

# PORT INFRA NEEDS FACELIFT

Developing new ports and terminals and the revival of old infrastructure at major ports in the country are expected to open up new opportunities for port equipment companies. However, the developments need to be on fast-track for the real benefit for the ports and the equipment players.



Photo courtesy: SANY

India has a vast coastline of around 7,500 km with 12 major ports and about 200 non-major ports.

Ports deal with 90-95 per cent of India's total foreign trade by volume. This indicates the importance of port infrastructure for the country. In spite of the vast coast line and strategic location of Indian ports on international maritime map, the performance of the ports in the country is not up to the mark compared to the other ports in the subcontinent.

### Current ports scenario

Ports in India handle bulk and containerised cargo at various terminals across the country. Containerisation is growing steadily in the country with more and more cargo are being containerised. With the growing trend of containerisation, more container terminals are being set up at the major ports and private ports. This is going to help port equipment players with the supply of new and improved handling equipment at Indian ports.

Between 2014-15 and 2018-19, the total container traffic (major and non-major ports) increased at CAGR of 9.43 per cent. The respective CAGRs for major and non-major ports were 5.54 per cent and 16.78 per cent. The non-major ports have outperformed major ports in terms of CAGR as well as year-on-year (Y-o-Y) growth. The country handled a total of 16.53 million TEUs in 2018-19. Analysing the trend and upcoming projects, it is expected to cross 30 million TEU by 2024-25. But this is not enough compared with the ports in the neighbouring countries in the region.



**"THE UPCOMING PROJECTS AT NON-MAJOR PORTS OFFER AMPLE OPPORTUNITIES TO THE TECHNOLOGY PROVIDERS AND EQUIPMENT SUPPLIERS."**

*Sanjay Saxena,  
Senior Vice President & Business Head HE,  
Sany Heavy Industry India*

**Sanjay Saxena, Senior Vice President & Business Head HE, Sany Heavy Industry India** says, "Due to inadequate infrastructure, procedural issues like border, weight, and transit delays, lack of certainty in policy changes and high cost location compared to Colombo, Indian ports have not been able to attract enough number of main line vessels. A significant portion of India's traffic is transhipped at neighbouring foreign ports such as Colombo, Singapore, Malaysia etc."

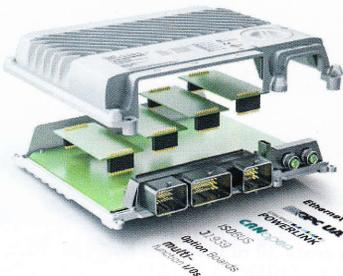
However, over the last two years, the Ministry of Shipping (MoS) has undertaken a number of initiatives to promote coastal shipping and transhipment in India. Saxena adds, "A major step taken for promoting transhipment in the country is relaxation of Cabotage law in 2018.

Other initiatives are priority berthing for coastal vessels at ports and provision of a minimum 40 per cent discount for the vessels carrying coastal cargo from or to major ports. In light of the increased impetus from the government, the volume of containers transhipped from the Indian ports has been growing faster and the share of traffic in the total container traffic declined from 34 per cent during 2017-18 to 30 per cent during 2018-19."

For any economy to grow, port sector development is crucial.

**Anil Bhatia, Vice President-Sales & Marketing, TIL** highlights the progressive steps of the government for the port sector development, "The Government of India has accorded high priority for expansion of port capacity, with infrastructure development projects like Sagarmala, which is a big investment driver for the sector. Over Rs 5 trillion worth of projects are at various stages of implementation and development under Sagarmala alone. Proactive initiatives to attract more private participation, plan to corporatise at least one of the 12 major ports are definitely positive steps. Although the Budget allocation for Sagarmala projects is lower than the cost of planned initiatives, the prospects appear stable with positive outcome."

According to Bhatia, the growth momentum of the port infrastructure can grow manifold with modernisation, mechanisation, setting up of the necessary support infrastructure, timely and successful project execution, enabling policies, as well as financing and funding mechanisms. "And all these bode well for port equipment



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which is estimated to grow in a big way.”

**Prakash Tulsiani, CEO, CFS, ICD & Investor Relations, Allcargo Logistics** highlights the need for overall development of ports and logistics as he elaborates, “There is room for improvement for port infrastructure in India. Even the Economic Survey 2019-20 has identified improvement areas like insufficient port infrastructure, narrow roads and poor strength bearing capacity of the roads. The port is well-placed and in terms of capacity building, we need deeper draft and improved connectivity. The lack of streamlined approach is also preventing the implementation of just-in-time shipment management protocols in ports which leads to congestion in ports.”

He further adds, “It is extremely encouraging for us to see the Budget 2020-21 has emphasised on the need to use technology to improve port infrastructure and performance. Ports need to perform in such a way that they are in sync with the global benchmarks. The introduction of mega cargo container ships has led to a substantial rise in freight volumes. So, ports must enhance their ship berthing capacities and cargo handling capabilities to manage that load.”

### Budget boost

The Union Finance Minister Nirmala Sitharaman in her budget speech announced a slew of steps to improve the port infrastructure in the country. Saxena explains, “Under the Union Budget 2020-21, the Ministry of Shipping (MoS) has received an allocation of Rs 18 billion, out of which 16 per cent (Rs 2.97 billion) is allocated under the Sagarmala project and 37 per cent (Rs 6.78 billion) will be used for inland water transport. Also, about Rs 1.44 billion will be used for development of ports. The projects under implementation will play vital role in 2020-21.”

Bhatia highlights some of the proposals in the Budget, “The National



“FOR PORT EQUIPMENT, THE CHALLENGE INCLUDE DELIVERING QUALITY MACHINES WITH HIGHER PRODUCTIVITY AT AFFORDABLE COST.”

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Vice President-Sales & Marketing, TIL

Infrastructure Pipeline has been drawn up to realise the vision of making India a \$5 trillion economy by 2024-25. While sectors such as energy, roads, urban development and Railways will take up around 70 per cent of the projected capital expenditure under this, port projects would also see a spending of Rs one trillion. If implemented timely, this will surely contribute majorly towards developing ports infrastructure. The National Infrastructure Pipeline plan and the upcoming National Logistics Policy are expected to ease challenges related to transport of goods and help in lowering logistics costs across the country through various measures such as single window logistics market.”

Tulsiani while hailing the Budget proposals, says, “Hinterland connectivity is a key factor which determines

the performance and competitiveness of a port. The National Infrastructure Pipeline with an investment outlay of Rs 1.03 trillion and focus on developing roads, Railways and logistics and warehousing will definitely boost the port performance by easing the burden off the port infrastructure. So, it's a positive development for ports. Also, the DFC completion is awaited and focus should be on that.”

### Port expansion: Opportunities and challenges

With the cargo throughput at India ports growing steadily, there are opportunities for port infrastructure revival that will be a boon to the port equipment players. Saxena elaborates the trend, “The private port developers have been keeping pace with the recent trend of deploying the latest technologies, replacing obsolete equipment, and undertaking modernisation and mechanisation initiatives to achieve operational efficiency. In this regards, the upcoming projects at non-major ports offer ample opportunities to the technology providers and equipment suppliers. In 2019, the replacement of old equipment also took place in a number of terminals. Local manufacturing capacity of port machinery in India is very limited due to low volumes,



Container handling at Indian ports is expected to cross 30 million TEU by 2024-25.

Photo courtesy: TIL

fluctuating exchange rates and higher customs duty.”

According to Bhatia, one of the main challenges faced by the port sector is port-hinterland connectivity. He further adds, “That aside, environmental clearances and land acquisition still remain difficult, especially for greenfield projects. Overcapacity is another issue facing ports which may affect the margins of terminal operators. Another challenge for the sector is to develop good transshipment facilities. Apart from policy intervention, more initiatives are needed to increase transshipment volumes at Indian ports. The government needs to provide options to shipping lines, both on the east and west coast, for selecting ports that are conducive for transshipment. The other challenges for the sector are shortage of trained and skilled manpower for operating advanced technological systems, presence of old and obsolete equipment that hindering the adoption of technologies in port operations.”

He also explains the challenges for port equipment players, “For port equipment, the challenges include delivering quality machines with higher productivity at affordable cost. Also on-time availability of spares goes a long way in reducing machine downtime. Availability of skilled manpower remains another challenge. TIL to this end offers comprehensive and customised operator trainings with modules spanning all aspects of reach-stackers. Sustained availability of long term capital is another issue that poses as a challenge.”

### Containerisation: opportunities and challenges

Though containerisation is picking up in the country, many ports facilities, especially at the major ports, need revival. Saxena explains, “Most of the Indian ports are only operating 70 per cent or below than the designed capacity. But still because of technological upgrade, new ship handling requirements, replacement of



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Allcargo Logistics*

obsolete equipment, augmentation of the capacity and new terminal construction will create ample amount of demand for container handling equipment.”

On the CFS scenario, he adds, “The CFS’ container volumes are majorly affected because of the direct port delivery (DPD) system. So there will be a significant drop (temporarily) in the mobile port equipment (like reach stackers, forklift and empty container handlers) requirement, especially when it comes to CFS. But still the major CFSs will definitely go for capacity addition in 2020-21. The Container Corporation of India (Concor), the biggest ICD network in India, has chosen to own the reach stackers rather than use in rental basis. There will be periodical requirement for reach stackers on the ICD segments. Recently, we have completed the supply 25 units of reach stackers to Concor which is one of the biggest of its kind.”

Bhatia says, “Significant new opportunities are envisaged for container handling equipment with increasing containerisation, development of dedicated logistics parks for handling containerised cargo and the thrust on developing container

terminals along the east and west coasts of India. CFS and ICDs form an important part of the ports and logistics infrastructure and there is an increased emphasis on developing ICDs, CFSs and air freight stations under Sagarmala. The government has planned to overhaul a number of dry ports to resolve infrastructural constraints faced by exporters and importers. Also, with the introduction of DPD scheme to speed up the delivery of cargo containers to importers/ consignees, the business model of CFS may need to be relooked in order to ensure that they are viable and sustainable. However, even with DPD, there will still be services such as the consolidation of less-than-container-load (LCL) cargo, where CFS would contribute.”

Tulsiani sees growth in containerised cargo movement as there will be more container handling cranes. “We will see more and more rail-mounted quay cranes (RMQCs) and rubber-tyred gantry cranes (RTGCs) being pressed into service in ports, ICDs and CFS. All will try to strengthen their container-handling mechanism to enhance efficiency.”

### New in port equipment

Looking at the long term opportunities at Indian ports for handling equipment solutions, key port equipment players have introduced new equipment. Keeping in view of the increasing scope in the bulk cargo, Sany has recently introduced the Sany Material Handler.

Saxena elaborates, “Material Handler is an efficient machine used in ports, stacking yards and warehouses to load or stack bulk cargo as well as to pick up, hoist or cut materials. Numerous core technologies promote the outstanding performance of Sany Material Handler. Energy control technology, hydraulic linkage technology, anti-overturning protection technology, malfunction automatic detection and data real-time display bring you high working efficiency and

hearty security. We are offering in both wheel type and crawler type. Also, the use has the option to select from the wide range of grab or attachments, depending upon the material going to be handled.”

Apart from this, Sany has a wide range of solutions for the ports, CFS and ICDs, starting from ship-to-shore (STS) crane, rubber-tyre gantry (RTG) cranes, rail-mounted gantry (RMG) cranes, laden and empty reach stackers, dedicated empty container handlers, forklifts etc. As a part of the green channel initiative, we have already supplied 15 units of electrically operated RTG cranes to the India's biggest and world's 28<sup>th</sup> ranked port, Jawaharlal Nehru Port Trust.

Saxena further adds, “Sany's range of port machines are energy-efficient and offer higher productivity at the lowest operational cost. We also offer terminal automation solutions for efficient terminal operation.”

TIL, in partnership with the Hyster-Yale Group, brings a range of reach stackers - RS45 and RS46 series to customers in India, Nepal and Bhutan for handling loaded containers in ports and inland freight stations. Lately, TIL has also begun to cater to markets in the Asia-Pacific region, such as New Zealand, Australia, Malaysia, and Thailand, through Hyster® network. Bhatia explains, “The reach stackers are built at TIL's factory in Kharagpur, West Bengal, in strict compliance with Hyster® design and stringent quality standards in line with those produced at Hyster's Nijmegen plant in the Netherlands. Local manufacturing by TIL provides distinct competitive advantages to customers by reducing delivery time and improving total cost of ownership.”

On the advantages of these equipment, he adds, “Designed to optimise space utilisation in container terminals, the HysterTIL® range of reach stackers with their outstanding maneuverability, excellent ergonomics, superior handling speed and flexible stacking capabilities, have become a



CFS and ICDs form an important part of port logistics.

preferred choice of the customers. Both RS46 and RS45 models feature powerful drivetrains comprising Cummins QSM11 and QSL9 engines respectively, along with Spicer off-highway TE27/TE32 transmissions.”

In addition, cooling-on-demand, load sensing hydraulics with variable displacement pump (VDP) technology, automatic throttle-up, integrated power train and optional empty seat engine shutdown help to optimise fuel consumption. The durable frame and boom have been developed using extensive analysis and testing with the RS 45-31CH model giving 45T in first row, 31T in the second row, and 15T in the third and the RS46-33 CH model giving 46T, 33T and 17T in the first, second and third rows, respectively.

TIL is also an authorised dealer of Hyster® forklifts of capacity 8T and above, and a range of container handlers. All these machines are backed by TIL's comprehensive product support and aftermarket solutions to

ensure higher return on investment by way of definite gains in productivity.

Safety is imperative in the operation of these equipment. Bhatia adds, “Hyster and TIL consider the safety of operations to be paramount in container handling operations. HysterTIL® range of reach stackers are optionally equipped with telemetry and onboard machine diagnostics. Telematics (IoT) is the technology of the future that seeks to improve all aspects of fleet management – machine productivity, total cost of operations and operator performance – in addition to operational safety, by way of wireless asset management. There is also the added flexibility of retrofitting the telematics application into older models and allied equipment from other manufacturers. Key features include – remote management of key performance indicators of the equipment, impact sensing, tracking regular preventive maintenance

Photo courtesy: TIL

schedules, tracking and reporting aggregate costs, GPS tracking, access control, automatic shutdown, operator pre-shift checklist, etc.”

According to Tulsiani, RTG cranes, reach stackers, side loaders, and forklifts are some of the key equipment used at the CFS and ICDs of Allcargo Logistics.

### Port development imperative

Development of port infrastructure such as draft, handling equipment and connectivity is imperative for improved efficiency of the port. Saxena says, “In India, the majority of the ports suffer from draft restrictions, the average vessel size at the Indian ports has increased from 3,715 TEUs in 2011 to 6,239 TEUs in 2018, while for China, it is around 12,000 TEUs. Also, the lack of integrated planning (independent port plans by Central and state government) has led to imbalance in capacity creation across the country.

Lack of adequate evacuation facilities at ports has led to increased cost of logistics to operators-rail is losing share to road; the share of coastal shipping and inland water transport remains limited. So, the MoS needs to implement plans to counter the above-mentioned problems.”

According to Bhatia, some of the booster steps for development include internal connectivity; removing infrastructural bottlenecks; de-congestion of hinterland connectivity

through rail, road, highways, coastal shipping and inland waterways; capacity augmentation; modernisation and cutting-edge automation; among others. Going forward, adequate steps and timely implementation with supportive infrastructure are key elements for development of port infrastructure.”

Tulsiani says, “In my opinion, the port infrastructure development strategy must go beyond the conventional framework and incorporate digital transportation and technological interventions to enhance sustainability and scalability. The port management should imbibe Internet of things (IoT), big data, blockchain technology, cloud-based services and connected platforms to multiply productivity. The ports can also explore deployment of smart sensor technology, as sensor data monitoring technologies can strengthen cargo-handling capacities in ports. High-speed multi-service networks and intelligent data integration systems can also be implemented to modernise ports logistics processes.”

On the other key things, he adds, “It is important to develop infrastructure as well as industries in and around the ports. Port connectivity by road and rail, developing the port community system (PCS) should be focused on. In addition, developing transshipment capabilities would help facilitate trade even better.”

### Positive outlook

In spite of the slow progress in development activities, port equipment players see positive outlook in the long term. Saxena says, “Under the Sagarmala initiative, 208 projects involving an investment of Rs 789 billion are being implemented under the ‘Port Modernisation and New Port Development’ component. Upcoming container projects like construction of container terminal at Kamarajar Port, JNPT fourth container terminal Phase-II, extension of existing container terminal at Vishakhapatnam, and the new port at Vadhaven for handling containers will boost the port infrastructure.”

Bhatia adds, “With the government actively responding to challenges related to connectivity, ease of doing business, etc, the outlook for the port and port equipment sector looks bright. Expanding cargo capacity and cargo traffic, increasing private participation and growing investments complemented by various initiatives by the government point towards positive times.”

The expansion, development and modernisation of port infrastructure in the country are an ongoing process. As a result, the capacity of the major ports has increased manifold. A number of projects are at various stages of implementation and development under Sagarmala. A number of greenfield non-major ports are also on the anvil with an investment of more than Rs 700 billion. Areas such as shipbuilding and smart port cities have also witnessed increased interest in the past few years. The various policy measures announced in the sector such as amendment to the model concession agreement, cabotage relaxations, new draft guidelines for major ports, etc, are expected to increase investor confidence in the sector which in turn will translate into great opportunities for growth in port equipment market.



- SUDHEER VATHIYATH



Material Handler is an efficient machine used to load or stack bulk cargo.

Photo courtesy: SANY