

# Analysis of Competition and Regulatory Issues in Transport Sectors in India

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# Reasons for Market Failure

- Conditions for market efficiency are demanding in practice.
- The existence of monopolies, public goods, externalities and asymmetric information distort the allocation of resources resulting in pervasive market failures in practice.
- Thus the allocation of resources is sought to be improved by government regulation.

# Natural Monopoly

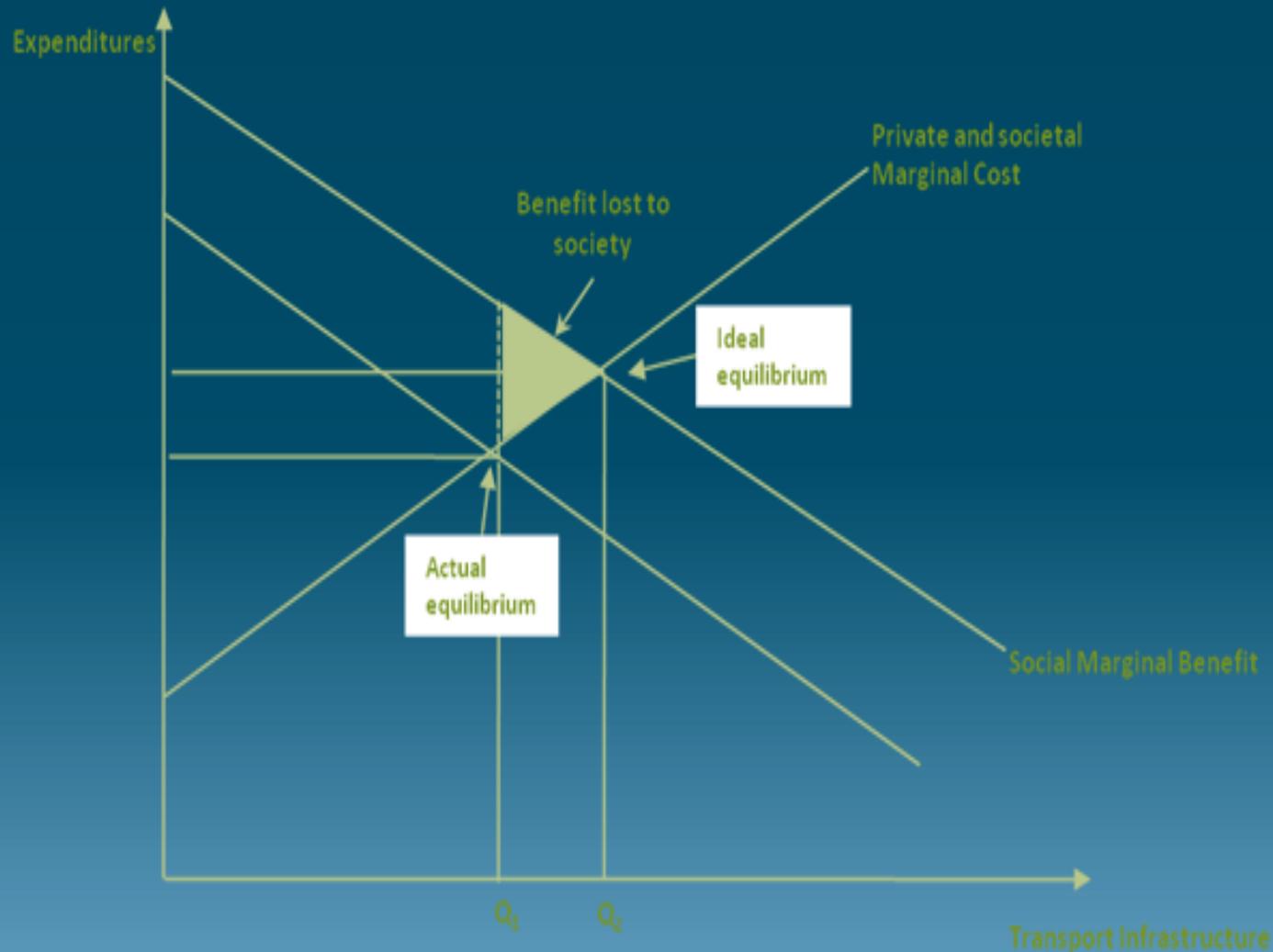
- Natural Monopoly when costs fall as output increases
- From the point of view of productive efficiency, public interest would recommend concentrating the production in a single company.  $P = MC$ ?
- The pursuit for productive efficiency and excessive profits in such instances will conflict with the public goal of allocative efficiency i.e. too little of the good will be provided.
- Natural monopolies are therefore either subject to extensive price regulation or are provided by the state, as happens in many European countries.
- Regulation in such cases seeks to achieve the outcomes of perfect competition by simulating the conditions. Examples of natural monopolies are sections of railways, electricity distribution, gas and oil pipelines etc.
- Telecommunications was also once considered a natural monopoly. Today, however because of new technology and deregulation, it is an intensely competitive business including in India and therefore subject to only limited tariff regulation.

# The Public Good Character of Transport

|              | Excludable  | Non-excludable   |
|--------------|---|--|
| Rival        | <p><b><u>Private Goods</u></b></p> <ul style="list-style-type: none"> <li>a) Urban Bus</li> <li>b) Rail, Airport, and Port Services</li> </ul>                      | <p><b><u>Common Property</u></b></p> <ul style="list-style-type: none"> <li>a) Urban Roads</li> </ul>  |
| Non-Rival    | <p><b><u>Club Goods</u></b></p> <ul style="list-style-type: none"> <li>a) Inter-urban highways (toll roads)</li> <li>b) Rail, Airport, and Port Services</li> </ul> | <p><b><u>Public Goods</u></b></p> <ul style="list-style-type: none"> <li>a) Rural Roads</li> <li>b) Street Sweeping</li> <li>c) Traffic signaling</li> </ul> |
| <b>Lower</b> | <b>Externalities</b>  | <b>Higher</b>  |

*Source: Adopted from world Development Report 1994*

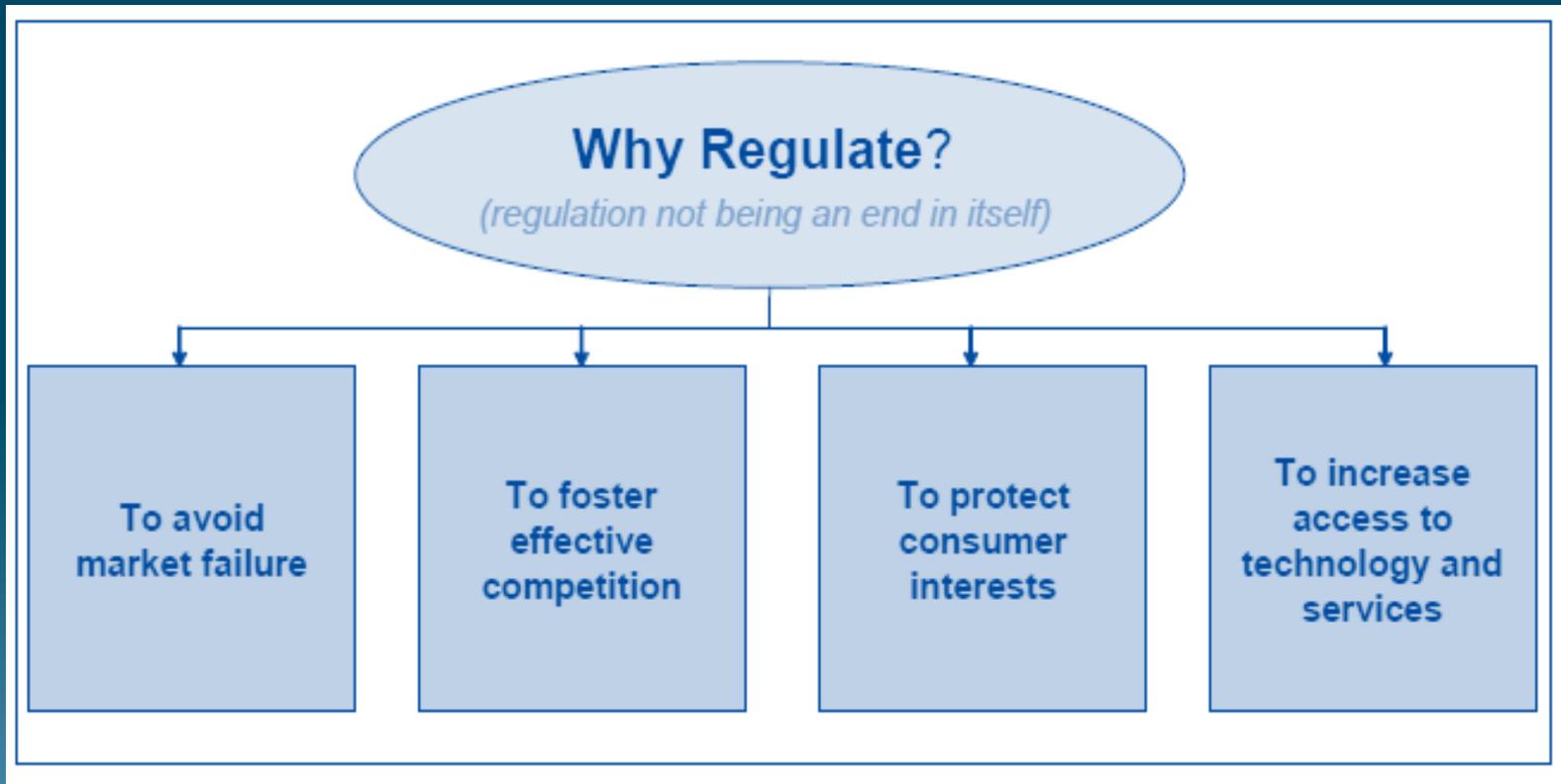
# The private market will underinvest in infrastructure, foregoing societal benefits



# Characteristics of Transport Infrastructure

- **Extensive economies of scale and scope that generally lead to market concentration and limit competition. As a result regulation cannot be completely abolished.**
- **Large sunk costs relative to fixed and variable (avoidable) costs.**
- **Sunk costs impose considerable risks and so discourage entry by new service providers.**
- **Services deemed essential to a broad range of users, making their provision and pricing politically sensitive.**

# The goals of regulation



# Main Messages of World Development Report 1994

- **Infrastructure can deliver major benefits in economic growth, poverty alleviation, and environmental sustainability – but only when it provides services that respond to effective demand and does so efficiently.**
- **The causes of past poor performance, and the source of improved performance, lie in the incentives facing providers.**
- **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**
- **Public-private partnerships in financing have promise**
- **Governments will have a continuing, if changed, role in infrastructure**

# What Makes for Effective Regulation

Regulatory bodies should

- Have competent, non-political, professional staff—expert in relevant economic, accounting, engineering, and legal principles and familiar with good regulatory practices.
- Operate in a statutory framework that fosters competition and market-like regulatory policies and practice
- Be subject to substantive and procedural requirements that ensure integrity, independence, transparency, and accountability.

# Ports & Shipping

# Port Governance Models

| Type                 | Infrastructure | Superstructure | Port labour | Other functions  |
|----------------------|----------------|----------------|-------------|------------------|
| Public service port  | Public         | Public         | Public      | Majority public  |
| Tool port            | Public         | Public         | Private     | Public/private   |
| Landlord port        | Public         | Private        | Private     | Public/private   |
| Private service port | Private        | Private        | Private     | Majority private |

Source: Port Reform Toolkit, World Bank 2007

# We Recommend Landlord Port Model

- The attractiveness of the Landlord Port Model is that it allows the state to act as the landlord while port investments and operations are carried out by private companies.
- A necessary condition for this model is for the Ports Authority to be *neutral* towards the private port service providers. Neutrality in general is an essential requirement for all providers of bottleneck facilities

# Some examples of Port Services that can be privatized

| Services to Vessels   | Services to cargo  |
|---|--|
| <ul style="list-style-type: none"><li>• Piloting</li><li>• Towing</li><li>• Mooring</li><li>• Dredging</li><li>• Utilities</li><li>• Ship repair</li><li>• Environmental services</li></ul> | <ul style="list-style-type: none"><li>• Stevedoring</li><li>• Wharf handling</li><li>• Transfers to land transport</li><li>• Storage</li><li>• Processing (consolidation, bagging, mixing)</li><li>• Cargo tracking</li><li>• Security</li><li>• Rental of specialized equipment</li></ul> |

# Regulatory Structure of the Indian Port sector

|  | Responsibility   | Governing Act              |
|--|--|----------------------------|
| Ministry of Shipping                                   | Coordinates the various activities related to ports, shipping and inland water transport | Merchant Shipping Act 1958 |
| Port Trusts  | Managing the daily activities of major ports in the country                              | Major Ports Trust Act 1963 |
| State Maritime Boards/<br>State Government Departments | Governing the non-major ports  | Indian Ports Act 1908      |
| Tariff Authority for Major Ports (TAMP)                | Regulation of tariff setting in Major Ports  | Major Ports Trust Act 1963 |

# Civil Aviation

# CIVIL AVIATION

- Regulatory oversight has to be strengthened in civil aviation. As in other infrastructure sectors, there are multiple regulatory bodies with overlapping jurisdiction and sometimes lack of clarity on their sphere of influence

# Regulatory Oversight in Civil Aviation

| Institution                                  | Responsibility   | Governing Act  |
|--|--|--|
| Directorate General of Civil Aviation (DGCA) | <ol style="list-style-type: none"> <li>1) Responsible for regulation of air transport services to/from/ within India and for enforcement of civil air regulations, air safety, and air worthiness standards. It also co-ordinates all regulatory functions with the International Civil Aviation Organization (ICAO)</li> <li>2) DGCA issues licenses to pilots, aircraft maintenance engineers, flight engineers, and air traffic controllers.</li> <li>3) Carries out amendments to the governing acts/ rules to comply with the amendments of the International Civil Aviation Organization (ICAO)</li> </ol> | Aircraft Act of 1934, Aircraft Rules, Civil Aviation Requirements, Aeronautical Information Circulars  |
| Bureau of Civil Aviation Security (BCAS)     | Regulatory Authority for Civil Aviation Security in India. It is responsible for laying down standards and measures in respect of security of civil flights at International and domestic airports in India  | Aircraft Act of 1934, Aircraft Rules, Civil Aviation Requirements, Aeronautical Information Circulars, The Suppression of Unlawful Acts against Safety of Civil Aviation Act (1982 and 1994) |
| Airports Economic Regulatory Authority       | <ol style="list-style-type: none"> <li>1) To determine tariff for aeronautical services</li> <li>2) To determine the amount of Development Fees at major airports</li> <li>3) To determine the amount of Passengers Service Fee</li> </ol>   | The Airports Economic Regulatory Authority of India Act, 2008; Aircraft Rules 1937, Aircraft Act 1934  |

# Regulatory Oversight in Civil Aviation

| Institution   | Responsibility   | Governing Act   |
|---|--|---|
| Commission of Railway Safety (Railway Inspectorate) | <ol style="list-style-type: none"><li>1) Safety of rail travel and train operation</li><li>2) Ensure that any new Railway line to be opened for passenger traffic should conform to the standards and specifications prescribed by the Ministry of Railways and the new line is safe in all respects for carrying of passenger traffic. Also applicable to gauge conversion, doubling of lines and electrification</li></ol> | Railways Act 1989, Statutory Investigation into Railway Accident Rules 1998 |

# Regulatory Oversight in Civil Aviation

| Institution  | Responsibility   | Governing Act  |
|--|--|--|
| <p>Airports Authority of India (merged National Airports Authority and International Airports Authority)</p> | <p>Responsible for creating, upgrading, maintaining, and managing civil aviation infrastructure both on the ground and air space in the country.</p> <p>The functions of AAI are as follows:</p> <ol style="list-style-type: none"> <li>1. Design, Development, Operation and Maintenance of international and domestic airports and civil enclaves.</li> <li>2. Control and Management of the Indian airspace extending beyond the territorial limits of the country, as accepted by ICAO.</li> <li>3. Construction, Modification and Management of passenger terminals.</li> <li>4. Development and Management of cargo terminals at international and domestic airports.</li> <li>5. Provision of passenger facilities and information system at the passenger terminals at airports.</li> <li>6. Expansion and strengthening of operation area, viz. Runways, Aprons, Taxiway etc.</li> <li>7. Provision of visual aids.</li> <li>8. Provision of Communication and Navigation aids, viz. ILS, DVOR, DME, Radar etc</li> </ol> | <p>Airport Authority of India Act, 1994 As amended by the Amendment Act 2003</p> |

# Civil Aviation

- Overhaul the existing institutional framework
- A unified and professional Civil Aviation Authority (CAA) along the lines of UK and the Federal Aviation Administration (FAA) is recommended that will consolidate regulatory functions and combine economic, technical, safety, environment and consumer protection regulation.
- Dispute Settlement body
- Essential Air Services Fund

# Roads & Highways

# Roads and Highways

- The sector faces enormous challenges relating to congestion, quality, safety, financing and monitoring of concession agreements, data collection and under provision in rural areas

# PPP-Problems

- A review of 20 years of PPP projects in transport shows that unsuccessful PPPs had weak feasibility studies, unresolved land allocation issues, overly aggressive bids, unpredictable and lengthy conflict resolution mechanisms, ambiguous tariff adjustment guidelines, ambiguous risk allocation and a lack of comprehensive planning and use of best practices

# What Contracts in Road PPPs should Cover

- a) The policy context and the government's intent and objectives;
- b) The relationship between the specific concession and national road and transport policy;
- c) The role of the key parties to the contract;
- d) The road or roads to be covered by the concession;
- e) The respective rights and obligations of the public and private sectors;
- f) Clear definitions of key issues such as road building standards, maintenance standards, and the circumstances in which force majeure may be invoked;
- g) An estimate of building costs and valuation methods for assets transferred to the concessionaire;
- h) The maintenance schedule and the estimates of traffic volumes and mix (in terms of vehicle weights) upon which it is based;

# What Contracts in Road PPPs should Cover

- i) The basis upon which variations to the contractual terms may be effected if traffic volumes differ from those upon which the contract is based;
- j) The investment plan for system expansion or upgrading;
- k) The various types of guarantees and warranties associated with particular components of the project;
- l) The identification of specific technical and commercial risks and how these are to be borne by the respective parties to the contract;
- m) The penalties for breach of contract by either party or how these may be invoked;
- n) The regulatory regime, matters to be regulated, and how regulation will be effected;
- o) The information requirements of the regulator and the obligations of the concessionaire to supply it;
- p) The extent of limitations on competition;
- q) The procedures for resolving disputes;
- r) The termination provisions;
- s) Assignment and renegotiation rules.

# Regulatory oversight for Roads

- Create an independent regulatory authority for India's Roads and Highways sector.
- The current arrangement both at Centre and States (MORTH, NHAI, PWDs) results in fragmentation and conflict because the rule making body is also the implementing body.
- In addition there is no independent assessment of performance across various parameters. An independent and autonomous regulatory body for roads is therefore necessary to improve outcomes of the sector. The functions of the independent regulator *inter alia* would involve : (a) Tariff Setting; (b) Regulation of Service Quality; (c) Assessment of Concessionaire Claims; (d) Collection and Dissemination of Sector Information; (e) Service-Level Benchmarks; and (f) Monitoring Compliance of Concession Agreements.
- Dispute settlement in the sector should be handled by an independent tribunal.

# Urban Transport

# Share in Urban Infrastructure Investment Requirement of Rs 34 lakh crore: 2012-2031\*

|  |                    |
|--|--------------------|
| <b>Urban roads</b>   | <b>51 per cent</b> |
| Water, sewerage, solid waste management, storm water drains, street lighting | 24 per cent        |
| Transport and traffic support infrastructure                                 | 16 per cent        |
| Other sectors  | 9 per cent         |
| <b>Additional Requirements (Rs Lakh Crore)</b>                               |                    |
| Capacity Building  | 1.1                |
| Urban Renewal including slum redevelopment                                   | 4.1                |
| <b>Total</b>   | <b>39.2</b>        |

\*At 2009-10 prices, not including the cost of land; GDP assumed to increase at 8 per cent per annum

# Urban Transport

- Among all transport infrastructures in India, UT is easily the most complex.
- UT is made up of about 20 components and is currently managed by as many agencies
- Fragmentation, unclear Regulatory Structure

# Suggested Institutional Framework for UT-WG

- Comprehensive legislation for UT clearly identifying the mandate for delivery of high quality services
- A new department of UT in the Central and each State Government/Union Territory
- A safety Board in each state
- Creation of Unified Metropolitan Transport Authorities (UMTA)
- Creation of independent regulators

*Source: Working Group on Urban Transport*

# Desirable Attributes of the UMTA

Integration and approval of proposals by city agencies such as the Municipality, Development Authority, Regional development authority and Traffic police

- Strategy and Policy Functions
- **Regulatory Functions**
- **Transport Demand Management**
- Resolution of day to day matters
- Monitor the work assigned to implementing agencies both for the city and the surrounding region.

# Regulatory Functions

- Whether regulatory functions related to standards, demand management and pricing are handled by UMTA or a specialized and independent regulatory body is a matter of detail.
- At the same time be vigilant against “regulatory proliferation” in India has been criticized as a strategy aimed at defending specific interests rather than improving sector outcomes.
- In case these regulatory functions are to be handled separately, independent regulators at the State and National level along the lines of Public Utility Commissions in the US is recommended. Inter-state disputes relating to UT can be addressed by the national regulator.

# Railways

# Trends in Railway User Charges

| 2004-05         | 2005-06     | 2006-07                      | 2007-08                      | 2008-09                      | 2009-10                      | 2010-11     |
|-----------------|-------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------|
| Passenger Fares | No Increase | No Increase                  | No Increase                  | Reduction                    | Reduction                    | No Increase |
| Freight Charge  | No increase | No across the board increase | No Increase |

*Source Wallack and Singh*

# Railways

- Earlier reports on IR have made a host of recommendations to transform the vertically integrated public sector behemoth. Other countries have gone through similar transformations; the situation is by no means unique to India. The obstacle is essentially political.
- The expert committees established under Rakesh Mohan and Sam Pitroda have made a number of rational suggestions that seek to create an independent, corporatized, customer focused and financially viable railways run along commercial principles and subject to generally accepted corporate accounting principles and reporting.
- Separation of policy and regulatory functions from commercial enterprise.
- This will require many things to fall in place- 'political will, management support, substantial funding, new direction, new thinking, mobilization of resources, innovative PPP and new business models, and a lot more.

# Railways

- Create a Railways Tariff Regulatory Authority to provide “a level playing field to all stakeholders”
- In addition, an independent dispute settlement tribunal could also be created with the existing Railway Rates Tribunal (RRT) charged with this mandate,
- Risk of regulatory institution proliferation as discussed earlier must be kept in mind

# Conclusions and Policy Recommendations

- Regulation is an extensive theme.
- Several justifications that have been advanced for regulatory intervention from different theoretical perspectives.
- Recognition of the need to embed it in the wider social and constitutional context – for locating it within the dynamic of state-market relations i.e. within the local context.
- As a discipline, regulation is best approached from multiple perspectives using instruments of economics, political economy, law and public policy.
- As an instrumentality of the state, it is no longer a state *versus* market dichotomy, but rather as one that reflects the changing role of the state towards market-led development.

# Conclusions and Policy Recommendations

- Sector specific regulation vs multi industry regulator.
- In England, sector specific regulatory agencies are the norm while “multi-industry” regulatory agencies are typical of most state public utility commissions in the United States.
- A multi-industry regulator, despite its attractiveness, is therefore neither feasible nor practicable to adopt immediately in India. It should remain a long term vision.

Thank You