

Using Telecommunications Collocation Providers for Disaster Recovery Support



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With some recent hurricane hits and near-misses, Leo A. Wrobel and Sharon M. Wrobel remind us about the advantages of using collocation services to get a disaster-struck facility back up and running

"We survived Ike!" These were some of the first words out of our friend Roger Scott's mouth on the morning of September 15, 2008. This was two days after Hurricane Ike had ravaged the city of Houston, Texas.

Actually, Roger, who is CEO of Cypress Telecommunications Corp. (d/b/a [Cytel](#)), did a little better than just survive—he prospered. Because he had thought in advance about disaster recovery planning, he also was in a position to help others who were less fortunate.

We live and work in Dallas, some 230 miles away from Houston. We were lucky in that Ike brought us very little wind and hardly any rain. The fact that this disaster happened so close to us, however, as a reminder that we hadn't written a hurricane article in a while. With storms like Ike and Gustav in recent memory, this is a good time for a refresher.

Let's start with Ike.

Sobering Statistics

Hurricane Ike scored a direct hit on the city of Houston, with the eye of the storm passing right over downtown Houston, the fourth largest metropolitan area in the U.S. Ike was a strong Category 2 storm packing winds of around 110 miles an hour when it made landfall near Galveston. At the time of this writing (September 18, 2008), Galveston is still a ghost town, having been largely evacuated prior to the storm. Even so, some experts estimate that approximately 60,000 people never left and are still in the Galveston area. This situation is creating enormous logistical issues because mobility is a problem and getting food, water, and other essentials into the area is extraordinarily difficult. Somewhat further inland, of the 4.5 million residents of Houston, roughly 90% lost power. (As of this writing, the total number of customers without power is 1.29 million, or 57% of total customers.)

Downtown Houston took a pounding, with thousands of blown-out windows in its many high rises. According to various news sources, the 75-story, 1,002-foot JPMorgan Chase tower alone spewed out not only glass, but insulation, furniture, and computers. At the time of this writing, the city of Houston still has a midnight to 6 a.m. curfew, and 60 people have been arrested to date for looting.

Cytel Survival

Cytel started out in the long distance business about 20 years ago, becoming a [competitive local exchange carrier](#) (CLEC) and later a disaster recovery provider. Cytel maintains a collocation facility at 2 Shell Plaza in Houston, right in the downtown area. The facility employs backup power, generators, and batteries. (Telecommunications equipment generally runs on -48 volt power, which many people forget until it's too late.)

Two power grids in Houston survived Hurricane Ike. One was the grid that served the downtown Medical Center area. The other served the Cytel collocation facility. Cytel attributes this survival largely to blind luck, but we think that a few more things may have been involved. Since both grids were in downtown areas, chances are that the distribution facilities would have been buried, which would have helped prevent destruction from hurricane-force winds. Flooding certainly can disrupt buried facilities, as illustrated during the Gustav and Katrina hurricanes in New Orleans, but storms

drains and other infrastructure for carrying away floodwater can be expected to be effective in a major downtown area. The issues of aerial cable and relative lack of storm drainage are more pronounced in the suburbs and outlying areas than downtown areas and, other than downtown, most of Houston was in the dark. (Not having been down there, we can't substantiate this theory personally, but it seems plausible.)

Another common problem occurred, even for our case study. Cytel employees went home at first, but came in promptly after determining that home and family were okay. Your recovery plan must take into account that after any widespread disaster, employees may not be available immediately. Other than downed trees and power lines, along with some roof damage, the storm damage from Ike wasn't bad enough to preclude Cytel employees from returning to the facility. The situation could have been different if injuries (or worse, fatalities) or extensive damage had occurred. Your plan must take these possibilities into account as well.

After returning to the facility, Cytel employees had all customers back online immediately and began working in the "spirit of service" mode that fortunately captures responders under adverse circumstances. For example, only 12 hours after the storm, they restored a large exchange server for a major company, in order to give that company email access. While this firm didn't have phone service at its normal location (due to lack of power), having email at least allowed for coordinating recovery efforts. Without the restoration of the email exchange server, this wouldn't have been possible.

The Advantages of Collocation

We've included this little story about Cytel in order to beat the drum again about the importance of 4Ci (command, control, communications, computers, and intelligence) in any disaster. If you cannot communicate with your responders, you cannot recover. Moreover, nobody ever knows which communications media will survive after a given event. One sound bet, therefore, is to cozy up to a good, reputable collocation provider.

A collocation ("collo" for short), sometimes called a "carrier hotel," is exactly what the name implies. These facilities are generally well-hardened; almost without exception, they allow carriers to connect with one another under both day-to-day and emergency operations. In a disaster, a collo can be indispensable. A typical collocation can house connections to one or more of the following kinds of technologies:

- Incumbent local exchange carriers (ILECs) such as AT&T or Verizon
- Major long-distance companies
- Competitive local exchange carriers (CLECs)
- Metropolitan area networks (MANs)
- Wireless providers
- Wireless Internet service providers (WISPs)
- Voice over IP (VoIP) carriers
- Satellite communication providers

Because it's difficult to say in advance which of these technologies will survive a widespread disaster such as a hurricane, it's prudent to position your organization in advance to take advantage of any of these technologies, depending on the circumstances. If connections to the ILEC go down, for example, connections could be purveyed quickly from a facilities-based CLEC or MAN. If everything goes to a hot place in a hand basket (so to speak), satellite and VoIP still might survive. In fact, after major disasters such as hurricanes, earthquakes, or tsunamis, satellite communication is often the only link left to a 21st century communications infrastructure.

By the same token, the Internet protocol (IP) dates back to a time when U.S. war planners envisioned scenarios in which every AT&T primary central office would be in the upper atmosphere in case of a nuclear attack. IP was designed so that packets of information could bypass these lost hubs and get through on the facilities that survived in outlying areas. This technology is equally useful today when major communications hubs are affected by disasters or even terrorism. Even better, the technology allows voice to be carried (hence the term voice over IP). When you sum it all up, it's possible to maintain 4Ci on both a data and voice basis by cobbling together surviving transport communication facilities, and then employing IP. There's no better place to do this than in a collo. (This is precisely how the military planners of the past envisioned it, except now civilian organizations demand the same capabilities!)

In the spirit of service, here's a quick hurricane checklist of considerations for what to expect after a large disaster affects you. Pay particular attention to the services that can be accessed in a collocation:

- Paging systems, including two-way paging, should work because they're satellite based. This includes

BlackBerry systems. Use them, and refer to them in your plan.

- Satellite communications shouldn't be affected. You should at least know where to connect to a satellite carrier (for example, in a collo) if you don't use this technology day to day. Of course, satellite is your primary technology (for instance, if your organization is a TV network), you must plan for backup in the event of a satellite outage.
- Wireless Internet service providers should be back on the air relatively quickly. Because there's no licensing requirement and the equipment is inexpensive and portable, WISPs often beat the phone companies in establishing Internet connectivity to affected areas. If you have access to the Internet, you have access to IP. If you have access to IP, you can restore 4Ci in terms of voice and data.
- Anything traversing a cable (aerial or buried) has a strong probability of being affected. Check into route diversity on cable facilities.
- If New Orleans and Houston are any indication, electric power may be lost and require some time to restore. Plan for backup power, including -48 volts for telephone and PBX equipment. Also plan for a reliable fuel supply for your generator. Remember, if you run out of diesel fuel, it takes electricity to pump more at a service station!
- Repair crews will have trouble getting into affected areas due to mobility and security concerns. Help may not be forthcoming immediately. Security often is inadequate in affected areas, so repair crews may be reluctant to service those areas.
- If you provide an essential service (hospital, government, etc.), look into [Government Emergency Telephone Service \(GETS\)](#), [Wireless Priority Service \(WPS\)](#), and [Telecommunications Service Priority \(TSP\)](#). These government-sponsored programs allow for priority when phone lines are saturated and wireless frequencies fill up after a major disaster. Again, this capability helps you to maintain 4C.

Some final tips:

- Arrange for flashlights and identifying vests for your own responders, so that they can be identified immediately and not mistaken for looters.
- Buy two-way radios for use in the immediate response area.
- Keep extra batteries for wireless phones and two-way radios.
- Keep a roll of quarters close by. Although they're tough to find these days, pay phones often are restored first by the phone company.
- Arrange in advance for your people to have access to cash. ATMs may not work for a while, and lack of cash could hamper your response.
- Use an outbound notification and inbound call-recovery service such as [Telecom Recovery](#) or [Velleros](#).

Summary

Cytel was affected by Hurricane Ike as both a disaster recovery provider and a telecommunications provider. But we're happy to report that Cytel and its customers are alive and well at press time due to some well-thought-out advance contingency planning. Remember, collocation providers, if employed properly can leave you "room to live" after a major disaster by providing immediate access to surviving telecom infrastructure. By overlaying IP and VoIP over these facilities, it's possible to restore 4Ci and thereby recover your organization, regardless of circumstances.

Keep in mind that even the smallest improvements you make in your response plans, such as adding a good collocation provider, add up when considered in total. They provide a greater measure of security and certainty in a disaster as well as to further protect the lives and livelihoods that depend on the solutions you provide. Best of luck and happy planning
