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Speech Lends Its Voice to Help Hurricane Victims

By [Stephanie Owens](#)
Speech Technology Magazine

Hurricane Katrina made landfall on August 29 with 140 mph winds, followed shortly thereafter by Hurricane Rita's 120 mph winds on September 24. With flood waters seeping over levees and homes in shambles, victims of the first hurricane scrambled to prepare for Rita's insurgence. Having realized the devastation of Katrina, Texas evacuated over 2.5 million people from multiple coastal cities – preparing for the worst¹. Miles of traffic with delays of 15 to 20 hours and long waits at airports were no exception to Rita's and Katrina's evacuation processes. As the hurricanes rushed north from the gulf, they wreaked havoc and destruction on everything they could reach leaving some areas under as much as 15 feet of water.

Thinking Ahead

The chaotic traffic jams were further complicated by the cancellations of hundreds of flights going in and out of affected areas. Continental Airlines was reported to have canceled 111 flights around Katrina's beaten path. With cancellations and reschedules flowing in from around the country and globe, Continental was relieved to find assistance from some automated friends. Katrina brought with her more than just destructive winds and swallowing waters, she also brought over double the incoming calls to airlines – most of which were flight reconfirmations and flight information updates. Having planned ahead for the holiday rush, Continental had already deployed Voxify's Automated Agents to take calls for flight reconfirmation, flight information, fare finder, and to welcome all incoming calls. News of Rita on September 19 created a spike in call volumes that would peak between September 21 and 23, until news of a downgrade in her intensity reached local residents. All calls were answered by the Automated Agents and routed to the appropriate center for assistance. Continental's automated agents were available 24/7 and answered all incoming calls with zero wait time – made possible by the solution's ability to scale instantaneously.

These Automated Agents did more than just answer the calls, they used speech recognition to complete flight reconfirmations, give flight updates, and find fares for callers, freeing up live agents to deal with the more complex calls. However, this is not the only aid that the Automated Agents have afforded. Wyndham International closed four of its hotels in New Orleans and cancelled all of its reservations in preparation for the storm. The Automated Agents that Wyndham put in place are not only able to answer and direct all incoming calls, but also to book, confirm and cancel reservations as well as provide hotel location information, serving approximately 45 percent of callers from greeting to completion. This freed up live agents and helped streamline calls that tripled in frequency with the onslaught of the hurricanes.

On the Move

Previously created solutions are not the only ones coming to assist victims and aid organizations alike. Rovenet, a provider of software that enables field workers to collect data on handheld


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devices, and Invores Systems combined their systems to create "I AM OK," a contact service that assists emergency relief workers with connecting hurricane victims to their families, which Rovenet and Invores are offering free of charge to relief organizations. The relief workers retrieve information from victims about family members and friends who may be searching for them including the relative's name, address, and telephone numbers, so that the relief worker can contact them and let them know the victim is ok. The information is keyed into a PDA or through Invores' special Web site, which is then converted to speech for delivery to the families. The victim's family then has two ways of receiving this information:

1. The data are collected and sent to national listing services and databases for distribution.
2. Invores' Express2.0 VoIP VoiceXML platform places phone calls to the designated relative with a personalized message (using text-to-speech) from the victims. The messages can also be accessed via the World Wide Web at www.portableforms.com/iamok.

The first relief organization to pick up on the "I AM OK" solution was the National Next of Kin Registry, a volunteer-based organization that helps people locate their next of kin in urgent situations. Invores and Rovenet are donating these technologies along with additional custom software applications, technology support services and VoIP telephony connectivity. The system and software has also received support through Palm, Inc.'s donation of handheld computers.

Also on hand to send out alerts and messages for quick response was MIR3's text-to-speech (TTS) Intelligent Notification solution. The solution was used to gather and deploy relief workers to help after the storms as well as warn local companies of the severity of the weather before it hit. The solution uses TTS to deliver messages to all forms of communication devices, such as cell phones, pagers, fax machines, voicemail, email, etc. The recipient can then use DTMF to respond to the message. These responses are often used to not only verify that a recipient has received the message, but also that he/she understands what to do next or that they are in need of assistance. Customers who applied this technology for hurricanes Rita and Katrina included ImpactWeather, FEMA, FEI Behavioral Health and the City of Miami.

The City of Miami deployed the Intelligent Notification solution in the middle of last year's hurricane season. They used the system not only for emergency situations in their area (i.e. Hurricane Ivan), but also for other areas calling upon them for assistance, as was the case with Rita and Katrina. In this situation, the City of Miami used the solution to notify all first responders in the Miami area with instructions of how to proceed. The information was typed in using real-time TTS, which delivered a notification within 60 seconds through all modalities and left an audit trail that was useful for the City of Miami's ongoing gap analysis.

For ImpactWeather – a provider of microclimate information to the aviation industry, the petrochemical industry, and the Pentagon for the Air Force – this was not their first time using the Intelligent Notification system. However, it proved very useful with the oil derricks in the Gulf Coast region for various Petrochemical companies as well as the tankers because ImpactWeather was able to use their microclimate information to send notifications via TTS to oil derricks to let them know which derricks did or did not need to be evacuated, saving money, lives and properties. Almost all of the oil derricks in the Gulf Coast region were evacuated using the TTS system. Other large Petrochemical companies that were customers of ImpactWeather received direction on how to provide supply-chain logistics as well as how to relay some of the messages that they had received from the tankers back to ImpactWeather.

While preparations played a key role in saving thousands of lives, it would be the response that would be most critical to those in the hurricanes' paths. FEMA received widespread criticism for the political issues that slowed their ability to get on site; however, when they pressed the button to assemble their teams – it only took 45 minutes to gather and ready volunteers. FEMA previously had an old fashioned, phone-tree setup in place to notify volunteers of specifics regarding instructions and departures. The phone tree would typically take about five hours with a gradual loss of content each time the message was relayed. Using the Intelligent Notification system, FEMA was able to put together specific messages for each individual group of volunteers (i.e. - doctors vs. equipment providers) and assemble them in an airplane hanger so that they could ready themselves and head out. They are still using the system to call upon volunteers. There is no way to dictate how these volunteers will be receiving their instructions, so the TTS solution covers all the bases by working with speech and text to deliver the message to all available modalities. FEMA has a schedule system that alerts the management team of the volunteer's location at any given time and lets them know what number to call in order to deliver

the message in the most timely and efficient manner possible, so if you are traveling the system knows to contact you via cell phone versus your home number. This enabled the swift assembly of the teams.

FEI Behavioral Health provides a series of services including crisis management to companies needing to communicate with their employees on various levels. MIR3's TTS is an embedded OEM product inside FEI's application. The companies using the application can give employees in the areas affected by hurricanes Katrina and Rita access to crisis management information, employee programs, corporate benefits associated with relocation, etc. All of this information was disseminated using MIR3's notification system with the DTMF response option to reply quickly.

Companies, such as Continental Airlines and Wyndham International, were able to provide self-service options to their customers as well as offer helpful information about their service capabilities during unexpected spikes in call volumes. Other companies and organizations, such as FEMA, National Next of Kin, City of Miami and FEI Behavioral Health were able to expand their services and their reach for those most affected by the hurricanes. Last year's hurricane led to the expansion of the City of Miami's deployment of Intelligent Notification system in various counties and cities. After this year's hurricane season, the other organizations plan to review the reach and success of their systems and determine where to expand/improve upon the use of their applications as well as evaluate the training opportunities available for each respective application.

¹Associated Press. (2005, Sept. 26). Louisiana, Texas Bail out from Rita. CNN.com. Retrieved Oct 4, 2005 from the World Wide Web: <http://www.cnn.com/2005/WEATHER/09/26/rita/>.

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