Intermediate Public Transport for Small and Medium Size Cities*

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* Based on IDFC Quarterly Research Note, September 2012
What is Intermediate Public Transport?

Two main types of IPT services:

- Door to door or “contract carriage”: cycle / auto rickshaw or taxi
- Informal public transport or “fixed route”: share-cabs or autos, mini-buses, “jugaad”
What role does IPT play?

- IPT plays a niche role in countries with good mass public transit
  - As a feeder to mass public transit
  - For very short trips

*Automated shuttle for group rapid transit (Rotterdam)*

*Bicycle rickshaw for tourists and short distances (Amsterdam)*

*Automatic pods from Heathrow terminal to car park (London)*
What role does IPT play in India?

- Urban public transport systems in India are insufficient
  - Only 5 cities have rail-based public transit
  - Of 78 cities with population over 0.5 million, only 20 had public city bus services (2009)

- IPT plays a critical role in India, often forming the primary mode of public transport in small and medium towns
  - Provides mobility where there is no public transport
  - Inclusive and especially important for the poor, who cannot afford private transport
  - Important source of livelihood for the poor and for migrants
IPT plays an important role in small & medium cities

<table>
<thead>
<tr>
<th>Population (mn)</th>
<th>Walk (mn Trips)</th>
<th>Vehicular (mn Trips)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public transport</td>
<td>IPT</td>
</tr>
<tr>
<td></td>
<td>Fast</td>
<td>Slow</td>
</tr>
<tr>
<td></td>
<td>Cars</td>
<td>Scooter/Motorcycle</td>
</tr>
<tr>
<td></td>
<td>Cycle</td>
<td></td>
</tr>
<tr>
<td>0.1-0.25</td>
<td>37.11</td>
<td>16.4</td>
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<tr>
<td></td>
<td>10.43</td>
<td>20.08</td>
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<tr>
<td></td>
<td>3.27</td>
<td>24.13</td>
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<tr>
<td></td>
<td>25.68</td>
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<tr>
<td>0.25-0.5</td>
<td>37.76</td>
<td>20.55</td>
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<td></td>
<td>8.93</td>
<td>17.19</td>
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<tr>
<td></td>
<td>2.6</td>
<td>29.83</td>
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<tr>
<td></td>
<td>20.87</td>
<td></td>
</tr>
<tr>
<td>0.5-1.0</td>
<td>30.67</td>
<td>25.41</td>
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<td></td>
<td>8.15</td>
<td>12.02</td>
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<td></td>
<td>9.47</td>
<td>29.1</td>
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<tr>
<td></td>
<td>15.86</td>
<td></td>
</tr>
<tr>
<td>1.0-2.0</td>
<td>29.62</td>
<td>30.55</td>
</tr>
<tr>
<td></td>
<td>6.39</td>
<td>8.09</td>
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<tr>
<td></td>
<td>3.3</td>
<td>39.57</td>
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<td></td>
<td>12.09</td>
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<tr>
<td>2.0-5.0</td>
<td>28.65</td>
<td>42.33</td>
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<td>4.94</td>
<td>2.97</td>
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<td></td>
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<td>28.86</td>
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<td></td>
<td>15.9</td>
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<td>&gt;5.0</td>
<td>28.35</td>
<td>62.81</td>
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<tr>
<td></td>
<td>3.29</td>
<td>3.65</td>
</tr>
<tr>
<td></td>
<td>6.13</td>
<td>14.75</td>
</tr>
<tr>
<td></td>
<td>9.38</td>
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*Source: RITES 1998*
## Comparison of IPT and other vehicles

<table>
<thead>
<tr>
<th></th>
<th>CO$_2$ Emissions (g/pkm)</th>
<th>Avg Trip Length (km)</th>
<th>Avg Speed (kmph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle rickshaw</td>
<td>0</td>
<td>1.7</td>
<td>10-15</td>
</tr>
<tr>
<td>Autorickshaw CNG</td>
<td>0.1 #</td>
<td>4.7</td>
<td>30</td>
</tr>
<tr>
<td>Battery rickshaw</td>
<td>8 $</td>
<td>2.5-3</td>
<td>25</td>
</tr>
<tr>
<td>“Jugaad”</td>
<td>n.a.</td>
<td>n.a.</td>
<td>25</td>
</tr>
<tr>
<td>Taxi (petrol)</td>
<td>146</td>
<td>1.5 %</td>
<td>50</td>
</tr>
<tr>
<td>Bus (diesel)</td>
<td>11</td>
<td>8.8</td>
<td>50</td>
</tr>
<tr>
<td>Two wheeler</td>
<td>37</td>
<td>8.7</td>
<td>30-40</td>
</tr>
</tbody>
</table>

Notes: pkm – passenger km; # carbon monoxide emissions less than CNG taxi; % for cars; $ well to tank emissions using India’s power generation mix (2010) and CEA emission factors for the fuels.

Regulation of IPT

CENTRAL GOVERNMENT
Motorised IPT covered by Central Motor Vehicles Act 1988 (MVA) but have no specific guidelines for two/three wheelers

STATE GOVERNMENT
Rules for motorised IPT

STATE GOVERNMENT / Local Government
Acts for Non-motorised IPT

RTO/Local Govt regulate licenses, vehicle registration, permits and compliance with safety and emissions standards
Regulation outdated and restrictive

- Caps on permits force drivers to operate outside the system
- Many cities disallow renting rickshaws, forcing drivers – many of which are migrants - to rent informally
- Some states have an age limit for drivers of cycle rickshaws (e.g. 45 years in Punjab)
- Rigid categories for licensing discourage new technology e.g. electric
Due to the restrictive policies, IPT providers largely operate informally

- Drivers lack job security and benefits
- They also do not have documentation of income, which limits access to credit to purchase their rickshaws
- Drivers are often subjected to harassment and confiscation of vehicles
- Negative environmental implications due to lack of regulation on emissions
Passenger service is also often poor

- No regulation of fares
- Little integration between modes due to lack of co-operation inconveniences passengers
- Lack of safety regulations puts passengers at risk
- Concern for safety due to mixed traffic flow driven by growth in private vehicles
Attempts have been made to organise IPT

- Provide better service to passengers
  - Transparency of fares and complaints hotline
  - Driver behavior and road safety training
  - Dispatch services or “dial-a-rickshaw”
  - Include added features such as seatbelts, newspapers

Board at rickshaw stand explaining rules and services obligations of rickshaws (Fazilka, Punjab)
Attempts have been made to organise IPT (contd.)

- Organise drivers and provide basic insurance, credit and allowances
  - Tea vendors co-ordinate bookings and dispatch in return for rent-free space and a captive market of drivers
  - Medical and accident insurance and discounted medical facilities
  - Children’s education allowance

Tea stand for drivers accepts bookings (Fazilka, Punjab)
Attempts have been made to organise IPT (contd.)

- Integrate with mass public transport
  - Feeder services for first and last mile connectivity
    - G-Riks metro to mall
    - Cycle Rickshaws from railway station to homes

- Promote sustainability
  - Cycle rickshaws, solar-powered rickshaw or rickshaws on CNG
Challenges in organising IPT

Financial viability

- Financed by grants or funds from corporates

- Self-financing - Booking fees, advertising, manufacture of vehicles….
  
  - Advertising - a key revenue source – is uncertain due to unclear or non-existent policies on outdoor advertising or actually banned
Challenges in organising IPT (contd.)

Lack of local institutional support

- Municipal authorities generally do not provide support
  - Municipal support has been integral to the organisation of IPT in places it has been successful (e.g. in building rickshaw stands, financial support and acquiring phone lines)

- Municipalities rarely provide infrastructure such as designated rickshaw stands and lanes for non-motorized transport

- Multiple authorities to work with e.g. municipality, railways, airports
Going forward

- Recognize IPT modes to facilitate registration and licensing
  - Policy should be broad and flexible to accommodate all existing type of IPT vehicles and allow for innovative technologies
  - Formulate clear policies allowing advertising on IPT vehicles
  - Set and enforce transparent fares

- IPT as feeder services for first and last mile connectivity
  - Integrate IPT in land use and transport planning
  - Pick up and drop off areas at stations and other mass transit

- Encourage sustainable modes of IPT
  - Extend subsidies for electric vehicles to electric rickshaws
Thank you!