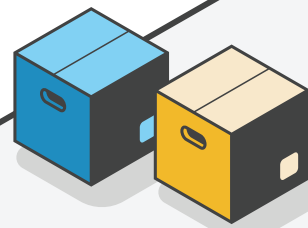
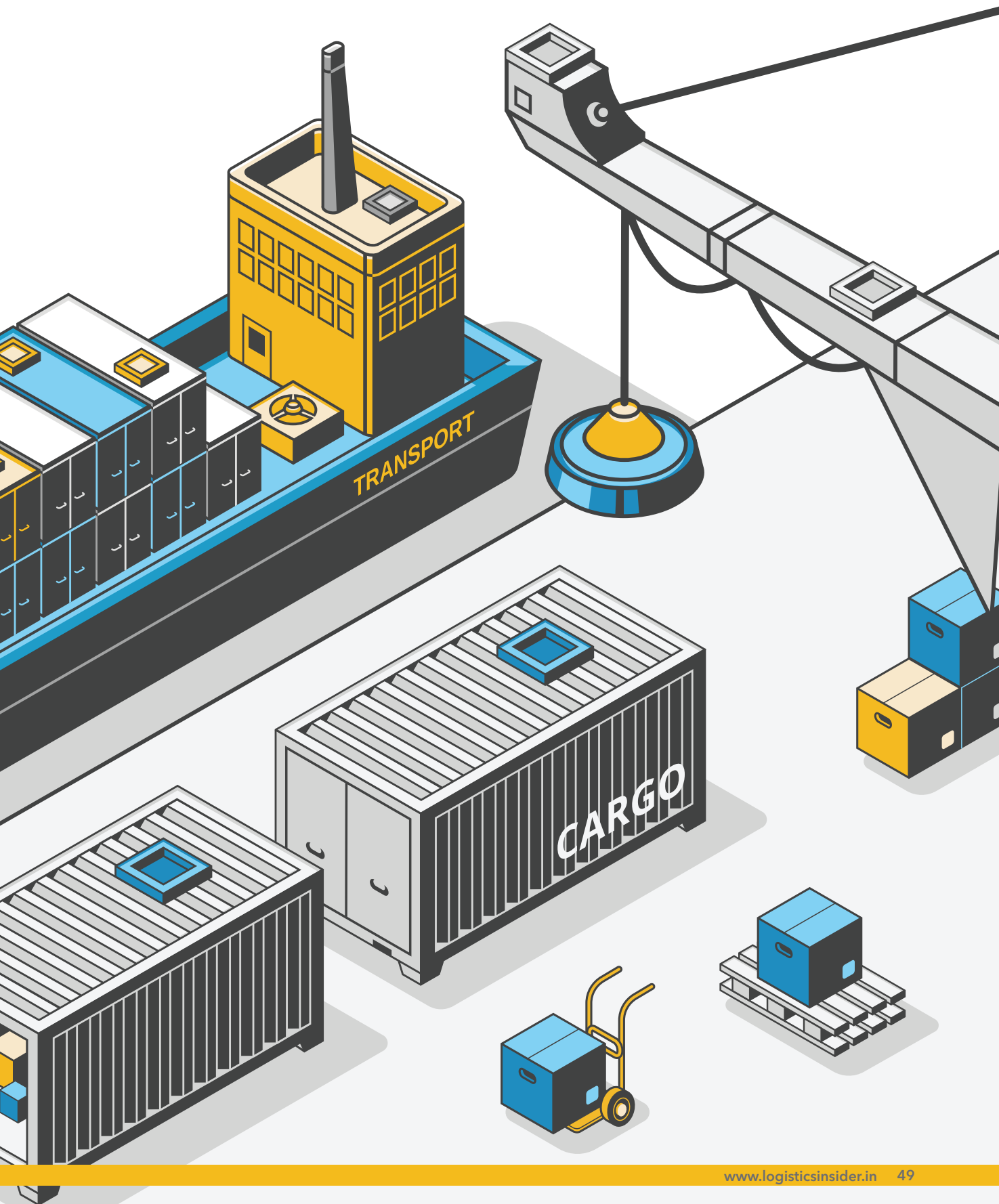


# Augmenting Berth Utilisation at Ports

At a time when the world's port authorities are under intense pressure to meet growing capacity demands amid constraints, berth utilisation has come up as an answer to effective expansion strategies in order to bridge the gap between demand and capacity. In this feature, we look at the steps by which we can augment berth utilisation in Indian ports and the challenges and solutions that lie therein.

» Basundhara Choudhury





**W**ITH THE CONTINUING SURGE IN COMMERCIAL VESSEL SIZES, THE WORLD'S PORT

**AUTHORITIES ARE UNDER PRESSURE TO ADOPT EFFECTIVE EXPANSION STRATEGIES TO MEET GROWING CAPACITY DEMANDS.**

Port Capacity plays a pivotal role in deciding the overall supply chain and logistics. Through strategic steps, there can be improved berth utilisation at ports.

## HOW CAN BERTH UTILISATION BE AUGMENTED ON INDIAN PORTS?

### 1. IMPROVING QUAYSIDE EQUIPMENT FOR HEIGHTENED PRODUCTIVITY

**Tamal Roy, President, Business Development and Corporate Strategy, JM Baxi Group** draws a direct parallel between berth utilisation and better productivity.

"To achieve better berth productivity, one needs to have an adequate number of quay cranes of updated technology and sizing", he writes.

Therefore increasing/ improving quayside equipment is a critical factor in better productivity. However, often that is not enough. Bottlenecks can often appear at the

yard or the gate or a rail dispatch yard. Such bottlenecks have to be removed by specific interventions. Further, use of technology to track and trace cargo flows, automation etc are often used to enhance productivity.

### 2. RAISING CARGO HANDLING VOLUMES

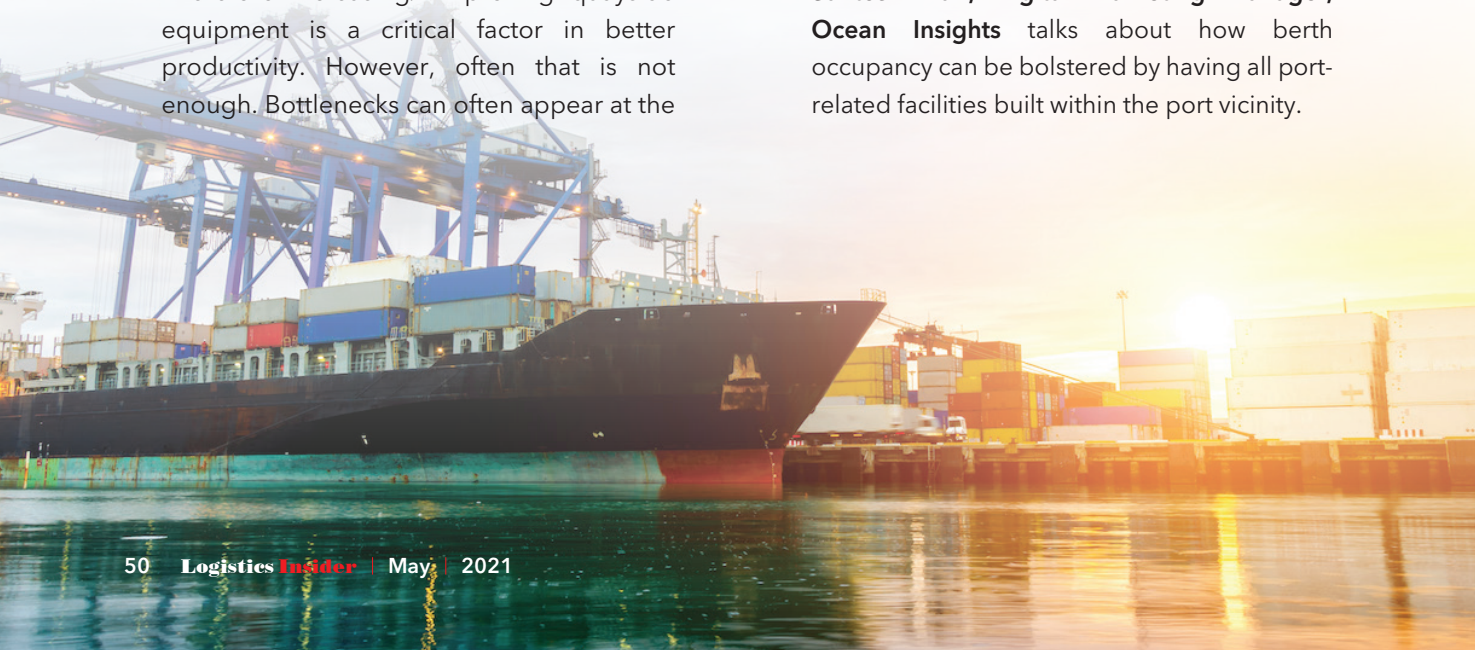
**Dr Abhijit Singh, Executive Director of Indian Ports Association** believes that utilisation of ports can only be increased by increasing cargo handling volumes.

"Though increase in cargo volumes depends on a lot of factors such as growth in economy, manufacturing, production, consumption etc., however cargo volumes at ports could also be increased by shifting cargo transportation from other modes to waterways or coastal shipping", he shares.

Waterway transportation is a cheaper and greener mode of transportation, but there are certain constraints which need to be overcome for shifting domestic cargo transportation from road and railways to waterways, Dr Singh adds.

### 3. BUILDING ALL PORT-RELATED FACILITIES WITHIN THE PORT VICINITY

**Santosh Nair, Digital Marketing Manager, Ocean Insights** talks about how berth occupancy can be bolstered by having all port-related facilities built within the port vicinity.





**Advanced visibility of port capacity is critical for new infrastructure development by way of being able to plan ahead”**

**TAMAL ROY**

President, Business Development  
and Corporate Strategy

**JM Baxi Group**



He writes, “Berth occupancy, as we understand, is the time that a berth is utilised, divided by the total available time. For a port, it is the primary indicator of congestion. If berth occupancy is more than 70%, it is a sign of congestion leading to a decline of services, whereas berth occupancy below 50% indicates underutilisation of available resources”.

While suggesting ways of improving the scenario, he shares, “One way this can be better bolstered is by having all port-related facilities built within the port vicinity. It has been reported and observed by the Indian government that the ports are generally underutilising their land assets and other resources. Having these facilities within the port vicinity will not only reduce the overall clearance time for shipments, but the idle berths can also be activated to allow more vessel berthing to take place”.

**4. ETA FOR ADVANCED ARRANGEMENTS  
AT THE PORT**

Mr Nair also adds how the knowledge of Estimated Arrival Time (ETA) can allow authorities to make arrangements in advance.

“Knowing the ETA of incoming vessels in advance can also enable port authorities to

start making arrangements to cater to the vessels even before they are at the port. This kind of visibility would allow faster clearance and improve berth occupancy at the port”, he shares.

**5. UTILISING EXISTING INFRASTRUCTURE  
TO THE MAXIMUM POTENTIAL**

**Rajiv Agarwal, Managing Director, Essar Ports Ltd** lists down a few suggestions for improving the utilisation of the existing infrastructure.

“While new infrastructure will take time to develop, it is important that the existing berth infrastructure across Ports and Terminals is utilised to a maximum. I believe the same can be achieved through the following:

**a) Enabling Policy Provisions**

- a. Ports & Terminals to handle cargo of any customer irrespective its status being captive*
- b. Facilities to handle diverse cargo irrespective of the provisions/ restrictions of license agreements*

**b) Mechanisation and Upgradation of current infrastructure to increase capacity and significantly reduce turnaround time of ships**



**Port Capacity plays a pivotal role in deciding the overall supply chain and logistics. Basis the surplus capacity and terminal availability one can safely plan overall logistics without thinking of re-routing the cargo."**

**RAJIV AGARWAL**  
Managing Director  
Essar Ports

- c) Undertaking coordinated dredging programme to cater to bigger ships
- d) Digitisation of information and leveraging of technology for seamless flow of information thereby facilitating faster movement of cargo
- e) Ensuring last mile rail connectivity to Ports for facilitating faster movement of cargo
- f) Adequate berthing policy to reduce any waiting time for ships which consequently leads to cascading effects
- g) Rapid Industrialisation in the vicinity of ports for boosting port led manufacturing."

### **HOW CAN BETTER VISIBILITY OF PORT CAPACITY ALLOW FOR CARGO RE-ROUTING AND SCHEDULE ADJUSTMENTS?**

Increased visibility and transparency on port performance as well as capacity can play a direct role in tackling port congestions. As has been witnessed during the pandemic, port congestions had led to massive delays in the entire supply chain, wreaking havoc in logistics and impacting businesses worldwide.

Port Capacity is a decisive factor that stands as

a sign of the health of the overall supply chain and logistics.

Mr Agarwal shares, "Customer expectations are rising around the world. The demand is now that the cargo should arrive quicker, have visibility and that too at lower costs.

Through real-time visibility of cargo movements and forecast reliability one can predict the time of delivery of cargo and alternate modes which can shorten the same. It is kind of similar to Google Maps where it shows alternative routes and the expected time of reaching a destination. We are seeing the same in logistics industry now.

"With IT systems, data analytics, predictive modeling and real time data availability customers can now opt for a different supplier, port of loading, shipping line, port of discharge and the logistics provider to have 100% reliability of delivery. The same has gained even more significance now in the wake of COVID-19 when global supply chains have been disrupted."

Mr Roy talks about how visibility of port capacity can open the door to new infrastructural development.

He writes, "Advanced visibility of port capacity





**It has been reported and observed by the Indian government that the ports are generally underutilising their land assets and other resources. Having these facilities within the port vicinity will not only reduce the overall clearance time for shipments, but the idle berths can also be activated to allow more vessel berthing to take place."**

**SANTOSH NAIR**  
Digital Marketing Manager  
**Ocean Insights**



is critical for new infrastructure development by way of being able to plan ahead. However, it will have limited advantage for cargo rerouting and/or schedule adjustments. We have to remember that container ships are liners and therefore are akin to a train service. If a train reroutes/ changes schedule, there is a cascade effect at all subsequent stations/ ports, as also, often can affect the following trains/liners. Yes, in the longer run, ports with capacity bottlenecks will be less frequented and new services will reduce/stop. But that is a lag effect, as a fall out of poor port capacity. To counter this effect, it is considered prudent to plan for new capacity creation once a container terminal nears 50-55% capacity utilisation".

Dr Singh writes, "Visibility and transparency on port performance and capacity helps in a proactive response in tackling port congestions. This could encourage shippers to use alternative routes to markets and minimise their cut and run responses when faced with demand led congestion and work more closely with ports to introduce congestion-linked schedule adjustments. Early adjusted schedules helps control the flow of cargo into terminals and avoid the yard congestion cycle. Real-time insights also allow the supply chain to adapt to disruptions quickly, optimising operations and reducing overhead costs."

## INITIATIVES TAKEN FOR UTILISATION OF EXISTING INFRASTRUCTURE:

Under the Maritime India Vision (MIV) 2030 recently published by the Ministry of Ports, Shipping and Waterways, globally benchmarked targets have been defined to help India develop best-in-class port infrastructure. Dr Singh shares more in this regard.

"The development of Indian Ports is estimated to drive cost savings to the tune of INR 6,000-7,000 Cr per annum for EXIM clients and help unlock INR 70,000 - 75,000 Cr worth of potential revenue. MIV 2030 targets 423 MTPA of capacity addition at Major Ports for the next 10 years. A total investment cost of over INR 33,400 Cr. has been envisaged for this capacity expansion. Out of this, approximately 95% capacity expansion is likely to be planned under Public Private Partnership (PPP)/ Captive mode by Major Ports", he shares.

He further sheds more light on the initiatives undertaken by the Maritime Sector to improve Ease of Doing Business in the Indian maritime sector.

Dr Singh adds, "Apart from physical infrastructure, there is a strong focus on strengthening the digital infrastructure of ports.



**Visibility and transparency on port performance and capacity help towards a proactive response in tackling port congestions. This could encourage shippers to use alternative routes to markets and minimise their cut and run responses when faced with demand led congestion and work more closely with ports to introduce congestion-linked schedule adjustments."**

**DR ABHIJIT SINGH**

Executive Director

**Indian Ports Association**

Several initiatives have been undertaken in recent times to improve Ease of Doing Business in Indian Maritime sector. For instance, The Port Community System (PCS) 1X has been operationalised in 19 port communities across 27 stakeholder types, thus enabling vessel related message exchange between ports and customs. Enterprise Business System (EBS) is under implementation at 6 Major Ports (Mumbai, Chennai, Deendayal, Paradip, V.O. Chidambaranar, and SMP Kolkata) and will be extended to other ports in the future.

While talking about the digital initiatives being undertaken, he shares, "Indian ports have adopted some digital initiatives such as on-road examination of containers, automated gate processing enablement, online berthing systems, etc. Further, the Ministry of Ports, Shipping and Waterways (MoPSW) is leading charge to create a unified logistics system - National Logistics Portal (NLP) - integrating all supply chain elements in India across various modes of transport like roads, railways, etc. As a part of same, a National Logistics Portal (NLP) Marine has been envisaged to solve many current EXIM challenges. This step is aligned with the global trend of building end-to-end supply chain solutions in shipping. NLP Marine will be developed in conjunction with the existing PCS1x platform and will provide API integration facility with various Port Operating

Systems, Terminal Operating Systems, and other stakeholder (s) systems."

"This entire ecosystem will be built on open standards with plug-and-play capabilities to allow changes at sub-system levels without affecting other parts and enable a heterogeneous multi-stakeholder environment to collaborate seamlessly", he states.

### **CONTAINERISED BULK HANDLING: A LOW CAPITAL INVESTMENT OPTION**

As an emerging alternative, Containerised handling of bulk cargo is seen as an attractive option that is low on capital investment and that enables the movement of bulk cargo without providing interim bulk storage facilities at the terminal. It is deemed as a viable alternative for increasing berth utilisation of container terminals.

"Containerised bulk handling is gaining traction globally as it enables the movement of bulk cargo from source to vessel and vice-versa without the need to provide interim storage facilities at the terminal", shares Dr Singh.

"It utilises specialised open top containers that are provided with locking lids to allow easy filling and sealing of the containers, and their standard sizes makes them easy for

transportation. Therefore, this method offers diversification and improves utilisation of assets without any substantial capital investment in cargo handling capacity."

Mr Agarwal writes, "With erratic market demand for the movement of general cargo, berths are often underutilised. In extreme cases, infrastructure is abandoned due to a significant drop in cargo volumes which also jeopardises the PPP.

"Containerised bulk handling is an alternative technology that facilitates the movement of bulk cargo from mine to ship without the need to provide interim bulk storage facilities at the terminal. This system offers a relatively low capital investment option to handle bulk cargo over a general cargo or container terminals for the reason that it not only offers diversification of cargo, improves asset utilisation and thereby increased revenue."

"In addition, it is not only environment friendly mode of dry bulk cargo handling but also offers complete flexibility as it can be moved between Terminals, or divested when core business improves."

## LIMITATIONS

Mr Agarwal lists down a few limitations that Containerised bulk handling as a concept has.

Applicability for export terminals only and in locations where dry bulk facilities are not available, Limited loading rates which cannot match high capacity terminals which can lead to overall higher FOB costs of commodity are some of the areas that limits it from being a viable concept.

"It seems like an attractive concept for many locations and will have to stand the test of time", he sums up.

## TO END WITH

Berth utilisation at ports can be augmented for superior visibility and to cater to the growing capacity demands. One of the key challenges, however, remains in ensuring that robust strategic plans and operational measures are in place to guarantee safe and efficient traffic - not only through shipping channels, but also at port berthing facilities. 