CURRENT STATUS OF LOGISTICS IN INDIA

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MOTS-CLEFS
Logistique, coût, route, rail, mer

1. COST OF LOGISTICS

A World Bank Study conducted recently says that the Indian logistics cost is one of the highest in the world. This study shows that as far as developing countries are concerned, these costs are 6 % to 8 % of the total value of goods. In China the cost is estimated at 10 % of total value of goods. By comparison, the cost of logistics in India is 14 % of the total value of goods. The freight costs for rail and road are quite high, for example:

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost (cents/km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>5.5</td>
</tr>
<tr>
<td>Japan</td>
<td>3.7</td>
</tr>
<tr>
<td>Canada</td>
<td>2.0</td>
</tr>
<tr>
<td>India</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Table 1: Comparison of cost of logistics between different countries

The following three factors are primarily responsible for the high cost of logistics in India:

Congestion cost

Congestion at ports, inland and roads have rapidly increased – thus directly augmenting logistics cost and also resulting in overall high inventory cost as delivery time increases.

Transaction cost

Administration costs including insurance and government taxes continue to be very high. The logistics cost could rise further due to supply and demand factors.

Demand and supply factors

The continued rise in container traffic is leading to increased traffic congestion in the rail and roads network, as exports and imports are growing 22 % to 25 % annually.

The high cost of terminal development along with relatively latest innovation in finalizing strategies result in only moderate pace in the supply chain addition. There is also lack of proper road infrastructure in the Class-B & Class-C towns. The lack of specific logistic professionals is also hampering the growth.

2. RAIL LOGISTICS

The domestic cargo container movement is still at a very initial stage in India. The road transport is mainly in the hand of highly unorganised players. Further rising fuel prices and axel load reduction are making road transport uneconomical over a long haul. There is a movement of 30 percent of exim containers by rail, and the remaining is transported by road. Till 2005 CONCOR was a sole service provider for rail transportation of containers.

2.1 Container Rail Logistics – SWOT

Strengths

There is a consistent growth over a CAGR of 25 % with a potential of 100 mmt in the year 2005-06. A total of 1.7 MTEUs were rail borne, out of which the North contributed 0.71 MTEUs and the West 0.23 MTEUS.
Weakness

This is a highly capital intensive business and the cost of rolling stock is around Rs.13 crores/rail. The cost of operating an inland container depot is around Rs. 100 crores. The entire infrastructure such as yard/containers/signals are still provided by one service provider namely Indian Railways.

There is a long gestation period and the project may take sometimes up to 10 years to achieve break even. There is high concentration of traffic at selected port/hinterland. 78% of the total container cargo is handled by west coast ports. 70% of total traffic at the west coast is handled by a single port, i.e. Jawaharlal Nehru Port Trust (JNPT). 60% of the traffic of the west coast moves to the northern hinterland, which leads to a heavy congestion along the routes.

Opportunities

With the growth of containerization due to growing GDP, there exists huge potential in the form of a largely virgin market. With the congestion at the existing road linkage ICDs and limited scope for excavation, there is an opportunity for development of competing facilities. There is a potential for running double stacked trains with the lower haulage charges and better utilisation of rolling stock and track capacity.

Threats

This industry is highly dependent on external agencies such as Indian Railways, port terminal operators and shipping lines. There are still several unresolved issues on operational matters, such as stability of rakes, service guarantee and dedicated freight corridors. With regards to double stacked operations due to the lack of a developed infrastructure, this may take time to take off in a larger way. There exists fragmentation on volumes due to multiple operations and there is no control on haulage cost.

2.2 Potential for domestic container movement

Due to the expected growth in the trade of readymade garments, textiles, handicrafts, processed an packed foods etc., a greater demand for containerization is anticipated. Further developments of larger SEZs and industrial parks is likely to boost the industrial development in the country. The additional container handling capacity would result in a higher penetration of containers in the break bulk cargo segment, thus helping container trade to grow further. Private container trains would also assist in providing sufficient hinterland connectivity for ports, thus facilitating handling increasing volumes of container traffic.

2.3 Inherent advantages of the rail container transport

i) Lower transportation cost
ii) Higher reliability
iii) Relatively safer and secure
iv) Very environmentally friendly
v) Reduced accidents.

As can be seen from the graph above, the number of accidents in rail traffic during 2004 are 2.34 lakhs as compared to 4.29 lakhs in road transport – which is far less in comparison.

2.4 Dedicated Freight Corridor

This corridor will enable the rail infrastructure to carry very high levels of freight leading to a reduction in unit cost of transportation and inventory. This will also achieve greater customer satisfaction an increase the Indian Railway’s share in the freight market. This shall also provide increased throughput by higher axel loads increasing the moving dimensions, track loading density, improve pay load ratio.

2.4.1 Initial routes

Rites, which prepared the initial feasibility report, has been commissioned to prepare detailed plans for two main corridors. These are aimed at easing capacity constraints on the so-called Golden Quadrilateral routes linking the metropolitan regions of New Delhi, Kolkata, Mumbai and Chennai, which at present carry around 80% of IR’s traffic.
• The 1.493 km double-track western corridor will run from Jawaharlal Nehru Port in Mumbai via Ahmedabad, Palanpur, Phulera and Rewari to Dadri in Uttar Pradesh, close to New Delhi. This will handle the rapidly-growing container traffic between the ports of Gujarat and Maharashtra and the hinterland in northern India, cutting the Mumbai - Delhi time from 60 to around 36 h. There will be a feeder route to serve the container depot at Tughlakabad.

• The 819 km double-track eastern corridor between Sonnagar and Khurja runs parallel to the existing Howrah - Delhi main line via Mughalsarai, Fatehpur and Etawah. Bypasses are planned around the urban areas at Allahabad, Kanpur, Tundla, Hathras and Aligarh, and the corridor will be grade-separated from intersecting branch lines.

• A single-track extension of the eastern corridor will run to Ludhiana in Punjab via Khurja, Meerut, Saharanpur and Ambala. Consultants are currently examining the technical and economic feasibility of extending the route to Gomoh and the ports in western Bengal.

• The western corridor will also have a feeder route to Dandarikalan container depot near Ludhiana, running via Rewari, Hisar and Jakhal.

• A new line is to be built between Rewari and Dadri to bypass the congested Delhi metropolitan area.

2.5 Double Stacked Containers

The ports in India handle around 5 MTEUs in 2005-06. The number of trains required will go up from 25 to 137 per day assuming a 30 % rail share. By aiming at a 50 % rail share, 225 trains/day will be required. This magnitude cannot be handled with the regular practice. For increasing the rail share, the haulage cost should come down. The double stacked containers can also match throughput for larger ships, thus leading to lower turn around time for the vessels. The table showing the savings achieved due to double stacked containers is given below this page.

A comparative table between the railways in India, Australia, USA, Europe is as on next page.

It can be seen from Table 3 that Indian Railway carries 450 kg of wagons dead weight for every 1000 kg of freight carried, compared to only 170 kg in the US.

<table>
<thead>
<tr>
<th></th>
<th>2005-06</th>
<th>2007-08</th>
<th>2009-10</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected TEUs</td>
<td>200.959*</td>
<td>326.671</td>
<td>483.557</td>
<td>1,239.285</td>
</tr>
<tr>
<td>No of trains with SSC</td>
<td>6.5</td>
<td>10.5</td>
<td>15.6</td>
<td>39.9</td>
</tr>
<tr>
<td>No of trains With DSC</td>
<td>3.4</td>
<td>5.6</td>
<td>8.3</td>
<td>21.2</td>
</tr>
<tr>
<td>Saving in rakes 17 % extra transit time for DSC trains</td>
<td>7.4</td>
<td>12.0</td>
<td>17.8</td>
<td>45.6</td>
</tr>
<tr>
<td>Saving in cost of rakes ( Rs. In Crs.)</td>
<td>88.7</td>
<td>144.1</td>
<td>213.3</td>
<td>546.7</td>
</tr>
<tr>
<td>Saving in locos assuming 17 % extra transit time</td>
<td>2.5</td>
<td>4.0</td>
<td>5.9</td>
<td>15.1</td>
</tr>
<tr>
<td>Saving in expenditure on loco account in Rs Crs.) / annually</td>
<td>1.20</td>
<td>1.95</td>
<td>2.88</td>
<td>7.39</td>
</tr>
<tr>
<td>Saving on account of maint of rakes in Rs Crs. / annually</td>
<td>4.43</td>
<td>7.21</td>
<td>10.67</td>
<td>27.34</td>
</tr>
<tr>
<td>Saving in fuel in Crs of Rs</td>
<td>9.1</td>
<td>14.8</td>
<td>22.0</td>
<td>56.3</td>
</tr>
<tr>
<td>Saving in crew in Crs.of Rs.</td>
<td>2.4</td>
<td>3.8</td>
<td>5.7</td>
<td>14.6</td>
</tr>
<tr>
<td>Total saving in revenue Expenditure</td>
<td>17.13</td>
<td>27.85</td>
<td>41.22</td>
<td>105.65</td>
</tr>
</tbody>
</table>

*Actual figure is Nil because no movement started till February 2006. There was negligible movement in March 2006.

Table 2: Savings achieved due to double stacked containers
2.6 Scheme of private sector participation in the railways

In this scheme of private sector participation in the railways which has been announced in February 2006 by the Indian government, the Indian Railways will provide the track, locomotive, signal, train crew for running container trains. The train operator is to procure wagons and his own terminal. He can also use other terminals. The lane for the terminal will also be made available. The maintenance of the wagons will be done by the railways. Railways will collect the train haulage charges. Train operators shall also be free to charge their own tariff from the customer.

Even though the rail logistics sector is opened for the private sector, following challenges will have to be met by this sector:

- Procurement of the wagons, ICD, trained manpower, monitoring machinery for movement of trains en route, detachment of wagons, exchange of information with railways.
- This shall immediately lead to escalation of land price, costlier wagons, costlier handling equipment and costlier manpower.
- Long term challenges to be faced shall be evacuation, as bigger vessels discharge larger volumes.
- Port rail terminal capacity will also challenge the new operator. There shall be imbalance between the import and export.
- The end cost will also have to be kept under control. The hub and spoke model of operation shall have to be optimized. This shall also lead to consolidation of hinterland volumes.

In the current Indian market, the exim trade is looking for reliability and predictability of services, hinterland penetration and capability of costs. As regards the new private players in the rail transport logistics sector, they should collaborate and cooperate which existing players, avoiding attrition, duplication of structural infrastructure and working together to bring about reduction in logistics cost for customers. This shall only be possible with improvement of the process, exchanging of information as much as possible and sharing each others structures and wagons.

3. SEA LOGISTICS

Transportation by sea is less expensive than transportation by road or railways. The secondary port development requires less infrastructure. Terminal development can easily be handled by private operators.

A policy supporting sea transportation in the country, has to take into account the following issues:

i) Developing secondary gateways along with the coast; hinterland to be encouraged to use the nearest coast; developing SEZ in the immediate vicinity of these ports. Feeder cargo should be sent to the nearest main line port. As the cargo starts moving through the secondary ports, the volumes will increase and secondary ports will slowly graduate to become the main line ports.

ii) Size and growth rate of the Indian logistics industry is varying from USD 15 billion to USD 50 billion, with 7% to 8% growth per annum.

iii) As regards the logistics service providers, quality infrastructure support is not always available on time, due to the high pace of economic development. This includes airport infrastructure, seaports, highways and express ways.

iv) Cumbersome procedures lead to a lack of focus on the part of policy makers. The logistic costs in the Indian economy is higher than in other countries, due to infrastructure bottlenecks.

v) The price of fuel forces the users to shift from road transport to alternative transport modes. Only a very small and limited number of logistics service providers are providing end-to-end logistics chain in a true sense. A large number of fragmented service providers aspire to cover all services. However, an integrated approach is lacking.

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>INDIA</th>
<th>AUSTRALIA / EUROPE / US</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVG SPEED (kmph)</td>
<td>23.3</td>
<td>100</td>
</tr>
<tr>
<td>CAPACITY (TEUs)</td>
<td>90</td>
<td>150</td>
</tr>
<tr>
<td>AXLE LOAD OF WAGONS (TONS)</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>LOAD CAPACITY PER WAGON (TON)</td>
<td>88</td>
<td>120</td>
</tr>
<tr>
<td>PAY LOAD: TARE WEIGHT OF WAGON</td>
<td>2 - 2.6</td>
<td>4.5 - 5.5</td>
</tr>
</tbody>
</table>

Thus Indian Railway carries 450 kg of wagons dead weight for every 1000 kg of freight carried compared to only 170 kg in the US.

Table 3: Comparison of load capacities in various countries
Fig. 2: Commodity traffic growth in India during 2004-05

Fig. 3: Traffic growth in Indian ports
SUMMARY

The paper analyses the traffic growth in India and its consequent effect on the modes of transport such as rail, road and sea. This paper also analyses the SWOT of the various modes of transport, with figures and tables. An analysis is also made of the various measures being taken by the Indian Railways to enhance the rail logistics in the country in the form of double stacked containers, creation of dedicated freight corridors connecting the hinterland to the ports, and also the private participation scheme, announced by the railways when inviting private players to the business of container handling.

RÉSUMÉ

L’article analyse la croissance du trafic de marchandises en Inde et ses conséquences sur les modes de transport ferroviaire, routier et maritime. Cet article propose également une analyse SWOT (forces, faiblesses, opportunités, menaces) des divers modes avec l’appui de chiffres et de schémas. Une analyse est également faite des diverses décisions prises par les chemins de fer indiens pour favoriser la logistique ferroviaire dans le pays sous la forme du double stack, de la création de voies dédiées au fret reliant les hinterlands aux ports et également du plan de participation privée annoncé par les chemins de fer afin d’inciter les investisseurs privés à prendre part au secteur de la manutention de conteneurs.

ZUSAMMENFASSUNG

Der Artikel analysiert das Verkehrswachstum in Indien und den sich daraus ergebenden Effekt auf das Transportwesen wie Eisenbahn, Straße und Schifffahrt. Der Beitrag analysiert ebenfalls das SWOT der verschiedenen Transportarten in Zahlen und Tabellen. Es werden auch die verschiedenen Maßnahmen analysiert, die die indische Eisenbahngesellschaft ergreift, um die Schienenlogistik im Land zu verbessern: Verwendung von Doppelstock-Containern, Bildung speziell dafür vorgesehener Frachtkorridore, die das Hinterland mit den Häfen verbinden, und ein privates Beteiligungsschema, das von der Eisenbahn angekündigt wurde, um private Investoren aufzufordern, sich am Containergeschäft zu beteiligen.