Regulatory and Financial frameworks for shared mobility in India

Background

Improving public transport in cities leads to improved access to activities and services for citizens in a resource efficient manner. This further contributes to co-benefits like improvement in air-quality, climate change mitigation and improved quality of life in cities. However, formal bus and rail based public transport systems in India have traditionally faced a shortage of public finance available for their development. The recent years saw increased investment in capital infrastructure development of metro systems[1] while the bus infrastructure continues to remain underfunded. Both metro and bus systems don't receive any financial support for operations. Given the societal objective of public transport agencies to provide affordable services for all income groups, these agencies regularly face operational losses. The twin challenge of capital and operational financing has limited the growth of urban public transport systems across India. As a result, out of the 450 cities with more than 100,000 inhabitants, only 10 ten cities have a suburban or metro rail service and about 65 cities have some form of formal bus transport.

The lack of adequate formal public transport combined with the citizen's increasing demand for shared mobility has led to the emergence of paratransit or Intermediate Public Transport (IPT) services. These are privately owned and informally operated shared mobility services, typically provided by three-wheeled auto-rickshaws with a capacity of three to six passengers per vehicle. Paratransit services provide both point to point (P2P) and shuttle services between fixed origins and destinations, forming the largest share of shared trips in many Indian cities. The recent years have also seen the emergence of 'New Mobility' solutions i.e. mobile application (app) based ride-hailing services provided by companies like Ola, Uber and Shuttl. These apps provide aggregate shared vehicles like taxis, three-wheelers and buses that provide on demand mobility as a service to users. Both paratransit and new mobility solutions are financed through private investments and only operate profitable services that recover their investments. Therefore, they cannot be expected to fulfil the role of a formal public transport that provides affordable access to mobility for all citizens.

[1] http://www.india.uitp.org/articles/india-investing-metro-infrastructure

In summary, Indian cities are faced with a combination of inadequate formal public transport and competing private solutions like paratransit and 'New mobility' services. This is in contradiction to the National Urban Transport Policy (NUTP), 2006 that advocates for integrated public transport systems in cities that reduce the need for private modes of transport like Cars and Two-wheelers. The lack of integrated regulatory and financial frameworks to govern shared mobility is identified as one of the key barriers towards such a transition. International Association of Public Transport (UITP) India, with support from Shakti Sustainable Energy Foundation (SSEF), has identified key gaps in the existing regulatory and financing mechanisms governing public transport in India and reviewed international examples to provide recommendations towards addressing these gaps. The study acknowledges the need for providing a multimodal shared transport system in Indian cities with high quality public transport systems as its core. Therefore, we provide a roadmap for improved regulatory and financial frameworks that can lead to an integrated approach towards formal public transport systems, informal paratransit systems and 'New Mobility' solutions.

Integrated regulation of shared mobility

Need for a Public Transport Authority/ Council and Public Transport Fund

One of the key barriers faced by all shared mobility services in India is the existing fragmented governance structure, wherein each mode is governed through separate legislations administered by different agencies at various levels of Governance. The following table provides a summary of the key legislations governing formal public transport and privately provided shared transport services in India. The list of agencies in charge of their governance highlights the multiplicity of agencies in charge of decision making, leading to each mode planning its services and fares independently. Such lack of integration in among shared services often results in shared modes planning for services that compete with each other for ridership along high demand corridors, while the lower demand areas remain underserved. This is in contradiction to the integrated multimodal public transport system envisaged in the NUTP (2006) that requires provision of public transport throughout the city.

Overview of Legislation, Organisation and Financing of shared mobility in India

Mode of transport	Legislation	Agency in charge of Governance	Public Financing	
			Capital	Operational
Bus	Motor Vehicles Act (1988), Road Transport Corporations Act (1960)	State Transport Undertaking (STU)/ Special Purpose Vehicle (SPV)	Occasionally	No
Metro	The Metro Railways (Construction of Works) Act, 1978	Special Purpose Vehicle (SPV)	Yes	No
Suburban rail	Indian Railways Act	Indian Railways	Yes	No
Paratransit/ Intermediate Public Transport (IPT)	Motor Vehicles Act	Road Transport Authority	No	No
New mobility services (App based aggregators/ Ride-hailing services)	Motor Vehicles Act, Taxi Guidelines by MoRTH	Road Transport Authority	No	No

Indian cities need to bring in institutional mechanisms like constitution of Public Transport Authorities (PTA) that are in charge of integrated governance and regulation of shared modes of mobility. Some Indian cities have already constituted Unified Metropolitan Transport Authorities (UMTA) for integrated decision making across agencies. The role of UMTA's, in the few cities they are functional, has generally been restricted to infrastructure planning and financing decisions. The regulatory aspects of shared mobility have not been a priority area. Therefore, it is recommended that cities either set up a separate PTA or a smaller Public Transport Council (PTC) within the UMTA that comprises of various agencies regulating shared mobility currently. The PTA/ PTC should be backed by a Public Transport Fund (PTF) that can be used to supplement capital and operational financing of public transport agencies. Such a fund will also incentivise various agencies in charge of shared mobility to be part of the integrated decision making process. The likely revenue streams of the PTF can be through grants from the Government, levying a 'Green tax' on high polluting vehicles, surcharge on property tax and stamp duty etc.

Comparision of existing and proposed governance framework for shared mobility

Mode	Existing regulatory framework			Proposed regulatory framework		
	Service Planning	Financing	Fare setting	Service Planning	Financing	Fare setting
Bus	Self	Self	State Transport Authority	Self + PTA*	Self + PTF**	PTA
Metro	Self	Self	Fare fixation committee	Self + PTA	Self + PTF	PTA
Suburban rail	Self	Self	Indian Railways	Self + PTA	Self + PTF	PTA
Paratransit/ IPT	Self	Self	Road Transport Authority	Self	Self	PTA
New mobility services	Self	Self	Road Transport Authority	Self	Self	PTA

*PTA- Public Transport Authority; **PTF- Public Transport Fund

The regulations corresponding to individual shared modes also have certain gaps that need to be addressed. The existing gaps and proposed recommendations are explained for each mode in the following sections.

Regulations for formal public transport (bus and rail based) systems

The regulations corresponding to various aspects of rail based mass transit systems are established by the Government of India through the Metro Railways (Construction of Works) Act, 1978 and the Metro Rail Policy (2017). In case of road based public transport, the National Government's role is limited to the 'Motor Vehicles Act', which defines the types of 'permits' to be issued for entities providing bus services. States are free to issue 'Stage carriage permits' i.e. vehicles offering shared services along predefined routes, stops and fares or 'Contract carriage permits' i.e. vehicles operating point to point services between predefined origins and destinations.

State Transport Undertakings (STUs) have a monopoly over provision of city bus services in many cities with private buses only issued contract carriage permits. This was done with the objective of providing exclusivity for STUs on high demand routes in order to compensate for various service obligations they need to undertake i.e. operating in off-peak hours, in low demand areas, providing subsidised fares to various sections of the society etc. Some cities have set up Special Purpose Vehicles

(SPVs) that issue service contracts to private bus operators according to a predefined service schedule.

However, both the STU monopolies and SPVs have been unable to scale up their services to meet the users' needs effectively. This is because, the city bus services have been unable to recover their costs of operation through the revenue generated from the fares set by the State Transport Authorities (STAs) and the City and State Governments haven't compensated for the operational losses of the bus service providers. Given the socio-economic and environmental benefits of the public transport systems, reforms necessary to insulate the STUs and SPVs from the losses incurred through their service and fare obligations need to be brought in.

Public Transport Service Obligations (PTSO) and Public Transport Service Contracts (PTSC)

The European Union (EU) has a regulation (EC No. 1370/2007) that mandates cities to define a **Public Transport Service Obligation (PTSO)** which prescribes a minimum level of service to be provided on various corridors of the city. Each city has a Public Transit Authority or a Metropolitan Transport Authority in charge of public transport planning for the city that determines the modal mix between various public transport services i.e. metro, tram, bus etc. towards providing these services. These services are given to public and private operators as **Public Transport Service Contracts (PTSC).** Such a contracting mechanism has allowed public operators to provide the required services without burdening them with the losses. It has also improved their efficiency due to the transparency brought by the need to meet the contract requirements.

In India, similar precedent has been set by the regulatory reforms brought by the **Electricity Act, 2003.** The act mandated states to split their electricity companies into generation, transmission and distribution companies. Further, a State Electricity Regulatory Commission (SERC), an independent and apolitical institution was set up in each state to determine the electricity tariffs for various applications i.e. domestic, commercial, industrial etc. If the state government wishes to offer any subsidy in electricity to different sections of society, for eg. agricultural usage, it has to reimburse the distribution company for the losses incurred due to the subsidy. Additionally, separating various functions has also led to increased private participation in profitable sectors like generation of power. These private power generators have clearly defined Power Purchase Agreements (PPA) with the distribution companies, thereby balancing their risks. This led to the distribution companies being the only loss making entity within the electricity sector, thereby helping the Government focus on initiatives to address specific problems of this sub-sector.

The learnings from the EU regulations and Electricity Act can be applied to the Indian public transport sector, by delinking their policy, planning and operations functions. It is recommended that the Public Transport Authority (PTA) or Public Transport Council (PTC) of the city takes care of policy decisions like service benchmarks across modes and develops a multimodal public transport service plan for the city. The PTA should also appoint an independent commission, similar to the State Electricity Regulatory Commissions (SERC), to determine the fares of various public transport modes. The PTA/ PTC also issues contracts to operators that deliver the planned services according to mutually agreed service plans and terms of payment.

Such contracts can help State Transport Undertakings (STU) in fulfilling their service and fare obligations without incurring losses. In cities where STUs don't have the capacity to deliver the service obligations, PTAs can contract some service to private operators. Such mix of operators also results in competition between operators leading higher efficiency in their service delivery. The PTA will then be responsible for reimbursing the operators for any subsidised fares. The key for the success of such an initiative will be to set up a dedicated Public Transport Fund (PTF) that will enable the PTA to honour the PTSCs issues to the operators. The lack of such a mechanism will only transfer the losses from the operators to the authorities, while adding another institutional layer. The following table compares the existing and proposed regulatory framework for public transport systems.

Overview of the proposed 'Public Transport Service Contract' framework

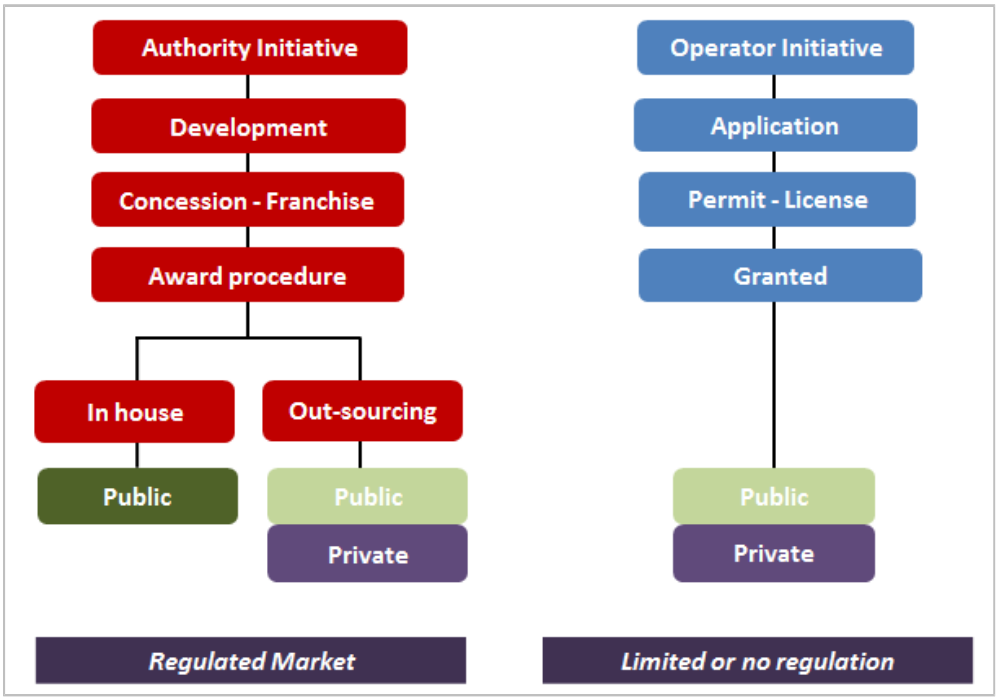
Type of public transport	Existing regulatory framework			Proposed PTSC based framework		
	Service planning	Operations	Fare setting	Service planning	Operations	Fare setting
Bus Operations	In-house	Self or contracted by STU*/ SPV**	State Transport Authority	Public Transport Authority	PTA+ issues PTSC++ to STU or private operator	Fare Fixation Committee
Metro	In-house	Metro SPV	Metro fare fixation committee	Public Transport Authority	PTA issues PTSC to Metro SPV	Fare Fixation Committee
Suburban rail	In-house	Indian railways	Indian railways	Public Transport Authority	PTA issues PTSC to Indian railways	Fare Fixation Committee

*STU- State Transport Undertaking; ** SPV- Special Purpose Vehicle;
+PTA-Public Transport Authority ; ++PTSC-Public Transport Service Contract

Improved regulation of paratransit services

The current paratransit regulation in India are driven by the initiative of the operator, where the operator applies for a stage or a contract carriage permit and the authority decides on issuing them. However, such a regulatory regime has led to operators opting only for high demand routes, while many areas in the city remain underserved. Therefore, an alternative model where the Government takes a greater initiative in planning for these services and ensures adequate level of service for passenger demand is proposed. This task is assigned to the Public Transport Authority which is empowered by a legal framework and appropriate mandate. The following figure summarises the existing unregulated market model and the proposed regulated market model to regulate paratransit.

Alternative models for regulating paratransit



Source: Guido Bruggeman, 2016

'New Mobility' regulations

The 'New mobility' solutions like technology based aggregators of three-wheelers, taxis and buses offer a flexibility that comes closest to a personal vehicle. Users can hail these services on-demand, thereby being incentivised further to move away from personal vehicles. Once the users are familiar with such on-demand transport modes, they are more likely to use other shared modes like formal public transport and paratransit services. Therefore, cities should harness the on-demand services as a part of their efforts towards reducing personal vehicle based mobility. However,

some cities in the developed world, with high rates of adoption of these 'New Mobility' solutions, have also seen a decline in the share of city bus services[2][3]. There are instances of vehicles operating on on-demand platforms being positioned around the busiest areas of cities to reduce wait time of users[4], thereby increasing the congestion in these areas rather than reducing it.

The current outlook of Indian regulators towards New Mobility solutions positions them as a competitor to the existing shared modes of transport. As a result, the 'Aggregator rules' and 'Taxi regulation' practices developed by various cities have adopted measures like restricting the number of permits and regulating their minimum fares[5] to reduce competition with other shared modes. The 'Taxi guidelines' issued by the Ministry of Road Transport and Highways (MoRTH) has called for a more open approach that positions them as a part of the solution and not the problem of congestion.

The regulation of 'New Mobility' service providers is an evolving subject across the global and no city has zeroed in on the exact path forward. Given the lack of adequate research on the impact of on-demand services in Indian cities, we recommend an open minded approach, where the New Mobility services are seen as an on-demand service that can reduce personal car dependence, rather than as a competition to public transport. However, it is to be ensured that we don't replace personal cars with commercial cars. Cities like Vienna and Helsinki have developed 'Mobility as a Service (MaaS)' platforms for effective integration of 'New mobility' solutions with formal public transport. Such solutions can be piloted in Indian cities to evaluate their impact of public transport ridership.

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[2] https://steps.ucdavis.edu/new-research-ride-hailing-impacts-travel-behavior/
[3] https://www.bostonglobe.com/business/2018/02/05/uber-pulling-boston-commuters-off-transit-and-putting-them-traffic-study-says/m81MOB3tNBlaW19e2zBAMN/story.html
[4] https://www.nytimes.com/2017/12/26/nyregion/uber-car-congestion-pricing-nyc.html
[5] http://bangaloremirror.indiatimes.com/bangalore/others/bangalore/others/cabs-to-cost-more-as-govt-sets-new-minimum-fare/articleshow/62447995.cms