Integration of a Metro Rail with Other Transit Systems - Case Study Delhi Metro

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Sharat Sharma
Director Operations

http://www.delhimetrorail.com
BASIC PREMISE

• The TRANSPORT SYSTEM of a city is the SUM of ALL MEANS of TRANSPORT

• Different MODES should be COMPLEMENTARY, not the competitors

• Seamless integration is IMPERATIVE
WHY INTEGRATION?

- Rational – Seamless Integration
- Cost-effective
- Efficient Public Transport System → Integrated & Optimized Modes
- But also Improving the passenger’s experience in PT
WHY INTEGRATION?

• PAX desire “non stop-non transfer”
• Transport Network consists of different modes (buses, trains, mototaxis, etc)
• Commuters switchover between different modes, with a feeling of “time loss” and “discomfort”.
• “minimise the need to transfer but maximise the opportunity to transfer”
• Make transfer seamless.
HOW TO INTEGRATE?

• Integrated planning - low PHPDT by bus, high PHPDT by MRTS
• Seamless passenger interchange among different modes - station / stop planning
• Unified ticketing
• Adequate signage - information, pamphlets
• Complementary scheduling of services
• Fare concessions on using multiple modes
**Transport Integration Issues**

Integration is the key to sustainable and need responsive public transport
DMRC’S EFFORTS IN ENCOURAGING MULTIMODAL TRANSPORTATION
INTEGRATION WITH BUS TRANSPORT
FEEDER BUS SERVICES

- 23 routes
- 170 Buses
- 1,20,000 Passengers/day
- 350 buses being procured
- 81 new routes are being planned
DMRC has prepared an integrated map showing DMRC network along with feeder bus routes and DTC routes.
INTEGRATION WITH BUS

• Route rationalisation of DTC routes to serve as feeder to DMRC
• Integration at Bus terminals:
  – Kashmere Gate
  – Anand Vihar
  – CTST
• Bus lanes/Stops at Metro stations
INTEGRATION WITH BRT

• Moolchand

• Lajpat Nagar
INTEGRATION WITH RAILWAYS
OLD DELHI
ANAND VIHAR
INTERCONNECTION AT NEW DELHI

New Delhi Railway Station

New Delhi Metro Station

Dedicated pathway
SEAMLESS INTEGRATION WITH RAPID METRO, GURGAON

• Sikandarpur
INTEGRATION WITH AIRWAYS
INTEGRATION WITH AIRWAYS

• Airport Line connects IGI

• Shuttle service from Aero City Metro station to Domestic terminal
INTEGRATION WITH AIRWAYS

- Tickets of Delhi Metro being sold at Delhi Aerocity and IGI stations of Airport Express line

- Smart Cards of Delhi Metro can also be recharged from these stations
INTERCHANGE FROM AIRPORT EXPRESS LINE TO DMRC AT DWARKA SECTOR 21

- Seamless Interchange facility at Dwarka Sec-21(Airport Line) to Dwarka Sec-21(Blue Line) is started to facilitate commuters
PARK AND RIDE
PARKING

• At 92 stations
• Occupancy almost 100%
• 2.33% users parking but not using Metro.
Encroachment outside metro station gate before implementation of ‘Halt & Go’
TRAFFIC INTEGRATION

HALT AND GO
INTEGRATION AT METRO STATION
WITH
OTHER PUBLIC TRANSPORT
TAXI/AUTO RICKSHAW STANDS
GRAMEEN SERVICE
BATTERY OPERATED TAXIS
RADIO TAXI COUNTER AT STATIONS
INTEGRATION WITH NMT

• Bicycle parking at nominal rate

• Bicycle rental Scheme at Vishvavidyalaya

• Rickshaw stands at stations
INTEGRATION WITH NMT

• DMRC has given LOA to M/s Greenolution 7 to start cycle shelter at metro Stations i.e.
  • Dwarka sector-14
  • MG Road
  • Akshardham
  • Saket
  • Shastri Park
  • Hauz Khas
  • Between CISF and DMRC staff colony, Shastri Park

Rented Cycle facility is available at Vishwavidyalaya Station.
ANNOUNCEMENTS IN TRAINS

- Feeder Services
- Indian Railway stations
- Airport Line
- ISBT
FARE INTEGRATION

• Being discussed with RBI- Money laundering Policy

• Rapid Metro – Closed system
INFORMATIONAL INTEGRATION
AIRLINE INFORMATION AT METRO STATION
### DTC SERVICES INFORMATION AT METRO STATIONS

<table>
<thead>
<tr>
<th>Route</th>
<th>Destination</th>
<th>Time</th>
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<tbody>
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</tr>
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*Note: Timings are subject to change.*

For more information, visit [www.delhimetrorail.com](http://www.delhimetrorail.com).
Metro Train time table information in “Trains At a Glance” Time Table of Railways
TIME TABLE INTEGRATION

• Airport Line services being extended to serve Shatabdi passengers

• Time table of line 2 (yellow line) modified to accommodate Indian Railways’ passengers

• Complementing Time tabling with feeder services.
OTHER EFFORTS

• Coordination with PWD for approach road improvement
• Coordination with local bodies to make approach to station obstruction free
• Construction of Foot Over bridge at Pragati Maidan
• No security check required for interchange passengers from Airport line to other lines
• Availability of Ticket Vending Machines of Airport metro line at Airport.
WAY FORWARD

Get Started Today.
INTEGRATED TICKETING

• Common Mobility Card
• With DTC
• With Airport Line
• With Parking
• With vendors at metro stations
• With rapid Metro
INTEGRATED TRANSPORT HUB

- To improve connectivity with Multimodal Integration in and around the influence zone of Metro Stations, UTTIPEC is helping DMRC in designing Phase-III stations.

- The mandates approved by MoUD are:
  - Multi-modal integration plan for Metro Stations
  - Pedestrian Crossing facilities at Vulnerable /accident spot
  - Standard Typical Crossing Design
  - Synchronization Of Signals, Signage & Road Markings etc.
  - Street Design Guidelines
  - Cycle sharing & other IPT

Considering all these mandates & decision, UTTIPEC has proposed to Plan, Design & retrofit 2km influence zone of all Ph-III Metro stations
CONCLUSION

- Integrated Transport Planning
- Integrated Rational fare system
- Transit oriented Development
- Unified Transport/Land Authority
Thank You
for
Giving me an opportunity
for sharing my views