

## Technology and 9/11

by Laura Forlano  
Wednesday, May 01, 2002 12:00 AM -

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The attacks on the World Trade Center succeeded in devastating New York's telecommunications infrastructure. However, a recent meeting of the City Council's subcommittee on technology brought to light the many ways in which technology was used to overcome the challenges of 9/11.

From Verizon and IBM to the Chief Medical Examiner's Office and the Housing Authority, technology played an important role in the rescue and emergency management efforts.

### Maps

With the [Department of Information Technology and Telecommunications](#) displaced from its offices and without access to computers, mapping experts had to recreate a map of the city. Luckily, Professor Sean Ahearn of Hunter College had a copy of the city's graphical information system (GIS) database. The Emergency Mapping and Data Center created in response to the attacks operated 24/7 for two months and handled 2,600 requests for information. In order to facilitate the use of these maps, the center produced a unique identification number for all city buildings. The mapping experience gained from the attack on the World Trade Center helped in the creation of a mobile mapping center to respond to the crash of American Airlines Flight 587 in Queens in November.

### Databases

The attacks made it painfully clear that city agencies do not possess a common database system. Thus, the families of victims had to fill out the same form many times over -- until IBM created a software program that allowed the data to be entered electronically and transmitted to different agencies. Databases also allowed the Chief Medical Examiner's Office to create automatic death certificates, scan and archive important documents, track collected DNA and match DNA with the victims. In addition, there is no online directory of emergency contact information for city employees. This made it difficult for city employees to work from home following the attacks.

### Global Positioning Systems

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Debris was tracked as it was removed from Ground Zero with the help of global positioning system (GPS) monitoring equipment. The system uses portable units to record information and transmit it wirelessly and securely to the Internet. The technology allowed the city to document the location and amount of debris efficiently and flexibly. It also allowed building inspectors quickly to inspect the damage to buildings surrounding the site of the World Trade Center.

## Telecommunications

While there has been a lot of talk about using technology to decrease redundancy and improve efficiency, this does not apply to telecommunications networks. This is because in order to avoid the serious damage which occurred as a result of 9/11, telecom companies recommend that redundancy be built into future city infrastructure. This includes greater network resiliency, more diversity of routes, and extra capacity. Competition between telecommunications providers is important in providing redundancy. In order to achieve this, the city will need to sign contracts with companies in addition to Verizon. However, building redundancy into telecom networks is very costly, wiping out the savings that new technology promises.

## Lessons

- The Internet survived when wired and wireless phones did not.
- Maps of the city are a vital resource in times of disaster.
- It is important to build redundancy into telecommunications networks.
- It is necessary to use decentralized databases or Internet-based data storage systems.
- City employees should be offered incentives and discounts on home computers.
- The city should give employees access to e-mail.
- Local, state and federal governments must share information across boundaries in order to avert public safety threats.

Of course, people -- government employees, the private sector, non-profit organizations and citizens -- were New York's most important resource following 9/11. Our city's techno-heroes found innovative ways to employ technology, and learned important lessons for future city tech policy.

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