Making 21st Century Transport Services a Reality

Improving road safety, security, and traffic management across Greater Manchester

EXECUTIVE SUMMARY

Customer Name: Transport for Greater Manchester

Industry: Transportation

Location: Manchester, United Kingdom

Number of Employees: 600

Challenge

· Increase passenger safety and security
· Improve traffic management
· Streamline operational efficiency and reduce cost

Solution

· Cisco Borderless Network
· Cisco Video Surveillance Manager
· Cisco Unified Communications Manager

Results

· Reduce operational cost of traffic control comms network by more than half
· Enhance public security through more effective video surveillance
· Help ensure efficient traffic flow—improving customer service and reducing environmental impact

Challenge

Transport for Greater Manchester (TfGM) delivers and develops public transport services for 2.55 million residents. It is the second largest metropolitan area in the U.K. and the largest outside London. TfGM runs the Metrolink tram service, which is undergoing a £1.4 billion expansion and modernization program, and operates transport modal interchanges, bus stations, and bus stops. It is also responsible for the day-to-day management of traffic signals on the city's major highways.

Having replaced the previous Greater Manchester Passenger Transport Executive, the role of TfGM in the community has grown significantly. For example, it assumed responsibility for developing an Urban Traffic Control scheme designed to help ensure that the city's traffic flows freely. In addition, it has an increasingly important responsibility for passenger safety and security.

However, TfGM faced several challenges. The organization needed to standardize and centralize its IT architecture, because each site had a separate infrastructure. For example, 20 bus stations might have 20 different CCTV systems. Also, although a single maintenance contract with one supplier was already in place, that company had to support many different systems.

"Previously we had an MPLS network that just supported corporate processes," says Rohan Mendis, ICT consultant for TfGM, "but to introduce services like IP CCTV, we needed to upgrade to a new multiservice network with greater capability." So, before it could start on the all-important task of optimizing transport operations, TfGM first needed a common IP platform over which it could standardize IT services and operational processes.

Solution

TfGM chose a converged IP infrastructure based on Cisco® Borderless Network Architecture using Cisco Catalyst® 3750E, 3650, and 4500E Series Switches. Cisco Medianet—a suite of advanced technologies that detect different types of endpoints, media, and application types to deliver the best user experience—insures it is optimized for video.

"We can look in real time at queues and the loading of trams and buses, and use these new and valuable insights to improve services. Should the police make an incident enquiry as part of a criminal investigation, we're able to provide exceptionally high-quality footage that can be used as evidence in court."

Rohan Mendis
ICT Consultant
Transport for Greater Manchester

Building on this multiservice platform, TfGM implemented Cisco Video Surveillance Manager, and has migrated over 100 analog cameras to Cisco 4300, 2600 and 2900 Series High-Definition IP Cameras. The total number of cameras will eventually increase to 950. These feature-rich digital cameras closely monitor bus and Metrolink terminals as well as traffic signals, busy junctions, and potential danger points where trams and cars intersect.

With Cisco Video Surveillance Manager software staff can log in securely, control pan-tilt-zoom cameras, view real-time and archived video, save individual video images, and even search for video containing motion. Designed using open standards, the Cisco solution integrates smoothly with BBV Omnivision CCTV surveillance software, enabling operators to carry out such tasks from their desktops.

A Cisco Unified Communications Manager system—using Cisco Unity Connection High Availability Configuration—running on Cisco Media Convergence Server 7835 has simplified and centralized management of the transport operator's Cisco IP Telephony and Unified Contact Center Enterprise environments. Moreover, the Cisco Borderless Network IP platform allows the integration not only of voice and data communications and video surveillance, but also public address systems and other transportation support services. The Abraham Moss terminal on the TfGM Metrolink Bury Line, for instance, is one of the first sites in Europe to be entirely IP-based, with all devices connected via the Cisco network.

"One of the biggest benefits has been the ease of integration provided by adopting Cisco solutions," says John Garner, head of information systems for TfGM. "Having an open architecture gives us a platform for consolidating systems, tools, and information, which increases the return on investment."

Results

Through increased coverage and more effective use of video surveillance, TfGM is able to provide customers with a much safer and more satisfying travel experience. Using Cisco Video Surveillance Manager, the operator can quickly investigate incidents by locating and retrieving specific video sequences to verify what has actually happened.

"We can look in real time at queues and the loading of trams and buses, and use these new and valuable insights to improve services," says Mendis. "Should the police make an incident enquiry as part of a criminal investigation, we're able to provide exceptionally high-quality footage that can be used as evidence in court."

The simplicity of the solution also means that the police needed little training in exporting video footage from the system. Similarly operators did not need custom training for control room teams.
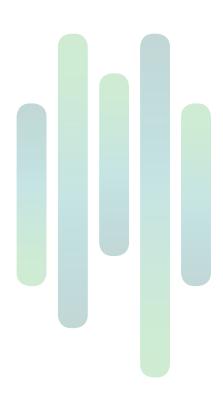
Passenger journey times and travel experience have also been transformed. Management of the city's traffic signals at some 2500 locations is being consolidated using ADSL, 3G, and fiber links to connect to the Cisco multiservice platform. This consolidation has allowed TfGM to do away with expensive analog circuits, reducing operating costs by more than half.

The resulting traffic management unification will provide staff at the control center with greater visibility and control of traffic signaling. "Using intelligent transport devices to improve traffic flow so buses do not have to wait at traffic lights also lowers carbon emissions and reduces environmental impact," says Mendis. The ultimate goal is to achieve free-flow traffic management.

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Head of Information Systems
Transport for Greater Manchester

Furthermore, the Cisco Unified Communications Manager has enabled TfGM to drive productivity and cost reduction. Cisco 7900 Series IP Phones are now used at bus stations and at the organization's two contact centers where staff arrange concessionary travel passes and safe driving courses for motoring offenders.

"The Cisco network is stable and performing well," says Mendis. "We use the same network for our ticket vending machines, which allow passengers to pay by debit or credit card at Metrolink stops. Cisco firewalls ensure secure transactions that are fully compliant with Payment Card Industry standards."

Next Steps

Looking to the future, TfGM is considering Cisco Digital Signs as a way of further improving information services and passenger experience. Deployment of this technology could also help generate potential revenue from promotions and advertising. Other future projects might include the introduction of face recognition technology and an IP-based incident response solution.

For More Information

To learn more about the solutions mentioned in this case study, please go to:

www.cisco.com/go/borderless
www.cisco.com/go/collaboration
www.cisco.com/web/solutions/ps/products.html#hybrid
www.cisco.com/go/physec

Product List

Borderless Network
· Cisco Catalyst 3750E, 3560, and 4500E Series Switches

Unified Communications
· Cisco Unified Communications Manager on Cisco Media Convergence Server 7835 – Cisco Unity Connection High Availability Configuration
· Cisco Unified 7900 Series IP Phones
· Cisco Unified Contact Center Enterprise

Physical Security
· Cisco Video Surveillance Manager
· Cisco Video Surveillance 4300, 2900, and 2600 Series IP Cameras

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