

Random Hacks Result in Himalayan Disaster Response Web Portal

Oakland, CA; September 25, 2011:-

“Imagine that a 8.0 magnitude has just hit the heart of the capital of Nepal – Kathmandu. There is utter chaos, fires are raging and there is a communications black out,” says Suresh Ojha, into the phone on a conference call line created to respond to this crisis simulation situation.

There is silence on the line and it’s clear that the participants of this mock crisis response exercise are unsure where to start.

“This is exactly the situation, we’re hoping to avoid,” says Ojha, “in the case of an actual crisis.” He then proceeds to rattle off a list of things that could be done in case of a real emergency, like knowing a hotline that can be called or a portal that can be accessed trusted to carry accurate information about what’s happening on the ground in Nepal.

Ojha along with Nisha Thapa and Bijay Niraula, led the Disaster Preparedness committee of the Nepali diaspora organization Computer Association of Nepal-USA (CAN-USA) also known as Global Nepal Professional Network (GNPN) in today’s effort. The town hall was jointly organized by the American Society of Nepalese Engineers (ASNEng), the America Nepal Medical Foundation (ANMF) and GNPN.

Thapa who is a nurse practitioner and active community organizer was motivated by the 6.9 magnitude earthquake that hit Eastern Nepal last week to push CAN-USA/ GNPN to host a “Hackathon for Nepal” to create a web portal that will function as a go to place for anyone needing information on the situation in Nepal.

“I’ve been working on disaster preparedness in Nepal for a couple of years now and when the earthquake hit, I really did not know where to turn,” Thapa said. “This is why we need to move fast, no one knows when the next big quake will hit and we can’t waste any more time not knowing.”

The Hackathon took place physically in Oakland California at the Community Health for Asian Americans (CHAA) offices all day Sunday, September 25, 2011, less than a week after the quake and by the end of the day, the Hackathon engineers had completed the “Himalayan Disaster Response Portal”’s basic structure and key elements.

The portal team led by Niraula tapped into the rich technical talents of the Nepali diaspora community in North America with volunteers from Canada and across the US.

A team of about ten software engineers mostly from the Nepali diaspora researched and sourced other crisis response portals to inform the creation of the Himalayan web portal.

Software engineers Nabin Acharya and Kumar Pandey worked on the overall design and structure of the portal while Santosh Aryal, Puran Singh and Leon Smith volunteered to build the portal that really brought the site to life. Two of the key software engineers on site Sunday, Singh and Aryal revealed the basic web portal at the end of the day Sunday.

“We sourced elements from portals like Ushahidi which was used in Haiti because it has built in tools such as reporting and mapping from the immediate quake zone. But we customized it for our needs by integrating features like People Finder and the Donate from Google App engine.”

The list of important information for the portal is lengthy and will need to be added in time, but the portal to be launched publicly as the “Himalayan Disaster Response Portal” today will already have key categories in place such as a medical facilities and needs report, volunteer need status, and food supply status.

Pandey who worked on the portal explains that the true value of the site will start to become clearer once there are actual members on the ground in Nepal that can populate the portal with trusted information that is usable otherwise known as crowdsourcing.

To demonstrate the idea of crowdsourcing, Aryal explained how someone on the ground in Nepal post quake with a mobile device could upload his location and tag it either as safe or unsafe for example.

Acharya explains that other key members will need to be contacted and tasked with uploading much of the information in Nepal but potentially entities like the Army, the police, medical organizations and others who will have data on safe sites around the city, health facilities and what their capacities are, which buildings currently need immediate attention for structural retrofitting, and other critical information.

In conjunction with the Hackathon, Ojha was moderating several consecutive town hall style discussions in a separate room to brainstorm around a range of topics such as medical needs, media relations and telecommunications infrastructure and needs post earthquake. Participants of the online and in person town hall discussions were from all over the US and Canada.

After the initial silence in response to Ojha’s post 8.0 magnitude earthquake scenario, several issues started to surface. One of questions that kept coming up in all conversations during the town hall discussions was who are the points of contact on the ground in Nepal and will they have the capacity to communicate with the outside world.

Sanjeev Adhikari who called in from Kentucky said , “This is the first I’ve heard of the web portal for disaster preparedness, however my question is would we be able to have access to key people in Nepal so we can get systematic information on what’s happening there? “

The conversations seemed to gravitate naturally towards Nepal’s readiness to deal with the situation as what happens on the ground will most likely affect the kind of information any portal will be able to have.

Ojha explained that CAN-USA has established a relationship with NSET, the National Society for Earthquake Technology and others in Nepal and are working with them to provide the necessary data for the portal where the Nepali Diaspora community can then access the information and make informed decisions on how to help.

But after Ojha clarified that the discussions were meant to focus on how the Nepali diaspora community can react post earthquake to assist Nepal and what resources they would need to do that, participants started to chime in with many ideas.

A member of ASNEngr, Mr. Acharya, commented that the web portal must be stress tested in order to make certain that it is available during an actual emergency.

Dr. Sunil Sharma, president of ANMF and many senior members of the ANMF attended the medical panel. During the medical response conversations, Dr. Archana Kayastha from Mountain View, California suggested, “We must have on hand a list of medical supplies we will readily have access to and a team of medical professionals, physicians, nurses and others who can and will be able to leave as soon as necessary.” Dr. Mark Hauswald of ANMF replied that following an 8.0 quake in Kathmandu physicians may not be able to enter the capital for nearly a week.

Another participant, Smriti Gurung a Registered Nurse in Oakland, California with experience in Haiti suggested, “It would be great to have doctors in Nepal telling folks coming in what type of specialties they needed, maybe also setting up contact practitioners on the ground.”

And someone else added that once there is a list of medical volunteers or any volunteers, they will need to get vaccinated so they can actually go into a country like Nepal on a moment’s notice.

Rob Rowlands who runs a school and health project in the Kanchenjunga region of Nepal and was personally impacted by the recent quake suggested tooling hospitals with a way to communicate their needs through the portal, “We could set up something simple like a webcam with a whiteboard where hospitals can write down what their needs are for the portal viewers to see.”

As the discussions wound down, the organizing members of CAN-USA started to digest and absorb much of the discussions they'd been having during the day.

Niraula, the technical lead for the web portal added, "All of the information requests made during the town hall as well as real time crowdsourcing features can easily be accommodated by the portal. When this earthquake happens the Nepali diaspora can instantly communicate and organize amongst themselves and with folks in Nepal."

Bineet Sharma, founding President of CAN-USA said, "I think that we have already started the ball rolling with the web portal and once we start to work on the various next steps of partnering with organizations in Nepal and globally to populate the portal with information, the word will get out to the wider community."

Another key aspect of the discussions centered around forecasting what the telecommunications scenario on the ground would look like post earthquake and the likelihood of not having any internet or cell phone connectivity became very probable if not a fore gone conclusion.

'If there were to be a complete communications black out then I believe that amateur radio or ham radio, would be a real essential tool for folks to have on the ground in Nepal," Ojha said. He and Rowlands have been collaborating on a project to figure out the specifications of a ham radio model with Satish Kharel and NSET in Nepal for sometime.

Ojha summed up the sentiments of the organizers in the room as ideas started to bounce back and forth around the best ways for the group to move forward, "Global Nepalis have a passionate interest in assisting Nepal prepare for this disaster. "

Nisha Thapa who pushed for the Hackathon started to push for the next action, "Once we have those specifications, we should definitely be able to raise the funds here to purchase and ship these radios to folks back home in Nepal, " said Thapa, "The web portal is a priority, that's now been created and we need to move on to the next action item and I think we can raise awareness and funds for the ham radio without much difficulty."

Everyone in the room looked exhausted from the day's efforts but the mood was optimistic, the community had come together and volunteered their skills to create a vital tool.

"This portal is presently in its initial prototype form but all of the most difficult fundamentals are complete but there's still work to be done to make this portal operational. Our dedicated team of programmers will continue to work on the portal to make it available to the public soon", said Niraula.

Although the portal is not completely done, the organizers are keen for the public to check it out at www.HimalayanDisasterResponse.org

“As soon as we’re ready, we’d like to ask people to start adding content or crowd sourcing material such as information on health center locations for example and secondly we will need volunteer programmers to build and refine what we have and to add new features,” Niraula said.

Even with more work to be done, the CAN-USA team is quite excited by what they were able to deliver in such a short period of time.

“With no funding and in less than a week we delivered a prototype disaster response web portal and successfully mobilized Nepalis throughout the United States and Canada. We look forward to working with people in Nepal on disaster preparedness issues,” Ojha said.

Word count 1,749

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