Social networking ignites traditional media in a major HADR exercise

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Introduction

Fig. 1: In the event of an actual transportation catastrophe like those that occurred during California's Northridge earthquake of 1994, social media can influence the rhythm, velocity, and direction of response and its potential ripple effects.

Fig. 2: Similarly, vectors applied on top of the Minnesota Bridge collapse of 2007 demonstrate the magnitude and direction of energy, i.e., communication flow as velocity, which, when utilized properly, has the potential to save lives.[1]

Exercise 24 (X24) was a major Humanitarian Assistance Disaster Relief (HADR) event (September 24-25, 2010) that engaged 79 countries and more than 12,700 people in a simulated, complex emergency of earthquakes, fires, tsunami, and disease via virtual and real collaboration simulating a real catastrophe much like others that have occurred, e.g., 1994's Northridge, California earthquake, and 2007's Minnesota bridge collapse.

The exercise tested how well organizations can quickly and efficiently tap into resources and expertise worldwide by using cloud computing, social media, and internet collaboration tools as they are dramatically being utilized in current disasters. The specific problem addressed how to effectively ignite social media (Facebook, Twitter, and many others) for a disaster as well as for a disaster exercise.

[1] Vectors denote magnitude and direction, as velocity.

Materials & Methods

Fig. 3: Integration and collaboration of social and traditional media can broaden and enrich vital communication during crises, as evidenced above by CNN in the role of the igniter that made X24 a viral social media event. Photo: Fredricka Whitfield CNN.

Fig. 4: Above map demonstrates the unprecedented magnitude of social media on the world stage

Fig. 5: San Diego State University's Visualization Laboratory (VIZ Lab) served as the fusion center into which bi-directional data flowed during Exercise 24.

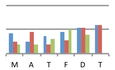
Starting nearly from scratch as a normal disaster would, the exercise tested ways to notify people worldwide (Fig. 4) in a way that engages them in social networking relationships that assist HADR events. Traditional media such as TV, radio, and online newspapers was tested as a means to rapidly spread the word about a simulated disaster. In so doing, X24 tested how collaboration occurs between existing relationships and organizations, particularly those dedicated to disaster response. X24 also tested whether creating a "disaster buzz" motivates people to initiate collaboration when ignited by traditional media (Fig. 3) broadcasting a message out to millions to hundreds of millions of people.

Results

X24 coalesced over 40 traditional media organizations, including outlets like CNN International who broadcast information about the event worldwide, and which served as the "igniter" that motivated people to link to the event via Twitter, Facebook, USTREAM, Skype, and other social tools of interaction and collaboration.

By the numbers, X24 created thousands of unique online conversations (posts) before, during, and after the event (September 23-25, 2010):

4,678 (97.6%) on Twitter
82 (1.7%) on Facebook
20 (0.4%) on blogs
11 (0.2%) traditional media



X24 tested effectively in enabling organizers to listen to, understand, and factor public communications into decision-making and speed response. The method successfully:

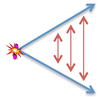
(M)onitored millions of internet sites 24/7
(A)ggregated results.
(T)riaged posts and redirected to appropriate organizations.
(F)iltered the noise from the relevant conversations.
(D)elivered results in a web-based Executive Dashboard Report near real-time.
(T)ranslated from and into multiple languages.

Testing found that people were willing to help exercise and promote detailed information to their followers, i.e., personal and/or organizational relationships in the Twitter community.

Content type during X24:

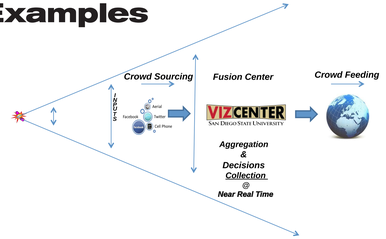
18% - Actionable Posts
77% - Informative/Warning posts
5% - Response from organizations

Without the aid of traditional media on cloud computing, social media, and internet collaboration tools, the ability to effectively tap resources and expertise to save lives and protect complex systems like transportation in HADR scenarios is reduced exponentially.



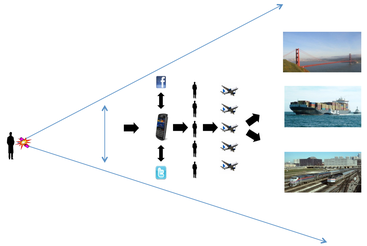
With the aid of traditional media serving as the igniter; energy, i.e., dataflow, increases exponentially, which then helps organizations to more quickly and efficiently tap resources and expertise in responding to HADR scenarios.

Examples



The utilization of near real-time tools represents a remarkable approach in ascertaining data from the field (GeoTwiter, GeoChat, and Google Latitude), especially utilizing smart phone devices, by transmitting bi-directional data to a fusion center where inputs can be aggregated, visualized, and used to impact situational awareness for decision support.

Such media ignited crowd-sourcing profoundly contributes to decision support and field response mechanisms for near real-time inputs, visualization, and situation awareness to command centers and actual field responders (on land, in air, and on water), by more effectively engaging global collaborators.



Social Media has transformed nontraditional communications nodes into global outreach data-flows using as little as 140 characters, or a snapshot by a cell phone. Yet, there are those who still deny its viability by ignoring its existence and/or distrusting its reliability. Nonetheless, the fact remains, social media represents the new frontier in how people create and transmit data-flow during man-made and natural disasters, as well as to coalesce around a cause célèbre such as the recent uprisings in the Middle East. However, what's more ominous and foreboding is social media's potential impact in the hands of terrorists as illustrated above. Although cell phones and emails were used to orchestrate 9/11, it is reasonable to interpolate the use of social media to attack complex systems like transportation, which begs a larger question, has DHS conceded the advantage of social media to the enemy?

Conclusion

Integration and collaboration of social and traditional media broadens vital communications channels during crises.

Social media, e.g., Twitter, Facebook, and Google, has forever altered speed and response vectors in the HADR paradigm.

Social media outlets work as standalone entities as well as a complementary part of an overall tactical HADR strategy.

Cloud computing as done by Twitter, Facebook, and Google enables near real time responses.

Social media offers ways to develop tools/protocols to appropriately manipulate near real-time energy vectors.

The use of igniters enable effective manipulation of both the HADR and social media paradigms, and beyond.

Literature Cited

Kathleen Hessert, Social Media Transforms Disaster Relief Efforts, www.buzzmgr.com/x24/, Buzz Manager, Inc., 2010

Alexander Choi, Vector Theory (E3), http://129.3.20.41/eps/mic/papers/0511/0511008.pdf, Creative Commons, 2006

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For Further Information

More information on Exercise 24 and Exercise 24 Europe can be obtained at http://vizcenter.net, or by contacting eric.frost@sdsu.edu. Please contact jwdovine@clap.name or eric.frost@sdsu.edu for more information on Social Media Security Policy (SMSP).