

# THE COMPUTERWORLD HONORS PROGRAM

---

## CASE STUDY



LOCATION:  
*Orlando, Florida,  
United States*

YEAR:  
*2006*

STATUS:  
*Laureate*

CATEGORY:  
*Government and  
Non-Profit Organizations*

NOMINATING COMPANY:  
*Avaya*

### ORGANIZATION:

Orange County Government, Florida

### PROJECT NAME:

“Bringing it Together” One Network and Three Storms

### Summary

On August 12, 2004, Tropical Storm Bonnie struck the Florida panhandle. Less than 22 hours later, Hurricane Charley made an unexpected turn in the Gulf of Mexico and set sights on Central Florida. The 155 mph winds caused an estimated \$15 billion in property damage making it the second most costly storm since Hurricane Andrew. Orange County, Florida was in the direct path of the hurricane and faced an emergency response situation not seen in years. The unexpected turn from the projected path brought the residents who had fled coastal areas, thousands of tourist and Orange County's 1,023,023 residents together under stressful conditions. With the sunrise also came the daunting task of moving 2.2 million cubic yards of debris while ensuring residents without electricity could obtain ice, water, food, tarps and shelter. Mobilizing personnel and delivering services to the citizens was the highest priority. Prior to Hurricane Charley, Orange County embarked on a project that consolidated networks and upgraded phone systems. These successful efforts gave Orange County the ability to respond quickly and efficiently. The county had a 311 Service Center already in place. Managers used real-time call summary data to identify call volume trends prompting proactive changes to interactive voice response applications and call center operations. During hurricane recovery efforts, the 311 center received 226,911 calls from citizens. To reach severely affected areas, the county deployed many field service centers. In some cases, staff drove vehicles in the midst of the rain and wind dodging falling traffic signals to install telephones and call center systems. The successful migration to IP telephony improved service to citizens by consolidating networks, upgrading legacy telephone systems while gaining flexibility, efficiency and reduced costs. Hurricane Charley, later followed by Frances and Jeanne exemplified the benefits and successes of this project through the rapid deployment of technology to bring services to citizens.

### Introductory Overview

Orange County, Florida is among the fastest growing counties in the country. Amidst 13 towns and cities, 1,023,023 residents receive services from 319 facilities spanning 1,000 square miles. From August 11, 2004 until October 10, 2004 the county experienced three hurricanes that presented unprecedented volumes of calls from citizens needing services. The day before Hur-



# THE COMPUTERWORLD HONORS PROGRAM

## CASE STUDY

**ORGANIZATION:**

*Orange County Government,  
Florida*

**PROJECT NAME:**

*“Bringing it Together”  
One Network and Three Storms*

**LOCATION:**

*Orlando, Florida, United States*

**YEAR:**

*2006*

**STATUS:**

*Laureate*

**CATEGORY:**

*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**

*Avaya*

ricane Charley, the 311 Service Center was staffed with 12 operators taking calls from citizens. Within hours of the storm passing, the county doubled the number of operators. Staffing eventually grew to 69 operators. On September 3, the day before Hurricane Frances, the 311 Service Center had a peak call volume of 42,573 calls from citizens seeking information and assistance. In the immediate aftermath of the hurricanes, county personnel distributed 9,000 meals per day, provided bottled water and ice and cleared trees and debris from homes filling 200,000 ten yard dump trucks. Residents were without electricity, medical patients required oxygen tank refills and many homes needed tarps to cover gaping holes in the roof.

At the very heart of the hurricane recovery effort was the county's ability to rapidly respond to citizens with information and service. During hurricane recovery, services such as the 311 Government Service Center, Building E-Services for Contractors, Animal Services, Inmate information, school and shelter information, debris collection sites and locations for ice and water played a key role. Prior to Hurricane Charley, the county improved service to citizens by consolidating networks, upgrading telephone systems and deploying IP telephony. The consolidation of networks formed the basis from which high capacity circuits combined with the latest of call center technology resulted in rapid responses such as increasing the number of operators to answer calls from citizens. In one affected area, Orange County installed a Citizens Relief Center that was operational in less than 24 hours so citizens could obtain assistance and checks for food and shelter costs.

Consolidating the data and voice networks and upgrading legacy telephone systems to centrally located communication servers provided the infrastructure that supported essential services. Technology such as IP telephony, interactive voice applications, web sites and VoIP were the vehicles used to deliver service to the citizens. The consolidation not only enhanced system management, it centrally located servers to one hardened facility. This is a crucial aspect in the aftermath of a major hurricane when electrical power is lost across a region. The county integrated systems into enterprise back-up and disaster recovery strategies. This ensured the survivability of the infrastructure, thus enabling business applications to remain available. As a result, the county provided critical services to its citizens while reducing operating and maintenance expenses.

### Benefits

The project improves service, reduces cost, increases flexibility and ensures the efficient and effective response to the needs of citizens. These advantages were demonstrated during the county's response to citizens during hurricane recovery. Infrastructural enhancements increased the county's ability to extend the network and install systems quickly and effectively. Citizens can obtain county information or submit requests for service anytime. Applications include self serve systems using the telephone and county web site and the 311 Government Service Center. Examples of the advantages provided from this project are the following.

Orange County 311 provides citizen access to government services and information by dialing one simple number. The county implemented voice response solutions for normal operation as well declared emergency situations. During hurricane recovery, voice response technology was crucial to provide information such as school closures, locations for ice, tarps, water, critical medical supplies and debris removal to citizens. For those severely impacted; reliable access to special services including evacuation shelter information was available. This included reverse



# THE COMPUTERWORLD HONORS PROGRAM

## CASE STUDY

**ORGANIZATION:**  
*Orange County Government,  
Florida*

**PROJECT NAME:**  
*"Bringing it Together"  
One Network and Three Storms*

**LOCATION:**  
*Orlando, Florida, United States*

**YEAR:**  
*2006*

**STATUS:**  
*Laureate*

**CATEGORY:**  
*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**  
*Avaya*

dial back that informed people of boil water notices. The voice applications include call routing so operators can connect callers to agents who speak Spanish or to those who have specialized skills.

Orange County Animal Control functions from two offices located on opposite sides of the county. Using IP telephony, the location of the office is transparent to the caller when providing crucial animal services, dispatch solutions and general information.

Citizens may obtain building permit information and contractors can schedule inspections or obtain status information for scheduled inspections using voice response applications. This is an advantage to citizens because it eliminates a time consuming visit to a central county office.

County utility voice systems can dial-out to alert citizens in affected geographic locations when a "boil water" alert is in place. The county used this system during hurricane recovery to inform citizens about where emergency services were available.

Orange County employee notification systems provide important information to employees via home numbers, cellular, pagers, etc. helping mobilize emergency response functions.

Elections officials use voice applications to provide information such as polling and precinct locations to voters and poll workers.

The Traffic Citation Division allows callers to enter citation numbers, determine citation fine amounts and pay fines using a credit card. This same system will dial out to citizens to notify them of a delinquent status and the actions needed to avoid a driver's license suspension. Clerks use voice applications to contact people due in court and to give specifics about the court appearance. Operators can see caller account and case information using screen pop technology reducing the time of calls and improving services to the citizen.

The Child Support Division allows callers to obtain information regarding their account such as account balance and pending payments. Personnel use screen pop technology to recognize callers so they do not have to provide account information to an agent each time they call.

Approximately 400 school crossing guards call a voice response system to report work hours during pay periods. This information interfaces with the payroll systems automatically. This replaced the former method of crossing guards calling a voice mailbox and subsequent manual entry of the data.

Corrections Department inmate information such as his/her location, bail amount, release date and booking charges are available using voice response systems. This same information is integrated to the government web site for further ease of access.

In addition to applications, the project provides advantages to the infrastructure, costs and administration. The county reduced overall technical operating expenses by 6.1% and network communication costs by 11.9%. Consolidating network circuits and reducing maintenance support costs by centrally locating voice servers generated the cost savings. The county reinvested the savings back into the network and voice applications. The upgraded voice system software provides real time call summary and management data that allows the county to make decisions affecting service response for citizens. During hurricane recovery, call volume trends prompted changes to voice applications and the deployment of additional call centers.

The consolidated infrastructure permitted Orange County to add a portable satellite voice



# THE COMPUTERWORLD HONORS PROGRAM

## CASE STUDY

**ORGANIZATION:**

*Orange County Government,  
Florida*

**PROJECT NAME:**

*“Bringing it Together”  
One Network and Three Storms*

**LOCATION:**

*Orlando, Florida, United States*

**YEAR:**

*2006*

**STATUS:**

*Laureate*

**CATEGORY:**

*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**

*Avaya*

communication system to the disaster response arsenal. The county can deploy this system in the field. These remote call centers connect to the county network and voice features to provide citizen's access to government services in an emergency. During Hurricane Charley, the county established a citizen relief center to an affected area in less than 24 hours. The satellite system decreased the response to drive time and the set up of IP telephone sets.

The project's innovation benefits citizens. During the hurricane aftermath, Orange County employees put aside their normal duties and helped the community relief effort by passing out ice, food and tarps and joining Community Action Response Teams to clear debris from streets and homes. Purchasing and coordinating the delivery of 1,400 tons of ice from as far away as Wisconsin requires precise mobilization of response teams. Managing the response effort required reliable communications made possible from the consolidated network, upgraded telephone systems and flexible business applications.

Other organizations benefiting are the counties, State of Florida and Federal agencies which together form an emergency response network. Geographically located in the center of the state, Orange County hosts the hundreds of thousands of costal residents who flee inland. This is combined with the thousands of tourists unable to leave due to weather restrictions and the county resident population. Orange County's response to service expands beyond the region to benefit citizens and business throughout the area. The hurricane recovery exemplified the importance of the government response to crisis situations and the advantage technology brings to improving service, reducing costs and enhancing system administration.

Globally, Orange County is a recognized destination for tourists. More than four million tourists a year visit Central Florida. The world wide news media coverage of the hurricanes demonstrated the State of Florida's ability to respond to a crisis. More importantly, the global tourism industry focused on Central Florida and Orange County throughout the ordeal. Countries around the world witnessed the services provided to the tourist population.

### The Importance of Technology

In a time of crisis, communications is the most important element supporting recovery efforts. During the hurricane recovery, the county's ability to rapidly respond to citizens with information and service relied on technology. The 311 Government Service Center, web site, building services, animal control, school and shelter information, debris collection sites and locations for ice and water were crucial services. The ability to extend 311 systems, install new service centers and manipulate interactive voice applications enabled an effective response effort to the hurricane disaster.

The consolidated infrastructure supports innovative applications. New management tools enhance operations, improve service to citizens and reduce costs. The ability of 311 managers using real-time call summary and management data to identify trends to proactively increase the number of operators and service centers demonstrates the importance of technology. Advanced technology, such as IP telephony, contributed to the project by making it possible for county personnel to build and install a fully functional Citizens Relief Center in less than 24 hours.

Having started with separate voice and data infrastructures, traditional telephone systems and raising costs the county consolidated networks, centralized communication systems and eliminated costly circuits. Taking advantage of innovate voice technologies contributed flex-



# THE COMPUTERWORLD HONORS PROGRAM

## CASE STUDY

**ORGANIZATION:**

*Orange County Government,  
Florida*

**PROJECT NAME:**

*“Bringing it Together”  
One Network and Three Storms*

**LOCATION:**

*Orlando, Florida, United States*

**YEAR:**

*2006*

**STATUS:**

*Laureate*

**CATEGORY:**

*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**

*Avaya*

ibility, consolidated management, improved efficiencies, reduced costs and improved services to citizens.

### Originality

Orange County, Florida is not the first local government to upgrade a communications network. This project is unique due to the manner of which the solutions were deployed. Emerging voice technologies represent new ventures for both the manufacturer and customer. Adapting business needs and designing an appropriate solution is critical to any technology project. This project is exceptional since the county used competing manufacturer engineers and internal personnel to form a team that together examined the intricacies of government business transactions. This team integrated a consolidated network and implemented innovative voice applications. The result was significantly enhanced services to citizens, improved operational efficiency and reduced costs.

Another exceptional aspect of this project is that a natural disaster subjected the new network and business applications to extreme stress immediately after implementation. Starting August 11, 2004, the county experienced three hurricanes that presented unprecedented volumes of calls from citizens needing services. Within hours of the first storm, the county added service center operators. Call volumes eventually peaked at 42,573. Staff continuously modified interactive voice applications in response to real-time call volume data. The county adjusted applications to dial-out to affected geographic locations providing emergency shelter, food, medical and debris removal information. One of the hardest hit areas required the immediate installation of a new Citizen Relief Center. The county's ability to respond efficiently and effectively was the result of good technology and the successful implementation of this project.

This project is original since the infrastructure and needs are specific to Orange County, Florida. Government services are similar from region to region; however, the needs of Orange County are unique since it is a world recognized tourist destination and a rapidly growing area with over one million residents. The complex vision, intricate design, phased migration, careful consideration placed on cost savings to support upgrades through reinvestment and the stress placed on the new systems during the 2004 hurricanes illustrate originality.

### Success

Orange County's ability to respond to the needs of citizens during three hurricanes between August 11 and October 10, 2004 demonstrated the success of this project. In this short period of time, the county mobilized an effort of unprecedented magnitude supporting one million residents, thousands of tourists and hundreds of thousands of coastal resident who fled inland for safety from raising waters. The consolidation of the county network and implementation of innovative web sites and voice applications formed the basis for providing services to the citizens. The new infrastructure and applications enabled managers to monitor trends and respond proactively. Orange County coordinated the delivery of 1,400 tons of ice, two million hot meals, remove 2.2 million cubic yards of debris and accommodated 226,911 calls to the 311 Government Service Center.

Before the first storm hit, Orange County Mayor Richard Crotty said, “This community will define itself by the way it deals with the effects of Hurricane Charley”. Witnessing the massive



# THE COMPUTERWORLD HONORS PROGRAM

## CASE STUDY

**ORGANIZATION:**  
*Orange County Government,  
Florida*

**PROJECT NAME:**  
*“Bringing it Together”  
One Network and Three Storms*

**LOCATION:**  
*Orlando, Florida, United States*

**YEAR:**  
*2006*

**STATUS:**  
*Laureate*

**CATEGORY:**  
*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**  
*Avaya*

outpouring of community support and county service, the Mayor said “We have passed the test with flying colors.”

Another Orange County customer, Tom Dickey, Clerk of Court Call Center Manager, who benefited from innovate voice applications wrote, “Before the Expert Routing Systems (ERS) was implemented we had to manually switch staff numerous times a day to capture the peaks and valleys of call volume of each court division. I can tell you this consumed most of our time and having the staff in three different call centers it became even more challenging. We have had ERS three days now and the effects have been dramatic. We have tweaked the Agent skill levels each day to answer our calls even more efficiently. To sum it up, we have performed at a 93% service level on most of the divisions the call center handles. Pre-ERS we had some divisions at 88% while another was in the 60% range.”

This project provides improved services to citizens, cost savings, converged networks and centralized communication systems. The services allow citizens to conduct business with Orange County, Florida quickly and easily. Among those services are building inspectors scheduling inspections, traffic fines being collected and 311 service center requests processed efficiently enabling the county to respond with service and assistance to citizens.

Immediately following implementation, three devastating hurricanes hit Orange County. Citizens started using the applications immediately and county personnel rapidly deployed more applications and systems in support of hurricane recovery.

The ability for the target audience to embrace and accept the new services were immediate in response the second most costly storm since Hurricane Andrew.

### Difficulty

The project ventured into the uncharted waters of new technology. It integrated traditionally separate groups of professionals representing significant challenges. Traditionally, telecommunication and data professionals are separate entities working in parallel. As voice technologies blended with data infrastructures, Orange County took the initiative to combine technical staff to one team. Through training and experience, staff learned the intricacies of both disciplines. County personnel worked together defining network topologies and points of commonality within the infrastructure. The result was a consolidated network supporting voice, data and video.

This is new technology. Best practices are just evolving and we had to unify a group of manufacturers with competing ideals with our technicians to achieve infrastructure convergence and IP telephony integration. This technology is new to everyone. Relying on manufacturer engineers for guidance was not an option. The alignment of competing manufacturer engineers with Orange County goals and objectives was a difficult key milestone to the project success.

Immediately following the implementation, three devastating hurricanes hit Orange County. The new infrastructure, applications and web site were instrumental in response and recovery efforts. The obstacles that were overcome formed the infrastructure from which innovative applications were delivered to citizens in time of crisis.

One of the primary goals of Orange County is to ensure enhanced delivery of services to citizens, visitors and international neighbors. Another goal is to provide valuable information about



# THE COMPUTERWORLD HONORS PROGRAM

---

## CASE STUDY

**ORGANIZATION:**

*Orange County Government,  
Florida*

**PROJECT NAME:**

*"Bringing it Together"  
One Network and Three Storms*

**LOCATION:**

*Orlando, Florida, United States*

**YEAR:**

*2006*

**STATUS:**

*Laureate*

**CATEGORY:**

*Government and  
Non-Profit Organizations*

**NOMINATING COMPANY:**

*Avaya*

Orange County Government, growth, tourism and public safety. Serving a diverse community continues to drive communication needs within Orange County Government. Recognizing these needs, Orange County Information Systems and Services Division implemented programs to improve services to citizens, enhance efficiency and reduce costs. Orange County Government Administration, Senior Management and the Chief Information Officer embraced the project and supported the endeavor completely. Improving service to citizens and reducing cost is consistent with Orange County Government management strategy.