tellabs®
GOVERNMENT SYSTEMS

Tellabs Rapidly Restores Communications Services Following Hurricane Katrina

Executive Summary

In the wake of Hurricane Katrina, the most destructive natural disaster in U.S. history, restoration of communications services was vital to the recovery efforts of residents and governmental agencies. Tellabs immediately mobilized in response to the needs of its customer, BellSouth, partnering with the carrier to rapidly repair damage wrought by the storm. Working in tandem, Tellabs and BellSouth were able to maximize the capacity and flexibility of surviving equipment, as well as to deploy temporary solutions throughout the network.

A comprehensive suite of Tellabs solutions enabled BellSouth to quickly reroute traffic and provide voice and Internet service to the stricken region. In addition to immediate recovery and repair efforts, BellSouth replaced damaged equipment with more robust, sophisticated offerings from Tellabs, investing in the Gulf Coast of tomorrow by enabling future high-speed, broadband services.

- After Hurricane Katrina struck, Tellabs equipment and services enabled a re-route of network traffic around New Orleans in a week, work that normally takes months
- Tellabs systems perform admirably during the recovery period, taking on increased workloads and providing much-needed flexibility and reliability under taxing conditions
- Bolstered by more advanced, robust equipment from Tellabs, BellSouth's post-Katrina network has added broadband capacity, which will provide Gulf Coast residents with more sophisticated voice, data and video services

"Instead of taking a few months to do the job, we did it in a week, and we were able to provide connectivity to the whole region."

– Dr. Dan Baeza,
BellSouth's General Manager for Transport and Access

Situation: Unprecedented Destruction

In August 2005, Hurricane Katrina devastated the city of New Orleans, as well as the Gulf Coast of Mississippi and Alabama. The Category 5 storm was the most destructive and costliest natural disaster in U.S. history, leveling homes and businesses in its path, and displacing tens of thousands of residents with its floodwaters. Federal disaster declarations covered 90,000 square miles, an area almost as large as the United Kingdom. At the storm's peak and in its immediate wake, nearly 3 million customers were without power. In places like Hancock, Miss., ham radio operators supplied the only communications into or out of the area, even serving as 9-1-1 dispatchers.

Representative Government Agencies Affected by Hurricane Katrina

Federal Agencies (active in New Orleans and Gulf region)
- Agriculture Department
- Army Corps of Engineers
- Bureau of Alcohol Tobacco & Firearms
- Coast Guard
- Environmental Protection Agency
- FBI
- Federal Emergency Management Agency
- Health & Human Services Department
- Homeland Security Department
- HUD
- Interior Department
- Justice Department
- Labor Department
- Minerals Management Service
- Transportation Department

State of Lousiana
- Administration Department
- Health and Hospitals Department
- Homeland Security and Emergency Preparedness
- Justice Department (includes Attorney General)
- Labor Department
- Louisiana Lottery Corporation
- Louisiana Air National Guard (Department of Military)
- Louisiana National Guard (Department of Military)
- Medical Center of Lousiana at New Orleans
- Public Safety & Corrections Department
- Revenue & Taxation Department
- Secretary of State Department
- Social Services Department
- State Police
- Transportation and Development Department
- Treasury Department
- Veterans Affairs Department

City of New Orleans
- Bureau of Revenue
- Bureau of Treasury
- City Administrative Office
- City Council
- City Planning Commission
- Department of Education
- Health Department
- Homeland Security
- Housing Authority
- New Orleans Fire Department
- New Orleans Police Department
- Public Libraries
- Public Schools
- Port Authority
- Recreation Department
- Regional Transit Authority
- Safety and Permits
- Sewage and Water Board
- Traffic Court

As the region's primary provider of telecommunications and Internet service, BellSouth's operations were vital to residents. Be it family members reaching out to locate missing loved ones or government agencies coordinating recovery efforts, people counted on BellSouth to provide critical connections between individuals and to the outside world. Though faced with severe damage to its network, the company knew it had to be swift and thorough in its response to the crisis. The carrier called on Tellabs to play an essential role in efforts to restore service.

Challenge: Repair, Reconnect, Recover

Estimates of Katrina's total cost top $81 billion. BellSouth suffered its share: 26,000 damaged poles; 830 tons of contaminated sludge in its manholes; 1.9 million sheath feet of underground cable beyond repair; 165,000 customer lines damaged; 33 Central Offices out of commission, 9 of them irrevocably. Perhaps most devastating—the New Orleans entry point to the BellSouth Regional Internet Backbone was buried underwater. There was no Internet connectivity to the entire Gulf Coast.

BellSouth approached the situation with short- and long-term goals: of most immediate concern, a quick fix to reroute traffic around New Orleans, to be followed by more extensive repairs across the network.

The company found answers to both scenarios in a comprehensive suite of equipment from Tellabs, which carriers depend on to handle most of the Internet and voice traffic in the United States.

Solution: Flexibility and Reliability

BellSouth had anticipated the vulnerability of its network if confronted with a catastrophe of Katrina's scale and had started preparing for such an event in 2002. The planned BellSouth Regional Transport Network (BRTN) would incorporate Tellabs equipment to increase capacity for voice, data and video; most importantly, equipment would be placed in Central Offices outside of flood zones. Construction on the BRTN began in late 2004, but months of installation and testing remained at the time Katrina reached land.

In the aftermath of the hurricane, Tellabs support staff immediately headed to the stricken region to aid with the New Orleans re-route and additional network recovery efforts. Truckloads of Tellabs equipment arrived within days.

For the New Orleans re-route, the Tellabs 7100 Optical Transport System (OTS), which provides cost-effective transport of high-bandwidth services, was instrumental in rapidly re-establishing voice and Internet service. BellSouth had selected the Tellabs 7100 system for its reliability and flexibility to form the backbone of the BRTN. When Katrina hit, of the 400 OTSs to be used across the network, only a few were in service. Crews worked around the clock to complete the BRTN in a single week; Tellabs staff provided vital assistance with engineering, parts procurement and training.

With the BRTN online, the Tellabs 7100 system provided enough capacity to route traffic around New Orleans and restore normalcy to the remainder of the network. BellSouth not only had its quick fix, but also a new 10 gigabits per second backbone that leaves the company well-positioned to meet customers' growing demand for high-speed services.

"We had a lot of cooperation to finish what should have taken months to complete," says Dan Baeza, general manager of Transport and Access for BellSouth.

During this intense recovery period, BellSouth set up tent cities to house and feed thousands of employees and their families. Tellabs helped bring order to this potentially chaotic situation, donating a new Tellabs 1100 Multiservice Access system remote terminal, which enabled BellSouth personnel to communicate with their families and co-workers.

Elsewhere in the Network

All fiber in the area was routed to a surviving Central Office (CO) in Gulfport, Miss., home to a Tellabs 5500 Digital Cross-Connect system. Hallmarks of the Tellabs 5500 system are its expandability in capacity and simplified service provisioning, which can be achieved remotely without downtime or interruption. At one point, the Tellabs 5500 system handled as many as 400 work orders to put through circuits. Its ease of use enabled technicians to jump on a terminal in Mobile, Ala., and provision a circuit in Gulfport.

The Tellabs® 1150 Multiservice Access Platform was installed on newly built pedestals on stilts.

In towns where the CO had been wiped out, BellSouth relied heavily on the Tellabs 1100 Multiservice Access system remote terminals, which were deployed in the field to provide temporary service until more extensive repairs could be made. The Tellabs 1100 system converges voice, video and data onto a single infrastructure; with technicians running fiber from Gulfport to the system, the remote terminals in effect replaced the CO and restored lost circuits.

Months later, with BellSouth's operations nearly back to normal, technicians swapped out the Tellabs 1100 systems for Tellabs 1150 Multiservice Access systems, which support extremely high bandwidth delivery, extending fiber optic cable to within a few hundred feet of the user. The company permanently installed all systems on "stilts" 12 or 14 feet above ground.

Forward Thinking

Tested by Katrina, BellSouth proved up to the challenge, its network bolstered by equipment from Tellabs. Solutions such as the Tellabs 5500 Digital Cross-Connect performed admirably under duress, providing BellSouth with much-needed flexibility and reliability under the most taxing of workloads.

Looking beyond recovery and repair, BellSouth also turned to Tellabs to position itself for the future, replacing damaged equipment with more dependable, sophisticated solutions. As Gulf Coast residents rebuild their homes and their lives, they can rest assured that the communications services they need will be there today, as well as their broadband needs of tomorrow.

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