



NEC

Global Tech Giant NEC Builds an Intelligent Passenger Information System (PIS) with Pickcel

The Client

Nippon Electric Company (NEC) is a Japanese Multinational Company having operations in India. In 2020, it ranked #450 in the **Fortune list of Global 500** companies.

The Challenge

The **Bus Rapid Transit System** (BRTS) is an ambitious project undertaken by the Government of India to improve bus movement in several Indian cities as a part of the smart city initiative. Our client, NEC Corporation India was tasked to come up with an IoT-driven Intelligent Transport Management System (ITMS) for the BRTS at Ahmedabad (Gujarat) and Hubli-Dharwad (Karnataka).

The ITMS systems consist of various sub-systems such as vehicle location tracking, route management, fare collections, and **Passenger Information Systems** (PIS).

Our client wanted to include a digital signage solution that could display real-time bus arrival-and-departure information on the digital signage displays (PIS) installed at the BRTS bus stops. At the same time, they needed to optimize the PIS to serve as a commuter engagement tool by showing various advertisements and other content.

The Solution

Pickcel collaborated with NEC for deploying the PIS solution at the BRTS bus stops. After thoroughly studying the then BRTS setting and requirements of our client, the Pickcel technical team came up with the following attributes for the PIS:

Live Bus Information

Our client already had an Automatic Vehicle Location System (AVLS) that showed real-time information on buses through GPS data.

Pickcel integrated the PIS software with the AVLS to publish live and instantaneous bus information. This infrastructure also helped to play advertisements and other content across 150 digital signage installed at the BRTS bus stations.

One of the hallmarks of this project was maintaining a latency of a maximum of 2 seconds. It means Pickcel PIS was able to gather the current information from the AVLS and distribute it on the digital signage displays within just 2 seconds of the actual occurrence!

Auxiliary Content Playback

Pickcel also built a capability to display emergency messaging, important public notifications, and visually appealing advertisements alongside real-time bus updates. All the information on the PIS screens is relayed multi-lingually. Pickcel's digital signage solution allowed the PIS to relay messages in three languages— the regional language, Hindi, and English.

Remote Troubleshooting

Pickcel developed a comprehensive admin module for configuration, monitoring, and maintenance of the PIS solution. Consolidation of the PIS with the IMS could monitor the system health and generate system error or breakdown alerts. Remote troubleshooting of the devices solved operational and logistical challenges.

Key Benefits

Robust Security: An integrated system requires exceptional data security. Pickcel's digital signage software extended the maximum level of safeguard.

Extremely Precise: Pickcel's digital signage software for the PIS could relay the bus information almost simultaneously with the events (with a lag period of just 2 seconds).

The Result

Both the Ahmedabad and the Hubli-Dharwad projects had astonishing results. The Hubli-Dharwad BRTS was recognized as the '**Best Urban Mass Transit Project**' by the Ministry of Housing and Urban Affairs, GOI. On the other hand, the Ahmedabad BRTS became one of the **most successful BRTS in India**.

Pickcel's digital signage software for the PIS played a salient role in this massive success.

One way to offer smooth vehicle transit was to avoid passenger confusion. The digital signage software for the PIS imparted substantial visibility of bus information. The PIS could now keep the commuters aware on-

- Estimated Time of Arrival (ETA) of all the buses
- Bus route numbers
- The final destination of the buses
- Door numbers
- Emergency messages (such as sudden roadblocks, schedule changes, etc.)

The PIS also kept the waiting passengers engaged by playing various brand videos, campaigns, and ads. It gave the passengers an overall relief from the wait-time frustration.

Pickcel's **digital display software** for the PIS currently serves as a brilliant example of intelligent **digital signage in transportation**.