INDIA MARITIME SUMMIT 2006

Confederation of Indian Industry

Indian Maritime Landscape

A Background Note

Prepared by

KPMG

The Knowledge Partner

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In the ports sector, KPMG has been involved in business planning, policy formulation, IT infrastructure assessment, traffic projections, competitor analysis, demand planning for ports in India and abroad. Currently, KPMG is involved in the business planning exercise for the ports of Mumbai, Kandla and JNPT.

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INTRODUCTION

The high growth trend in Indian GDP is reflected in the country's burgeoning international trade, and the consequent high growth in traffic volumes for the shipping and ports sector over the past few years. High Export-Import (EXIM) growth is not limited to India. Trade volumes in entire South Asia and South East Asia have grown at a higher rate than the global average due to the growth in Asian economies, principally China and India. This growth trend is expected to continue over the medium term with a consequent increase in international trade from India and China. This would, in turn, translate into additional demand pressures on the Indian shipping and ports sector.

Shipping

Shipping is a cyclical business and is affected by ship-manufacturing activity around the world. When demand for tonnage increases, new ships are ordered. Following the current surge in demand, order books for new ships are at an all time high. Other interesting trends in the sector include increasing ship sizes, the integration of shipping lines and port operators, efforts towards horizontal integration/alliances, etc. These trends have increased the bargaining power of shipping lines vis-à-vis other players in the value chain. The Indian shipping industry has also been increasing capacity. Many players have developed expansion strategies and are planning to raise capital through the market to finance the same. As global competition increases, the Indian shipping industry will have to upgrade its fleet to improve its efficiency and become competitive.

Ports

The ports sector in India has also witnessed significant growth in the recent past, especially in the container terminal segment. Over 95 percent of India's international trade by volume takes place through ports, and hence, ports play an important role in India's EXIM trade. Recent government initiatives in the sector have led to domestic and international players investing in Indian ports. Current growth trends suggest that the Indian ports sector would require a significant increase in capacity to meet future cargo demand. Accordingly, Indian ports have developed expansion plans. Many major ports in India have adopted the build-operate-transfer (BOT) model to facilitate the development of additional capacity. This has resulted in the entry of international players such as DP World, Maersk, PSA, etc. in the Indian ports sector. On the other hand, private sector investments in minor ports have also increased with successful participation in ports like Mundra, Pipavav, Hazira, Gangavaram, Krishnapatnam, Dhamra, Gopalpur, etc. Leading private ports like Mundra and Pipavav have also developed ambitious expansion plans. However, the sector faces hinterland connectivity pressures, and it is important that the connectivity to ports in India is improved.

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[1] NMDP Report, March 2006

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Mult-imodal Transportation

India would also need to focus on multi-modal transport to facilitate movement of goods from inland locations to ports and vice-versa. This would require development of road and rail infrastructure, improvement in multi-modal transport, and modifications in procedural arrangements to allow smooth flow of traffic (load limits on road, etc.).

Overall, the Indian maritime sector is poised for healthy growth in line with the growth in Indian economy. This requires planning and investments by all stakeholders, including the government and the public and private sector, for developing the requisite infrastructure, improving current processes and introducing policy measures that create a conducive environment for players in the sector.

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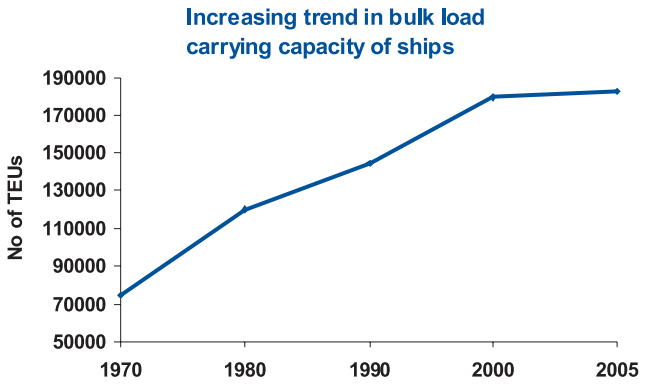
GLOBAL MARITIME OUTLOOK

Global Shipping Trends

Larger Vessel Sizes

Over the years, vessel sizes in maritime trade have increased as a consequence of the need to reduce operating costs by achieving economies of scale. Within the last five years, the average size of vessels has increased from approximately. 19,970 to 22,970 DWT. At the beginning of 2006, ships of up to 19,999 DWT, comprised approximately 75.8 percent of all merchant ships (28,700 ships of 300 gross tonne and over), compared to 74.1percent in 2002. The majority of ships in these size classes are general cargo ships. Moreover, more than 48.5 percent of the total deadweight tonnage aggregated to size classes between 20,000 - 99,999 DWT (about 9,944 ships)[2].

In the bulk segment, the new ships entering the carrier fleet in last ten years were mainly larger units with an average size of around 66,500 DWT. At the beginning of 2006, there were 1,249 bulk carriers attributable to the panamax size segment (60,000-80,000 DWT). With about 88.9 million DWT, they had a share of 26.0 percent of the total bulk tonnage. About 796 capesize bulk carriers



(greater than 80,000 DWT) had a share of 36.4 percent with 124.3 million DWT. The trend has been that the maximum size of the bulk carriers has increased steadily from 75,000 DWT in 1970's to approximately 183,000 in 2005[3].

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[2] htpp://www.rina.org.uk/rfiles/navalarchitect/grow0404.pdf
[3] Trends in Ship Sizes, Ian Buxton, University of New Castle, School of Marine Science and Technology

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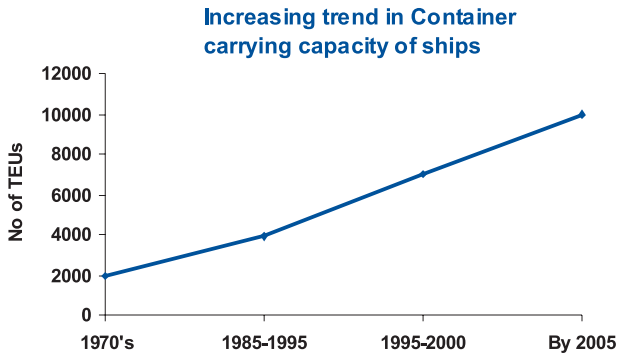
In the container segment, there has been a progressive increase in container ship sizes from the 1970s. In the mid-1970s average ship sizes were 1,000 - 2,000 TEUs. This increased during the mid-80s and early 90s when 4,000 TEU panamax vessels were ordered by most shipping liners. Subsequently, in the mid 1990s post-panamax vessels of upto 7,000 TEUs were introduced. The quest for larger ship sizes has been driven by the potential for economies of scale. By 2005, about 25 percent of the ships operating across the globe were over 4,000 TEUs in size. Analysts believe that there are no significant technical barriers in increasing ship size to up 18,000 TEUs. With recent developments in engine design, single engine vessels larger than 10,000 TEUs are now being built[4] .



[4] ISL Market Analysis 2006 Report (www.isl.org)

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Trends in Shipping Line Business

The Emergence of Horizontal Integration

There has been an increase in horizontal integration among shipping liners driven by an emphasis on cost reduction and ensuring capacity utilization. Horizontal integration has emerged in various forms - operational arrangements on vessel sharing, slot sharing, consortia, and strategic alliances.

Consortia

Consortia are agreements between liner shipping companies aimed primarily at operating joint services by means of technical, operational, or commercial coordination (e.g., joint use of vessels, port installations, marketing organizations, etc.).

Strategic or Global Alliances

Strategic alliances emerged in the mid-90s, with shipping lines seeking to provide combined services on various routes. The alliances were formed to increase efficiency and ensure better utilization of vessels through numerous arrangements. These included joint vessel-route assignments, itineraries, sailing schedules, optimizing the type and size of vessels to be employed, additions and withdrawal of capacity, ports and port rotations on a global scale, etc., such that each participant's services were fully integrated into one operating system. Participants in alliances included national and cross-traders, as well as conference and non-conference lines. Grand Alliance and New World Alliance are some of the key alliances formed by liners.

Indian shipping companies are increasingly forming alliances with private players for the full capacity use of vessels during their trips.

Increasing Importance of IT Infrastructure

Information technology (IT), especially Internet-based systems, can be used effectively to streamline and improve supply chain processes, enhance cooperation between carriers and their customers by enabling instant communications, and eliminate many burdensome procedures and regulations. Most developed countries have already implemented a variety of strategies and policies to develop their information infrastructure. In many countries, port information systems have been transformed into integrated logistics information systems through interconnected efforts with other logistics-related information systems. INTIS at the Port of Rotterdam, ADEMAR+ at the Port of Le Havre, DAKOSY at the Port of Hamburg, SEAGH at the Port of Antwerp, and FCP80 at the Port of Felixstowe, are good examples of IT systems that facilitate electronic submissions and clearance of shipping information.

The Indian maritime industry has also increased its emphasis on IT infrastructure. Initiatives such as EDI are being implemented across various ports. The government has also initiated development of PORTNET, which would integrate various port users such as shipping agents, shipping lines, etc., as well as ports with

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each other. This is expected to streamline information flow and improve process efficiency across ports. Indian customs is also developing a risk management system to expedite custom procedures. This system is being implemented initially at the Jawaharlal Nehru Port Trust (JNPT) and would be rolled across other ports subsequently.

Increased Emphasis on Value-Added Services

The provision of value-added services at ports is sometimes pivotal in ensuring lasting economic growth for the port as well as the hinterland that it services. They also act as a competitive advantage and a differentiator.

Value-added services can lead to growth of integrated services within the port as well as attract related industries around the port, thereby benefiting the hinterland as well. For example, the Port of Rotterdam has been able to attract a number of European Logistics Centers (ELC) into the Port Area. A number of foreign firms that established ELCs in the Port of Rotterdam also moved their European headquarters, call centers, and research and development facilities to Netherlands.

In India, shipping lines and other logistics operators have realized the significance of providing customers with value-added services and have started integrating their operations so that they can offer the entire spectrum of services to their clients. More private port operators and shipping lines have acquired CFSs and ICDs in the hinterland and are planning a strategic entry into the rail freight containerization business.

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Global Maritime Security Environment

Maritime security initiatives have assumed critical importance in context of the threats from terrorist activities globally. The implementation of global maritime security initiatives at Indian ports is necessary to ensure continued integration with the world shipping and port trade.

Container Security Initiative

Container Security Initiative (CSI) was driven by United States as a measure to counter terrorist attacks at its ports. Through CSI, announced in January 2002, maritime containers that pose a risk are identified and examined at foreign ports before they are shipped to the United States.

CSI consists of four core elements:

- Using intelligence and automated information to identify and target containers that pose a risk.
- Pre-screening containers that pose a risk at the port of departure before they arrive at U.S. ports
- Using detection technology to quickly pre-screen containers that pose a risk.
- Using smarter, tamper-evident containers.

International Ship and Port Security Compliance

The International Ship and Port Security Compliance (ISPS) was adopted by the International Maritime Organization's diplomatic conference in December 2002 as part of amendments to the 1974 Safety of Life At Sea convention. July 1st, 2004, was set as the deadline for the maritime community to become ISPS compliant[5]. In line with the objectives of the International Maritime Organization, the ISPS emphasizes ship-related aspects rather than the infrastructure of ports. Offshore facilities are treated as extensions of port facilities and hence those aspects of the code, which are applicable to ports, are also applicable to all offshore facilities.

Highlights of the ISPS Code:

- Enables the detection and deterrence of security threats within an international framework
- Establishes roles and responsibilities
- Enables collection and exchange of security information
- Provides a methodology for assessing security
- Ensures that adequate security measures are in place.

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[5] http://www.ispscompliance.com/

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ISPS requires ship and port facility staff to gather and assess information, maintain communication protocols, restrict access, prevent the introduction of unauthorized weapons, etc., and provide the means to raise alarms.
India is one of the first few countries along with Singapore to complete the implementation of the ISPS Code, ensuring that there will be no hindrance in Indian exports and imports. The ISPS Code has been implemented in 12 major ports, 35 minor ports, 205 ships, and 3 shipyards catering to international trade[6].

The Customs-Trade Partnership Against Terrorism

The Customs-Trade Partnership Against Terrorism (C-TPAT) was launched in November 2001 with the guiding principles of voluntary participation and jointly developed security criteria, best practices, and implementation procedures. In exchange for their security investments, C-TPAT partners receive "…reduced inspections at the port of arrival, expedited processing at the border, and other significant benefits, such as 'front of line' inspections and penalty mitigation."

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[6] http://shipping.nic.in/writereaddata/linkimages/CapterII4886079359.pd

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INDIAN MARITIME SECTOR OUTLOOK

Overview

India's goal of emerging as a modern economy depends on its ability to sustain economic growth of over 8 percent annually over the next decade. To do so, the Government of India has identified development and modernization of the country's economic infrastructure as a priority area. The development and growth of ports, in particular, is crucial as they play a vital role in the country's overall economic development. There has been a sustained rise in the volume of exports driven by a revival of growth in the manufacturing sector and improved export competitiveness. The Indian Government has fixed an ambitious target of U.S. dollar (USD) 150 billion for exports by 2008-09 to double India's share in world exports from nearly 0.8 percent to 1.5 percent. Of India's international trade, about 95 percent by volume and 70 percent by value is undertaken through the maritime route. At present, there are 12 major ports, six each on the west and east coast and about 45 non-major and private ports contributing to maritime trade[7].

Shipbuilding and Ship-Repair Industry

Overview

India has 23 shipyards, of which 7 are under administrative control of the central government, 2 with state governments, and the rest in the private sector. The present shipbuilding capacity of India is only 2,81,000 DWT, which is small according to global shipbuilding standards, and inadequate given the country's requirements[8]. Owing to lack of mechanization, productivity levels of all Indian shipyards are also low. Till recently, most Indian shipyards were incurring losses. However, the current uptrend in the global shipbuilding industry and the government's shipbuilding subsidy have led to a turnaround in this sector.

The geographical profile of the global shipbuilding industry suggests a location change over the years. Shipbuilding industries shifted from Europe to Japan, Korea, and Singapore in the 70s and then to China in the 90s. At present, Korea, (with a 35 percent share in the global shipbuilding market), Japan (35 percent) and China (16 percent) are the major global ship-building hubs. India, on the other hand, has only about 0.3 percent of the global market share. A cost-effective labor force and the availability of ancillaries has helped China capture a significant market share. India is now replicating China's success owing to a growth in domestic manufacturing sector and the improving skill profile of its labor force. However, India will need to invest 100 billion Indian Rupees (INR) over the next 10 years to acquire a market share of even three percent. Players in the industry have developed investment plans and recently, two of the large private shipyards (Bharti Shipyard and ABG Shipyard) have raised funds for their capital expansion from the stock market[9].

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[7] http://shipping .nic.in
[8] NMDP Report, March 2006
[9] NMDP Report, March 2006

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With the exponential growth in the number of ships calling on Indian ports, providing ship-repair facilities is becoming an increasingly attractive opportunity. Not only does ship-repair activity help generate substantial local jobs, it also builds the capacity of local industry. It is noteworthy that among the 326 yards in China, nearly 160 focus on ship repairs.

Areas to be Addressed

Development and Upgradation of Infrastructure

Indian shipyards enjoy a price advantage over many international ones, for building specific types of ships. However, Indian yards lack the capability to build large and modern ships. Presently, the Cochin Shipyard is the only one that has the capability to repair and develop large ocean-going ships. While the government has provided subsidies to shipyards developing ocean-going vessels for exports, it needs to ensure that the benefits reach private operators through effective procedures and policies that enable Indian players to become competitive.

Meeting International Standards for Technology, Design and Safety

China, Japan, and Korea are capable of developing highly sophisticated ships that meet international requirements. Indian shipbuilders need to improve their capability to match foreign players in ship automation and technology. Development of training programs in various academies to produce high quality talent in the shipbuilding industry is identified as a principal focus area.

Benchmarking to International Standards

The Indian shipbuilding industry must focus on benchmarking their own processes to international standards to improve efficiency, delivery times, price, and quality, which, in turn, will enhance the competitiveness of the Indian shipbuilding sector. India's costs are not competitive with prevailing international rates and the issue of time over-run also needs to be addressed for developing the ship-repair industry in India. Measures such as performance incentives, public-private partnership (PPP) models, etc., could be introduced to improve efficiency.

Support Growth of Ancillary Industry

Ancillaries need to develop along with the shipbuilding industry as they are the key competitive differentiator for establishing/relocating shipbuilding and ship-repair facilities. A cluster development approach for building ancillary capacity could be adopted.

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Shipping Industry

Overview

India has over 110 companies in the shipping sector. Major domestic players include Shipping Corporation of IndiaLtd, Great Eastern Shipping Co Ltd, Essar Shipping, and Varun Shipping Company Limited. However, India's shipping industry has not grown at a pace commensurate with its international trade. From 1990-91-2005-06, the Indian fleet's total gross tonnage grew at around 1.8 percent per annum compared to the average trade growth of about 14 percent. Consequently, India's maritime trade is dominated by foreign fleets and the ratio between foreign and Indian fleets in Indian maritime trade is 70:30. Also, the average age of Indian ships is 16.5 years as against the world average of 12.2 years. The Indian fleet is mostly deployed on international operations, which account for 93 percent of the total capacity, while coastal shipping accounts for 5.7 percent of capacity and offshore shipping the rest.

The market share of Indian shipping companies also declined due to decreasing tonnage and a fall in assured cargo on account of the liberalization of the regulatory environment and the start of shipping operations by major customers, like refineries.

Recent Initiatives

i. The government introduced a tonnage tax from FY04-05, to provide the Indian shopping industry a level playing field vis-à-vis international shipping companies and facilitate the growth of Indian tonnage. The new tax and the recent increases in trade resulted in a steady growth in Indian tonnage in the last 18 months. Indian tonnage as on June 1, 2004, was 7.05 million Gross Tonnage (GT), and it increased to 7.69 million GT as on December 31, 2004, and further to 8.32 million GT as on December 1, 2005. Dredgers have also been included in the tonnage tax regime with effect from 2005-06.

ii. Keeping in view India's position as a leading merchant navy supplier and the stiff challenge faced by India from South-east Asian countries like Philippines, China, etc., the government is considering the formation of an International Maritime University by an Act of Parliament.

iii. A high-powered steering group under the Chairmanship of the Minister of Shipping, Roads, Transport and Highways with the Union Minister of State for Tourism as Co-Chairperson has been set up for the formulation of a National Cruise Shipping Policy.

iv. A Memorandum of Cooperation (MoC) on maritime transport, science and technology was signed on April 14, 2005, between the Indian government and the Department of Transportation of the United States of America.

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Areas to be addressed

Increase in Fleet Size and Improvement in Fleet Quality

The average age of Indian ships is over 16 years compared to a global average of around 12 years. To reduce this disparity, it is crucial that Indian companies acquire a younger fleet. At the same time, Indian companies would have to increase their fleet size to gain market share. Recent government initiatives like introducing tonnage tax and improving the processes for acquiring vessels have increased shipping tonnage. However, continuous strengthening of related measures can help Indian players increase their fleet size and quality.

Need for Supporting Policies and Incentives

Indian ship owners are statutorily required to insure their fleet with Indian insurance companies for hull and machinery. The premium rates (fixed by the tariff advisory committee) have traditionally been much higher than international rates. Apart from this, the industry has been seeking revaluations of withholding tax on ECBs. The policy framework requires a modification to provide Indian shipping players a level field vis-à-vis international players.

Policy initiatives are also required to retain and forge talent. While Indians are considered to be highly qualified for sea-faring jobs, Indian ship owners face a shortage of personnel. One of the reasons is that the Indian taxation regime for companies and ship personnel imposes additional costs, making employment on Indian ships unattractive. Hence, a large number of Indian nationals work on foreign ships.

Simplification of Tax Structure

The taxation regime applicable to the Indian shipping industry comprises multiple taxes including service tax and fringe benefit taxes. These reduce the competitiveness of the Indian shipping industry. Introduction of simplified tax procedures and incentives to ensure Indian players are competitive.

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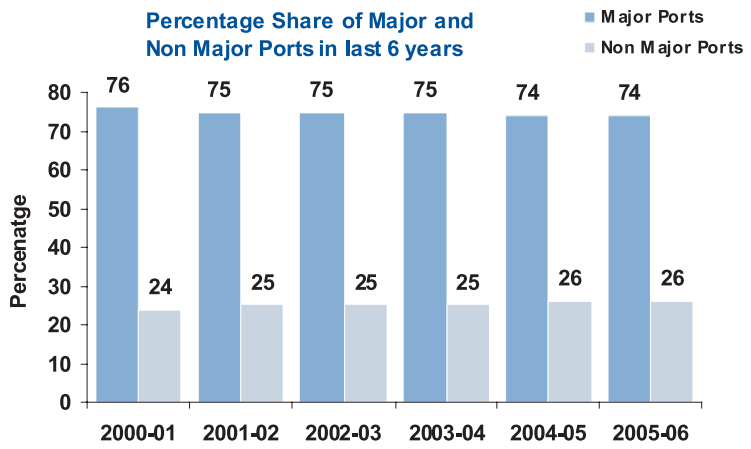
Ports

Overview

Ports in India are classified in two categories-'major' and 'non-major'. Major ports are under the control of the central government. Non-major ports are controlled by respective state governments. Central and state governments are responsible for developing, maintaining, and operating ports under their jurisdiction. Ports in India are governed by the Indian Ports Act of 1908. Major ports are also governed by the Major Ports Trust Act, 1963, with the exception of Ennore, which is the first corporatised major port and is governed by the Companies Act. Major ports are under the administrative control of the central government through the Ministry of Shipping, Roads, Transport and Highways. In 1997, the Tariff Authority for Major Ports (TAMP) was formed as the tariff regulator for all major ports. All powers for fixing tariffs in major ports lies with TAMP, but it has no jurisdiction over minor or private ports. All the conservancy powers in ports and all other regulatory functions with regard to safety, etc., are vested in the port trusts themselves.

Existing Traffic at the Ports

The total volume of the traffic handled by all Indian ports during 2005-06 was 568.93 million tonnes, of which 423.41 million tones, i.e., around 74 percent was handled by major ports and the remaining 145.52 million tonnes by non-major ports[10]. The traffic share of major ports and non-major ports during the last five years is presented as under:



During 2005-06, major ports handled a record traffic of 423.41 million tonnes with a growth rate of 10.3 percent over the previous year, which was higher than the growth in GDP. Of the total traffic handled at major ports, petroleum crude and products have the largest share of about 33 percent; iron ore, 20 percent; coal, 14 percent; containers, 14 percent; and the rest is shared by general cargo[11].

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[10] NMDP Report, March 2006
[11] NMDP Report, March 2006

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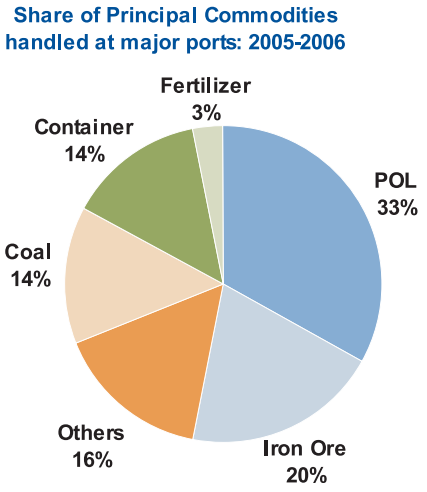
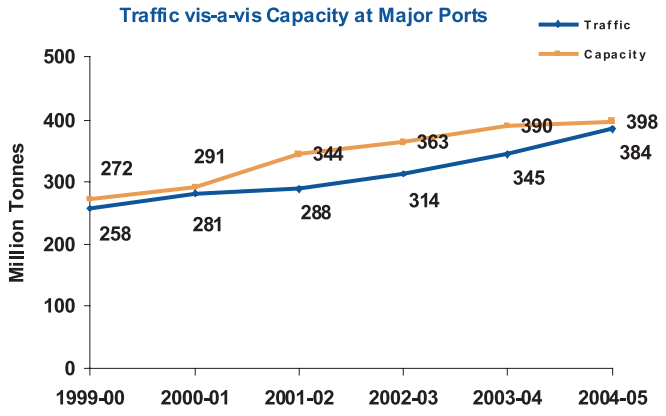


The Visakhapatnam port handles the largest cargo among all the major ports with traffic of 55.80 million tonnes, followed by Chennai with 47.2 million tonnes of cargo[12].

Ports Capacity

Till 2000-01, most ports were operating over or near the saturation levels of their handling capacities, resulting in high pre-berthing detention and turnaround time of vessels. The situation improved in 2000-01 as the port capacity of 291.45 million tonnes exceeded the cargo volumes of 281.11 million tonnes. The capacity in major ports as on March 31, 2005, was 397.50 million tones, and the traffic handled was 383.75 million tonnes[13].



However, commodity-wise capacity constrains continue to persist for iron ore, fertilizers and raw materials, coal, and containers.

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[12] NMDP Report, March 2006
[13] NMDP Report, March 2006

Traffic Growth and its Trends

The overall compound annual growth rate (CAGR) of traffic at major ports between 1951 and 2004 was 5.51 percent, whereas during the post-liberalization period, i.e., during 1991-92 to 2003-04, the CAGR has been 6.74 percent. However, in the last five years, the traffic growth at major ports has exhibited a CAGR of 10.63 percent[14].

Traffic Projections for 2014

Keeping the objective of the Maritime Policy in view, the National Maritime Development Programme (NMDP) has prepared macro-level traffic projections for the overall port sector, which includes major and non-major/private ports. These projections are based on the feedback received from major ports and their users, a number of policy papers/plan documents, trade requirements, the international scenario governing the country's exports and imports and new and expansion projects to be undertaken by the public and private sector. The broad commodity-wise traffic projections, as per NMDP, are presented below:

Commodity	Traffic in All Ports during 2003-04 (million tonnes)	Projected Traffic 2013-14 (million tonnes)	CAGR (%)
POL	182.45	290.00	4.74%
Container	51.00	251.40	17.30%
(TEUs)	(3.90)	(20.95)	(18.31%)
Iron Ore	71.35	131.50	6.43%
Coal	57.84	135.90	8.8 0%
Other Cargo	95.57	152.75	4.80%
TOTAL:	**458.21**	**961.55**	**7.69%**

[14] NMDP Report, March 2006

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Capacity Requirement

To meet the projected traffic of 705.84 million tonnes by 2013-14 likely to be handled at major ports, a capacity of around 917.59 million tonnes has been estimated[15]. The detailed break-up of the commodity-wise capacity requirement is as under:

Commodity	Existing Traffic at Major Ports during 2004-05 (million tonnes)	Existing Capacity at Major Ports 2004-05 (million tonnes)	Projected Traffic for Major Ports 2013-14 (million tonnes)	Overall Capacity requirement by 2013-14 (million tonnes)	Additional Capacity to be created by 2013-14 (million tonnes)
POL	126.44	157.35	191.2	248.56	93.71
Container	54.76	48.30	181.20	235.56	186.01
(TEUs)	(4.23)	(4.13)	(15.10)	(19.63)	(15.5)
Iron Ore	76.20	51.00	97.50	126.75	75.75
Coal	52.79	44.2	109.90	142.87	98.67
Other Cargo	73.56	92.55	126.04	163.85	73.95
TOTAL:	**383.75**	**397.5**	**705.84**	**917.59**	**528.09**

Recent Initiatives

The Indian Government has undertaken several policy initiatives for improving the Indian port sector. The investment policy developed by the government allows public-private participation in the ports sector and has been well received. Since the introduction of the policy, 13 projects with private sector participation have become operational and 4 projects are under implementation to promote modernization and development in the ports sector. These 17 projects involve an investment of INR 61.3 billion, while an additional 20 projects involving more than INR 4,4.42 billion of private investment are under consideration[16].

In addition, the ministry has also introduced a number of other policy initiatives for developing the ports sector to meet the growing demand of international trade.

i. For building and operating port terminals on a BOT basis, a comprehensive Model Concession Agreement (MCA) has been developed. The framework of MCA addresses the issues important for limited recourse financing of infrastructure projects, such as mitigation and unbundling of risks; allocation of risks and rewards; symmetry of obligations between the principal parties; precision and predictability of costs and obligations; reduction of transaction costs; force majeure conditions; and termination provisions. It also deals with other important concerns such as user protection; transparent and fair procedures; and financial support from the government. The MCA also elaborates on the basis for commercializing ports in a planned and phased manner.

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[15] NMDP Report, March 2006
[16] NMDP Report, March 2006

ii. The government has also approved the long-awaited Sethusamudram Ship Channel Project at an estimated cost of INR 2,4.27 billion. With a depth of 12 meters, the channel will enable ships up to 10 meter draft a shorter passage. This will result in savings of up to 424 nautical miles and sailing time of up to 29.9 hours[17].

iii. The Ministry of Shipping has developed the Draft National Maritime Policy with the aim of inducting modern technology and achieving increased levels of synergy and coordination in the maritime sector. The policy attempts to address issues for strengthening the sector through synergies of initiatives at the centre and state level, as well as encouraging the flow of investments into the sector, e.g., for upgrading infrastructure and modernizing facilities with respect to maritime ports, shipping, and Inland Water Transport sectors.

iv. The ministry has also initiated a business planning exercise across all major ports aimed at identifying development strategies for all major ports, hinterland connectivity requirement, and investment outlays for the ports.

New Investment Policy to help Public-Private Partnerships
The Indian Government has already announced a series of measures to promote foreign investment in the port sector as listed below:

- No approval is required for foreign equity up to 51 percent in projects providing supporting services to water transport
- Automatic approval for foreign equity upto 100 percent in construction and maintenance of ports and harbors.
- Open tenders are to be invited for private sector participation on a Build-Operate-Transfer (BOT) basis.

The Government has announced guidelines for private/foreign participation that permit formation of a joint venture between major ports and foreign ports, between major ports and minor ports, and between major ports and companies.

The measures are aimed at attracting new technology, fostering strategic alliances with minor ports to create optimal port infrastructure and enhancing private sector confidence in the funding of ports.

The guidelines permit the formation of a joint venture between:

i. A major port and foreign ports for the purpose of constructing new port facilities within existing ports, improving productivity of existing ports, and development of new port ;

ii. A major port trust and a company or a consortium of companies where ;
   - A company or a consortium of companies, selected through BOT bidding under the guidelines of private sector participa tion alliances with a major port trust for improving the viability of the scheme and/or to enhance the confidence of the private sector.
   - A company or a consortium of companies is selected under the scheme of innovative/unsolicited proposals
   - Oil PSUs/a joint venture company of oil PSUs are/is selected for oil related port facility as a port based industry.

[17] NMDP Report, March 2006

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Areas to be addressed

Streamlining the Regulatory Framework

A common refrain regarding Indian ports concerns overregulation, which leads to a delay in port-development activities. In this regard, regulations in areas such as licensing, environment and conservation, safety, quality of service, dispute resolution, CFS development, etc., may require revaluation and simplification.

Regulation of Major vis-à-vis Minor Ports

As compared to major ports, non-major ports operate with lesser regulatory oversight. The government has taken initiatives to simplify regulations. However, such disparities must be removed to create a level playing field.

Development of Modern Infrastructure

Indian ports would need to upgrade their infrastructure to meet future traffic requirements. The NMDP plan and current business planning exercises being carried out across all major ports are aimed at identifying future port requirements. The identified projects must be executed in a time-bound manner to ensure that port development is in line with market requirements.

Easing of Hinterland Connectivity Pressures

Rail capacity in India is currently constrained. With the current growth in traffic, it is necessary to develop adequate capacity for all modes of evacuation, including rail and road. Development of inland waterways and promotion of multi-modal operations is required for improving the availability and efficiency of hinterland logistics.

Role of Public Port Authority

The need for a public port authority could be considered as means to increase focus on areas such as long-term planning, infrastructure development, asset management, and regulatory functions such as maritime safety, environment protection, and fair competition.

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Hinterland Connectivity

Overview

Effective evacuation of the cargo to and from the port is critical for inter-modal networks to function smoothly. In the case of certain cargoes like bulk, railways have a major share in inland transportation. On other hand, manufactured cargo typically moves by roads because of the inherent advantages road provides to suppliers in terms of flexibility in schedules and door-to-door delivery.

In recent years, containerization of non-bulk and non-liquid cargo has increased globally as well as in India. Most manufactured cargoes and even bulk cargoes for international as well as domestic trade move in containers. In 2005-2006, some 4.5 million TEUs of containers were handled at various ports of the country[18]. As the trend of containerization increases, multi-modal transport of cargo will assume increasing significance.

Multimodalism

In India, multimodalism is still at a nascent stage, as the country has been rather slow in adopting containerization. However, with the liberalization of the Indian economy and growth in the manufacturing segment, growth in containerization has accelerated. With the increase in requirement for freight transport, the necessary impetus for growth of multi-modal transport in the country is likely to be available.

Railways

While the Indian Railways enjoy a major share of movement of bulk cargoes, given its inherent advantages in bulk transportation, it has also started targeting the rapidly growing manufactured cargo segment. Policy initiatives allowing private participation in rail container transport have attracted a large number of private players. As the number of players increase, ocean carriers and shippers would have more choice in hinterland transport options. This is expected to usher in a more competitive freight transport environment, delivering greater efficiency with consequential lower costs and increasing trade volumes.

In addition to the above, the Railways have also embarked upon an ambitious programme of capacity expansion on trunk routes and addition of new capacities. Dedicated freight corridors along the golden quadrilateral and port-rail connectivity projects are some of the key initiatives in this direction.

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[18] http://shipping.nic.in

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Roadways

Roads have enjoyed a higher modal share in cargoes that move to and from various ports in the country. An ambitious National Highway Development Programme (NHDP), involving a total investment of INR 2,200 billion up to 2012 will expand the capacity of road infrastructure and improve delivery efficiencies. Private participation in these projects is increasing, ensuring delivery commitments and service level efficiencies. The principle mode of private participation is through:

- Construction contracts
- BOT for some stretches-based on either the lowest annuity or the lowest lump-sum payment from the government.

Inland Waterways

IWT is one of the oldest economically and environmentally sustainable means of transportation. It consists of transportation through a network of lakes, rivers, canal, creeks, and backwaters. It is location-specific, and confined to regions that have waterways.

Despite a network of inland waterways spread over 14,500 km, India has not adequately exploited this form of transport. IWT contributes a miniscule 0.15 percent of the total inland cargo transportation in terms of tonne km. This slow progress can be attributed to the lack of supporting infrastructure, navigational constraints, and the need for additional governmental support.

In contrast, some of the more developed countries depend heavily on this mode of transport. IWT carries 14 percent of the cargo traffic in the U.S., while in the Netherlands it accounts for 46 percent of the traffic.

Recent Initiatives

i. The Government has announced the development of rail freight corridors and rail freight terminals through private participation. The government has allowed private players entry into rail container transport and as many as 14 players have registered for commencing operations.

ii. Steps are also being taken for restructuring and strengthening National Highways Authority of India, which is the implementing agency for the national highways programme. Institutional mechanisms have been established to address bottlenecks arising from delays in environmental clearance, land acquisition, etc. The government has laid special emphasis on traffic management and safety-related issues through the proposed Directorate of Safety and Traffic Management. It is expected that a combined set of these initiatives

should deliver an efficient and safe highway network across the country. To attract investments in the sector on a fair and transparent basis, an MCA for PPPs in national highways has been mandated.

iii. The NHDP envisages investments totaling over INR 2,200.billion by 2012[19]. This would include upgradation of various highways in India including the Golden Quadrilateral, four laning, two laning of over 40,000 km of highways, etc. Within this plan, roads leading to ports have been included for development.

iv. To provide an impetus to IWT development, the Indian government has approved the Inland Water Transport Policy, which includes several fiscal concessions, and policy guidelines for rapid development of the mode and encourages private sector participation in development of infrastructure and ownership and operation of inland vessels. IWAI is also authorized for joint ventures and equity participation in BOT projects.

v. With the objective of enhancing inland connectivity, the Indian government has declared three new National Waterways: Kakinada-Pondicherry Canal System comprising Kakinada Canal, Eluru Canal, Commamur Canal, Buckingham Canal, Kaluvelly Tank, Bhadrachalam-Rajahmundry stretch of River Godavari, and Wazirabad-Vijaywada stretch of River Krishna as NW 4; the Geonkhali-Charbatia stretch of East Coast Canal, the Charbatia-Dhamra stretch of Matai River, the Talcher-Dhamra stretch of River Brahmani, and the Mangalgadi-Paradip stretch of Mahanadi Delta as NW 5, and Karimganj-Lakhipur stretch of River Barak as NW 6[20].

Areas to be Addressed

Higher Transaction Costs

The present logistics systems are inadequate for increasing traffic due to the lack of capacity on some segments of the logistics chain. This has adversely affected the development of true multi-modal transport value chains, resulting in higher transaction costs for Indian shippers/consignees. The logistics cost as a percentage of GDP stands at 13 percent in India compared to 8.7 percent in the U.S., 10 percent in Europe, and 11 percent in Japan. This indicates the inefficiency and higher cost of logistics in India.

To address the high costs, the Indian government has already started implementing several schemes to increase the capacity of railways. Axle loads are being increased on several routes so that more loads can be carried per wagon. Double stacking has been allowed on many sections subject to feasibility.

[19] National Highway Development Programme Report
[20] http://iwai.nic.in/

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Infrastructure Development of Rail and Road

Given the increasing traffic at Indian ports, it is important that road and rail connectivity measures are undertaken. The government has undertaken the development of dedicated freight corridors, port connectivity projects, and the NHDP. Besides new projects, there is also a need to upgrade current infrastructure to improve the load-carrying capacity and quality of roads as well as the capacity of rail to match future traffic. Early completion of various projects in the rail and road sector is crucial to meet the heavy traffic projections for future.

Facilitative Measures to Streamline Processes

Trade facilitative measures such as customs and port procedures, equipment, connectivity to hinterland, and EDI need to be implemented expeditiously at all Indian ports to ensure a streamlined end-to-end process. The government has already taken several initiatives to enhance the IT infrastructure of major ports. However, more emphasis needs to be given to time-bound completion of such initiatives. This would help in expediting processes in the vicinity of the port and thereby, improving ports throughput.

High Switching Costs

The cost of switching from one mode of transport to other modes of transport is high at present. This is especially relevant in case of inland waterways where access to waterways increase IWT costs. In such a scenario it is important that support is extended to IWT as it can help in reducing the traffic burden on rail and road.

Navigational Hazards Inhibit Growth of IWT

Navigational hazards further complicate the situation for IWT. Most waterways suffer form shallow water, narrow channel widths in the dry season, siltation, bank erosion, and inadequate navigational aids, which prevent vessels from continuously plying the waterways. If clear channel markings and right navigation are not provided, IWT can be prone to accidents.

Poor Infrastructure at Inland Waterway Terminals

The absence of support infrastructure like surface road links and properly equipped terminals and warehouses to facilitate the smooth transit of cargo has been a major constraint in India. Mechanical handling facilities are needed at riverine terminals which need to become cargo oriented to reduce turnaround times. Storage facilities are needed so that more shippers can use the IWT to transport their goods. Moreover India has only 400 IWT vessels in the private and public sector, which is not sufficient to meet the demand[21].

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[21] http://iwai.nic.in/

Human Resource Development

Due to the high quality of training imparted to maritime personnel, India has always been regarded as a major source of skilled manpower for world shipping. India has around 150 training institutes with 4 in the public sector and around 146 in the private sector, capable of producing 11,164 seafarers (4,575 officers and 6,589 ratings) annually.

Recent Initiatives

Recruitment and Promotion

To facilitate mobility of manpower from one port to the other, appointments at senior levels will be effected through a composite method where eligible officers from all major ports fulfilling the criteria would be considered. Recruitment and promotion rules of such appointments shall also be standardized.

Incentives

To improve the efficiency of ports, the government has allowed incentive programs to be implemented by ports. Under these programs, the performance of port officers/personnel would be monitored by respective ports regularly and incentives like awards/mementos/remuneration for each year would be awarded. Incentives programs have been undertaken at various ports. The incentive programs initiated for crane operators at JNPT has led to an improvement in productivity parameters.

Dock Labor Boards

To enable interchangeability of labor the government has introduced the Dock Workers {Regulation of Employment (inapplicability to Major Port Trusts)} Act, 1997, which provides for merger of Dock Labor Boards; it has been implemented by most ports.

Training

Training programs for port officers and employees have also been identified as important under a recent initiative. It is proposed that there would be induction/foundation courses for new entrants and departmental promotees. The curriculum of the training program would be designed to cover the multiple activities carried out at a port. Refresher courses would also be conducted at regular intervals to keep pace with the latest developments. Successful completion of training courses would be made mandatory for promotions. Training institutions will be encouraged to collaborate with reputed counterparts abroad for upgrading skills of both trainers and trainees.

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Areas to be Addressed

Calculation of Productivity Linked Reward

The present scheme of payment of productivity linked reward is based on certain productivity parameters calculated on an all-India basis. The payment is made out of the resources of the port trusts and each major port trust is an independent entity. So the scheme may need to be relooked at, based on productivity parameters of individual port trusts.

Retention and Training for Personnel

While training has been identified as a focus area by the government, it is also necessary to address the need for training for special skills in areas where ports face manpower shortage. This includes training for crane operators, pilots, VTS (full form) operators, etc. Incentives should be provided to ports to invest in training infrastructure such as simulators, etc. Plans should also be developed to retain key staff such as pilots, IT personnel, VTS operators, etc.

Conclusion

India's maritime sector is witnessing promising growth, which is reflected in the increase in the demand for infrastructure and services across the entire value chain comprising shipping, ports, ship-building/repair, and logistics. While this growth has thrown up bottlenecks in infrastructure and service provisioning across the sector, it has also opened up opportunities in each segment. Therefore, it is critical to pursue comprehensive measures at the policy, administration, and project level in each segment, so that bottlenecks are addressed and opportunities are capitalized upon, thereby ensuring that the growth momentum is sustained.

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List of Abbreviations

BOT	Build Operate Transfer
CAGR	Compounded Annual Growth Rate
CFS	Container Freight Station
CONCOR	Container Corporation of India
CSI	Container Security Initiative
C-TPAT	Customs-Trade Partnership against Terrorism
DWT	Dead Weight Tonnes
ECB	External Commercial Borrowing
EDI	Electronic Data Interface
ELC	European Logistics Centers
EXIM	Export-Import
GDP	Gross Domestic Product
GESCO	Great Eastern Shipping Company
GoI	Government of India
GT	Gross Tonnage
HR	Human Resource
ICD	Inland Container Depot
IMO	International Maritime Organization
ISPS	International Ship and Port Security Compliance
IWAI	Inland Waterways Authority of India
IWT	Inland Water Transport
JNPT	Jawaharlal Nehru Port Trust
MCA	Model Concession Agreement
MOC	Memorandum of Cooperation
NHAI	National Highways Authority of India
NHDP	National Highway Development Programme
NMDP	National Maritime Development Programme
POL	Petroleum, Oil and Lubricants
PPP	Public Private Partnership
PSU	Public Sector Unit
R&D	Research and Development
SCI	Shipping Corporation of India
TAMP	Tariff Authority for Major Ports
TEU	Twenty Feet equivalent Unit
VTS	Vessel Traffic Service

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the growth of industry in India, partnering industry and government alike through advisory and consultative processes.

CII is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. Founded over 111 years ago, it is India's premier business association, with a direct membership of over 6000 organisations from the private as well as public sectors, including SMEs and MNCs and indirect membership of over 98,000 companies from around 342 national and regional sectoral associations.

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