

OPPORTUNITY. 機匯



THE LONG ROAD
TO RECOVERY

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BE SAFE, VIGILANT AND PREPARE FOR RECOVERY

The start of 2020 has brought about many challenges to our company, the industry and the world as a whole. The multiple shocks of a global pandemic, synchronised suppression of demand in many countries and an oil price crash all happening in tandem present an unprecedented situation for all. It is unexpected and the impact is working out to be of a greater magnitude than what the world has seen during the financial crisis over a decade ago.

But in times of crisis, it is when faults and strengths are clearly exposed. For our group, I strongly believe that it is the latter.

We have activated measures to ensure that the health of our staff is well-protected across the globe. Our Safety, Security & Environment Committee is ensuring required precautionary health measures are in place to provide a safe environment for all those who use our terminal facilities. We are working closely with government and health officials for this, and we are also working to assist within the communities where we operate as much as we possibly can.

It is also in crises that the importance of the gears behind the scenes are exposed. The supply chain and all its components – logistics operators, truckers, air cargo carriers, shipping lines, ports and terminals amongst many others – are proving vital to ensure that shipments of food, medical supplies and critical goods are kept moving such that medical frontline workers have the supplies they need, and that people can continue to receive necessities. The port sector is an integral part of this pipeline, and Hutchison Ports’ global network of terminals together with our dedicated staff who keep our operations up and running, play an important role.

Despite the current environment and restrictions in travel, business never stops and we are making efforts to progress our ongoing projects. For instance, we have set up a remote command centre in Hong Kong to effectively connect project team members from different locations to remotely support the implementation of nGen at our new Stockholm terminal, which will commence operations later this year.

Looking forward, I strongly believe that as a company we are resilient, and I remain positive about the strength of a rebound in global demand. In the meanwhile, while we are confined and free from business travel, it is a good time for managers to review and refresh their areas of responsibility in order to refine and improve processes and output.

During this time of great disruption in supply chains, we also see our efforts in digitalising our business and applying new technologies as a vital component in being well prepared for the future.

Lastly, I would like to take this opportunity to wish you all good health as we move forward together on the road to recovery.

Eric Ip
Group Managing Director
Hutchison Ports

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THE LONG ROAD TO RECOVERY

On 16 January 2020, China agreed to purchase an additional US\$200 billion worth of United States (US) products over the next two years as part of the Phase One Trade Deal, which includes purchases related to manufacturing, agricultural, energy and services. The agreement over the Phase One Trade Deal sets the world economy to a much-relieved environment to investments and trade activities.

Just about two weeks before the Phase One Trade Deal being signed, the new coronavirus disease, also known as the COVID-19, was first reported from China's city of Wuhan (Province of Hubei) on 31 December 2019. The outbreak of COVID-19 has first led to factory closures caused by an extended Chinese New Year holidays (an extra 10 days) to the employees from returning to work to lower the risk of further transmission.

Concerns by the authorities that returning workers may increase the spread of the virus, led to a delay in factories and industrial activity returning to full production. This situation resulted in an exponential fall in domestic production and international trade.

Moreover, the government had to lock-down provinces and ban all flights to and from China to mitigate the risk of spreading the virus and adding pressure to the already overloaded healthcare system.

MANUFACTURING IMPACT

As the virus spread throughout China in February, the impact was most keenly felt in the manufacturing and export-led industries, as a programme of government-sanctioned factory closures accelerated.

This decline in exports affected total container volumes handled at China's coastal ports, including Hong Kong. Box throughput fell almost 16 percent in February year-over-year, according to *Alphaliner*.

China's ports volume, for January and February, declined 10 per cent when compared to the same period in 2019.

Apart from ports in Hubei Province, all other Chinese ports have resumed normal operations since the end of February, but to date volumes have not fully recovered to their pre-holiday levels.

Through into March and the pace of blank sailings declined reflecting a return to post Chinese New Year levels, according to *SeaIntelligence*. *Lloyd's List Intelligence* reported that in mid-March, Yangshan and Shanghai ports were recording container handling volumes in line with 2019 figures.

MARCH THROUGHPUT RECORDED GROWTH

The China Ports & Harbours Association reported that for the first week of March container throughput of the eight major container ports increased 9.1 per cent. Among them, the growth rate of Dalian, Tianjin, Qingdao and Guangzhou increased 10 per cent. The overall growth rate of Bohai-rim ports is faster than other coastal ports.

China's central government estimated that more than 60 per cent of small and medium-sized enterprises and 95 per cent of large companies outside of Hubei had restarted operations. More than three-quarters of key foreign trade enterprises in China have recovered by at least 70 per cent of their production capacity, said Ren Hongbin, Assistant Minister of Commerce.

As the world reels from the spread of the virus, the impact on the supply chain has also been significant as trade flows to and from China, which were reduced during the first 10 weeks of the year and now the focus is shifting to the rest of the world.

THE COVID-19 PANDEMIC IS CURRENTLY DISRUPTING THE WORLD ECONOMY AND SUPPLY CHAINS

On April 13, the World Health Organization reported that the COVID-19 pandemic is affecting 213 countries, areas or territories. While global supply chain has been severely disrupted by the COVID-19 pandemic lately, China's production, freight transport and ports are seeing a gradual increase in volume. Whereas, in North America and Europe, governments are now moving quickly to control the spread of the virus.

BLANK SAILINGS UP IN APRIL

As of April 11, the total number of blank sailings in 2020 totalled 384, due to the pandemic with an additional 83 blank sailings recorded April 4-11 on various deep-sea trades, according to *SeaIntelligence*.

The count of blank sailings includes both from China and other countries affected by the global spread of the virus.

On Asia-Europe and Transpacific combined, the carriers have now removed 3 million TEU of capacity. To put this into perspective, this equals 2.4 times the normal removal seen during the Chinese New Year holidays.

Comparing the blank sailings over the pandemic to the Chinese New Year holidays shows there is a potential demand decline of roughly 6.4 million TEU globally.

With an optimistic outlook, if world trade returns to 'normal' after the second quarter and the carriers do not cancel any further sailings, this would still lead to a demand decline of 4 per cent full year in 2020, reported *SeaIntelligence*.

The COVID-19 pandemic is currently disrupting the world economy and supply chains and the World Trade Organisation is forecasting a 32 per cent fall to world trade this year.



PORTS AROUND THE WORLD VOW TO STAY OPEN

EUROPE

As China's exports start to move to Europe there have been a series of announcements from European ports that they will stay open for business despite strict measures being undertaken by governments to reduce the spread of the COVID-19.

In Italy, the first European nation to be affected by a lockdown and the country with the one of the highest mortality rates, ports and freight transport were exempted by the Italian government.

Contship Italia Group, Italy's container terminal and intermodal operator, said facilities at La Spezia, Ravenna and Melzo/Milan were operating as normal, and had implemented deep cleaning and distancing by staff to minimise the risk of infection.

There was a similar message from Genoa, Pra', Savona and Vado Ligure, operated by the Western Ligurian Sea Port Authority, claims that "guarantee the smooth movement of freight across the country, without disruptions to the supply chain," according to a report in *Lloyds List*.

Northern Europe's largest port, Rotterdam, issued a statement that despite the far-reaching social impact of the COVID-19 outbreak, the Port of Rotterdam will remain operational. Cargo handling and production will continue unabated. The Harbour Master Division will continue to monitor safety and public order.

Allard Castelein, CEO Port of Rotterdam Authority said, "The Port of Rotterdam and industrial complex are vital to Rotterdam, the Netherlands and Northwest Europe. We are proud of that fact. We will do our utmost to be the safest, most efficient and most customer focussed port business area to the users. Not just in good times, but also now. Rest assured that we will be doing everything we can to minimise the impact of COVID-19 on the port.

Obviously, we cannot do this on our own. We will continue to nurture our alliances with all our partners, clients and stakeholders."

Germany's main import hub in Hamburg is also seeking to calm fears of disruption to the supply chain. The Hamburg Port Authority said it was a "top priority" for the port to remain fully operation "in the best interest of the population".

Hamburg terminal operator Hamburger Hafen und Logistik AG (HHLA) said the supply of the population and companies with cargo and goods via HHLA's terminal facilities was ensured, "regardless of the measures in force to protect against the spread of the virus".

"We are aware of our special responsibility as a service provider for Germany as an industrial nation," said Angela Titzrath, Chief Executive of HHLA. "Our employees will contribute to maintain Germany's supply is secured."

In Belgium, port is officially classified as 'essential national infrastructure'. Many regions and economic activities in the rest of Europe are dependent on supply chains from Belgium and vice-versa. The continuity services of Port of Antwerp will remain assured, as will the logistics chain and the transport of goods from Belgium to the rest of Europe. The EU also decided to create 'green lanes' for trucks meaning that crossing the border should not take more than 15 minutes and the green lanes will be open to vehicles carrying any type of goods.

(source: portofantwerp.com/n)

ASIA

In China, all major international ports are operating with health precautions and procedures in place due to COVID-19. At Wuhan port, there are restrictions on the movement of transshipment cargo by inland river feeder vessels in and out the city's ports on the Yangtze River.

In Hong Kong, all port facilities and terminals are working as normal with COVID-19 health checks taking place at all berths.

The Port of Singapore remains open for cargo operations and marine services, including shipyard repairs.

THE MIDDLE EAST & SOUTH ASIA

At Oman's Port of Salalah Container Terminal operations: Manning, vessel and gate operations continue as normal.

In Pakistan, all ports and terminals are operational and working with essential staff deployed to comply with the government's COVID-19 response plans for ports to ensure business continuity. However, delays in operations may be expected.

Operational vessel movements are regular at all ports managed by Sharjah Ports Authority, measures have been introduced for vessels at Sharjah ports to prevent and control the spread of COVID-19.

AFRICA

Egyptian ports are open but are implementing precautionary and preventative measures. So far there have been no reports of disruption to shipping through the Suez Canal. The east side of Port Said is closed, while the west side remains open with limited operations.

The port of Alexandria is only accepting vessels to discharge cargoes and the port of Damietta is restricted to container ship activity only.

Due to the COVID-19 outbreak and a reduction both in vessel calls and port staff, Durban Container Terminal Pier 2 in South Africa will be reduced to two berths

At Durban Container Terminal Pier 1, Ngqura Container Terminal (Coega), Port Elizabeth Container Terminal and Cape Town Container Terminal all will operate a single berth with approximately half of the current staff complement.

Cape Town Multi-Purpose Terminal will handle containers on a single berth. Durban Point will operate on a single berth for both containers and essential breakbulk goods, while East London will not handle containers.

The ports of Warri and Port Harcourt in Nigeria continue to operate normally and are open but manpower challenges in complying with 'social distancing' and free movement for logistics workers. There are sufficient stevedores for the time being.

The Nigerian Ports Authority announced a suspension of demurrage/terminal storage fees and charges with effect from 23 March 2020.

THE AMERICAS

The Port of New York and New Jersey is open and operating normally. “Our supply chain partners from the marine terminal operators and longshore labour to truckers and warehouse and distribution centre operators are working hard to help sustain our economy and support the 28 million consumers in the local region that are dependent on the port during this difficult time,” the port authority said.

On the West Coast of the US Port of Oakland, Maritime Director John Driscoll said: “Ports including Oakland have been declared essential infrastructure and must keep operating for the public good and the future of trade.”

In Argentina, the Government has considered that those activities which are urgent to enable international trade are exempted, therefore, ports and ships are operating.

In Brazil public and private ports and cargo handling facilities continue without disruptions other than a reduction of the labour force, particularly those on administrative duties.

In the Panama Canal all vessels with confirmed or suspected cases of COVID-19 are prohibited from transiting the Canal and must comply with the required quarantine period.

In the port of Freeport, Grand Bahama – including Buckeye, Bahama Rock, Freeport Container Port (FCP), all are open for business, but subject to restrictions imposed by the Government to prevent the spread of COVID-19.

(Source: North – a UK-based global marine insurer)

OIL PRICE DROP BOOST FOR CARRIERS

The fall in the price of crude oil will provide a short-term cash boost from bunker surcharges implemented based on fuel prices in January, while paying much less for fuel now, according to *Sea-Intelligence*. The global surplus of oil is a result of an increase in production by Saudi Arabia and Russia.

The fall in oil prices should also be beneficial for shippers as the cost of very low sulphur fuel oil dropped 35 per cent between January and March, according to *Drewry*.

“The good news is that the fuel part of ocean freight rates paid by shippers will fall and that the underlying bunker costs of shipping lines will also be much lower than previously expected,” *Drewry* wrote. “The extra cost of the IMO 2020 rule will be deferred until the global economy normalises.”

OPEC and ten other oil producing countries (known as OPEC+), met on April 12 and reached agreement to cut 9.7 million barrels per day, due to a significant drop in demand due to the fall in economic activity caused by the COVID-19 pandemic. The main immediate reason for the cut in production was that global oil storage facilities were reaching capacity.

As the oil surplus is utilised there will be a gradual increase in the cost of fuel including bunker oil.



from China to finish a product, it will look for other sources,” said Igor Tambaca from Rail Cargo Bridge told [RailFreight.com](https://www.railfreight.com).

Services are also resuming from Chengdu and Chongqing which run services to Poland, Germany and the Netherlands. Other hubs such as Zhengzhou, Xi’an and Yiwu also resumed services in late February. Rail freight services to and from Wuhan are expected to be suspended for the coming months.

RAIL FREIGHT RESUMES

Freight train schedules with westbound departures are resuming service across China, and several trains have departed, fully loaded on their way to Europe, according to [RailFreight.com](https://www.railfreight.com). From Xiamen, much of the rail freight cargo originates in Japan and South East Asia for transportation to Europe.

“Some customers, such as car manufacturers, are changing sourcing to other parts of China or even Korea and Vietnam. That is already happening and proves to be a good solution. A car manufacturer in Europe cannot afford to wait for its car parts



CHINA RETAIL SECTOR SLOWLY RETURNING

Foreign brands and retailers operating in China are reporting a gradual return of shoppers to high street stores and malls.

The latest data from AutoNavi, a Chinese web mapping, navigation and location-based services provider operated by Alibaba Group Holdings, has also shown that road traffic around major shopping districts in China picked up by an average of 30 per cent on the weekend of 14-15 March compared to February past month, according to a report in the South China Morning Post. This is seen as

an indication that consumers are returning to the shopping malls in China as infection rate appears to have peaked in the country and seemingly under control.

A report by Bain Consulting said that the trend in consumer spending in China is likely to mirror the SARS epidemic in 2002-03, with a slow but sustained return to shopping.



PROLONGED UNCERTAINTY

VESSEL RELOCATIONS

However, there are indications that there will be a knock-on effect, as vessels have to be relocated to serve Asia-Europe and Transpacific routes now as China ports have reopened again. The disrupted round-trip cycles have created shortages of both vessel capacity and equipment availability.

Due to the dearth of capacity there has been a rate increase by carriers, and for some back-haul shippers the coming weeks might well be a matter of whether they can get their cargo moved at all, almost irrespective of the price they are willing to pay.

Carriers are favouring empty repositioning for the limited back haul sailings, to get into position for an expected peak in Chinese exports in the remaining quarters.

Carriers had shown discipline in blank sailings when the COVID-19 was at its peak in China and which means that they were able to maintain freight rates.

“Until now rates have been relatively stable despite the COVID-19 impact from China and might well also be through the coming period if we see a new raft of blank sailings,” Alan Murphy, CEO and Founder of Sea-Intelligence said.

The net effect in Europe over the coming weeks or months will be a slow-down in the turn-around speed of containers,” Lars Jensen, CEO of Sea-Intelligence Consulting wrote on LinkedIn. “This in turn will mean a slow-down in the repositioning of containers to Asia – and hence further increases the likelihood that we will see container shortages in Asia when volumes begin to pick up.”

SUPPLY CHAIN RISK MANAGEMENT AND LIABILITIES

The TT Club has issued advice to the freight community to the ongoing challenges around the world due to labour shortages at ports and cancellations of inland transport links in different regions/countries. Constraints in the supply of goods due to factory closures and reduced schedules of air, ocean and rail carriers may expose forwarders to claims arising from delivery delays and cargo deterioration.

“Up-to-date status reports on their cargo’s progress, or lack of it, are vital to shippers,” emphasises TT Club’s Risk Management Director, Peregrine Storrs-Fox. “Forwarders and logistics operators will certainly prove their mettle if they can consistently make customers aware of the ongoing attempts to problem-solve.”

In attempting to deliver such solutions, however, a forwarder may need to use routes, carriers or modes that are less familiar, or to partner with other actors, of whom he has no experience. Such ‘workarounds’ are common at times of crisis when pressure from customers to deliver freight by whatever means can be intense. Additional care and due diligence must be taken when working in unfamiliar environments. It might be necessary to take extra precautions in employing bills of lading, standard trading conditions, letters of indemnity and other means in order to protect the stakeholders from unforeseen costs and liabilities.

ESTIMATED 2020 LOSSES

As Europe and the US now face fall out of the COVID-19 virus there are now estimates that could see a loss of 17 million TEU of cargo or 10 percent of total cargo capacity for shipping lines globally in 2020. This level is similar to those seen during the financial crisis in 2009.

(source: Sea-Intelligence bulletin)

“The real underlying problem is the impact this will have in the longer term in 2020 and possibly beyond, on not only consumer spending but also on the willingness of companies to order goods in the first place – as well as their ability to do so, as we are also seeing a possible financial liquidity problem begin to appear,” said Alan Murphy.

POTENTIAL TRADE REBOUND IN SECOND QUARTER

Similar to SARS and the Financial Crisis in 2003 and 2009 respectively, there is a potential for a dramatic increase in cargo volume in the middle of the second quarter, creating a soaring stronger-than-normal peak season and a stronger second half compare to a regular year.

Shipping lines may add additional capacity to carry delayed goods and freight rates may get a boost in the second half of the year.

Already we are seeing an uptick in production in March and which is expected to continue through into the second quarter.

Although there are some concerns about falling consumer demand from the US and Europe as countries go into lockdown mode, threatening to offset some of the rebound growth in container shipping.

WHAT'S NEXT?



ALTERNATIVE SOURCING ON THE AGENDA

Despite the resumption of production in China the pandemic has led to many brands and retailers looking to mitigate the risk of future 'Black Swan' events by diversifying their sourcing to other countries outside of China.

"I think from now on, our business will grow faster because of the virus," Arturo Velazquez of T-shirt manufacturer Hockey Exportprint told Sourcing Journal at a fashion and footwear conference in Las Vegas in early February 2020.

His company supplies many retailers in Los Angeles from his factory close to Mexico City with a three-day turnaround. Many Mexican manufacturers now see their proximity to US

markets as a distinct advantage over imports from Asia. Velazquez said that he can deliver within two weeks of an order from existing stocks and quick turns.

COMPONENTS AND INTERMEDIARY PRODUCTS AFFECTED

One of the main areas of trade that has been affected is China's leading global role in providing components or intermediary products to electronics, automotive machinery and textile companies, according to Stephen Olson a research fellow at the Hinrich Foundation. (Source: South China Morning Post)

China also relies on importing electronic integrated circuit boards for its local computer and mobile phone manufacturing sector predominantly from Taiwan and South Korea, this has also affected production.



As industry moves quickly to find alternatives to source products and components from other countries, these solutions may also be temporary and more expensive. The result could be higher supply chain costs and inflated prices for the industry and consumer.

FASHION SOURCING OPPORTUNITY AND DILEMMA

There is also the potential for emerging Asia Pacific countries such as India to increase its share of the fashion garment business.

"Some of our existing clients have increased the business they give us," said Harsh Agarwal of Suditi Industries, a shirting company based in India, told Sourcing Journal.

He added that he thought that many fashion buyers in the US would look for a second source outside of China to mitigate the risk of another hiatus in the supply chain.

China's position as the world's major sourcing nation cannot be replaced overnight and it will take time for other countries to build up their own manufacturing infrastructure to provide the volumes that China produces.



PLOTTING THE COURSE TO RECOVERY

As the great and the good of the maritime industry try and plot a course through the worst disruption to world trade since the financial crisis of 2009, the question is when will the recovery be underway.

History suggests that shipping is one of the first to benefit from any uptick in the global economy as demand increases for goods and materials when industry and consumption resume.

The SARS epidemic in 2003 and the Asian currency crisis in 1997 also caused tectonic shocks to business and trade, but recovery came quickly and was sustained in the following years.

We are now living in an era with improved communications widely available and technology more reliable, the tools to aid recovery is around us and it also opens opportunity for us to work smarter and better. Digitisation and automation will be at the heart of this new era as the industry embraces solutions that save time and costs and ultimately improve supply chain efficiency and working environment.

China's established supply chains from raw materials to finished product are highly efficient and difficult for other countries to replicate in the short to medium term.

However, there will be a great deal of analysis, post-coronavirus, in the fashion world on how to mitigate the risk by developing a broader geographical sourcing model.

"Some companies will certainly consider in the future how they can make their highly developed supply chain insensitive to disruptions like this", Thomas Lange, CEO of GermanFashion told [Fashion United.com](https://www.fashionunited.com).

The Spring and Summer 2020 fashion season has been relatively unaffected but second half of the year, however, fashion companies will have to prepare themselves for considerable market disruptions, reported by [Fashion United.com](https://www.fashionunited.com).

BRANDS 2020 LOSSES UNCLEAR

Although retail brands have reported a plunge of sales, the extent of total losses remains unclear. Ralph Lauren estimates that its fourth-quarter guidance will be negatively impacted by US\$55-70 million in sales as well as US\$35-45 million in operating income in Asia, it was reported in the textile and garment trade publication *Fibre to Fashion*.

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VIRTUAL WORLD THAT OPTIMISES SPACE AND TIME

During the last 50 years, simulation technology has found its way from technical applications into the logistics sector. Driven by increased demand for high productivity, due in part to the introduction of larger container vessels, specific computer systems for simulation were developed for container terminals.

The latest strategic approach is to use digital simulation technologies for planning, developing and the installation process of a container terminal, according to Holger Schuett, Managing Director of akquinet AG port consulting GmbH.

At the beginning of the process there is little information available about the planned terminal and the main task is to visualise the idea of the new terminal as well as calculating its potential capacity (measured in TEU per year).

Herman Chiu, General Manager, Terminal Development, Group Operations at Hutchison Ports, said the use of simulation technology to terminal design and development during business development or the initial terminal design stages has been adapted to some of the group's new terminals.

"We build our own simulation models to evaluate different operations modes such as rubber-tyred gantry crane (RTGC) vs rail-mounted gantry crane (RMGC) and automation modes like automated guided vehicle (AGV) vs automated straddle carrier (Auto-SC). These models are also used for terminal layout planning for civil engineering design and capacity planning," he added.

Equipment sizing and requirement for investment estimation and phased procurement are also simulated.

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The next step is to organise the layout of the terminal and determine the type and quantity of equipment required for transportation and stacking for the first test of rough strategies for deployment and allocation. As more detailed information and data becomes available, the more elaborate the results will be including cost and carbon footprint-evaluations.

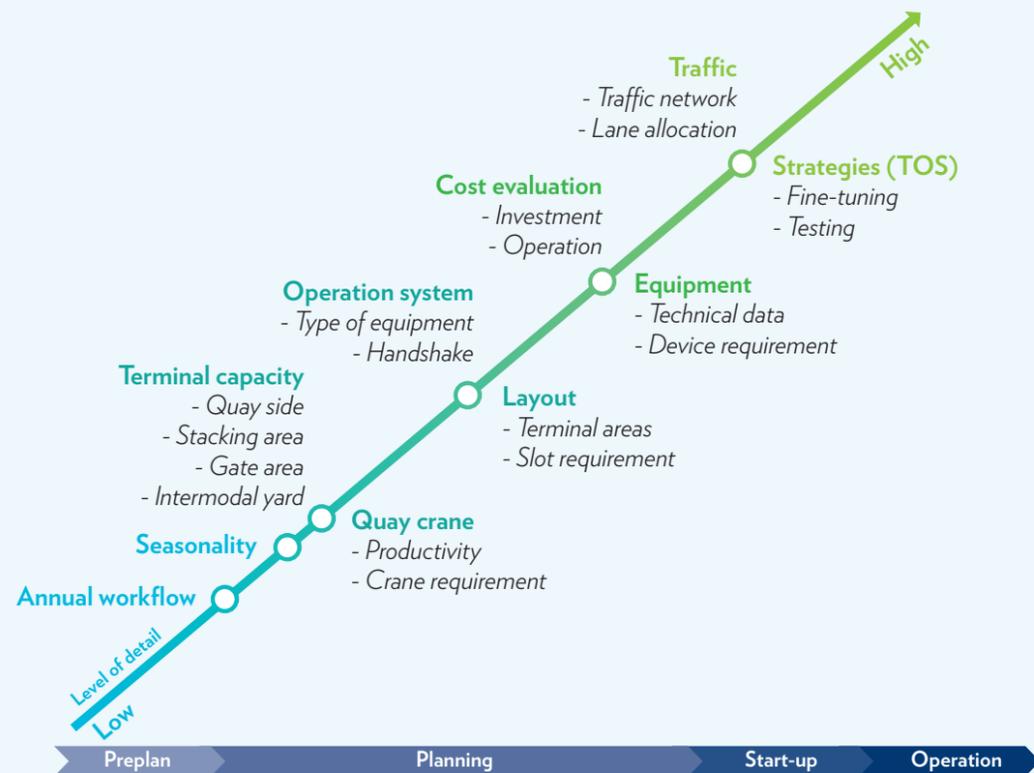
“The importance of IT systems will increase over the next few years, quality management and assurance

systems will also become more important. New technology for automated testing and fine-tuning of the parameter settings for the control systems will be necessary. Particularly, emulation technology supports these tasks by providing virtual terminals. These are simulation models of all terminal processes, which may be directly connected to the terminal operating system (TOS). They may be used as testbeds for the control system of the terminal,” said Schuett.

KEY FACTS UTILISING SIMULATION IN TERMINAL OPERATIONS

- Terminal simulation with visual output (animation) helps understand where and why bottlenecks occur.
- Modelling establishes a relationship between operational performance level and equipment deployment and quantifies with KPI's for productivity enhancement.
- Used in evaluating the costs and effects of new or proposed operations strategies or business flow.
- Assists TOS parameter tuning in optimising resource deployment.

Tasks during developing, start-up and operating terminals



Source: akquinet AG port consulting GmbH



BENEFITS

The main benefit in planning of 'greenfield' terminals or the extension of a 'brownfield' terminal using simulation applications is to find the optimal layout, including the size and width of stacks as well as the traffic network flow for a planned terminal.

Simulation technology also allows the planner to run sensitivity analysis to explore what happens if some planning assumptions do not turn out as originally assumed and to provide a realistic cost benefit analysis as the simulation-based results are much more reliable compared to static calculations only.

Using virtual terminals allows the terminal operator to test the functionality of the control software, as well as the efficiency of the parameter settings within the control system. Furthermore, the operation staff at the terminal may be trained using this technology – similar to a pilot training in flight simulators.

The last step is using the simulation model of the terminal, also called the 'digital twin', to continuously provide with data in parallel to the real live operations with an accurate-to-the-second state of the live terminal. This way the simulation will be able to forecast the operation of the next minutes, hours or shifts and may detect bottlenecks in advance. The operation staff will be enabled to act proactively instead of reacting on challenges.

Nowadays, holistic simulation and emulation products are available in the market, that may be directly used by terminal planners and operators. Typically, first terminal models are created by the specialists, while they may be maintained and configured by the end-user.

Chiu added that simulation models also enable senior or project managers to assess and visualise the outcome of a major investment before making decision and understand where and why terminal bottlenecks occur and if the proposed changes to either the layout, system or equipment would bring in expected improvements.

“The technology can also perform ‘what-if’ analysis and generate quantified advantages or disadvantages for change justification on yard strategy, berth priority and intra-port transfer arrangements,” said Chiu.

- When or at which predefined figure of throughput the next phase should go live?
- How many pieces of equipment will be required for each single phase?
- What does this mean for the investment period?

Besides the benefits mentioned earlier, specified simulation models may also be used to evaluate the implementation of sequenced expansion phases of an existing terminal. Thus, questions may be answered like:

According to Chiu, “The application for future expansion is the same as planning for a new terminal, except that we can obtain relevant input data from the existing facilities which otherwise are not available for a new site.”

CASE STUDIES



Computer simulation model was built to:

1. Perform detailed design on the automatic stacking crane (ASC) terminal layout and traffic flow pattern.
2. Assess the operational performance on the waterside and landside of the terminal design.
3. Provide analytical platform for new automation logics required in in-house TOS (nGen) development, like instructing dual ASC within block, score-based yard location search, straddle carrier deployment and time-based movement optimisation etc.



1. Operations and system assessment for introducing remote-controlled RTGC.
2. Simulation was used to evaluate new yard planning strategy to suit the change in operating requirement of remote-controlled RTGC.
3. The same model also compared and assessed different new logics introduced to nGen to maximise its efficiency and test the safety patterns of the stacks.

MEASURING KPIs TO OPTIMISE PRODUCTIVITY

Besides the typical KPI of container terminal operations (e.g. moves per hour or boxes handled per hour), simulation technology developer deployed an evaluation approach coming from other industries including automotive and chemicals to the container terminal industry.

The overall equipment effectiveness combines information about the productivity, the utilisation of the equipment and the quality of the process within each single defined KPI.

Therefore, the operation staff can detect potential bottlenecks or inadequate utilisation in one view on the dashboard and may go in deeper in the hierarchical structure of the evaluation results to understand the reasons.

This approach may also be applied to the real operation to show the effectiveness of the current operation in real-time manner.



NO JOB IS TOO BIG

When you want to transport a power turbine or 100 ton gas pipe sections thousands of miles across international borders – who do you call? The answer is a project forwarder – a relatively small group of professionals who plan and execute multi-million-dollar projects from bridge building, transporting train locomotives to moving factories piece-by-piece.

Projects are high risk because forwarders quote a price on these projects, with best intentions, but many problems can be encountered along the way. Just a simple thing like a customs person making an error or an important document not being signed, can mean a ship standing at a berth for days, costing thousands of dollars a day, before being released.

“Nowadays the easiest way to define a project would be something that doesn’t fit in a container or on a pallet for an aircraft,” said Scott McArthur, Managing Director of Myriad Logistics. “Projects also means high profits as you need experts and experienced professionals to handle these heavy or oversized cargoes”, he added.

The difference between a freight forwarder and a project forwarder is that the latter works directly with shipowners to charter or part-charter vessels and have direct contact with the ship owners, the stevedores, port authorities and customs. Project managers will be on-site during the loading and unloading and for ocean cargo they would use breakbulk vessel types. For inland, project forwarders must also be prepared to build temporary bridges over rivers and ravines in more remote locations to transport mega cargoes.

On the airfreight side there is a large global freighter fleet available today for urgent project cargo moved by air. Vital large components for major engineering such as power plant machinery for infrastructure projects are typically the kind of cargo moved by airfreight. For very large pieces that don't fit in a conventional freighter aircraft, the enormous Russian built Antonov An-124 can be deployed, with a maximum take-off weight of 40 ton and 226 ft in length.

SPEED IS OF THE ESSENCE

Project forwarding, like most industries, is more technology focused, and that is something that is being embraced with project forwarders hiring IT experts to help improve processes and make them better, faster and more precise. However, in project forwarding the hands-on experience of humans that have lived and breathed the handling of special cargo and project cargo is crucial.

In the automotive sector things must move fast, entire assembly lines are being shipped all over the world with the machinery and tooling equipment. It is a high stress situation and with the world being so small nowadays, China and Europe or China and US are just within 16-24 hours away by flight, projects are becoming more time definite, so, you need to know what you are doing.

“Having talent the ability to manage stressful situations, the knowledge and the contacts required to really handle mega projects properly are the most important attributes for a successful project forwarder,” said McArthur.

“I guess you can say project professionals are the high rollers of the forwarding world,” he concluded.

The Antonov An-124 cargo aircraft.



GLOBAL GIANT PROJECTS UNDERWAY

There are many multi-billion-dollar engineering projects underway around the world which involve excavating tunnels and bridge building. Then there are mines under construction in Central and South America and major land reclamation projects all over the world.

In West Africa, such as Angola, there are multiple major infrastructure projects underway to rebuilding roads and ports. In South East Asia, there are new airports, expansion of seaports, hospitals and housing projects. All are utilising project forwarding either locally or importing heavy or large materials, machinery and equipment.

BRI BOOM TIME FOR PROJECT CARGO

The Belt and Road initiative (BRI) is the most exciting project involving potentially more than 100 countries with thousands of kilometres of new roads and rail systems. The project will take many years to complete, not only because of the sheer size of the project, but also all the politics, the lengthy decision making processes and the lead times from when a project is given the green light to completion can take three to four years.

According to the China International Contractors Association, in 2017 alone, Chinese contractors concluded 7,217 construction contracts along the Belt and Road and 13,267 construction contracts globally.

COMPETITIVE LANDSCAPE

“The project logistics market is fairly fragmented in nature, with the presence of large global players and small- and medium-sized local players. Most of the global logistics players have a special project cargo division to meet the market needs and demand. Additionally, local players are increasingly enhancing their capabilities, in terms of fleet size, service offerings, industries served and technology. Global manufacturers are making large and oversized components in the factory sites (off-site), which creates huge complexities for the heavy cargo haulage companies. The global companies who have high capital and assets can invest in upgraded fleets and can benefit from the aforementioned scenario. On the other hand, regional and local players are also coming up with better industry solutions to support the needs of the clients in executing the projects in scheduled time,” according to a report by Mordor Intelligence ‘Project Logistics Market – Growth, Trends and Forecast (2020 – 2025).’

2019-2024 MARKET SNAPSHOT

Project Logistics Market forecast



Source: Mordor Intelligence



A distillation column on a barge floats to the factory.

RENEWABLE MARKET GROWTH IN EUROPE

One of the fastest growing sectors in the project forwarding sector is renewable energy, particularly wind turbine power. In 2020, the European Union (EU) is aiming to achieve sourcing 20 per cent of all energy consumed in the bloc from sustainable means, that is expected to grow 12 per cent by 2030, according to a report on the Breakbulk Europe website.

Once 2030 is reached, EU estimates suggest an additional 320 gigawatt (GW) of wind power, both on and offshore, will be added to Europe’s energy mix. Germany will install the most, with 85 GW of wind, followed by France with 43 GW and the United Kingdom (UK) with 38 GW. Investment within the EU is growing and wind power is the major sector to receive investment.

The UK is at the forefront of European wind investment, in the first half of 2019 the country installed 931 megawatt (MW) of offshore capacity. It also has significant projects underway, for example the Hornsea-1, a 1.2 GW wind farm being built off the North-East coast, it will be the largest of its kind in the world once completed.

The UK’s University of Sussex suggests that Europe by itself has the power to meet the globe’s entire energy demands. A study revealed that, if Europe meets its potential onshore wind farm capacity, it could power 52.5 terawatt of power, according to the Breakbulk Europe report.



Offshore windfarms have a growing role in cutting carbon emissions.

COMPLEX OFFSHORE AND ONSHORE INSTALLATIONS

Transporting wind turbines including the generator, gearbox, drive train, and brake assembly particularly to offshore installations is challenging and require highly skilled professionals. Furthermore, to maximise the efficiency of wind turbines, the blades have been lengthened by more than 30 per cent to 50 metres during the last decade, creating another transportation challenge for project forwarders.

Editor’s Note: During the COVID-19 pandemic, many projects have been suspended, but will resume when the current crisis is over. Major infrastructure projects such as dam building and power generation are largely funded by investment banks and sovereign wealth funds. There may be delays in completing some of the projects as financing options are reviewed, post-coronavirus.

REVERSE LOGISTICS A KEY TO MORE SUSTAINABLE SUPPLY CHAIN

Traditional supply chains have been developed in a one-way pattern of production and consumption, which despite being an engine for economic growth, is also an unsustainable model as it depletes resources, according to a study about the 'Reverse Logistics Maturity Model' produced by DHL, Cranfield University and the Ellen MacArthur Foundation.

The study is focused on the development of a circular economy and the need to rethink materials and energy use to reduce consumption of raw materials, such as renewable and reusable products.

For many years once a product was delivered to the consignee, that was the end of the process for logistics services providers and shippers. Now with the advent of on-line shopping, consumers are driving growth in reverse logistics. Today, there is an expectation from shoppers that a product which is delivered in the wrong size or colour will be returned free of charge.

On the industrial side of logistics, the aerospace and automotive sector has long been a leader in reverse logistics, with components being returned because they are the wrong size, shape, material or have been damaged during transit. Mechanical parts in these two sectors are often customised with individual serial numbers to ensure each product is authentic, backed by a certification process to reduce the risk of fake parts entering the supply chain.

The consumer electronics industry which includes mobile phones and computers also has a robust returns sector, although many of the products are returned to local depots or customer service facilities.

Each of the business verticals has specialist suppliers who understands the complexities of each sectors supply chain. One overriding factor is to develop a more sustainable reverse logistics supply chain with improved access to data from consumers highlighting the reasons why products are returned and how often, this can make a significant reduction in industrial waste, as products can be reused, recycled or resold to minimise loss.

LOGISTICS COMPLETES THE CIRCLE

Reverse logistics will play a major role in developing the circular model, transporting end of life goods to be reused and recycled and as important, managing the flow of data to enable optimal reverse supply chains, according to the Reverse Logistics Maturity Model report.

“Logistics not only the collection and transport of materials and products but value-added activities such as testing, sorting, refurbishing, recycling and redistribution,” according to the report.

Potentially a massive industry is emerging and one that ticks all of the boxes in terms of sustainability and providing a big opportunity for logistics companies, particularly those with an existing global infrastructure, to develop a new line of business utilising existing assets and expertise.

CROSS BORDER RETURNS

The volume of cross-border returns has increased exponentially due to globalisation, with products typically manufactured in China and sold in Europe and the United States (US). The level of complexity in returning products is high as it includes customs compliance as well as health and environmental laws and regulations.

Building a digital returns platform for shippers, logistics services providers and customers is time consuming and costly, so most companies opt to outsource physical collections to third-party logistics companies.

In the fashion industry, such as footwear and sportswear sectors, there has been a lot of waste in recent years as returned goods were not being sent back in an efficient and cost-effective way. Fashion brands did not know the reason why goods were being returned by consumers as they did not have the data.

Two experienced reverse logistics professionals in the United Kingdom (UK), Graham Best and Phil Smith, Co-Founder of ReBOUND, saw the opportunity to provide an integrated platform focused on online shopping, connecting consumers, retailers, delivery and logistics companies.

The company helps many of the UK’s leading retail brands as their customers, who manage their entire returns business through their integrated reverse logistics platform.

“Consumers now expect a free returns policy from online retailers and it makes sense to integrate all of the reverse logistics through a single platform, enabling transparency throughout the whole process and providing data that can be used to improve efficiency and reduce costs,” said Graham Best, CEO and Co-Founder of ReBOUND.

If a retailer’s returns policy is poorly reviewed, then the consumer will not trust the retailer and they will shop elsewhere. In contrast a good returns service attracts business from larger global markets, based solely on the trusted returns policy. Free returns are now used as a marketing pitch and provide competitive advantage to many leading retailers.

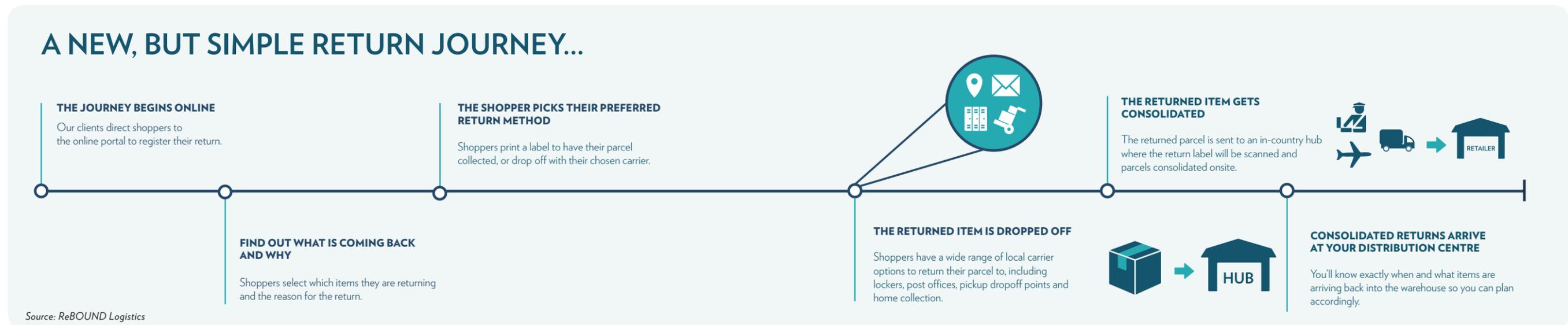
“Returns are no longer an afterthought for retailers, who are now factoring returns into their digital strategy to ensure they are not a barrier to cross-border trade. The US and Europe are typically high-volume lanes for UK brands, but more recently key online players are also ramping up sales in Asia and Russia,” said Best.

HOW REVERSE LOGISTICS GAIN COMPETITIVE ADVANTAGE

Zappos, an online retailer of shoes and apparel, built its success on the promise of free and easy returns. The company actually encourages customers to order two sizes of shoes to make sure they end up with one pair that fits. Zappos’ use of logistics as a competitive service advantage is one reason 75 per cent of the retailer’s shoppers are repeat customers. While this policy drives up return volumes and shipping costs, it reduces customers’ hesitancy to place an order and results in more sales overall.

(Source: 6 Things You Can Do To Make Returns a Competitive Advantage by Fortna)

Amazon centralises returns in a single facility for efficiency. The Lexington, Kentucky facility is designed to handle both inbound returns and outbound disposition of returned inventory. Amazon makes it easy for customers by providing a pre-paid shipping label so packages can be dropped off or scheduled for pick-up by UPS. For prime-eligible items, the company credits the customer’s account within 24-48 hours of initiating the return; in many cases before the customer has even shipped it, to encourage the order of replacement or additional items.



Hermes fulfilment is the largest fully automated reverse logistics warehouse in the world. Rather than continue to manually sort returns in its picking warehouse, Hermes looked to automation technology to increase efficiency and accuracy.

The automatic returns management system has a storage capacity of 1 million items in approximately 176,000 storage locations. Most products remain in the system for only a few hours. Utilising up to 30 workstations on two levels, up to 15,000 items per hour are processed during peak times.

The use of automation at Hermes has enabled the company to process returns faster with greater flexibility. They've also been able to improve quality with greater accuracy and make better use of the space in the facility.

SIX THINGS YOU CAN DO TO MAKE RETURNS A COMPETITIVE ADVANTAGE

- 1 Decide whether to outsource or handle returns in-house
- 2 Determine the true cost of returns
- 3 Implement metrics and management controls for returns
- 4 Work towards a single view of inventory
- 5 Mitigate the need for returns
- 6 Align return policies to incentivise the lowest cost return option or de-incentivize returns

(Source: Fortna)

WHAT IS THE ESTIMATED VALUE OF THE REVERSE LOGISTICS SECTOR AND WHAT ARE THE MAJOR TRADE LANES?

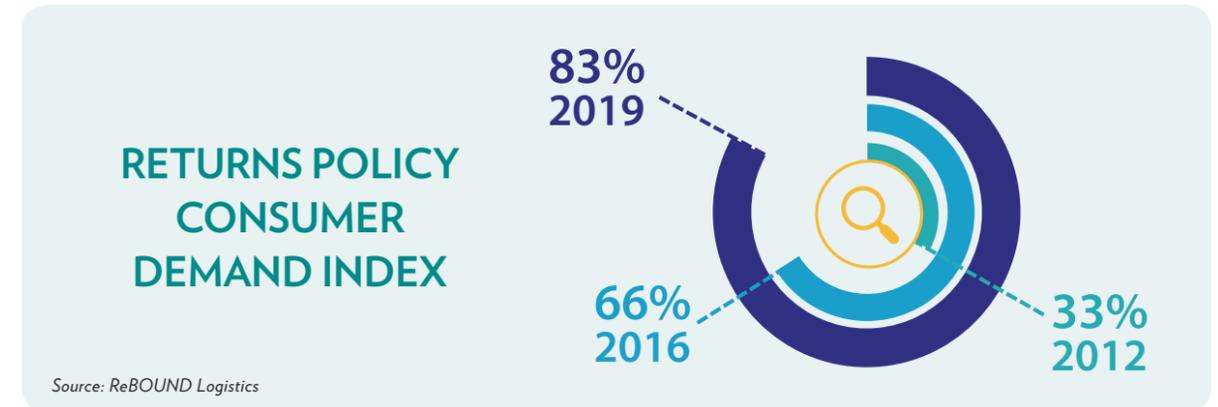


In the UK alone where returns rates average 30 per cent for the fashion sector, ReBOUND estimates that the impact of clothing returns over peak would have amounted to US\$2.6 billion in 2019. The returns specialists also estimate that global returns across all product verticals would have cost UK retailers approximately US\$90 billion in 2018.

According to the US based National Retail Federation, if returns were a corporation, they would rank number 3 on the Fortune 500 list.

INDUSTRY TRENDS

More shoppers than ever are looking at the return policy before buying.



Returns behaviour varies across verticals – for instance footwear experiences higher returns rates at around 10 per cent higher than other clothing and ladies evening wear can be double the norm for daywear, according to ReBOUND's statistics. The sports leisure wear sector is also growing very quickly following a similar profile to fashion.

Boom regions for reverse logistics are North America, Europe, Russia, Hong Kong and Australia; but there are also positive signs in South America, the Middle East, South East Asia and Mainland China are all moving up, according to Best.

FIVE REASONS ORGANISATIONS SHOULD IMPLEMENT THEIR OWN REVERSE LOGISTICS STRATEGIES:

- 1 Allows a trader to receive products back from the consumer or send unsold merchandise back to the manufacturer to be taken apart, sorted, reassembled or recycled; minimising overall costs for an organisation
- 2 Reverse logistics can be valuable in increasing product lifecycles, supply chain complexity, maintainable practices and consumer preferences; which have to be improved on to maintain productivity and growth
- 3 Gains can include; increasing speed of production, reducing costs (transportation, administrative, and aftermarket maintenance, repair and replacement), retaining customers by improving service goals and meeting sustainability goals
- 4 More value can be extracted from used/returned goods instead of wasting manpower, time and costs of raw materials involved in the original supply chain
- 5 Improved customer satisfaction and loyalty by paying more attention to faulty goods, and repairs of merchandise. Reverse logistics can include gaining feedback to make improvements and to improve the understanding of real reasons for product returns.

(Source: Paul Hinz, Adaptalift Group website, Logistics Blog)

NEW ERA DAWNS AS STOCKHOLM TERMINAL IS UNVEILED



Operations will commence at the brand-new container terminal Hutchison Ports Stockholm very soon.

Preparations for the opening of Hutchison Ports Stockholm are currently in full swing in Norvik, some 60 kilometres south of Stockholm, the terminal's infrastructure and facilities are quickly being finalised. The quay wall, container stack, office building and on-site rail track are practically ready for use. At the same time, the equipment and IT systems for efficiently handling ships and the hinterland modalities train and truck are arriving and are rapidly being installed. In the run-up to the launch of the operation, these are currently being subjected to extensive testing.

In phase one, Hutchison Ports Stockholm will start out on a 450 metre quay with two quay cranes (QCs) with a reach of 22 containers wide. A virtual QC integration was held among Hutchison Ports Stockholm Operation and IT team and the crane manufacturer with great success. The team was able to perform normal and exceptional flows to identify potential design issues early to reduce on-site QC cycle time. In addition, eight automatic straddle carriers (Auto-SCs) capable of stacking three-high will be deployed for the transport of containers at the terminal.

After a manual start, operations at the new terminal will be substantially automated soon afterwards. The QCs supplied by the manufacturer can be remotely operated, while the new generation of intelligent straddle carriers allow for unmanned operations using automation.

The terminal is capable to handle all visiting trucks with minimal human intervention, from initial pre-notification to gate-in and gate-out. Truck drivers will use the Hutchison Ports ubi app (*to learn more, please refer to OPPORTUNITY Issue 8 - "Ubi extends reach to new ports."*) to prepare and organise their terminal visits, while at the terminal, optical character recognition will play an important role for identifying drivers and controlling each visit.



Arrival of automatic straddle carriers.

POTENTIAL GAME CHANGER

There are more factors that make Hutchison Ports Stockholm a potential game changer for north European container logistics. Today, nearly half of Sweden's gross national product is generated near downtown Stockholm, with container flows travel via the port of Gothenburg on the south-westerly coast of Sweden necessitating 500 kilometres of transport over land. Furthermore, the inbound and outbound cargo flows at the current Container Terminal Frihamnen is limited due to its draught and capacity limits.

The new Hutchison Ports Stockholm terminal at Norvik will efficiently serve Sweden's capital and the surrounding regions directly by sea as its the only deepwater facility along the east coast of Sweden. With a depth along the quay of 16.5 metres, an ideal location on the coast and state-of-the art equipment and facilities, the new terminal is ideally equipped for changing these ingrained transport patterns. Vessels of any size will be able to moor at the new facility when operation commence. Pilotage from the fairway only takes fifteen minutes compare to four hours at the current terminal.

Hutchison Ports Stockholm will be ideal to serve as a major hub for container flows to and from the adjacent Baltic region at its new terminal location. (see fig. 1)

SUSTAINABILITY BOOST

Last but not least, the launch of Hutchison Ports Stockholm will give an important boost to sustainability. Using more environmentally friendly diesel-hybrid equipment, for example, but also through the rail facilities that are available on-site with direct connection to the Swedish rail network. The current terminal will be decommissioned shortly after Hutchison Ports Stockholm has come on stream. This will help divert freight traffic away from the highly populated Stockholm's city area.

At the same time, the municipality is given the widely desired opportunity to convert the old terminal area into an attractive residential area.

Lawrence Yam, CEO of Hutchison Ports Sweden said, "We are very eager to make Hutchison Ports Stockholm terminal a great success. With the deepest draught of all ports in Sweden, the new equipment and the latest technology, our customers will benefit from high productivity at an outstanding location. We are looking forward to develop and expand business opportunities with our customers."



Arrival of remote control quay cranes.

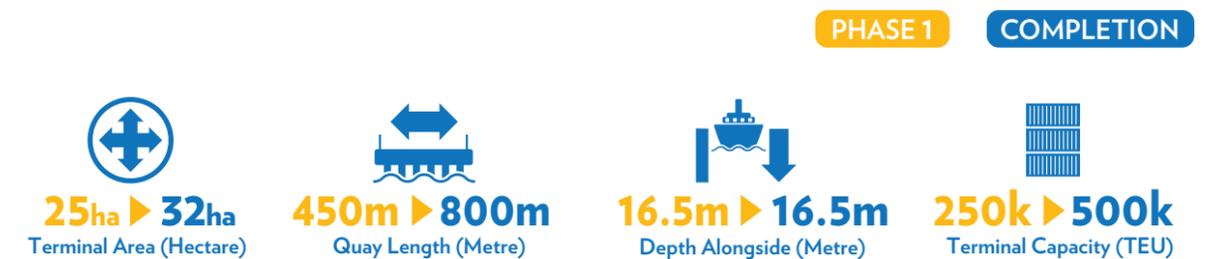


Figure 1

GSBN BLOCKCHAIN GROUP TAKES MAJOR STEP FORWARD

CargoSmart Limited, a leading logistics technology solutions provider, announced that nine industry-leading ocean carriers and terminal operators, namely CMA CGM, COSCO SHIPPING LINES (COSCO), COSCO SHIPPING Ports, Hapag-Lloyd, Hutchison Ports, OOCL, Port of Qingdao, PSA International and Shanghai International Port Group (SIPG), have signed a shareholders' agreement in the proposed Global Shipping Business Network (GSBN).

The new agreement demonstrates commitment by GSBN shareholders to the project and a significant milestone in the blockchain group's official establishment. GSBN will develop innovative applications to create value to stakeholders in the supply chain.

GSBN will be established as a not-for-profit organisation that operates and facilitates a secure and trusted data exchange platform for all stakeholders throughout the supply chain. The consortium will nurture community participation and introduce a wide range of innovative services and applications to streamline operational processes and overall efficiency. CargoSmart will be the technology solutions provider and platform operator for the GSBN.

The agreement signed on February 27, followed completion of blockchain proof-of-concepts (PoC) with eTradeConnect facilitated by the Hong Kong Monetary Authority in November 2019 (refer to OPPORTUNITY issue 8, 'New ventures and opportunities around the world') proves that the GSBN and its associated technologies will be able to bring real benefits to the industry. The network's unique combination of carriers and terminal operators provides a balanced perspective, generating new ideas to transform the industry by going beyond the conventional carrier-centric business model.

CargoSmart has recently announced that it conducted a pilot project with COSCO, SIPG and Tesla for a new application to transform the cargo release process. It is among the first pilot projects with an ocean carrier conducting a real-time exchange of shipment data with a terminal operator through blockchain. Such an application will undoubtedly accelerate the digitalisation of shipping industry processes and the further optimisation of currently stressed global supply chains. The application will be further developed for participants of the GSBN blockchain consortium, once it is officially established.



* COSCO SHIPPING LINES and COSCO SHIPPING Ports

OPPORTUNITY.

HUTCHISON PORTS HELPS FIGHT GLOBAL DEFORESTATION



Hutchison Ports has undertaken a tree-planting initiative to help reduce the rate of global deforestation inside or near its ports and facilities towards the end of last year's GoGreen initiative. Hutchison Ports network of ports has been participating in different global environmental initiatives as well as GoGreen events for the past five years, covering waste minimisation and recycling of waste product.

During the latest GoGreen event, some 1,100 participants including staff and families together with business partners planted over 4,200 trees of various species inside and around the terminals to protect biodiversity.

 **4,200+ trees**

 **1,100 participants**



Scan QR code to visit official website.

THERE WERE 21 PORTS IN 13 COUNTRIES PARTICIPATED GOGREEN 2019.



- | | | | |
|------------------------------|---------------------------|-----------------------------------|--|
| 1. Hutchison Ports Ajman | 7. Hutchison Ports Gydnia | 13. Hutchison Ports Pakistan | 20. Hutchison Ports Yantian |
| 2. Hutchison Ports Australia | 8. Hutchison Ports HICT | 14. Hutchison Ports PPC | 21. Jiangmen International Container Terminals |
| 3. Hutchison Ports BACTSSA | 9. Hutchison Ports HIT | 15. Hutchison Ports RAK | |
| 4. Hutchison Ports BEST | 10. Hutchison Ports HPIC | 16. Hutchison Ports SITV | |
| 5. Hutchison Ports Busan | 11. Hutchison Ports KICT | 17. Hutchison Ports Tanzania | |
| 6. Hutchison Ports Gwangyang | 12. Hutchison Ports Oman | 18 & 19. Hutchison Ports Thailand | |



OUR NEW TERMINAL COMING SOON

