Science, Technology, and Society

tsunami technology

By Wai Fong Chiang and Brian Lewis

AID

A child holding up an item donated to survivors from the tsunami disaster. *Photo Source:* MSNBC Jan 3, 2005 (Accessed Jan 28, 2005)

COMMUNICATIONS

A Buddhist monk taking pictures on his mobile phone as monks, nuns and lay Buddhists chanted prayers for the victims of the tsunami during a ceremony in Hong Kong. *Photo Source:* AP pic (Accessed Jan 19, 2005)

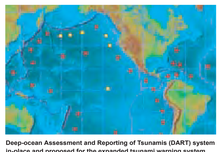
MODELING

A sample map created with DM Solutions Group mapping software application. *Photo Source:* DM Solutions (Created Jan 19, 2005)

PROJECTS

Juwita (left) clutching Rosmawati's hands after being reunited at a hospital. *Photo Source:* The Star Online (Accessed Jan 19, 2005)

WARNING SYSTEMS



Deep-ocean Assessment and Reporting of Tsunamis (DART) system in-place and proposed for the expanded tsunami warning system. *Photo Source:* NOAA (Accessed Jan 19, 2005)

New communication technologies are tools of unprecedented power for building community and relaying information, as was clearly shown in the recent tsunami disaster. Using the internet and radio signals, including email, cell phones, and instant messaging, individuals from many different cultures reached across tremendous geographical, cultural and linguistic divides to offer emotional and economic relief to thousands caught in a series of tragic and life shattering events. We have gathered together on the STS Tsunami and Technology site many inspiring examples of human creativity and innovation, as the global community reached a level of common, immediate focus and concern never possible before.

People from Europe, Asia, the Americas and elsewhere searched for loved ones through email, with hope-filled subject lines asking for response: “Are you there?” disseminated globally with a keystroke. Databases were created by volunteers and professionals who collected information on missing people and made it immediately accessible. 15 million US dollars were reportedly raised through text-messaging. Blogs in Chinese and many other languages called for volunteers. Experts organized and shared educational information, from “The Top 10 Myths about Disaster Relief” -- cautionary tales in a traditional, though now computer-mediated and disseminated form -- to the physics of earthquake-generated waves. Donors to the Tsunami Relief Project were granted special access to elite teleseminars, and 'webinars' generating new levels of knowledge and commitment. Satellite images of the tsunami available on the world wide web showed a macro view which made new relationships of scale and geography comprehensible with computer animations, and these in turn were interpreted through a variety of languages.

http://www.sts.utexas.edu/projects/tsunami/

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Aid

Aid comes in many forms. The availability and innovative use of technology is helpful in terms of creating search databases, sharing information, coordinating relief efforts, and seeking volunteers with special skills and expertise. More importantly, needs, requests, and feedback from local communities can be shared more widely and efficiently.

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Communication and Connectivity

As multi-modal communication involving speech, images, texts, and signals becomes more and more popular throughout the world, experts as well as individuals are responding to disaster and emergency situations with greater flexibility.

At the same time, when large scale disaster like the tsunami happens, we are reminded of the importance of establishing trans-regional connectivity for efficient communication to coordinate relief efforts as well as to offer personal communication to those affected.

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Modeling and Mapping

Models have a great impact on how we perceive, think, and learn about the world. The technology used to generate models has become very sophisticated, allowing us to gather and represent a tremendous amount of sophisticated data in ways that most closely match our perceptual capabilities. This ability has been very important in relation to the Asian tsunami disaster.

Creating these representations allows us to easily grasp concepts, create associations, recognize patterns, and extrapolate future possibilities. In some cases, models may help a layperson understand the magnitude of an event. In other cases, models help experts develop theories and communicate their findings. The power of this technology is to make the chaotic and complex seem elegant and simple.

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Projects

After the devastating tsunami disaster, many people in different parts of the world responded to help tsunami survivors. Artists, students and professionals display innovative efforts to tap into the knowledge and expertise of people connected through the internet to help those that are being displaced in the tsunami disaster.

Using internet as a tool to connect, we can touch each other across oceans and seas.

Juwita (left) clutching Rosmawati's hands after being reunited at a hospital. *Photo Source:* The Star Online (Accessed Jan 19, 2005)

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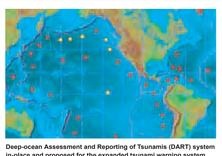

Deep-ocean Assessment and Reporting of Tsunamis (DART) system in-place and proposed for the expanded tsunami warning system.
Photo Source: NOAA (Accessed Jan 19, 2005)

Warning Systems

Immediately following the tsunami of 2004, people were searching for ways to prevent a similar disaster. It is human nature to attempt to improve our relationship with nature. Often, the first place we turn is towards technology.

With technology's ability to detect information beyond our normal capabilities, perform rapid calculations, and transmit information globally in an instant, we are able to predict and react to events that were previously considered unavoidable. But even with our increasing reliance on technology, it is often beneficial to remember that human instinct, experience and learning are powerful technologies in their own right.

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