

Case Study :



THE CHALLENGE

An organisation built around moving people, demands communications 'on-the-go'. So when Stagecoach Manchester embarked upon their fleet refresh programme, a review of their radio communication solutions highlighted some issues to be addressed.

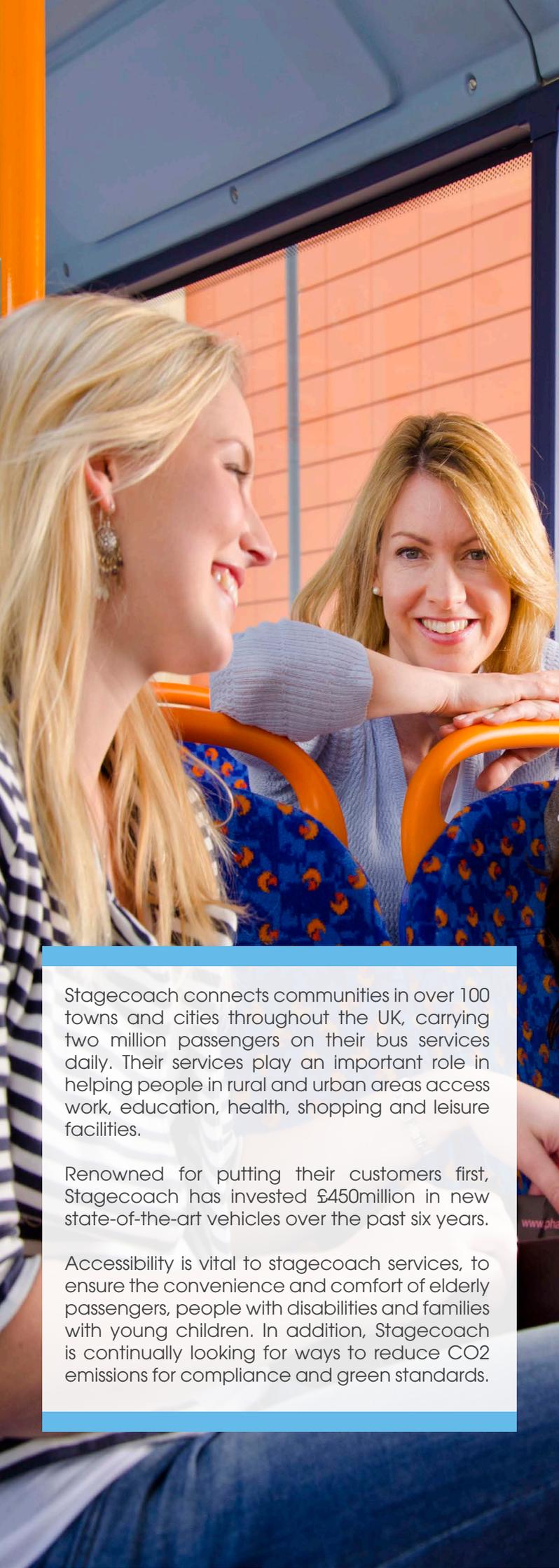
Stagecoach had been using an MPT1327 trunked radio network, which was more than 20 years old. Stagecoach Manchester was experiencing a high failure rate with their legacy communications solution and the costs of operating and maintaining it had become very high. Taking buses off their routes in order to find and repair equipment failures was costly.

Having buses operate on routes with impaired or no communications capability also impeded Stagecoach's ability to run services to schedule. In both cases, the high failure of their communication solution was impacting passenger experience.

A further challenge presented by the legacy communication solution was poor coverage. In some of the areas where Stagecoach was operating, bus drivers experienced either poor quality or a total loss of communications capability, derived from a lack of network infrastructure. In these areas it was difficult for bus drivers to exchange information with the control room and therefore meant that updates were delayed while buses entered the geographic areas with better coverage. Optimisation of bus operations for the existing fleet was a challenge - and one that needed to be resolved prior to Stagecoach Manchester commencing their acquisition strategy.

Having recognised that their legacy communication solution was nearing end-of-life, Stagecoach made the decision to update their fleet communication systems. The opportunity to bring their communications technology up-to-date would support their drive to improve passenger experience by delivering enhanced fleet services.

Stagecoach's new radio communication system requirements included the need for Manchester-wide coverage as well as capacity for a growing fleet of vehicles. In addition, a fully managed service capability was needed to ensure that any communication system problems could be dealt with by their communications provider - ensuring that Stagecoach could focus on moving people and not repairing radio equipment.



Stagecoach connects communities in over 100 towns and cities throughout the UK, carrying two million passengers on their bus services daily. Their services play an important role in helping people in rural and urban areas access work, education, health, shopping and leisure facilities.

Renowned for putting their customers first, Stagecoach has invested £450million in new state-of-the-art vehicles over the past six years.

Accessibility is vital to stagecoach services, to ensure the convenience and comfort of elderly passengers, people with disabilities and families with young children. In addition, Stagecoach is continually looking for ways to reduce CO2 emissions for compliance and green standards.



The brief presented to affini outlined the need to replace Stagecoach's existing radio system with a scalable, flexible and cost effective alternative. One of the prerequisites outlined within the brief was the need for compatibility with Motorola devices. Not only did Stagecoach have a large estate of wireless devices and peripherals from the Motorola range, but they had also opted to consolidate their radio equipment to the Motorola range on a global basis.

affini recommended a migration to digital radio technology. The MOTOTRBO Linked Capacity Plus and multi-site trunked radio system was specified to address Stagecoach Manchester's operational requirements. The system would comprise of 750 DM3400 mobile radios installed in the buses, 50 DP3600 portable radios for operations personnel and TRBO Enterprise 3.5 fixed PC Dispatcher Stations deployed at each of the Stagecoach Manchester's four operations centres.

The radio solution designed by affini, required a robust and resilient infrastructure on which to operate. The solution proposed by affini recommended the use of Microwave. In addition to the ability to extend coverage around Manchester in a cost effective manner, Microwave provides enhanced resilience over IP. The Linked Capacity Plus system was implemented across two existing sites where new repeater and antenna equipment were installed. One of the sites was within Manchester city centre, the second site is on the 280m high Wernerth Low hill on the outskirts of the city to provide 'fill-in signal' for total coverage.

The new solution proposed by affini would not only facilitate radio communications to and from buses and the Stagecoach operation centres, but it would also enable calls between radios and any fixed line or mobile telephones across the operation. Some of the calling features essential to bus operations included call dispatching, call logging and group calls, which could be achieved through the inclusion of a telephony interconnect facility. In addition, the new solution would provide transmit interrupt - an essential feature for the instant delivery of emergency communications. With such a feature rich communication solution, Stagecoach could manage incidents and fleet, or schedule adjustments in real-time, helping to maintain efficient fleet operations.

Opting for a Digital Mobile Radio (DMR) solution, affini could deliver better voice quality than Stagecoach's existing analogue solution. In addition, the DMR solution would provide the ability for IP integration to support future applications, as well as enhanced capacity. The additional capacity would be needed to enable Stagecoach to extend radio communications within their existing fleet of vehicles, as well as to support any new vehicles via their acquisition strategy.

Perhaps the biggest challenge of the solution proposed by affini was the transition from the legacy solution, to the new DMR solution. affini recognised that it would not be feasible for affini to implement the changeover in one go, as this would require taking the entire fleet of Stagecoach vehicles off the road. To overcome this obstacle, affini outlined a transition plan that would take a phased approach to deployment and manage a large proportion of the work around the Stagecoach schedule - both in hours and out of hours. Although this deployment would take longer, it would minimise schedule disruption for Stagecoach.



HOW DOES THE SYSTEM WORK?

The final element of the solution was a fully managed service wrap. This capability would provide Stagecoach with a full support contract to cover telephone support, remote monitoring for fault verification, fault diagnostics and repair, as well as preventative maintenance. The service management package outlined within the affini proposal included rigorous SLAs to minimise downtime, as well as a spares inventory to ensure that any faulty equipment could be swapped out in the shortest possible time. The service wrap would also provide preventative maintenance checks on all radio equipment to ensure potential issues were identified and resolved before causing any service disruption.

A bus driver presses an overhead button to request a call back and a dispatcher at one of the operations centres responds to find out what the request entails. The driver will then use a foot pedal to communicate the request and the operations centre responds and provides information on how to handle the situation. Should the operations centre need to share any information with a larger, defined group of buses, they can make a broadcast call. In an emergency the bus driver can use the foot pedal to override busy channels and get through to the dispatcher instantly.



- **Scalable, communications** - Seamless roaming enables drivers to focus on the road, without having to adjust their radio settings as they travel through poor coverage areas.
- **Hands-free control & operation** - Use of a foot pedal to enable hands-free communication, ensures the safety of both Stagecoach's drivers and passengers.
- **Improved safety and security features** - Key features like Transmit interrupt ensure that communications can be prioritized exactly when they are needed and emergency alerts ensure that drivers can send notifications to central locations instantly.
- **Enhanced coverage** - Extended radio coverage throughout the city, enables radio communications to be maintained at all times.
- **Voice and data integration with enhanced voice quality** - The integration of both voice and data into a single network eliminates the need for separate network controllers enabling rapid response to driver and crew requests.
- **Increased productivity & efficiency** - Real-time communications enables Stagecoach Manchester to manage their people and their fleet, for optimal utilization.
- **Voice and data integration, enhanced voice quality** - The integration of both voice and data into a single network eliminates the need for separate network controllers enabling rapid response to driver and crew requests.
- **Significant cost reductions** - The fully managed service delivered by affini has reduced the time and costs associated with the high failure rate of the legacy system. The new solution also provides a predictable cost model as the fleet size expands.
- **Standardisation** - Opting for a Motorola DMR solution and Motorola devices has provided Stagecoach with blue print that can be replicated as their business grows. With a robust radio communication solution operating across their fleet, Stagecoach is now able to positively impact customer experience. Their ability to run services on time with minimal delays is derived from their ability to communicate in real-time. In addition, the ability for Stagecoach to scale their solution as their business grows will support their desire to increase both the number of services they operate as well as the frequency of the services to further improve customer experience.



WHY AFFINI?

affini continues to work with Stagecoach, hosting regular user forums to ensure that the system continues to meet the day to day challenges that Stagecoach faces.

Furthermore, the Stagecoach Manchester deployment has become the de-facto standard for radio communications within the group.

THE FUTURE

Stagecoach has subsequently re-engaged with affini to extend wireless radio coverage to include their newly acquired Middleton bus fleet. On-going user group meetings are being used to develop the architecture so that the solution can be further expanded to include Firstgroup Wigan bus fleets in the near future.



“affini came with the vision, the backing of Motorola Solutions and years of expertise that made the decision to choose the Linked Capacity Plus easy. We could see immediate infrastructure cost savings by moving from the existing five site solution, to a two site digital platform whilst maintaining functionality and radio coverage. The possibility of this model being deployable to other areas of our business was key to gaining the executive team’s approval”

Peter Sumner,
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