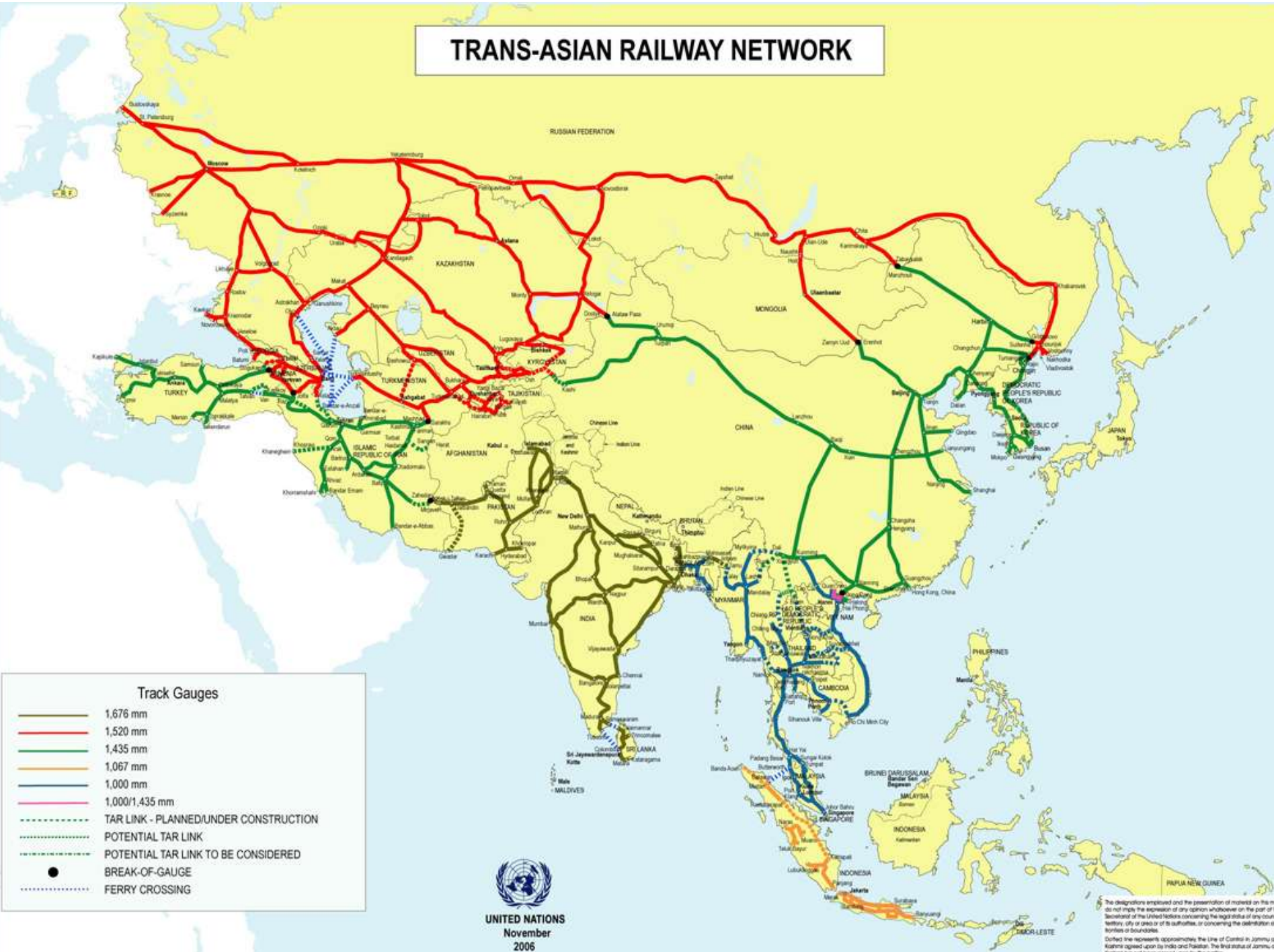


Financing of Transport Infrastructure and Public-Private Partnerships

Public-Private Partnerships for
Development of Rail Infrastructure,
Railway Staff College
Vadodara, March 2007

TRANS-ASIAN RAILWAY NETWORK



UNITED NATIONS
November
2006

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The level status of Jammu and Kashmir has not been agreed upon by the parties.

Financing needs of selected transport projects and programmes in the ESCAP region

Geographic coverage/ country	Transport subsector/ project	Financing need (US\$ billion)	Time frame	Comments
ESCAP region	Asian Highway	18.0	-	Upgrading and improvement of 26,000 km of highways in 26 countries
	Trans-Asian Railway	23.5	-	Construction of 13 missing links and double tracking of priority routes
China	Rural roads	47.7 (Y385.2 billion)	2006-2010	325,810 km of new roads and paving of 675,535 km of roads
	Railway network expansion	250.0	By 2020	28,000 km of new lines
	Beijing-Shanghai high-speed link	24.7	-	1,320 km of high speed rail link
	Airports	17.4	5 years	44 new airports plus upgrading of existing ones
India	Rural roads	26.0	-	368,000 km of new rural roads and 370,000 km of upgraded roads
	National highways	48.9	2005-2012	Development of 45,000 km of national highways in phases
	Dedicated freight corridor (rail)	11.0	-	Proposed 9,500 km of high capacity, high speed freight corridor
	Airports	9.0 (by government)	6 years	30 non-metropolitan airports

Estimates of average annual investment needs in the transport sector, 2005-2015

Transport subsector	Developing Asian and Pacific countries		ESCAP region	
	2005-2010	2010-2015	2005-2010	2010-2015
Roads	161.0	206.0	185.0	231.0
Railways	7.7	8.2	8.8	9.3
Airports	8.7	10.9	14.6	18.5
Container ports	2.3	3.4	2.5	3.6
Urban mass transit	15.6	24.3	20.4	29.8
Total	195.0	253.0	231.0	292.0
Annual average (2005-2015)	224.0		261.5	
All infrastructure	608.4		NA	

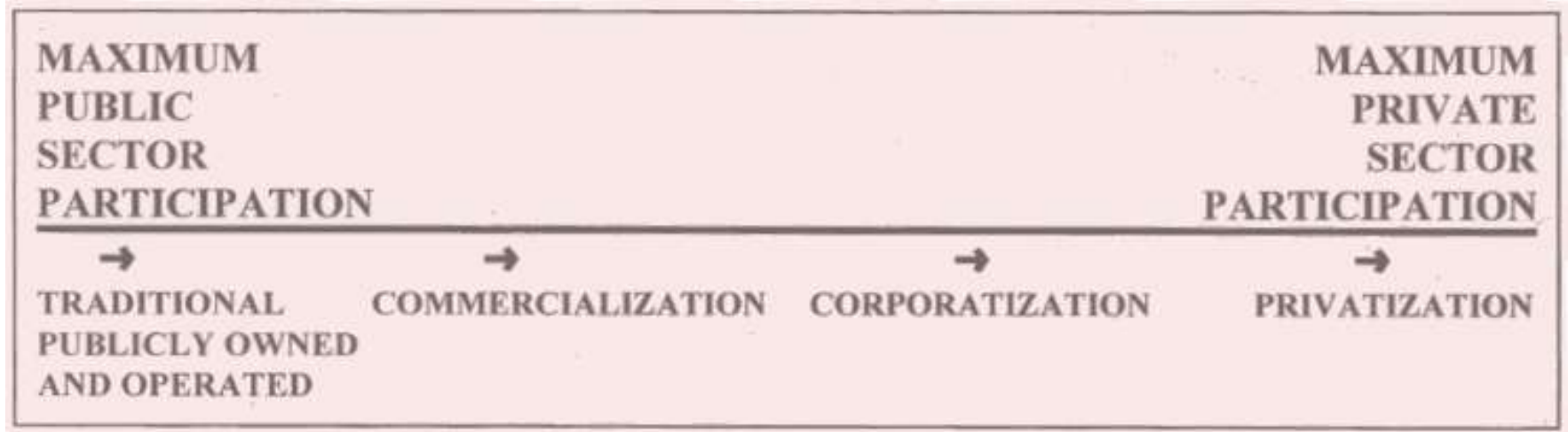
Estimates of Annual Infrastructure Needs in Asia 2007-1011

	ADB-JBIC-WB East Asia (excluding South Asia)¹	UNESCAP East Asia and South Asia²	RIS South and East Asia³
Infrastructure investment (US\$ billion)	165	228	412
Infrastructure investment (% of GDP)	6.2	6.8	7.3

Total private sector investment and number of projects by subsector, 1990-2005

Sector	Total investment (Billions of US\$)	Share of investment in the sector	Number of projects
Airports	7.9	13.5	36
Railways	9.3	15.3	16
Ports	15.8	25.9	100
Roads	27.7	45.6	210
Total	60.7	100.0	362

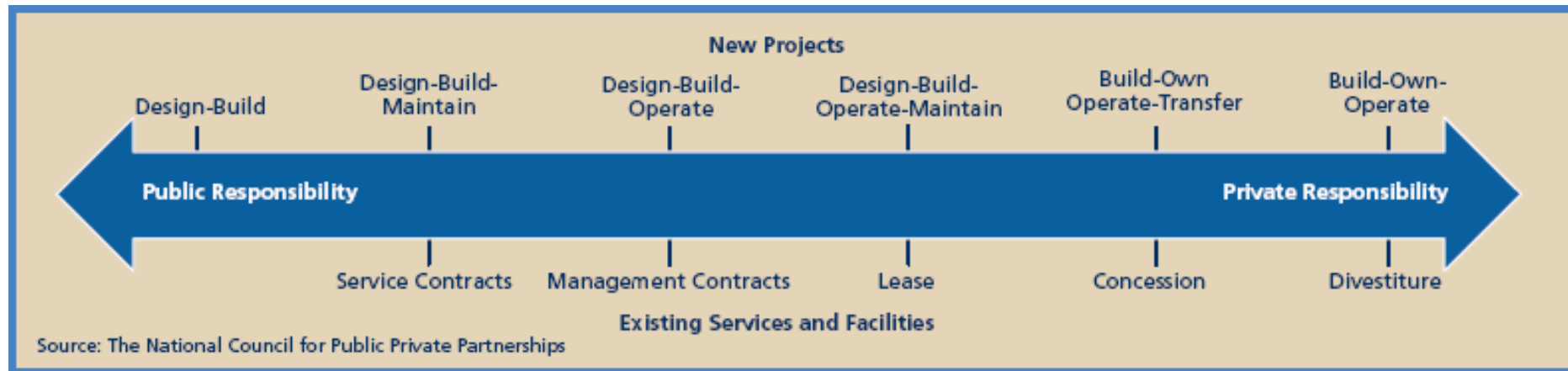
Spectrum of Commercialization/ Privatization Options



Commercialization and Corporatization in India

- Indian Railway Finance Corporation Ltd
- Container Corporation of India Ltd
- RITES Ltd
- Indian Railway Catering and Tourism Corporation Ltd
- Railtel Corporation of India Ltd
- Pipav Railway Corporation Ltd
- Konkan Railway Corporation Ltd

Modalities for PPPs



PPP Projects in the railway sector

- Australia: Alice Springs-Darwin 1,420km
BOOT
- Republic of Korea: Seoul-Busan high-speed train
- Gujarat:
 - Pipav Rail Corporation
 - Kutch Railway Company

Urban Rail Systems

- Bangkok:
 - BTS Sky Train
 - MRTA
- Kuala Lumpur
 - STAR
 - Putra
 - Monorail
- Manila
 - MRT Line 3

Mass Rapid Transit in Bangkok

A) *BTS SKY Train*

Sponsor:	BMA
Operator:	BTSC (built as a BOT project) – 30 year concession
Length:	Two lines- 23 km: 23 stations
System:	Standard-gauge full metro elevated system 6-car train, 2 min headway
Cost:	1.22 billion US\$ (equity, IFC, debt from banks)
Capacity:	25,000 pax/hour/direction max (3-car train)
Train Cap.:	3-car train: 735 passengers
PSP modality:	BOT 30 years concession
Revenue:	100% goes to the operator
Ridership:	About 450,000 per day





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Mass Rapid Transit in Bangkok

Sponsor:	MRTA
Operator:	Bangkok Metro Public Co
Length:	20 km; 18 stations
System	Standard gauge, heavy rail, 6-car trains, 2 min headway
Cost:	Approx. US\$ 3.1 billion (80% Govt- JBIC loan; 20% private)
Capacity:	25,000 pax/hour/direction max (3-car train)
PSP modality:	25 years concession to run
PSF structure:	about 30% equity, 70% debt



Kuala Lumpur STAR

Sponsor:	Central Govt.
Opened:	1996 (1st section)
Operator:	STAR
Type:	Elevated/at-grade Light Rail Transit
Technology:	No-frills high platform LRT
Length:	27 km; 3 radial routes; 25 stations
Train capacity:	
PPP type:	BOO, review after 60 years
Cost:	US\$ 0.9 billion
Financing:	Equity – 20%; Domestic debt – 80% (govt. supported)
Ridership:	110,000 per day

[Taken over by SPNB (National Infrastructure Company Limited) 2002]



Kuala Lumpur PUTRA

Sponsor:	Central Govt.
Opened:	1999
Operator:	PUTRA
Type:	Combination of elevated/at-grade/underground metro
Technology:	Driverless fully automated metro
Length:	29 km; 2 radial routes; 25 stations
Train capacity:	2-car trains; 30,000 per hour per direction
PPP type:	BOT, 30-year concession
Cost:	US\$ 1.5 billion
Financing:	Equity – 20%; Domestic debt – 80% (govt. supported)
Ridership:	150,000 per day

[Taken over by SPNB (National Infrastructure Company Limited) 2002]



Kuala Lumpur Monorail

Sponsor:	Government (Dept. of Railways)
Opened:	2003
Operator:	KLMS
Type:	People mover – distributor system in CBD
Technology:	Straddle type elevated monorail
Length:	8.6 km; 1 line with 11 stations
Train cap.:	2-car trains; 158 passengers
PPP type:	BOT concession for 40 years
Cost:	US\$ 0.3 billion
Finance:	Equity – 22%; Domestic debt – 78% (govt. supported)



Manila MRT Line 3

Sponsor:	Central Govt (DOTC)
Opened:	2000
Operator:	ELC (4 Filipino property developers)
Type:	Metro
Technology:	1435 mm gauge; Elevated Czech streetcars operating metro service
Length:	17 km, 1 line;
PPP type:	BLT for 25 years in return for revenue guarantee + property right along the route
Cost:	US\$ 0.7 billion
Finance:	Equity – 28%; Foreign debt – 56%; domestic debt 16%
Ridership:	About 400,000 per day



Constraints and Impediments to Private Sector Participation

International Private Sector's Perspective

“If I am going to invest money, I must:

- be allowed to make a profit,
- be able to take it home with me,
- be provided a reasonable local legal structure to enforce dispute resolution,
- be able to remit my profits in hard currency, with limited currency risk.”

JMK Laing CBE, Chairman John Laing Plc,
World Infrastructure Forum Asia 1994

Administration and Bureaucracy

- Procedures
 - Complex
 - Numerous
 - No fixed time frame for completion
- National laws applicable to PSP
 - Complex and scattered in many different instruments
 - Absent or inadequate to deal with specific issues
 - Powers and duties to provide infrastructure vested in public monopolies, with limited scope for PSP
- Large number of agencies with different or ill-defined responsibilities, some overlapping
- Existing bureaucratic structures and civil servants themselves ill-equipped to perform new role

Judiciary and Arbitration

- Inadequate appeals procedures against “administrative “decisions”
- Lengthy judicial processes
- Inconsistent judicial decisions
- Perception that “national treatment” not afforded to foreign appellants
- Inadequate dispute resolution procedures
 - Problems with enforcement of international arbitration awards

Emerging Issues

- Increased domestic capability to construct infrastructure facilities; build rolling stock, signaling equipment etc; and provide infrastructure related services
- Domestic financing of infrastructure
- Decentralization

Selected Lessons

- Quality of traffic studies
 - traffic forecasts
 - modal splits
 - toll elasticities
 - Marketing of tolls and “user pays” principles
 - Integration of urban transport systems
 - transport planning
 - melding networks
 - ticketing
 - Separation of “political pressures”
 - (e.g. toll increases or construction of parallel infrastructure after awarding concessions)
- and commercial agreements that have been entered into with the private sector

“There are many on-going programs for providing increased support for infrastructure in Asia. These are steps in the right direction. But they do not add up to meeting the challenge of vastly increased needs for financial and non-financial support for infrastructure development in Asia. There is thus a need for major breakthrough in regional financial [and non-financial] architecture in the changed economic environment of Asia.”

Railway Staff College
Vadodara, 20 March 2007



Thank you



www.unescap.org/ttdw/common/TIS/TAR/tar_home.asp

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