Developing Container Capacity: Progress, Issues and the Way Forward

CRISIL Infrastructure Advisory
Overview of the Presentation

- Container ports in India - Present capacity
- Container projects proposed/under development
- Status of upcoming projects
- How much additional capacity is expected?
- Container traffic under alternate scenarios.
- Issues influencing project development.
- Way forward.
Hinterland classification and key container ports in the region

### Ports handling containers

<table>
<thead>
<tr>
<th></th>
<th>Western Ports</th>
<th>Eastern Ports</th>
<th>Southern Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Ports</strong></td>
<td>JNPT, Mumbai, Kandla</td>
<td>Kolkata, Haldia, Paradip, Vizag</td>
<td>Chennai, Tuticoin, Cochin, New Mangalore, Goa</td>
</tr>
<tr>
<td><strong>Private Ports</strong></td>
<td>Mundra, Pipavav</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Ports</strong></td>
<td>Hazira, Rewas, Dighi</td>
<td>Vallarpadam, Vizhinjam</td>
<td>Ennore, Gangavaram</td>
</tr>
</tbody>
</table>

Source: CRISIL Analysis
Present container handling capacity-2009

Total 000’ TEUs – 10350

Upper West Coast
Kandla, Mundhra, Pipavav

Central West Coast
Mumbai, JNPT

Lower West Coast
New Mangalore, Cochin, Mormugao

Central East Coast
Vizag

Upper East Coast
Paradip, Haldia, Kolkata

Lower East Coast
Chennai, Tuticorin

Traffic in ‘000 TEUs
Container handling projects envisaged upto 2020

- Upper West Coast- New container terminals at Hazira and Jamnagar.
- Central West Coast- Offshore terminal at Mumbai port, fourth container terminal at JNPT, and new developments at Rewas and Dighi.
- Lower West Coast- Container terminals at Vallarpadam and Vizhinjam.
- Lower East Coast- Development of container terminal at Tuticorin, 2nd container terminal at Chennai and container terminal at Ennore.
- Central East Coast- Container handling facilities at Gangavaram and Krishnapatnam.
- Upper East Coast- New container terminal at Paradip, new developments at Kulpi and Dhamra.

Source: IPA, Other sources
Projected container handling capacity-2020

Total 000’ TEUs – 33150

Upper West Coast
Kandla, Mundhra, Pipavav, Hazira, and Jamnagar

Central West Coast
Mumbai, JNPT, Rewas and Dighi

Lower West Coast
New Mangalore, Cochin, Mormugao, Vizhinjam

Upper East Coast
Paradip, Haldia, Kolkata, Dhamra, Kulpi

Central East Coast
Vizag, Gangavaram, and Krishnapatnam

Lower East Coast
Chennai, Tuticorin

Traffic in ‘000 TEUs
Status of various projects

• **Mundhra 2nd container terminal:** Operational since August 2008. This terminal is capable of handling about one and a quarter million twenty-feet container per annum and will mainly cater to the needs of the northern hinterland of India. Some of the salient features of the terminal are a quay length of 618 meters, four rail-mounted quay cranes, 12 rubber tyred gantry crane, four reach stackers, round the clock berthing and un-berthing coupled with modern tug boats.

• **Container terminal at Hazira Port:** HPPL had signed an agreement with PSA on 13 January 2007 to develop and run a terminal that would be operational from 2010 and handle 1.23 million containers a year. PSA has now exited the project citing stiff commercial terms particularly with regard to waterfront royalty. Shell has now hired Citibank NA to identify a firm that can develop multi-cargo handling facilities (including containers, chemical and bulk cargo) with about $500 million investment.

• **Mumbai port offshore container terminal:** BOT agreement for the project has been signed, work is in progress and the container is expected to be operational by Dec 2010. The project would involve filling up Princess and Victoria docks to create container storage space and laying of 3 railway tracks to facilitate construction of rail storage depots. Connectivity projects include the Vadala Kurla Dedicated Rail Freight Corridor project and the Eastern Express Freeway project.

• **JNPT Fourth Container Terminal:** Global invitation of Request for Qualification was published in March 2009 and the last date of submission has been extended to 31st July, 2009.

• **Rewas port:** Issues related to land acquisition.
Status of various projects (Contd)

- **Vallarpadam Container Terminal**: The first phase of the new Terminal will have a capacity of 1 million TEUs which consists of 600 metres of quay, six Super Post Panamax Quay Cranes and an on-dock railhead serviced by rail-mounted gantry cranes. Construction of a new four lane bridge and highway access to the 'golden quadrilateral' road network is underway.

- **Vizhinjam Container Terminal**: The award of the project has been disputed and the bid of the challenging firm is being re-evaluated.

- **Chennai Mega Container terminal**: RFQs have been invited and 9 firms have submitted the RFQs in March 2009. Shortlisting of bidders in progress.

- **Ennore Container Terminal**: Six bidders shortlisted at the RFQ stage.

- **Gangavaram expansion**: Plans on hold for the time-being.

- **Paradip Container Terminal**: The proposed container terminal to come up on BOT basis will form part of the port trust's long-term capacity addition programme. Feasibility for the project presently underway.

- **Dhamra Port**: Construction in progress. Container terminal proposed at a later stage.

- **Kulpi Port**: As part of the Rs 1,200-crore project, a container port and a special economic zone are scheduled to come up in South 24-Parganas' Kulpi, which is just 55 km from Kolkata. Phase-I of the port development was supposed to be completed at the end of 2009, as per the agreement. The project has however been delayed because of issues related to existing ports, dredging, etc.
Traffic handled at major ports

- Traffic handled at major ports has increased at a CAGR of 7.32% between 1994-95 to 2008-09.

- Traffic handled by major ports in FY 2008-09 has grown at 2.12% over FY 2007-08.

- Traffic at Paradip, Kandla and Mormugao has increased at rates between 9-18% over the previous year.

- New Mangalore, JNPT and Tuticorin have shown increases in the range of 2% and Chennai at 0.58%.

- Traffic at other ports has shown decline ranging from 0.5% to 9.55%.
Impact on container cargo

Containerized traffic at major ports has increased at a CAGR of 11.92% between 2003-04 and 2008-09, with an increase of 2.02% in 2008-09 over 2007-08.
Container traffic under different scenarios
Approach adopted for the assessment

General approach

• The total container traffic for each port would consist of:
  – Its share in the container traffic to/from the primary hinterland
  – Its share in the container traffic to/from the secondary hinterland
  – Non-containerized export-import general cargo from primary hinterland

• The year wise projection for total traffic has been made based on current traffic data and scientifically estimated growth rates.

• The percentage share of each port in this total traffic has then been estimated using standard Logit model.

• The Empty TEUs in the primary and secondary hinterlands have been estimated based on the percentage of empty TEUs observed in the region with respect to the loaded TEUs.

• The traffic growth rates for this study have been estimated by adopting the globally accepted “Elasticity of Transport Demand” method.

• Factors such as accidental growth i.e. trade imbalances and empty container repositioning and induced growth also have an impact on traffic forecasts and these have been considered while reviewing traffic forecasts.
Assumptions underlying scenario of container traffic - Scenario A

- Horizon for projection: 2007-2039
- GDP Growth: 8.00% p.a from 2008-2020, 7.5% p.a from 2021-25 and declining by 0.5% every four years thereafter up to 2039.
- Container penetration level: increasing to 75% by 2014 and assumed at those levels thereafter.
- Incidence of transshipment: Increasing to 4.5% by 2010 and assumed at those levels thereafter.
General cargo and container traffic was projected to reach 382 mn and 286 mn tons respectively by 2020. Containerized traffic was projected to reach 23 mn teus by 2020.
Container Traffic-Revised scenario B

- Horizon for projection: 2007-2039
- GDP Growth: 5.7% in 2009-10, 7% and 7.8% in 2010-11 and 2011-12 resp (CCER), 6.4% p.a until 2021-22 (post 1991 average) and 5.5% p.a thereafter up to 2038-39 (post 1975 average).
- Container penetration level: increasing to 75% by 2014 and assumed at those levels thereafter.
- Incidence of transshipment: Increasing to 4.5% by 2010 and assumed at those levels thereafter.
Under the revised scenario, general cargo and container traffic is projected to reach 316 mn and 237 mn tons respectively by 2020. Containerized traffic is projected to reach 19 mn teus by 2020.
## Projected container capacity -2020

<table>
<thead>
<tr>
<th>Port Group</th>
<th>FY 09</th>
<th>FY 10</th>
<th>FY 11</th>
<th>FY 12</th>
<th>FY 13</th>
<th>FY 14</th>
<th>FY 15</th>
<th>FY 16</th>
<th>FY 17</th>
<th>FY 18</th>
<th>FY 19</th>
<th>FY 20</th>
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<tbody>
<tr>
<td>Upper West Coast</td>
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<td>3600</td>
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<tr>
<td>Central West Coast</td>
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<td>4200</td>
<td>4200</td>
<td>5500</td>
<td>6600</td>
<td>7350</td>
<td>8100</td>
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<td>11050</td>
<td>11800</td>
<td>12300</td>
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<td>Lower West Coast</td>
<td>600</td>
<td>1700</td>
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<td>2900</td>
<td>2900</td>
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<td>4100</td>
<td>4100</td>
</tr>
<tr>
<td>Lower East Coast</td>
<td>1400</td>
<td>2150</td>
<td>2350</td>
<td>3400</td>
<td>4600</td>
<td>6250</td>
<td>6250</td>
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<tr>
<td>Central East Coast</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>600</td>
<td>800</td>
<td>800</td>
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<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td>Upper East Coast</td>
<td>350</td>
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<td>350</td>
<td>850</td>
<td>1350</td>
<td>1600</td>
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<td>Total</td>
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<td>28900</td>
<td>30700</td>
<td>31650</td>
<td>32650</td>
<td>33150</td>
</tr>
</tbody>
</table>
Scenarios of container traffic versus capacity addition proposed.

- **Base case scenario**: Assuming that only projects under implementation or at the bidding stage come up.
- **Moderate case scenario**: Assuming that in addition to projects under implementation/bidding, half of the balance proposed projects come up.
- **Best case scenario**: Assuming that all the projects under consideration come up.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>FY 2012</th>
<th>FY 2015</th>
<th>FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container capacity ( mn teus)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Base case scenario</td>
<td>13.95</td>
<td>19.65</td>
<td>23.9</td>
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<tr>
<td>Moderate scenario</td>
<td>15.07</td>
<td>22.67</td>
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<tr>
<td>Best case scenario</td>
<td>16.2</td>
<td>25.7</td>
<td>33.15</td>
</tr>
<tr>
<td>Container traffic ( mn teus)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base case scenario</td>
<td>10.15</td>
<td>12.86</td>
<td>18.49</td>
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<tr>
<td>Moderate scenario</td>
<td>10.15</td>
<td>13.03</td>
<td>19.14</td>
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<tr>
<td>Best case scenario</td>
<td>10.15</td>
<td>13.3</td>
<td>20.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumed GDP growth rate</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base scenario</td>
<td>5.70%</td>
<td>7.00%</td>
<td>7.80%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Moderate scenario</td>
<td>5.70%</td>
<td>7.00%</td>
<td>7.80%</td>
<td>6.40%</td>
</tr>
<tr>
<td>Best case scenario</td>
<td>5.70%</td>
<td>7.00%</td>
<td>7.80%</td>
<td>7.00%</td>
</tr>
</tbody>
</table>
Container projects- happenings

- PSA which was to have set up the container terminal at Hazira has walked out of the deal citing commercial terms that render the project unviable. As per the terms, the waterfront royalty payable to Gujarat on a per container basis by the terminal operator was to increase 20% every three years which could not be passed on to the customers in a competitive environment.

- The coordination committee of people evicted for development projects has decried the delay in readying the rehabilitation land for the evictees of the proposed Vallarpadam International Container Transhipment Terminal.

- Vizhinjam-A consortium of Lanco Group and Malaysia's Pembinan Redzai was recently selected as the developer, but one of the unsuccessful bidders, a consortium led by Mumbai-based Zoom Developers Ltd, moved court against Lanco's selection, alleging irregularities in the bidding process.

- Two multipurpose berths developed by Vizag Seaport (VSPL) have long-term take or pay clause with Sail covering the entire concession period. However, as Vizag Port is a major port covered under the Major Port Act, there is only limited freedom for fixing tariff as the Tariff Authority for Major Ports (TAMP) caps the tariff for private operators. Similarly, the offshore container berth and terminal project and Ballard Pier Container Terminal will also come under TAMP, leaving little pricing freedom for port operations.
Vizhinjam- Happenings

• The tendering process began in 2003 for the project on a build-own-operate-and-transfer basis for 30 years and was once terminated owing to non-receipt of bids.

• In 2005 the tender was awarded to a consortium in which Zoom Developers was a member subject to the Government of India’s clearance.

• After an internal inquiry, the Centre declined security clearance for the consortium. The petitions said the Bid Evaluation Committee had rejected the bid of Zoom Developers after a detailed evaluation and after perusing the Law Secretary’s opinion.

• The re-tendering process began with a global investor meet in April 2007. Bids were floated in July 2007 and by January-end 2008, Vizhinjam International Seaports Ltd, the nodal agency formed for overseeing the project had finalised five bidders.

• A consortium of Lanco Group and Malaysia’s Pembinan Redzai was selected as the developer, but one of the unsuccessful bidders, a consortium led by Mumbai-based Zoom Developers Ltd, moved court against Lanco's selection.

• Based on the Supreme Court verdict, the Kerala Government has decided to re-evaluate the tender submitted by the Mumbai based Zoom Developers for the proposed container trans-shipment terminal at Vizhinjam.
Project Development Process

- Inception
- Feasibility
- Procurement
- Development
- Delivery
- Exit

--- Project Preparation Period

--- Project Term
Bottlenecks at Project Inception Stage

Quite often many projects lack sound economic rationales. Projects are often based on political statements thus impacting scale and scope.

Many departments have a tendency to list projects for PPP, when departmental funds are not available. Thus, the choice of PPP as preferred mode does not arise from a systematic and objective analysis.

Baseline surveys are often inadequate or not conducted.

Absence of market/public testing to understand desirability/viability of the project from all the stakeholders in a project.

Lack of sector reforms to support projects.
The feasibility studies are not conducted properly (leading to lower user demand as compared to projected demand, bankability, etc)

Many projects suffer from improper planning and lack of linkages (like lack of road and rail connectivity for ports impacting the operations of ports)

The land is not identified for many projects before initiating the projects. The projects for which land for development is identified the possibility of transfer of ownership to the developer is not ascertained

In case of many projects, the R&R measures have been inadequate to value, location and type of land of land taken by Government leading to disputes

Focus of public sector is to quickly get the project to market rather than take more time in ensuring project bankability
Inadequate Feasibility Studies

Lack of Budgets

- Number of projects/state: 200-400
- Average Project Cost: Rs 200-400 crores
- Expenses for feasibility & procurement: Rs 3-5 crores/project
- Funds required at state level during XI Plan: Rs 600-2000 crores

Inadequate feasibility studies

- Budget constraints at state level for Infrastructure projects
- Reduction in scope of work for feasibility studies
- Price constraints on consultants for feasibility studies
- Inadequate data collection, analysis & scoping by consultants
- Lack of preparation and planning for projects
- Leads to feasibility study on paper only

Note:

This computation of requirement of funds at state level is just to give an order of magnitude of the requirement of funds for feasibility study and procurement for infrastructure projects
## Examples of Bottlenecks at Project Feasibility Stage

<table>
<thead>
<tr>
<th>Project Stage</th>
<th>Issue</th>
<th>Critical Issues constraining Project Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Feasibility</td>
<td>Delay in preparation of feasibility report</td>
<td><strong>Coal Berth at Tuticorin Port:</strong> Expected date of commencement of work June 2006, but feasibility report received by IPA in November 2006.</td>
</tr>
<tr>
<td>Project Feasibility</td>
<td>Lack of planning</td>
<td><strong>Connectivity Issues at Chennai Port:</strong> Poor condition of the road outside the Chennai Port and damaging of drain on the road in December 2007 lead to severe congestion that impacted container evacuation from the port. As a result of the congestion the port’s inventory shot up to around 1.5 times of it’s normal level. Delay had lead feeder operators to levy a congestion charge of USD 100 per TEU from December 2007.</td>
</tr>
</tbody>
</table>
Bottlenecks at Project Procurement Stage

- There is lack of marketing leading to low awareness of the projects initiated by Government
- In many cases improper prequalification process leads to mixed bag of strong and weak qualifiers which lead to speculative bids
- Discerned view on differentiating proposals based on quality often gets diluted. As a result, weaker proposals and high quality proposals get bunched in technical evaluation. With least cost/grant being the focus leading to technically weak project sponsors and aggressive price bids leading to increase in risk profile of projects
- Contract is not well debated at the procurement stage between bidders and client leading to protracted negotiations after selection of bidder.
### Examples of Bottlenecks at Project Procurement Stage

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<tbody>
<tr>
<td>Project Procurement</td>
<td>Delay in finalization of bid documents</td>
<td><strong>Container Terminal at Ennore Port:</strong> Expected date of commencement of work delayed by more than one year due to delay in issue of bid process documents.</td>
</tr>
<tr>
<td>Project Procurement</td>
<td>Delay in selection of bidder</td>
<td><strong>Offshore Container Terminal at Mumbai Port:</strong> Expected date of commencement of work March 2006, but Gammon selected to build terminal in January 2007.</td>
</tr>
</tbody>
</table>
Bottlenecks at Project Development, Delivery and Exit Stage

- The multiple interface for clearances and approvals from ministries and departments at centre, state and local levels results in project delays. The concept of single window clearance needs to be introduced for all states for all the sectors.

- The public interest litigation and court cases has led to delay in development and commissioning of the projects impacting the project profitability.

- Cost escalation during development due to increase in costs of inputs like cement, steel, etc at higher rates than WPI/CPI. Since the tolls/revenues are linked to WPI/CPI the revenues don’t rise in proportion to development costs.

- Poor monitoring leading to sub-standard quality of construction and delay in completion.

- The delivery of projects have been impacted by low demand and tariff disputes after commissioning of the project leading to financial losses to the developers and loss of investors interest.
### Examples of Bottlenecks at Project Development Stage

<table>
<thead>
<tr>
<th>Project Stage</th>
<th>Issue</th>
<th>Critical Issues constraining Project Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Development</td>
<td>Environmental clearance</td>
<td><strong>Dhamra Port in Orissa:</strong> Project was delayed by more than 4 years due to environmental issues – construction was to start by the end of 2000 however the project achieved financial closure in February 2005.</td>
</tr>
<tr>
<td>Project Development</td>
<td>Clearance</td>
<td><strong>Pipavav Port in Gujarat:</strong> The project took more than two years to receive all the necessary clearances after achieving financial closure.</td>
</tr>
</tbody>
</table>
Way Forward

- Projects need to have a sound economic rationale with the feasibility well established.
- Feasibility to be accorded due importance with consultant selection based on appropriate weightage to technical and financial bids- addressed under the new MCA and selection process with rigorous shortlisting of bidders.
- Recognize the importance of integrated planning of projects including the required connectivity projects, prioritize and phase them to dovetail with the projects proposed.
- Provide necessary comfort to developers through extension of concession period in the event of reduction in traffic-addressed in the new MCA.
- Involve and incorporate feedback from various stakeholders right from the concept stage.
- Anticipate and sort out issues related to land acquisition, environmental clearances, resettlement and rehabilitation.- Addressed in the new MCA where the govt is responsible for handing over land, ensuring environmental clearances etc prior to financial close.
- Ensure well-defined process for bidder evaluation and selection so that proposals get the necessary weightage for quality- Addressed in the new MCA but does not protect against delays in bidding due to litigations, etc.
- Ensure that the contract is well-debated at the initial stage to minimize time taken for negotiations and developer selection.
- Put in place an appropriate mechanism for project monitoring to ensure quality of construction and timely completion of the project- taken care of under the provision for Independent Engineer under the new MCA.
Thank You