Responding to the Christchurch Earthquakes

Jithen (J) Singh, senior technical evangelist, Eagle Technology Group Ltd., shares how they are working with other agencies to be better prepared to share information and respond more quickly.

http://video.esri.com/watch/212/responding-to-the-christchurch-earthquakes

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Video Transcription

00:01 I wanted to start off by giving you a little bit of background to this.

00:03 On the 4th of September, 2010, around 4:30 a.m., Christchurch awoke to a 7.1 magnitude earthquake.

00:12 A couple hours later, we were on the phone to our users down there offering as much assistance as we can.

00:18 This wasn't about business, but it was about survival and about doing the right thing for our users.

00:24 A couple hours later, we worked with our users to get them on board with a number of things.

00:33 And then two weeks ago, unfortunately, like John mentioned, a 6.3 magnitude aftershock rocked Christchurch.

00:41 And this has caused massive damage through most of the region.

00:47 Due to this, a national state of emergency's been declared in the country.

00:52 Unfortunately, unlike the previous earthquake, this has caused a number of fatalities as well.

00:56 But it's great to know that there is a number of international search and rescue teams...

01:00 ...working on the ground in Christchurch to help in the rescue and recovery effort.

01:05 As you can see from some of the facts on the screen, it is going to be a little while before New Zealand is back...

01:10 ...or at least Christchurch is back up to it's normal state.

01:14 So I was wanting to share with you some of the ideas in the areas that we've been working in.

01:19 I wanted to start off with data.

01:21 I emphasize this quite heavily because it was one of the most important parts...

01:25 ...and also the hardest parts for us, working through this earthquake response.

01:30 We were dealing with around 10 different agencies, four different GIS systems...

01:34 ...and formats of PDFs, CSVs, Excel documents, all coming in.

01:39 In the initial earthquake, ArcGIS 10, plus the Data Interoperability extension, allowed us to work with this data.

01:45 But it was more than this. It was about being smart and using the tools in a way that we can automate certain things.

01:52 ModelBuilder helped us through this process.

01:55 But we've taken it a step further now. We're now using Python scripting to automate it totally.

02:00 Data's being fed into landing folders...

02:02 ...and Python scripts are being automatically run to update data that go up into the public viewers.

02:08 ArcGIS 10, plus a templated structure, has allowed us to enable editing.

02:13 We really wanted to do this in the initial earthquake, but we weren't able to.

02:17 Right now, we have securely enabled editing environments...

02:21 ...where a number of the agencies are feeding information and updating statuses of roads...

02:26 ...and other sort of structural incidents, et cetera, all through...live to the public.

02:30 This has allowed us to focus more on the sites, rather than worry about the data.

02:36 Talking a little bit about infrastructure.

02:38 We've been doing a lot of work in cloud computing in New Zealand in the last six months...

02:42 ...and it's been a really interesting area as cloud computing grows.

02:46 But one of the things we found is that we haven't done enough to be prepared for something like this.

02:52 It's not just about being able to throw up an ArcGIS Server in the cloud and saying, we know, We've got it running.

02:57 It's about having a system in place, having your network in the cloud, having databases in the cloud...

03:02 ...authentication servers ready to go, when something like this strikes.

03:07 And we're getting there. We're working on that.

03:09 We know it's a mistake and we're working on it to make that possible.

03:15 I wanted to touch a little bit on the viewers that we had.

03:17 In the initial earthquake, we launched a Flex-based viewer, which was used as sort of a incident viewer.

03:23 In the current earthquake response, we've changed this to a JavaScript-style viewer.

03:28 This viewer is being used to showcase a lot of the operational-based information...

03:32 ...whether that be where the location of water tankers are, portaloos, et cetera.

03:39 We've also been able to bring in social media, and I'll talk about that in a second...

03:42 ...and rope in a lot of those feeds from a number of sources, as well as open this up to a number of secure sites.

03:50 The bus routing system in Christchurch has just got off the ground and is now live...

03:54 ...showing the public how to find bus route information.

03:57 And as I mentioned, secure access for agencies to view postearthquake imagery...

04:02 ...and other high-resolution images as they come out of the ground.

04:08 Mobile and the lack of it. And I mention this because we didn't do enough in this area.

04:13 In the first earthquake, it was too late by the time we actually got mobile up and running.

04:21 In the current earthquake, it's now been about two weeks, and as far as I'm aware, they're still not using mobile in the field.

04:27 And for us, it's about educating our users and getting them better prepared...

04:31 ...to utilize mobile technology when an event like this strikes.

04:35 We're working with them to try and make this possible right now.

04:39 From a social media perspective, I want to emphasize the fact on how much social media has played in this Christchurch earthquake.

04:46 For the first three days at least, a lot of the information coming from the ground was actually being fed through social media channels.

04:52 You saw on that screen shot, we were able to bring a lot of those together...

04:55 ...a lot of the Ushahidi feeds from the crowdsourcing perspective, Facebook, Twitter, YouTube...

05:01 ...bring it all into one view where the public can actually see information straightaway.

05:06 It's been a great working relation...we formed a great working relationship with many of our users on the ground.

05:11 They've been our contacts there and we've been their contacts with technology.

05:15 But in all of this, there's a new definition to the term "preparedness."

05:20 For me, it's about understanding...understanding technology ahead of time is key.

05:24 Having the tools and the skills in place and having the people to support a disaster like this is vital.

05:31 It’s been a touching experience, not being on the ground in Christchurch was, and still is, quite a hard, is quite hard...

05:38 ...but there’s been a great desire to help from the GIS community.

05:42 I’m sad to have left New Zealand to be here attending the conference...

05:46 ...but what we have put in place right now with some of the automated ways of working is great...

05:50 ...and it is working and that’s the great thing to know.

05:54 Charting a course together over the last six months, we have learned a lot...

05:58 ...and much of which is being used on the ground right now in Christchurch.

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