

A White paper  
on  
**Seaport: Challenges and Issues  
in India**



by



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### Executive Summary

Maritime Transport, a key constituent to the trade and economic growth in India, contributes 90% in terms of volume and 77% in terms of value. The current trend is to outsource to India and China, and China upgraded their ports at greater extent to cater this outsourcing potential.

In the Indian scenario, though there is an impressive growth of container traffic of over 15 per cent per annum over the last five years, this is far lesser compared with International trends. Though the turnover time and pre – berthing time came down further from 3.7 days in 2002 – 03 to 3.5 days in 2003 – 04, and from 6.9 hours in 2002 – 03 to 5 hours in 2003 –04 respectively, Indian ports are still a long way to go to reach the world standard. India plays a marginal role in the export of maritime transport services with a less than one per cent share of world market. While the capacity has increased, the infrastructure needed to support has not increased. For example, JNPCT and NSICT are facing capacity constraints corresponding to their volume growth.

The growth in traffic has exceeded the growth in capacity leading to congestion and low productivity. Low-level productivity and inefficient process and procedures make the Indian Maritime sector unattractive in the eyes of global players. There are various bottlenecks for the Indian Ports in the form of Insufficient Infrastructure, Poor Logistics, Primitive Technology, Cumbersome Regulation Systems and Plaguing Labor Issues.

The trade growth in India is inevitable as it is ranked one among the top five manufacturing outsourcing destinations in the world. Unless the infrastructure, facilities and processes in Indian ports are upgraded to the world standard, it would be a huge loss of trade potential for them. Realizing this and acting faster is the need of the hour. Both public and private sector participation should be encouraged to modernize the Indian Infrastructure. Single window clearance, multi modal operations, and an efficient custom process would increase the competitiveness of Indian ports in the global maritime market.



### Introduction

Maritime Transport is a key constituent to the trade and economic growth in India as it shares 90% of trade in terms of volume and 77% in terms of value. India has 12 major and 184 minor / intermediate ports spread across the vast coastline of 7517km. In 2003 – 04, cargo handled by major ports registered a 9.9 per cent increase, from 9.0 per cent in 2002-03. As of today, the 12 major ports handle about 76 per cent of the traffic. The container traffic has registered an impressive growth of 15 per cent over the last five years.

Though the turnover time and pre – berthing time came down further from 3.7 days in 2002 – 03 to 3.5 days in 2003 – 04, and from 6.9 hours in 2002 – 03 to 5 hours in 2003 – 04 respectively, Indian ports still a long way to go to reach the world standard. The Freight cost rose by 15 per cent to 115 per cent per tonne across different ports in India in the last few years. The lack of modernization, infrastructure not in line with volume growth, inadequate productivity and equipment, inefficient government procedures and regulations, and lack of hinterland connectivity constituent to the poor performance of Indian ports. Consequently, Indian ports are less attractive than their counterpart in China, who has upgraded its ports and grown at an amazing speed.

In the light of this, this article would analyze the bottlenecks that Indian ports are facing in the competitive, globalized and deregulated market environment, where the speed and economic of scale are the key mantras to sustain.

### World Maritime Trade

As per UN Report on Maritime Transport in 2003, World Maritime trade increased by 0.8 per cent in 2002, reaching 5.88 billion tons of loaded goods. Asia had by far the largest share of the world tonnage of seaborne loaded goods – 37 percent followed by Europe and America with 25.4 percent and 21.2 percent respectively. Africa and Oceania were representing only 8.8 per cent and 7.6 per cent respectively of the total.



On contrary, the preliminary information available for 2002 indicates that world seaborne container trade increased by 8.4 per cent to 75.8 million TEU. Container flows in the dominant leg, Asia to North America, increased by more than 8 per cent in 2002, while in the opposite westbound direction, flows increased by about 1 per cent, resulting in a widening imbalance of container flows. This trend clearly reflects the impact of outsourcing to Asia, especially to China and India, and it is expected to grow further in the future. The Chinese ports have upgraded their facilities, procedures / processes and equipments to cope up with the volume growth from Chinese market to US and Europe.

### **India Maritime Market**

The 12 Indian major ports handled 344.5 MT cargo volume in 2002 - 03 with a increase of 9.9 per cent from 9.0 per cent in 2002 – 03. As of today these major ports handle about 76 per cent of total traffic. The dry and liquid bulk cargo constituted about 80 per cent of total traffic and the remaining by the general cargo including containers. There has been an impressive growth of container traffic of over 15 per cent per annum over the last five years. However, it is still a long way to go when compare with the largest international ports. For example, JNPT handled only 2 million TEUs when compare with other international ports like Hong Kong (19.1 million TEUs) and Antwerp (4.8 million TEUs). Though Inland water transport has a great potential in the future in India, today it accounts only 0.15 percent. There has been a significant growth of traffic handled by minor ports in India when compare to traffic of 108 MT in 2003 –04 from 27.83 million tonnes in 1996 –97.

### **Indian Ports current scenario**

The Indian economy has made significant strides over the last two decades with annual average growth measured by GDP rising from a low level of 2.9 per cent in the seventies to 5.8 per cent in the nineties. Though the real GDP in 2003-04 is estimated to have grown by 8.2 per cent, India plays a marginal role in the export of maritime transport



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services with a less than one per cent share of world market. Indian Maritime sector is less attractive due to its low level productivity and inefficient process and procedures when compare to its counterparts like China and Sri Lanka.

### Infrastructure Bottleneck

Indian ports are plug with the lack of capacity and low productivity. The high turnover time and pre berthing time, and freight costs make Indian ports less competitive. Though the turnover time and pre – berthing time came down further from 3.7 days in 2002 – 03 to 3.5 days in 2003 – 04, and from 6.9 hours in 2002 – 03 to 5 hours in 2003 –04 respectively, Indian ports still a long way to go to reach the world standard. The turn over time in Singapore and Hong Kong ports is 6 to 7 hours .In a recent paper, Limao and Venables (2000, henceforth LV) show that poor infrastructure accounts for more than 40% of estimated transport cost. They also show that raising transport costs by 10 percent reduces trade volume by more than 20 percent. The shipping cost could be reduced up to 12 percent by improving the port efficiency. For instance, increasing turnover efficiency and customs process time would greatly reduce freight costs, and increase customer service.

**Performance Indicators for Indian Ports**

Name of the Port	Avg. pre- berthing time (hrs)		Average turnaround time	
	2002-03	2003-04	2002-03	2003-04
<b>Haldia</b>	3.60	3.43	3.02	2.84
<b>Mumbai</b>	3.60	4.64	5.06	4.07
<b>Jawaharlal Nehru</b>	11.75	8.24	2.28	1.85
<b>Chennai</b>	4.30	0.91	3.70	4.85
<b>Cochin</b>	1.67	4.02	2.19	2.22
<b>Vizag</b>	3.12	1.18	3.72	3.33
<b>Kandla</b>	16.80	11.06	5.94	5.06
<b>Mormugao</b>	19.92	26.71	1.94	4.47
<b>Paradip</b>	10.32	5.14	3.37	3.43
<b>New Mangalore</b>	4.41	3.07	2.37	2.35
<b>Tuticorin</b>	7.20	1.60	3.59	2.52
<b>Ennore</b>	1.56	1.66	2.22	2.11

Source: Ministry of Shipping &

<http://indiabudget.nic.in>

**Table 1**



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The main fundamental flaw behind this story is that the port development projects, in the past, have not taken into consideration the growth in traffic and, as a consequence, the growth in traffic has exceeded the growth in capacity leading to congestion and low productivity (Ref. Table 1).

Total Capacity and Traffic Handled at Major Ports  
(In Million Tonnes)

Year	Capacity	Traffic Handled	Capacity Utilization (%)
1995 – 96	181.2	215.3	119
1996 - 97	219.5	227.3	104
1998 – 99	239.5	251.7	105
1999 - 00	254.4	272.0	107
2000 -01	291.0	281.0	91

Source: Regional Seminar on  
Liberalization of Maritime Transport Services  
under WTO GATS

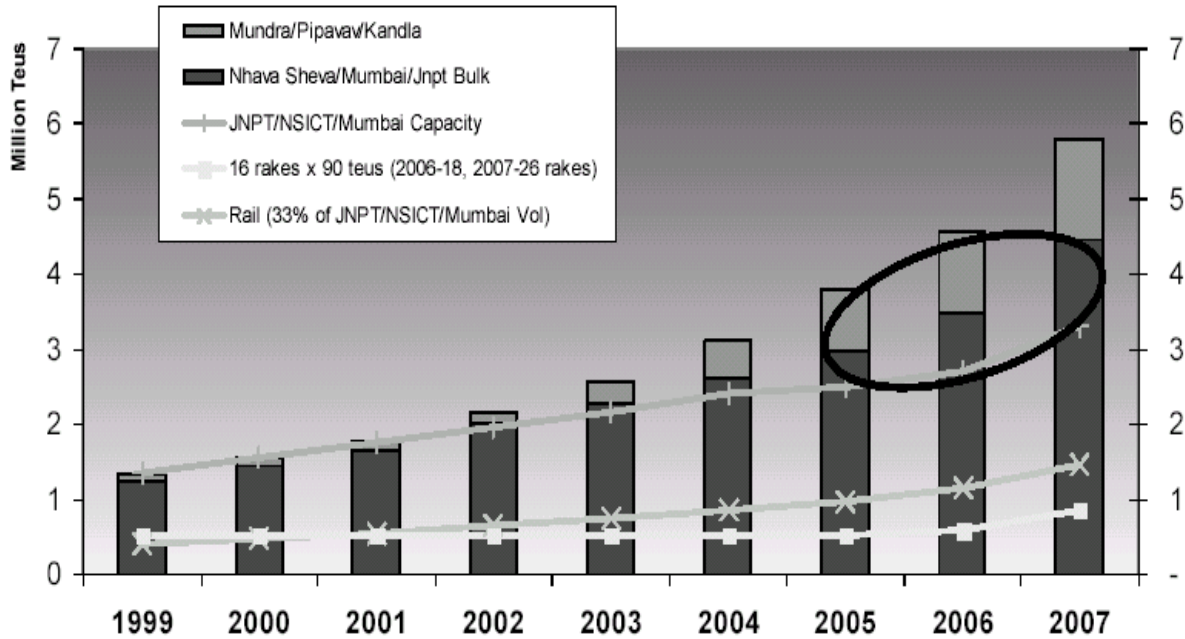
**Table 2**

This is the same case as well at some of the leading container terminals in India. For instance, the Jawaharlal Nehru Port (JNP), once a jewel in India's crown, is now constrained with low productivity and inefficiency due to inadequate infrastructure to handle a huge volume growth, which has gone up to 16 percent over the previous year, and frequent labor strikes. It is a highly sensitive issue given the fact that JNPT shares more than 50 percent of Indian container market.





## Capacity and Infrastructure



Source: [http://www.aisaship.com/USA-ITA\\_Seminars/bmoore.pdf](http://www.aisaship.com/USA-ITA_Seminars/bmoore.pdf)

**Figure 1**

The above figure clearly reflects the capacity constraints that JNPT and NSICT are facing corresponding to their volume growth. In 2002 – 03, JNPT handled roughly 2 million TEUs.

### Performance Indicators for Container Terminals in India

	JNPT	CHENNAI	Kandla	Kolkata
<b>Avg. Pre berthing time on port account (Hours)</b>	8.44	0.68	1.98	0.08
<b>Average turnaround (Days)</b>	1.62	1.36	2.18	3.03

Source: Ministry of Shipping &

<http://indiabudget.nic.in>

**Table 3**



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The exponential growth of container traffic and economic of scale led many shipping companies to opt for larger vessels. Many shipping companies already have placed orders for 7000 to 9000 vessels. Asian Countries like China, Malaysia and Srilanka have invested heavily on port and port related intermodal infrastructure capable of accommodation the latest transport and cargo transfer technology as well as the largest vessel size for their trade. This has increased the efficiency and performances of their ports at a greater extent, which has resulted in Indian ports being served mainly by small vessels rather than by larger and more cost efficient vessels, which adds costs and delays to customers.

### Infrastructure and Productivity Benchmark

#### Port Infrastructure Benchmark

	<b>JNPT</b> (JNPCT & NSICT)	<b>Kandla</b>	<b>Jbel Ali</b>	<b>Laem Cha Bang</b>	<b>Singapore</b>	<b>Busan</b>
<b>Container Terminals</b>	2	1	6	5	3	6
<b>No. of Berths</b>	5	4	10	5	20	31
<b>Draft (m)</b>	12	10	12	14	17	15
<b>Volume – '000 TEUs</b>	2,000 (Roughly in '03)	126	4,194	1,10	16,800	9,436
<b>Max.Size of Vessels (DWT)</b>	50,000	30,000	80,000	50,000	150,000	50,000

Source: Secondary Data

**Table 4**



**Port Productivity Benchmark with China Port**

	JNPT	Chennai	Shanghai	NSICT
<b>Avg. Moves/ hour</b>	<b>17*</b>	<b>25*</b>	<b>28**</b>	<b>22*</b>

<sup>1</sup>Source

**Table 5**

Only around 15 per cent of the total container traffic for India is shipped directly to Indian ports (source: CRIER, Working Paper No 76). For the rest, Indian ports are largely served by feeder vessels from the transshipment hubs of Colombo, Singapore and Dubai. The feeding of the country's export and import traffic through transshipment ports not only results in a delay of at least three days but involves an additional shipping cost of US\$ 175 to US\$ 200 per TEU. The ultimate burden of these costs is borne by the Indian consumer and exporters.

### **Logistics Bottleneck**

The port productivity and efficiency also depend upon the quality and reliability of road and rail connectivity, and adequate storage and handling facilities. The lack of expressway connectivity between major ports as well as industrial clusters, and high fuel cost make hinterland transportation inefficient and slow. Also the container freight stations and business need to be organized efficiently through good management practice in space utilization, adoption of technology for track and trace, etc.

<sup>1</sup> \* Hindu News Paper on Nov '04

\*\* UNCTAD Maritime Transport Review Report 2003



### Technology Bottleneck

The technology innovations and information technology have changed the way goods being transported between international port terminals. Many international ports like Rotterdam, Hong Kong, PSA and Antwerp have implemented end-to-end solutions to streamline the flow of information between their trading partners. Though all major ports in India have implemented (not fully) EDI (Electronic Data Interchange) and online tracking systems, the information exchange amongst the major trading / operational partners, such as customs, ports, inland terminals and shippers involved in container trade is limited.

For example, only a few ICDs/CFSSs have implemented IT and that too in limited percentage. And the custom MIS systems are not based on EDI standards; hence the computer interface between the ports and customs is also not possible. Thus, an exporter has to deal with different agencies with different formats for processing of documents and clearances. What Indian ports should need is a single window clearance under one roof to optimize the process time and transaction costs. A Study conducted by CII estimated that if computer to computer communications between vessels operators, ports, shipping agencies, custom authorities, custom brokers, freight forwarders, consignee is established through EDI, the efficiency of Indian ports would increase by 20 percent.

### Regulation Bottleneck

The custom procedures and regulations, and lengthy documentation process are the other areas where Indian maritime sector lags the pace when compare with its counterparts like Singapore, China, and Malaysia. At all international ports, the modernized custom administrations have adopted a highly selective procedure for examinations of containers and about 95 percent of containers are



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allowed clearance without any physical examinations. Where as in India, 10 percent of the contents of each box should be checked and verified. It causes delay, and adds a high transportation costs.

The cost of moving containers through Indian ports is much higher than other regional ports like Bangkok, Singapore, etc. A World Bank study found that the cash outlay of moving an import container through any major Indian port is around US\$500-520 per box when compare to US\$330-350 in foreign ports of region. For the export containers, the Indian cash outlay is US\$420 compared to US\$340 at comparable foreign ports (source: CRIER, Working Paper No 76).

### Document Benchmark

Activity	India		Singapore		China		Indonesia	
	No Documents	No Days	No Documents	No Days	No Documents	No Days	No Documents	No Days
Removal of goods from plant	7	1	2	0	3	0	2	0
Customs Clearance	3	1	1	1	1	1	1	1
Export Benefits Application	5	5						
Export benefits Verification	2	10						

Source: ETIG Knowledge Forum

**Table 5**

### Labor issues

Major Indian ports are bogged with frequent labor strikes, consequently, congestions, inefficiency and lower productivity at their respective ports. The port



labor federations and unions are very powerful in India. Still, the old incentive schemes and other service conditions are followed at all major ports. For example, in the 1950s incentive schemes were introduced wherein the worker whose output exceeded the prescribed datum line was paid at a higher rate for the extra output. But over the years, many ports have modernized and adopted sophisticated cargo handling equipments but these datum lines have not been changed yet.

For example the recent strikes (four different strikes in a month) at JNPCT brought its operations standstill for a week. Thousands of boxes were stranded at the terminal as well as yards. Similarly, operations at NSICT came to a naught for almost three days, after P&O Ports turned down a demand for ex-gratia payment by over 500 employees. Subsequently, the labour strike at JNPT's import CFS, currently operated by the state-run Central Warehousing Corporation (CWC), affected the landlord port's operations partially. In both instances, the striking workers were demanding ex-gratia payment or productivity-linked incentive, before Diwali. But the terminal operator claimed that as per the agreement, there is no provision for an ex-gratia payment. Few months back, the same situation happened at Chennai Container Terminal Limited (CCTL) as well.



### Recommendations

- Public and Private participation is the only solution for the financial bottleneck that Indian ports are facing to modernize their facilities and infrastructures to the world standard level. Though government encourages the private sector participation in development and operation of port infrastructure, the process and procedures are time consuming and it is not in a pace with a trade growth. Hence government should streamline the privatization processes and procedures and ensure the level playing field among the terminal operators. Otherwise, India maritime sector would lose its trade potential to its neighboring ports such as Sri Lanka, China, Malaysia, etc., which already have achieved the world standard.
- Government should link all major ports and Industrial cluster places with expressway to ensure a streamline movement of goods between different entities. Port Authorities should introduce a single window clearance and a single paper clearance for pre / post shipment procedures and benefits. EDI should be implemented fully and should be integrated with other trading partners, and should ensure 24 × 7 Operations and online customs clearance.
- Government should modernize the existing CFSs / ICDs Facilities and increase its capacity to cope up with a pace of trade growth.
- Various stakeholders including Government should strive to create a congenial work environment among labor, operators, authorities and so on and develop standard code of conduct to all ports, which would reduce the misunderstandings between terminal operators and labor.



### Conclusion

Indian Maritime Sector is regarded as a less competitive and attractive in the Maritime World due to its poor productivity, inefficient process and procedures, less chances for hub status due to inadequate drafts and away from international sea routs, and high freight cost. However, the growth of trade, in India, is inevitable due to its strong economic growth, globalization, and deregulations. India is ranked one among the top five outsourcing destinations in the world as well. India would lose this exponential trade potential to its neighboring ports, who are competitive and efficient, unless government and port authorities speedy up their process and procedures to upgrade ports infrastructure, facilities and process to the world standard.

Also Indian ports should improve port service quality and intermodal infrastructure, which can efficiently serve the containerized foreign trade from door to door in order to make Indian ports more attractive and cost effective to its customers.





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