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Social Networking Experiment Shows Effects of Mass Mobilization

By Stephen Kaufman | Staff Writer | 20 January 2010



DARPA randomly placed 10 balloons across the continental United States and challenged social networking teams to locate them.

Washington — Many people who have a wide audience in social networks such as Twitter and Facebook probably have speculated about the true power of online information, wondering what its potential can be, how fast information can travel, and how quickly large groups of people can be mobilized in support of a cause.

There have been prominent examples of success, such as the [One Million Voices Against the FARC](#) campaign that led to protests around the world against the Colombian terrorist group in February 2008, and various commercial-sponsored treasure hunts which, for example, guided participants from their computers to random phone booths to await calls that would give them clues for completing a puzzle for a prize.

The [Defense Advanced Research Projects Agency](#) (DARPA), which in 1969 created the technical core of what would become the Internet, decided to put social networking to the test in a December 5 scientific experiment. The contest pitted

teams against each other to see which would be the first to mobilize thousands of people to help pinpoint all the locations of 10 red balloons spread randomly across the vast continental United States. The first to find all 10 would receive a \$40,000 prize.

“We really didn’t know what to expect,” DARPA’s Peter Lee told *America.gov*. Given the relatively small size of the balloons and large amount of land to cover, “it seemed impossibly difficult,” he said. As director of the Transformational Convergence Technology Office, Lee was in charge of the network challenge.

He said he was very surprised that the challenge was solved in just under nine hours. DARPA had actually allowed up to five days for the competition to run its course.

The winning team, from the Massachusetts Institute of Technology (MIT), succeeded by employing a unique online incentive structure through social network advertising that offered to pay not only those who found the balloons, but also those who had recruited them to the campaign.

As MIT team leader Riley Crane explained December 11 on National Public Radio (NPR), “we made it effortless for people to participate, and in addition to the monetary rewards, people could really watch their direct impact at influencing others to join.”

Lee said that approach encouraged anyone in the world to participate since they could notify friends and family in the United States to be on the lookout or to investigate reports of balloon sightings. He said about 250 non-American teams participated in the contest, including teams from India, Iran, Sudan, Russia and various countries from South America and Asia. Those teams were able to mobilize their expatriate communities inside the United States for help, he said.

The relatively new phenomenon of strangers being connected through social networking brings a new aspect to global competition. “The principle here at work is this concept that ... we think less and less about groups in adversarial situations being defined by physical borders, but instead by ... social networks,” Lee said.

DARPA’s experiment tested not only the speed and effectiveness of social networking. It also added a challenging twist by allowing the teams to covertly spread misinformation to each other in hopes of producing reports of false sightings or forcing them to spend precious time chasing after them.

There were approximately 200 fake balloon reports and “really great fake photos” made using photo-editing software that were posted online as “proof,” Lee said.

The top teams were able to quickly locate people in the vicinity of reported sightings to verify the validity of the reports. Lee said one of Google Corporation’s teams used the company’s mapping resources to locate nearby businesses or residences, called them up, and asked them to look out their windows or step outside to verify claimed sightings.

Lee also acknowledged that DARPA’s invitation for teams to put their links on its [Web site](#) had resulted in the site getting hacked about a week before the competition had started. Some teams, he said, planted viruses that would cause infected

computers to be redirected to a spoof Web site where their reports of balloon sightings would be revealed to competitors, rather than to DARPA.

“At first you think ‘this is bad,’ and then you think ‘all is fair in war,’ and then finally you think ‘it would make for a cleaner competition if we actively fix that,’ Lee said, so DARPA ultimately decided to remove the spoof sites.

In addition, he said some teams “found each other and started to enter into negotiations to exchange information.” This created another interesting dynamic in which the competitors were negotiating often without understanding the value of their reports, given the rampant misinformation. “It was pretty intense,” Lee said.

So what does this competition mean for real-world scenarios? In the short term, Lee said, disaster response comes to mind, where mass mobilization can be used to quickly locate individuals with certain knowledge, expertise or access to specialized equipment. The person or item sought need not be online. They could be found by merely locating someone with a way to reach them.

MIT’s Riley Crane told NPR he could also see this type of social networking being used to rally a large number of people for other altruistic goals, such as finding missing children.

But Lee said the experiment also revealed that social networking “has just barely penetrated our society”; there are many widespread groups across the United States, such as the Boy Scouts, Girl Scouts and other associations beyond the “net savvy,” that could have done well, but have little online penetration. “There is tremendous room for growth in social media,” he concluded.

Lee said the first 40 years since DARPA’s experiments in computer networking gave birth to the Internet have succeeded in laying its infrastructure, making it spread and increasing its accessibility.

“The next 40 years will continue to do that but I think we’ll also really see this social element.” DARPA, he said, “is taking that really seriously.”

KEYWORDS: [Internet](#), [social networking](#), [DARPA](#), [misinformation](#), [Peter Lee](#), [MIT](#), [freedom of information](#)

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