

# Helping in a disaster

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# **Destruction in downtown Port-au-Prince after this year's Haiti earthquake.**

- Photograph: Carlos Barria/Reuters



# Mobile technology takes centre stage in disaster relief

- Rescue missions after the Sri Lankan tsunami and Haitian earthquake were boosted by using mobile phone networks, satellites and other computer software
  - Kate Bulkley The Guardian, Friday 18 June 2010 11.07 BST

## Layer 5 – 8 and beyond

- Assuming the network is operational, what can we do with it?
  - Christchurch Earthquake Map
    - <http://eq.org.nz/>
  - Student Volunteer Army
    - <http://www.facebook.com/StudentVolunteerArmy>
  - Trade Me
    - <http://www.trademe.co.nz/christchurch-earthquake-support>

# Christchurch recovery map

- Ushahidi instance <http://www.ushahidi.com/>
- A system that can take text messages and information from the community, outside of normal Civil Defence perspectives.
- The information can be used by multiple websites (maps were embedded in Herald and Stuff, data fed into Google Crisis Response page & [eqviewer.co.nz](http://eqviewer.co.nz)).

# Ushahidi

- "Ushahidi", which means "testimony" in Swahili, was a website that was initially developed to map reports of violence in Kenya after the post-election fallout at the beginning of 2008.
- Used EQ systems for Haiti, Christchurch, Japan
- Open source software
  - <http://ushahidi.com/>

## Who used it?

- Over 100,000 people used the system. Many people without Internet or electricity benefited because friends and family had access or had a smartphone.
- Info on what was happening on the street reassures people
- Some important people helped behind the scenes.
- Short code, common across all telcos, was enabled in a couple of hours.

# Example sites

- Syria
- <http://syrianspring.crowdmap.com/>
- Samoa
- <http://alerts.crowdmap.com/>



# How was it built?

- Used open source code and improved it. Usability improvements to ushahidi were taken up globally.
- Catalyst donated staff time. Very useful in project management and assistance.
- 300,000 messages in first week.

# Crisis Commons

- You can volunteer for any event around the world.  
They helped by handholding in the first few hours to get the site going here.
- Locally over 300 people were trained, 140 provided edits, a dozen were core.
- LINZ and DIA helped.
- No logos, so organisations found it easier to help.  
Didn't look like civil defence, just critical information.
- Enthusiastic people without open source experience found it hard to help.

# Problems

- Had a high barrier to entry in terms of people had to be self-driven and motivated to help.
- Work was able to be parallelised - lots of small discrete stuff.
- Copyright licencing using Creative Commons
  - Christchurch Council saw the effort as a distraction, unknown
  - Question marks about their use of our material, breaching the licence

# Problems...

- Delay in launching site as relationships established
- Used official sources where possible
- Marketing of services - ok for a cafe to tell they are open.
- People didn't necessarily know they were contributing to the site, e.g. tweeting.

# TradeMe

- Trade Me is an online auction site – think of eBay
  - User base is 2.8 million
  - NZ population is 4.5 million
- On the Trade Me message boards, saw daily messages posted leap from 25000 to 72000 after the quake struck
- People will talk, want info, offer help

# What did TradeMe do?

- TradeMe built a sub-site overnight, spoke to Govt and local govt agencies before going live.
- Totally free, totally available to all members (2.8m accounts)
- Categories: Volunteer labour, accommodation, lost & found pets, transport, business premises, other

# Statistics

- Heavy traffic: 11000 listings, 4.9m page impressions and 267,000 unique browsers in March (181,000 in the last week of February)
- This provided a tangible and convenient way for people from outside Christchurch to help.
- Also incorporated other relevant sources of information on the landing page e.g. EQC links, Google People Finder, EQ.org.nz map, etc.
- No need for these resources to be official - just applied common sense and picked the useful ones

# Student Volunteer Army

- In September got thousands of students but authorities were unable to take them seriously
- Social media - Facebook was the biggest, most important tool, followed by: Smartphones, GeoOps, Gmail and Twitter. In particular, modified GeoOps to deal with the thousands of requests coming in.
  - Facebook more interactive than twitter - and no limit to number of characters in a message.



# Use volunteers effectively

- Students need leaders at all levels.
  - They work well in large teams.
  - Food is great motivator.
- Students don't like being taken advantage of.
- Issues with Council - lack of trust.
- Problems with Council help line.
- SVA focused on silt removal while Council used them as a dumping ground for all sorts of requests.

# Building prior relationships

- e.g. Foo camp list, was very useful to get things going immediately.
- Civil Defence hard to work with
- Mostly ignored SVA.
- Fulton Hogan worked well with SVA
- Template being produced for other universities in New Zealand to use and adapt

# Stories and Experiences from Chch

- Andy to tag Dean
- Experiences from people on the ground in Chch

# Power

- 2 hours of power
- Nothing for 3 weeks

# Fuel

- Fuel isn't so easy to get, even if the ship is here

# Buildings

- Sometimes buildings no longer exist.
- Sometimes buildings are not structurally sound
- Sometimes buildings are structurally sound, but you can't gain access to them because they are in a cordoned off area.
- Sometimes the buildings are structurally sound and have been cleared for access, but the fibre pit you need to get into in front of the building is covered in squashed cars/pieces of building/full of liquifaction.

# Communication about building situation

- Massive breakdown in communication over whether buildings are
  - OK
  - Condemned
  - Have burst water pipes
  - Have their generator inside or outside
  - Have their generator fuel tank inside or outside
  - Whether the generator can be refuelled
  - When exactly the genny will run out of juice

# Are you important?

- Do you qualify to be in the first round of rationing?
- Fuel
- Power restoration
- Access to restricted zones
- etc



# Have we gone too far with modernisation?

- Old telecom suburban exchanges were like bunkers
- self contained power plants
- those survived
  
- Street side cabinets... not so much.

# Stresses on People

- People will step up
- Massive responsibility & massive workload
- If you don't have this - you're stuffed
- Make sure that you rotate people out when you get a chance

# Walk out the room now and never come back

- Get up,
- Leave your computer right now.
- That will be the last you ever see of it.
  
- Problems?
  
- Huge issue for small business

# Network Design

- If they only just work on the best of days...
- Then they won't work at all on the worst of days.
- Make sure that you're not running your margins so close that the wheels are going to fall off at the first bump.

# Keep it Simple

- The simpler a network was, the more likely it was to stay around.

# **Make systems simple, then they survive**

- Can your receptionist/cleaner update pages on your external website?
- Could they read a simple document and learn?

# Change Freeze

- Other carriers having full change freezes on anything touching Christchurch which made arranging alternative paths for various services difficult.

# Contractors and On Site access

- Contractors on the ground suddenly unable to do whatever it was they were going to because of their personal circumstances.
- Time restrictions on access to certain areas of the city, meaning service-impacting physical changes need to be done during the day.
- Limitations on which individuals can access certain areas of the city, meaning a reduction in the number of contractors (ie, individuals) able to perform a given task.



# CHCH – What did work

- Individuals in other organisations helping re-establish connectivity to customers
- Know your neighbours in the same building. They can tell you things
- Guys on the ground going to extraordinary lengths/working stupid hours to join the pieces back together, despite them now being homeless.
- Some carriers able to re-establish interconnect points in non-Christchurch areas.
- First-hand information from people on the ground, rather than hearsay.
- People managing to get some juice into the genny gas tank to give more time to migrate services away from condemned buildings.

# Develop some resistance to disasters

- You get more resistance to disaster the more disasters that you survive.
- You can generate some yourself to bootstrap this process.
- MFAT examples.