

THE INDIAN QUAGMIRE: AN ASSESSMENT OF IMPEDIMENTS TO SEAMLESS TRANSPORT SERVICES

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ABSTRACT

The paper scrutinizes the Indian multimodal transport network. It identifies the various impediments to multimodality in the Indian context that include lacunae in the country's multimodal Act, policy failures, operational deficiencies, and infrastructure limitations. The author suggests various remedial measures to better integrate the transport network, and also attract private investment in the nation's transport infrastructure.

INTRODUCTION

The very name India conjures up an image of a country rich in history, interspersed with seemingly unbelievable contradictions. In its fifty years of independent existence as a singular land of the plural, India has made remarkable progress in many areas while remaining distinctly regressive in many others. On the one hand, it is one of the poorest countries on the surface of the earth; yet while, it is the world's 10th most industrialized nation, the world's largest producer of fruits, the second largest producer of vegetables and possesses indigenous space technology². It is home to a billion people, and has a huge affluent domestic market, second in size only to that of the People's Republic of China while at least one-half of its citizens lives in acute poverty. India trains many well-qualified scientists, engineers, doctors, computer programmers and academics. Nevertheless, many of these well-trained citizens seek a living elsewhere in pursuit of better opportunities and living conditions. There are regions in India where literacy is a 100 percent and the net population growth is negative. By the same token, the same Mother India bears the burden of an equally substantial number of illiterates and regions exploding with population growth.

The ongoing liberalization of Indian economy, despite some noticeable bumps, has rekindled global interest in this slumbering giant. Indian economic growth accelerated to 7.2 per cent in 1994-95 and 7.1 per cent in 1995-96 in terms of **GDP** at factor cost. The nation has a sustainable current account deficit (1.6 per cent of the **GDP** in 1995-96), a stable inflation rate (5.7 per cent average in 1996-97), a domestic savings rate of 24.9 per cent of **GDP** and low levels of fiscal deficit (5 per cent of the **GDP** in 1996-97). Presently, India has the fifth largest gross domestic product in the world (based on purchasing power parity) and is expected to go a step higher by the year 2020. However, what may be the biggest impediment to the Indian re-emergence on the global commercial scene is its infrastructure limitations, in particular the absence of an efficient integrated multimodal transportation capability. The disparity between the

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³ India entered the nuclear club in May 1998 as a result of which the western nations and Japan imposed economic sanctions on the country. This could have serious economic repercussions although the scope and magnitude of sanctions imposed on India remain unclear.

growth rates in India's industrial production (13 per cent p.a. for 1995), exports (18 per cent p.a. for 1995) and facilities (less than 5 per cent p.a. for 1995) is a good illustration of the tightening bottleneck ("Majors Spurn" 16). The nation's road, rail and sea transport system is deficient in many ways and the performance of Indian ports well below acceptable international norms (Balasubramaniam 63-65). The recent decision by Hewlett-Packard against making a \$400 million plant investment in India is a classic illustration of the paradoxical situation confronting Indian economic growth (Karp).

The predicament that India faces is not entirely unique. Indeed this is the case with many developing countries and countries in transition. However, the Indian scenario is worth analyzing further for a variety of reasons. While it provides a good illustration of the typical impediments to providing integrated transportation one witnesses in most developing countries, it also provides a snapshot of some problems unique to India partly because of its size and also because of its place in history as the world's largest democracy. Furthermore, as a big emerging market that has remained unscathed by the ongoing economic crisis in Asia, investment in India is still a possible option for many multinational firms. The paper will discuss the importance of integrated transportation capabilities in today's market environment followed by a description of Indian policy initiatives to foster it in the country. The Indian transport sector will then be analyzed in terms of its multimodal capability, and the bottlenecks and impediments to seamless transport services identified.

THE ROLE OF INTEGRATED TRANSPORT SERVICES IN FACILITATING ECONOMIC GROWTH

Transportation capabilities play an ever increasing role in facilitating the global supply chain (Morash and Clinton, 1997). The developed nations, in general, have invested huge sums of money in their transportation infrastructure to facilitate the seamless movement of cargoes demanded by ongoing changes in industrial processes as well as changes in the organization of international trade and its patterns. Simultaneously, service providers in those countries have fine-tuned their processes to provide guaranteed service levels and commitments. As a result, these nations enjoy lower total logistics costs (as a per cent of the national GDP) that contribute toward their sustainable competitive advantage in the global market. In the case of developing countries, investment in transport infrastructures may not be the priority when it comes to public spending choices. However, this does not preclude a developing country from pursuing other avenues to enhance logistical efficiency when faced with scarcity of financial resources. Indeed it has been shown using Brazilian and Ghanaian experiences that the potential gains from operational changes in the transport system may be greater than that from massive infrastructure investment (Delaquis, et al., 1997).

A recent UNCTAD Report (1995) underscores the importance of an efficient transport system for developing countries and countries in transition. The report envisages that a manufacturing system and a transport system, working in synchronisation with each other and operating under a flexible regulatory system would propel the developing countries into homogeneous *"export machines"*. The Report specifically recommends that developing countries and countries in transition follow a *"multimodal transport approach as one way to re-engineer their transport sectors and to increase the international trade, in particular the South-South and South-North trade"* (UNCTAD Report 1995, 5). It advocates developing nations' taking advantage of the experiences of developed countries while implementing their multimodal transportation policies and capabilities so that they can avoid reinventing the wheel and the typical growing pains of an infant industry. The outcomes predicted by the UNCTAD multimodal approach

include significant benefits to the service user (particularly in the areas of cycle compression, increased cargo security and reduced overall transport costs), the service provider (in terms of commercial incentives to adapt to transport-related technologies and developing niche areas), and the government itself (through streamlining of transport-related procedures besides stimulating trade and economic activities in general) (UNCTAD Report 1995, 17).

It has been observed that many developing countries are unable to foster multimodal movements because of national transportation policies that are not conducive to the implementation of multimodality and the inability to issue a through bill of lading (Rahmatullah 1995, 12). India is one nation that took measures to overcome this problem. The Government of India began working toward a comprehensive multimodal transportation legislation in 1987. This culminated in the enactment of the Multimodal Transportation of Goods Act (MTGA) in 1993. The Act is based primarily on the 1977 UNCTAD/ICC Rules and also parts of the 1980 UN Convention. The introduction of the Act coincided with a period of economic liberalization and a desire to attract private interests, indigenous as well as from abroad, in hitherto forbidden areas of the national economy. The past five years of experience under the new legislation provides good background to make reasonable conclusions regarding the Indian transport sector and highlight the impediments to seamless cargo movements in the country.

HISTORICAL BACKGROUND

The Indian Railways (IR) introduced intermodal transportation in 1966 to stem its eroding market share in general cargo freight movements to the truck operators. IR used 5 tonne capacity containers (called IRS *containers*, and 3 IRS containers = 1 TEU) and effectively combined the door-to-door flexibility of road movements with the cost economies of rail movements, and also eliminated multiple cargo-handling at intermodal transfer points. This was a successful strategy and the intermodal container traffic handled in India grew from 621 TEUs in 1966-67 to 14,549 TEUs in 1980-81.

The focus of Indian intermodalism shifted radically from domestic to international movements in 1981-82. IR handled 229 ISO marine containers in 1982. During the next seven years, the number of ISO marine containers handled increased to 43,065 TEUs while the domestic intermodal container traffic dropped to 9,300 TEUs. This was primarily because of the increasing attention given to export traffic and the large volumes offered by ports while the domestic movements became secondary and infrequent. In 1988, the Government of India set up CONCOR (Container Corporation of India), an autonomous public sector undertaking under the Ministry of Railways, to better facilitate and coordinate the multimodal movement of export and import cargoes between gateway ports and the inland container depots (ICDs) in the hinterland. CONCOR took over the seven Inland Container Depots (previously run by Indian Railways) on November 1, 1989 and ran the nation's first dedicated liner train from Delhi to Jawaharlal Nehru Port (JNP) on November 14, 1989. The volume of ISO container traffic handled by CONCOR increased ten-fold from 1988-89 to 1996-97 (424,741 TEUs). During the same time, the domestic container traffic also increased 300 per cent from 9,300 TEUs to 278,801 TEUs (Advani).

THE INDIAN MULTIMODAL TRANSPORTATION OF GOODS ACT (MTGA) 1993

The MTGA (Act No. 28, 2nd April, 1993) is an Act that provides for the regulation of the multimodal transportation of goods, from any place in India to a place outside India, on the basis of a multimodal transport contract and for matters connected therewith or incidental thereto. It allows road, rail, inland waterways and deep-sea operators and non-vessel owning common carriers (NVOCCs) to register as multimodal operators with the Director General (DG) Shipping. There are provisions to ensure the professional competency of potential operators and also their financial capability (in terms of minimum annual turnover). The multimodal transport operators (MTO) that meet the basic criteria are licensed to operate for a year after which it can be renewed annually. The MTO issues a multimodal transport document (MTD) in compliance with a model prescribed by the DG Shipping and acts as a principal in providing multimodal transportation rather than as an agent. The MTD would replace the Combined Transport Document (CTD) used commonly for inland movements. The MTD may be negotiable or nonnegotiable (unlike the CTD which is nonnegotiable), and is acceptable to banks when the MTO is seeking documentary credit. The Act provides for the limitation of liability of the MTO which is set at SDR666.67 per package or unit, or SDR2 per kilogram of the gross weight of the package lost or damaged, whichever is higher. The Indian Carriage of Goods by Sea Act (1925) and other Acts that deal with domestic modes of transportation have been amended to ensure uniformity with the MTGA. Presently, there are 147 registered MTOs in India of which 15 are multinationals and the rest Indian operators (Advani).

THE CURRENT STATUS OF THE INDIAN TRANSPORT SECTOR

Appendix A shows the transportation infrastructure in India. A cursory knowledge of the subcontinent's location and geography highlights its logistical potential. The country has a coastline of about 7,000 kilometres, and a glorious maritime past (that was seriously hurt during the colonial era) to boast. There is a handful of well-located ports-- 11 major ports under central jurisdiction and about 163 minor ports under state control-- on its coastline. All Indian ports are located strategically close to both the trans-Pacific and the Europe-Far East arterial liner routes besides the booming intra-Asia North-South trade lane. The national shipping line, Shipping Corporation of India (SCI) has one of the largest fleets in the world. India is a crucial supplier of workforce for the global shipping industry and its merchant marine officers in particular are well sought after. There are state-owned shipyards that build vessels and carry out repairs, besides being blessed with a significant supply of iron ore. The container penetration ratio in India has gone up from 14 per cent in 1982-83 to 40-45 per cent in 1995-96 although significantly lower compared to most developed countries. Furthermore, the hinterland penetration of ISO containers in India is about 20 per cent, about one-third of that in developed countries (Advani). The country has an extensive road and rail network, linking the various ports to their respective hinterlands, and all major commercial centres are accessible by air. As of 1994-95, Indian Railways (with a total national investment of about \$10 billion) had a network of 7,050 stations, 1,600,000 employees, 7,000 locomotives and 300,000 wagons (India Country Report, 1996). The system carried 390.5 million tonnes of freight (272 billion tonne km) and 4,068 million passengers (339 billion passenger km) in 1994-95. As the provision of passenger service is an instrument of social policy, the tariff structure is weighted highly in its favor. The cross subsidization often leads to large increases in freight rates and hence, causes a shift from rail to trucking movements. There is also a high degree of vertical

integration within the Indian Railways, and it manufactures most of its equipment and accessories.

CONCOR registered as an MTO with the DG Shipping on December 28, 1994. Twenty per cent of CONCOR's equity was disinvested by sale to public in October 1994 as part of the nation's privatization initiative. CONCOR handled 24.4 per cent of all Indian containerized cargo in 1995-96 and its operations in 1997 included:

- IS Inland Container Depots
- 5 Container Freight Stations (CFSs)
- 6 Port Side Container Terminals (Off-dock Facilities)
- 11 Domestic Container Terminals

TABLE 1, CONCOR'S DEDICATED CONTAINER TRAIN SERVICES (1997)

Origin-Destination	Frequency
Delhi to Mumbai (Bombay) Port	7 days a week
Delhi to JNPT	7 days a week
Delhi to Haldia	Once a week
Ludhiana to Mumbai/JNPT	4 days a week
Bangalore to Chennai (Madras)	3 days a week
Coimbatore to Cochin	3 days a week
Ahmedabad to Mumbai/JNPT	2 days a week
Hyderabad to Mumbai/JNPT	Once a week
Bangalore to Cochin	Once a week

Source: CONCOR Brochure, 1997.

CONCOR operates dedicated liner trains along all major corridors as shown in Table 1. A typical CONCOR liner train carries 80 TEUs in 40 rail cars and has a length of 686 metres.

TABLE 2. CONCOR'S THROUGHPUT AND TURNOVER STATISTICS

Year	Throughput (Million TEUs)	Turnover (Million \$*)
1991-92	108,277	13.3
1992-93	155,585	20.8
1993-94	237,160	30.0
1994-95	402,632	56.6
1995-96	594,118	101.5
1996-97 (estimated)	725,000	122.4

■note: \$*—author's conversions at Rs.39 = \$1

Source: CONCOR publications

Table 2 shows the increasing role of CONCOR in India's multimodal operation in terms of throughput and turnover from 1991-92. Appendix B shows the domestic and international throughput of Indian Railways from 1980-81 to 1996-97. Central and state warehousing entities and private commercial interests have entered into CFS operation. New CFS operators include the Central Warehousing Corporation (CWC), the Shipping Corporation of India (SCI) and state warehousing entities such as Punjab State Warehousing Corporation (PSWC) and Rajasthan Small Industries Corp. Ltd. (RSICL).

India has 2.1 million km of road length that comprises National Highways (primary road system), secondary and feeder road system covering State Highways and Major District Roads, and Rural Roads. From 1951 to 1995, vehicle population on Indian roads increased 90-fold while the road network expanded only seven-fold. The National Highways, arterial roads that connect the nation's ports, state capitals, industrial and tourist centres and adjacent countries, constitute only 2 percent of the total road network. However, they bear 40 percent of the total road traffic and barely grew 50 percent from 1951 to 1995 (India Country Report, 46-47). Given its budgetary limitations, the Government expects to attract private capital for road projects on a *Build, Operate, Transfer* (BOT) basis. The National Highway Act (1956) was recently amended to facilitate private sector investment in roads.

India is a riverine country with about 14,545 km of navigable waterways and significant potential for eco-friendly commercial activities. However, large mechanized cargo vessels cannot navigate most of these waters. The Inland Water Authority of India (IWAI) was set up in 1984 to develop, maintain and administer the waterways. In order to focus on those areas where such navigation is possible (with a minimum draft of 2m), a recent policy measure identified three National Waterways of 1,620 km, 891 km and 205 km respectively (India Country Report, 64-65). The government intends to develop these waterways as an alternative mode of transportation to supplement road and rail movements. The Central Inland Water Transport Corporation (CIWTC) is engaged in freight transportation through the waterways. Presently, the entire inland water system carries barely 0.7 per cent of the inland cargo with virtually no container handling capability. The policymakers aim to increase this to 2 per cent by the year 2002 through private sector participation in creating infrastructures and developing the requisite fleet capacity.

THE IMPEDIMENTS

The preceding discussion underscores India's significant potential in transport and logistics management. However, having the potential does not mean much unless it is utilized. Today, the nation does not even have a port that can bring in a main-line (mother) vessel that serves the voluminous Europe-Far East trade route that hugs the Indian coastline. Not only does it not have sufficient port infrastructure, the shipping tonnage it has built up over the years is far from inspiring and its policies lacking foresight. In the shipbuilding sector, Indian yard presence is merely a token. This is despite the sector's acknowledged potential to create large number of well-paying jobs, badly needed in India. As for domestic transportation, all the different modes stand alone as functional silos with virtually no integration between them. Multimodal capability exists only on paper with very little true multimodal operations. The basic multimodal motto of "don't stop the box" appears more like a mirage in the Indian context thanks to the multitude of bottlenecks strewn along the inland transit. These impediments include lacunae in the multimodal legislation, dated customs and procedures, bureaucratic hurdles, operational impediments, shortcomings in shipping policies and infrastructure limitations experienced by every sector of the multimodal transport chain, and are discussed next.

Imperfections in the Indian Multimodal Legislation (MTGA 1993) While India should be complemented for enacting a multimodal legislation, there are numerous lacunae in the present legislation. To begin with, the legislation excludes air freight operators and forwarders from MTO status. The MTO certificate is issued for only one year, and the operators have to renew it every year. This creates unnecessary transaction costs for bonafide operators. One major area of concern for MTOs is their liability when involved in an international movement that also includes a deep-sea leg. As per the present provisions, the MTO's liability will be greater than that of the ocean common carrier who issues an ocean bill of lading under the present Indian Carriage of Goods by Sea Act. There are a variety of other minor issues identified by the Indian multimodal industry. The government is presently reviewing these and other recommendations of the industry.

Dated Customs and Procedures

Although a multimodal transport document (MTD) is recommended by the MTGA, its use is somewhat limited. Operators still issue mode-specific bills of lading, railway receipt, railway bills, lorry receipts, etc., or use the combined transport document (CTD), the predecessor of MTD. There are serious limitations with the Indian CTD. It evolved as a result of the rules and regulations issued by the Foreign Exchange Dealers Association of India and established the responsibilities and liabilities of combined transport operators from ICD points (Desai). However, it does not provide a legal regime of uniform liability for multimodal transportation. Furthermore, it does not confer negotiability or title to goods and hence, does not meet the requirements of MTGA.

Only 47 of the registered MTOs have started offering MTDs. MTOs are not able to offer MTDs even where they are appropriate. This is because Indian MTDs lack credibility among foreign buyers. The latter are unhappy with the infrastructure and equipment available in Indian ICDs and CFSSs, and find the whole system including scheduled train services to gateway ports undependable. Even Indian exporters prefer to play it safe and use the old system of CTDs or segmented mode-specific documents rather than deal with the uncertainties of the new service (Desai). Therefore, most Indian exports still move on FOB basis. As there are a number of parties involved in such a segmented domestic movement, the transaction costs are significantly high. As a

result, the overall cost of inland movement is far higher than a comparable move in neighbouring countries.

Bureaucratic Hurdles

India is well known for its highly bureaucratic procedures and protocols. A good example of such interference is the Ministry of Commerce regulating the location and number of CFSs and ICDs. The various Indian ministries that have a stake in transportation activities in India include Civil Aviation & Tourism, Commerce, Communications, Defense, Environment and Forests, Finance, Food, Home Affairs, Industry, Labour, Railways, Surface Transport and Water Resources. In addition, the Civil Service bureaucrats associated with transportation in India include the Director General (Roads), Director General (Shipping), Joint Secretary (Shipping), Joint Secretary (Transport), Joint Secretary (Ports), Chairman (National Highways Authority of India), Chairman (Inland Waterways Authority of India), Additional Director General, (Department of Tourism) and the Director General (Foreign Trade). All these are at the federal government level. To this must be added the state and local levels of ministries and bureaucracy. This is a good reason why the different modes of transportation stand alone as functional silos with very little integration between them. Even today, an exporter from Mumbai, the nation's largest port, must complete and process 54 documents (27 pre-shipment documents, 14 customs clearance documents, and 13 documents for post-shipment realization of bills), and receive 16 approvals from the various departments (Rao, "Indian Customs System").

There is an urgent need for a coordinated approach towards providing multimodal movements and eliminating unnecessary barriers to the smooth movement of cargoes. The previous Indian Government established an Intermodal Steering Group under the Chairmanship of Planning Commission Member (of Transport). This group is officially responsible for developing an integrated freight transportation plan. All these initiatives vibe well with the nation's attempt toward economic liberalization and solicitation of private investment in the transport sector. However, uncertainties in the Indian political scene through frequent elections and ministerial changes, and ambiguities in the liberalization process as a result of conflicting signals from policymakers provide little comfort to the private sector.

Operational Impediments

Many Indian ICDs lack export facilitation agencies like TEXPROCIL, a phyto sanitary certification issuing body. Furthermore, only some ICDs offer export promotion schemes such as DEEC (Duty Exemption Entitlement Certificate) and DEPS (Duty Entitlement Passbook Scheme). The availability of the above services requires ratification by the ministries of commerce and finance, which will only happen if there is significant pressure from the various stakeholders.

A recent initiative of the Government of India to charge the ICD operators for the services of customs officials is burdensome, particularly on the smaller ICD operators. As an example, an ICD that handles both import and export cargoes could be meeting all direct and indirect costs associated with as many as 13 customs officials (Advani). It is hard to rationalize why this expense should be passed on to the operators. At the very least, there should be some rational methodology in allocating government staff at ICDs and CFSs rather than using them as convenient vehicles for reducing the government's payroll burden.

A country of India's size needs more ICDs and CFSs, especially in the interior points. This is an area where the private sector could play a big role if the Ministry of Commerce would liberalize the entry restrictions. Rail accessibility is a problem with some of the existing ICDs and CFSs. In at least one case, road movement to the gateway

port is a necessity because of the absence of rail connections, and in some other cases, road movement is preferable to rail movement despite the long distances involved. For example, the movement from Delhi to Mumbai (Bombay)/JNP is the most voluminous intermodal route in the country and is approximately 1,400 km long. Appendix C shows the cost breakdown for this rail movement. The same movement by truck has a direct cost of about Rs. 20,000 and an indirect (opportunity) cost of Rs. 15,000. Neither of these moves comes close to the demands of a contemporary supply chain. The actual rail transit time for a CONCOR liner train on this route is presently 96 hours (four days). CONCOR claims 95 per cent vessel matching rate for tMs service. However, only 8 per cent of the containers arriving Mumbai are loaded on the day of arrival. As a result, a typical shipper or MTO would allocate five days for this movement that would take ordinarily less than 24 hours in a developed country. Furthermore, with import containers arriving at JN Port, it has been observed that the transit to Delhi takes approximately 12 days (Advani). This is because of a waiting time of 6-8 days which needs to be reduced. This can be accomplished by introducing better handling facilities in ports and reducing the handling time, and also by increasing the number of railheads in ports so that they can handle a greater number of trains. This could be an area where private investment would be beneficial.

Many ICDs and CFSs do not have sufficient empty containers and flatcars. The flatcars are heavy and poorly designed with large wheels, resulting in a lower payload. There are several tracks of narrow gauge. Sophisticated innovations like double-stack trains that can provide significant economies of scale and cost efficiency are impossible in the Indian context. The vertical clearance problem is severe along Indian rail tracks because of a number of tunnels and also electric wires as India depends heavily on the electrification of its tracks to reduce the nation's oil importing expenses. The users of rail services would like to see better frequency and customer service, and assured transit times (see Table 3) besides better technology such as high speed wagons and modern container handling equipment. In 1994, the World Bank approved a \$94 million loan to CONCOR for investment in rolling stock. Some of this money is kept aside for the acquisition of new high-speed flats that can run at speeds of 80-90 km/hour.

TABLE 3. TOP THREE SERVICE CRITERIA FOR THREE MAJOR SHIPPERS IN GUJARAT, WESTERN INDIA

Ranking	Reliance	Arvind	Nirma
1.	Door-to-door service	Service reliability and regularity	Cost
2.	Service regularity	Total transit time	Door-to-door service
	Pilferage, loss, etc.		
3.	Total transit time	Information about consignment	Total transit time

Source: Indian Railways and Multimodal Transport: Case Studies, Raghuram, G. (1996).

There are numerous limitations with road movements as well. There is no centralized motor vehicle tax structure. An operator receives a permit to provide service to designated areas, states or regions. The chassis and tractors are usually inferior with very little multi-axle vehicles. Roads and bridges are not maintained adequately which

results in higher operating and maintenance costs. Many drivers are poorly trained and the enforcement of road and safety regulations is sometimes lacking. These, along with poor cargo securing arrangements leads to many accidents on the road. Another major problem with road movements is octroi, a mandatory levy in many jurisdictions. In addition to the direct cost of the octroi, all octroi check-posts become bottlenecks impeding the smooth flow of traffic and thereby contribute toward significant indirect cost. Furthermore, movement of containers between ICDs and shippers' premises is restricted to certain hours of the day in most Indian cities. As a result, a trailer may average only one trip a day, adding to the overhead costs. The congestion in Indian roads needs to be cured without affecting the efficiency of freight movements. The options include building alternative routes for freight movements and strategically placing new ICDs away from urban centers. The private sector can play a big role in infrastructure investments as discussed in the next sub-section.

Many of the Indian coastal vessels are well past their prime and due for scrapping. Furthermore, coastal shipping has been crippled by complex and rigid customs regulations and the use of EDI is very limited. Customs authorities have a genuine concern about smuggling and other illegal activities which makes them assume a *guilty until proven innocent* attitude toward even bonafide service providers. There is an urgent need for the overhaul of Customs procedures and the streamlining of documentation requirements. The promotion of domestic and inland shipping will greatly help reduce the congestion in India's overcrowded roads and highways experienced today.

Other areas that need improvement include promotion of LCL traffic and block trains, building more special containers such as reefer and tank containers, allocating special areas for handling hazardous goods, providing adequate parking space for users of ICDs and CFSs, and ensuring the availability of basic amenities and facilities for running an office at ICDs and CFSs. The national policymakers should identify expressways for four-laning and also provide expeditious road network linking the major metropolitan areas of Mumbai, Delhi, Calcutta and Chennai, all these being ideal candidates for private sector participation.

Infrastructure Limitations

Investment in the National Highway Network, conversion of narrow gauges, and navigational aids and dredging the designated Inland Waterways Systems are all areas of immediate concern. Equally significant are the problems facing Indian seaports. It is truly ironical that India, a nation that had the best domestic transport network as well as the best known and equipped seaports in the South Asian region until well into the 1960s, has to depend on Colombo, Dubai and Singapore as conduits for its containerized imports and exports. The tunnel vision of Indian bureaucrats, who paid attention to planned targets but not to market realities or contemporary transportation trends and their lackadaisical management style has left India far behind where she should be today. As acknowledged by the Indian DG Shipping, a current inventory of Indian port infrastructures is far too modest-10 dedicated container berths, 15 quayside cranes and 32 yard gantry cranes-for a nation of one billion people to even enumerate ("Trusts Allowed Private Investors"). Besides the added costs of transshipment operations, port congestion and inefficiency, what is even more troubling is the impact on total cycle time for Indian cargoes. In a world that is increasingly moving toward time-based competition, even the smallest increase in cycle time is sufficient to make Indian products uncompetitive in the global supply chain. This is particularly crucial as India is looking for export-led growth in future years. Thus, the chronic congestion and inefficiency in Indian ports could be a major hurdle that stifles the nation's industrial and economic growth and so, requires a paradigm shift in operational philosophy.

Various Indian port authorities have reported that they are operating beyond their planned capacity. This is totally misleading as such estimation is based on antiquated labour and performance standards. *Ipsa facto*, a virtual catharsis of the current port management practices in India alone is expected to increase the port capacities by 35 percent (Raghuvanshi 12). Indeed if the Indian port authorities' claim of exceeding capacity norms is relevant, it is a good illustration of policy failure; i.e., the lack of proactive port capacity planning by the Indian bureaucracy. There have been some improvements in Indian port performance in recent years beyond any doubt. However, the burning issue is whether the recent port and shipping liberalization policy measures are sufficient or is it a case of "too little too late", that needs stronger antidotes such as a radical re-engineering for true rejuvenation.

The demand for container ports in the Indian subcontinent region is forecast to increase from 2.9 million TEUs in 1994 to 8.2 million TEUs in the year 2005 under an assumed optimistic economic environment (Ocean Shipping Consultants, 1994). The forecast under assumed pessimistic environment is for 7.2 million TEUs in 2005. To facilitate the optimistic forecast, the required new craneage alone in the Indian subcontinent is 10 new units in 1995-96, 10 units in 1997-98, 16 in 1999-2000 and 52 in 2001-2005 (Carding 29). The more recent India Infrastructure Report forecasts total Indian seaborne traffic to grow from 240 million tonnes in 1996-97 to 484 million tonnes by 2002-3, the end of the ninth five-year plan (Vol. IV, 209). The Ministry of Surface Transport has estimated the need for Rs. 400bn (\$11.5bn) investment in the major ports alone during the period 1997-2002. The government expects to raise the bulk of this money through private investment on 30 year-long *build, operate, transfer* (BOT) contracts.

It is refreshing to note the shift in Indian port development and operational policies given the nation's reputation for highly bureaucratic, centralized control of major ports (Government of India Port Privatization Guidelines). The current Indian port privatization initiative is a major improvement from the earlier version perceived as a joke by private interests (Bascombe 89) and characterized as ambiguous, frustrating and devoid of commercial principles by a former port bureaucrat (Joshi 227).

After several false starts, the attempt to create a privately owned and operated container terminal has at last come to a financial closure at Jawaharlal Nehru Port, Nhava Sheva and the port itself is being corporatized. The progression toward running a privately operated container terminal in any Indian port is an exceptional accomplishment by Indian standards. What has been accomplished at JNP is a significant breakthrough. What is even more noteworthy is the fact that the whole process was truly transparent, very non-controversial and completed almost on time. The JNP officials ought to be credited for the transparent and timely way in which they went about awarding the contract that may indeed become a model for similar projects in India and other developing countries. However, there are several aspects of the JNP port privatization model that need fine-tuning before it is emulated elsewhere (Shashikumar 1997).

As per the present plan, the port will continue its regulatory role under the original Major Port Trusts Act of 1963. However, a new independent tariff regulatory authority will fix and regulate port tariffs. The tariff authority will be chaired by a past or present senior Government bureaucrat with port experience and will also include an economist and a finance specialist, both with at least fifteen years' relevant experience. Port and terminal operators must not exceed the ceiling tariffs established by the new body. The Government of India feels this is essential to increase transparency and provide a level playing field for investors (Jain 10). However, from the private operator's perspective, this is rather discouraging and indicative of continued bureaucratic meddling. If private interests are allowed to build and operate a terminal, there is no reason to preclude them

from pricing commercially. If indeed a governmental body is to be the ultimate arbiter of port tariffs, why is it that they should set the ceiling tariff alone? Would not a tariff with a zone of rate-making freedom on either side be more conducive for entrepreneurs? Furthermore, what is wrong if an efficient terminal operator charges higher rates for fast and reliable cargo turnover-which the present system has certainly not provided-that would only help a shipper's competitive stance?

Mutuality of obligations is another area where one would like to see some improvements. Some present bid requirements are likely to result in frustrations eventually. For example, the shortage of electric power is a major problem in India. The bid document stipulates that the Port Trust (licenser) will *supply electrical power as available subject to payment by the licensee at rates to be prescribed by JNPT from time to time* (JNPT Bid Document 48). There is no mention of any recourse for the private operator if the port authority fails to supply power and they hamper port operations.

The issue of a performance guarantee is also controversial and unpopular with private interests. They cannot help but compare their situation with fellow entrepreneurs in the power sector. In this sector that is also being privatized presently in India, the State Electricity Boards are the ones who guarantee consumption of power for a certain number of years. Accordingly, entrepreneurs make their investment in a power plant. The current guidelines for investment in the port sector are in sharp contrast. An entrepreneur in the Indian port sector must not only make the investment but also guarantee a certain level of throughput during the lease period. This is not particularly attractive for an investor choosing between an investment in the port sector *vis-d-vis* one in the energy sector. The bid document specifies clear and succinct qualifying criteria for responding to the JNPT bid invitation. This should be sufficient to keep off the fly-by-night operators and speculators. Established port operators will not invest in a new facility without doing their homework. If indeed they are chosen for their expertise in port operations and management, why not have them guarantee a royalty per container, or per tonne of cargo handled, rather than a fixed number of containers per year?

The privatization guideline issued by the Government of India stipulates that at the end of the BOT period, all assets will revert to the port free of cost (MoST 5). The JNPT bid document complies fully with this provision. However, what incentive is mere for an operator nearing the end of the BOT period to maintain all the equipment and hand them over in anything more than barely working conditions? At this juncture, the room for litigation appears very broad and inviting. Future bid documents should clarify this aspect so that there is less ambiguity. Furthermore, lenders would also want clarification who owns these assets during the BOT period before issuing loans.

One interesting aspect of the JNP BOT outcome is that a private terminal will be in operation right next to the present terminal operated by the Port Trust. Much as it has the advantage of enhancing the performance in the present terminal through an osmosis of better practices and efficiency, one should not ignore the possibility of the reverse. It will be truly engaging to watch who is going to influence whom. The problem is certainly far deeper and goes right back to the Major Port Trusts Act of 1963, adopted well before containerization in India, and to unsolved issues related to the highly militant Indian dock labour.

The two issues discussed next are more important from a long-run strategic perspective of all Indian ports in general. As the new terminal becomes operational, JNP's position as India's premier container port will be well established. It may indeed cross the one million TEUs per annum benchmark by the turn of the century and enter the lower echelons of top tier container ports. Nevertheless, how attractive will a container port

with 10.7 metres of entrance draft and 12 to 12.5 metres of draft alongside be for today's major container operators? None of their latest generation mother vessels will still call at JNP or other Indian ports for that matter. The best that JNP can attract is a vessel carrying around 4,000 TEUs which means that ports like Colombo, Dubai and Singapore will still remain as gateways to India. Thus, despite the immense volumes of cargo generated by a rapidly growing Indian economy, the nation's ports do not seem headed for the coveted load centre status, and are still destined to be served primarily by feeder vessels.

The Indian privatization guidelines expressly state that ports should ensure that private investment does not result in the creation of private monopolies (MoST 2). However, the recent string of successes of the P&O Ports Australia Group must be troubling to even the least sceptical observer. It is a subsidiary of the British P&O, best known for its shipping line that recently merged with Nedlloyd to form one of the biggest container operators in the world. The worldwide operation of P&O Ports is controlled from Sydney, Australia and presently owns partly or fully and/or manages 53 ports in 16 countries. Its current projects in South/South East Asia include:

- Port Qasim Container Terminal, Pakistan's first dedicated container terminal
- the Laem Chabang International Terminal Co. in Thailand
- the South East Asia Gateway Terminals Ltd. at Colombo in Sri Lanka.

These are besides the JNP project in Bombay and the recently awarded billion dollar Vadhavan port project in Maharashtra. The group can conceivably drain all the subcontinent cargo to perhaps Colombo, making it a world class load center and ensure the feeder port status of Indian ports. Once the technical bid is accepted, should NPV be the sole criterion in awarding the BOT port projects? What about an overall vision, and scope for competition in future years with neighbouring ports for load centre status? Presently, this appears to be lacking despite the centralized nature of Indian port planning and development.

If the central government's attempt to rejuvenate the port sector looks encouraging, the initiative by aggressive state port authorities to attract private sector participation in port investment and operations is truly admirable. The states of Gujarat and Maharashtra in particular have been very proactive and the first joint sector port, Pipavav in Gujarat, is well on its second phase of expansion. Gujarat, a highly pro-business state in Western India, alone has set aside an aggregate outlay of Rs. 100 billion (\$3 billion) for port development by the turn of the century. These greenfield minor ports do not suffer from the myriad problems affecting the major ports and some of them may indeed become major ports in the next millennium if sufficient inland transport infrastructure is built to facilitate expeditious linkages to the interior points. The only hindrance here appears to be the burgeoning Indian environmental lobby whose actions were partly responsible for the lack of response for some proposed greenfield port projects. The current Indian dock labour also is opposed to new private ports as they perceive it would take away traffic from the present major ports (Rao, "India Fears Growing Protest").

CONCLUSION

Integrated transportation services is a vital necessity for the competitive advantage of nations in general. A developing country that aims for export-led economic growth must strive to provide seamless multimodal transportation services. The Indian multimodal transportation sector is maturing gradually. However, there are serious lacunae in the enabling Act which need immediate attention. The throughput and revenue earned by

CONCOR, an autonomous division of the Indian Railways and the primary multimodal operator, have gone up considerably since its inception in 1988. At the same time, there are numerous operational impediments that preclude modal integration. The lingering dated practices such as the use of a CTD rather than the prescribed MTD and the bureaucratic hurdles resulting from political uncertainties as well as because of a hesitation toward true liberalization continue to impede the Indian multimodal sector. Above all, there are serious infrastructure limitations which create numerous bottlenecks, beginning with the ports of entry. While privatization seems the only way to raise the financial resources to overcome these limitations, the scope and foci of Indian privatization schemes remain unclear because of political uncertainty. As an example, in the aftermath of the Hewlett-Packard decision mentioned earlier, the Surface Transport Minister issued an unusually drastic order to clear the backlog in all Indian major ports. Accordingly, all major port trust chairs were given expanded authority to expedite berthing of container ships in particular and set a goal of not more than twenty-four hours waiting period from 1 September through 30 November, 1997, for ships calling at India's major ports. Shortly thereafter, the government and the surface transport minister were unseated. Even if the same political group was in power today (which is not the case), a twenty-four-hour built-in slack time is hardly the type of cure that would comfort the sceptics wedded to the concept of time-based competition. The only goal that would appease them is India striving for zero delay forever in its ports, faster turnaround of vessels and making good on that promise, rather than any accomplishment she might gain as a nuclear power. Only then can India aim to be a true economic giant in the next millennium.

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