Public Sector | City of Las Vegas

The City of Las Vegas shapes the future of urban living

Client profile

The City of Las Vegas is a dynamic community with 600,000 residents. Many people know Las Vegas is about entertainment, excitement and great hospitality — which is why the city attracts 39 million visitors a year. But Las Vegas is so much more. It's also a city of innovation, where the community works together to provide world-class amenities for the people who visit, whether they stay for a weekend or for many years. It's a great place to work, live and play.

Why NTT DATA?

- Ability to bring technology components together to create innovative solutions
- Vast portfolio of expertise, including advanced data analytics, network infrastructure services and cloud management
- Comprehensive technical capabilities through an end-to-end partner ecosystem

> "Working with NTT DATA on our innovation journey highlights the value of partners in delivering solutions that bring our community together and create the Las Vegas of the future.
>
> **Michael Lee Sherwood,** Chief Innovation and Technology Officer, City of Las Vegas

Business need

- Create safe spaces for residents and visitors
- Enable data-driven planning decisions
- Expand the solution to more areas
- Augment employee capabilities

Solution

- Gather and process predictive and real-time data
- Identify park and road usage patterns
- Detect deviations from patterns, in real time, to shape incident response
- Migrate Smart Solution from on-premises to cloud to improve agility
- Leverage Private 5G to expand network coverage

Outcomes

- > USD1 million savings per year
- > 90% reduction in wrong-way driving
- > 14K predictions per week from extensive AI and ML models
- Improves park safety for residents and visitors
- Uses data-driven insights to shape planning
- Creates opportunities for future growth

Business need

Shaping the future of urban living using cutting-edge technology

Las Vegas is known for its lights, glitz and glamour. In this vibrant city, technology isn't just a tool; it's the driving force behind an entire city's transformation. From the iconic Las Vegas Strip and dazzling performances to great neighborhoods supported by excellent resident services, every element of this city harnesses the power of cutting-edge technology to create an unparalleled experience for visitors and residents.

The City of Las Vegas has been exploring new, dynamic ways to interact with the community, working closely with partners like NTT DATA. Located in the heart of the Mojave Desert, where natural resources like water are scarce, sustainability is essential to Las Vegas living. It stands as a national leader in environmental sustainability, making it a core consideration in their approach to creating a smart, technology-integrated urban environment.

By harnessing the power of IoT devices, secure networks and edge analytics, Las Vegas aims to craft a safer, more connected and intelligently planned urban landscape. This data provides them with the insights needed to make real, sustainable changes for the city. Las Vegas understands the future belongs to those who can harness insights from their own data. It employs these state-of-the-art tools to foster safer public spaces, enhance mobility options and make informed city-planning decisions that pave the way for a smarter and more sustainable urban future.

Solution

Amplifying the city's ability to serve its community

To shape the city of the future, you need insights into its present. What do residents and visitors need? Why do they behave the way they do? And what can you create to enhance their experience and connect the city to them? The answers lie in understanding a colossal amount of data. NTT Smart Solutions "think" and assess multiple data sources, perceive current conditions and allow officials to plan, decide and act on those conditions — leading the way to smarter decisions.

"In the past, we had to rely on incident reports or somebody physically counting the number of incidents. And watching the area could only happen for a short period of time," says City of Las Vegas Deputy Director of Innovation and Technology, Chris Craig. "Now, we're able to gather analytics and data 24 hours a day, 365 days a year, and have a much more robust set of data to make smart decisions."

While the solution behind the smart city processes the data, finding the appropriate location to store so much information had to be considered. The pilot project kept data on-premises, but a more flexible solution was needed as more of the city become smart. Microsoft Azure, managed by NTT DATA, provided the ideal location for this sensitive information.

The right way to end wrong-way driving

Traffic management is a vital function for every modern city, and eliminating wrong-way driving was one area the city targeted early on. Michael Sherwood, Chief Innovation and Technology Officer for the City of Las Vegas says, "We have the ability to look at traffic patterns and flows, using camera and imaging technology. Machine learning and AI turn traffic data into insights, and these insights can be used to answer questions that will ease traffic congestion and improve safety."

The connection at the root of smart parks

The city's parks provide spaces for residents to relax, enjoy themselves and spend time with friends and family. To keep those spaces safe, they've adopted a smart park strategy that detects people, keeps track of park occupancy and assists in crowd control by alerting the team as the park reaches capacity. It also detects incidents, allowing humans to respond more quickly.

> "You need to really take the time to analyze the data to make the choices for your citizens. That's where partnerships like those with NTT DATA come in — you can get the analytics, the dashboards, the graphs, the charts. They process 436GB of data every hour, and 35 machine-learning model runs make 850 predictions an hour, that's more than 14,000 predictions per week.
>
> **Chris Craig,** Deputy Director of Innovation and Technology, City of Las Vegas

Las Vegas has seven smart parks. “The project aims to not only increase public safety but also provide dynamic new insights into how park assets are used: what time of day people visit, when the park is closed, and manage it after working hours,” says Sherwood. These insights help officials make intelligent decisions on what services to provide at specific parks, based on who uses them, such as which parks need playgrounds for small children and which don’t.

Expanding connections beyond fiber

In downtown areas, Las Vegas relies on the city’s fiber backbone. As the project expands, serving residents creates a greater need for wireless connection solutions. The organization has been working with NTT DATA partners, such as Juniper, to start creating a wireless backbone with ultra-reliable, low-latency communication for smart connected parks — and a more connected community.

“One of the areas we’ve has been focusing on is the new world of connectivity, looking for new ways to connect devices to scale into our environment,” says Sherwood. “And one area that we’ve piloted has been Private 5G.”

They’ve already put the expanded network to use to provide connectivity to students and schools in the Clark Country School District. “This began as a result of the pandemic, providing internet access to students who needed to shift to virtual learning,” says Sherwood. “More than 1,000 students and families have been connected already, and this number will grow as we continue to expand the reach of the wireless network.”

Outcomes

Improving safety in real time while planning for the future

The Smart Solution gives the City of Las Vegas real-time visibility of potential incidents, which is invaluable to first responders and public safety decision-makers. Response times have improved since they receive alerts instead of having to check cameras or send a patrol. Insights into how an area is being used can also help make planning decisions. It allows officials to integrate other edge systems (like those that monitor air quality) and public data sources (like weather information) to enable better decision-making.

“Not only has NTT DATA brought an end-to-end ecosystem into our environment, but they’ve also worked with the systems we already had in place,” says Sherwood. “Allowing us to forge new partnerships with other organizations as we continue to create great solutions that are improving our efficiency and building our community in a new and safe way,”

Creating cost efficiencies

Las Vegas expects to save up to a million dollars a year by avoiding wrong-way accidents and lowering the resource costs for continuous patrolling. These savings can then be redirected into other priority areas.

Improving traffic and road safety

Studying incidents of wrong-way driving informs decisions to replace stop signs with traffic lights on busy streets. “Wrong-way driving incidents have gone down significantly where we’ve done this. The data shows that we used to have approximately 40 incidents a day,” says Craig. “Now we’re seeing, on average, only three or four a week.”

Creating opportunities for future growth

“The awesome thing about having the Smart Solution on Microsoft Azure is that it now scales much quicker. And we can start to leverage cloud-native services as we move forward with NTT DATA, deploying more cameras, more sensors and more use cases across the city,” says City of Las Vegas Network Administration Specialist, Allen Tyson.

Expanding the number of smart parks

Extending the network ecosystem across Las Vegas through the deployment of private 5G enables them to explore new connected services. More smart parks, even in areas that weren’t accessible before, allow Las Vegas to deliver the most appropriate services to each community. The optical sensors help them improve the safety of the parks and gather information on how people use them. In turn, those usage patterns allow for better planning.

Creating a sustainable city is paramount for Las Vegas. In Sherwood’s view: “The cities that learn, understand and invest in technology will be the cities of the future. Las Vegas is and will continue to be the city where citizens live, work and play.”

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