

Unified transport ticketing interface (UTTI)

Overview:

When you travel from point A to point B, you most probably need to take multiple modes of transport. What if, we bring all modes of transport in a unified interface to enable a fast, cost efficient, environment friendly and hassle-free travel with a single ticket?

A Start-up can use the HERE location platform and collaborate with Ministry of Road Transport and Highways, Indian Railways, State Transport department, Traffic Department and other private players to build a seamless travel platform. Government of India has a mission to develop 100 smart cities across the country which are sustainable and citizen friendly. This game changing platform will aid in that mission.

Current Challenges:

It is common, for many people in a city to use multiple mode of transport such as public bus service, city railway transit, metro, monorail, app-based cab service, autorickshaw, ride sharing cab, ride sharing bus, bike sharing, cycle. Currently there is no mechanism to travel from one location to another location using a single ticket; the larger the city the greater is the need for it. With an increasing urban population in India that is projected to more than double to 590 million by 2030, the traffic situation is set to worsen.

The economic growth and urban productivity of a city depend on an effective transport system which enables efficient movement of people. An ineffective transport system creates an array of problems like traffic congestion, pollution, environmental impact, parking problem, loss of public space.

According to Revised Master Plan 2031 that Bangalore Development Authority put out in the public domain, 1.18 crore citizens waste 60 crore man hours annually and this translates to Rs 3,700 crore including Rs 1,350 crore on fuel alone, and the rest on productivity (man hours) loss. One of the reasons could be, currently the public transport operators have proprietary single vendor technologies which are less flexible and costly.

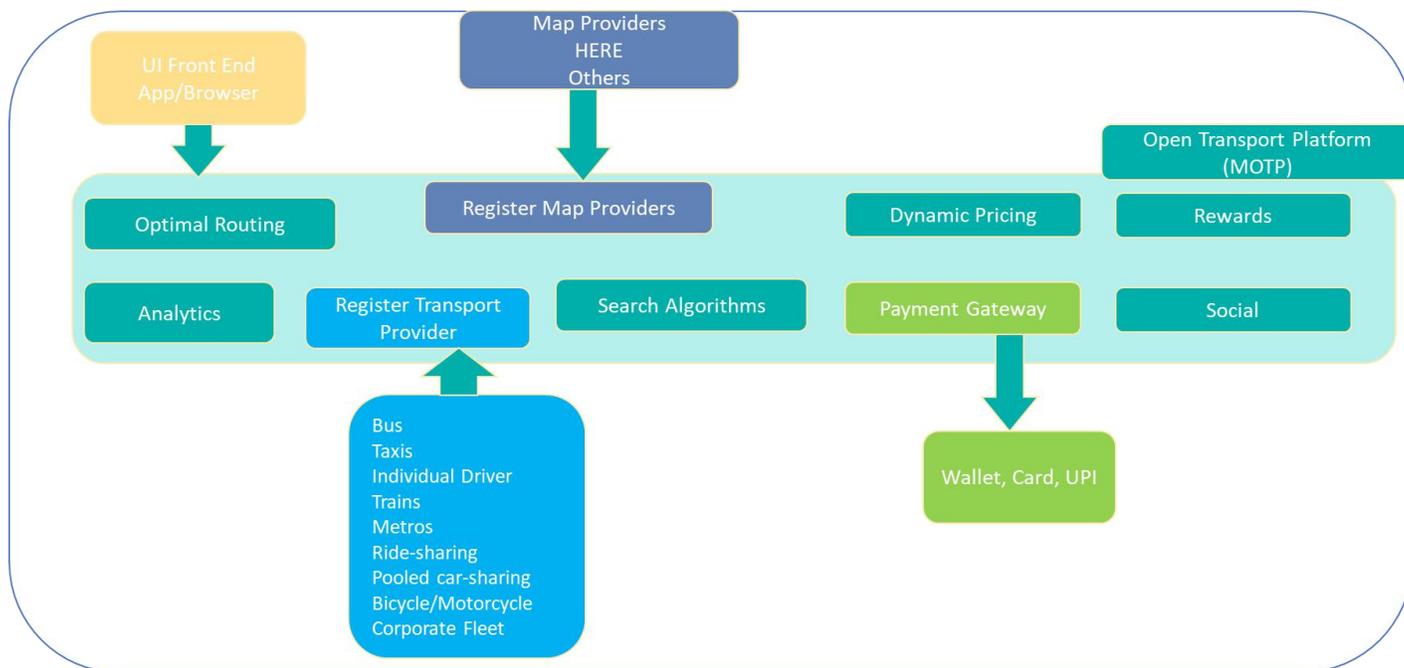
There should be a merger of different transport vendors under an apex body for Indian cities. For example, Mumbai has various public service providers such as suburban railway service by Western Railway and Central Railway, bus services by the municipal corporations of Greater Mumbai, Navi Mumbai, Kalyan-Dombivli, Thane, Mira-Bhayandar, besides the metro rail services by Mumbai Metropolitan Region Development Authority (MMRDA) and Mumbai Metro Rail Corporation (MMRCL). It also has private services provider like autorickshaws, the *kalipeeli* taxis, Ola, Uber etc. All these have their independent governing bodies or unions but there is no central body which oversees their operations and aligns their efforts for better

commuter experience. With such an apex body the government’s objective of having an Integrated Multi Modal Transport System will become more attainable. Today’s consumer is tech savvy and wants to use a single ticket.

The benefit of creating a Unified Ticketing system backbone infrastructure is that the transport department could optimize the routes, there is possibility to track traffic flows and manage it. This would save the fuel cost and huge saving of forex and contributing to GDP. The traveler will save time, cost and travel in an environment friendly manner. It will encourage people to use public transport resulting in lesser number of cars on road. The Government of India has taken a note of urban mobility issues in the Smart Cities Mission. It has stated that the building blocks of smart cities in India should include efficient urban mobility and public transport.

Business Requirements:

Business requirement are illustrated in the diagram and in the description below.



Define a transport vendor neutral charter and create open standard for transport infrastructure to enable secure, cost-effective and flexible fare collection. The open standard will allow the transport vendor to create a business model using the open standard and help them in revenue generation. This will enable the vendors to capitalize on the compatibility between mobile devices, plastic card, QR technology, IOT devices and allow introduction of new technology. The Urban transport Ticketing system infrastructure would provide interface to integrate independent ticketing system from different transport companies. Any transport company can plugin to the Ticketing system hub to provide seamless journey. The platform will be built which can integrate with transport companies like

IRCTC, Metro Company, City Bus Transport companies such as BEST, Cab Aggregators such as Ola, Uber.

The HERE location platform will enable the traveler to select the source and destination of travel. It will make API call to multiple transport companies to get the real time location data and pricing data the backbone interface. It will aggregate the data received and apply algorithms to present the user with shortest and best possible navigable path along with the optimized ticket cost. Then user confirms the navigable path. The final Payment happens through the integrated payment wallet, UPI. Mobile payments have been a game changer for public transport.

Users mobile device will generate PNR (Passenger Name Record) number or QR code. Use of QR code can be used as paperless ticket and make it completely cashless. The QR code can be used to check in, check out in respective mode of transport to complete the payment transactions. Revenue will be shared with respective transport provider.

The platform will be made social so that user can hashtag the journey. The user can create a group for the whole journey, especially for business travel, city sightseeing, intercity travel like Mumbai-Pune, Mumbai-Shirdi. Bangalore-Chennai.

Any user who signs into the platform needs to be KYC compliant using Aadhar biometric verification to remove redundancy and make the city more secure to reduce the road accident, city crime rate. Anonymized data can be used to identify travel patterns and shared to the transport department. For users having feature phone, the Unstructured Supplementary Service Data (USSD) protocol can get user to share the ticket id.

HERE location platform can perform analytics on the sensor data received from vehicles for real time updates. HERE location platform and traffic