



# MSRTC CASE STUDY



## OVERVIEW

The Maharashtra State Road Transport Corporation abbreviated as (MSRTC, or simply ST), is the state run bus service of Maharashtra, India with 16,500 buses which ferry 7 million passengers daily. It serves routes to towns and cities within Maharashtra and adjoining states. Apart from locations within the state of Maharashtra, the MSRTC service also covers destinations in neighbouring states. It also offers the facility of online booking of tickets for all Buses. The S.T. buses are also used for transportation of the postal mail, distribution of medicines, newspapers and even tiffin's sent by people from rural areas to their relatives in cities. Transporting goods of the farmers to cities is also one of their jobs.



## REQUIREMENT

MSRTC wanted to offer on-board entertainment to its travellers. Considering the large number of travellers and a highly competitive market with low margins, they wanted a low cost high capacity solution that could accommodate many concurrent users. The major challenge of installing WiFi internet in any moving object is ensuring uninterrupted service and quality of signals. Adding to this challenge, because of the volume and diversity of the travellers, managing and controlling the network is a huge concern.



## HOW WE HELPED

- ▀ Reduced OpEx and CapEx
- ▀ Easy tracking of number of users, bandwidth control, policy management and reporting
- ▀ Large volume of data to perform consumer behaviour analytics
- ▀ Increased revenue by on-board advertisements
- ▀ Integrated BYOD support
- ▀ Simplified and centralized network management
- ▀ A reduction in network fault calls
- ▀ Ability to remotely control, monitor and troubleshoot
- ▀ Ubiquitous Wi-Fi coverage and stronger signal
- ▀ The ability to support high density environments with more concurrent users per access point
- ▀ Access point Monitoring
- ▀ Proximity marketing

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*MSRTC deployed Indio's Unibox and access points to provide seamless and sustainable wireless solution to travellers for entertainment.*

Maharashtra State Regional Transport Corporation (MSRTC) is one of India's largest bus operators which operates a fleet of over 20,000 buses across the state of Maharashtra. Established in 1950, MSRTC reaches far flung areas of the state through over 50 depots scattered across the vast state. It operates Shivneri Volvo buses on major routes like Mumbai – Pune, Mumbai – Nashik, Mumbai – Nagpur and others. It also operates semi-luxury buses, sleeper and regular buses on other routes. It serves over 10 million users each month and generates over Rs 100 million in annual revenue.

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MSRTC was also facing intense competition from private bus operators who offered many value-added services to lure the passengers. It was important for MSRTC to also offer added services and improve the customer satisfaction so it could withstand the fierce competition from other bus operators. MSRTC found that most of its customers owned WiFi-enabled smartphones and were looking for connectivity and entertainment while traveling long distances. Traditionally, the common medium of entertainment was a television connected to a DVD player. The staff would insert a latest blockbuster movie for the entertainment of the passengers. However, they had started facing complaints from passengers who need more options for entertainment while on the go.

There was an increasing demand to have in-flight entertainment like experience in buses. The in-flight entertainment provides many options to the passengers so they could choose from multiple options like movies, TV shows, music videos, cartoons and videos. When MSRTC started inquiring about the in-flight entertainment they realized that per seat entertainment system was too expensive and it didn't fit their budget, especially when they were operating in a highly competitive travel industry with low margins. They needed a system that was affordable yet provided multiple entertainment options to their patrons.

MSRTC wanted to be more competitive and offer something that was not attempted earlier in the travel industry in India. They were looking for a

solution that was scalable and didn't require Internet connectivity since the 3G/4G services were not reliable on the intercity and interstate routes.

MSRTC soon realized that Wi-Fi based entertainment system was the answer since it offered an affordable yet scalable solution for their on-bus entertainment system. They floated a RFP for installing and operating a WiFi enabled entertainment system with advertisement capability on all the fleet. Pune-based KPIT expressed interest in the RFP and submitted a bid for the same. KPIT is a well-known company that offers technology solutions for the automotive sector. KPIT has been instrumental in building various innovative products for automobiles besides offering a complete managed service with its team of over 5000 engineers.

Initially KPIT tried to build the WiFi router and hotspot solution in-house but they soon realized that they didn't have the expertise and experience to build a robust and scalable WiFi router and hotspot software. Their field trials were not able to handle the load of streaming a full-length movie or video and led to unpleasant experience for the guests. KPIT contacted Indio Networks to offer the complete WiFi solution for over 20,000 buses and helping them operate and manage the network centrally from a single console.

Indio Networks built a special WiFi router that was purpose built for this project. The first challenge was to handle concurrent WiFi sessions from 25 – 30 passengers and provide a throughput of at least 1 Mbps to each user. This throughput was essential for streamline a high-quality

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video or movie from the router to the user's smartphone. Secondly the router and antennas had to be compact enough to fit in the rugged enclosure yet offer coverage across the bus from the driver seat. Lastly, the router had to withstand vibrations, power fluctuations and harsh environment in the bus.

From the software side, the router firmware needed to be upgraded centrally so new updates could be easily pushed to the routers once they were installed on the buses. The router also needed to support complete hotspot functionality including captive portal, authentication, bandwidth management and policy control. All the routers had to be managed and monitored centrally from a single dashboard. Wifisoft offered its award-winning Wi-Fi LAN Cloud platform along with AP controller for managing the remote WiFi routers. The router firmware was designed to communicate with the central dashboard periodically and update the status of the network. It also downloaded the newest firmware and configuration updates if necessary. This architecture allowed Wifisoft to easily manage and upgrade the remote routers while monitoring their health on a periodic basis.

KPIT deployed the routers along with the entertainment solution in 20,000 buses over the course of a year. The entertainment system had on-board hard disk to store over 2000 hours of entertainment videos, movies, songs

and TV shows. Since MSRTC was the first company to offer WiFi-based entertainment service, they received a lot of media coverage in newspapers, TV and radio.

Initially the passengers were unaware of the new system but once KPIT started doing advertisement and promotions at bus stations and inside the buses, the passengers started using the entertainment service. Passengers were offered a lot of media ranging from local TV shows, movies, videos and songs. The service that was once a prerogative of air travellers was made available to the common people. Once the passengers got comfortable with the system they started recommending the service to their friends and family. Within 3 months, the viewership touched over 100,000 and was increasing at the rate of over 25,000 each month. KPIT also worked with an advertisement company that was responsible for injecting video ads in the viewer contents. With the increase in viewership, KPIT started monetizing their investments by offering various ads on the network.

Excerpt

[https://en.wikipedia.org/wiki/Maharashtra\\_State\\_Road\\_Transport\\_Corporation](https://en.wikipedia.org/wiki/Maharashtra_State_Road_Transport_Corporation)