

# The arrival of a safer, more efficient transportation system

## Auckland Transport delivers benefits with video analytics powered by HPE IDOL

### Objective

Achieve breakthroughs in public safety and optimize transportation infrastructure management using real-time data analytics

### Approach

Upgrade the surveillance camera infrastructure and implement an on-premise big data analytics platform supported by long-life hardware and services

### IT Matters

- Provide end-to-end batch file processing in 2 hours versus 4.5+ hours
- Automate reports and data analytics
- Develop new applications and improve user experiences with real-time, rapid streaming of high volume data
- Optimize video analytics with more than 2,000 video feeds recorded, 200 video analytics running in real time

### Business Matters

- Ensure accurate vehicle identification and scene analyses
- Provide proactive problem management with incident, hot spot, and traffic violation detection
- Evaluate infrastructure performance for improved service and travel continuity
- Formulate proper business decisions with analysis of data and daily files
- Support favorable perception of city's transportation network among taxpayers and citizens
- Improve city services with real-time data channeled to stakeholders and partners
- Transform business operations
- Integrate ticketing system with insight on travel times, patterns, trip frequencies, and demographics

Auckland Transport, the transportation agency for the city of Auckland, New Zealand, steered a Big Data project to glean video analytics from more than 2,000 closed-circuit television (CCTV) cameras. As a result, the city is closer to realizing its vision of safer roads and efficient public transportation.

Five years ago Auckland Transport was established from six regional councils to oversee roads, traffic networks, and public transportation. The merger yielded five different operational centers with various technologies. A small staff monitored hundreds of older CCTV screens and tracked inputs on pedestrians, cyclists, and vehicles.

"We were missing so much," says Roger Jones, Auckland Transport Chief Technology Officer. "The cameras were being used for reactive investigation rather than active problem management."

Making the roads safe necessitates pinpointing hot spots and trends, mitigating and reacting swiftly to issues, and monitoring the performance of the entire transportation network. In addition, multiple stakeholders and partners—from police and emergency responders to third-party application

developers—need actionable insight on travel activities.

"Our stakeholders want fast, real-time data about traffic lights, congestion, buses, and trains," Jones notes. "They want to use the analytics to transform their business operations day-to-day. We didn't have that wealth of data."

The agency faced the challenges of launching a new CCTV system, converging the units and their data, and then, assimilating and churning out vast data volumes to those who need to know. Auckland Transport enlisted Hewlett Packard Enterprise (HPE) to help achieve its goals.

The agency selected video analytics powered by the HPE IDOL, a data analytics solution, which enables personnel to derive insights and patterns from massive amounts of real-time streaming video data. Housed in the agency's facilities, HPE ProLiant Gen8 BladeSystem, HPE 3PAR StoreServ Storage, and HPE Critical Watch support the IDOL platform. The agency uses HPE Intelligent Scene Analysis System and HPE Automatic Number Plate Recognition for surveillance and to gather accurate details about vehicles and traffic scenes all across the largest city of the country.

“Our choice of the brand rested on the breadth of the solution that we were looking for—from hardware, software, and services application perspectives,” Jones explains. “Taking all those factors into account is why we selected HPE.”

### **Exceeding customer expectations**

The agency extracts about 1 TB of data monthly from the train CCTVs and at least 8 PBs of data weekly from street cameras mounted at intersections. In addition, the Microsoft® SQL Server-based warehouse holds around 3 TBs of data. The IDOL data analytics platform processes CCTV video analytics, integrating that data into the incident management system, also on the IDOL platform.

Approximately 200 video analytic schemes run in real time, enabling staff to respond to issues that make 1.4 million citizens safer on the road. Agency personnel can detect traffic violations, congestion, and parking problems, as well as harness patterns uncovered by the IDOL platform.

“The public safety is a huge step increase,” Jones admits. “That has financial ROI across the medical and broader community spectrums. As a transport agency, our IDOL analytics platform is helping us exceed customer expectations and shape positive perceptions.”

Putting the data to work, the agency has gained an integrated ticketing system with insight on travel times, patterns, trip frequencies, and demographics.

“We can now start to tailor our messaging, especially for transport, to the stops where people are at the right time of day,” Jones says.

Instead of conducting ad-hoc surveys, city planners can use the real-time data from license plates to construct heavy transport and trucking options.



“We want partners to give us longevity of products and association. We need a brand to be in there for the long haul. We are an HPE shop, so we picked HPE and their products.”

- Roger Jones, Chief Technology Officer, Auckland Transport

“This is very much about the planners having reliable information,” Jones says.

### **Enabling strong analytics**

Current statistics and other significant volumes of data—such as the parking system—reside on the HPE Vertica Analytics Platform, which processes structured data quickly. IDOL accelerates the delivery of relevant knowledge, linking statistics with historic corporate information and financials in the SQL warehouse. The warehouse data integrates with the Vertica and API Management Solution data stores to provide integrated reports at the front end.

The data analytics platform provides faster end-to-end batch file processing. Previously, batch processing took 4.5+ hours. As a result, service, bus, and ferry operators could not leverage needed information when starting their work day. Now batch processing finishes in 2 hours.

“We have a huge performance increase,” Jones explains. “When the operators come in to work, they have yesterday’s information, and they can make the right business decisions. The API Management Solution platform can manage streaming of high data volumes at high velocities.”

### Customer at a glance

#### Industry

Government/Public Sector

#### Primary hardware

- HPE ProLiant Gen8 BladeSystem
- HPE 3PAR StoreServ Storage
- HPE StoreAll Archive
- HPE FlexFabric

#### Primary software

- HPE IDOL Information & Data Analytics platform
- HPE Vertica Analytics Platform
- HPE Intelligent Scene Analysis System
- HPE Automatic Number Plate Recognition
- API Management Solution

#### HPE services

- HPE Software Services
- HPE Critical Watch

Through its investment in big data technologies from HPE, Auckland Transport is building upon its “Future Cities” vision, one in which developers and officials employ all types of data, sensors, and technologies to improve products and services for their citizenry. Jones sees the agency continuing to enhance resident experiences as more agency stakeholders and partners fully grasp the potential of big data.

“We are looking to enable them to take that data and do something with it, find patterns we don’t have the expertise to find, and deliver value back to us and to everyone else. We’ve provided the platform and enabler. They must pick it up and run with it,” he concludes.

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