Chapter 77
Planning Transit System for Indian Cities: Opportunities and Challenges

Arnab Jana
Indian Institute of Technology Bombay, India

Ronita Bardhan
Indian Institute of Technology Bombay, India

ABSTRACT

Indian cities are currently in a phase of transition. Continuous urbanization and seamless connectivity is the paradigm. Proliferating bourgeois class is extending the demand for private automobiles. With limited opportunity to increment land use allocated to transportation and rapid shift towards automobile ownership, importance of transit system is being sensed. City managers believe that public transit could be an alternative in providing solution to ever increasing problem of traffic congestion, parking demand, accidents and fatalities, and global environmental adversities. This chapter examines the critical planning issues that need to be addressed. It highlights the opportunities and challenges these cities are poised towards transit system planning. The experiences from cities worldwide that have adopted transit systems to create compact city forms fostering mixed land use development are exemplified here. A '3P' developmental framework of 'provide', 'promote' and 'progress' has been proposed to harness the opportunity.

INTRODUCTION

Importance of transportation and its allied infrastructure to economic growth and productivity is undeniable. Competiveness and vibrancy of any urban areas is dependent on the ease of connectivity and seamless mobility of desired resources and manpower. As the economic activity increased, per capita income levels rose significantly. With more employment opportunity, cities attracted and retained talents. However, majority of the Indian cities could not cope up with the increased demand for infrastructure. Similar has been the case with public transportation service. It has been reported in 2005 that public

DOI: 10.4018/978-1-5225-5646-6.ch077

bus service for intra city transportation was available in 17 cities and rail transit existed in only four cities, out of 35 million plus cities in India (Singh, 2005). As an alternative, the nouveau riche opted for personal mobility. If compared globally India still lags behind in ownership pattern with respect to developed nations (see Table 1). With increasing economic affluence, ownership pattern is evident to increase. Currently the roads in CBDs in different cities across the country have exceeded the capacity, causing congestion, delays, accidents and pollution. Unreliability and deteriorated service delivery of the public transport system further added on to the agony of the working middle class, who as well opted for personalized vehicle as an alternative. There is a dire need for planning an integrated transit system to cater to the growing demand.

Under this purview, this chapter examines the planning challenges that need address at this wake of change the Indian cities are currently witnessing. It highlights the opportunities and challenges of transit planning. The experiences from cities worldwide have been assimilated to develop a developmental framework that might aid in policy decisions and planning transit systems for Indian cities, fostering efficient public transportation.

Subsequently the chapter will discuss:

- Growth of Indian cities and planning challenges
- Adaptive transit planning
- Policy Initiative in India
- Harnessing the opportunities

Table 1. Vehicular penetration in select developed & developing countries

	Country	GNI per Capita, (current US$)	Passenger Cars (per 1,000 people)*	Motor Vehicles (per 1,000 people)†	Road Density (km of road per 100 sq. km of land area)‡
Developed Nation	USA	48040	440	26	68
	UK	41130	456	21	172
	Germany	42550	510	46	180
	Japan	37610	452	28	88
Developing Nations	Brazil	8140	179	68	19
	India	1170	11	84	136
	China	3610	34	72	40
	South Africa	5630	110	7	NA
Other Asian Nations	Sri Lanka	1970	19	115	NA
	Philippines	2480	9	35	NA
	Malaysia	7590	308	325	41
	Korea	21090	265	37	105

* Passenger cars refer to road motor vehicles, other than two-wheelers, intended for the carriage of passengers and designed to seat no more than nine people (including the driver).

† Motor vehicles include cars, buses, and freight vehicles but do not include two-wheelers. Population refers to midyear population in the year for which data are available.

‡ Road density is the ratio of the length of the country's total road network to the country's land area. The road network includes all roads in the country: motorways, highways, main or national roads, secondary or regional roads, and other urban and rural roads.

Source: World Bank; http://data.worldbank.org

NA: Data not available