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IAMAI
Internet And Mobile Association Of India

Connected Commutes

The digital revolution in city bus travel

Several travel technology apps have emerged in response to urban commuters' pressing challenges, particularly concerning inefficient bus operations and the inconvenience of traditional ticketing methods. The efforts of these apps are dedicated to leveraging technological advancements to enhance the convenience, efficiency, and overall experience of city bus travel. At their core, they seek to address two critical issues plaguing public bus mobility: the unpredictability of bus arrival times and the inconvenience associated with cash-based ticket purchases. Recognising the transformative potential of technology in revolutionising urban transportation, such apps endeavour to pioneer innovative solutions that benefit commuters and contribute to a more sustainable and efficient urban mobility ecosystem.

Some key technological advancement-based services being offered by city travel apps are:

Live Bus Tracking

Live tracking features integrated into these apps utilise GPS technology and real-time data analytics to give users accurate information regarding vehicle locations, routes, and estimated arrival times. This feature empowers travellers to plan their journeys effectively, minimise waiting times, and make informed decisions about transportation options. By offering visual representations of vehicle movements on map interfaces, live tracking enhances transparency and predictability in travel, fostering greater confidence among users.

Digital Passes

City travel apps offer digital pass systems that have revolutionised the ticketing process, providing users with a seamless and contactless means of purchasing and managing tickets. By transitioning from traditional paper-based tickets to digital passes, passengers can enjoy a hassle-free boarding experience while eliminating the need for cash transactions. Through secure mobile platforms, travellers can easily purchase, store, and validate digital passes, streamlining the boarding process and reducing boarding times. Digital passes offer enhanced flexibility and convenience, allowing users to access tickets anytime, anywhere, from their smartphones.

Digital City Travel booking apps have streamlined the process of reserving and purchasing bus tickets, offering convenience and flexibility to travellers while reducing the reliance on traditional ticketing methods. Additionally, these apps have contributed to improved efficiency and transparency within the bus transportation industry by providing real-time updates, route information, and ticket availability, enhancing the overall travel experience for passengers. The app-based ecosystem is positively impacting the convenience of commuters and bus transport authority in one of the busiest bus networks of India: Brihanmumbai Electricity Supply and Transport Undertaking (BEST). As on date, BEST's live tracking app has over 6 million downloads. Below remark was made by Shri Lokesh Chandra in 2022 within a few months of launching BEST’s app.

> Digital ticketing will help reduce the burden. In just a few months after launching, over three lakh commuters have already downloaded the app and 12,000-15,000 commuters are being added every single day. Besides the convenience of passengers, this will also ease the working of bus conductors.
>
> **Shri Lokesh Chandra, IAS**
>
> Former General Manager, BEST (2021 – 2023)

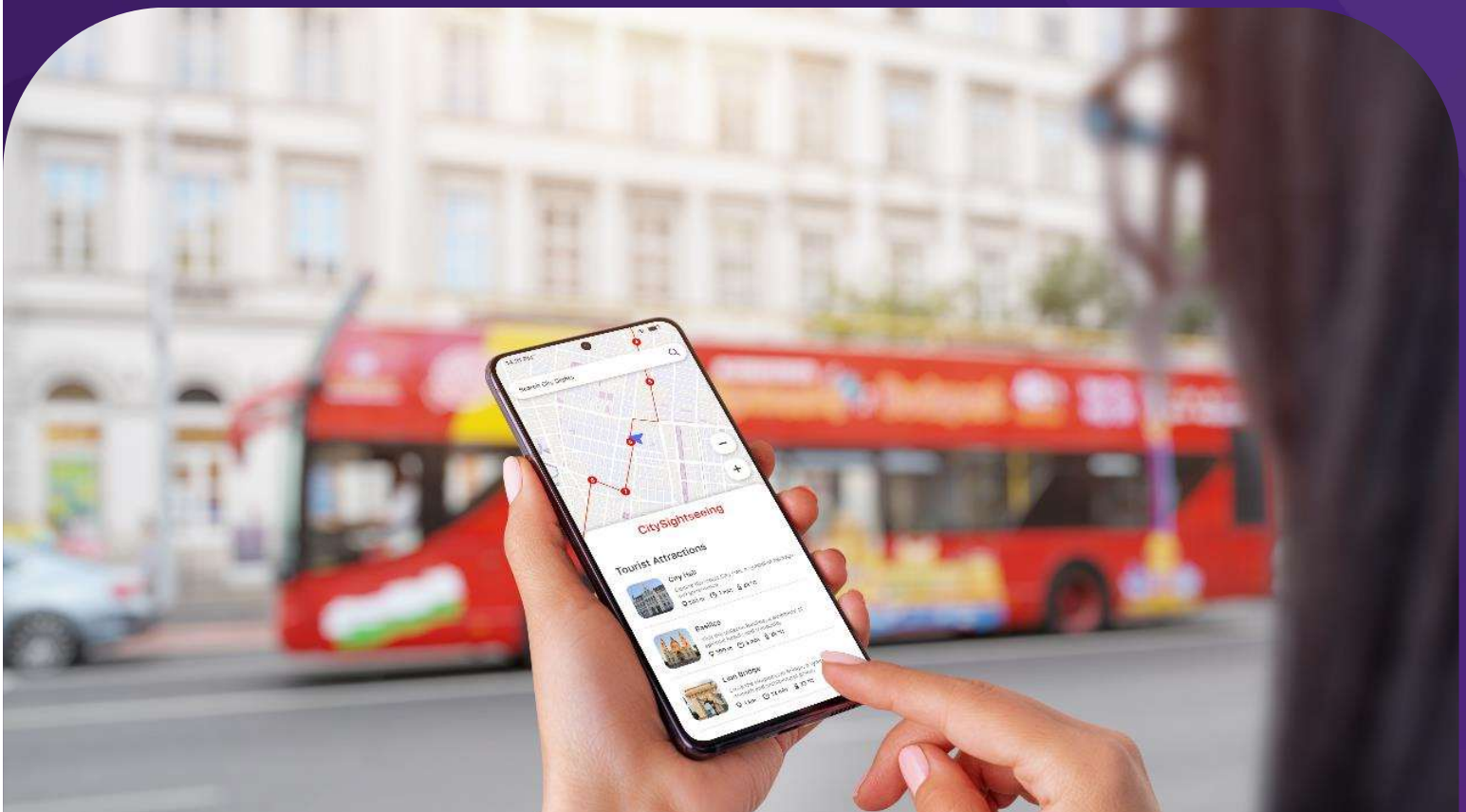
Route Discovery

Complementing live tracking features, city travel apps provide route discovery functionalities that offer comprehensive information about available routes, schedules, and destinations. Through such mobile applications and web-based platforms, users can explore various route options and optimise travel routes based on personal preferences and constraints. Route discovery features enable travellers to make informed decisions about transportation choices, identify efficient routes, and easily navigate urban environments. By promoting route optimisation and accessibility, city bus travel apps enhance the overall travel experience and encourage greater utilisation of public transit services.

User-Centric Design

A commitment to user-centric design principles is central to the city travel apps' technological advancements. By prioritising usability, accessibility, and intuitive interfaces, city travel apps ensure a seamless and enjoyable experience for users of all demographics. Through user research, feedback mechanisms, and iterative design processes, these apps continuously refine and enhance their digital solutions to meet their user base's evolving needs and preferences. From simplified ticket booking interfaces to personalised journey planning features, a user-centric design ensures that travellers can easily navigate and utilise city travel apps to optimise their travel experience.

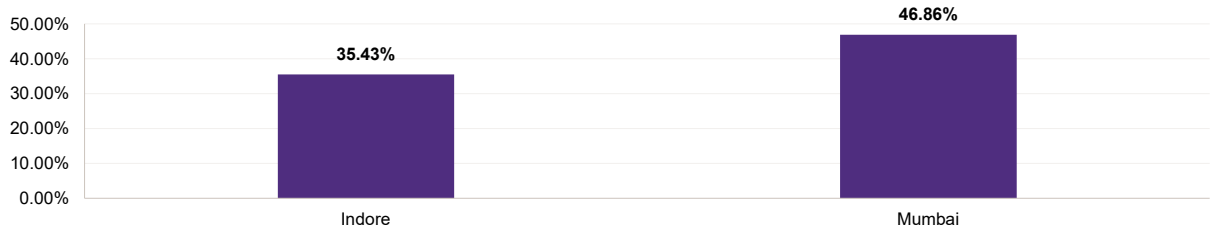
By harnessing the power of technological innovations, such as live tracking, digital passes, and route discovery functionalities, such applications aim to redefine the landscape of city bus travel, making it more accessible, convenient, and passenger-centric. Through strategic partnerships and collaborative efforts with local authorities and stakeholders, these apps are poised to significantly impact urban transportation, improving the lives of millions of commuters while promoting the adoption of public transit as a viable and sustainable mode of transportation.



Usage of bus tracking functionality by respondents

One of the key objectives of the survey was to assess the awareness and adoption of value-added functionality, such as city bus tracking using mobile applications. This is especially important for intra-city bus travellers, who have to wait a considerable amount of time at bus stops daily, as they cannot track their particular bus. However, to address this critical requirement, city travel apps have started offering 'map-based' bus tracking as a value-added feature.

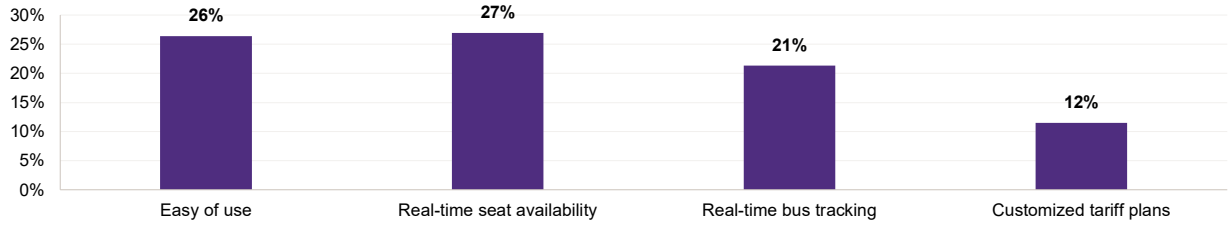
% Respondents using bus-tracking



Desirable features of city travel apps

The overall survey indicates that users expect certain add-on services from city bus travel apps besides mere ticket booking, and these services will be critical going forward for business acquisition from offline ticketing services. Incidentally, live bus tracking is among the top three features potential users expect, with ease of use and real-time seat availability being the other significant considerations.

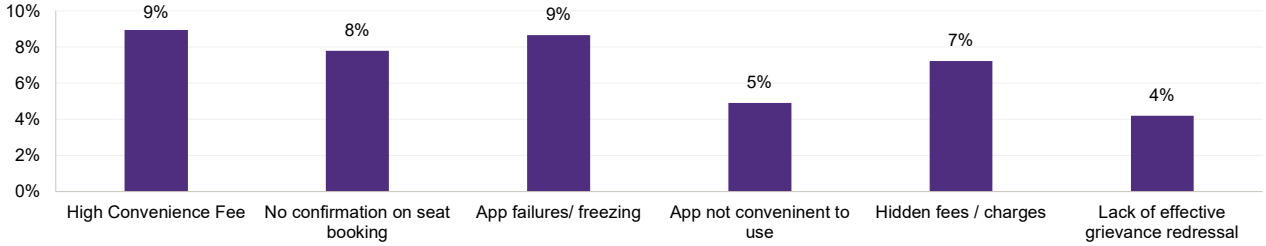
Most desirable features of city bus travel apps



Some other notable features on the traveller's wish list are 'offers and discounts', 'multilingual UI', and 'real-time refunds' in case of an unsuccessful booking. [This was a multiple-choice question. Therefore, respondents may have chosen more than one option.]

User concerns/challenges in city travel apps

Key concerns/challenges faced while using city bus travel apps by users



The primary research conducted across intra-city travellers also revealed some of the key challenges respondents face while using various city travel apps. 'High convenience fees' and 'app failures' were the two most common challenges faced by respondents, with 9% of them facing such issues. However, on the positive side, 26% of the respondents mentioned not facing serious concerns or challenges while using their city travel apps.

Benefits of using city-travel application

The rise in live tracking and online ticket booking for intra-city bus travel is a welcome development. Besides the obvious convenience for travellers, the adoption of such digital platforms offers the following benefits:

1. Traffic reduction:

City travel apps significantly reduce traffic congestion by providing commuters with accurate, real-time information about bus arrivals and routes. This empowers travellers to make informed decisions about their travel routes, leading to a shift towards public transportation instead of private vehicles. As more people opt for buses, especially during peak hours, the number of cars on the road decreases, alleviating traffic congestion. Moreover, the efficient operations facilitated by these apps incentivise more individuals to use public transit, further contributing to reducing traffic congestion and improving urban mobility overall.

2. Benefitting local buses and convenience for commuters:

Increased use of ticket booking on city travel apps results in numerous benefits for local bus services and commuters alike. These apps optimise bus routes and minimise operational inefficiencies, enhancing local bus services' efficiency and profitability. Features such as live tracking, digital ticketing, and route discovery significantly enhance convenience and comfort for commuters. Reduced waiting times and streamlined boarding processes make bus travel more attractive, ultimately encouraging more people to choose buses over other modes of transport. This increased ridership benefits the bus operators and promotes sustainable urban mobility. After implementation of end to end digitisation of BEST buses, Shri Lokesh Chandra, IAS, former General Manager BEST (2021-23) enumerated its benefits:

> It will not only enable digital transactions, but also live-track buses, get a status of ETA (Expected Time of Arrival) and vacant seats. For those who are not digital savvy, a smart card will do the trick. The new ticketing system will be National Common Mobility Card-compliant.
>
> **Shri Lokesh Chandra, IAS**
>
> Former General Manager, BEST (2021 – 2023)

3. Environmental impact:

City travel apps also reduce carbon emissions and environmental pollution by encouraging a modal shift towards public transportation. As more people opt for buses instead of private vehicles, there is a decrease in fuel consumption and greenhouse gas emissions. This shift towards sustainable transportation practices helps mitigate the negative environmental impact associated with car-centric urban mobility. By promoting public transit, these apps play a crucial role in creating a more sustainable and environmentally friendly transportation system.

4. Economic benefits:

Improved bus ridership and increased public transportation usage stimulated by city travel apps can lead to several economic benefits for cities. Reduced traffic congestion results in lower infrastructure costs and increased productivity due to improved traffic flow. Additionally, local businesses located along bus routes may experience increased patronage and foot traffic, benefiting from improved accessibility for commuters. By promoting public transportation usage, ticket booking apps contribute to the economic vitality of urban areas and support local businesses.

"BEST, one of the largest city bus travel networks in India, has rolled out 100% paperless tickets using app-based ticketing system. This has helped them save paper rolls worth INR 2 Crore annually."

Recommendations

Implementing city travel apps by State Transport Undertakings (STUs) can significantly enhance the efficiency and accessibility of public transportation systems by offering real-time information, leading to improved commuter experience, increased ridership, seamless integration with other modes of transport, enhanced service delivery by gathering feedback from commuters, monitoring service performance, and identifying areas for improvement, leading to better customer satisfaction and increased trust in public transportation systems. We propose the following recommendations:

1

Recognising the socio-economic status of few intra city bus passengers, particularly belonging to economically disadvantaged citizens who do not use a smart phone or have limited access to mobile internet, we must:

- **USSD based bus tracking:** To ensure inclusivity, we can introduce USSD based bus tracking through which the passenger can simply press a combination of *# & no. keys to find the current location of the bus. Telecom companies offer services like balance enquiry, recharge facility to their non smart-phone users through USSD mode.
- **SMS tracking:** Non smart phone users can also track the bus by sending sms to a toll-free no. to know the live status and expected arrival time of the bus. Several reputed banks offer SMS facility to their customers to enquire about account balance, last 5 transactions and few other services.

2

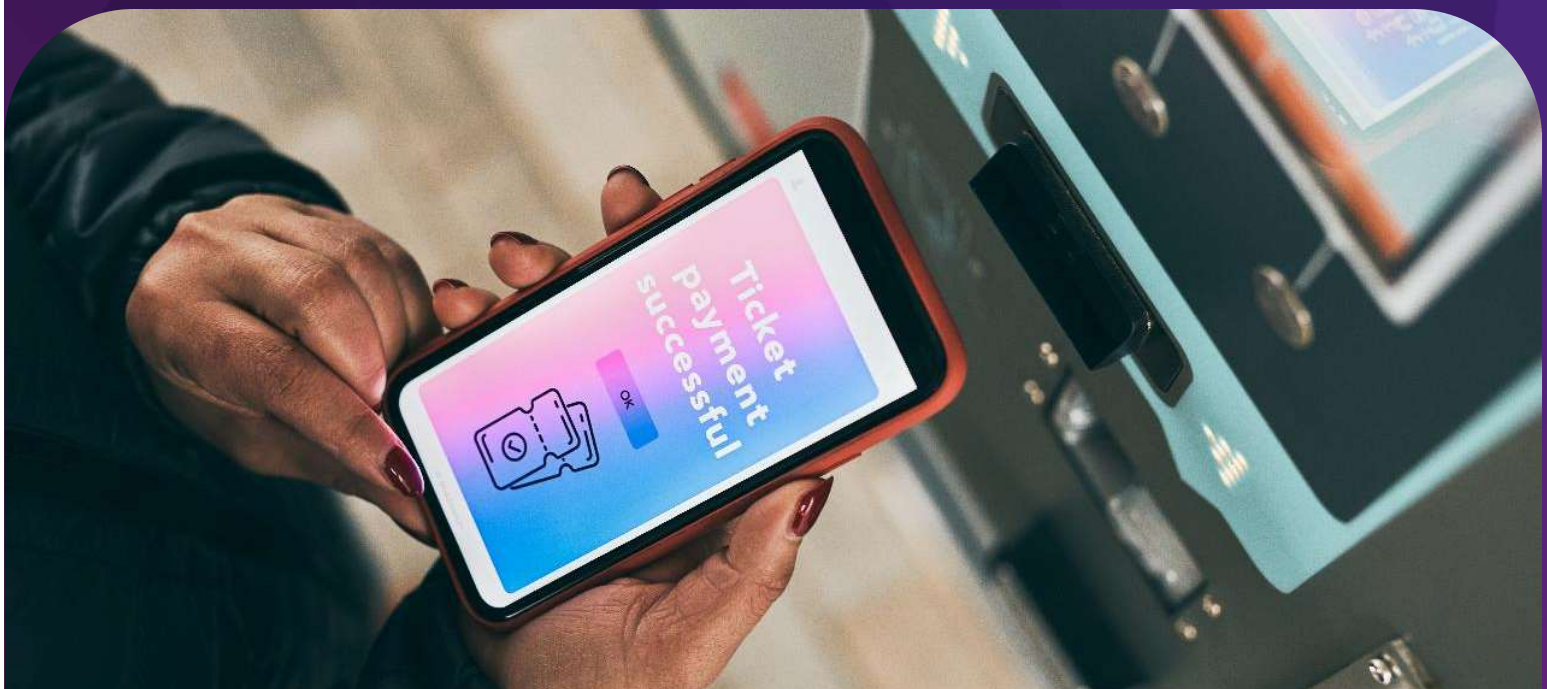
Push notifications for advance ticket booking: Push notifications can be sent to customers who have booked their online ticket before the bus leaves its source station. This will also help the bus provider to know the utilization of the capacity which will help in introducing more buses on the same route.

3

Bus Break down: In case of a break down, app should enable customers to find the best alternate bus to reach their destination on time.

4

Integration with other modes of transport in the city: In major cities like Mumbai, Delhi, Bengaluru, Kolkata & Hyderabad, metro train is also used widely for intra city travel. The app should be able to suggest best possible route with a combination of city buses/metro or both. This will not only reduce the travel time but also optimise the seat availability across both modes of transport.



About IAMAI

Established in 2004, the Internet and Mobile Association of India (IAMAI) is a not-for-profit industry body representing the digital industry. With 590 members, including Indian and multinational corporations, as well as start-ups, IAMAI has been instrumental in shaping India's digital economy. IAMAI advocates free and fair competition, and progressive and enabling laws for businesses as well as for consumers. The overarching objective of IAMAI is to ensure the progress of the internet and the digital economy. Its major areas of activities are public policy and advocacy, business to business conferences, research, and promotion of start-up.

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