Crisis management for information teams – Coping strategies

Crises arrive in different forms. They can be rapid onset such as an explosion at an industrial site, they can be large scale such as a cyclone or wildfire which cover hundreds of kilometers, they can simultaneously threaten many communities and the environment, and in extreme cases they can lead to multiple loss of life and property. When crises strike the demand for information to support life-saving decisions quickly accelerates above an information systems capacity to process it and the quicker circumstances change the quicker information becomes outdated.

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Three years ago Mark established his own company, Red Bluff Spatial, to review, coach and mentor spatial teams on how to manage through a crisis. Recent work has included stints with the University of Melbourne and the Australasian Fire Authorities Council. Prior to this, Mark was Manager of the Country Fire Authority's GIS team for over 30 years and has re-joined as a Volunteer. On Australia Day 1999, Mark was awarded the Australian Fire Service Medal and was the first Victorian in a non-response role to receive the medal.

The question of how to keep emergency management information systems operating efficiently during crises is a difficult one to answer. By studying previous examples to see how others have managed gives us some insight into how to do it well. By evaluating how data and information are tracking through a system, by analyzing and adjusting team structures and by developing a live research and development capability all led to enhanced deadline management and throughput by teams and systems facing crises. And of course the best performances came from those who had prepared well.

Previously unknown opportunities are available to utilize data and information to support emergency management decision making. As recent crises as distant as Tibet and the Pacific Islands have shown, dispersed on-line volunteer communities assisted time-poor decision-makers by creating damage assessment estimates using data from satellites and drones.

This article distils lessons from many crises, including the Black Saturday mega-wildfires where the author led spatial information teams through that event as well as extensive interviews with information team leaders in the Christchurch earthquakes and 9-11 terror attacks. Although the paper has drawn most material from mapping and spatial information systems, the advice offered here has value to any team managing information in a crisis whether they be from local government, a utility or an emergency response agency.

Described here are the top ten coping strategies for information management teams .. before, during and after a crisis.

Coping strategy 1
Up to date system manuals (boring but essential)

Emergency information management teams document procedures and processes in paper and digital resources in order to respond quickly to situations as they crop up and to deliver standard and consistent analyses and products.

A Business Continuity Plan, a technical document that describes the means of preventing and recovering from information system failures, and an Operational Manual, which describes the agreed methods and techniques to analyze and produce operational information, are both examples of documents that are relied on during crises. Remember that the incumbent team leaders may not be available during a crises, so replacements will rely on these documents.

A good way to keep them up-to-date is to embed them within another annual process, such as end-of-financial year reviews.

Coping strategy 2
Exercising (practise makes perfect)

As an information team grows and matures it learns to cope with the normal stresses and strains of changing demands and timetables. In a crisis these take on a completely different magnitude; the pressure to produce analyses, statistics and maps to guide decisions can overwhelm.
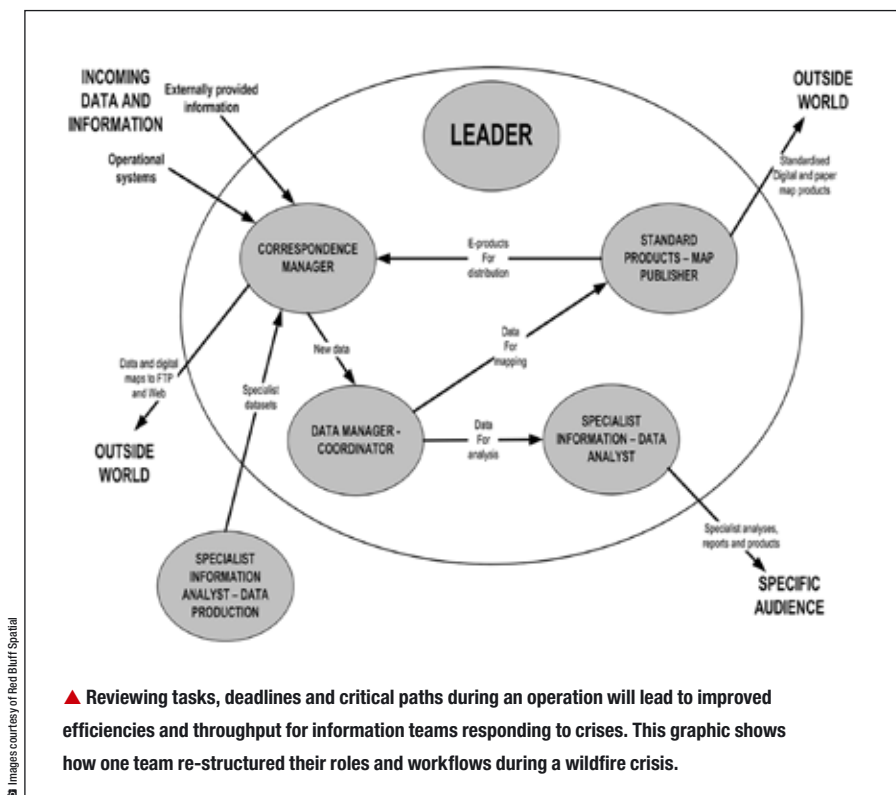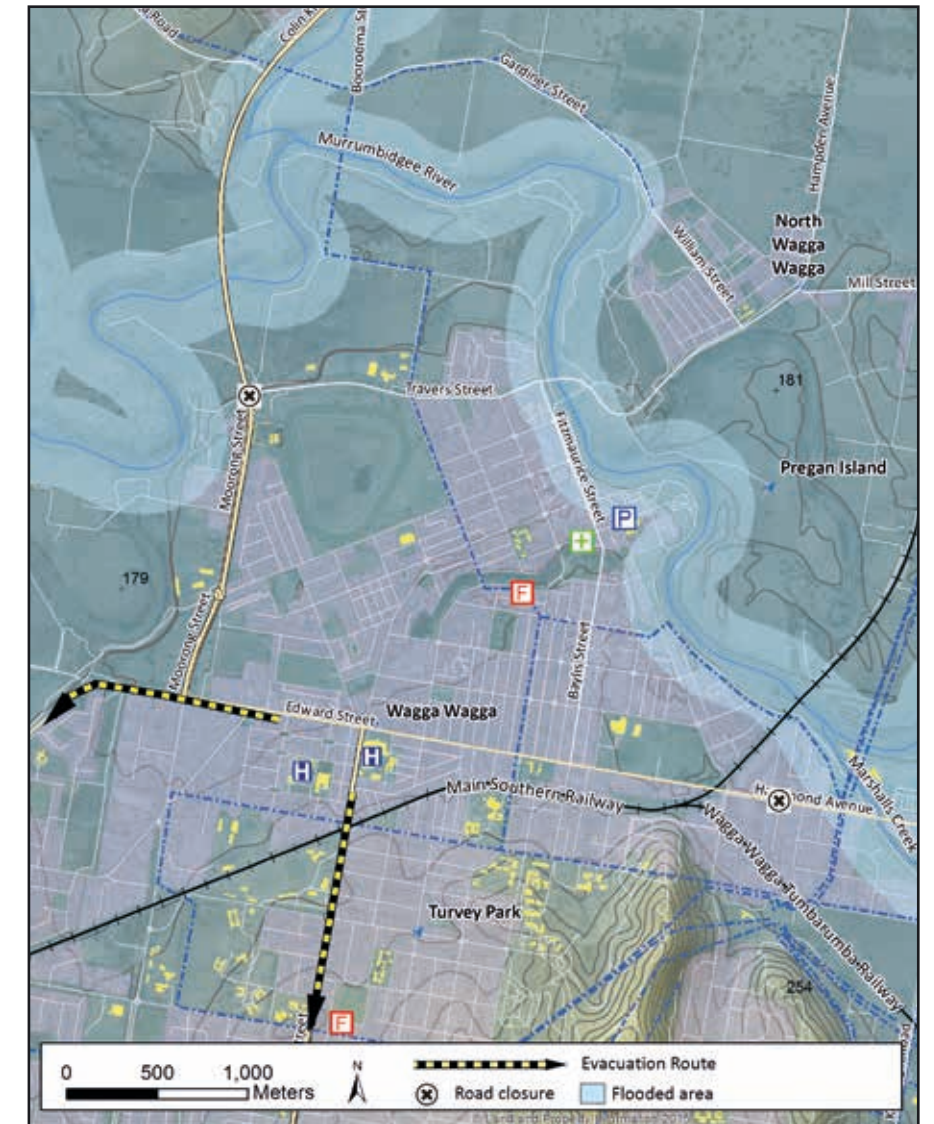
▶ Exercising is a key for information teams to perform well in a crisis. Scenario's should mimic crisis like conditions.

Improvement in the ability to cope comes with practise. Exercising is a key.

Don't just practise a routine emergency, the sort that your team is expected to deal with, try to set up and trial for an catastrophic event, like a 1 in 1,000 year cyclone if you are in a rescue agency or a complete failure of the power network so that you have to rely on wit and intuition to keep productive. And make sure you invite some partner agencies in because in a real crisis you will need their assistance sooner or later.

Coping strategy 3
A 24/7 roster (managing people is a key)

As a crisis escalates there is an immediate demand for information. In time the initial information management teams whether they be dealing with social media, modeling impacts or creating maps will become fatigued and need to be supplemented or replaced.

A draft roster, prepared for just such an occasion, that describes each team member and their role, will enable a smooth transition to a 24/7 capability. Also allow for specialist roles that may

crop up during a crisis .. you may not know what they are beforehand (e.g. you may need an expert in handling satellite or drone imagery) but at least have an expectation that team structures will need adjustment during a crisis.

Coping strategy 4
Review team structure during the crisis (manage deadlines, increase efficiency, cater for live R&D)

Information teams often operate using the structures used for normal operations. As a crisis develops and new challenges are thrust upon the team there may be more efficient ways of increasing the rate of processing data, of meeting production deadlines and even catering for live R&D. Tasks that may not be critical to daily production schedules (such as the processing of routine emails or the development of new analyses) can be handled at a more convenient time.

▲ Reviewing tasks, deadlines and critical paths during an operation will lead to improved efficiencies and throughput for information teams responding to crises. This graphic shows how one team re-structured their roles and workflows during a wildfire crisis.

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Image courtesy of Keith Pakenham – CFA

▲ During crises information management teams need flexibility to cope with increased demand.

Coping strategy 5
A practical job allocation and tracking system (for guest workers)

Staff trying to complete work are constantly interrupted by customers with new requests. With multiple requests backing up part of the secret to high throughput is to farm out work to helpers. A simple job tracking system for each task is essential, one that is easy to use for managers and workers alike, and one that can be accessed externally.

Coping strategy 6
ICT support (you need a little help from your friends)

Support from an agency ICT resource will smooth many tasks. Allocation of guest worker passwords, remote software installations, transfer of large files, clearing plotter buffers, server management and access to and from agencies outside the corporate firewall are just a few examples of the need to foster this important relationship.

Coping strategy 7
Expanding capacity (acquiring more workers and using on-line communities)

The ability to scale-up is essential to get through the volume of work presented during a crisis. In response to the 2011 Christchurch earthquake, one small team at the city council used 70 information analysts from 17 organisations.

Assistance comes from many quarters including partner agencies, universities and corporations. Increasingly online Volunteer Technical Communities (VTCs), with access to "the crowd" are supporting crisis response teams around the world.

TomNod, an initiative by satellite company Digital Globe, uses it's image collection capabilities with online volunteer resources to generate damage assessments.

Coping strategy 8
Stress management (coping with a crisis)

It is likely that at least some of the team will know somebody affected by the crisis. Given the extent of personal anxiety and trauma it is vital to put in place measures to monitor and manage stress. Regular team meetings, sharing team photos, emails, phone calls to remote team members, access to psychological support and reinforcement of the value of the work are just a few examples of practical measures to cope with stress.

Coping strategy 9
Good document storage (the need to retrieve post-incident information)

As a crisis winds down the focus inevitably turns to after action reviews, academic research and public scrutiny via the media and courts of inquiry. With the volume and variety of information products being generated, an intuitive document filing and management system will enable a clear and concise narrative to be developed.

Coping strategy 10
Do whatever it takes to get the job done

Informed decision making requires consideration of relevant and timely information. Inevitably during a crisis new techniques and new data sources will present themselves as aiding decision making, however the first task at hand is to get the job done within a minimum time with the tools available.

A great crisis information team has the capability to adjust, to evolve and to do whatever it takes to get the job done.

In Afghanistan, circa 2010, an NGO had great difficulty sharing large data files as all normal means of transmission were curtailed. They used carrier pigeons to get their data to colleagues. They got the job done.

Summary

There are no capital costs to undertaking an activity like this .. just an investment of intellectual capital and a desire for your team to perform at it's best in a crisis.

The list given here is a small collection of the many paths by which an information team will improve efficiency and throughput during a crisis. Each individual team needs their own list tailored for their own circumstances.

Once a crisis hits, information teams are met with a tsunami of tasks. Only good preparation will determine whether your team has a life-buoy handy.

↘ **For more information, go to www.redbluffspatial.com.au**