GCN Award Winner for Government Agency IT Achievement – 2008

Agency: U.S. Department of Housing & Urban Development (HUD)

Project: The national housing locator system

Nomination Submitted by: Citizant

Following is the nomination letter submitted for this project, summarizing the project's accomplishments, the technologies used and innovative steps taken to achieve them, and the resulting impact the project had in improving the agency's efforts.

Accomplishments:
HUD's National Housing Locator System (NHLS) is a web-based system that allows federal, state, and local agencies to rapidly identify available housing for people displaced from their homes by a presidential declared natural disaster. The NHLS consists of the following components: • Housing Locator: Identifies available temporary housing in the event of an emergency from existing housing data providers.• Housing Asset Collection: Mechanism to collect and make available temporary housing properties not already maintained by existing data providers• Housing Referral System: Process to manage and track housing aid provided to disaster victims. One of the lessons learned from Hurricanes Katrina and Rita was that the government lacked a national inventory of available housing to accommodate evacuated citizens. Congress mandated the development of a solution to this vital need and HUD tapped Citizant, one of the Washington region's leading providers of government professional technical solutions, to help close the gap.

Citizant began working with HUD in 2006 to develop the NHLS, a searchable, web-based clearinghouse of available rental housing nation-wide. The system provides a single source of accurate and timely information on available, habitable rental housing. This powerful tool was designed to help the government better serve the public during hurricanes, earthquakes and other disasters that require mass evacuations. The system combines federal housing resources with commercial housing locators and Web sites to offer one platform that allows state and public housing authorities and other first responders to rapidly identify available housing options based on various search options.NHLS currently has more than 100 different Internet and government data providers, with additional providers being added regularly. Among the participants are Socialserve.com, Apartments.com, HomeSales.gov, Rent.com, and dozens of local public housing authorities. To maximize these data partnerships, NHLS uses Web Service exchanges to facilitate data sharing among other agencies, including FEMA.

HUD also provides secure access to agencies, including Veterans Affairs, through VPN Tunnel technology. Citizant developed and launched the initial system within 60 days of contract award. Due to cutting-edge development and testing methodologies, this system was deployed in record time and with significant cost savings. Other companies urged HUD to finance a $10-15 million project to build a comparable system. Using a Web 2.0 approach and rapid application development, Citizant provided the first NHLS system for less than $1 million. Currently, the NHSL is being used to aid families displaced by the floods in Iowa, Wisconsin, and other Midwest states. To date, the system has been used to help relocate families in Florida after tornadoes in March, by Flood victims in Iowa, by families in California who lost their homes to the fires in October, and by families who were displaced by flooding in Washington and Oregon in December. For the first time, government and other organizations have a single source to access during a disaster or emergency to ensure citizens who are in dire need of housing have access to available housing on a nationwide basis.

Technology:

The innovations exhibited in the use of available services — employing Web 2.0 technologies to make the system simple, widely available, reliable and scalable — resulted in less technical risk and faster implementation. Leveraging a data-centric SOA strategy and Web 2.0 technologies, NHLS was deployed within two months and saved the government millions of dollars over traditional application development methods. Key examples of the innovation include: Data-Centric SOA and Rapid Development Cycle Citizant built the NHLS using a data-centric service oriented architecture (SOA) that focuses on leveraging existing data sources and allows certain functions to be handled at the source. After developing a prototype to demonstrate the functionalities of the system, Citizant employed an incremental development lifecycle model with phased system releases to speed development and system availability. Standardized tools and data interfaces allow developers to constantly update NHLS functionality. Based on user-defined requirements, new features are added during a rolling two-month development cycle. NHLS as a Web Service Information sharing is a primary objective of the federal government.

The NHLS Web service exchanges information using Simple Object Access Protocol (SOAP) messages. These
capabilities allow other agencies, including FEMA, to share the housing information that is available via NHLS. Through VPN Tunnel technology, HUD provides secure access to several other agencies, including Veterans Affairs. Long-Tail Approach to Data Collection NHLS is designed to collect data from willing, reputable sources. Citizant is tasked with establishing relationships with all 4,000 Public Housing Authorities (PHA) nationwide so that data and available housing inventory are in place prior to any disaster. While concentrating on a few national data providers, the system also

collects data from a large number of small vendors. This ensures that the data represents not only heavily populated metro areas, but also the small towns and rural areas.

RESTNHLS transfers data from some providers using a simple form of Web service, Representational State Transfer (REST), allows new data providers to quickly adhere to a standardized format for data transfer. NHLS gets housing data from an XML file in a predefined format using simple HTTP calls. Rich User Experience and Interaction NHLS incorporates Web design patterns to enhance the user's experience. Specifically, AJAX is used in the commenting system and in the mapping tool. This delivers an enhanced experience as if the application were running locally, while providing the power and flexibility of serving the application in
a distributed Web environment. NHLS listings are enhanced by user interaction when they add comments about properties. Mashups within NHLSNHLS uses Google's map API as a backdrop for radius search functions, allowing the system to easily and quickly overlay views of available properties with little additional development. The systems can quickly integrate and display other data sources such as schools, public safety facilities, HUD and PHA offices, and shelter locations if necessary. Simple Integration of RSS FeedsFuture development efforts include feeding weather information from NOAA via RSS to help the users stay informed of weather changes that could directly affect placement of disaster victims.

Impact:
NHLS was a joint government/industry solution to a Congressional mandate that needed to be delivered quickly and cost-effectively. Every CIO has mission critical objectives that must be met to remain operationally effective and leveraging an innovative technical approach for the least investment is fundamental to this achievement. NHLS showcases a creative, cost-effective solution to a problem a government agency had to solve. Beyond merely solving the problem, this project brings tremendous value to citizens while also providing a best practice template for the use of Web 2.0 in government. NHLS impacted the industry in the following ways: Meeting HUD's Mandate to Serve Citizen's in times of Disaster NHLS responds to a Congressional mandate and allows HUD to further its mission of supporting community development and increasing access to affordable housing.

The system complements HUD's proven housing and emergency disaster voucher programs by allowing HUD and its partners (Housing Authorities, and other First Responders) to deliver housing assistance by rapidly locating homes during an emergency. Since the first release in January 2007, the system has been used by families displaced by disasters across the country. In addition to robust search tools, Citizant developed an integrated customer service/case management system to help manage the placement of evacuees and the delivery of emergency assistance. Cost-Effective Solution Delivers Immediate Benefit Citizant developed and launched the initial system within 60 days of contract award. Development started in December 2006 and HUD launched the first release in January 2007.

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This innovative, inter-governmental solution promotes one of the federal government's primary initiatives: information sharing. For the first time, government and other organizations have a single source to access during a disaster or emergency to ensure citizens who are in dire need of housing have access to available housing on a nationwide basis. It is anticipated that the NHLS will be made available to veterans, those needing assisted living facilities, and to support elderly housing needs in Phase 2 or Phase 3 of the project. HUD is committed to seeking out the most cost-effective, innovative and flexible solutions that allow it to work hand-in-hand with other Federal agencies.