from all members of the Ministerial Council for Police and Emergency Management, and from peak broadcast media bodies including Free TV Australia, Commercial Radio Australia, the Australian Broadcasting Corporation, Australian Subscription & Radio Association, the Special Broadcasting Service, and the Community Broadcasters Association of Australia.

The ABC has Memorandum of Understandings or partnerships with the emergency bodies in all States and Territories that commit the Corporation to use its best endeavours to provide

emergency warnings. The ABC has the largest radio and television networks in Australia, supported also by a comprehensive website and is a recognised and trusted source of local information, including emergency information, for many communities. This network is supported by portable FM radio transmitter units that can be rapidly deployed when existing infrastructure is damaged. For example, during the bushfires in Victoria in 2009, the ABC relocated its Western Australian and Queensland flyaway units to Melbourne, which were used for emergency broadcast purposes to the communities of Kinglake and Healesville/Warburton.

SBS will also broadcast emergency warnings on its television and radio services at the request of emergency service agencies, although SBS cannot provide the same local focus as the ABC.

The free-to-air commercial radio and television industry codes of practice require licensees to ensure they have procedures in place to enable the timely and accurate broadcast of emergency information.

In 2012, the Australian Government passed legislative amendments to the *Broadcasting Services Act 1992* requiring that all emergency warnings broadcast on free-to-air and subscription television must be in text and oral form, and captioned where practical, to maximise the accessibility of vital information.

d) An assessment of the preparedness and the adequacy of resources in the emergency services sector to prevent and respond to extreme weather events;

Triple Zero

Telstra is the current Emergency Call Person for Triple Zero (000) and 112, as set out in the Telecommunications (Emergency Call Persons) Determination 1999. Along with each state and territory, Telstra has a range of measures in place to help mitigate surge events, including increased lines, communications traffic overflow systems and/or extra 1800 numbers.

Emergency call centres maintain anticipatory staffing capacity, such as Telstra's ability to send an immediate recall message to all operators within the call centre vicinity. In the event of a large increase in emergency calls, Telstra also employs a recorded voice announcement (RVA) which lets callers know that there is a large volume of emergency calls being made and encourages them to stay on the line.

We understand some emergency organisations are also testing the use of alternative communications, such as the Queensland Police Service's use of social networking site Facebook to provide updates to the public during cyclone Yasi. Such alternatives may prove particularly useful in cutting down the number of callers who dial Triple Zero seeking information during a crisis, rather than to make an emergency service request.

The two national emergency call service call centres run by Telstra have additional redundancy measures designed to ensure reliability during extreme weather events and other crises. They are physically separated (NSW and VIC) and each is equipped with dual exchanges for redundancy.

Part 16 of the Telecommunications Act 1997 stipulates requirements for carriers and carriage service providers (C/CSPs) in the event of a natural disaster. These requirements include that C/CSPs can be required to supply a carriage service for the management of natural disasters, or enter into an agreement with the Commonwealth about operational requirements in times of crisis.

Spectrum

The carriers, Telstra, Optus and VHA cover 99% of the Australian population with their commercial mobile networks, and have over the years worked to make their networks more resilient.

The Australian Communications and Media Authority (ACMA) is also working with the public safety agencies, as part of its review of the 800 MHz band, to identify the appropriate spectrum needed to deploy a new nationally interoperable mobile broadband capability.

On 29 October 2012, the ACMA announced it has reserved 10 MHz of spectrum in the 800 MHz frequency band for the deployment of the proposed capability. The ACMA will also make a further 50 MHz of spectrum from the 4.9 GHz frequency band available to public safety agencies to provide very high capacity local wireless broadband. The package of spectrum recommended by the ACMA provides a solid basis for the states and territories to deploy a nationally consistent and multi-layered public safety mobile broadband capability.

In designing this dedicated capability, public safety agencies will need to consider options to address coverage, overflow capacity and redundancy issues to deliver a holistic communications capability that is cost-effective, efficient and reliable. Commercial telecommunications providers are well placed to assist on a cost-effective basis. Technological options to offload data to fixed networks, such as the NBN, will also prove valuable.

h) Any related matter

Telework

Telework is an emerging element of planning for continuity of operations during and following a natural disaster. The Telework Advisory Group reported that remote work programs increase organisational flexibility and help companies rebound from crises more quickly[3]. Teleworking organisations often have their human capital distributed across locations making them less susceptible to natural disasters and crises. Minnesota in the USA is a state known for its frequent extreme weather events and has a high rate of telework at 22 per cent[4].

[3] The Telework Advisory Group for WorldatWork (2005), *Exploring Telework as a Business Continuity Strategy* report http://www.workingfromanywhere.org/news/ITAC_Explore_Telework.pdf Accessed 12 December 2012 USA: Scottsdale, www.worldatwork.org

[4] PR Web (2012), *Connect Minnesota Releases Teleworking Report*

Telework in New York City increased by 20 per cent in the aftermath of Hurricane Sandy, which hit the eastern coast of the USA in October 2012.[5] Although federal government offices in Washington D.C. closed down for two days during the hurricane, about one third of government workers were able to continue working remotely[6]. The not-for-profit Transition Network was another of many organisations that teleworked to keep their operations going[7]. Goldman Sachs chief administrative officer, Jeffrey Schroeder, whose office was within the evacuation area, told staff that most of them would work from home[8].

Similarly, investment company QIC lost access to its Brisbane head office for almost two weeks during the Queensland flood crisis, but continued to operate using a combination of disaster recovery sites and a significant number of staff working from home[9].

Teleworking may also enable companies to provide customer support across a wider range of time zones and locations, increasing their competitive advantage. The reduced expense of off-site workers can be particularly beneficial during the recovery phase.

The National Digital Economy Strategy sets a goal of at least 12 per cent of the workforce teleworking at least one day per week by 2020.

[5] American City (26 November 2012), 'Interactive Timeline Details Transportation Status During and After Sandy': online article http://americancity.org/daily/entry/interactive-timeline-details-transportation-status-during-and-after-sandy Accessed 13 December 2012.

[6] Society for Human Resource Management (November 2012)

[7] Society for Human Resource Management (November 2012), *Hurricane Sandy Forces Companies to Reconsider Telework:* online article http://www.shrm.org/hrdisciplines/technology/Articles/Pages/Hurricane-Sandy-Telework.aspx?homepage=marquee&buffer_share=ea7bd&utm_source=buffer Accessed 12 December 2012

[8] Quartz (October 29, 2012) 'Citibank and Goldman Sachs are working from home today': online article http://qz.com/20988 Accessed 13 December 2012

[9] QIC.com (January 2011) *QIC delivers key investment management functions throughout the Queensland flood crisis* Media release http://www.qic.com/assets/PDF/Media-Releases/QIC-Delivers-Key-Investment-Management-Functions-Throughout-The-Queensland-Flood-Crisis.pdf Accessed 12 December 2012