Interoperability for Extreme Events Research Group

How Interoperability Can Significantly Improve Recovery Outcomes

When the recovery process starts during a disaster or extreme event, teams are formed from many agencies - government, NGOs and corporations – they work collaboratively to achieve the best possible outcomes for the affected community. Some of the agencies will bring to the task high-tech skills and equipment, though most don't. It is highly unlikely that the available systems and processes used are "interoperable". If they were interoperable, the outcomes would most likely be significantly better and more cost effective.

> *"Effective emergency management depends on the quality of the information and tools available to decision makers (including the community) at the time decisions need to be made"*. The 'Information Interoperability Blueprint, Victoria' [5]

added benefits. Recovery systems and processes – which rely heavily on collaboration - are a prime target for technology gains, especially from interoperability.
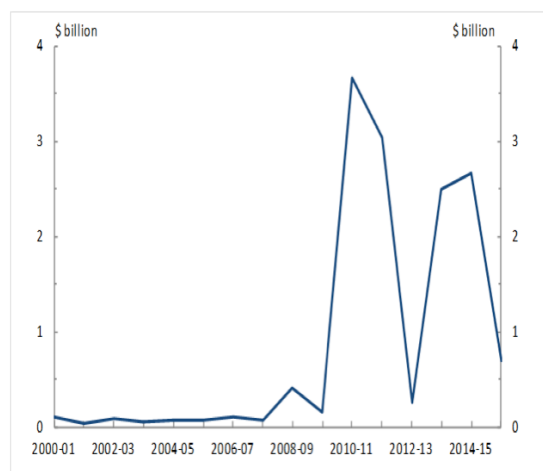

Figure 1 – Recovery Costs 2000 – 2015 [1]

Key factors

- Interoperability is already written into federal and state government policy, though it has been slow to make headway into recovery practices;

- Recovery costs have risen significantly in recent years, and now represent a large, unpredictable cost flow into the national economy [Figure 1]; and

- Most business systems and processes can be improved with current technologies, often with considerable cost savings, efficiencies and

How is interoperability defined

FEMA, the US Emergency Management Agency, defines Interoperability as: "the ability of systems, personnel, and equipment to provide and receive functionality, data, information and/or services to and from other systems, personnel, and equipment, between both public and private agencies, departments, and other organizations, in a manner enabling them to operate effectively together". [2]

The UK Joint Emergency Services Interoperability Programme[3] uses a more comprehensive definition

of interoperability which is "the extent to which organisations can work together coherently as a matter of routine".

However many of the benefits of interoperability cannot be realised until the difficulties of systems and processes working together are overcome.

The phases in the recovery cycle

"Recovery is [defined as] the coordinated process of supporting affected communities in the reconstruction of the built environment and the restoration of emotional, social, economic, built and natural environment wellbeing …. It is a complex social and developmental process". [4]
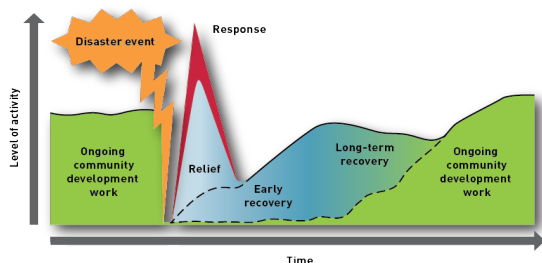
Figure 2 Effect of disaster on ongoing community

However, "Recovery provides an opportunity to improve aspects beyond previous conditions by enhancing social infrastructure, natural and built environments, and economies". [4]

Where interoperability can change recovery outcomes

- Government systems and processes are mostly not interoperable during disaster recoveries; this is a fair clue that they are not as highly efficient as they could be, and that significant improvements can be made;

- Recovery operations and supporting activities are mostly multi-agency by nature, and as such could reasonably benefit from collaborative technologies, systems and processes;

- Accounting for people – alive, injured, otherwise incapacitated, or deceased – and their whereabouts is a major activity in most emergencies both in the response and recovery phases;

- Many logistics, equipment management and planning activities require multi-agency participation and collaboration for the best outcomes;

- Preparedness. With the right foresight, interoperability can be created before any specific event occurs, or before it is even known where it will occur; and

- Timeliness. Especially in commencement of recovery activities, is an important factor in cost effectiveness, and can be greatly improved with interoperability.

There are often serious challenges to information sharing in recovery operations that are human issues as well as technology problems, the most damaging are information 'control' problems. Highly experience emergency managers agree:

"Attempting to control access to emergency information is ultimately counter-productive, as it serves only to fragment the common operating picture and deny the community access to the highest quality information, forcing it to rely on alternative sources". [6]

It is proposed to undertake a comprehensive study commencing in 2015-16 on how interoperability can significantly improve recovery outcomes in extreme events, which based on early findings, anticipates that if the systems and procedures used in managing a recovery were made interoperable, the outcomes would be significantly better and more cost effective.

References

1. Prepared by Department of Finance and included in the Commonwealth Audit Report 2014-15.
2. FEMA website, definition of interoperability.
3. UK Joint Emergency Services Interoperability Programme, website, definition of interoperability.
4. AUSTRALIAN EMERGENCY MANAGEMENT HANDBOOK SERIES Community Recovery HANDBOOK 2
5. The "Information Interoperability Blueprint" Victorian Fire Services Commissioner.

THE UNIVERSITY OF
SYDNEY

Business School