

Smart City Ahmedabad Development Limited (SCADL)

A seamless, safe and reliable intelligent transport management system

The Customer

As one of India's fastest growing scientific and industrial hubs, the city of Ahmedabad was among the first 20 candidates selected for the government's Smart City Mission. Recognising the vital importance of efficient public transport, Smart City Ahmedabad Development Limited (SCADL) partnered with NEC to upgrade the manually operated, often erratic bus transit infrastructure with a seamless, safe and reliable intelligent transport management system.

The Challenges

"Improving public transport is integral to smart city success. It is costly, but transferring passengers at attractive prices enables education, employment, and ultimately safe movement," advocates SCADL CEO, Rakesh Shankar.

Ahmedabad's two major bus services Bus Rapid Transit (BRT) and City Bus AMTS operate 1,000 buses transporting 0.8 million passengers daily across the city. Despite attractive ticket prices, the bus services were underutilised due to customer concerns over quality.

The previous manually operated system suffered from poor route planning, a lack of advertised bus schedules, bus-bunching, excessive waiting time, rough driving, stop skipping, and inconvenient or inconsistent cash collection.

Overview

Industry

- Transportation

Challenges

- Address inefficiencies and poor customer experience of manually operated bus transport systems
- Develop a software-based, cashless bus transport system
- Improve bus service visibility to reduce operating costs and improve scheduling

Solution

- Implemented an intelligent transport management system to support seamless, safe, fast, and efficient bus services
- Develop IoT-driven automated fare collection, GPS-enhanced vehicle location, passenger information, vehicle and depot management systems
- Analyse and interpret scattered data to optimise resources and improve customer satisfaction

Results

- Improved bus service efficiency and commuter travel experience
- Identified popular and problem route areas, future investment requirements and opportunities
- Paved the way for an integrated multi-modal smart transport system and operating platform

A lack of transparency also resulted in higher operating costs and customer complaint handling. The city authorities were keen to upgrade to a cashless, software-based bus service system backed by advanced ICT to help reduce expenses and problem-response time. “Smart transportation must offer ease of use for the traveller, transparency of services, and the ability to plan. We needed to understand entire routes and behaviour, so we could deploy the right resources, add new vehicles, and develop seamless transport services.”

The Solution

SCADL partnered with NEC to implement an intelligent transport management system (ITMS) that improves the efficiency of BRT and AMTS bus services using a cashless open-loop card system. In addition to automated fare collection, the one-stop, IoT-driven system manages bus resources, bus maintenance, transport information, and personnel, it also collects and analyses data to help optimise resources and boost ticket sales.

The ITMS incorporates five smart transport sub-systems:

- 1. Automated Fare Collection Service (AFCS):** Quick and secure cashless payment via prepaid RuPay card or smartphone ensures greater convenience, passenger safety and ridership visibility.
- 2. Automatic Vehicle Location System (AVLS):** Real-time visualisation of vehicle location via fitted GPS enables the city to calculate estimated time of arrival and support bus operations from a central command centre to adhere to a planned schedule.
- 3. Passenger Information System (PIS):** Provide real-time bus information via mobile app, website and in-station boards to enable passengers to plan their route and estimate waiting and arrival times. Route and bus stop information is also provided via on-board displays and announcements.
- 4. Vehicle Planning Schedule and Dispatch System (VPSD):** Bus routes and schedules optimised by analysis of bus travel performance and traffic volume.
- 5. Depot Management System (DMS):** Allocate and optimise crew and overall bus operations by automating the management of vehicles, fuel, inventory, personnel, and vehicle maintenance.

“Improving public transport is integral to smart city success. It is costly, but transferring passengers at attractive prices enables education, employment, and ultimately safe movement.”

Rakesh Shankar
SCADL CEO



Data from each service is collected and analysed uniformly in a command control centre against key performance indicators to create more efficient and dynamic bus service operations, and a smarter, safer travel experience for commuters, across the ticketing, in-station and in-journey stages.

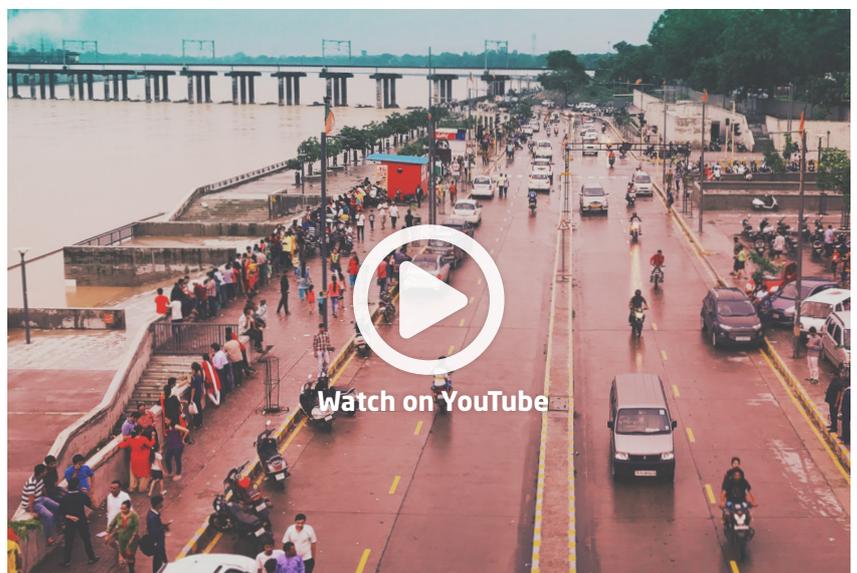
The Results

“Real-time visualisation of running buses and fare revenue enables operators to easily detect irregularities and swiftly determine countermeasures,” explains Shumpei Fujii, Head of the Transportation Business Unit at NEC Technologies India. Incident management systems also enable operators to track incidents such as equipment failure and bus accidents throughout the incident lifecycle.

“This software-based system enables us to remunerate service contractors using concrete parameters such as total kilometres driven, driver behaviour, safe driving, route adherence. New scheduling systems are already generating sizeable monthly savings,” says Shankar.

SCADL is now looking at developing multi-modal travel services spanning BRT, metro, railway, monorail, taxis, etc. and offering seamless services supported by integrated operation and ticketing platforms. Shankar believes, “NEC has depth, tremendous transport products and experience of complex projects in Tokyo and elsewhere.

Both partners share the same fundamental measure of that success. “Throughout this project, NEC Technologies India orchestrated a group of 20 vendors and partners scattered worldwide because our primary motivation is to build synergies and leverage our transportation solutions portfolio and ICT to create advanced social infrastructure, and improve India’s society,” states Fujii.



For more information:

 nec.com.au

 contactus@nec.com.au

 131 632

Corporate Headquarters (Japan)
NEC Corporation
www.nec.com

Australia
NEC Australia Pty Ltd
www.nec.com.au

North America (USA)
NEC Corporation of America
www.necam.com

Asia Pacific (AP)
NEC Asia Pacific
www.sg.nec.com

Europe (EMEA)
NEC Enterprise Solutions
www.nec-enterprise.com

v.21.04.15 | **NEC Smart Transport Services: Case Study - Ahmedabad**

NEC Australia Pty Ltd reserves the right to change product specifications, functions, or features, at any time, without notice. Please refer to your local NEC representatives for further details. Although all efforts have been made to ensure that the contents are correct, NEC shall not be liable for any direct, indirect, consequential or incidental damages resulting from the use of the equipment, manual or any related materials. The information contained herein is the property of NEC Australia Pty Ltd and shall not be reproduced without prior written approval from NEC Australia Pty Ltd.

©2021 NEC Australia Pty Ltd. All rights reserved. NEC and NEC logo are trademarks or registered trademarks of NEC Corporation that may be registered in Japan and other jurisdictions. All other trademarks are the property of their respective owners. All rights reserved. Printed in Australia. Note: This disclaimer also applies to all related documents previously published.

NEC