Urban Transport in India
Policy, Planning and Recommendations

Introduction

India's urban population is expected to increase to 600 million by 2031 from 285 million in 2001[1].There is a growing need for cities to be adequately equipped to meet the mobility requirements of the current population as well as of those yet to join the population. Urban areas should facilitate the easy and sustainable flow of goods and people in order to sustain the desired level of economic activity. Unfortunately, transport in urban areas has faced several issues pertaining to planning, affordability and connectivity. Moreover, rapid urbanization of cities has led to a considerable increase in the number of motorized vehicles. The recent sprawling of cities has substantially reduced the proportion of non-motorized transport such as cycling, walking, and rickshaws, creating high dependency on private and public transport, thereby leading to issues of road safety and environmental feasibility.

Issues with Urban Transport

Lack of Connectivity: The existing public transport services in urban areas are overburdened and inadequate. Transport planning has often been neglected in the development of cities and has been unable to account for the exponential rise in the urban population. The development of new public transport facilities, such as the metro or the monorail has been slow and does not always provide last mile connectivity. As a result, multiple forms of public transport need to be developed to increase connectivity. Moreover, regularizing and increasing the efficiency of existing transport services is essential in order to encourage people to actively opt for them.

Planning of Roads and Highways: The roads in urban spaces have been overburdened with the increasing number of motor vehicles, resulting in frequent traffic congestion. Accessing the workplace, educational and recreational facilities etc. is becoming increasingly time consuming. The explosive growth in the number of motor vehicles has exposed the limitations of the amount of road space provided by urban areas. For example, on an average, the population of India's six major metropolises increased by about 1.9 times between 1981 to 2001 whereas the number of motor vehicles went up by over 7.75 times during the same period.[2]

Road Safety: The burgeoning urban population has been accompanied by a similar increase in the number of motorized vehicles. With the rapidly increasing motorization in cities, India is facing an increasing threat of road traffic injuries and fatalities. The provisional data for road accidents in India shows a figure of 1,46,000 deaths in 2015 as compared to around 1,38,000 deaths in the year 2014.[3] The number of people who are seriously injured and disabled is even higher, at about 3 lakhs. The impact of these accidents is more pronounced for the

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[1] India's Urban Demographic Transition: The 2011 Census Results (Provisional), Ministry of Urban Development and National Institute of Urban Affairs.
[2] National Urban Transport Policy, Ministry of Urban Development, Government of India.
[3] Road Accidents in India 2015, Ministry of Road, Transport & Highways, Government of India.

economically weaker sections, as many of those killed or injured tend to be cyclists, pedestrians or pavement dwellers.

Increasing Cost of Travel: The cost of travel, especially for the poor, has also seen an increase in the recent past. There has been a decline in the use of cheaper non-motorized modes such as cycling and walking. The change can be attributed to the high risk associated with these modes as they share the same right of way with motorized vehicles. Further, the expansion of cities as a result of greater urbanization and population growth has led to an increase in the travel distances, making non-motorized modes difficult to use.

Environmental Costs: India's transport sector is the fourth largest emitter of Greenhouse gases. With increased expansion in the transport infrastructure due to rapid urbanization, in order to meet the development needs of energy consumption and mobilization, these emissions are likely to grow significantly. Moreover, increased use of personal motorized vehicles has also led to an evident increase in air pollution. Most cities are now seeing alarming levels of air pollution, caused majorly by the increased vehicular movements and unplanned non-motorized transport planning.

In lieu of the issues outlined above, the National Urban Transport Policy was formulated in 2006, to identify the problems and priorities of the transport sector and create a roadmap for state governments to develop schemes and policies to remedy the same.

National Urban Transport Policy

The National Urban Transport Policy aims to guide State level action plans within an overall framework to develop urban transport planning as a professional practice, and to take up coordinated capacity building, research and information dissemination to raise the overall level of awareness and skills. The policy recommends the following measures in order to achieve its key objectives:

Integrating Land Use and Transport Planning

Transport systems should be designed based on city-specific features such as population, area, urban form, topography, economic activities, income levels, growth constraints etc. Moreover, both transport and land use planning should be developed coherently in a manner that serves the entire population and simultaneously minimizes travel needs. An integrated master plan is necessary to enable a city to take an urban form that best suits the geographical constraints of its location and supports the key social and economic activities of its residents. All urban development and planning bodies in the states should be required to have in house transport planners as well as representation from transport authorities in their management.

Equitable Allocation of Road Space

Presently, vehicles such as cars, which carry fewer people, occupy more space compared to larger public transport such as buses catering to a greater number of people. In addition, users of non-motorized vehicles have tended to be squeezed out of roads on account of serious threats to their safety. There is a need for road space allocation to be focused more on the commuters; thereby increasing the space allocated to public transport systems. Reservation of lanes and corridors exclusively for public transport and non-motorized modes of travel could help to achieve this change. Moreover, lanes be reserved for vehicles carrying more than three persons (popularly known as High Occupancy Vehicle Lanes).

Prioritizing the Use of Public Transport

Public transport is universally acknowledged as a more sustainable form of transport, which occupies less road space and causes less pollution per passenger per kilometer. The following steps can be taken to ensure the development of adequate and cost effective public transport facilities:

- **Quality and Pricing of Public Transport:** In order to persuade vehicle owners to shift to public transport, yet ensure low cost equitable pricing, the government can envisage different levels of services – a basic service, with subsidized fares and a premium service, which is of high quality but charges higher fares and involves no subsidy.
- **Technologies for Public Transport:** There is a wide spectrum of public transport technologies ranging from high capacity technologies such as underground metro systems to low capacity bus systems running on a shared right of way and intermediate technologies, such as buses on dedicated rights of way, elevated sky bus and monorail systems. These technologies should be taken in to consideration while planning public transport for a specific city.
- **Integrated Public Transport Systems:** Investments in public transport systems should ensure the development of proper inter-change infrastructure that offers a seamless interchange to the users and ensures last mile connectivity.

Use of Cleaner Technologies

Present environmental concerns should encourage prompt introduction of clean and non-motorized transport facilities. Measures such as incentivization for use of fuel-efficient (zero pollution) and small sized vehicles should be introduced, that occupy lesser road space and cause lower levels of pollution. Moreover, statutory provisions, mandating all in-use vehicles in a city, including personal motor vehicles, to undergo periodic check-ups and obtain specified certifications should be made.

G – Cycle and Sanjhi Cycle Projects

The *G-Cycle* and *Sanjhi Cycle* projects in Gandhinagar, Gujarat and Karnal, Punjab are cycle-sharing initiatives that operate on a public-private partnership model. Both these projects use smart cards to facilitate the renting of cycles. There are designated spots in the cities where the cycles can be rented out. These initiatives, apart from being environmental friendly, promote non-motorized transport and reduce the burden from public transport. They can be emulated in other states as one of the measures to increase urban connectivity.

Capacity Building

Government should adopt institutional and individual capacity building measures for enhancing the transport system in India. At the institutional level, capacity building would primarily involve compiling best practices and setting up a knowledge management center that would sustain and enhance expertise as well as facilitate more informed planning. At the individual level, a major exercise of training and skill development of the public officials and other public functionaries is necessary to increase the awareness of officials of the nuances of urban transport planning and the specific issues involved in managing city transport. Apart from these measures, several other

measures such as seeking involvement of the private sector, conceptualizing innovative financing mechanisms using land as a resource and conducting public awareness campaigns can be instrumental in reforming the urban transport system in India.

Road Safety and the Motor Vehicles Amendment Bill, 2016

The Motor Vehicles (Amendment) Bill, 2016 was introduced in the Lok Sabha on August 9, 2016 by the Ministry of Road, Transport and Highways (MoRTH) to bring about significant changes in issues relating to improvement of road safety, citizens' facilitation, strengthening rural transport, improving last mile connectivity, increasing automation and computerization and enabling online services. The following are some of the key features of the Bill.

Enhancement of Penalties:
- In order to further discourage the offences related to road safety, the Bill enhances the penalties for offences under the Act, such as driving under the influence of alcohol, jumping red lights, driving while using mobile phone.

Treatment and Rehabilitation of Victims of Road Accidents:
- In order to encourage immediate help and assistance to victims of road accidents, the Bill provides a scheme for cashless treatment of road accident victims during golden hour. Golden hour is the hour, which immediately precedes a traumatic injury, during which the likelihood of preventing death through prompt medical care is the highest.
- In order to provide adequate rehabilitation to the families of hit and run case victims, the Bill increases the compensation for death in a hit and run case from Rs 25,000 to Rs 2 lakh or more, as prescribed by the Central Government.

Insurance:
- The Bill provides a comprehensive framework with regards to vehicle insurance. The Central Government is to constitute a Motor Vehicle Accident Fund, which will provide compulsory insurance cover to all road users in India.

Increasing Transparency:
- In order to increase transparency and ease, the Bill provides for the computerization of certain services, including issuance or grant of licenses and permits, filing of forms or applications, receipt of money for fines and change of address.

Offences by Juveniles:
- In order to prevent juvenile offenders under the Act, the Bill provides for the guardian of the juvenile or owner of the motor vehicle to be liable and also for the cancellation of the registration for the vehicle.

Regulation of Manufacturing Standards Related to Vehicles:
- The Bill permits the Central Government to order for recall of motor vehicles in case a defect in the vehicle may cause damage to the environment, or the driver, or other road users. The Central Government may report defects, on its own, leading to recall of vehicles.

Accommodating Evolving Forms of Urban Transport:

- In the burgeoning space for online cab providers, the Bill defines an aggregator as a digital intermediary or market place. Usually, the aggregator connects the driver with the passenger for transportation purposes. Under the Bill, aggregators can operate only with a license and are obligated to comply with the Information Technology Act, 2000.

Innovative Urban Transport Planning

Sustainable and Intelligent Transport Planning for Smart Cities

One of the core infrastructural elements in a Smart City is to provide for urban mobility and public transport. For this purpose, there is a need for an effective Transport Demand Management (TDM), by application of various transport strategies and policies that reduce and space out the travel demand. The key recommendations for such planning are as follows:

Parking Space

- Acute parking shortage, both on and off the streets increases the load on the roads, reducing space for movement and encouraging people into buying cars. For this reason, parking must be priced heavily and kept off streets. Additionally, policies to reduce the increasing number of cars per family should be implemented and linked to the building/ housing byelaws for effective planning for parking spaces.

Integrated Fares

- Integrated fares and cashless transactions through 'smart cards' and similar devices are recommended for cities with multiple modes of public transit services as it encourages the ease of access, increased usage of public transport and smooth transfer between modes.

Performance Standards

- Mechanisms to track and maintain performance standards need to be designed which contain performance indicators based on economic, social and environmental aspects such as air pollution, average travel time, public transport fares and number of road fatalities.

Inclusive Planning Systems for Effective Mobility

The key strategy to plan for effective urban mobility is to design movement for 'moving people' rather than planning only focused around motorized vehicles. This would entail focusing on sustainable and cleaner modes of transport such as walking, cycling and public transport. In addition, the transport policies should be designed keeping in mind the gendered aspect of its usage. There is a need to increase sensitization of current urban transport policies to the needs of women, providing them enhanced choices of travel and increasing their capabilities and functionalities. The street designs, flow of spaces and connectivity along with ease of access need to cater to the needs of all its users and sensitive to the design requirements of people with special needs.

Moreover, they should be adaptable to the increasing interest of youth towards public transport and non-motorized transport.

Conclusion

Planning for transport is a very complex and challenging process due to it being an intermediate service. There are number of policies and interventions made towards achieving efficient mobility patterns addressing the challenges of transport planning. However, effective implementation of these policy measures towards a more sustainable urban transport planning calls for innovative strategies and adoption of smarter and adaptable technologies.