

# **INFRASTRUCTURE DEVELOPMENT AND FINANCING**

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# Outline

- ☞ What is Infrastructure
- ☞ Characteristics of Infrastructure
- ☞ Public Sector Influence
- ☞ Drivers for Commercial Outlook
- ☞ Implications of Commercialisation
- ☞ Conclusions

# What is Infrastructure

# What is Infrastructure ?

- ❖ Social Overhead Capital

- ❖ Infrastructure Supports

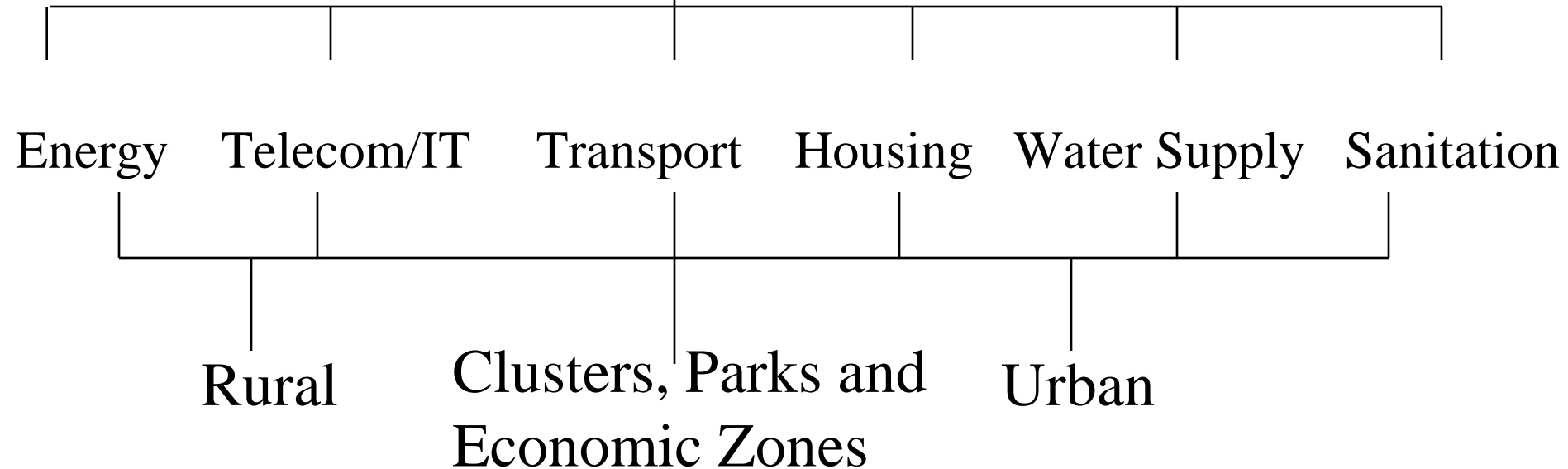
- ❖ Economic growth
- ❖ Poverty alleviation
- ❖ Sustainable natural environment

*Source: World Bank*

# Infrastructure

Economic

Social



Infrastructure service essential to derive the benefit of economic infrastructure.

However, service 'cost' is relatively less [if high: Social infrastructure like Health, Education, Police, Judiciary]

# Characteristics of Infrastructure

# Characteristics of Infrastructure

- ☞ High investment costs : decreasing average costs
  - Economies of scale & scope leading to natural monopolies: need for regulation
- ☞ Use of a key “national” resource
  - Need for regulation
- ☞ Benefits from users to non users
  - Framework for fiscal cycle and concessions

# Public Sector Influence



# Why Public Sector?

- ❖ Production characteristics
- ❖ Consumption characteristics
- ❖ Strong 'public' interest

# Governments Have Not Achieved Their Own Goals

- Poverty alleviation
  - ◆ Water
  - ◆ Daily fuel
- Vested interests
  - ◆ PDS
- Cadres
- Incestuous institutions

# Transport Infrastructure Uniformly Poor

Transit times high

Variable transit times

Damages, losses, accidents

Logistic costs : Transportation

Inventory

Handling

Losses

# **Drivers for Commercial Outlook**

# Framework for Commercialization

Improve Asset Creation Efficiency	Improve Asset Management Efficiency	Improve Service Delivery Effectiveness & Efficiency
Increase Stakeholding	Increase Accountability	Increase Autonomy

Issues of incentive compatibility

# Increase Stake Holding



Privatization ← Monopoly



Appropriate Bundling ←

- Horizontal
- Vertical

# Increase Accountability



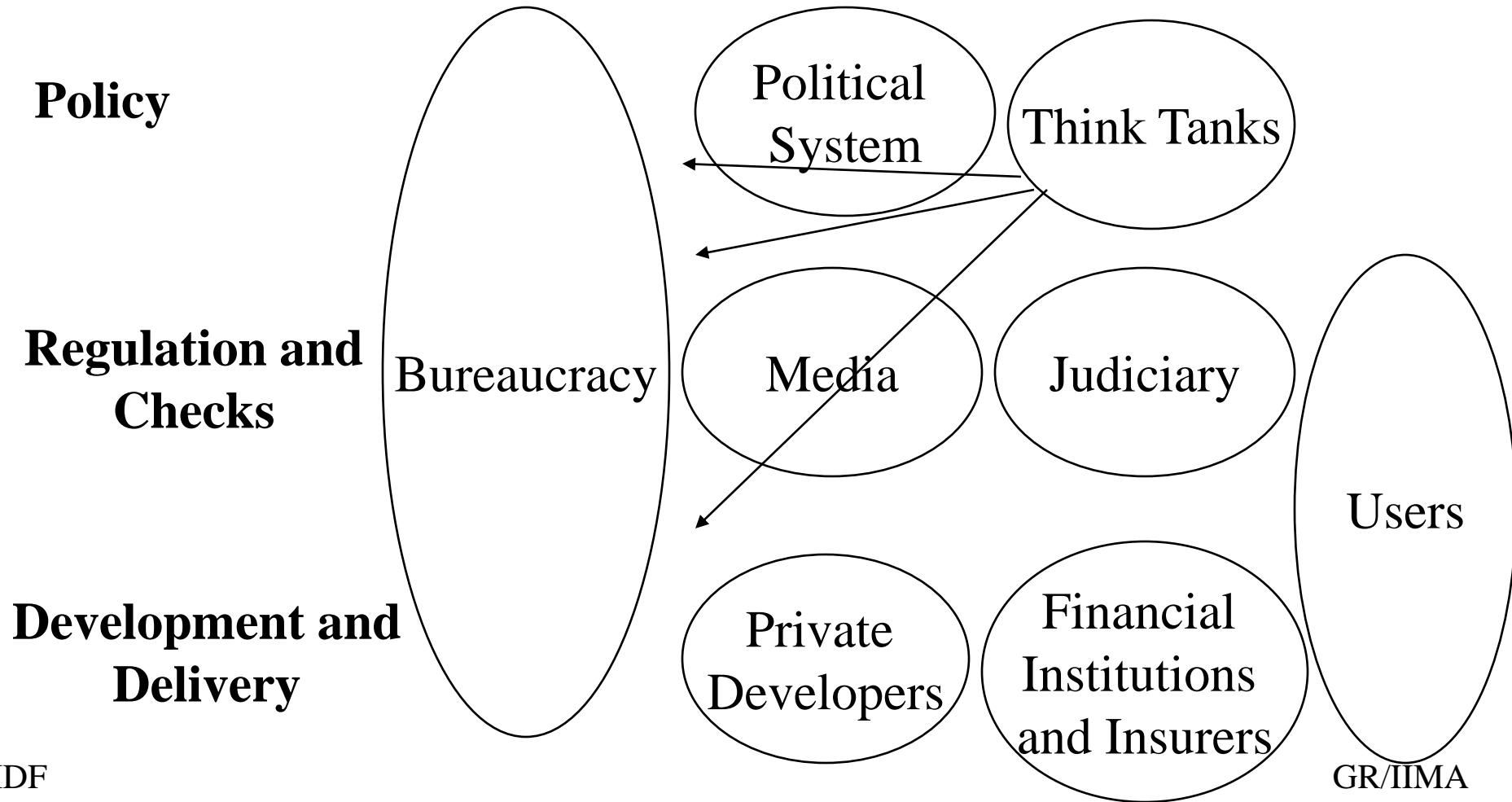
Competition

- From substitutes
- From markets  
(Multiple providers)
- From right to access the market

# Increase Autonomy

- ☞ Corporatisation
- ☞ Focused goals & accountable management
  - Performance
  - Management contracts
  - Service contracts

# Actors in Infrastructure





# **Implications of Commercialisation**

# Key Implications

- ❖ Project structuring: (Appropriate bundling)
- ❖ Risk assessment and management
- ❖ Project financing: (Appraisal, sourcing and engineering including taxes/subsidies)
- ❖ Project management: (Implementation)
- ❖ Financial restructuring, and mergers and acquisitions
- ❖ Regulatory and institutional framework

# Framework for Appropriate Bundling

- ☞ To attract commercial interest
- ☞ Cherry picking vs Social responsibility
  - Subsidy and Cross-subsidy
- ☞ Retention of control
- ☞ Transparency of transactions

# Risks

Political

Force Majeure

Performance

Completion

Overruns

Policy

Market

Credit

Supply

Operating

Financial

# Risk Management

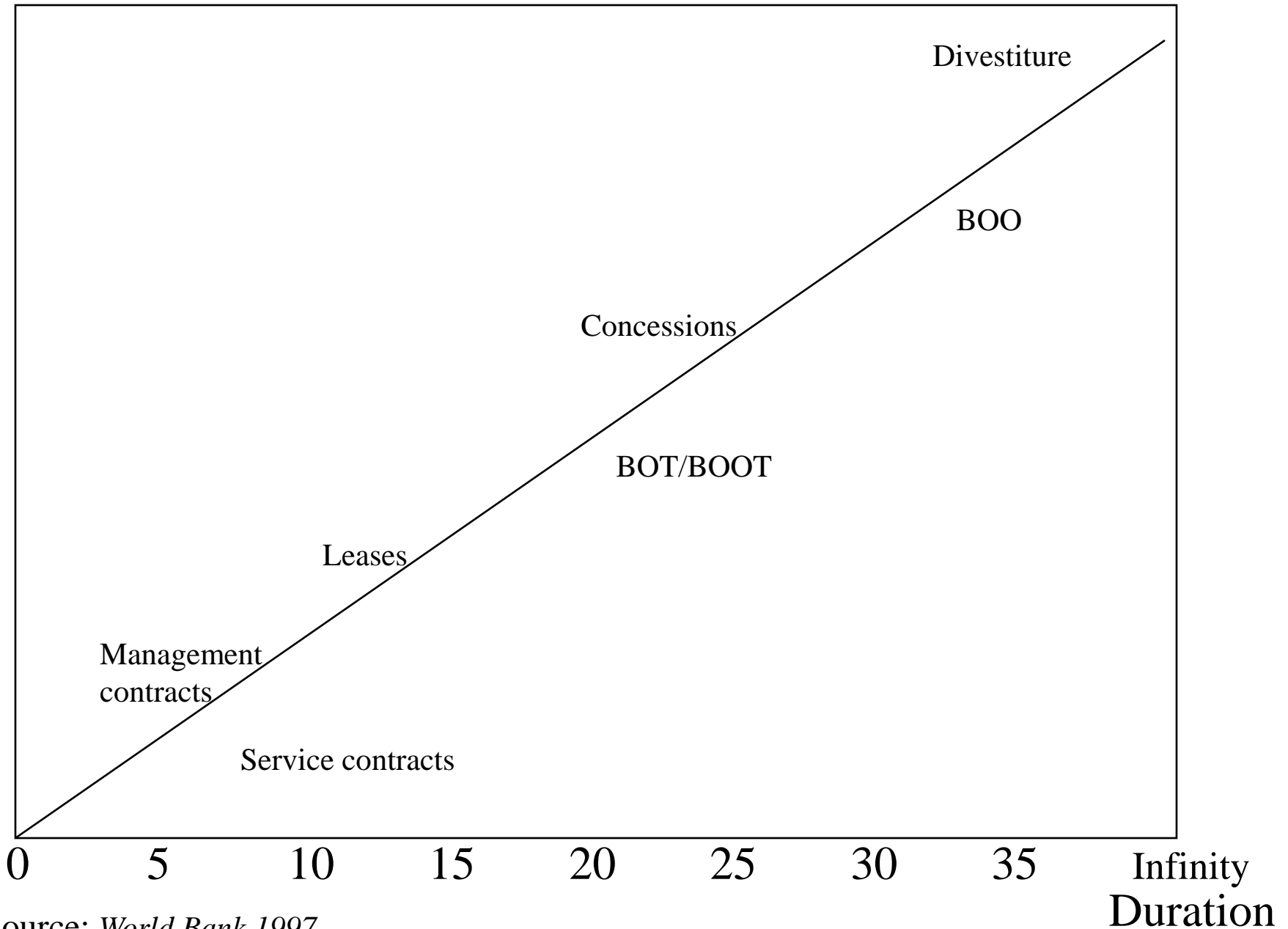
- ❖ Build Own Operate
- ❖ Build Own Operate Transfer
- ❖ Build Operate Transfer
- ❖ Build Own Lease Transfer
- ❖ Invest
- ❖ Lend

# Allocation of Responsibilities to Partners

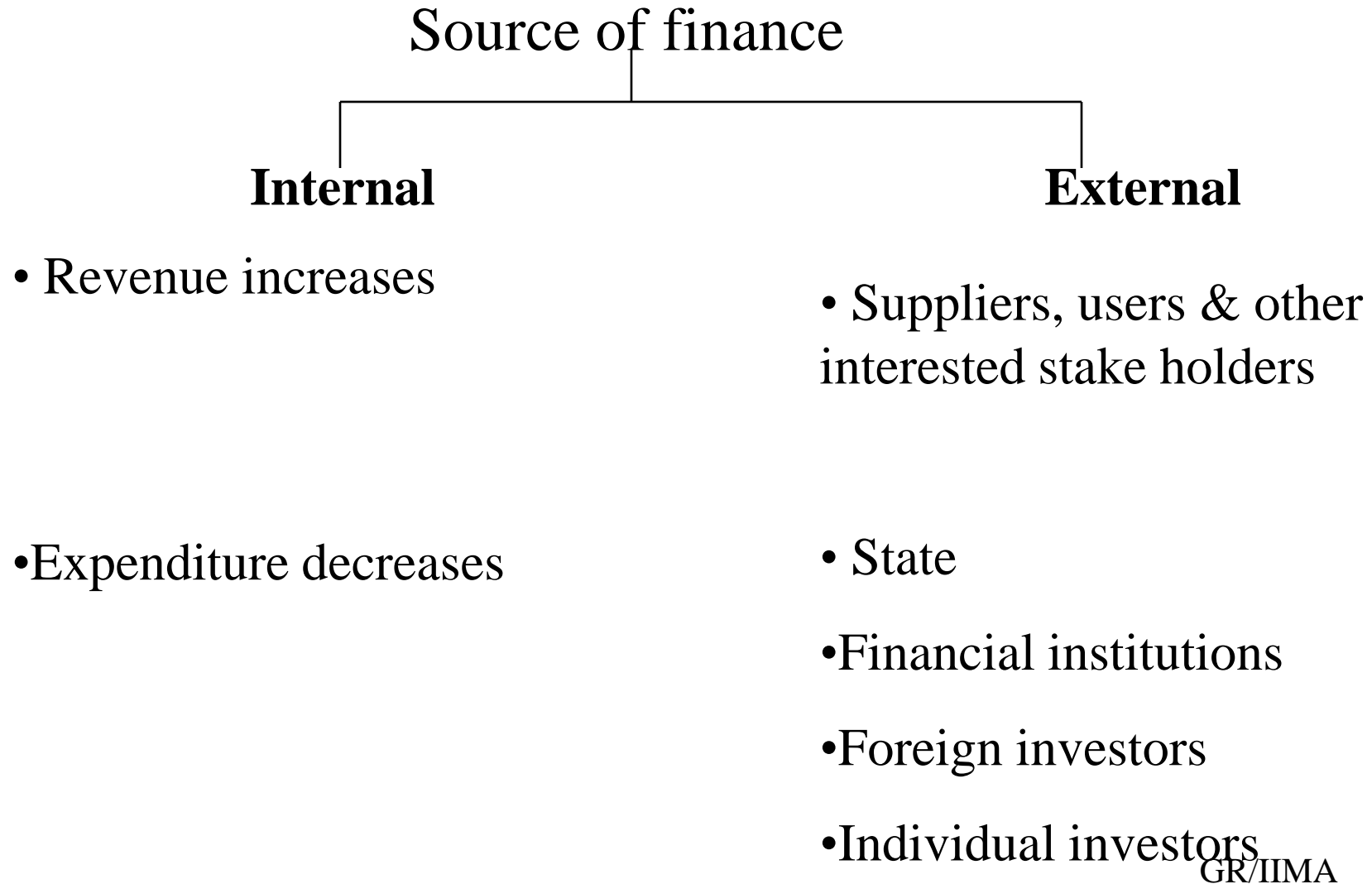
<b>Option</b>	<b>Asset ownership</b>	<b>Operations and maintenance</b>	<b>Capital investment</b>	<b>Commercial risk</b>	<b>Duration</b>
Service contract	Public	Public and private	Public	Public	1-2 years
Management contract	Public	Private	Public	Public	3-5 years
Lease	Public	Private	Public	Shared	8-15 years
Concession	Public	Private	Private	Private	25-30 years
BOT/BOOT	Private and public	Private	Private	Private	20-30 years
Divestiture/ BOO	Private or private and public	Private	Private	Private	Indefinite (may be limited by license)

Source: *World Bank 1997*

# Private Participation Options



# Options for Mobilising Resources





# Contracts

- ☞ Specification
- ☞ Time frames
- ☞ Review triggers
- ☞ Termination conditions

# Regulatory and Institutional Framework

- ☞ Market failures
  - Licensing
  - Environmental Impact
  - Safety
  - Pricing
  - Service Levels
  - Dispute resolution
- ☞ Institutions and Instruments

# Conclusions

# International Scenario

- ☞ Private sector investment increasing
- ☞ Telecom has the maximum share of investments
- ☞ Gaps in most infrastructure between developed and developing countries

# What Needs to Happen

- ❖ Manage infrastructure like a business, not a bureaucracy
- ❖ Introduce competition - directly if feasible, indirectly - if not
- ❖ Give users and other stakeholders a strong voice and real responsibility
- ❖ Leverage Public - Private partnerships

# Role of State

- ❖ Identify stake holders
- ❖ Develop appropriate risk sharing schemes including ‘subsidies’ as required
- ❖ If continuing as a player, then corporatise/commercialise the play
- ❖ Develop umpires
- ❖ Clearly delineate roles of

Policy maker (and regulator)

Licenser

Player

# What Will Happen

- ❖ Inevitability of involving private sector
- ❖ Experience is still raw in project structuring, contractual & legal implications
  - ❖ Hence awareness of issues more important than ‘specific solutions’
- ❖ Case law build up
- ❖ Mistakes will be made and learning must take place
- ❖ Governments will have a continuing, if changed role in infrastructure

Thank You



# System of State Involvement

Infrastructure	Owner	Contractor
1. Ownership and asset creation <ul style="list-style-type: none"><li>- Right of Way</li><li>- Terminals</li><li>- Rolling stock and equipment</li></ul>		

# System of State Involvement

Services	Principal	Agent
1. Maintenance -Right of way -Terminals -Rolling stock and equipment		
2. Operations -Right of way -Terminals -Rolling stock and equipment		
3. Customer services -Basic services -Special services		

# System of State Involvement

Regulation
1. Licensing
2. Environmental impact
3. Safety
4. Pricing
5. Service levels

1. Licensing
2. Environmental impact
3. Safety
4. Pricing
5. Service levels

# System of State Involvement

For each mode

And further segmentation possible based on market considerations

- Passenger vs Freight
- Urban vs Rural
- Domestic vs International

## Transport Sector Components and Involvement of the State and Private Sector:

INFRASTRUCTURE	Ownership			
	Air	Rail	Road	Water
<b>Right of Way</b>	<b>(State controlled)</b> DGCA, AAI	<b>(State controlled)</b> Indian Railways	<b>(State controlled)</b> NHAI, PWD, Urban Administrations, Local Governments, Defense	<b>(State controlled)</b> Major Ports - Govt. of India, State Maritime Boards, Port Directorates
<b>Terminals</b>	<b>(State controlled)</b> AAI, Defense	<b>(State controlled)</b> Indian Railways, Large Industries for Captive Sidings	<b>(Open to all)</b> SRTUs, Large Industries, Trucking Companies, etc	<b>(Partly Open)</b> Major Ports - Govt. of India, State Maritime Boards, Port Directorates, Some Private and Captive Ports
<b>Rolling Stock and Equipment</b>	<b>(Open to all)</b> IA, AI, Other Private Airlines	<b>(State controlled)</b> Indian Railways	<b>(Open to all)</b> SRTUs, Private Vehicle Owners	<b>(Open to all)</b> SCI, Great Eastern, Essar & Others

SERVICES	Maintenance			
	Air	Rail	Road	Water
<b>Right of Way</b>	- NA -	<b>(State controlled)</b> Indian Railways	<b>(State controlled)</b> NHAI, PWD, Urban Administrations	<b>(State controlled)</b> Major Ports - Govt. of India, State Maritime Boards, Port Directorates
<b>Terminals</b>	<b>(State controlled)</b> AAI	<b>(State controlled)</b> Indian Railways, Large Industries for Captive Sidings	<b>(Open to all)</b> SRTUs, Large Industries, Trucking Companies, etc	<b>(State controlled)</b> Major Ports – Govt. of India, State Maritime Boards, Port Directorates, Some Private and Captive Ports
<b>Rolling Stock and Equipment</b>	<b>(Open to all)</b> IA, AI, Other Private Airlines	<b>(State controlled)</b> Indian Railways	<b>(Open to all)</b> Innumerable Small scale garages, Large organized work shops for SRTUs, few private sector large workshops	<b>(Open to all)</b> Port Dry Docks, HSL, CSL, Chokhani & Others

SERVICES	Operations			
	Air	Rail	Road	Water
<b>Right of Way</b>	<b>(State controlled)</b> DGCA, AAI	<b>(State controlled)</b> Indian Railways	<b>(State controlled)</b> Police Department in case of high traffic density	<b>(State controlled)</b> Major Ports - Govt. of India, State Maritime Boards, Port Directorates, Light House Authority
<b>Terminals</b>	<b>(State controlled)</b> DGCA, AAI	<b>(State controlled)</b> Indian Railways, Large Industries for Captive Sidings	<b>(Open to all)</b> SRTUs, Large Industries, Transport Companies, Control and State Warehousing Corporation	<b>(Partly open)</b> Major Ports - Govt. of India, State Maritime Boards, Port Directorates, Some Private and Captive Ports, Stevedores, Agents, etc
<b>Rolling Stock and Equipment</b>	<b>(Open to all)</b> IA, AI, Private Airlines	<b>(State controlled)</b> Indian Railways	<b>(Open to all)</b> SRTUs, Private Vehicle Owners	<b>(Open to all)</b> SCI, Great Eastern, Essar & Others

SERVICES	Customer Services			
	<b>Air</b>	<b>Rail</b>	<b>Road</b>	<b>Water</b>
<b>Basic Services</b>	<b>(Open to all)</b> IA, AI, Private Airlines	<b>(State controlled)</b> Indian Railways	<b>(Open to all)</b> SRTUs, Private Bus Operators, TCI, Patel Roadways, Forwarding Agents, etc	<b>(Open to all)</b> Brokers, Chartering Agents, Forwarding Agents
<b>Special Services</b>	<b>(Open to all)</b> IA, AI, Private Airlines	<b>(State controlled)</b> Indian Railways	<b>(Open to all)</b> SRTUs, Private Bus Operators, Tour Operators, TCI, Patel Roadways, Forwarding Agents, etc	<b>(Open to all)</b> Brokers, Chartering Agents, Forwarding Agents



	Regulation			
	Air	Rail	Road	Water
<b>Licensing</b>	DGCA	IR	RTO	DG Shipping
<b>Environmental Impact</b>	DGCA	Department of Environment	RTO	DG Shipping
<b>Safety</b>	DGCA	CRS	Traffic Police	DG Shipping
<b>Pricing</b>	-	Parliament Railway Rates Tribunal,	-	DG Shipping, TAMP
<b>Service Levels</b>	DGCA	IR, Railway Claims Tribunal	-	DG Shipping

Thank You

# Port Scenario in India: Cost of Congestion (2003-04)

No of port calls	: 18,750
Avg turnaround time	: 3.5 days
International 'good' avg	: 1.0 days
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Extra time in India per port call	2.5 days
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<b>No of ship days lost</b>	<b>: 46,875</b>

# Port Scenario in India: Cost of Congestion (2003-04)

46,875 Ship days @ \$10,000/day  
\$468.75 mn  $\approx$  Rs 20.6 bn/year  
(@ Rs 44/\$)

Net foreign exchange  
earnings of shipping : Rs 36.5 bn/year  
(2002-03)

(excluding cost of buying ships)

Repatriated earnings  
of 'shippees' : Rs 10 bn/year