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Creating a smarter, safer city with digital technologies

ABSTRACT

This white paper explores the components and benefits of a Smart City solution in use at the City of Las Vegas, Nevada. This solution, developed by NTT DATA Services and based on systems from Dell Technologies and VMware©, is helping to make Las Vegas a safer, more livable city.

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THE CASE FOR SMARTER CITIES

Explosive population growth is propelling the world to a new phase in urban evolution. From public safety and transportation to health, housing, education and tourism, today's urban administrators face unique challenges that call for smarter approaches to managing the urban environment.

This is the way it is today for the City of Las Vegas, Nevada, one of the fastest-growing and most-visited municipalities in the United States. On top of a double-digit population growth rate over the past decade,[1] the city hosts more than 40 million visitors in a typical year.[2]

As it faced the pressures brought by a rapidly growing population and a constant influx of visitors, the City of Las Vegas looked to intelligent digital technologies to help it operate in smarter, more efficient ways. In particular, the city wanted to use smart technologies to improve situational awareness and responsiveness to public safety issues as well as to drive innovative solutions for mobility and economic development.

The City of Las Vegas found its answer in a Dell Technologies-based Smart City solution from NTT DATA© Services, a leading global business and IT services provider.

THE SOLUTION

Designed to improve safety, NTT DATA's Las Vegas Smart City solution uses an array of Internet of Things (IoT) devices, high-definition video cameras and sound sensors to monitor a public area within the city's Innovation District. The solution creates a secure, distributed platform using micro data centers located near sensors in the designated public area to expedite analytics and improve situational awareness for first responders and public decision makers.

The micro data centers use both reactive and predictive analytics to deliver real-time data to the locations where the data can provide maximum value. Diagnostic analytics applications at the edge analyze large volumes of data, but send only data indicating an incident has occurred or needs investigation back to the core data center. This approach minimizes data transport volumes and response times to reduce the demands on the information and communications technology (ICT) infrastructure.

The Smart City solution incorporates video and sound data inputs from the area, integrated with publicly available, historical data sources, such as crime, weather and social media data. This combination allows the cognitive foundation embedded in the solution to apply advanced analytical processing to facilitate safety decision making.

By leveraging cognitive analytics, including artificial intelligence and machine learning technologies, the Smart City solution also learns to identify normal patterns of activity occurring in public places. It can then detect and alert the authorities to patterns that appear abnormal, helping to reduce response times for first responders.

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1   Source: World Population Review, "Las Vegas, Nevada Population 2020," accessed January 25, 2021.
2   Source: Las Vegas Convention and Visitors Authority, "Trends and Research," accessed January 25, 2021.

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An award-winning solution

NTT DATA Services' Smart City solution for the City of Las Vegas was recognized by the Smart 50 Awards, which honors the most transformative "smart projects" of the year. NTT DATA took home an award for "Smart Public Safety," which recognized that the solution was designed to reduce response times for first responders during public safety incidents. In addition, NTT DATA's initiative was also honored as a "Safe City" for helping to improve situational awareness and provide insights for public safety decision makers through early notification of potential and active incidents.[3]

3   NTT DATA Services, "NTT DATA's Smart City Solution for Las Vegas Receives Two Smart 50 Awards," March 14, 2019.

The Las Vegas Smart City solution also enables real-time alerts for public crowd density, number of vehicles, sound alerts and more. These capabilities support predictive alerts, validation of critical alerts and a reduction in the amount of data required to be processed by the city.

To design and implement the Smart City solution, NTT DATA partnered with its parent company, Nippon Telegraph and Telephone Corporation (NTT), as well as its operating companies Dimension Data, NTT Communications, NTT COMWARE and NTT Security.

In addition, through an ongoing partnership between NTT and Dell Technologies, the solution incorporates Dell EMC hyperconverged infrastructure and IoT gateways, as well as the VMware vCloud NFV (network functions virtualization) platform, which hosts predictive analytics applications.

A SAFER, MORE LIVABLE CITY

Today, the Las Vegas Smart City solution is making a positive impact on the day-to-day lives of both residents and visitors. It is making the city a safer, more livable place to be, while empowering city leaders to make better decisions.

With data generated by traffic-flow monitoring, the city can more intelligently route vehicles, reduce congestion and wrong-way driving, and get people to their destinations faster. The solution is also helping the city deploy emergency services personnel with extreme accuracy, dispatching the right resources to handle the issue at hand.
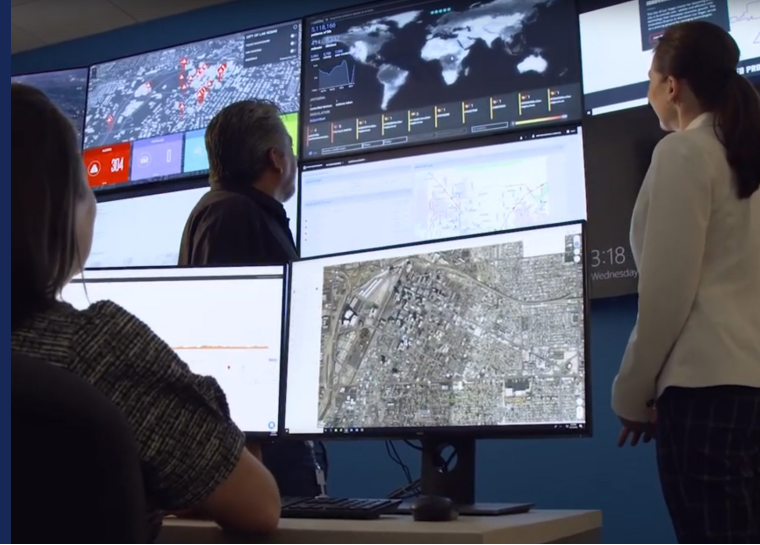
Ultimately, the creation of a connected urban area has enabled the City of Las Vegas to collect and analyze data efficiently, improve safety, and enhance the lives of both residents and visitors alike.

And the future promises to bring even more of the same.

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Outcomes

The Smart City solution from NTT DATA and Dell Technologies is helping the City of Las Vegas:

• Improve public safety situational awareness

• Accelerate decision making and responsiveness

• Leverage edge analytics for actionable insights

• Reduce data storage needs dramatically

• Build the foundation for a more connected, smarter city

GETTING STARTED

Regardless of where your organization is in your Smart City journey, you can benefit greatly from ready access to the expertise and services of NTT DATA Services and the proven hardware and software solutions from Dell Technologies.

NTT DATA Services partners with clients to navigate and simplify the modern complexities of business and technology, delivering the insights, solutions and outcomes that matter most. The company strives to deliver tangible business results by combining deep industry expertise with applied innovations in digital, cloud and automation across a comprehensive portfolio of consulting, application, infrastructure and business process services.

Dell Technologies, in turn, provides essential infrastructure for the Smart City journey. These offerings include Dell EMC Hyperconverged and IoT solutions integrated with best-in-class virtualization, storage, backup and disaster recovery products to provide a highly available, scalable and automated Infrastructure as a Service (IaaS) foundation for the digital city.

Dell Technologies also offers data platforms that provide an end-to-end data management solution to ingest data from diverse sources, curate, prepare, store and manage data with governance for analysis and collaboration, along with an open application deployment platform based on Pivotal Cloud Foundry.

TO LEARN MORE

To learn more about Smart City offerings from NTT DATA Services and Dell Technologies:

• Watch the video "City of Las Vegas and NTT DATA"

• Visit Dell Technologies at "Building foundations for our urban future"

• Explore NTT DATA Services at "Accelerate Smart"

To learn more, visit Dell Technologies at "Building foundations for our urban future"

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