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NAGPUR METRO

URBAN MOBILITY INDIA CONFERENCE -2016

Financial Structure for Metros of Future Cities

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Current Financing and funding in Metro Projects

Funding Arrangement

Funding type	Model	Projects
Government Funded	50:50 Central – State Government Ownership	Kochi, Nagpur, Chennai, DMRC, Bangalore, MEGA
	100% State Government Ownership	Jaipur, Lucknow (Initially)
	100% Central Government Ownership	Kolkata (North-South) – IR Kolkata (East – West) – IR + MOUD
Public Private Partnership (PPP) model	Private provisioning of operations & maintenance	Delhi Airport Express **(Initially)**
	PPP – BOT model	Hyderabad Metro, Mumbai Line 1
Private Funded	Complete Private Initiative	Gurgaon Rapid Metro

FINANCIAL TRANSACTIONS OF PUBLIC AND PRIVATE STAKEHOLDERS IN THE CASE OF METRO RAIL PROJECTS

Pros and Cons of the Current financing structure of Govt. Funded projects

Pros

- Standing frame work with DEA & MOUD available for funding – Saves Time
- Multiple agencies for funding available hence higher capacity – Bigger Kitty
- Government backed financing – Competitive Rates
- Reliability & Continuous funding for the full tenure of the project assured – provides flexibility in case of Time or Cost over-run

Cons

- Absence of long term hedging mechanism
- State government contribution significantly higher due to additional RoW acquisition charges & entire impact of currency fluctuations to be borne by the state government.
- Insignificant role of Domestic Financial institutions due to lack of long term funds available in the domestic debt market.

Pros and Cons of the Current financing structure of Private Funded projects

Pros

- Additional resources available for projects in addition to govt/public resources
- Leverage efficient private sector management experience

Cons

- Likely higher interest rates due to perceived higher risks
- Limited ability to recover investments through fare box revenue
- Limited ability to capture full land value due to absence of necessary reforms in the non-fare revenue streams
- Absence of ability to tap long term funding resources locally
- Limited overseas funding due to risk of currency fluctuations
- Absence of effective dispute resolution mechanism in the concession agreements causing delays

Metros and Financing Requirements

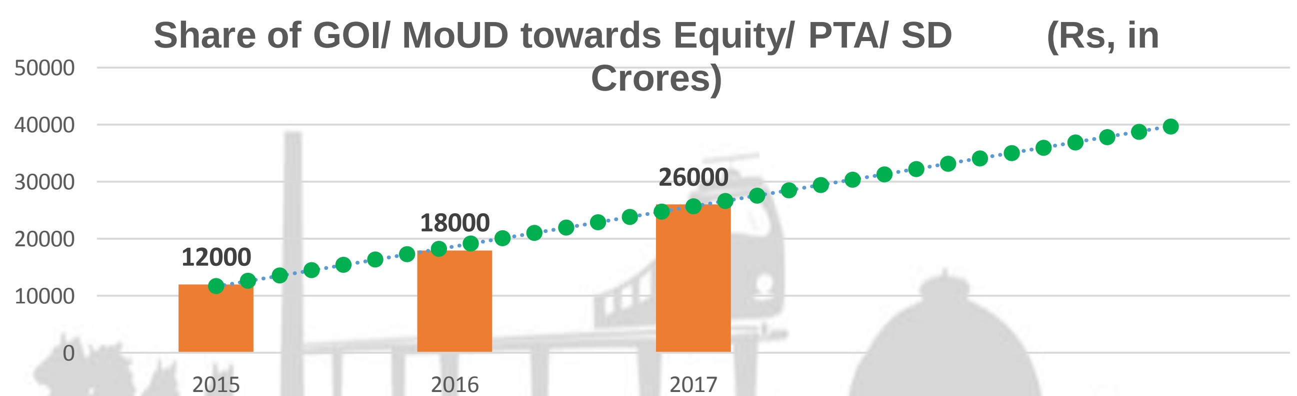
Indian Metro Scenario

12
Cities

Metro Projects –
Under Operation - 325kms;
8 Metro projects
Under Construction -516kms;
14 Metro projects
Under Consideration – 553kms;
15 Metro Projects

16
Additional Cities

As per NUTP cities with a population higher than 20 lakhs ;
16 additional Metro projects are likely to come up.



With many new Metro projects/ extensions planned the onus of funding is bound to be huge on MoUD & State governments
The quantum of money required will rise and new streams of revenues/funding avenues have to be tapped

Sources:
-National Urban Transportation Policy, 2016
-MoUD

PPP - Mumbai Metro Line 1

PARTICULARS	DETAILS
Project	Development of Metro Link running through one high density corridor, Mumbai Metro network covers a total distance of 11.4 Kms involving 12 ultra-modern station buildings with state-of-the-art depots and complete infrastructure in Public Private Partnership. **Commencement 2006**
Capital Cost	Rs. 3137.4 Crs
Funding Plan	RInfra : Rs. 1882.44 Crs 69% MMRDA : Rs. 815.72 Crs 26% Veolia : Rs.156.87 Crs 5%
Project Sponsors	RInfra – 69% MMRDA – 26% Veolia -- 5%
Project Implementation Framework	DBFOT involving: • Civil & Structural works including stations, elevated viaduct & depot; • Supply & Installation of Rolling Stock, Signaling & Traction Power Systems; • Supply & Installation of Communication Systems; • Other Systems required for successful operation of Metro Rail
Operations & Maintenance	Operations are managed by MMOPL & maintenance outsourced to a single external agency
Revenue Model	Fare based Revenue Non Fare based Revenue – Advertisement & Limited Property Development
Key Highlights	▪ **Assured ridership (Up to 3Lakh passengers/day) given the high demand of the East West connectivity in Mumbai** ▪ **Smaller project at 11.4 Kms hence easier to handle and execute** ▪ **Project has been successfully commissioned in 2014 –Considerable time overrun in commissioning** ▪ **Related Cost escalation disputes and fare fixation issues**

PPP - Airport Express Link Project

PARTICULARS	DETAILS
Project	Development of Airport Express Metro Link
Capital Cost	Land + Civil + Systems : Rs.5700 Crs
Funding Plan (Land+ Civil) **Funding (Systems + operations**	DMRC/Government INR. 2815 crores Reliance Infra paid INR 2885 Crs.
Concession Agreement	Concession Period : Min 30 years
Length of MRTS	Mostly Elevated, with 6 stations
Project Implementation Framework	Lump Sum Turnkey Development Agreement involving: • Civil & Structural works including elevated viaduct (Govt.); • PPP ➢ Supply & Installation of Rolling Stock, Signaling & Traction Power Systems; ➢ Supply & Installation of Communication Systems; ➢ Other Systems required for successful operation of Metro Rail
Ops & Mntc	As per provisions of Metro Act
Revenue Model	Fare based Revenue – As per corresponding fare slabs Non Fare based Revenue – Advertisement & Transit Oriented Development Now managed by DMRC
Key Highlights	• **Cost Overrun.** • **Dispute between private entity and government.** • **Private partner withdrawn** • **Operations transferred from Private to Government.**

Private : Rapid Metro

PARTICULARS	DETAILS
Project	Development of Metro Link from Delhi Metro Sikanderpur station on MG Road to Sector-56 in Gurgaon under concession from Haryana Urban Development Authority (HUDA) in Public Private Partnership
Capital Cost	Rs. 1088 Crs- Phase 1, Rs. 2143.00 Cr – Phase 2
Funding Plan	Phase 1: Equity : Rs. 816 Cr 75% DLF : Rs. 272 Cr 25% Phase 2: Senior Debt from Banks/FIs : Rs. 1500.00 Cr *70%* Sponsor's Contribution : Rs. 643.00 Cr *30%*
Concession Agreement	Phase 2 : Concession Agreement executed on January 3,2013 Concession Period : 99 years
Length of MRTS	5.1 Km Fully elevated, Double Track with 6 Stations for Phase 1, 7Km, Fully elevated, Double Track with 6 stations for Phase 2.
Project Implementation Framework	Lump Sum Turnkey Development Agreement involving: • Civil & Structural works including six stations, elevated viaduct & depot; • Supply & Installation of Rolling Stock, Signaling & Traction Power Systems; • Supply & Installation of Communication Systems; • Other Systems required for successful operation of Metro Rail
Ops & Mntc	As per provisions of Metro Act, Internal O&M
Revenue Model	Fare based Revenue – As per DMRC fares for corresponding fare slabs Non Fare based Revenue – Advertisement & Property Development
Key Highlights	• **First phase commissioned & execution of second phase currently on** • **Suitable only for small scale feeder systems/network covering particular real estate projects**

PPP- Hyderabad Metro - Structure

PARTICULARS	DETAILS
Project	Development of Metro Link Consisting of three high density corridors, Hyderabad Metro network will cover a total distance of 71.16 km involving 66 ultra-modern station buildings with state-of-the-art depots and complete infrastructure in Public Private Partnership
Capital Cost	Rs. 14,132.00 Crs
Funding Plan	GoTS : Rs. 1413.20 Crs *10%* L&TMRL : Rs. 12718.80 Crs *90%*
Projector Sponsors	GoTS – 10% L&TMRL – 90%
Concession Agreement	Concession Agreement executed on July 5,2012 Concession Period : 35 years with an entitlement of further 25 years
Project Implementation Framework	DBFOT involving: • Civil & Structural works including stations, elevated viaduct & depot; • Supply & Installation of Rolling Stock, Signaling & Traction Power Systems; • Supply & Installation of Communication Systems; • Other Systems required for successful operation of Metro Rail
Ops & Mntc	Hyderabad Metro has chosen to outsource the entire O&M activity to a single external agency
Revenue Model	Fare based Revenue . Non Fare based Revenue – Huge reliance on Property Development given the size of the project & Advertising
Key Highlights	• **Assured ridership given the size & growth of the twin cities of Hyderabad/ Secunderabad** • **Project yet to be commissioned** • **Facing time overruns & associated cost over run** • **State bifurcation issues** • **Absence of effective dispute resolution mechanism in the concession agreements causing delays**

Current GOI and State Government Funding Mechanism

Debt: The current arrangement of GOI facilitating external funding for the SPV, is most efficient and competitive (low interest rates). During our discussions with funding agencies, they have indicated that they have sufficient access to incremental funds and are more than willing to fund additional Metros in India if approached (KFW, Germany, EIB, World Bank, DEA etc.).

Equity: In the current SPV structure of 50:50 equity contribution by GOI:GOM in absolute terms the actual Equity contribution of GOI is not more than 14-15% and subordinate debt of ~5%; total 20%. State Government's share other than Equity & Subordinate debt also includes R&R cost, Cost escalation, Currency fluctuation on debt etc. thereby making the states share significantly higher at 25%. Including land costs the state government's share is at 28.5%.

It would hence be prudent to evaluate if the 50:50 structure can actually implemented in total spirit i.e. other items that the states currently bear i.e. currency, cost escalation etc. is also borne proportionately. Land cost/ R&R costs can be retained in its current form of being funded by the State given that the benefit of the asset created would be benefitting the people of the state.

The current funding mechanism needs to be supplemented by tapping additional avenues of financing

Challenges facing financial structure of Metro Projects

- Long gestation periods to build the Metro and recover the capital investment
- Fare revenues are not sufficient to offset capital cost
- Monetization of Land value takes time
- GOI's contribution not proportionate to State government's contribution on account of the state's sole responsibility to provide for land, forex fluctuations & cost over-runs (GOI's contribution available only up to 20%).
- Debt sustainability issue of State Governments due to their precarious financial condition.
- It is to be seen how GST will change this situation.
- Intermodal transport financing not secure and works independently

Unified Metropolitan Transport Authority (UMTA) Need of the Hour

Issues

Rising Pollution

Road Accidents

Road Congestion

An example of Integrated Transport System from Singapore.

- Dubai, Singapore, Paris and London etc already have a Unified Transport Authority which has been very successful.
- Having an integrated system that oversees all public means of transportation can significantly improve the regulatory framework, feeder service, financing requirements, first mile – last mile connectivity and overall improve the public transport.

Urgent reform necessary in India at the level of both Union & the State Governments

Multi-**Pronged Strategy**

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STRATEGY: REVENUE SIDE

1. Metro projects should come up only in cities where ridership visibility is strong in terms of PHPDT

2. Alignment of the route should ensure strong ridership

3. Fare fixation mechanism should be independent and related to costs – both construction and O&M

TAP NON-FARE REVENUES

- **TOD – INCOME FROM SALE OF PREMIUM OF EXTRA FSI**
- **SHARE FROM STAMP DUTY**
- **DEVELOPMENT FEE**
- **ADVERTISING RIGHTS**
- **ADVERTISING/PARKING/VEHICLE**

Metro should be the first to capture increased value of land by Station development

Multi Pronged Strategy

STRATEGY: COST SIDE

- CONTROL PROJECT COST
- CONTROL FINANCING COST
- COMPLETION WITHIN SANCTIONED TIME
- COMPLETION WITHIN SANCTIONED COST
- STRONG DOCUMENTATION TO AVOID DISPUTES AND CLAIMS
- SUITABLE O&M STRATEGY

CONSIDERATIONS

1. By increased focus on cost reduction by focussing on reducing ROW, via-duct segment width reduction, reduction in weight per span etc operational costs can be considerably reduced, resulting in reduced fare and increased ridership
2. New financial instruments like masala bonds, climatic bonds & raising local debt can be explored to reduce financing costs
3. Use of Digital Project Management platform to keep complete track of project execution with focus on time and cost; synchronized documentation management and reduced claims & disputes
4. O&M strategy to control O&M costs and ensure reliability & durability of assets. Focus should be to bring down life time costs by implementing various initiatives like Solar power generation etc

A big anomaly is that environmentally friendly transport is subject to service tax whereas NHAI is exempt thereby resulting in higher costs for metros than the sanctioned DPR costs

Suggested Innovative Financing Mechanism

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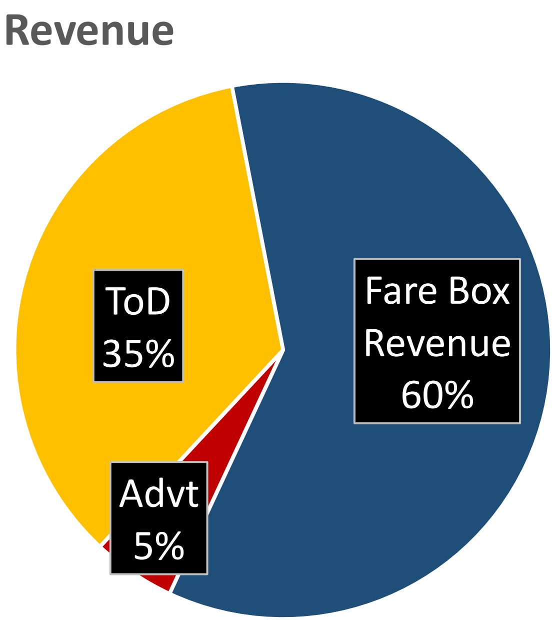
Innovative Finance Instruments vary widely and have been applied by local governments and related agencies in different parts of the world financing Transit and Transit Oriented Development (TOD) related investments

Primary Drivers:

- ❑ Land Value
- ❑ Dedicated Levies/ Taxes
- ❑ Bonds/ Foreign Avenues

TAX OR FEE BASED	NON-TAX OR NON FEE BASED	OTHERS
Property taxes	Land Based Value Premium FAR (Floor Area Ratio)	Metro Bonds
Betterment Charges	Additional Cess/ Transferable Development Rights (TDR)	Foreign Avenues
Other Special Assessments	Location Naming/ Advertising Rights	
	Royalty for Access	
	Development rights and Air Commercialization rights	

Revenue mix & structure for financing options



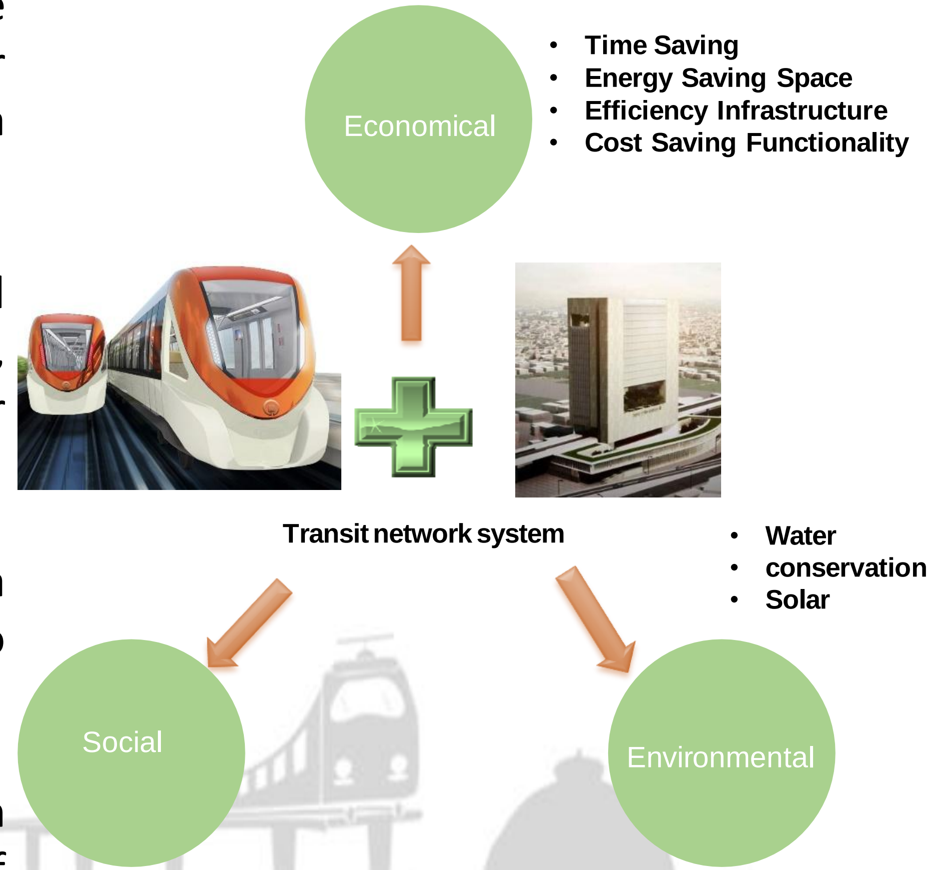
Way Forward

- Once the Metro is operational any state land bank at the Stations can be used for station development for real estate and a revenue stream can be generated

- With decreased costs and enhanced revenues through various non-fare sources, Metro finances will be in a much better state.

- Metro can get its ratings done through a Rating agency, and increase its ability to raise domestic debt at attractive rates.

- Metros being environmentally friendly can look at tapping funds through issue of Metro Bonds , climate bonds, masala bonds etc.



REVENUE SIDE

- ✓ TOD – Income from FSI premium
- ✓ Share from stamp duty
- ✓ Development Fee
- ✓ Advertising rights & Cess; Parking, Vehicle Cess
- ✓ Optimized route length
- ✓ Strong ridership visibility

COST SIDE

- ✓ Control project & finance cost
- ✓ Timely completion within budget
- ✓ State-of-the-art systems (5D BIM)
- ✓ Solar Energy
- ✓ O&M strategy
- ✓ Strong documentation

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10 lakh sft commercial and 60 lakh sft residential development

Target 35% to 40% non-fare revenue (40% global standard)

As per MOUD recommendations – GOM has created a Common Umbrella Entity – Maharashtra Metro – to execute all projects apart from MMR – savings ~10% of project cost including the cost on turnkey execution by other Metro Corporations


View of World Class Metro Station of Nagpur Metro: Sitabuldi & Zero Mile Station
THANK YOU