FUJITSU

Case Study
Transport for London

»Thanks to meticulous planning and collaborative working with Fujitsu's team, we were able to successfully deliver wireless internet to over 210 stations in a very tight time frame and within budget, with an average of 800,000 user sessions per day in the first six months«

Steve Townsend, CIO, TfL

THE CUSTOMER

Country: United Kingdom
Industry: Public Transport
Founded: 2000
Website: www.tfl.gov.uk

Transport for London

THE CHALLENGE

Transport for London (TfL) wanted to introduce wireless internet access in as many Underground stations as possible in the run up to the London 2012 Games. The logistics of designing and installing infrastructure up to 200ft underground demanded an agile and collaborative strategic partner.

THE SOLUTION

TfL appointed Fujitsu to design its wireless underground network in an innovative way that balanced its operational requirements for data while simultaneously providing a great Wi-Fi experience to the public and delivering value for money.

THE BENEFIT

- The wireless network enables trains to send near real-time data allowing proactive maintenance to take place, increasing reliability and minimising delays to customers.
- It also supports London Underground employees to securely connect to the network, giving them enhanced mobility and improving performance at work.
- The public Wi-Fi helps TfL to enhance the passenger experience throughout each station with download speeds typically twice as fast as the average UK home connection.

The customer

TfL was created in 2000 and is responsible for implementing the Mayor of London's Transport Strategy. Its transport network is responsible for 30 million journeys every day across London Underground, Docklands Light Railway, London Overground, buses, Barclays Cycle Hire, Tramlink, the Congestion Charge as well as 580km of main roads. TfL is also responsible for all the traffic lights and regulating the City's taxis and private hire trade.

The challenge

London has the oldest Metro system in the world and TfL wanted to introduce Wi-Fi on its network to improve customer experience for the millions of people who use it every day. The choice was made to launch the Wi-Fi service in as many stations as possible in time for the London Olympics in 2012. Success relied on collaborating closely with TfL to create and deliver an efficient design and provide a resilient service.

"With London Underground playing the key role in transport for the Games, the Wi-Fi project became crucial for the success of the event and showcasing London as one of the most connected cities in the world," explained Steve Townsend, CIO, TfL. But the vision had a longer term goal. "We need to get more information to mobile staff. People don't control transport from behind a desk," he says. "The technology has to be mobile to get to staff on station platforms, outside stations, and moving around the network." A digital ecosystem in the making.

Fujitsu is a long term strategic partner of TfL and since 2004, has been responsible for managing the data networks that support TfL's 25,000 employees. It was therefore the ideal choice to design and manage the deployment of Wi-Fi access across the Underground network. Fujitsu worked with partners Installation Technology to design and install a solution for ubiquitous access, Virgin Media to provide high capacity Wide Area Network connectivity, and Cisco to supply network access points compliant with the Underground environment.

The technological complexity of carrying out such a major piece of work up to 200ft underground was daunting and required highly detailed planning. Despite the difficulties, the Fujitsu team mobilised the technology in only four months to deliver the services TfL required.

In addition to the very tight deadline for completing the installation, the other major obstacle to overcome was the limited time available for work teams on a daily basis. They had access to Underground stations for only four hours a day during routine maintenance hours in the early hours of the morning. Moreover, they had to cope with working in highly confined spaces with very stringent fire regulations.

The solution
In just four months, Fujitsu designed and launched the service TfL had appointed it to deliver, enhancing the journey to work for millions of commuters. This involved installing on average 14 internet access points for each station to be Wi-Fi enabled.

The solution provides contiguous coverage throughout each station, essential to support TfL's operational systems. The installation has been built with future requirements in mind, providing a minimum capacity of 1GB per second with in-built growth capability of 50-100 per cent.

Fujitsu's team performed a site analysis of every Tube station and used modelling tools to decide where the access points should be situated. The scale of the operation was clear from the amount of materials needed to install the service including over 250km of copper and 135km of fibre.

As the network also carries CCTV data and information from the trains on performance, it was critical that internal and public data were fully separated. Because of this as part of the contract, Fujitsu also provides ongoing support and maintenance of the service as well as a security layer.

Thanks to meticulous planning as required by TfL, Fujitsu was able to deliver a resilient wireless internet service to over 100 stations in a very tight time frame and within budget.

The benefit
In the first six months, there were over 100 million user sessions - an average of 800,000 user sessions per day. The project achieved a major milestone towards the London Mayor's goal of making London one of the world's most connected cities.

With careful planning Fujitsu were able to design, build and operate a transport communications network able to support the most challenging logistical exercise any city can undertake.

Implementing one of the first underground Wi-Fi services in Europe as required by TfL, has provided a real-time information service to enhance the journeys of customers. In addition, TfL employees are no longer tied to desk based PCs allowing them to work more flexibly around the stations.

Conclusion
Not only has Wi-Fi on the London Underground that Fujitsu delivered contributed to making the Olympics more memorable, the project has also delivered an early legacy and helped shape the future of public services. It has given added value to millions of TfL's customers and contributed to record satisfaction levels on the Tube as well as significantly boosting performance by improving staff communication.

"Our customer satisfaction surveys show we have achieved record high scores - about 10 percentage points above the average for public sector transport providers. The feel good effect of Wi-Fi on the London Underground has been an important factor in contributing to this."
Steve Townsend, CIO, TfL