Developing Urban Public Transport

International Experience of the Evolution of Policy Regarding Public Private Partnerships

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Workshop On Restructuring Public Sector Undertakings: Best Practices
Organised by
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Developing Urban Public Transport
Fostering Public-Private Partnership

- Urban Public Transport Policy - Govt. of India, The World Bank and International Experience
- Competition in Urban Bus Services – Regulatory Role of Government
- Implications for Development of W. Bengal Public Transport Services
Urban (Public) Transport Policy
World Bank – GoI – Intl Experience

- The World Bank -
  - "Cities on the Move", 2002
- The Indian Government -
  - Draft National Urban Transport Policy, 2004
- The practice
  - Worldwide experience
The Issues: Public Transport Pricing

- **GoI Policy**
  - subsidize basic PT for the poor
  - allow differentiated services at higher prices

- **WB Advice**
  - encourage differentiated services
  - concentrate on financial sustainability
  - focus subsidies tightly (on poor) and finance subsidies directly (not through cross-subsidies)

- **Worldwide experience suggests**
  - blanket fare controls often destroy public transport
  - PT fare policies should be part of a comprehensive policy
The Issues:
Public vs Private Provision

- GoI Policy
  - contract out bus operations to private sector

- WB Advice
  - contract out bus operations to private sector

- Worldwide experience suggests
  - concessioning and franchising works, but
  - public sector roles/skills need reform
The Issues; Technologies for Public Transport

- **GoI Policy**
  - Bus systems up to 20,000 pphpd
  - All cities >5 million to plan rail systems

- **WB Advice**
  - Consider affordability of technologies
  - Phase development

- **Worldwide experience suggests**
  - Bus systems can manage up to 35,000 pphpd
  - Bus systems much cheaper, but neglected
# Financial Performance of Metro Systems

<table>
<thead>
<tr>
<th>City</th>
<th>Rev/op cost (US c)</th>
<th>Rev/Pass (US c)</th>
<th>Cost/pkm (US c)</th>
<th>Corridor Traffic (M/day)</th>
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<td>8.1</td>
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</table>
The Issues; Financing

- **GoI Policy**
  - dedicate taxes for an urban transport fund
  - encourage private provision of services and infrastructure

- **WB Advice**
  - dedicate taxes for an urban transport fund
  - encourage private provision of services and infrastructure
  - focus subsidies on users, not suppliers

- **Worldwide experience suggests**
  - private financing of services easy to achieve
  - private financing of infrastructure difficult
The Issues;
Institutional Co-ordination

- **GoI Policy**
  - set up Unified Metropolitan Transport Authorities

- **WB Advice**
  - set up Unified Metropolitan Transport Authorities
  - incorporate all urban transport modes under UMTA

- **Worldwide experience suggests**
  - UMTAs work
  - UMTAs require political will and financial resources
A Metropolitan Urban Transport Authority: Transport for London

- Is responsible for:
  - planning and procuring public transport services
  - The main road network
  - Traffic control system

- Is financed by
  - local taxation
  - road pricing revenues
Urban Public Transport Policy
Need for Action

- GoI/WB in agreement on most policy issues
- Indian urban transport institutions too fragmented and ineffective
- Lack of emphasis on realistic financeability
- Implementation often quite different or contrary to principles
- Regulatory emphasis misplaced (survival of PSEs) causes more problems than it solves
Competition in Urban Bus Services
International Experience

- Evolution of Urban Bus Services Policy
- What Should be the Regulatory Role?
- A Success Story – Bogota, Colombia
- Establishment of an UMTA
Competition in Urban Bus Services
Public Policy Since the 1970s

- Public provision and self-regulation norm during 1970s but resulted in major fiscal problems.

- In 1980s, liberalization and privatization became prevalent but led to safety and environmental problems.

- Also led to social problems as tariffs increased, subsidies were cut, and some poorer communities suffered service reductions.

- The 1990s saw policies to mitigate the excesses of competition – restrict entry, competition “for the market” instead of “in the market”.

- Recently, the State has returned as regulator and facilitator – emergence of hybrid model and strong public-private partnerships.
Competition in Urban Bus Services
Recent Assessment

- Estache and Gomez-Lobo review recent experience in “Limits to Competition in Urban Bus Services in Developing Countries”.
- The Hybrid Model maybe the most rational from economic point of view due to various market failures in urban bus systems.
- Two sets of regulatory issues emerge:
  - Organization of the bus market to address the market failures.
  - Regulatory intervention without compromising competition efficiencies.
- Experience of Santiago, Chile to show emergence of regulatory issues.
- Review main sources of market failure and regulatory responses.
- The Hybrid Model and the experience in Bogota, Colombia.
Competition in Urban Bus Services
Santiago, Chile – A Typical Evolution

- **Period ending in 1979 - State Provision:**
  - Heavy state intervention as provider and regulator of prices, routes, permits
  - Chronic shortage and low quality of service, long waiting times, congested buses

- **Period 1979 to 1990 - Liberalization and Free Competition:**
  - Sector liberalized – free entry, freedom to establish routes, and set tariffs (1983).
  - Increase in coverage and number of buses went from 5100 to 13,600.
  - Capacity utilization dropped by 55% and real tariffs increased 100%
  - Major problems due to externalities (pollution, congestion, safety)

- **Period Since 1990 - Re-Regulation But with a Difference:**
  - New regulations – tendering system for established routes, tariffs set competitively
  - Number of buses dropped to around 8100 despite a 20% increased ridership
  - Bus stock improved – average age 6 years, over 50% met emission standards
  - Waiting times averaged only 4 minutes despite fewer buses.
Competition in Urban Bus Services
Sources of Market Failure

▲ Market Failures in Bus Industry are not just due to externalities such as air pollution and congestion.

▲ Santiago experience is typical, and the market failures evidenced there include:
  ▪ Lack of Curb Rights - uncontrolled locations for passenger pick-up and drop-off
  ▪ Agency Problems - contracts that create incentives for poor on-road behavior
  ▪ Inefficient Entry and Exit - need for socially optimal fare regulation

▲ Addressing these problems will require a sophisticated Regulator - network characteristics, peculiarities of demand, cost structures under various operating conditions.
Competition in Urban Bus Services
Lack of Curb Rights

- Locations for pick-up and drop-off of passengers need to be controlled.
  - Uncontrolled access creates head-to-head competition in the market resulting in safety and traffic congestion problems.
  - Development of a route often depends on providing service until demand picks-up and this investment won’t happen if the operator making the investment does not have protected curb rights.

- Solutions to address “Curb Rights” problem include:
  - Transferable curb rights which can be bought or rented – difficult to police
  - Exclusive route operating rights granted to a single operator or consortium of operators – e.g. a route association. Competitive tendering for these rights for a period of say 5 years would engender competition “for the market”
Competition in Urban Bus Services
The Agency Problem

- Driver contracts of Private Operators Create Perverse Incentives
  - Driver remuneration often linked to revenue - consequently driver engages in head-to-head competition on the road.
  - Although a rational “private solution” it has negative consequences for society.
  - Creates problems of safety, orderly operation of bus stops, even design of stops.
  - Service frequency also a problem as drivers engage in “head running”.

- Solutions to address the “Agency” problem include:
  - Paying drivers fixed wage – not natural in competitive bus industry.
  - Strict traffic monitoring and control – not practical and very expensive.
  - Break link between profits and revenue – pay for quality of service.
  - Exploit economies of scope, scale, density – route structures to encourage joint operation by many operators sharing revenue based on service provided.
Competition in Urban Bus Services
Inefficient Entry and Fares

- Free Markets in Urban Bus Services Lead to High Fares and Excess Capacity
  - Ratio of “Socially Optimal Number of Buses” to “Private Equilibrium” depends on Fixed Cost to Revenue ratio.
  - Researchers (e.g. Evans 1987) have shown that the private competitive equilibrium will result in high tariffs and excessive entry.
  - Empirical evidence (e.g. Santiago 1980s) suggests competing firms prefer service to price competition. Consequently fares are higher and occupancies lower than socially optimal.
  - Dichotomy between Developed (high private car use) and Developing (high public transport use) economies – for latter free markets create excess services due to externalities of pollution and congestion, whereas for the former subsidies are justified to increase services.

- Solutions to address the “Inefficient Entry” problem:
  - Regulate fares optimally
  - Regulate routes and service frequency
Competition in Urban Bus Services
Asymmetric Information Problem

- Effective regulation must contend with information asymmetry between regulator and private operator – costs of routes, different service qualities and other factors are better known to operators.

- However, there are a number of regulatory mechanisms that can circumvent the information asymmetry problem to a large degree:
  - Tendering bus route franchises – competition for the market has been shown to work in Santiago, Bogota, London
  - Santiago tendered 5-Year contracts using a multi-variable selection
  - U.K. used two forms of contracts, minimum subsidy and a gross cost basis, and there is evidence gross cost contracts lower costs more and improve safety
  - Yardstick competition may be used if competition is limited. Norway used a standard cost model which was found to increase cost efficiency
Competition in Urban Bus Services
Regulatory Challenges

*Unified Metropolitan Transport Authority would be needed to undertake the following:

- Design and integrate transport network - exploit economies of density and scale, develop transfer infrastructure, integrated tariff mechanism, exclusive bus lanes, etc.
- Exercise regulatory control on routes, service frequencies, tariffs, entry by qualified operators.
- Administer revenue sharing mechanism to decouple operator revenue from passengers carried - revenue collection independent of operators, and sharing mechanism based on services provided.
- Impose bus quality characteristics, technological specifications, driver training and certification requirements.
Competition in Urban Bus Services
Reforms in Bogota, Colombia

During the 1990s Bogota struggled with many of the same problems:
- Buses competed vigorously in the streets (war of cents)
- High congestion with speeds as low as 10 kmph during peak periods
- Average occupancy rates were 45%, buses contributed 70% of air pollution

Reforms were Effected in 36 months:
- Transmilenio, centerpiece of the reforms, operational in 24 months
- Consisted of 35 km of exclusive bus lanes tendered competitively
- Also 22 Feeder Routes (67 km) tendered covering 40 neighborhoods
- Infrastructure investments of $215 million for bus lanes, stops, pedestrian bridges, transfer stations, pre-paid ticketing system

Results Have Been Dramatic:
- Avg. speeds 27 kmph, air pollution 30-40% less, safety much improved
## Developing W Bengal Public Transport Performance Indicators for STUs

<table>
<thead>
<tr>
<th>Staff/Bus (No.)</th>
<th>Financial Loss (Rs./Km)</th>
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<tr>
<td>CSTC</td>
<td>10.45</td>
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- WBSTC: 12.71
- CTCT: 11.51
- India (Rural): -5.32
- India (Urban): -5.82

### Financial Loss (Rs./Km)
- CSTC: -13.56
- NBSTC: -14.85
- SBSTC: -8.2
- WBSTC: -7.15
- CTCT: -5.32
- CSTC (Urban): -14.85
- SBSTC (Urban): -8.2
- WBSTC (Urban): -7.15
- CTCT (Urban): -5.32
Development of West Bengal STUs
Key Issues for Consideration

- Establish a Unified Metropolitan Transport Authority – a Regulatory and Planning Body.
- Develop integrated fare collection mechanism which allows targeted subsidies to the poor.
- Institute a system of Route Tendering and revenue sharing among operators.
- Develop a core network of high density Bus Rapid Transit and feeder routes with modern infrastructure.
- Require the existing STUs to compete for business within such a system of tendered routes.
Thank You