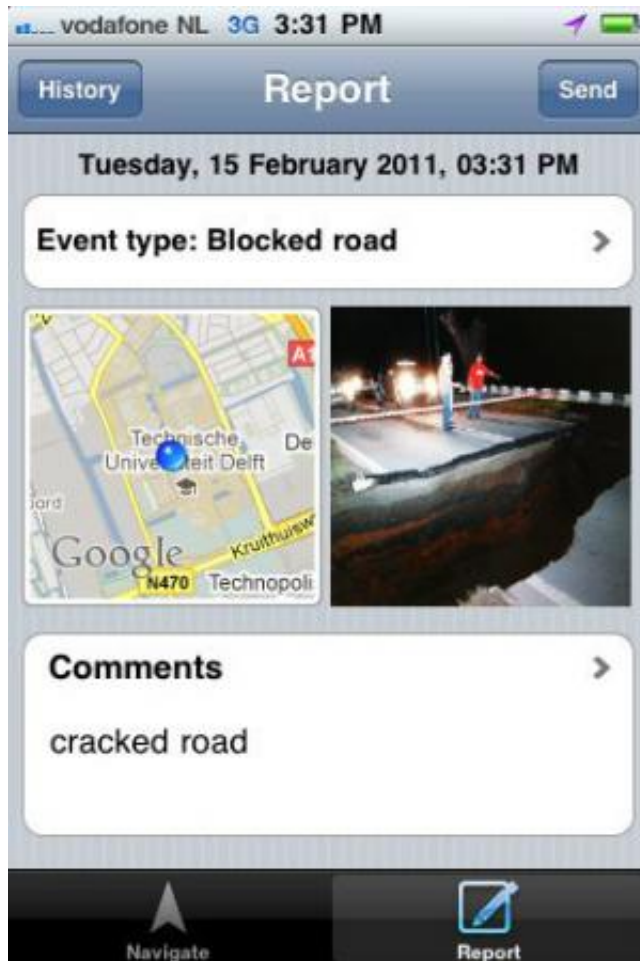


People in disaster areas are not helpless victims but useful informants

February 8 2013



Use people in disaster areas as sources of information instead of seeing them solely as helpless victims. That is better for all parties involved.

This is the claim made by Lucy Gunawan, who received her doctorate for research on this subject at TU Delft on February 4.

Field sensors

Lucy Gunawan's research focuses on the question of how people who have been affected by a catastrophe can be guided to a safe location making use of their own resourcefulness and the available [mobile technology](#). In contrast to traditional centralised disaster-management systems, Gunawan proposes using a decentralised system. This will enable people in the disaster area to guide themselves to a safe environment while simultaneously acting as 'field [sensors](#)' for sharing information about the catastrophic event.

Disaster sociology

Gunawan: "Literature in the area of disaster sociology indicates that people in [disaster areas](#) are by no means always helpless victims. They are mostly capable people who act rationally and proactively in a united and helpful way. Even in the time of crisis, they are able to deal creatively with all available technologies."

"These people, who are [eyewitnesses](#) and spread throughout the disaster area, form the largest group in the disaster area. This means that these people form a great potential resource for collecting first-hand information about the catastrophic event."



Navigation and map system

Firstly, a good navigation system that provides sufficient and flexible support is crucial in these situations, despite the changing environment in the disaster area. Gunawan's first study was a [field experiment](#) with a mobile [navigation system](#) that only indicated the direction of the destination and if necessary provided elementary navigational instructions. The results demonstrate that a simple navigational instruction in the form of an arrow is sufficient in order to guide people to a specific destination. Secondly, the information provided by the

various people has to be clustered in a reliable way in a collective map. Gunawan demonstrated that a good map is created by allowing individual contributions that indicate reliability to be entered simply and consistently.

Simulated disaster

One of the things Gunawan did as part of her research was to carry out an extensive, controlled field study that simulated a disaster in Delft. A group of participants played various roles (the affected population and operators) simultaneously at various locations (in the field and in the information centre), while using various aids (mobile phone, desktop computer) and applications.

"The aim of this study was to compare the proposed system with a traditional centralised system. The results of this study demonstrate that the proposed system was superior to the traditional system in safely guiding the stricken population to the destination, helping the operators to realise a better awareness of the situation and lowering the work pressure of the operators," says Gunawan.

"My research could form the basis for the next generation of disaster-management systems.

Provided by Delft University of Technology

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