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NTT DATA SMART World Solutions

United Nations SDGs and Las Vegas

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

City of Las Vegas Guiding Principles

The City of Las Vegas will be a **leader in resilient, healthy cities**, leveraging the pioneering **innovative spirit** of its residents to provide **equitable access** to services, education and jobs in the new economy.

Equitable
inclusive, fair, welcoming

Resilient
sustainable, adaptable, flexible

Healthy
strong, accessible, well

Livable
unique, complete, enjoyable

Innovative
smart, diverse, bold

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Sustainability targets and Las Vegas

UN SDG Target 3.6

By 2020, halve the number of global deaths and injuries from road traffic accidents.

City of Las Vegas's Vision

Eliminate all transportation fatalities and serious injuries in the city of Las Vegas by 2050.

NTT DATA Solutions

Contributing to a reduction in road accidents, accelerating incident response and enhancing citizens' safety and well-being. Leading to less traffic disruptions and vehicle emissions and more sustainable operations.

Wrong-way driving use case

**Wrong-way analytics detects a vehicle going in the wrong direction
and allows safety adjustments for a "safer" city and "safe" citizens.**

Wrong-way driving detection outcomes

Incident reductions – 90%

Emergency personnel – Reduced vehicle usage

Cost savings for citizens and city

Improved public safety

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Sustainability targets and Las Vegas

UN SDG Target 11.6

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality.

NTT DATA solutions for monitoring air quality to empower city leaders to take the right decisions.
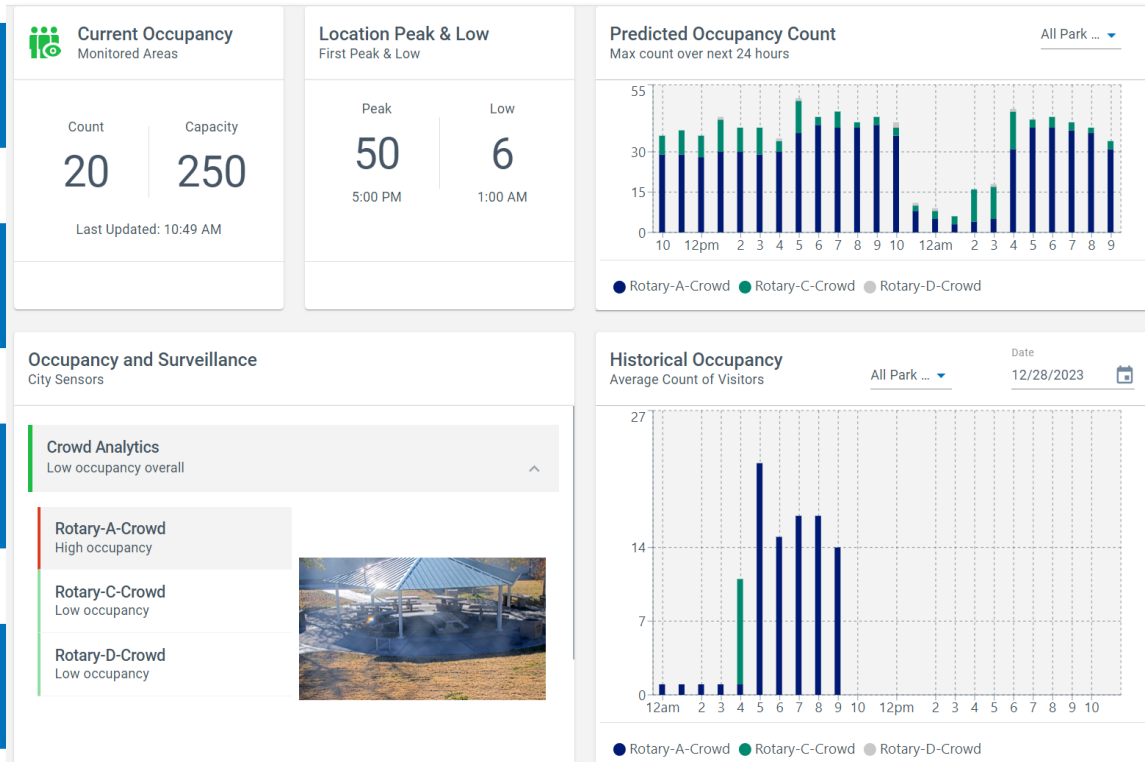
UN SDG Target 11.7

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces.

NTT DATA solutions for improving parks' safety and accessibility.

Smart Parks use case and outcomes

Monitors park facilities use and safety incidents.

Predicts occupancy conditions and historical trends enabling more efficient operations.

Green space for all

Citizen and visitor equal access to services

Safer parks with enhanced incident response

More efficient operations and less carbon emissions

Sustainability targets and Las Vegas

UN SDG Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

NTT DATA Solutions

Using NTT DATA, the City moved to the Azure Cloud for more efficient and less energy usage; the City also is establishing P5G connectivity, so access is universal. Students throughout Las Vegas, from K–12 and college, are enabled for remote learning. This expanded access is particularly appreciated in underserved areas and by 14.9% of citizens who live at poverty levels in the city.

NTT DaTa

Cloud migration and network connectivity outcomes

More efficient energy usage by using a cloud environment.

Network access across city allows for equality of opportunities for all citizens.

More efficient energy usage via Azure Cloud

Expanded network coverage removing digital divide in citizens

Ability to apply more NTT DATA solutions

NTT DATA

The City of Las Vegas shapes the future of urban living

Business need

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.

As part of this vision the city was looking to:

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

Outcome

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.

Solution

To address these needs the city is looking to understand the colossal amount of data generated by multiple systems across the city. Underpinning this is our NTT Smart Solutions platform.

NTT DATA 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. This allows them to:

- Gather and process predictive and real-time data
- Migrate Smart Solution from on-premises to cloud to improve agility
- Leverage Private 5G to expand network coverage

✓ > 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

> " 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 Sherwood,** *Chief Innovation and Technology Officer, City of Las Vegas*

Read the full case study

Watch the video

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Smart Management Platform

Turn data into actionable insights that drive real outcomes.

The modern organization lives in a data-driven environment. With the advent of the Internet of Things (IoT), increasingly more sensors and data devices are connected to the internet and each other, generating an unprecedented amount of data. Knowing how to handle this data and how to take advantage of it is the key to creating actionable information and predictive analytics to drive organizational success. For this purpose, NTT developed the Smart Management Platform (SMP), an **Outcome-based Analytic and AI Application Development Platform** capable of ingesting, normalizing, analyzing, and delivering data-driven insights from large amounts of data across disparate sources.

These data insights are encapsulated into purpose-built **Smart Apps** that accelerate the time-to-value for better business decision-making and agility. The NTT Smart Application catalog (App Store) contains over 15 reusable applications for immediate deployment to NTT and partner customers. New Smart Applications can be developed by regional delivery teams to support customer requirements if not satisfied by an existing Smart App and can be certified by the NTT Smart Platform for inclusion into the Smart App Store for use by future customers. All Smart Apps are cloud agnostic and can also be deployed on premise depending on customer requirements.

NTT DATA Smart Solutions

Industry: Cross-industry

Tech domain: Analytics Application, IoT & AI

Commercialization model:
Product license subscription (SaaS)
Cloud, On-Premise or Hybrid delivery

IP owner: NTT DATA, Inc.
Regions with business: Global – North America, APAC & EMEAL

- City of Las Vegas (City/Parks)
- INDYCAR (Venue/sport)
- Clark Count, NV (Parks)
- Ilitch Sports & Entertainment – Little Caesar's Arena (Venue)
- Victoria DOT (Transportation)
- NZCIS (Sport)
- NTT CIC Brussels (Occupancy)
- NTT Global Data Centers Americas (Carbon footprint)

What?

Distributed Open Architecture (Cloud and Platform Agnostic)

Data ingress/egress from any source with standard APIs

Advanced Data Analytics and AI Engine

Accommodate scale from small pilots to large deployments

Why?

A set of people-centric IoT-enabled edge analytics applications

Processes data from virtually any data source

Designed to transform this data into actionable intelligence and outcomes.

Although the platform has re-usable components, clients can buy the use cases they need and the ones that better suit their business and sustainability outcomes.

How?

Consultative sale

Phases of deployment:

- Discover & design
- Anallyze & implement
- Configure & deploy
- Pilot & recommend expansion

Support – OpCo/Region (L1/L2) and SMP Team

- International Institute for Fan Experience (IIFX)
- Dell Technologies
- Genetec
- Cities Today Institute
- Harvard

NTT DATA Smart Solutions use cases

Although the platform has reusable components, clients can buy the use cases that suit their business and sustainability ambitions.

The closed-loop

Real-time feedback can be used to alert the right personnel and influence the situation on the ground, e.g. pre-recorded audio announcements.

Predictive insight

The system can deliver predictions to allow better decisions and prevent incidents.

City/campus

Usage analytics Use of amenities e.g. parks, litter bins	**Public safety** Unsafe situations, incident response
Unsafe driving Road incident response & prevention	**Traffic predictions** Traffic trends for better planning and mobility
Transportation occupancy Adjust service and inform travellers	**Crowd monitoring** Situational awareness for planning purposes

Air quality Environmental intelligence for indoor and urban air quality monitoring

Events/venues

Occupancy and crowd monitoring
Regulate spectator flows

Fan experience
Personalized viewing and accurate sports statistics

Buildings

People flows
Energy efficiency and safety

Health checks
Non-intrusive temperature check

Sustainability

GHG emissions analysis
Accurate reporting for statutory compliance

Sustainability digital twin
Analyze trends in energy usage across Scope 1-3 and perform what-if optimization scenarios

Manufacturing

Worker safety monitoring
Ensure correct PPE and no trespassing of yellow lines

Healthcare

Patient observation
Detect patients leaving their beds when it's unsafe to do so or asking for help

NTT DATA Smart Sustainability Solution

Enables measurement, reporting and data driven optimization actions to achieve environmental sustainability goals faster

Quick start for baselining carbon footprint

- UI to rapidly:
  - Define assets and hierarchies
  - Establish emission factors (use established industry standards or define custom)
  - Enter energy, water or waste bills and goals
- Automated carbon footprint calculations
- Dashboard to view usage, carbon footprint and trends across facilities
- Ingest usage data from other sources

Consulting driven

Ease of integration

- Ingest data from virtually any source from analog to digital, manually or completely automated
- Evolve to more complex smart meters/devices driven data integration at sub-facility levels
- Integrate with other systems or data sources for corelative insights and optimization e.g. energy usage and occupancy or weather correlation

Ease of use and compliance reporting

- User experience design driven dashboards, can be customized if needed
- Reports and data to support GRI/EU standards reporting needs

Flex and expand

- Deployment options include Azure, AWS, NTT cloud or on prem/hybrid
- Solution platform can be used for Sustainability and other organizational use cases
- Easily expand to accommodate across Scope areas for a complete view of your organization

Data-driven decision capabilities

- Explore high energy usage trends or anomalies to focus on for optimization
- Adjust to predicted energy and water usage
- Evolve to enhanced data driven comparisons and what if capabilities using "Digital-Twin" capabilities

Enhance efficiency

- Optimize resource utilization and allocation
- Identify opportunities to avoid waste
- Modernize operations

Measure ➡ **Insights/Report** ➡ **Optimize**

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