High performance. Delivered.

Singapore Government: Safe City Test Bed

A public safety solution using video and sensor analytics

Overview

The Singapore Government sees analytics as an important growth area and vital to making Singapore one of the safest and most efficient cities in the world. Through its Safe City program, the Government is using the latest in advanced analytics to complement its public safety solutions and increase security, deliver services more efficiently and make the most of its workforce.

As part of this program, the Government worked with Accenture to complete a test bed that trialled the use of video analytics in a public safety setting. Working with six agencies, Accenture used its Safe City Solution to integrate existing and new video sources into a central analytics platform and run live tests during two major public events in the Marina Bay precinct.

Through the use of advanced video analytics and user-friendly applications, the test bed successfully helped the Government predict crowd behaviour, coordinate resources, respond to incidents and collaborate more effectively across agencies – delivering public service for the future.

Client profile

Accenture worked with the Safety and Security Industry Programme Office (SSIPO), jointly established by the Ministry of Home Affairs (MHA) and the Singapore Economic Development Board (SEDB), to develop a Safety and Security industry with innovation capabilities. The MHA is responsible for public safety, civil defence and immigration in Singapore, while the SEDB executes strategies to sustain the city state as a leading global hub for business and investment.

"Our collaboration with Accenture in the field of big data analytics will contribute toward a deeper understanding of our public safety landscape and increase our ability to anticipate and respond better to public safety incidents and crises as they occur,"

Anselm Lopez, Co-Director of the SSIPO and Director, Capability Development and International Partnerships, Singapore Ministry of Home Affairs.

Business challenge

The Singapore Government realised that analytics could go beyond simply spotting existing patterns of behaviour and instead help it better understand, prepare for and react to future events.

By applying a centralised video analytics solution, the Government would be able to share data between agencies more easily. A robust analytics platform could also deliver actionable insights for users with a wide range of requirements.

As a video analytics solution represented a major step into new technological territory, a test bed was deemed necessary to test its effectiveness.

How Accenture helped

Accenture collaborated with six Singapore Government agencies across law enforcement, transport and the environment to pilot our Safe City Solution supported by the Accenture Video Analytics Service Platform.

The test bed involved three phases:

1. Integrating the infrastructure.
Over a four-month period, Accenture integrated existing video management systems into a common streaming platform, allowing the Government to maximise its return on investment from infrastructure that was already in place. The solution brings together data from a diverse set of sensors, including wifi data, GPS, mobile application data and video feeds. A further analytics layer allows for the creation of different outputs for a wide range of user groups, all in real-time.

2. Adding data analytics.
Combining video analytics with advanced analytics such as simulation models, machine learning and text analytics, Accenture's solution analyses available data to uncover meaningful insights in real-time. A unified user platform allows information to be visualised through a command and control application as well as mobile devices, and connect to existing external operational systems.

3. Trialling the solution.
Over a further four months, using an agile testing approach Accenture ran a series of bi-weekly trial runs and 'sprint' reviews. The participating agencies were able to provide feed-back, refine and shape the scope of the solution according to their needs. This process of fine tuning helped increase the operational relevance of each trial run and encouraged ongoing technological innovation across the test bed.

High performance delivered

Accenture's Safe City Solution allows public safety leaders in Singapore to perform their jobs more effectively, with increased situational awareness and more streamlined operations.

Accenture helped equip the Singapore Government to deliver the following outcomes:

• Innovation in crowd and urban city management analytics.
High crowd activity, crowd size estimation and object detection were successfully detected with a greater than 85% accuracy. For crowd size estimation in City Hall MRT station, this was achieved by simply using 5 cameras of the existing CCTV cameras in City Hall, one of Singapore's busiest metro interchange stations. Accenture's crowd simulation model was used to predict crowd movement through this station during the 2013 Formula 1 Grand Prix in Singapore.

• Increased operational support.
Apart from Formula 1, the solution was also tested during Singapore's Marina Bay 'Countdown' event, held on New Year's Eve in 2013. At both events, the platform successfully predicted how crowds would form. It visually presented the position of and information from surveillance cameras via alerts, as well as the real-time tracking of GPS locations of the ground units supporting the large-scale event.

• Anomaly detection through social media monitoring and analytics.
The solution uses trend analysis to identify abnormal activity on social media and contain key words of interest relating to public safety. This provides users with an automated way of identifying deviations from established patterns of behaviour in the digital world.

• Real-time decision making.
Tested using crowd simulation and evacuation scenarios, Accenture's solution helped city leadership respond faster by providing them with data from real-time operations. This is achieved by integrating real time inputs from video analytics with advanced analytics simulation model, instead of just relying on static standard operating procedures.

The Singapore Government gained insights and awareness that will be relevant for future operational rollouts, and can now integrate public safety video information from a range of agencies and produce meaningful insights in real-time, helping it respond faster and be more accountable to the citizens it serves – delivering public service for the future.

"The solution's integration of video analytics, combined with an agent-based evacuation simulation model, makes it a powerful tool. Potentially, it can help agencies go beyond static standard operating procedures and make real-time decisions based on live data and insights."

About Delivering Public Service for the Future

What does it take to deliver public service for the future? Public service leaders must embrace four structural shifts—advancing toward personalised services, insight-driven operations, a public entrepreneurship mindset and a cross-agency commitment to mission productivity. By making these shifts, leaders can support flourishing societies, safe, secure nations and economic vitality for citizens in a digital world—delivering public service for the future.

Connect with us to learn more on delivering public service for the future on Twitter @AccenturePubSvc

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 289,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US$28.6 billion for the fiscal year ended Aug. 31, 2013. Its home page is www.accenture.com.