Lloyd's List

One Hundred Ports 2017

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A new reality

Linton Nightingale
Top 100 Ports Editor

If 2015 was a stark awakening for the container port industry that the golden years were coming to a close, then last year revealed tepid growth as the new reality.

The days of 5%-6% annualised throughput gains are long gone, let alone the regular double-digit growth of the not-so-distant past.

Following on from mere 1% increase the previous year, the 2017 edition of Lloyd's List's top 100 container ports shows that the elite box facilities achieved accumulative growth of just 2% in 2016.

Slower economic growth in China played its part, highlighting once more its intrinsic link to the wider fortunes of an industry dependent on its export trade.

Nevertheless, China and its colossus ports were still the main drivers of growth last year, reporting combined volume increases at a level higher than any other comparative region.

Europe maintained its moderate growth, as one would expect from a mature market, while growth in North America, the Mediterranean and the Middle East was largely fragmented.

Throughput levels in southeast Asia fared rather better as new manufacturing bases drove outward trade, yet in Latin America the economic frailties of key trading nations put paid to port progress.

Significant growth opportunities were few and far between, although some ports did manage to improve markedly on their 2015 performance. However, more often than not this was to the detriment of a rival box facility, stealing business from elsewhere rather than capturing previously untapped markets.

Analysts forecasts of continued slower volume growth in the short to medium term suggests that this competitive environment will only increase.

In response, ports and terminals are starting to follow the same consolidation narrative as the liner operators. They too are looking to tie down customers and volumes long term. Whether this means cosying up with neighbouring terminals or offering joint ownership opportunities to carriers, will in many instances be seen as a necessity to safeguard future business.

Add to this the ongoing battle to accommodate bigger and bigger vessels, life is becoming ever more complicated for ports and terminals, accustomed to year upon year of healthy throughput advances and a relatively stable operating environment.

Adjusting to this new era will certainly be a challenge for ports, but acclimatise they must.

Top 100
Container Ports 2017

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Top 100
Container Ports 2017

Slowly does it

Global box terminal growth maintains moderate incline as China remains chief driver, writes **Linton Nightingale**

THE top 100 container ports handled 555.6m teu in 2016, up 2.2%, or slightly over 12m teu, on 2015 as the trend of subdued volume growth carried over from the previous year.

Total volumes may have risen moderately but this was not to say that there were not any success stories over the course of the 12 months. This helped to mask some dire performances elsewhere.

Volume growth was typically fragmented. Fortunes fluctuated between regions and countries, but one common theme remained — China as the main growth engine.

All 20 Chinese ports maintained their top 100 status based on 2016 throughput numbers. With combined volumes totalling 206.8m teu, a rise of 2.7% on 2015 levels, boxes passed across Chinese docks were equivalent to more than 37% of liftings used to compile this year's rankings.

There were some notable standout performers from within China. Tangshan, modest in size compared with other ports in the country — the smallest in our rankings — saw volumes increase at breakneck speed by 27.2%. Meanwhile, medium-sized ports Taicang and Dongguan/Humen reported growth above 8%, as did Fuzhou, recording the second-highest increase by a Chinese port of 9.1%.

Out of the 20 ports represented by the economic powerhouse that is China, seven remain in the top 10.

The largest total from an individual port unsurprisingly came from Shanghai, holding on to its crown as the world's biggest box facility and by some distance. China's colossal port complex handled a phenomenal 37.1m teu in 2016, an annual increase of 1.6%. Although stark in comparison to the 3.5% and 4.5% jump reported in 2015 and 2014 respectively, in relative terms this was still more than 500,000 teu of additional traffic.

Shanghai's eight-year reign as the premier container port came amid another disappointing year for second-placed Singapore. Throughput levels here continue to be held back by an increasingly competitive environment within the Malacca Strait, as the battle for transhipment trade in the region intensifies. The one positive for Singapore was that annual box traffic fell only marginally, by less than 0.1%, upon reaching its overall total of 30.9m teu, against 2015's 8.7% slump.

China's Shenzhen too, despite retaining its third-placed ranking, also saw volumes fall back in 2016. Again, the drop was slight but more significantly this represented the port's first slip in throughput figures since the grip of the global financial crisis in 2009.

Any further decline could result in compatriot Ningbo-Zhousan making its top three debut at Shenzhen's expense on the back of another year of healthy volume growth.

The dual port facility, located in the east of the country south of Shanghai, followed up 2015's success of 6.1% volume growth

Biggest winner
Salalah ▲ 29.4%

The winners

Ranking	Port	2016 annual throughput (teu)	2015 annual throughput (teu)	Annual % change
44 ▲ 17	Salalah	3,325,044	2,569,363	▲ 29.4%
84 ▲ 10	Tangshan	1,932,000	1,519,000	▲ 27.2%
76 ▲ 11	Bandar Abbas	2,130,000	1,678,000	▲ 26.9%
71 ▲ 5	Chittagong	2,346,909	2,024,207	▲ 15.9%
45 ▲ 7	Mundra	3,320,285	2,895,046	▲ 14.7%
74 ▲ 5	Barcelona	2,236,960	1,954,262	▲ 14.5%
66 ▲ 7	London	2,537,000	2,217,000	▲ 14.4%
32 ▲ 4	Manila	4,523,339	3,976,262	▲ 13.8%
91 NEW	Sines	1,513,083	1,332,200	▲ 13.6%
58 ▲ 10	Incheon	2,679,504	2,376,996	▲ 12.7%

with a further 4.6% uptick in traffic. With the latest wave of container shipping consolidation driving more business across its docks in 2017, Shenzhen's position seems increasingly under threat.

Guangzhou gains

Among the top Chinese ports, it was Guangzhou that came out as the winner. Although it was unable to improve on its seventh-placed status, the port reported record throughput levels of 18.9m teu. Box business grew 7% on the back of healthy domestic cargo volumes and free trade agreements signed between South Korea and China.

The other Chinese port majors Qingdao and Tianjin also reported growth last year, yet the exception along with Shenzhen was Hong Kong.

Hong Kong's annual volumes slipped below 20m teu for the first time since 2003. Trade did however reportedly pick up in the latter stages of the year, a trend that transferred into the early part of 2017. But losing out on alliance calls and talk of the relaxation of cabotage restriction under instruction from Beijing could put paid to any recovery in volumes.

Hong Kong's woes meant that Busan traded places with the city port in the rankings to reach fifth spot. But Busan too did not have the best of years.

The South Korean port was hoping to eclipse 20m teu for its full-year 2016 throughput figures, yet missed out thanks largely to the loss of business stemming from the much-publicised Hanjin bankruptcy. Busan has since reset its aim of surpassing 20m teu for 2017.

Busan's move up the rankings was the only positional change in this year's top 10, which combined reported growth of 1.3% year on year in 2016 with total volumes of 219.4m teu.

Aside from China, the biggest representation in our rankings came once more from Asian ports outside the country, where the region's 10 largest box facilities managed a 2.4% increase in traffic.

Singapore and Busan naturally were big contributors, yet the title of the fasting growing port in Asia outside China went to Chittagong, Bangladesh.

The port, handling more than 90% of the country's containerised movements, which are dominated by the ready-made garment trade, moved up five places in the rankings to 71st driven by double-digit volume growth at 15.9%.

Mundra also reaped the benefits of much-needed infrastructural upgrades to support India's burgeoning box trade. Mundra followed up 2015's impressive 6.4% jump in box numbers with an even more impressive 14.7% rise.

Meanwhile, Manila cemented its place as a major player in Southeast Asian trade. Buoyed by a booming national economy and terminal investments it reported a 13.8% increase in container traffic in 2016.

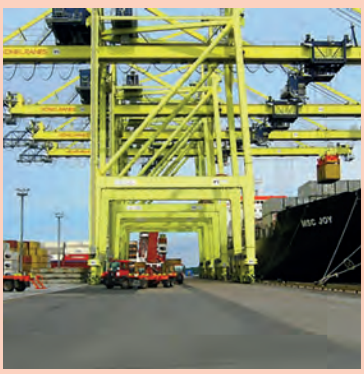
On the Asian continent there were also double-digit surges in box volumes in both Port Klang, Malaysia, and South Korea's Incheon, reporting increases of 10.8% and 12.7% respectively. There was also a return to the top 100 rankings for the Malaysian port of Penang on the back of a 9.1% increase in volumes last year.

Falling foul

In the Middle East and South Asia, the region's far and away largest port, Dubai's Jebel Ali, saw volumes fall back. However, it did manage to hold on to its ninth-placed ranking.

The United Arab Emirates port fell foul of the low oil price, restricting box numbers both domestically and abroad with its oil-dependent trading partners. Volumes in Dubai slipped 5.3% in 2016 to 14.8m teu, but the indications so far this year are that DP World's flagship facility is likely to claw back volume losses.

Elsewhere, there was a rankings debut for Saudi Arabia's new mega box hub King Abdullah just a few



Biggest loser
St Petersburg ▼ 15.0%

The losers

Ranking	Port	2016 annual throughput (teu)	2015 annual throughput (teu)	Annual % change
95 ▼ 9	St Petersburg	1,457,800	1,715,139	▼ 15.0%
49 ▼ 12	Port Said	3,035,900	3,462,400	▼ 12.3%
54 ▼ 9	Ambarli	2,803,133	3,091,026	▼ 9.3%
19 ▼ 2	Tanjung Pelepas	8,280,661	9,120,000	▼ 9.2%
46 ▼ 5	Colon	3,258,381	3,577,427	▼ 8.9%
86 ▼ 5	Dammam	1,785,000	1,954,364	▼ 8.7%
53 ▼ 6	Balboa	2,831,893	3,078,101	▼ 8.0%
42 ▼ 4	Santos	3,393,593	3,645,448	▼ 6.9%
30 ▼ 2	Lianyungang	4,703,300	5,009,000	▼ 6.1%
21 ▼ 1	Long Beach	6,775,171	7,192,066	▼ 5.8%

years after welcoming its first commercial vessel to its docks. With plans to expand capacity to a whopping 20m teu come 2025 to rival Dubai's once seemingly unassailable position as top dog in the Middle East, the port looks likely to remain a rankings regular in the years to come.

Colombo, Sri Lanka, also continued its recent run of good form, as did the fellow UAE ports of Abu Dhabi and Khorfakkan. Volumes also started to return to Iran's Bandar Abbas upon the easing of sanctions.

On the flip side, Port Said's volumes maintained their downward trajectory as the Egyptian economy stuttered, falling 12.3% in 2016 versus the year-ago period.

Contrasting fortunes

California's container port majors Los Angeles and Long Beach remained the big two in North America, but there were contrasting fortunes for the US pair.

Los Angeles reported an 8.5% rise in volume to reach all-time throughput highs, climbing one ranking place in the process to 18th, while neighbouring Long Beach dropped out of the top 20 altogether, having witnessed a 5.8% fall in container liftings.

The result came largely as a consequence of Hanjin. Whereas Los Angeles gained from diverted cargo to its docks following the Korean line's demise, Long Beach lost a key carrier customer.

It was also not all plain sailing on North America's east coast either. Both New York/ New Jersey and Savannah saw traffic numbers decline, although Virginia did provide some joy on the Atlantic seaboard with a healthy rise in volumes last year.

Economic frailties

The major box ports in Latin and Central America were once again exposed to the economic frailties of the region,

resulting in a disappointing 12-month period overall.

Balboa and Colon suffered the most, despite finally celebrating the inauguration of the expanded Panama Canal. Although the newly enhanced Panamanian artery promises to lead a new age of larger vessels transiting the Americas, it does not promise more cargo for the region. With big ships able to make direct calls at destinations either end of the waterway, this has lessened the need for some transhipment activity.

Santos and Cartagena also reported a decline in volumes last year, while Manzanillo, Mexico's main box hub, bucked the trend among the regional players with a respectable rise in traffic of 5%.

In northern Europe, port performance was typical of a mature market. Moderate volume growth was a theme played out across the big container terminal complexes.

The continent's largest port, Rotterdam, returned to the growth trail on the back of a slight traffic dip in 2015, as volumes climbed 1.2%. But the big winner once again proved to be Antwerp. Belgium's box hub continued where it left off the previous year with a further 4% uptick in traffic, spurred by new services switched from ailing compatriot Zeebrugge and a lack of exposure to Russia's beleaguered box market. This hampered Hamburg's progress, as volume growth was restricted to 1%.

Russian trade restrictions made a further dent in box traffic moved through St Petersburg. The Baltic facility saw volumes sink 15% in 2016, the highest fall in percentage terms of any top 100 port, and is now in danger of falling out of the rankings altogether come this time next year.

Returning to the top

Algeciras was reinstated as the Mediterranean's largest container port in 2016. The Spanish transhipment hub swapped places with Valencia despite it, too, recording a rise in liftings.

The major success story in the Mediterranean, however, was Piraeus, as it looks to return to its former glories. The Greek port has come on leaps and bounds since its controversial privatisation and the arrival of new tenants and joint owners China Cosco Shipping Group. With the Chinese conglomerate aiming to push the port up the rankings to become one of world's top 30 box destinations, Algeciras will soon be looking beyond Spain in its bid to hold on to its Mediterranean crown.

BOX-TRAORDI-NARY

The container terminals of Hamburger Hafen und Logistik AG (HHLA) are the hubs of a network that connects ports with economic regions in the hinterland. As a leading European port and transport logistics company, HHLA offers highly efficient container handling for the world's largest ships and high-performance container transport from a single source — in Hamburg, Odessa, Central and Eastern Europe, between the North Sea, Baltic Sea and the Mediterranean.

Box line shake-up: huge risks and fewer rewards for ports?

As carriers amalgamate into a handful of very powerful players, should ports and terminals also consider merging in order to create scale and improve productivity? writes **Janet Porter**

NOWHERE is the impact on ports of container line consolidation more apparent than in the Los Angeles/Long Beach complex, where terminal operators are already feeling the pressure as carriers adjust their networks in response to mergers, acquisitions and the introduction of new alliances.

Admittedly, the two southern California ports are not entirely typical, since most of the 13 terminals across San Pedro Bay are controlled by ocean carriers, which brings an added dimension to the unfolding drama.

But every time one line buys another, two carriers merge, or a group forms an alliance, ports will be affected one way or another, as service schedules are adapted to eliminate duplicate sailings, new port pairs are introduced, or other changes made to ship operations as operators endeavour to improve efficiency while also trying to differentiate their products.

For ports, there will be winners and losers, and it may not be apparent for some time yet which will thrive and which may fail. That is because even though, for the past three years, the container shipping industry has been in the throes of the biggest upheaval it has ever experienced, the shake-out is far from over.

Modest beginnings

It all began in a fairly modest way back in 2014, when Hapag-Lloyd and Chile's CSAV announced plans to merge their container operations.

That was the starting gun for the first round of consolidation since 2005, when Maersk bought Anglo-Dutch carrier P&O Nedlloyd and Hapag-Lloyd acquired CP Ships, itself the product of numerous takeovers.

Next came CMA CGM's takeover of German shortsea operator OPDR, while Hamburg Süd bought Chilean line CCNI. But even then, it was not clear that the industry was going to do much more than tinker round the edges.

The general assumption was there were too many vested interests standing in the way of any major merger or takeover, and any consolidation moves were more likely to involve regional players than any of the global heavyweights.

Singapore's sovereign wealth fund Temasek changed all that when it decided to put its interest in Neptune Orient Lines, up for sale after years of poor financial results – a move that would have seemed unthinkable a few years earlier, when a national carrier was considered more important than profitability.

CMA CGM won the bidding war against Maersk when its $2.4bn offer was accepted in December 2015, with the transaction concluded in the middle of last year.

Throughout 2016, there were consolidation moves that were reshaping the industry almost month-by-month, with state-owned Cosco and China Shipping merging to form the world's fourth largest container line, and Hapag-Lloyd following up its merger with CSAV by amalgamating with Qatari-controlled United Arab Shipping Co.

Bankruptcy shock

But just as the entire container transportation community was absorbing all these realignments

Consolidation Timeline

Apr 2014:	Hapag-Lloyd and CSAV agree to merge container operations
Nov 2014:	CMA CGM announces offer for German shortsea operator OPDR
Mar 2015:	Hamburg Süd takes over Compañía Chilena de Navegación Interoceánica
Dec 2015:	CMA CGM unveils plans to acquire NOL for $2.4bn
Feb 2016:	Cosco and China Shipping complete merger
Aug 2016:	Hanjin Shipping files for bankruptcy
Oct 2016:	NYK, MOL and K Line reveal decision to merge their container lines
Dec 2016:	Maersk's $4bn bid for Hamburg Süd accepted
May 2017:	Hapag-Lloyd and UASC complete merger
Jun 2017:	Maersk agrees to sell Mercosur to CMA CGM
Jul 2017:	Cosco announces $6.3bn takeover of OOIL/OOCL

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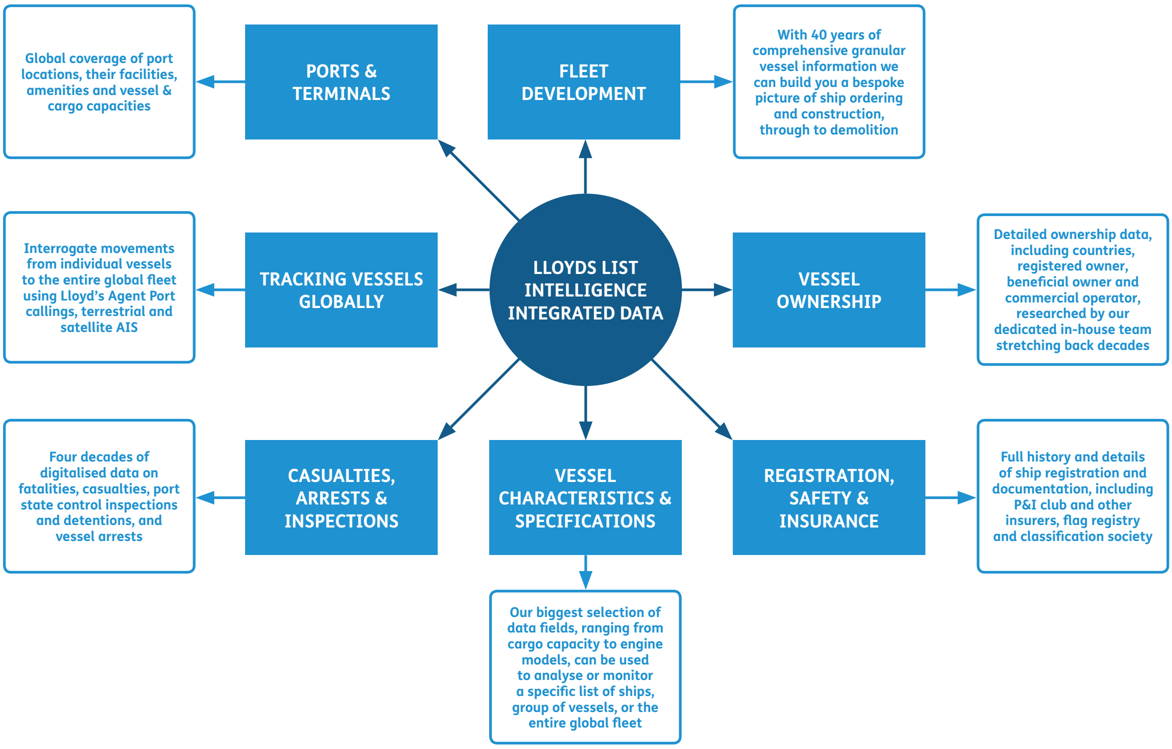

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came the biggest shock of all: the collapse of Hanjin Shipping in August 2016. It left in its wake a trail of chaos as ships stayed out at sea for fear of arrest in port, and cargo was left all over the place.

That bankruptcy may have been the final straw for the big three Japanese shipping groups, as – in yet another extraordinary turn of events – they announced at the end of October plans to combine forces and create a single container shipping line. The new legal entity, Ocean Network Express, or ONE, came into being in July and will inaugurate services next April.

Not to be outdone, Maersk returned to the fray in December, with its $4bn bid for Hamburg Süd accepted, as Germany's Oetker family finally decided to sell its shipping business after considering the matter for several years and coming very close to merging with Hapag-Lloyd at one stage. The transaction should be finalised later this year.

Deal of the decade?

Finally came the biggest deal of all, with Cosco Shipping poised to swallow up perhaps the juiciest prize in the business, the highly regarded Orient Overseas Container Line, in a $6.3bn deal. That will propel the enlarged group into the world's top three carriers in terms of capacity, behind the European pair Maersk and MSC, but ahead of CMA CGM.

And there could still be more to come, with questions over the future of mid-sized players such as Taiwan's Yang Ming, Israeli line Zim, and Singapore's Pacific International Lines.

But as if this were not enough for service providers such as terminal operators to absorb, they also have to keep track of the new global alliances that now dominate the east-west container trades, and their continuing evolution.

The 2M alliance of Maersk and MSC now has a looseknit agreement with South Korea's Hyundai Merchant Marine, which failed to secure full membership – partly because of customer concerns about the risks associated with a line perceived to be financially vulnerable.

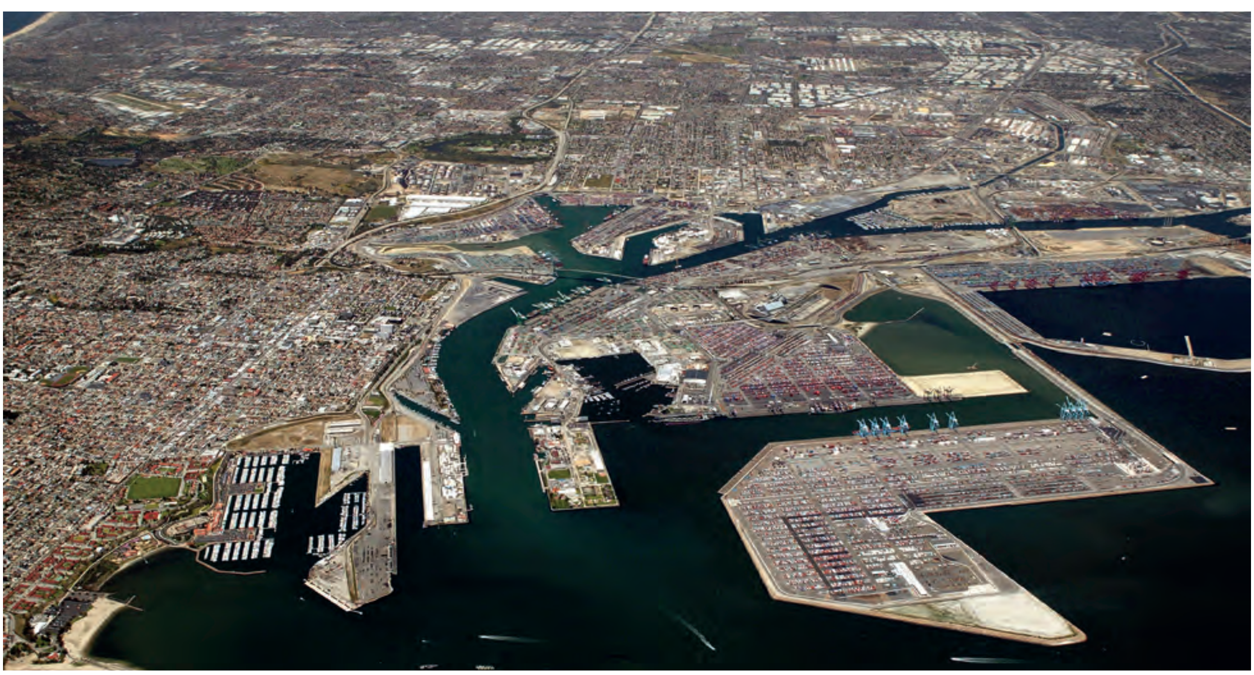
Meanwhile change is afoot within the other two groups because of merger and acquisition developments.

The balance of power within the Ocean Alliance of CMA CGM, Evergreen, Cosco Shipping and OOCL will shift as the Chinese and Hong Kong lines are combined – albeit while maintaining separate brands. And The Alliance of Hapag-Lloyd, NYK, MOL, K Line and Yang Ming now consists of three rather than five members, following the merger of the Japanese trio.

Every single one of these deals will have a bearing on ports, which are already having to cope with the rapid arrival of much larger tonnage into the main container markets, with 20,000 teu-class ships set to dominate the Asia-Europe route by the end of next year, and probably entering the transpacific trades on a regular basis in the not-too-distant future.

One uncertainty is how those carriers with terminal interests will respond. Maersk is pursuing one strategy, bringing its container line and port operations into a single business unit and ensuring Maersk Line moves as much traffic as possible through APM Terminals' facilities.

MSC and Cosco both have sizeable terminal interests that they are expanding, the former



The LA/Long Beach complex looks like a single port

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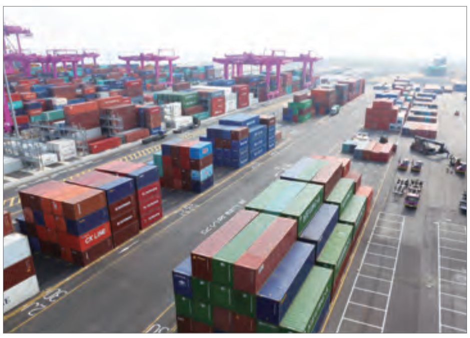

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having recently taken a 35-year concession in Ivory Coast and the latter in the process of buying Noatum's terminals in Valencia and Bilbao.

CMA CGM, on the other hand, is selling a majority stake in the Global Gateway South terminal in LA that it acquired when buying NOL and its liner arm APL. There may be other former APL terminal stakes that it wants to dispose of, but CMA CGM still has plenty of port assets in its portfolio.

Likewise, Evergreen and the Japanese big three are among those with terminal interests, and may be wondering whether these continue to provide a strategic advantage, or would be better off in the hands of one of the big ports groups, or in need of new capital from private equity.

At the same time, Chinese state-owned ports company Shanghai International Port Group is investing in a container line by teaming up with Cosco in the takeover of OOCL.

Port collaboration

For the terminal operator heavyweights such as Hutchison, DP World, and PSA, as well as smaller players and individual ports, there is also a great deal to consider.

With so much at risk as the customer base shrinks in number, collaboration between ports along the lines of the arrangement between Seattle and Tacoma is one scenario now gaining favour.

So could two of the world's top 20 ports eventually combine rather than continue with excess capacity and the inefficient use of berths and equipment because of the ownership structure of the 13 terminals located in Los Angeles and Long Beach, most of which are controlled by container lines?

Tale of two cities

To the uninitiated, the two ports that fill San Pedro Bay, some 30 miles from Hollywood, look like a single vast complex, with nothing to distinguish one from the other. Yet they are arch competitors, run by two separate cities, and the official line is that the status quo will remain.

CMA CGM is selling a majority stake in LA terminal Global Gateway South

The current set-up makes little sense any more, however. Whereas in the past, individual lines wanted their own terminal in order to guarantee berths and manage intermodal connections, that is no longer the case in the era of super-sized alliances.

All four members of the Ocean Alliance – Cosco, OOCL, CMA CGM and Evergreen – have their own separate facilities in the LA/Long Beach complex. But will Cosco keep its premises in LA when OOCL is building the most technically advanced terminal in the country across the harbour in Long Beach?

Evergreen has stated that consolidation of the Ocean Alliance's terminals within LA/Long Beach is not being considered "at this stage", leaving open the possibility that rationalisation in one form or another may happen eventually.

Within The Alliance, will the Japanese lines that are now combined into ONE keep their separate terminals?

And Hyundai Merchant Marine has already decided to close its California United Terminals that was on land leased from APM Terminals in LA, now it has a 20% stake in Pier T in Long Beach.

Each of the container terminals in LA/Long Beach is the size of a small port in its own right, leaving a large amount of latent capacity and the inefficient use of assets that has been brought into stark relief by a more concentrated container shipping industry and the arrival of three huge vessel-sharing agreements. And such challenges are replicated – on a smaller scale – in ports around the world.

So, at a time when so many extraordinary events have occurred in an industry that had been somewhat stuck in its ways for the best part of 10 years, who is to say that a merger of Los Angeles and Long Beach ports could never happen? After all, the Port of New York and New Jersey crosses state lines.

Maybe one day, California will deem that one plus one makes sound commercial sense and, in so doing, catapult San Pedro into the top 10 in a show of strength to competitors from ports in Canada, Mexico and on the US Gulf and east coasts.

Stranger things have happened.

Don’t believe the hype

The upswing in global box demand in the first half of 2017 will prove short-lived, while life will not get any easier for traditional operators as China’s port interests build, writes **Linton Nightingale**

SLUGGISH growth in global container port volumes is here to stay. That is the clear message from analysts to an industry that should not read too much into recent trade developments.

Box traffic may have surged in the first half of 2017 — prompting revised forecasts of unprecedented 5% or even 6% full-year volume growth — but that will prove to be an anomaly. Moderate demand growth could return as early as next year.

A survey by industry analysts Alphaliner of more than 250 ports revealed that global container port throughput grew by an estimated 6.7% in the first six months of the year, the industry’s strongest showing since 2011.

That momentum is anticipated to continue into the second half of the year, after July figures revealed similar strong growth levels.

Alphaliner noted positive growth across all regions in the January through June period, in which south Asian ports reported the highest growth margin, of approximately 9.3%. Chinese and US ports were close behind with respective increases of 8.4% and 8.2%, while only the Middle East saw comparative token gains of around 3.1%.

Standout port performances from among the top 10 ranked ports came from Shanghai (9.6%), Ningbo-Zhoushan (14.4%) and Hong Kong (10.5%).

Unfortunately for ports these figures, impressive nonetheless, are not the green shoots of an impending recovery or an indication of a return to past glories. Rather, a correction from the two previous years’ failings, says Drewry senior analyst for ports and terminals Neil Davidson.

“If you look at the current growth rates they are largely skewed. Take Latin America, for example, this year where there is big growth rates it is because 2016 was so terrible,” he says.

“The message is not to get too carried away with potential 2017 growth, as in 2018 we will probably be back to our normal 3% or 4% growth level."

These thoughts are echoed by Danish Ship Finance director of research Christopher Rex who says that while demand will continue to increase it will likely rise at a slower rate over the next two or three years.

"Growth will slowly start to level off and become less and less per year," he says.

This also fits with the new normal observed by the World Trade Organisation, in which global trade is growing at a slower pace than that of gross domestic product.

Foremost facilitator

Although this climate of slow growth will be unfamiliar to ports, one trend that will not change is Asia, and more specifically China, remaining the main facilitator of global trade, says Mr Davidson. The only difference is that growth will not be so pronounced.

The emerging Asian markets too will also continue to play a key role in driving intercontinental cargo flows, as well as the vital intra-Asia trade. There is also hope that India will realise its strong growth potential in the near future, he adds.

Elsewhere, the outlook is rather uncertain. The Middle East has seen its volumes suffer as a result of the low oil price, and until there is a sharp rise, it is difficult to envisage a significant upturn in fortunes. The same applies for key markets in West Africa, such as Nigeria and Angola.

Signs that the Latin American economies are improving may be reassuring for the region's ports, but this is not going to trigger recovery on a grand scale when you consider its size in comparison to the lucrative Asian market.

Europe as a mature market is unlikely to provide significant growth, while the direction of North American volumes is rather tenuous.

Since the signing-in of the new US administration, talk of nationalism and protectionism has cast doubt over the country's future commitment to global trade agreements. The future of the North American Free Trade Agreement for one has been heavily scrutinised by President Donald Trump, who has threatened to tear up the agreement unless it better serves US interests.

The major positive is the current strength of the US economy, yet even its future is not clear cut, explains Mr Davidson.

"The US treasury appears to be running out of money and needs to borrow more, so the stock market could potentially fall off a cliff," he warns.

Container throughput growth at top 10 ports (January-June 2017)

Ranking	Port	Growth in teu (%)
1	Shanghai	▲9.6%
2	Singapore	▲6.4%
3	Shenzhen	▲3.8%
4	Ningbo-Zhoushan	▲14.4%
5	Hong Kong	▲10.5%
6	Busan	▲5.0%
7	Guangzhou	▲11.7%
8	Qingdao	▲1.8%
9	Dubai	▲4.3%
10	Tianjin	▲2.2%

Source: Alphaliner

Operator hardship

A sustained period of moderate growth and uncertainties within key trading markets will make life that much harder for the global terminal operators, which are already struggling to cope with the rapid evolution of their core customer base, the carriers.

The unprecedented wave of consolidation has continued and now the four former alliances operating the east-west trades have been whittled down to three. For ports and terminals dotted along these routings, ensuring at least one of these groupings is committed to the port is vital.

A terminal with an affiliated line, such as CMA Terminals, Cosco or APM Terminals, has an obvious advantage in this regard. However, with market share and reputations to keep up in an equally competitive liner industry, there is no automatic right to services. Terminal operators must ensure competitiveness regardless.

Moreover, they can also no longer rely on the exclusive business of one line to survive.

Mr Davidson highlights the rise of what he refers to as the 'hybrid operators', ones that have direct links to certain lines yet run them slightly at arm's length.

Cosco Shipping Ports is a prime example. It may have links to Cosco, but it is also running a very successful ports business in its own right.

"The days of the terminals business owned by a shipping line that only served that line are pretty much gone," he says.

Those without a liner arm acting independently, the likes of PSA, DP World, or Hutchison Ports, now have to go about things a different way.

Yes, they can offer a guaranteed service in 27 ports around the world, for example, but that is often not enough, says Mr Davidson. More and more joint ventures between carriers and

Country moves with us

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port operators have been initiated as a result, in a fundamental shift within the nature of terminal ownership. This win-win scenario provides the lines with both a regional base, not to mention an additional revenue stream, while guaranteeing ever more precious cargo for the operators.

New strategy

Weakening demand has also led to a change of strategy from the giant Chinese operators, notably CS Ports and China Merchant Holdings. The pair have responded to slower domestic growth by looking further afield, with sights set firmly on expanding their global footprint to all four corners of the globe. Shanghai International Ports Group too is also branching out its business beyond China.

For the independent and indeed carrier-connected operators with growth aspirations of their own, this poses a major problem. The Chinese companies are willing to pay a premium for terminal assets and can also borrow money at a much lower rate of interest.

"There is a stark contrast between the activity of the Chinese terminal operators compared to the more traditional ones," says Mr Davidson.

"Chinese investors are very aggressive and are happy to take more risks."

With the government-led One Belt, One-Road initiative as a platform, the rise of the Chinese operators within the port sector shows little sign of slowing.

Cosco makes mark on operator league

MODEST global box growth was reflected in the performance of the major terminal operators in 2016, but it also marked the year that China Cosco Shipping rose to prominence in the sector.

The merger of Cosco Shipping Ports, China Shipping and Cosco Container Line spawned a giant, one that became the largest port operator on teu terms overnight.

China Cosco Shipping, as the integrated group is now known, ousted Hutchison Ports at the top of the terminal operator rankings last year with combined volumes of 85.5m teu, according to data compiled by Drewry Maritime Research. This represented a rise of 36.2% against those handled in 2015 by the Cosco Group, which previously held fifth position among the port elite.

In losing its top operator crown, Hutchison saw volumes in 2016 fall 2.3% to 79.1m teu year-on-year, following a disappointing performance domestically and at European facilities.

APM Terminals may have dropped one place, but still managed to gain ground on Hong Kong-based Hutchison as additional volumes stemming from its Grup Marítim TCB acquisition helped boost moderate like-for-like growth.

PSA International rebounded from a fall in traffic the previous year with a positive result for 2016, as volumes grew 5.4% to 67.3m teu, while DP World witnessed a 3.2% uptick in throughput numbers through its terminals to 62.4m teu.

On an equity teu basis, with volumes weighted according to ownership shares, PSA still heads the top five rankings table despite a 1.2% fall in volumes. Hutchison, DP World and APMT maintained their respective second, third and fourth positions, while China Merchants Port Holdings lost its fifth place position at the expense of the newly formed China Cosco Shipping.

Top 5 global/international terminal operators' total throughput, 2016-2015

Million teu / % share of world container port throughput

		2016		2015			
Ranking	**Operator**	**Million teu**	**% share**	**Million teu**	**% share**	**Growth / decline (m teu)**	**Growth / decline (%)**
1 ⇕	China Cosco Shipping	85.5	12.2%	62.8	9.2%	▲ 22.7	▲ 36.2%
2 ⇕	Hutchison Ports	79.1	11.3%	81.0	11.8%	▼ 1.9	▼ 2.3%
3 ⇕	APM Terminals	71.4	10.2%	69.3	10.1%	▲ 2.1	▲ 2.9%
4 ⇕	PSA International	67.3	9.6%	63.8	9.3%	▲ 3.5	▲ 5.4%
5 ⇕	DP World	62.4	8.9%	60.5	8.8%	▲ 1.9	▲ 3.2%

Notes
Unless stated otherwise figures include total annual throughput for all terminals in which more than 10% shareholding held as at 31st Dec 2016.
Figures for each operator do not include volumes from other GTO/ITO and non-GTO/ITO operators in which stakes are held
Due to method of calculation there is some degree of variation between Drewry's figures and some terminal operators' publicly announced results
China Cosco Shipping includes Cosco Shipping Ports, China Shipping and Cosco Container Line for the period Apr-Dec 2016 after the merger in Feb 2016
Hutchison figure include HPH Trust volumes

Source: Drewry Maritime Research

The Top 100 Ports in 2016

Ranking	Port	Country	Region	2016 annual throughput (teu)	2015 annual throughput (teu)	Annual % change
1 ↕	Shanghai	China	Asia	37,133,000	36,537,000	▲ 1.6%
2 ↕	Singapore	Singapore	Asia	30,903,600	30,922,300	▼ 0.1%
3 ↕	Shenzhen	China	Asia	23,979,300	24,204,000	▼ 0.9%
4 ↕	Ningbo-Zhoushan	China	Asia	21,560,000	20,620,000	▲ 4.6%
5 ▲1	Busan	South Korea	Asia	19,850,000	19,469,000	▲ 2.0%
6 ▼1	Hong Kong	China	Asia	19,813,000	20,073,000	▼ 1.3%
7 ↕	Guangzhou	China	Asia	18,857,700	17,624,900	▲ 7.0%
8 ↕	Qingdao	China	Asia	18,010,000	17,510,000	▲ 2.9%
9 ↕	Dubai	UAE	Middle East	14,772,000	15,592,000	▼ 5.3%
10 ↕	Tianjin	China	Asia	14,490,000	14,090,000	▲ 2.8%
11 ▲1	Port Klang	Malaysia	Asia	13,169,577	11,886,685	▲ 10.8%
12 ▼1	Rotterdam	Netherlands	N. Europe	12,385,168	12,234,535	▲ 1.2%
13 ↕	Kaohsiung	Taiwan	Asia	10,464,860	10,264,420	▲ 2.0%
14 ↕	Antwerp	Belgium	N. Europe	10,037,341	9,653,511	▲ 4.0%
15 ↕	Dalian	China	Asia	9,614,000	9,450,000	▲ 1.7%
16 ↕	Xiamen	China	Asia	9,613,679	9,182,815	▲ 4.7%
17 ▲1	Hamburg	Germany	N. Europe	8,910,000	8,821,481	▲ 1.0%
18 ▲1	Los Angeles	United States	North America	8,856,783	8,160,457	▲ 8.5%
19 ▼2	Tanjung Pelepas	Malaysia	Asia	8,280,661	9,120,000	▼ 9.2%
20 ▲1	Laem Chabang	Thailand	Asia	7,227,431	6,780,000	▲ 6.6%
21 ▼1	Long Beach	United States	North America	6,775,171	7,192,066	▼ 5.8%
22 ↕	New York/New Jersey	United States	North America	6,251,953	6,371,720	▼ 1.9%
23 ↕	Yingkou	China	Asia	6,086,000	5,922,000	▲ 2.8%
24 ↕	Ho Chi Minh City	Vietnam	Asia	5,986,747	5,788,084	▲ 3.4%
25 ▲2	Colombo	Sri Lanka	Asia	5,734,923	5,185,467	▲ 10.6%
26 ▼1	Bremen/Bremerhaven	Germany	N. Europe	5,535,000	5,479,000	▲ 1.0%
27 ▼1	Tanjung Priok	Indonesia	Asia	5,514,694	5,201,118	▲ 6.0%
28 ▲3	Algeciras	Spain	Mediterranean	4,761,428	4,515,768	▲ 5.4%
29 ▲1	Valencia	Spain	Mediterranean	4,722,000	4,615,768	▲ 2.3%
30 ▼2	Lianyungang	China	Asia	4,703,300	5,009,000	▼ 6.1%
31 ▼2	Tokyo	Japan	Asia	4,700,000	4,629,000	▲ 1.5%
32 ▲4	Manila	Philippines	Asia	4,523,339	3,976,262	▲ 13.8%
33 ▼1	Jawaharlal Nehru	India	Asia	4,517,587	4,480,000	▲ 0.8%
34 ↕	Khorfakkan	UAE	Middle East	4,330,200	4,142,000	▲ 4.5%
35 ▲4	Taicang	China	Asia	4,081,000	3,760,000	▲ 8.5%
36 ▼1	Felixstowe	UK	N. Europe	4,000,000	3,980,000	▲ 0.5%
37 ▼4	Jeddah	Saudi Arabia	Middle East	3,956,856	4,188,215	▼ 5.5%
38 ▲6	Piraeus	Greece	Mediterranean	3,736,644	3,330,000	▲ 12.2%
39 ▲1	Savannah	United States	North America	3,644,521	3,737,400	▼ 2.5%
40 ▲3	Dongguan/Humen	China	Asia	3,640,000	3,362,657	▲ 8.2%
41 ▲1	Seattle/Tacoma	United States	North America	3,615,752	3,529,084	▲ 2.5%
42 ▼4	Santos	Brazil	Central-South America	3,393,593	3,645,448	▼ 6.9%
43 ▲3	Tanjung Perak (Surabaya)	Indonesia	Asia	3,354,968	3,154,392	▲ 6.4%
44 ▲17	Salalah	Oman	Middle East	3,325,044	2,569,363	▲ 29.4%
45 ▲7	Mundra	India	Asia	3,320,285	2,895,046	▲ 14.7%
46 ▼5	Colon	Panama	Central-South America	3,258,381	3,577,427	▼ 8.9%
47 ▲1	Marsaxlokk	Malta	Mediterranean	3,084,309	3,064,005	▲ 0.7%
48 ▲3	Nanjing	China	Asia	3,083,900	2,940,000	▲ 4.9%
49 ▼12	Port Said	Egypt	Middle East	3,035,900	3,462,400	▼ 12.3%
50 ▲3	Rizhao	China	Asia	3,010,000	2,810,000	▲ 7.1%
51 ▼1	Tanger Med	Morocco	Mediterranean	2,964,278	2,961,837	▲ 0.1%

Ranking	Port	Country	Region	2016 annual throughput (teu)	2015 annual throughput (teu)	Annual % change
52 ▼ 3	Vancouver	Canada	North America	2,929,585	3,054,467	▼ 4.1%
53 ▼ 6	Balboa	Panama	Central- South America	2,831,893	3,078,101	▼ 8.0%
54 ▼ 9	Ambarli	Turkey	Mediterranean	2,803,133	3,091,026	▼ 9.3%
55 ▲ 2	Kobe	Japan	Asia	2,801,160	2,706,967	▲ 3.5%
56 ▲ 8	Gioia Tauro	Italy	Mediterranean	2,797,000	2,547,000	▲ 9.8%
57 ▼ 3	Yokohama	Japan	Asia	2,780,628	2,787,296	▼ 0.2%
58 ▲ 10	Incheon	South Korea	Asia	2,679,504	2,376,996	▲ 12.7%
59 ▼ 1	Nagoya	Japan	Asia	2,658,481	2,630,807	▲ 1.1%
60 ▲ 3	Virginia	United States	North America	2,655,705	2,549,270	▲ 4.2%
61 ▲ 14	Fuzhou	China	Asia	2,650,000	2,430,000	▲ 9.1%
62 ▼ 3	Melbourne	Australia	Asia	2,640,000	2,579,214	▲ 2.4%
63 ▼ 7	Durban	South Africa	Africa	2,620,000	2,770,335	▼ 5.4%
64 ▲ 1	Yantai	China	Asia	2,600,000	2,452,200	▲ 6.0%
65 ▲ 1	Manzanillo	Mexico	Central-South America	2,580,660	2,541,140	▲ 1.6%
66 ▲ 7	London	UK	N. Europe	2,537,000	2,217,000	▲ 14.4%
67 ▼ 7	Cartagena	Colombia	Central-South America	2,510,093	2,610,059	▼ 3.8%
68 ▼ 6	Le Havre	France	N. Europe	2,510,000	2,560,000	▼ 2.0%
69 ▲ 1	Oakland	United States	North America	2,370,000	2,277,521	▲ 4.1%
70 ▼ 1	Sydney	Australia	Asia	2,363,780	2,310,064	▲ 2.3%
71 ▲ 5	Chittagong	Bangladesh	Asia	2,346,909	2,024,207	▲ 15.9%
72 ▼ 1	Genoa	Italy	Mediterranean	2,297,917	2,242,902	▲ 2.5%
73 ▼ 6	Yeosu Gwangyang	South Korea	Asia	2,249,558	2,327,308	▼ 3.3%
74 ▲ 5	Barcelona	Spain	Mediterranean	2,236,960	1,954,262	▲ 14.5%
75 ▼ 1	Houston	United States	North America	2,174,000	2,131,000	▲ 2.0%
76 ▲ 11	Bandar Abbas	Iran	Middle East	2,130,000	1,678,000	▲ 26.9%
77 ▲ 3	Karachi	Pakistan	Asia	2,100,000	1,950,000	▲ 7.7%
78 ▼ 1	Quanzhou	China	Asia	2,091,500	2,000,000	▲ 4.6%
79 ▲ 3	Callao	Peru	Central-South America	2,054,970	1,900,444	▲ 8.1%
80 ▼ 2	Charleston	United States	North America	1,996,282	1,973,202	▲ 1.2%
81 ▲ 3	Dandong	China	Asia	1,990,000	1,830,000	▲ 8.7%
82 ▲ 1	Southampton	UK	N. Europe	1,957,000	1,933,000	▲ 1.2%
83 ▼ 11	Osaka	Japan	Asia	1,952,372	1,970,321	▼ 0.9%
84 ▲ 10	Tangshan	China	Asia	1,932,000	1,519,000	▲ 27.2%
85 ⬍	Guayaquil	Ecuador	Central-South America	1,821,654	1,764,937	▲ 3.2%
86 ▼ 5	Dammam	Saudi Arabia	Asia	1,785,000	1,954,364	▼ 8.7%
87 ▲ 1	Alexandria	Egypt	Middle East	1,633,600	1,688,301	▼ 3.2%
88 ▲ 1	Kingston	Jamaica	Central-South America	1,567,442	1,653,272	▼ 5.2%
89 ▲ 6	Abu Dhabi	UAE	Middle East	1,550,000	1,504,293	▲ 3.0%
90 ▲ 7	Taichung	Taiwan	Asia	1,535,011	1,447,390	▲ 6.1%
91 new	Sines	Portugal	Mediterranean	1,513,083	1,332,200	▲ 13.6%
92 ⬍	Bangkok	Thailand	Asia	1,498,009	1,538,445	▼ 2.6%
93 ▼ 2	Chennai	India	Asia	1,495,000	1,565,130	▼ 4.5%
94 new	Taipei	Taiwan	Asia	1,477,330	1,334,506	▲ 10.7%
95 ▼ 9	St Petersburg	Russia	N. Europe	1,457,800	1,715,139	▼ 15.0%
96 ⬍	Mersin	Turkey	Mediterranean	1,453,000	1,466,119	▼ 0.9%
97 ▲ 1	Montreal	Canada	North America	1,447,566	1,446,075	▲ 0.1%
98 new	Ashdod	Israel	Middle East	1,443,000	1,306,767	▲ 10.4%
99 new	Penang	Malaysia	Asia	1,437,120	1,317,352	▲ 9.1%
100 new	King Abdullah	Saudi Arabia	Middle East	1,402,225	1,300,222	▲ 7.8%
			Total	**555,582,424**	**543,601,497**	▲ 2.2%

Note
2015 throughput figures have been updated to include revised figures from port authorities and terminal operators

01 | Shanghai China

WHEN you reach the top, there is only one direction you can go. To avert such a decline, Shanghai, the world's busiest container port since 2010, has to figure out where the growth potential is in future.

Last year's throughput of 37.13m teu was impressive, but the 1.6% annual growth rate wasn't.

This is weaker than 3.5% reported in 2015 and 4.5% in 2014, let alone the double-digit advances seen in the good old days.

China's lacklustre foreign trade performance is, of course, a major cause for the slowdown. After all, the country's export volume, in US dollar terms, declined by 7.7% year on year in 2016.

But there are reasons for optimism to return, with exports climbing 8.5% during the first half of this year.

Yan Jun, president of Shanghai International Port Group, the mega port's main operator, told Lloyd's List in a recent interview that total handling in Shanghai for the whole of 2017 can be expected to top 39m teu, which, if it materialises, represents an increase of approximately 5% from the year-ago period.

In the longer run, however, the outlook is still quite challenging, amid the new normal observed by the World Trade Organization, in which global trade now grows slower than of the pace of GDP.

There are also additional uncertainties, such as the vast and murky debt load, which are threatening China's economic activities.

Teaming with Cosco Shipping

Fortunately, SIPG has found several sweet spots to maintain a sustainable growth.

Creating a shared fate that binds itself with the country's largest shipping conglomerate is certainly the most notable one.

Having acquired a 15% stake in SIPG in June, China Cosco Shipping Group now makes Shanghai its home-base container port and transhipment hub in China, creating extra cargo flows at the port, according to Mr Yan.

Cosco Shipping controls the world's fourth-largest boxship fleet. It shipped 6.2m teu of containers – in domestic trade and foreign trade – via Shanghai in 2016 and became the port's biggest client.

The giant's fleet size will move up another rung by combining vessels operated by Orient Overseas International Ltd. This might well explain why SIPG joined Cosco Shipping's offer to acquire the Hong Kong-based carrier in July.

Top transhipment hub ambition

Backed by the colossal state-owned partner, SIPG is seeking to unearth its huge potential for transhipment business.

Transhipment of international cargo in Shanghai increased by 9.7% year on year in 2016. Yet the sum of the volume was just 2.7m teu, accounting for only 7.3% of the port's total throughput – a tiny proportion compared to Asian transhipment hubs like Singapore and Hong Kong.

The volume can grow faster with further regulatory liberalisation, such as simplification of customs clearance, in the city's free trade zone, where the port is located, Mr Yan said.

The president put special emphasis on the port's traffic from cabotage trade – the country's export and import cargoes carried by foreign-flagged vessels between Chinese ports and Shanghai. Its volume stood at less than one-fifth of 1m teu last year, yet jumped by 72% compared to 2015.

The startling growth was achieved two years after Beijing relaxed its cabotage restrictions to foreign-flagged but Chinese-owned ships calling at the Shanghai Free Trade Zone. The relaxation was later extended to other FTZ ports, including Guangzhou and Tianjin.

A lifting of the ban to foreign carriers like Maersk Line and Mediterranean Shipping Co, for which SIPG has been lobbying, has yet to be accepted by the policymakers, however.

But with the government increasingly open-minded on international trade, Mr Yan said Shanghai has the potential to compete for the spot of top transhipment hub in Asia for the global major shipping lines, which own most of the ultra-large containerships.

On the other hand, transhipment from domestic river ports, such as Taicang, Nanjing and Changsha, is also a key constituent of the container throughput in Shanghai, which sits on the tip of the Yangtze River.

The sum of these cargoes topped 12.1m teu last year, representing a year-on-year expansion of 3.5%.

One strategy that SIPG has been using to ramp up traffic is by investing in those river ports, setting up joint venture terminals there and establishing an integrated customs clearance system between the terminals and the port of Shanghai.

Yangshan Phase IV

Last but not least, the fully automated Yangshan Phase IV is expected to enhance Shanghai's handling capability and operational efficiency.

Mr Yan said the new deepwater port, with total investment of Yuan12.8bn ($2.1bn) and an annual receiving capacity of 6.3m teu, completed its construction and was currently running equipment tests.

On December 10, 2017, the port will kick off a trial run, marking a countdown to formal operations by the end of next year.

The operation of fully automated terminals still has plenty of room for optimisation, according to Mr Yan.

The goal of the one-year test run is to make the remote-controlled port more productive, namely hitting more crane moves per hour than the traditional 28-33 moves.

Moreover, the new port, when in full operation, can slash the workforce by two-thirds to just 500 workers, significantly bringing down the cost of labour, Mr Yan added.

In late July, SIPG sent a team to OOIL's Long Beach Container Terminal in California, another fully automated port, to learn some tips from its peers.

"After the takeover is complete, such kind of communication will be even easier," Mr Yan added.

2016 throughput
37,133,000 teu ▲ 1.6%

Port authority
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Terminals (Operators)
Yidong Container Terminal Branch (SIPG)
Zhendong Terminal (SIPG)
Shanghai Pudong International Container Terminal (Shanghai Waigaoqiao Free Trade Zone Stevedoring Co, Hutchison Ports Pudong and Cosco Pacific)
Shanghai East Container Terminal (SIPG and APMT Terminals)
Shanghai Mingdong Container Terminal (SIPG, Cosco Shipping Ports and HPH)
Shanghai Shengdong International Container Terminal (SIPG)
Shanghai Guandong International Container Terminal (SIPG)

02 | Singapore Singapore

SINGAPORE managed to stem its losses in 2016, but in what its chief executive called "another difficult year for the port and shipping industry", Southeast Asia's mega transhipment hub failed to recover any of the ground it lost in 2015.

Volumes of 30.9m teu in 2016 were just 18,700 teu below 2015's figure, a drop of less than 0.1%.

The 2015 fall in throughput was the first since 2009, but Singapore has now suffered a two-year losing streak after its six-year growth spurt. Singapore relies heavily on transhipment volumes, which are under particular threat from consolidating lines and growing alliances.

Maritime and Port Authority of Singapore chief executive Andrew Tan attributed the 2016 result to changes in the various container line alliances, merger and acquisition activity, container lines' continued overcapacity and the resultant low freight rates.

Last year also saw Hanjin's collapse and the disruption it sent across maritime supply chains.

Mr Tan forecast that 2017 would be another pivotal year for Singapore and the wider maritime industry, one marked by geopolitical uncertainty and slow trade growth.

PSA Singapore, the flagship terminal of port group PSA International, contributed the majority of Singapore's total container throughput; 30.59m teu in 2016, down from 30.62m in 2015.

The company said the steady result came despite a slowdown at the start of 2016, which was followed by a surge in throughput that lasted through the second half of 2016 and into 2017.

PSA said the growth could be attributed to higher productivity as operations ramp up at the new facilities in Pasir Panjang Terminal Phases 3 and 4, which opened in June 2015, as well as new long-term customers secured via joint ventures, namely Cosco-PSA Terminal and CMA CGM PSA Lion Terminal.

Mr Tan Chong Meng, group chief executive of PSA, said of the result: "2016 served up another difficult year for the port and shipping industry. We had to grapple with sluggish global trade, weak demand for container shipment, sustained excess shipping capacity and depressed freight rates.

"The tough business environment is likely to continue into 2017 but that is not the whole story. We may witness more system-wide changes brought on by the convergence of slow market growth, emerging technologies and new business needs.

"Rapid consolidations in the container liner industry are giving rise to uncertainties as well as opportunities. New shipping service deployments and products


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will hit the market, demanding adjustments and adaptations by not only terminal operators, but players big and small in the global supply chain."

MPA and PSA have been far from passive in addressing the challenges they face.

In light of the difficulties faced by container lines, the port introduced a 10% concession on port dues for container vessels for one year from January 15, 2016; that concession has since been extended right through to the end of 2017.

The $2.6bn expansion of PSA's Pasir Panjang Terminal Phases 3 and 4, offering almost 6,000 m of quay length and up to 18 m water depth, will bolster PSA Singapore Terminals' container-handling capacity to 50m teu annually by the end of 2018.

Looking further ahead, Singapore has plans to move all of its container handling to one area, under the Tuas Next Generation Port project. The project is split into four phases over three decades. Phase one dredging and related works are already under way for the project, with a completion date early next decade.

Tuas NGP will eventually allow the relocation of all of the city's terminals as their leases expire in 2027.

The mega terminal will employ the latest technologies to increase efficiency and safety, as well as reducing emissions at what MPA expects will be the only port capable of handling 65m teu in one location.

MPA announced the formation of MPA Living Lab, an initiative to encourage collaboration, research, development and application of new technologies in the port space at local higher education institutions. The project covers robotics and automation, data analytics and intelligent systems, smart and innovative infrastructure and maritime environment and energy.

Singapore has taken steps to improve its liquefied natural gas bunkering infrastructure, with the launch of an LNG truck-loading facility for the distribution of LNG to local industry and bunkering of LNG fuel for vessels. Plans are in place for further facilities should demand increase.

2016 throughput
30,903,600 teu ▼ 0.1%

Port authority
Maritime and Port Authority of Singapore, 460 Alexandra Road, PSA Building #19-00, Singapore 119963

Website
www.mpa.gov.sg/web/portal/home

Email
qsm@mpa.gov.sg

Terminals (Operators)
Tanjong Pagar (PSA Singapore)
Keppel (PSA Singapore)
Brani (PSA Singapore)
Pasir Panjang (PSA Singapore)
Jurong (Jurong Port)

03 | Shenzhen China

SHENZHEN is actually not just one port, but several running along the city's coastline.

On the east side, there is the port of Yantian, while Chiwan, Shekou, Mawan and Dachanwan reside on the west.

So it comes as no surprise that consolidation has become the key word lately, especially when last year the combined container throughput of these ports recorded its first decline since 2009, following the outbreak of the US financial crisis.

The west four ports, which saw handling volume up 2% to 11m teu, are under the ultimate control of Hong Kong-listed China Merchants Port.

However, while Shekou, Mawan and Dachanwan are directly operated by CM Ports, Chiwan is run by Shenzhen Chiwan Wharf Holdings – a company listed in Shenzhen, yet also affiliated with the port arm of state conglomerate China Merchants Group. This has created concerns over harmful horizontal competition.

The structure of SCWH is quite complicated. Apart from the shares held by the public, SCWH is 33.58% owned by CM Port and 32.52% owned by Nanshan Group, a private enterprise based in China's Shandong province.

However, SCWH is de facto controlled by CM Ports, to whom Nanshan's stake was entrusted under a stock custody agreement inked in September 2012. In addition, CM Ports also holds a non-controlling interest of 37.02% in Nanshan.

There have been talks that CM Ports intends to acquire the 32.52% stake held by Nanshan, and then consolidate assets of the other three western ports into the Shenzhen-listed unit. However, it appears the two parties are yet to be able to agree on a price.

CM Ports does not have much time left, though. It pledged to solve the competition issue within five years through asset restructuring when signing the stock custody agreement. That means the deadline is this September.

A merger between east and west

A greater ambition of the state-owned port giant is probably to merge all the ports – both west and east – in Shenzhen, some industry sources said.

If true, it would be a much harder task, however.

Yantian Port Group, owned by Shenzhen municipal government, is the main operator in Yantian. But Singapore-listed Hutchison Port Holdings Trust, part of Hong Kong tycoon Ka-shing Li's business, controls the container terminals with a majority shareholding.

These terminals – Yantian Phases I & II, Yantian Phase III and Phase III Expansion, West Port Phases I & II – are known for their deepwater berths and capability of handling megaships. Yet combined throughput of those terminals currently in service dropped 3.9% year on year to 11.7m teu in 2016.

In its annual report, HPH Trust attributed the decline – mainly in transhipment volumes – to shipping lines' regrouping and service rationalisation, adding "pricing competition in Shenzhen has also intensified".

At one time, there was speculation that the trust was mulling a disposal of its interests in Yantian, but chief executive Gerry Yim told Lloyd's List in a recent interview that there was no such plan.

Perhaps the stumbling block was still an attractive price, or perhaps Mr Li has a bigger plan for his terminal assets. But port consolidation is moving fast across the coastal provinces in China, and the trend seems unstoppable.

Beijing has recently unveiled its Guangdong-Hong Kong-Macau Greater Bay Area initiative, in which building an integrated port cluster serves as a key point. As home to the busiest container port in this area, Shenzhen certainly has a big role to play.

2016 throughput
23,979,300 teu ▼ 0.9%

Port authority
Transport Commission of Shenzhen Municipality, 16 Zizhu 7th Rd, Futian, Shenzhen, Guangdong, China, 518040

Website
www.sztb.gov.cn

Terminals (Operators)
Shekou Container Terminals (China Merchants Holdings International and Modern Terminals)
Chiwan Container Terminal (Chiwan Wharf Holdings, Kerry Properties, CMHI and Modern Terminals)
Yantian Intl Container Terminals (HPH Trust)
Da Chan Bay Terminal (Modern Terminals and Shenzhen Yantian Port Group)
Mawan Container Terminal (China Everbright Holdings, China National Foreign Trade Transportation and Nanhai Oil Shenzhen Development)

04 | Ningbo-Zhoushan China

NINGBO and Zhoushan merged into one port in 2015, with the former making up the vast majority of the combined box volume.

Container throughput at the port complex came close to 21.6m teu in 2016, a 4.6% increase from the year before.

However, the potential for growth is not yet diminished. With the bigger picture improving, growth for the first half of this year climbed to 14.4%, while handling reached 12.4m teu.

The qualities that can lead to further improvement at Ningbo-Zhoushan come from many aspects.

Zhejiang province, its home-based hinterland, is the fourth-largest economy and the fifth-largest export/import region in China.

The superior geological position and natural conditions in Ningbo – deep water and a long shore – have made it one of the most favourable ports for major carriers and their big vessels. No wonder Maersk, China Cosco Shipping Group and Orient Overseas (International) Ltd all have a stake in the terminals there.

There is no risk of a capacity shortage in future, either. There is a shoreline amounting to more than 200 km, with water depth exceeding 15 m, in Zhoushan, waiting to be developed.

It seems the latest wave of liner shipping consolidation will only strengthen Ningbo's position. After the new shipping alliances started their services in April this year, the port's handling surged to a record monthly high of 2.3m teu in May, partially due to rationalisaion of routes by shipping lines and repositioning of their containers.

In addition, the base of sea-to-rail transport at the port complex's remains low – only 0.25m teu in 2016 – yet is growing at a fast pace of nearly 47% year on year.

What are the negatives?

There are, however, some concerns.

First, Ningbo is too close to Shanghai, home to the world's busiest container port. The straight-line distance between Ningbo's Beilun Port and Shanghai's Yangshan Port is less than 80 km.

"Shanghai is Beijing's designated global shipping hub, so our relationship with them is more about collaboration," says Ningbo-Zhoushan Port Group chairman Mao Jianhong.

But the well-worn rhetoric fails to disguise the reality of fierce competition between the ports. Shanghai appears in the lead in linking its fate with that of shipping lines, after the main port operator Shanghai International Port Group sold 15% of its equity to Cosco Shipping and offered to buy a 9.9% stake in OOIL.

The moves are expected to add fuel to Shanghai's throughput, especially transhipment, some of which might come at the expense of its southern neighbour.

Secondly, the newly established Zhejiang Free Trade Zone covers Zhoushan, but not yet Ningbo.

Moreover, it remains uncertain how beneficial the provincial government-led port consolidation will be for Ningbo, at least in the short run.

Five local ports – Ningbo, Zhoushan, Wenzhou, Jiaxing and Taizhou – have been merged into the Zhejiang Harbour Investment & Operation Group, with centralised management and operation.

The aim is to consolidate resources and avoid excessive competition among them, therefore improving efficiency and enhancing competitiveness of the ports industry in Zhejiang as a whole, said Mr Mao, who also chairs ZHIOG.

The chairman could well be right, but the costs for Ningbo are also obvious.

The port has lost its autonomy and will likely be forced to surrender its own benefits when the time comes to serve the wider interests of the parent group.

2016 throughput
21,560,000 teu ▲ 4.6%

Port authority
Ningbo Municipal Transport Bureau, Ningbo Municipal Port Administration Bureau, No 117 He Ji Road, Ningbo, China

Website
www.nbjt.gov.cn

Email
webmaster_nb@zjt.gov.cn

Terminals (Operators)
Ningbo Beilun International Container Terminals (Ningbo Port Group and Hutchison Port Holdings)
Beilun Second Container Terminal (Ningbo Port Group)
Ningbo Yuan Dong Terminals (Ningbo Port Group, Cosco Pacific, OOCL Terminal Ningbo, State Development & Investment Transport Holding)
Ningbo Gangji (Yining) Terminal (Ningbo Port Group, Ninterin Ltd)
Ningbo Daxie China Merchants International Container Terminal (China Merchants Holdings International, Ningbo Port Group and China International Trust & Investment Corp)
Ningbo Meishan Bonded Port Zone – Xinhaiwan Terminal (Ningbo Port Group, China Shipping Terminal Development and PSA)
Ningbo Meishan Bonded Port Zone – Meishan Container Terminal (Ningbo Port Group, APM Terminals)

05 | Busan South Korea

THE year 2016 was a milestone for the port of Busan, not so much because the seemingly relentless expansion in throughput paused for breath, but because the demise of Hanjin Shipping, a major customer and terminal operator, prompted a reassessment of the port's future.

Total throughput for the year was recorded at 19.45m teu, with a split that saw inbound and outbound boxes both at around 4.8m teu. The number of containers transhipped slipped back to 9.8m teu, disappointingly below the significant 10m teu mark it achieved just a year earlier.

By comparison, Busan handled 19.5m teu in 2015, an impressive growth from 12m teu in total in 2004.

If the headlines were all about Hanjin's bankruptcy, the more positive context was surging growth in intra-Asia container shipping that meant even the seismic shift of Hanjin's fall and the reshuffling of alliances was almost surpassed.

Speaking in the early days of 2017, before full 2016 numbers were known, port president Woo Ye-jong reset the goal for 2017 at 20m teu, to be achieved by extra efforts to attract containers from regions with significant growth potential, such as Southeast Asia (especially Vietnam, Indonesia and the Philippines), South America and the Middle East.

There would be a further push for US east coast cargo via the expanded Panama Canal, and a focus on handling mega ships of the largest capacity to fulfil the port authority's ambition to become a global logistics hub.

Busan port plays a critical role in South Korea's national economy. Located at the opposite end of the country from the main consumer city of Seoul, Busan handled 75% of all containers discharged and loaded by all Korea's ports – a rise from 73% in 2010.

That geographical separation has driven investment in excellent infrastructure across South Korea, and it has also enabled Busan to position itself as the preeminent northern regional hub because it lies close to western Japanese consumers and the eastern cities of China.

Besides its role as vessel operator, Hanjin Shipping's collapse was important for Busan because the wider group had invested in the container terminal business.

Four of the five terminals at Busan New Port are owned by foreign companies, among which are Singapore's PSA International, the UAE's DP World, and Macquarie Korea Infrastructure Fund, which is managed by Macquarie Korea Asset Management, a wholly owned subsidiary of Australia's Macquarie Group.

The June 2013 acquisition of half of Hanjin's stake in the Hanjin Busan Newport terminal by South Korean private equity fund IMM Investment was followed, in April 2016, by a move by PSA to take a 40% share of Hyundai Pusan Newport terminal from struggling Hyundai Merchant Marine.

So when IMM wanted to withdraw from its investment early in 2017, the government moved quickly to effectively block foreign investors by a combination of Hanjin Transportation, Busan Port Authority, government-affiliated Global Marine Financing and Export-Import Bank of Korea.

Last year was therefore one in which Korean state-backed interests were forced to respond to foreign investment in Busan's container terminals by retaining a controlling shareholding in one facility.

It was a sign of Busan's nervousness that Busan Port Authority president Woo Ye-jong announced he was to co-host a seminar that focused on how to address the crisis in Korean liner shipping, and how to encourage national and regional politicians to come to its aid.

If 2016 was a tough year for Busan, 2017 will bring issues of its own.

2016 throughput
19,850,000 teu ▲ 2%

Port authority
Busan Port Authority, 46, Street 9, Chungjang-daero, Jung-gu, Busan, 600-755, South Korea.

Website
www.busanpa.com

Email
info@busanpa.com

Terminals (Operators)
Busan North Port:
Jaseongdae Container Terminal (Hutchison Korea)
Singammam Container Terminal (Dongbu Busan Container Terminal Ltd)
Gamman Container Terminal (Busan International Terminal Co)
Sinseondae Container Terminal (CJ Korea Express Busan Container Terminal Co)
Busan New Port:
Phase 1-1 (Pusan Newport Intl Terminal)
Phase 1-2 (Pusan Newport Co)
Phase 2-1 (Hanjin Newport Container Terminal)
Phase 2-2 (Hyundai Pusan Newport Terminal)
Phase 2-3 (Busan Newport Container Terminal)


COSCO

06 | Hong Kong China

HONG KONG saw container throughput down 1.3% to 19.8m teu in 2016 – the first time it has fallen below 20m since 2003, according to statistics from the city's maritime department.

However, there has been a trend of recovery behind the annual decline.

Having sustained a long-time contraction, volume started to pick up from the second half of last year. Between August 2016 and May 2017, handling for the 10 months increased by nearly 13% compared to the year-ago period.

Hong Kong's Transport and Housing Bureau said the improvement was alongside the recovery of international trade.

But the recent reshuffle of shipping alliances and the subsequent rationalisation of their services is creating fluctuations in the port's throughput.

Growth in June, for example, dropped to 0.2% year on year.

Earlier, Alphaliner pointed out Hong Kong would see its weekly calls reduced on Asia-Europe trade due to the rationalisation. Two new grouping of carriers, the Ocean Alliances and The Alliance, started their services this April.

Beijing's policies

If the global ports industry is being met with various uncertainties, Hong Kong is facing no less, if not more. Apart from the trade outlook and consolidation of shipping lines, another big cloud, perhaps, rises from Beijing's policies.

One of the most talked-about concerns is the relaxation of the cabotage restriction, which, if it goes ahead, could be disastrous to the city's port.

Hong Kong, a special administrative region of China, is considered as a foreign port and not subject to the national cabotage rules. Benefiting from that, the port has been favored by global shipping lines as a key transhipment hub for Chinese outbound boxes.

Up to now, Beijing has only partially liberalised the trade to several major Free Trade Zone ports, such as Shanghai and Guangzhou, provided international cargo is carried by foreign-flagged ships owned by Chinese companies.

But a full-scale liberalisation, which will virtually abolish the privilege enjoyed by the Hong Kong port, could slash its container volume by 12%, according to a study by the Hang Seng Management College published at the end of last year.

While the central government is said not to have such a plan for the moment, lobbyists for a further easing of cabotage are working quite hard.

During a recent interview with Lloyd's List, Shanghai International Port Group president Yan Jun reiterated his wish that policymakers could further relax cabotage rules, which fits nicely into the country's strategy to build Shanghai as a world maritime centre.

Other major Chinese ports, including Guangzhou, Ningbo and Qingdao, are also said to be lobbying for the idea, as well as foreign carriers such as Maersk Line.

Even if Beijing refuses to budge, the tie-up between China Cosco Shipping Group and SIPG could well enable Shanghai to snatch more transhipment volume from Hong Kong.

Cosco Shipping, which controls the world's fourth-largest boxship fleet, acquired a 15% stake in SIPG in June. The fleet size will move up another rung if the two can successfully acquire Orient Overseas (International) Ltd.

Another concern over the former British colony is Beijing's plan to establish the Guangdong-Hong Kong-Macau Greater Bay Area, in which port consolidation is a major project.

Raymond Tam, the city's secretary for constitutional and mainland affairs, said that Hong Kong should no longer compete in the container terminal business against Chinese ports in the region under the GBA initiative. Instead, it should focus on maritime services, such as finance and insurance.

The remarks prompted statements from the Transport and Housing Bureau and the Hong Kong Maritime and Port Board to reaffirm support for the city's port.

Government's efforts

There has, however, been criticism that the lacklustre port performance should at least be in part attributed to the inaction of the Hong Kong government, when it comes to port issues like the lack of land and loss of cost competitiveness.

The situation seems to be improving, though, as the government, as well as the terminal operators, have started to take remedial action.

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The government is allocating several pieces of land to Kwai Tsing Container Terminals to increase space for container storage yard and barge berth. To better receive ultra large containerships, it has also undertaken a dredging project to deepen the approach channel to KTCT from 15 m to 17 m.

On the other hand, the two main terminal operators in Hong Kong – Hutchison Port Holdings and Cosco Shipping Ports – are putting the 16 berths stretching across five terminals at Kwai Tsing under one management system in order to raise efficiency levels.

Some of these moves have probably also contributed to the growth in throughput mentioned in the beginning of the article.

Yet shipping companies seem to want more.

Roberto Giannetta, secretary-general of the Hong Kong Liner Shipping Association, told local press recently his group was disappointed that the city's competition authorities did not grant the same block exemption order for the voluntary discussion agreements between carriers, as it did for the vessel-sharing agreements.

2016 throughput
19,813,000 teu ▼ 1.3%

Port authority
Hong Kong Marine Department, Harbour Building, 38 Pier Road, Central, Hong Kong

Website
www.mardep.gov.hk/en/home.html

Email
mdenquiry@mardep.gov.hk

Terminals (Operators)
Terminal 1 (Modern Terminals)
Terminal 2 (Modern Terminals)
Terminal 3 (Goodman Hong Kong Logistics Fund and DP World)
Terminal 4 (Hongkong International Terminals)
Terminal 5 (Modern Terminals)
Terminal 6 and 7 (Hongkong International Terminals)
Terminal 8 East (Hongkong International Terminals and Cosco)
Terminal 8 West (Asia Container Terminals)
Terminal 9 North (Hongkong International Terminals)
Terminal 9 South (Modern Terminals)

07 | Guangzhou China

AS ONE of China's top five largest ports, Guangzhou was a beneficiary of growing domestic cargo volumes and free trade agreements signed between Korea and China, which helped boost 2016 total container volumes handled by 7% year on year to just under 18.9m teu.

The port is able to handle container vessels up to 20,000 teu in size.

Port authorities have been busy seeking out new global trade links and signing friendship agreements with the port of Hamburg to explore future commercial opportunities as part of the One Belt One Road's Maritime Silk Road component.

They have also established friendly relations with the port of New York/New Jersey and the port of Savannah, in order to co-operate on potential business ventures.

A joint venture with the port of Antwerp's training unit saw the establishment of the Guangzhou-Antwerp Port Training & Consultancy Centre in September 2016.

The venture will utilise the expertise of Antwerp, which is one of the major European ports, to train and nurture talent in the port and logistics sector to be deployed at ports in Southeast Asia and Africa along the Maritime Silk Road.

Following on from that, port authorities signed a pact to make Malacca (Melaka) a sister port in December 2016, adding to the sister port agreement inked with Port Klang in 2015.

As part of the One Belt, One Road initiatives, Chinese companies are helping to build the Melaka Gateway Port in the Malaysian city, with construction beginning in 2017.

On the domestic front, port authorities signed a memorandum of understanding with Maersk subsidiary Svitzer at end-January 2016 to form a joint venture offering towage and related marine services for Guangzhou port, with an initial fleet of three tugs.

Amid the industry slowdown, the port group inked a strategic co-operative framework agreement in that same month with nearby Zhuhai Port Group to collaborate in areas such as infrastructure development and commercial ventures, and the raising of capital for such initiatives.

Looking ahead, the port plans to develop itself into an international shipping hub through a three-year plan.

One of the moves was to bring the nation's state-owned shipping conglomerate, Cosco Shipping, to set up its South China headquarters in the Nansha District in Guangzhou city, where it will be responsible for the business operations in Guangdong province, Guangxi autonomous region, Guizhou province and Yunnan province.

Another initiative by the port authority was to sign a deal with Guangdong province's transportation department to develop the Guangzhou Shipping

Exchange, setting up a centre for the exchange, a big data centre and a port and shipping economic operations monitoring centre.

The plan is to complete the basic framework of the Guangzhou Shipping Exchange's trading, services and data components by 2018-2019.

To foster innovation in the ports and logistics sectors, as well as the shipping sector, officials from the planned shipping exchange, Guangdong's transportation data management centre, and Dalian Maritime University's engineering research centre for vessel navigation systems jointly established the Guangdong innovation centre for smart shipping.

The centre will focus on research that will improve ship navigation systems used on the Pearl River Delta's inland waterways.

In December last year, Huangpu Port was formally opened for operations after the completion of the first phase of the project.

The first phase saw the building of three berths measuring 182 m long, with a draft of 7 m.

Ultimately, the terminal will encompass a land area of 160,000 sq m, while the five multipurpose berths will cover 300 m lengthwise and have an annual capacity of 400,000 standard containers, or 1.1m tonnes of cargo.

The Zhongshan Huangpu Port Cargo Joint Venture Company managed the project, with Yuan340m ($50m) in investment.

2016 throughput
18,857,700 teu ▲ 7%

Port authority
Guangzhou Port Authority, 14-19F, No 406 Yanjiang East Road, Guangdong 510100, China

Website
www.gzport.gov.cn

Email
gzgjcs@gzport.gov.cn

Terminals (Operators)
Henan Terminal (Guangzhou Port Group)
Xinfeng Terminal (Guangzhou Port Group)
Huangpu Old Port (Guangzhou Port Group)
Xinsha Terminal (Guangzhou Port Group)
Huangpu New Port (Guangzhou Port Group and PSA)
Nansha Terminal Phase I/Nansha Stevedoring (Guangzhou Port Group, CS Terminal and Guangzhou Nansha Assets Operation Company)
Nansha Terminal Phase II/Guangzhou South China Oceangate Container Terminal (Guangzhou Port Group, Cosco Pacific and APM Terminals)

08 | Qingdao China

QINGDAO is not only one of the largest ports in China but also one of the biggest in the world, heavily involved in all three segments of containers, dry bulk and crude oil in north Asia.

Positioned strategically between Russia, Central Asia, Japan and South Korea, Qingdao has boomed as a regional hub despite macroeconomic obstacles like the slowing Chinese economy, shrinking trade growth and contracting port throughput across the rest of the country.

However, China's attempts at growing its international port footprint is proving to be a big business driver.

Qingdao's cargo throughput for the whole group, including joint ventures, grew 3.1% to 443m tonnes in 2016, out of which 'foreign trading' cargo throughput rose 4.5% to 329m tonnes.

Its all-important container traffic rose 2.9% to 18m teu in 2016, from 17.5m teu a year earlier, although the growth rate has slowed from the 5.3% seen in the previous year.

Segmented earnings for Qingdao Port International Co Ltd, the company that operates the port, showed a contraction in the bulkers segment, but growth in all the other shipping categories.

The overarching direction from President Xi Jinping's Belt and Road strategy is pushing the port beyond it regional hub status. It is implementing an aggressive internationalisation policy and expanding its footprint in foreign ports.

In October 2016, Qingdao Port signed a deal with APM Terminals to purchase 16.5% of Vado Investment in Italy, which operates the Vado Ligure Port. This is Qingdao's first overseas project of its kind.

At the start of 2017, Qingdao Port International signed a deal to sell a stake to Cosco Shipping Ports, which raised increase its

shareholding in Qingdao to 18.41%.

The deal will see Qingdao developing its international shipping hub in north Asia, co-investing in overseas terminal projects like the Khalifa Port Container Terminal II project in Abu Dhabi, and setting up a company to manage overseas projects.

It has been in talks with the port of Makasa in Indonesia, Laem Charbang Port in Thailand, and Sihanoukville Port in Cambodia for partnerships.

Qingdao operates four port areas: Qingdao Qianwan Port Area; Huangdao Oil Port Area; Dongjiakou Port Area; and Dagang Port Area. Its deepwater berths allow it to accommodate the world's largest container vessels, iron ore vessels and oil tankers.

In the dry bulk business, Qingdao plans to make full use of its 400,000-tonne terminal, expand ore mixing and matching and futures settlement to build up an 'ore supermarket' in China.

Its liquid bulk or oil trade, which has been propelled by the boom in China's northeastern refinery cluster, has grown exponentially.

Qingdao Port imported 56.05m tonnes of crude in 2016, representing nearly half of the total crude imports of Shandong province and making it China's largest port for crude imports. This is set to grow further with oil storage tanks and pipelines in the Dongjiakou Port Area's "great artery".

2016 throughput
18,010,000 teu ▲ 2.9%

Port authority
Qingdao Port International Co Ltd, 7 Ganghua Road, City North District, Qingdao, Shangdong Province, PRC

Website
www.qdport.com/www.qingdao-port.com/en/lxwm.jsp

Email
qggj@qdport.com

Terminals (Operators)
Qianwan Port Area (QQCT, QQCTU, Qiangang Branch, West United, and Qingdao Port Logistics)
Huangdao Oil Port Area (Qingdao Shihua
Dongjiakou Port Area: Dongjiakou Branch, QDOT, Huaneng Qingdao, Qingdao Shihua, Mercuria Oil Terminal, Mercuria Logistics and Datang Port)
Dagang Port Area (Dagang Branch)

09 | Dubai United Arab Emirates

DP WORLD's flagship port Jebel Ali, Dubai, saw volumes slip 5.3% last year on 2015 levels, but still managed to hold on to its top 10 ranking status.

Throughput levels fell from just shy of 15.6m teu to below 14.8m teu at the Middle East box hub, dragged down by a reduction in lower-margin transhipment cargoes and challenging market conditions, according to the UAE operator.

Exposure to oil-dependent markets also weighed heavily on traffic volumes.

The slowdown in traffic prompted DP World to announce it was to scale back on the capacity build-up at the port and similarly across its portfolio.

Construction of Jebel Ali's fourth container terminal did continue, however, albeit slowly, with the operator stating that capacity will be ramped up as and when demand dictates.

There were signs that market sentiment was returning toward the end of the year when trade levels at the port began to stabilise.

DP World reported a 6.7% drop in throughput figures handled in Dubai through the first nine months of 2016 on the corresponding year-ago period, but in the final quarter, box numbers fell by just 0.7%.

And volumes have continued to rebound since. The latest figures coming out of Dubai at the time of writing showed that 7.7m teu was moved across the docks in the first six months of 2017, representing a 4.3% rise year on year.

DP World says it is anticipating full-year growth to improve further still, to somewhere in the region of 6.6%, with levels approaching 16m teu, in what would be a

record year for the port.

This turnaround in fortunes has accelerated construction works at terminal four, which is now nearing first phase completion, with commercial calls expected to commence in the latter stages of the year.

DP World has added a further 13 ship-to-shore cranes and as many as 35 automated rail gantry cranes to its container-handling fleet to support the new facility, which will initially bring total port capacity up to 19.3m teu annually.

There are, however, plans in place to increase the new terminal's capacity further still, to 3.1m teu, enabling Jebel Ali to support the handling of 22.1m teu per annum.

Upon doing so, Jebel Ali will be equipped with a minimum 110 STS cranes and approximately 11 km of deepwater quay.

2016 throughput
14,772,000 teu ▼ 5.3%

Port authority
DP World, PO Box 17000, Dubai UAE

Website
www.dpworld.com

Email
info@dpworld.com

Terminals (Operators)
Terminal 1 (DP World)
Terminal 2 (DP World)
Terminal 3 (DP World)

10 | Tianjin China

FOR Tianjin, 2016 was the year in which the phoenix rose from the ashes – quite literally – as growth in both container and overall cargo throughput signaled its rebound from the deadly explosions of August 2015 that had impaired operations for several months.

The pictures of mounds of smouldering containers at the port's warehouses have made way for a solid 3.9% growth in total cargo throughput to 474.72m tonnes in 2016, making Tianjin the fourth-largest Chinese port by total throughput, according to the Ministry of Transport.

In China's northeastern port cluster around the Bohai Bay, the ports of Tianjin and Qingdao compete intensely for the leading position.

While Tianjin has been the larger port in terms of total cargo throughput, Qingdao has been the biggest as far as container volumes are concerned. The past year was no different, but what was significant was the strong rebound in container volumes for the port of Tianjin.

Tianjin posted 2.8% growth in container throughput to 14.5m teu in 2016, compared to a negligible growth of just 0.2% in 2015. This made it the sixth-largest container port in China, according to the ministry of transport.

In the non-containerised segment, coal, automobiles, steel and crude oil posted growth, while metal ore witnessed a decline.

Automobiles rebounded by a strong 46.5%, which was perhaps the single largest indicator of the port's recovery from the 2015 blasts that ranked as the biggest manmade loss yet seen anywhere in Asia, costing around $3bn for marine insurers alone.

Tianjin's automobile logistics hub accounts for 40% of Chinese car trade and the destruction of thousands of cars in storage had set the car industry back by hundreds of millions of dollars. However, recovery was on track in 2016.

Shanghai Zhenhua Heavy Industry Co., Ltd. (ZPMC) specializes in designing, manufacturing, erecting, commissioning, shipping in fully erected state, after-sales servicing and developing new port machinery products. Its primary products include container cranes, offshore engineering products as well as large steel structures. Cranes manufactured by ZPMC have been supplied to over 150 ports in 92 countries over the world. With more than 400 units of container cranes being built, ZPMC is holding 82% global market share for quayside cranes, and 40% global market share for yard cranes.

ZPMC Southeast Asia Holding Pte. Ltd. (ZPMC SEA) is a subsidiary of ZPMC with headquarter in Singapore. Equipped with an experienced engineering team, ZPMC SEA is able to provide various engineering solutions to both port operation and offshore industry clients, which include:

- •Emergency repair
- •Crane relocation/disposal
- •Offshore component inspections
- •Crane maintenance service
- •Crane modification and upgrade

Based in Singapore, ZPMC SEA engineering team is offering technical consultancy and engineering service over the entire Southeast Asia region. Since 2014, ZPMC SEA has been offering crane discharging service for PSA Singapore. While in 2015, ZPMC SEA engineering team was called for emergency repair in Port of Tanjung Pelepas, and just in the same year, ZPMC SEA has accomplished crane relocation projects in Malaysia and Hong Kong.

ZPMC SEA conducting emergency repair in Port of Tanjung Pelepas, Malaysia

ZPMC SEA accomplished relocations for quayside cranes from Lumut Port to Port of Tanjung Pelepas, Malaysia

In order to keep a crane in efficient and economical working order throughout its entire commercial life, crane service and maintenance can be crucial. ZPMC SEA is able to offer a total maintenance solution integrated with both preventive maintenance and corrective maintenance with a wide range of clients including PSA Singapore, Belawan International Container Terminal Indonesia and Port of Tanjung Pelepas Malaysia.

Equipped with an engineering team which process both experience and expertise in port machinery, ZPMC SEA is able to offer crane upgrading and modification service to enhance the capacity and productivity of quayside cranes. In 2016, ZPMC SEA successfully accomplished a height raising project for quayside crane operated by Modern Terminal Limited (MTL), Hong Kong. The project was successfully completed within two months. The upgraded crane was empowered to handle New Panamax Vessels after an increase of 5.5m in crane height was achieved.

ZPMC SEA will be working closely with port users as well as offshore industry clients, and dedicated to resolve engineering challenge with comprehensive solutions.

ZPMC SEA provided Height Increase service for MTL, Hong Kong

ZPMC Southeast Asia Holding Pte. Ltd
3 International Business Park Nordic European Centre #03-25/26, Singapore 609927
Tel: +65-6567 1588
E-mail address: sales@zpmc.sg   Website: www.zpmc.com

Tianjin port is at the heart of the Bohai Bay Economic Zone, one of the three biggest economic regions in China, and the Tianjin Pilot Free Trade Zone, or TPFTZ, which was launched in April 2015 as part of China's second wave of hugely successful free trade zones.

The port supports Beijing's Belt and Road Initiative, or BRI, and falls into the China-Mongolia-Russia Economic Corridor, with connections to 400 ports in more than 200 countries and regions all over the world.

In late November 2016, the first China-Europe freight train departed from the Tianjin free trade zone and arrived in Minsk, the capital of Belarus, with 104 containers of construction materials; it returned with several European products.

Tianjin was also the first port on the maiden voyage for what was the world's largest containership, *Madrid Maersk*, a 20,568 teu vessel and the first second-generation Triple-E container vessel, on Maersk Line's Asia-Europe service network.

Restructuring efforts have also been in focus. Hong Kong-listed Tianjin Port Development Holdings Ltd signed an agreement with Tianjin Port Co that would make Tianjin Port the main operating platform for the group's cargo-handling and logistics business.

Looking ahead, the global economy is expected to maintain moderate growth, the US economy is expected to be more positive, the European economic recovery is expected to firm further, and the Chinese economy will continue to attain stable growth," Tianjin port said in its annual report.

2016 throughput
14,490,000 teu ▲ 2.8%

Port authority
Tianjin Port Development Holdings Ltd, 99 Jingang Road, Binhai New Area (Tanggu), Tianjin 300461, China

Website
www.ptacn.com

Email
webmaster@ptacn.com

Terminals (Operators)
Second Stevedoring Company Terminal (Tianjin Port Development)
Tianjin Port Container Terminal (TPD)
Tianjin Orient Container Terminal (DP World, NWS Holdings and Tianjin Port Holdings Co)
Tianjin Five Continents International Container Terminal (TPC, China Merchant Holdings International, China Shipping Container Lines, Cosco Pacific and NWS)
Tianjin Port Alliance International Container Terminal (TPD, PSA International, OOCL, APMT)
Tianjin Port Euroasia International Container Terminal (TPD, Cosco Pacific and APMT)
Tianjin Port Pacific International Container (PSA International and TPC)

11 | Port Klang Malaysia

PORT Klang continued its ascension to being one of the biggest ports in Asia, with an impressive 10.8% growth in 2016, thanks to transhipment boosts.

With total throughput reaching 13.2m teu, the traffic of the Westports terminal, which handles more than 75% of the port's throughput, grew by 9.9% to 9.9m teu, thanks to an 11% growth in transhipment containers and a 4.6% increase in gateway containers.

The port's other container terminal, Northport, handled the remaining 3.3m teu.

Aside from organic growth, the increase in transhipment was also partly due to the upsizing of vessels before the expansion of the Panama Canal, Westports said. The terminal also benefited from the upsizing of vessels for Africa-related services.

During 2016, Westports terminal finalised the expansion of its berth by 300 m, totalling 4.9 km. The operator is also working on the expansion of its container terminal 8, adding a 300 m wharf, as well as a 600 m wharf in its container terminal 9.

By the end of 2016, Westports owned 55 quay cranes, after buying three in 2016 and 36 variable speed rubber-tyred gantry cranes on the back of six acquisitions in 2016.

Westports also plans on adding another 900 m wharf, a project currently under construction. It will also add another 12 quay cranes in 2017 and the beginning of 2018. Westports will be spending around RM850m ($198.5m) on these projects in 2017.

As the port edges closer towards joining the elite top 10 global ports club, it is also able to handle some of the largest vessels in the world, servicing vessels up to 19,000 teu or 20,000 teu.

2016 throughput
13,169,577 teu ▲ 10.8%

Port authority
Port Klang Authority, Mail Bag Service 202,Jalan Pelabuhan Utara, 42005 Pelabuhan Klang, Selangor, Malaysia

Website
www.pka.gov.my

Email
onestopagency@pka.gov.my

Terminals (Operators)
Westports (Westports Malaysia Sdn Bhd)
Northport (Northport (Malaysia) Bhd)

12 | Rotterdam The Netherlands

ROTTERDAM remains Europe's premier container hub, on the back of a 1.5% upswing in volumes last year on 2015 levels.

Throughput just shy of 12.4m teu was driven by strong export and import numbers to both the Far East and North America, offsetting weaknesses in the South American market.

In Europe, the Dutch port reported an increase in feeder and shortsea traffic with the UK, Ireland, Spain and Portugal, while the ongoing struggles within the Russian economy weighed down on containerised trade in the Scandinavia/Baltic market.

According to the Port of Rotterdam Authority, although volume growth was slight, it ensured its box market share in the Hamburg-Le Havre range was kept at around 30%.

This leading share in northern Europe is expected to be maintained through 2017, as will the upward trend in volume growth, with Rotterdam receiving a favourable outcome from the rejigging of the latest alliance networks.

For example, 2M, Maersk Line and Mediterranean Shipping Co's vessel-sharing agreement, opted for an extra first port of call position in Rotterdam as part of the lines' AE10 offering. This is in addition to the existing final port call on the itinerary.

The port authority anticipates the move to add a significant tally to its annual volumes, reflected in the impressive growth figures achieved in the first six months of 2017.

The latest figures, published mid-2017, show Rotterdam handled 6.7m teu from January through June, a rise of 9.3% on the same period in 2016.

2016 throughput
12,385,168 teu ▲ 1.2%

Port authority
Port of Rotterdam Authority, PO Box 6622, NL-3002 AP Rotterdam, Netherlands

Website
www.portofrotterdam.com

Email
info@portofrotterdam.com

Terminals (Operators)
APM Terminals Rotterdam, APMT Maasvlakte II (APM Terminals)
Rotterdam World Gateway (DP World)
Barge Center Waalhaven
Delta Container Services (Kramer & ECT)
ECT Delta Barge Terminal, ECT Delta Terminal, ECT Euromax Terminal (ECT)
Rotterdam Container Terminal (Kramer)
Rotterdam Short Sea Terminal (RSST)
Uniport Multipurpose Terminals (UMT)

13 | Kaohsiung Taiwan

A ROBUST 5% year-on-year growth in transhipment volumes for the transpacific trades over 2016 was the key reason for the recovery in overall container throughput for the Port of Kaohsiung, which saw a 2% increase in 2016 to 10.5m teu compared with the previous year.

Lacklustre domestic economic growth, however, offset further gains, with domestic cargo volumes falling 1.8%.

The island's 2016 gross domestic product grew about 1.5% over the previous year as the export-reliant economy continued to grapple with the shifting of electronics component manufacturing facilities to relatively lower-cost areas such as mainland China.

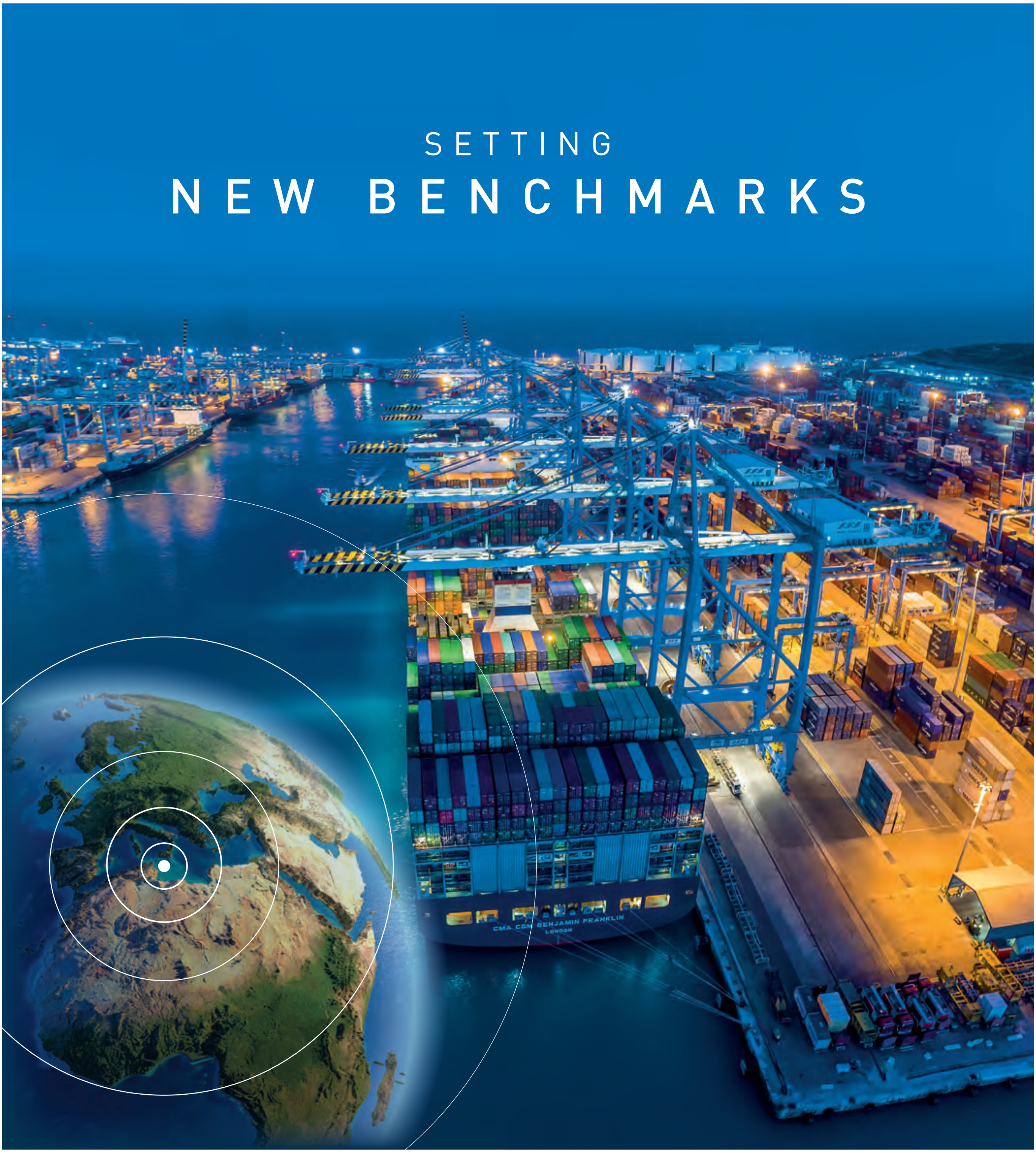
On the back of the higher overall box volumes, though, port authorities are focusing on its key expansion initiative, the Intercontinental Container Terminal project, also known as Container Terminal No 7.

Authorities have scheduled the project to be executed in two phases, which will comprise the building of five berths with a depth of 18 m, capable of accommodating 22,000 teu-class containerships, eventually leading to a handling capacity of 4.5m teu per year.

Reclamation works commenced in 2015 for the first phase of the project, aiming to build 1,185 m of quay and 76 ha of hinterland development to provide 2.25m teu of annual handling capacity to the port by the tentative completion date of 2019.

Some international port operators have already indicated their interest in the planned Container Terminal No 7, with Dubai-based DP World signing a memorandum of understanding with the port authorities in July 2016 to jointly promote services of the terminal to the industry and encourage major shipping lines and terminal operators to invest in facilities there.

In 2016, port authorities acquired four new sets of 22-row quay-to-yard gantry cranes that have since started operations.


SETTING
NEW BENCHMARKS

2016 throughput
10,464,860 teu ▲ 2%

Port authority
Taiwan Internationals Ports Corporation: No 10 Penglai Road, Gushan District, Kaohsiung City 804, Taiwan

Website
www.twport.com.tw/en/

Email
T01534@twport.com.tw

Terminals (Operators)
Terminal 1: Berth No. 42-43 (Lien Hai Container Terminal Company)
Terminal 2: Berth No. 63-64 (Wan Hai Lines); Berth No. 65-66 (OOCL)
Terminal 3: Berth No. 68-69 (APL); Berth No. 70 (Hong Ming Terminal & Stevedoring Company, subsidiary of Yang Ming Marine)
Terminal 4: Berth No. 115-117 (Evergreen Lines); Berth 118-119 (Hyundai Merchant Marine); Berth No. 120-121 (Taiwan International Ports Corporation)
Terminal 5: Berth No. 76-78 (Hyundai Merchant Marine); Berth No. 79-81 (Evergreen Line)
Terminal 6 (Kao Ming Container Terminal Corp)

14 | Antwerp Belgium

ANTWERP reported the highest box growth within Europe's fiercely competitive northern range for a second consecutive year in 2016.

Although demand growth was not quite at the same level of 2015, when volumes were up 7.5% year on year, the Belgian box port followed this up with a 4% jump in traffic to surpass the 10m teu barrier for the first time in its history, albeit by only a few thousand lifts.

Volumes continued to shift from domestic rival Zeebrugge, while its lack of exposure to weak Russian trade further east and mainstay on the major east-west alliance routings meant it clawed back yet more market share in the region.

According to the Port of Antwerp Authority, the Belgian facility increased its share of traffic among the Le Havre range of ports to 24.4%.

Last year also marked the completion of key ocean carrier customer Mediterranean Shipping Co.'s shift of operations from Delwaide Dock to the left bank of the River Scheldt at Deurganck Dock.

With its new location, MSC's box terminal in Antwerp – a joint venture with PSA International known as the MSC PSA European Terminal, or MPET – is now the largest in Europe. MPET boasts a capacity of approximately 9m teu and a 3.55 km quay.

Nevertheless, the Flemish government and port authority is only too aware of the need for additional container capacity.

Unlike the majority of northern Europe's major container hubs, Antwerp has plenty of room to expand its existing footprint and, at the time of writing, there were as many as eight potential developments on the table.

The Port of Antwerp Authority hopes to increase capacity by 2022.

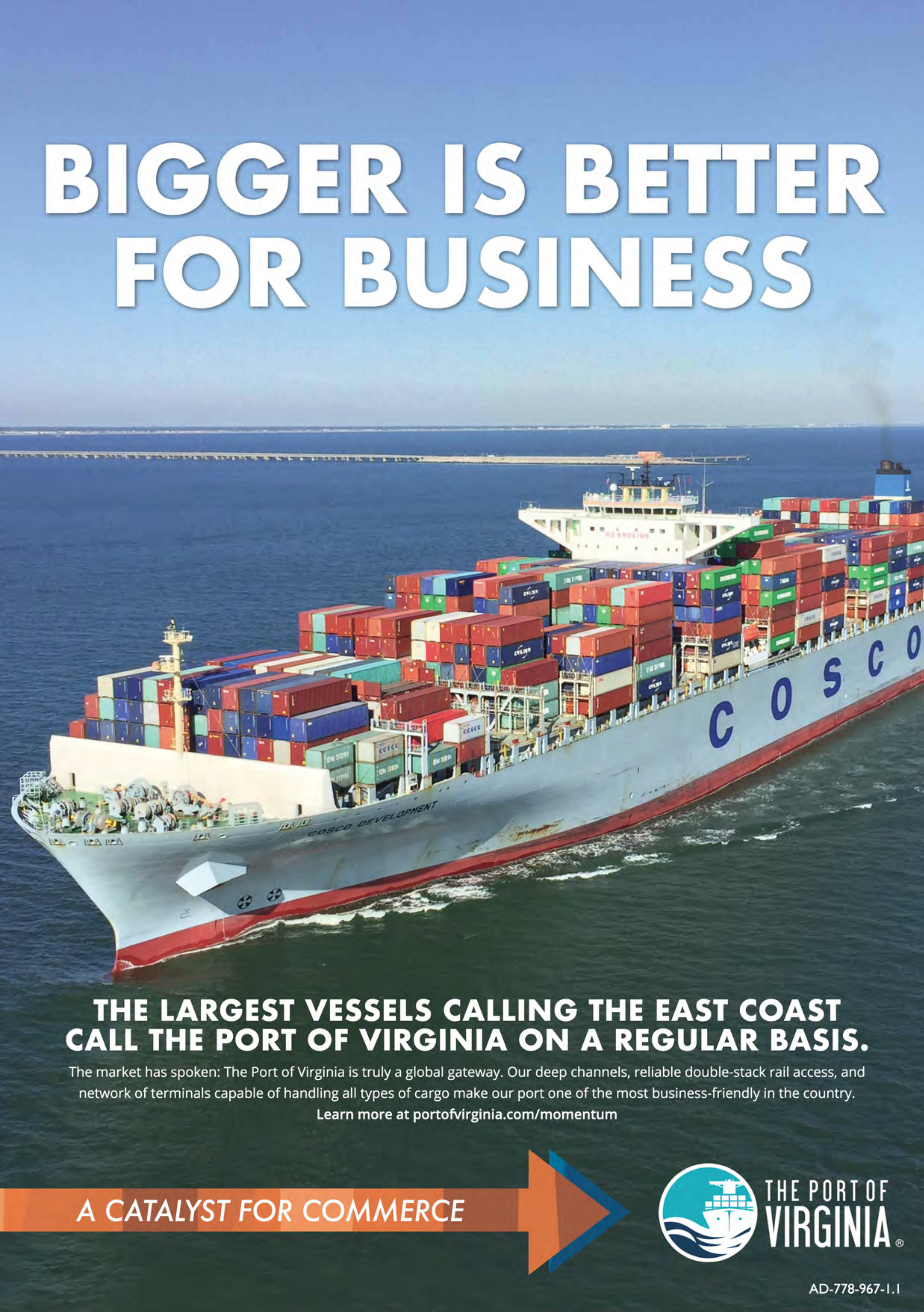
2016 throughput
10,037,341 teu ▲ 4%

Port authority
Antwerp Port Authority, Port House, Entrepotkaai, 2030 Antwerp, Belgium

Website
www.portofantwerp.com

Email
info@portofantwerp.com

Terminals (Operators)
PSA Noordzee Terminal (PSA)
PSA Europa Terminal (PSA)
Independent Maritime Terminal (SEA-Invest Group)
MSC PSA European Terminal (MSC/PSA)
Antwerp Gateway Terminal (DP World)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15 | Dalian China

DALIAN is one of the northernmost trading hubs in China and a city that was part-built by the Russians and by the Japanese when it came under foreign rule during different parts of the last century.

The city's global roots are reflected in the Port of Dalian's strategic positioning in North Asia as a trading hub for oil products, containers, wheeled commercial vehicles, iron ore, coal, steel, grain, bulk and general cargo, as well as passenger and roll-on, roll-off operations.

Dalian Port lies on the northeast economic belt of the New Silk Road and is connected to the remote hinterland by a sea-to-rail intermodal network that ships a record number of containers. It has the Dalian-Russia refrigerated train line and the Liaoning-Bering Strait-Europe shipping channel, which is linked to Japan, South Korea, Asean and major domestic ports.

Container throughput at Dalian in 2016 was 9.6m teu, representing an increase of 1.7% from 2015, effectively reversing a decline in container throughput faced during the previous year.

The Dalian Group's total container throughput, which includes a 15% stake in Jinzhou New Age Container Terminal Co and another 15% in the Qinhuangdao Port New Harbour Container Terminal Co, totaled 10.4m teu, an increase of 2.5% from the previous year.

Since the economy of the region relies heavily on the energy and raw material industries, with underdeveloped modern manufacturing and service sectors, Dalian Port handles huge amounts of bulker and oil tanker shipments. In fact, the Dalian Commodity Exchange is one of the world's leading commodity trading hubs for materials like iron ore.

In 2016, the Dalian Port Group handled a total of 58.3m tonnes of oil and liquefied chemicals, representing an increase of 11.2% from the previous year.

The port boasts the ability to accommodate 450,000 tonne ultra large crude carriers, the world's largest oil tankers, making Dalian the first port in northern China with this capability, boosting its energy storage and trading business significantly.

"With a comprehensive range of cargo types in its operations, the group has a stronger risk-resisting capability. It is anticipated that the group will continue to maintain steady growth in its total throughput," Dalian Port said in its annual report.

In 2017, the company plans to build support facilities for crude oil storage tanks on Changxing Island, strengthen the feeder network within the Bohai Rim for building a transhipment hub, facilitate the build-up of a transhipment centre for domestic trade and improve iron ore distribution by berthing ore carriers with a capacity of 400,000 tons.

2016 throughput
9,614,000 teu ▲ 1.7%

Port authority
Dalian Port Corp, 1 Gangwan Street, Zhongshan District, Dalian, Liaoning Province, PRC

Website
www.dlport.cn

Email
ir@dlport.cn

Terminals (Operators)
Dalian Container Terminal (Dalian Container Terminal Co Ltd)
Odfjell Terminals Dalian (Odfjell Terminals/ Dalian Port Co Ltd)
Dalian Dagang China Shipping Container Terminal (Dalian Port Group, Dalian Container Terminal, China Shipping Group and PSA)

16 | Xiamen China

XIAMEN saw container volumes for 2016 rise 4.7% to 9.6m teu compared with the previous year.

The port authority has been actively promoting transhipment via domestic and foreign trade, with one initiative being a direct weekly service from Xiamen Haitong Container Terminal to Lianyungang Port.

To date, the port can accommodate containerships of around 21,000 teu in size.

In November last year, Xiamen Haicang box terminal's Berths No 14-19 were completed, with Berth 14 and part of Berth 15 (measuring 538 m) fully automated.

The terminal is equipped with 45 automated handling machines, with annual capacity of 780,000 teu-910,000 teu, a 20%-40% increase from previous figures.

Continuing on with the theme of environmental sustainability, Xiamen Container Terminal Group in December 2016 unveiled a three-megawatt high-voltage ship-to-shore electric system at the port, involving a total investment of about $1.8m, to meet vessels' power demands while cutting down on emissions.

The new electrical system is estimated to be able to reduce emissions by 79 tonnes per year, and significantly cut noise pollution from vessels' engines.

Port authorities are also in the process of researching sustainable technologies such as LED lighting and solar-powered facilities; modifying transportation vehicles to be powered by liquefied natural gas; improving the port's water and waste treatment systems; as well as introducing oil pollution-monitoring systems targeting vessels calling at the port.

2016 throughput
9,613,679 teu ▲ 4.7%

Port authority
Xiamen Port Authority, 127 Dongdu Road, Xiamen, Fujian Province, China

Website
www.fjgh.gov.cn

Email
ghjbgs@fjjt.gov.cn

Terminals (Operators)
Xiamen Haitian Container Terminal (Xiamen Container Terminal Group)
Xiamen Hairun Container Terminal (Xiamen Container Terminal Group)
Xiamen International Container Terminals (Xiamen Container Terminal Group 51%, and Hutchison Ports, 49%)
Xiamen Songyu Container Terminal (Xiamen Container Terminal Group, 75% and APM Terminals, 25%)
Xiamen Haicang Xinhaida Container Terminal (Xiamen Container Terminal Group, 66% and Xiamen Haicang Investment Group, 34%)
Xiamen Haitong Container Terminal (Xiamen Port Holding Group owned, Xiamen Container Terminal Group operated)
Xiamen Ocean Gate Container Terminal (Cosco Pacific, 70% and Xiamen Haicang Investment Group, 30%)

17 | Hamburg Germany

EUROPE's third-largest container port saw a return to growth in 2016, following a sharp fall the year before. At just over 8.9m teu, it is still nearly 1m teu shy of its previous record year.

A diversified port with four dedicated container terminals and several multi-purpose terminals, Hamburg also has a major rail port that handles goods to and from Germany's industrial heartland to the south.

After an initially modest start at the beginning of the year, container throughput picked up during the second half. At 91.7m tonnes, total containerised cargo volume rose by 1.2%.

Container traffic with Asia was up by 1.3% at 4.7m teu. China continued to dominate as a trading partner, rising 1.6% to 2.6m teu.

As a home port to Hapag-Lloyd and Hamburg Süd, it is not surprising that container services on trade routes with North and South America were 2.9% up at 1.2m teu, as both German lines have a strong focus on the north-south trades.

Despite this, Hamburg is still a major player in intra-European trade, handling 2.6m teu. Its location on the Elbe, which leads directly to the Kiel Canal and on to the Baltic, has helped lift Russia cargoes again, up 4.5% to 453,000 teu, despite ongoing trade sanctions remaining in force.

While the Elbe is Hamburg's lifeline, the river – and European environmental regulations – threaten its role as a leading port.

Hamburg and federal waterways authorities want to dredge 130

km of the river so that ships with 14.5 m draught can reach the port at all states of tide. There is a risk that costly waits for the right tidal height could deter carriers from calling at Hamburg.

Despite this, in May this year, the 20,170 teu *MOL Triumph*, for a few weeks the largest boxship in the world, was able to call at Hamburg and, with it now becoming a major hub for The Alliance, which has a large fleet of ultra large tonnage, Hamburg's future looks bright.

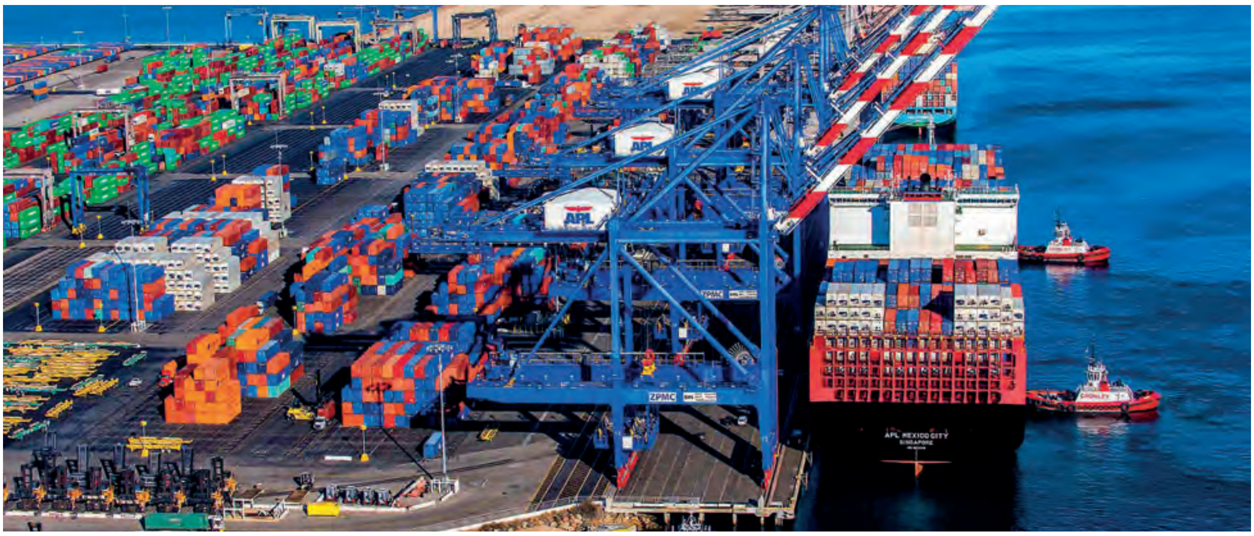
2016 throughput
8,910,000 teu ▲ 1%

Port authority
Hamburg Port Authority, Neuer Wandrahm 4, D-20457 Hamburg, Germany

Website
www.hamburg-port-authority.de

Email
info@hpa.hamburg.de

Terminals (Operators)
Containers:
Container Terminal Altenwerder (HHLA)
Container Terminal Burchardkai (HHLA)
Container Terminal Tollerort (HHLA)
Eurogate Container Terminal (Eurogate)
Multi-purpose:
Hansa Terminal (Buss Ports)
Dradenau Vorhafen (Rhenus Midgard)
Oswaldkai Terminal (Unikai)
Rosshafen Terminal (Vollers)
Süd-West Terminal (C. Steinweg)
Wallmann Terminal (Wallmann)



18 | Los Angeles US

LOS Angeles enjoyed a bumper 2016 in terms of container traffic, which jumped 8.5% to just over 8.8m teu.

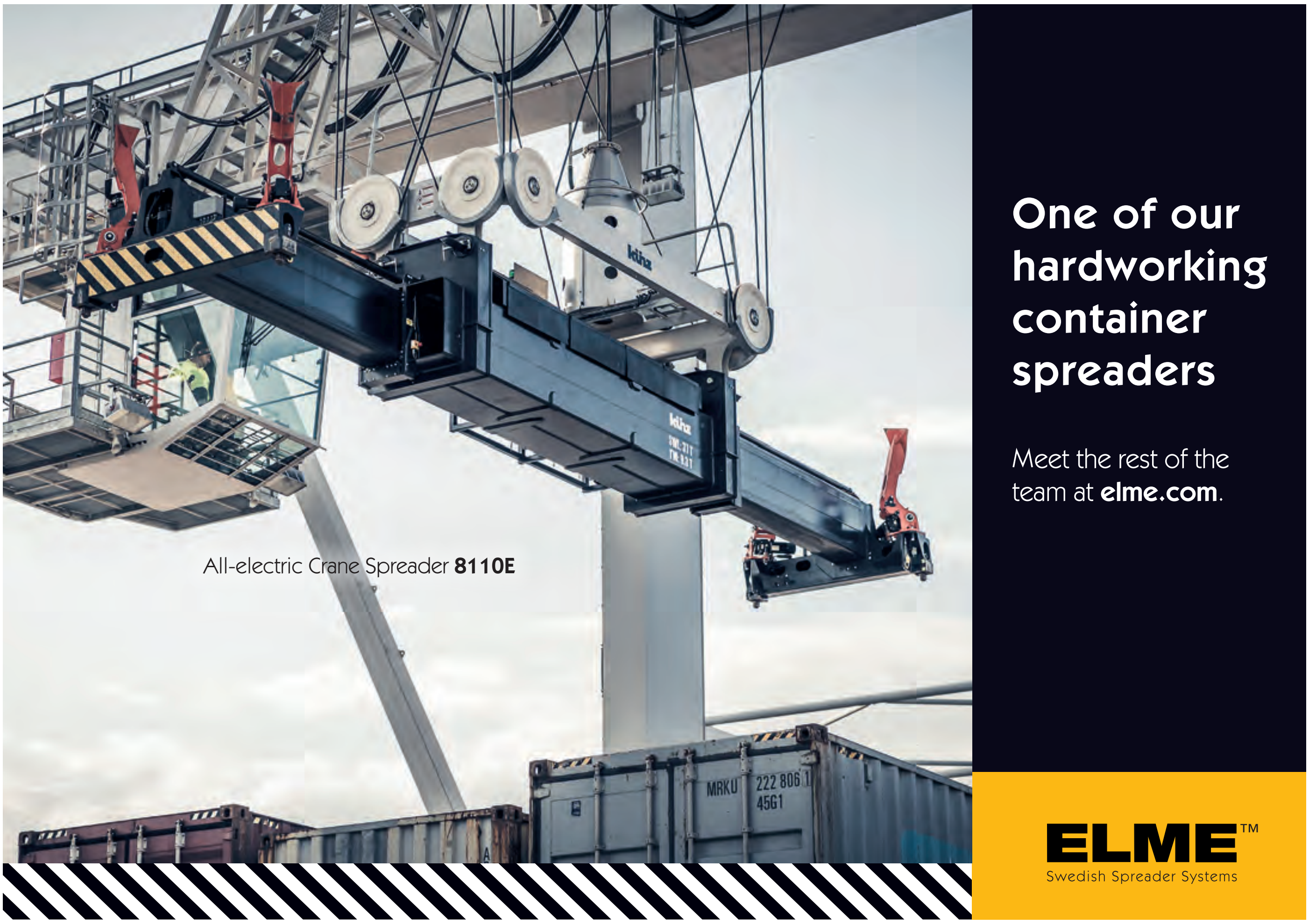
As the port's executive director Gene Seroka noted: "We shattered the all-time record for cargo volume in the western hemisphere."

The strong performance was undoubtedly helped by the collapse of Hanjin Shipping, a customer of neighbouring Long Beach, and the shift in cargo to other lines such as Maersk, which calls at APM Terminals' huge Pier 400 facility in LA.

The US west coast has also benefited from labour peace over the past year or so, while Mr Seroka has been at the forefront of efforts to forge a better relationship with the powerful International Longshore and Warehouse Union – an approach that seems to be paying off, as members voted this summer to extend their existing five-year employment contract from 2019 to 2022.

However, perhaps the biggest challenges facing both LA and Long Beach is the surplus container-handling capacity across the two ports, with shoreside cranes only in action about 50% of the time during a typical working week.

Whether the formation of new global alliances will force carriers – most of which have their own terminal interests in the two ports – to consolidate these assets remains to be seen. But Mr Seroka is acutely aware of the need to find



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That means persuading container lines to take the right ship to the right terminal, so that bigger vessels, for example, are handled by those facilities with the deepest water and tallest cranes.

Smaller tonnage then goes to those berths with more suitable shoreside equipment, and which may be more difficult for larger units to access in a port with a somewhat convoluted layout.

Meanwhile, change is already in the air, with CMA CGM finding a prospective buyer for the Global Gateway South terminal in LA, which it acquired through the takeover of NOL and its container shipping arm APL.

The French line, which already has a 10% stake in Pier J in Long Beach, announced in early July that it would be selling a 90% shareholding in GGS to EQT Infrastructure and P5 Infrastructure for $817m.

The transaction includes a commitment from CMA CGM to continue calling at the terminal, one of the few in San Pedro Bay able to handle 18,000 teu-class ships.

Then came the news that Hyundai Merchant Marine was to terminate its lease with APM Terminals and close its California United Terminals on Pier 400 at the end of August.

APMT will take back the space and will also continue to handle one of HMM's transpacific services.

Meanwhile, 2017 is on track to surpass 2016, with volumes up 9.5% on 2016 in the first seven months of the year.

2016 throughput
8,856,783 teu ▲ 8.5%

Port authority
Port of Los Angeles, 425 S. Palos Verdes St, San Pedro, CA 90731, US

Website
www.portoflosangeles.org

Email
community@portla.org

Terminals (Operators)
Berths 100-102: West Basin Container Terminal (Cosco Shipping)
Berths 121-131: West Basin Container Terminal (Yang Ming)
Berths 136-147: TraPac Container Terminal (MOL)
Berth 212-225: Yusen Container Terminal (NYK)
Berths 226-236: Everport Container Terminal (Evergreen)
Berths 302-305: Eagle Marine Services (CMA CGM)
Berths 401-404: APM Terminals/Pier 400 (Maersk)
Berths 405-406: California United Terminals (HMM – lease terminated August 2017)

19 | Tanjung Pelepas Malaysia

LOCATED in the southern Johor state of Peninsular Malaysia, the port of Tanjung Pelepas is focused on increasing capacity to take advantage of expected regional trade growth, even though a change in network strategies by certain customers led to lower volumes in 2016.

The port has embarked on a terminal equipment and facility upgrading programme, which is expected to improve its performance as well as meet the long-term needs of customers.

Preventive maintenance initiatives and an asset-upgrading programme worth more than $150m are under way, which include the purchase of new quay cranes with spreaders, rubber-tyred gantries and prime movers, to be delivered in stages throughout 2017 and the first quarter of 2018.

The port is also acquiring 93 new prime movers, with the first batch already delivered. Among other container-handling equipment purchases by the port are 26 units of electrified RTG cranes and

eight new Triple-E cranes.

In terms of infrastructure upgrading, two berths are to be improved to accommodate the new Triple-E cranes.

Johor Port Authority general manager Muhammad Razif Ahmad said recently he was optimistic Tanjung Pelepas port would meet its target for 2017, as cargo handling at the port had increased from April.

The port's container throughput was 4.14m teu as at June 2017 compared to 4.31m teu in the same period of 2016.

Fitted out with the right facilities and equipment, the Port of Tanjung Pelepas has the capacity and capability to accommodate all sizes of containership, including the latest mega-size vessels.

In May this year, it became the first port in southeast Asia to welcome the 20,568 teu *Madrid Maersk*, the first "second-generation" Triple-E class vessel owned by Maersk Line.

2016 throughput
8,280,661 teu ▼ 9.2%

Port authority
Johor Port Authority, Jalan Mawar Merah 2, Pusat Perdagangan Pasir Gudang 2, 81700 Pasir Gudang, Johor

Website
www.ptp.com.my

Email
ptp@ptp.com.my

Terminals (Operators)
Pelabuhan Tanjung Pelepas (MMC Corporation)

20 | Laem Chabang Thailand

COVERING 2,572 acres, Laem Chabang is Thailand's main deepsea port and continued to show continued growth in container throughput in 2016.

Located 130 km to the south of Bangkok, in the coastal province of Chonburi, it handled 6.6% more containers, with growth seen in both exports and imports, although transhipment volumes registered a slight decline.

Promoting it as the country's main port, the Port Authority of Thailand aims to make Laem Chabang the regional hub for multimodal transport and logistics.

A five-year strategic plan, starting from 2015, to accommodate an expected surge of around 5% annually in container throughput, is on track, according to PAT managing director Montree Lergchumniel.

Among several major developments that are part of the plan is the single rail transfer operator project, which aims to improve the movement of containerised cargo by rail to the port.

The first phase of the project, including construction of the rail yard and installation of six railway tracks, is scheduled for completion in October 2017.

Meanwhile, construction of a 78 km-long east coast line, linking Chacheongsao, Sri Racha and Laem Chabang, has been completed and is expected to boost the port's capacity to handle rail container volume of up to 2m teu per year.

PAT's strategic plan for Laem Chabang also incorporates other major schemes, such as the coastal berth development project, as well as improvement of facilities to minimise traffic congestion within the port and surrounding areas.

An important supporting factor is the country's Eastern Economic Corridor Development Project, which prioritises rail and port connectivity to raise efficiency and minimise transport costs.

2016 throughput
7,227,431 teu ▲ 6.6%

Port authority
Port Authority of Thailand, 444 Tarua Road, Klongtoey, Bangkok 10110 Thailand

Website
www.laemchabangportnew.com

Email
pr@laemchabangport.com

Terminals (Operators)
LCB Container Terminal 1 Ltd (APM Terminals)
LCMT Company Ltd (APM Terminals)
TIPS (TIPS Co Ltd)
Terminals B5 & C3 (Laem Chabang International Terminal Co)
Hutchison Laemchabang Terminal/Terminal A3 (Hutchison)
Eastern Sea Laem Chabang Terminal (ESCO)
Evergreen Container Terminal (Thailand) Ltd (Evergreen/Mitsui)

21 | Long Beach US

LONG Beach is rapidly bouncing back from the hit it took in 2016 when one of its tenants, Hanjin Shipping, collapsed, leaving a big hole in its business.

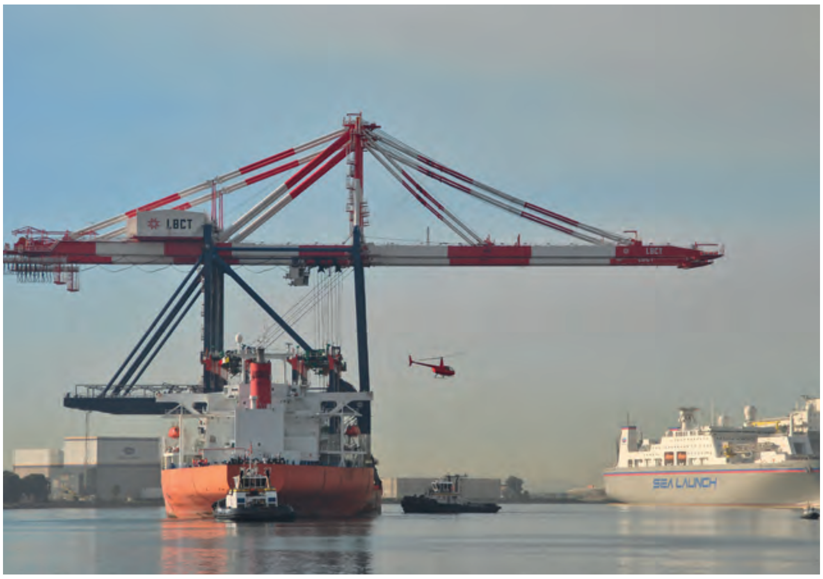
Annual volumes were down almost 6% as cargo traffic that had been handled by Hanjin's Pier T terminal was dispersed elsewhere. Neighbouring Los Angeles was the main beneficiary as shippers switched to financially sound lines such as Maersk.

However, once the Danish line's 2M partner Mediterranean Shipping Co had taken a majority stake in Pier T, along with Hyundai Merchant Marine, Long Beach's container throughput not only stabilised but started to grow, with several exceptionally strong months in the spring and summer of 2017. In fact, Long Beach enjoyed its busiest May on record, its second-best June, and then the strongest month ever in July.

As a result, the port's newly appointed executive director, former Federal Maritime Commission chairman Mario Cordero, predicts Long Beach is on course for "perhaps" its best year ever, with container volumes forecast to be up by between 5% and 7%.

Mr Cordero took over the top job after Long Beach had gone for several months without a director following the sudden departure of his predecessor. He is now overseeing a $4bn 10-year infrastructure investment programme that runs to 2020.

By then, the replacement for



2016 throughput
6,775,171 teu ▼ 5.8%

Port authority
Port of Long Beach, 4801 Airport Plaza Drive, Long Beach, CA 90815 US

Website
www.polb.com

Email
info@polb.com

Terminals (Operators)
Pier T: Total Terminals International (MSC and HMM)
Pier G: International Transportation Service (The Alliance)
Pier F and E (Middle Harbor): Long Beach Container Terminal (OOCL/Ocean Alliance)
Pier J: Pacific Container Terminal (CMA CGM/ Ocean Alliance)
Pier A: Stevedoring Services of America
Pier C: SSA (Matson)

the Gerald Desmond Bridge, which spans the main channel, would have been completed. This will allow much bigger ships to access terminals beyond the bridge.

The final phase of the huge Middle Harbor development, with a fully automated facility operated by OOCL, will also be finished by late 2019 or early 2020.

With OOCL about to be bought by Cosco Shipping, which has its own facility in Los Angeles, it is unclear how the matter of surplus terminal capacity in the two southern Californian ports will be resolved as ocean carrier consolidation continues.

However, Mr Cordero is confident Long Beach's close association with both lines over the years will pay off in the future.

The port authority also expects OOCL's Long Beach Container Terminal and other facilities to be berthing 20,000 teu-class ships as these vessels eventually enter the Pacific trades on a regular basis, and as the port gains experience in handling tonnage of this size and accelerating the off-loading process.

Looking further ahead, Mr Cordero also hopes a \$600m-\$800m investment in on-dock rail capability will lift the percentage of containers moved in and out of the port by freight train from about 25% now, to nearer 35%, and one day to as much as 50%.

22 | New York / New Jersey US

TOTAL throughput for the port of New York/New Jersey in 2016 was down 1.9%, reflecting a return to normal conditions following a surge of cargo diverted to the US east coast from the US west coast in 2015, due to well-documented labour disputes.

In fact, the port of New York/ New Jersey resumed its organic growth during the first six months of 2017, handling a total of 3.3m teu compared to 3m teu in 2016, representing an 8.5% year-on-year increase.

But the big news for the busiest port on the US east coast is the completion of the \$1.6bn Bayonne Bridge navigational

clearance project in June 2017. The new navigational clearance of 215 feet allows containerships of up to 18,000 teu to travel underneath it to port terminals, compared to the previous clearance of 151 feet, which only allowed containerships of up to 9,800 teu to call at the port.

The raising of the Bayonne Bridge followed the completion of a $2.1bn, 50-foot navigation channel-deepening project.

The port authority has also invested more than $600m in its on-dock, ship-to-rail systems, which includes the ExpressRail Port Jersey project, currently under construction. The project is considered a critical success factor to improve port efficiency, competitiveness and to reduce emissions from the elimination of truck trips to terminals.

When ExpressRail Port Jersey opens at the beginning of 2018, it will increase the port's handling capacity to 1.5m container lifts a year, as well as eliminate 2.5m annual truck trips from local highways, thus ensuring its container-handling capacity will remain the greatest on the US east coast.

2016 throughput
6,251,953 teu ▼ 1.9%

Port authority
Port of NY & NJ, 225 Park Ave South, New York, NY 10003, US

Website
www.panynj.gov/contact/contact-us.html#port

Email
info@polb.com

Terminals (Operators)
APMT Port Elizabeth (APM Terminals)
Global Marine Terminal (Global Terminal & Container Services Inc)
Maher Fleet St Terminal & Maher Tripoli Street Terminal (Maher Terminals)
New York Container Terminal (Global Container Terminals)
Port Newark Container Terminal (Ports America)
Red Hook Marine Terminal (American Stevedoring)

23 | Yingkou China

YINGKOU has continued to see slower growth in container throughput, and the Liaoning-based port is thinking of ways to revive the volume.

Its 2016 growth rate was just 2.8%, compared to 5.5% in 2015 and 5.8% in 2014.

The port's growth engine used to be the economy of northeast China, where its hinterland resides. But the three provinces of Liaoning, Jilin and Heilongjiang have been viewed as China's "rust belt", as the traditional industrial area sees manufacturing activity shift elsewhere.

In order to revitalise economic development in this area, the Liaoning provincial government has signed a Port Corporation Framework Agreement with state giant China Merchants Group.

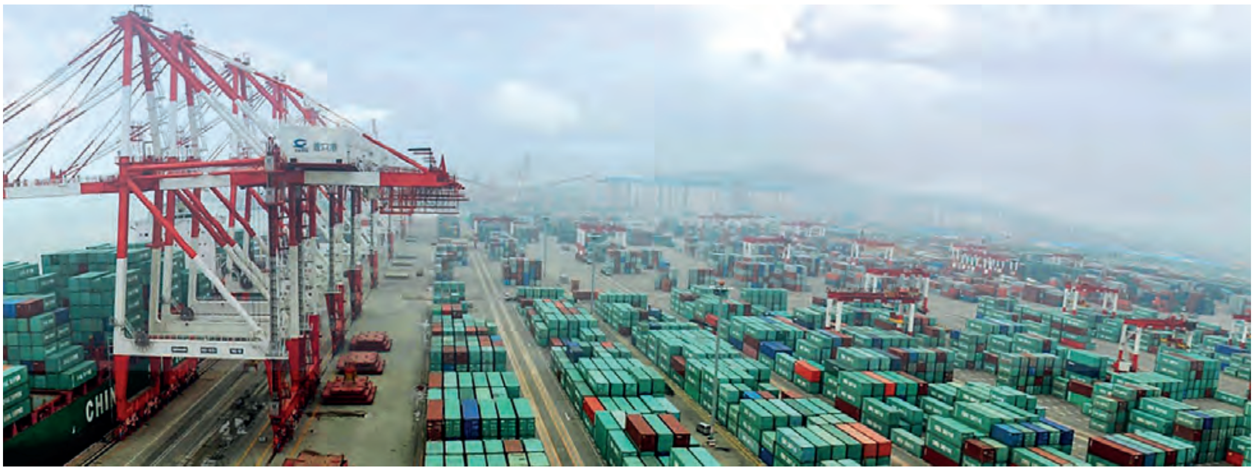
This agreement aims to establish a merged port operating platform for all ports in the province, with Dalian Port Corp, Yingkou Port Group and Jinzhou Port to anchor the integrated entity tentatively known as Liaoning Port Group.

Once established, this entity will be managed by CMG, which will reorganise the businesses and optimise the overall management structure in order to boost global competitiveness, as well as promoting shipping hubs and the relevant sectors in the province.

Regional port consolidation is nothing new in China. Past examples can be seen among ports in the Beibu Gulf, Xiamen Port, Hebei Port Group, Zhejiang Harbour Group and Jiangsu Port Group.

However, some industry analysts questioned whether this move, which came in response to a struggling port industry across the nation, can really prompt a revival of industry development.

While port consolidation can optimise the utilisation of port capacity and alleviate the industry



downturn, a detailed programme for the new entity has not yet been unveiled and, as such, uncertainty persisted, they said.

Ying Kou Port Group, the main port operator, has also been seeking other ways to enhance the volume.

One is to continue improve land transport links. The company has increased rail services to central Europe in recent quarters. It also agreed to purchase 49% in the Rbls18bn ($304m) logistics centre of Russia Railways in Moscow.

Domestically, it has also aimed to enhance co-operation with the Port of Shenyang and Zhonggu Shipping to improve its services.

However, with the macro side weakness, it remains to be seen whether Yingkou can raise the ceiling of its box volume. Its throughput only grew 0.7% on year to 2m teu in the first four months of 2017.

2016 throughput
6,086,000 teu ▲ 2.8%

Port authority
Yingkou Port Authority, Penavico Bldg, 1 New Port Rd, Bayuquan Dist Yingkou, Liaoning, Prov 115007, China

Website
www.ykport.com.cn

Email
ykplc@ykport.com.cn

Terminals (Operators)
Yingkou Container Terminal (Yingkou Port Container Terminal Co)

24 | Ho Chi Minh City Vietnam

VIETNAM continues to be one of Southeast Asia's success stories, the fastest-growing market in the region. Growth in gross domestic product in 2016 was 6.2%, a slight cooling from 2015, according to figures from the World Bank.

The service sector of the country's economy continues to grow, and Vietnam's strength is being reinforced by buoyant domestic demand, but exports remain a keystone.

Export growth in 2016 was 9%, accelerating from 7.9% in 2015, according to the World Bank. This growth was fuelled by manufactured goods, which is good news for container carriers.

Vietnam's success in exports is particularly significant when compared to its neighbours; China, Indonesia, Malaysia, Philippines, Singapore and Thailand all recorded negative growth in 2015, and only Thailand managed a positive figure in 2016.

While volumes continue to climb at Ho Chi Minh City, the port complex has its problems. Vietnam has become the poster child for overcapacity and overinvestment.

Complexes in both the north and south of the country have capacities that far exceed local and transhipment demand, exacerbated in the north by tight draught restrictions.

The General Statistics Office of Vietnam is targeting 6.7% growth in gross domestic product in 2017, and export growth of 6%-7%.

Ho Chi Minh was considered one of the winners in the recent reshuffling of the major container line alliances. The Cai Mep terminal secured calls from new services from The Alliance, Ocean Alliance and 2M from April 2017, connecting the port to North America, Europe and its neighbours in Asia.

To the north, Ho Chi Minh will face fresh competition from the Haiphong International Gateway Port, which is currently under construction, with completion slated for the end of 2017. Haiphong will be the first deepwater port in the north of the country

2016 throughput
5,986,747 teu ▲ 3.4%

Port authority
Vietnam Port Authority, 3 Nguyen Tat Thanh St, HCMC, Vietnam

Website
www.vpa.org.vn

Email
info@vpa.org.vn

Terminals (Operators)
Ben Nghe (BNP)
TCCT (Saigon Newport)
TCIT (Saigon Newport)
TCTT (Saigon Newport)
CPTT (APM Terminals)
SSIT (SSA Marine)
SITV (Hutchison Ports)
SP-PSA International Port (PSA)
VICT (First Logistics Development)
SPCT (DP World)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10,000,000 TEU Annual Throughput
Limitless business opportunity for a network with distinction
Kumport,Turkey
Lome,Togo
Colombo,Sri Lanka


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25 | Colombo Sri Lanka

LOCATED on the west coast of Sri Lanka, the country's largest port, Colombo, continued its rapid growth in 2016, reporting a double-digit container throughput increase.

With its deep natural harbour, it is strategically positioned on the east-west trading routes, serving trade to and from Europe, east and south Asia, the Indian sub-continent, Persian Gulf, and East Africa.

The significant rise in volumes came as a result of an influx of ultra large containerships calling the Colombo International Container Terminal, situated in the port's new south harbour development, capable of handling three ULCs simultaneously.

CICT is one of two terminals to be constructed in the south harbour, as part of the Sri Lankan government-led Colombo Port Expansion Project. Situated west of the old port, the expansion comprises an area of approximately 600 hectares and will increase capacity to 11.7m teu at full build-out.

The East Container Terminal, the second terminal in the south harbour, is expected to be operational in 2019. As part of its first phase, the Sri Lanka Ports Authority has completed works on a 440 m single berth, consisting of a 440 m quay, boasting an 18 m draught.

President Maithripala Sirisena told local reporters in August this year the terminal would not be privatised and would remain under the supervision of the SLPA.

2016 throughput
5,734,923 teu ▲ 10.6%

Port authority
Sri Lanka Ports Authority, 19 Chaithya Road, PO Box 595, Colombo 01, Sri Lanka

Website
www.slpa.lk

Email
info@slpa.lk

Terminals (Operators)
Jaye Container Terminal: SLPA
Unity Container Terminal: SLPA
South Asia Gateway Terminal: SAGT
Colombo International Container Terminal: China Merchants Holdings / SLPA

26 | Bremen / Bremerhaven Germany

THE Bremenports Group handles all its containers at Bremerhaven. Last year, the 5 km of quay at Europe's fourth-largest container port, including 14 berths for mega containerships, saw a throughput of 5.53m teu.

With inbound boxes at 2.65m teu and outbound at 2.88m teu, the year experienced an uptick – although of little more than 1%.

But behind that positive news lies an established trend. A peak appears to have been reached in 2012 of 6.11m teu, followed by three years of decline. Throughput of more than half a million boxes has been lost.

Trade statistics reveal the top eight trade destinations all suffered a setback between 2014 and 2016. US trade slipped from 848,000 teu to 722,000 teu; China from 742,000 teu to 567,000 teu; and Russian trade halved from 527,000 teu to 269,000 teu.

Of the total throughput, 3.18m teu (57%) was transhipped; of the remaining 2.34m teu, 51% was taken by road and 46% by rail. The proportion carried on by inland waterway has fallen from 4.4% in 2010 to just 2.7%.

Bremerhaven is competing against another Bremen city-supported port, Wilhelmshaven, which saw a 12.9% increase in throughput between 2015 and 2016 from 426,751 teu to 481,720 teu.

Eurogate Group handles boxes at Bremerhaven, Wilhelmshaven, and Hamburg. The terminal operator reported a significant increase in the number of mega containerships (in excess of 18,000 teu capacity) handled, and suggested the optimistic outlook for 2017 – offered in spite of a reshuffle of alliance members – will continue to favour Wilhelmshaven rather than Bremerhaven.

2016 throughput
5,535,000 teu ▲ 1%

Port authority
Bremenports GmbH & Co. KG, Am Strom 2, 27568 Bremerhaven, Germany

Website
www.bremenports.de

Email
office@bremenports.de

Terminals (Operators)
Eurogate Container Terminal (Eurogate)
North Sea Terminal Bremerhaven (APM Terminals and Eurogate)
MSC Gate (Terminal Investment Ltd and Eurogate)

27 | Tanjung Priok Indonesia

THE Port of Tanjung Priok in northern Jakarta saw throughput rise 6% in 2016, as it started commercial operations at a new container terminal built to accommodate mega vessels.

New Priok Container Terminal One (NPCT1), a joint venture company established by state-owned port operator Indonesia Ports Corp (otherwise known as PT Pelabuhan Indonesia II, or Pelindo II), Mitsui & Co, PSA International and NYK Line, will operate the new terminal.

The terminal, which has a handling capacity of 1.5m teu, with a total quay length of 850 m and a 16 m draught alongside berths, was started in August 2016 in time to mark Indonesia's Independence Day.

The terminal is equipped with eight super post-panamax quay cranes and 20 electrically powered rubber-tyred gantry cranes. With the use of ERTGs and exploring "cold ironing", NPCT1 seeks to make the terminal one of the most environmentally friendly facilities in the container shipping business.

Tanjung Priok is Indonesia's largest port, with about 6m teu in annual capacity. The port operator IPC has 12 port branches, mainly located in the western part of Indonesia.

Tanjung Priok, which has suffered congestion in the past, saw the construction of NPCT1 completed in 2015. This included a dock, container yard and a southern access road, in addition to the operational equipment required.

Two more terminals are expected to start operations around 2020-2021, which will add 3m teu to the handling capacity. The $3bn New Priok project is fully funded, with joint venture partners providing about $1bn, while IPC provided about $1.5bn through internal funds and debt, IPC senior vice-president David Wignall said.

2016 throughput
5,514,694 teu ▲ 6%

Port authority
Indonesian Ports Corp, Jl Raya Pelabuhan no. 9, Tanjung Priok, Jakarta Utara, 14310, Indonesia

Website
www.priokport.co.id

Email
priok@indonesiaport.co.id

Terminals (Operators)
Jakarta International Container Terminal: Pelindo II
New Priok Container Terminal One: IPC, Mitsui, PSA International, NYK

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ZIM

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www.ashdodport.co.il

28 | Algeciras Spain

CONTAINER throughput at the port of Algeciras showed a 5.4% rise in 2016 versus a year earlier, taking it to the top of the charts for the Mediterranean region and demoting its nearest rival, Valencia, to second place.

Algeciras is aiming to increase competitiveness in the region through measures including a reduction in port taxes and expansion projects that will see it able to accommodate the largest vessels, the 20,000 teu-sized mega boxships.

"The Port Bay of Algeciras looks to the future with its eyes set on its great potential to continue growing and gaining new traffics," according to a report on the port's website.

Through the second extension of the Isla Verde Exterior, the port could hit the 7m teu mark, it said, adding it is planning a phase C project, which will see 80 new hectares of port surface area and more than 1,000 m of quay line.

With continuous growth in reefer traffic during the past few years, the port has started operating a new terminal – Agro Merchant – dedicated to the trade, which significantly increases the storage capacity of frozen and refrigerated products.

2016 saw a change in ownership of one of the port's two terminals.

Total Terminal International Algeciras is now under the responsibility of Hyundai Merchant Marine, which took over the facility as one of a number of assets obtained from the now defunct Hanjin.

With TTI's future secure, reports that Maersk Line is looking to drive more volumes through APM Terminals-operated facilities can only be further good news for Algeciras, with the operator in charge of its largest box terminal.

However, the port has been marred – along with other Spanish ports – by a labour dispute that grew in intensity this year, with intermittent work stoppages that threaten throughput figures.

The European Union called for immediate changes to what it described as an 'illegal monopolisation' of the workforce operating the country's ports. It imposed a fine on Spain equivalent to $3.4m for failing to reform the sector.

2016 throughput
4,761,428 teu ▲ 5.4%

Port authority
Autoridad Portuaria de la Bahia de Algeciras, Paseo de la Conferencia s/n, Apartado 7, E-11207, Algeciras, Spain

Website
www.portofalgeciras.com

Email
comercial@apba.es

Terminals (Operators)
APM Terminals Algeciras: (APMT)
Total Terminal International Algeciras (Hyundai Merchant Marine)

29 | Valencia Spain

IF Valencia had been hoping for a period of calm after a turbulent time involving lawsuits, arbitration and an embattled port authority, it would have been very disappointed.

For not only has one of the world's top 30 gateways been caught up in labour disputes that have disrupted all Spanish ports, but it has also captured the attention of China.

Cosco Shipping Ports is to take a 51% interest in JP Morgan-controlled Noatum Ports, which operates Valencia's largest container terminal, as well as a facility in Bilboa, plus rail terminals in Madrid and Zaragoza. The $224m deal is likely to be concluded in September or October, subject to shareholder approval.

Hong Kong-listed Cosco Shipping Ports, which signed the sale and purchase agreement in mid-June, could eventually buy 100% control.

Noatum's Valencia terminal handled 2.5m teu last year and, after a recent expansion with its new Muelle de Costa berth, has capacity of 3.5m teu and the ability to work four ultra large containerships at the same time. There is also more land that could be developed.

When adding the volumes of the two other Valencia terminals, operated by Mediterranean Shipping Co and APM Terminals, the container traffic rose 2.3% to 4.7m teu in 2016. This was just behind Algeciras, which regained its top spot in the Mediterranean for container volumes.

However, port authority chairman Aurelio Martinez has further

2016 throughput
4,722,000 teu ▲ 2.3%

Port authority
Autoridad Portuaria de Valencia, Avda Muelle del Turia s/n 46024, Valencia, Spain

Website
www.valenciaport.com

Email
comercial@valenciaport.com

Terminals (Operators)
Noatum Container Terminal Valencia (Noatum)
MSC Terminal Valencia (Mediterranean Shipping Co)
APM Terminals Valencia (APM Terminals)

development plans, as Valencia aims to capitalise on its position as the closest port to Madrid and, as such, the fact it is not just reliant on transhipment traffic.

Meanwhile Cosco Shipping Ports, part of the powerful Cosco Shipping Group, regards the Valencia investment as part of the One Belt, One Road project, and complementing its presence in the eastern Mediterranean, where it already operates a container terminal in Piraeus.

For Valencia, the big gain should be the services of Ocean Alliance partners Cosco Shipping, CMA CGM, Evergreen and OOCL.

30 | Lianyungang China

THE growth era appears to be over for Lianyungang.

The Jiangsu-based port suffered an on-year fall of 6.1% in container throughput to 4.7m teu in 2016. That came after a mere 0.1% growth in 2015.

The port, which has struggled to find its own niche, handled much lower volumes last year than its 2013 peak of 5.5m teu.

Lianyungang has positioned it as the departure point of the so-called Eurasia land bridge; on paper, west Asia, or even central Europe, could become the port's hinterlands.

But while this ambition could one day be realised if President Xi Jingping's One Belt, One Road initiative to improve transport links between Asia, Europe and Middle East succeeds, for now, the volume is just not picking up.

According to a statement on the Jiangsu provincial government website, Lianyungang blamed the poor performance on macroeconomic weakness and unstable cargo sources.

How to bring the port back to growth? The answer, according to the port, would be to improve the logistics chain; to work with rail service providers to cut fees; and to enhance hinterland connections, with a focus on river ports.

It remains to be seen whether those measures would work.

Lianyungang appears to be part of the "squeezed middle".

Neighbouring giants like Shanghai and Qingdao belong to different local authorities, so it is unlikely they would be willing to work out large transhipment deals under China's bureaucratic structure, where provincial governments often initiate port consolidation.

In addition, the port is too large to position itself as a feeder port. The Jiangsu government has, in fact, established a port group to control Lianyungang and other ports in the province.

However, it positions Lianyungang as an international hub – a tough position to hold when competing with Shanghai and Qingdao.

Moreover, other coastal ports are shifting their attention to rail connections as well, so competition to become the hub for Eurasia land bridge is likely to heat up. The search by Lianyungang for its niche looks set to continue.

2016 throughput
4,703,300 teu ▼ 6.1%

Port authority
Lianyungang Port Authority, 99 Zhongshan East Rd, Lianyungang, China

Website
www.lyggk.gov.cn

Terminals (Operators)
Lianyungang New Oriental International Container Terminal (Cosco Ports)
Lianyungang-PSA Container Terminal (PSA International)

31 | Tokyo Japan

TOKYO's position as Japan's largest container port appears unassailable. However, there are longstanding issues that must be addressed.

Throughput in 2016 rose to 4.7m teu from 4.63m teu in 2015, about one-fifth of the national total of 21.7m teu. This remains far ahead of slowly improving Kobe (2016: 2.8m teu, 2015: 2.7m teu), Yokohama (2016: also 2.8m teu), and Nagoya (2.7m teu).

In 2010, the Japanese government launched a policy to stimulate its "strategic international container ports", providing financial assistance for investment in a bid to counter the increasing regional magnetism of the South Korean port of Busan.

Despite such encouragement, throughput at the four major Japanese ports fell in 2015, so the latest, positive figures from the transport ministry should be put into context. Both Japan's exports and imports picked up some of the momentum lost in 2015 when China's economy slowed – China accounts for about 40% of Japanese container business.

However, this hid concerns for Tokyo's international competitiveness. Road traffic congestion problems for containers arriving at and leaving Oi Container Terminal, the largest of Tokyo's three box-handling facilities, have become acute as the volume of foreign trade containers increase.

A redesigned road layout now keeps trucks waiting to pick up boxes away from laden trucks making their way from the terminal. If the transport ministry's policy to encourage export and import trade takes off, the flow of containers around Oi terminal could make or break Tokyo's success in 2017.

2016 throughput
4,700,000 teu ▲ 1.5%

Port authority
Bureau of Port and Harbor, Tokyo Metropolitan Government, 8-1 Nishishinjuku 2-chome Shinjuku-ku Tokyo 163-8001, Japan

Website
www.kouwan.metro.tokyo.jp

Email
kouwan_kouhou@section.metro.tokyo.jp

Terminals (Operators)
Aomi berth 01 and 02 (Isewan Terminal Service, Sankyu, Sumitomo Warehouse, Daiichi Transportation & Terminal and Nippon Express)
Aomi berth 03 (Mitsui-Soko and Nippon Express)
Aomi berth four (Suzue)
Oi berth 01: Tokyo Kokusai Koun (K Line)
Oi berth 02: Daito (K Line)
Oi berth 03: UTOC (MOL)
Oi berth 04: International Container Terminal Co (MOL)
Oi berth 05: Azuma Shipping (Wan Hai Lines)
Oi berth 06: Nippon Container Terminals (NYK)
Oi berth 07: Uni-x (NYK)
Shinagawa Container Terminal (Daiichi Transportation & Terminal, The Sumitomo Warehouse, Azuma Shipping, Nippon Express, Sankyu)

32 | Manila Philippines

THE port of Manila further cemented itself as major player in Southeast Asian trade, as a booming national economy and terminal investments led to a 13.8% increase in container traffic in 2016.

The Philippines' biggest container terminal, the Manila International Container Terminal, operated by International Container Terminal Services Inc, accounted for almost half of the throughput, with 2.2m teu handled in 2016, marking a 10.8% increase from 2015.

ICTSI attributed part of this growth to the introduction of an online container booking platform called Terminal Appointment Booking System in October 2015, which helps

optimise truck movements in and out of the terminal.

MICT also benefited from the completion of the terminal's Yard 7 in November 2015, which was part of its Pesos5bn ($99m) expansion project. Yard 7 increased the terminal's capacity by 18% from 2.5m teu to 2.75m teu.

The two Philippine Ports Authority-controlled terminals also grew at impressive rates. The Manila North Harbor, which only trades with Philippine ports, grew by 14.4% and handled 1.3m teu; while the Manila South Harbor, which only trades with foreign ports, increased traffic by 19.3% to 1m teu.

Apart from changes at the port, its success is also owed to the country's continuing economic growth, which reached 6.8% growth rate in 2016 up from 5.9% according to the World Bank, ahead of China and just behind India.

In light of the successful 2016, ICTSI decided to engage in an $80m investment programme that includes the construction of a seventh berth at the terminal, and an order for 25 cranes that would allow the terminal to handle boxships greater than 13,000 teu.

2016 throughput
4,523,339 teu ▲ 13.8%

Port authority
Philippine Ports Authority, Bonifacio Drive, South Harbor, Port Area, Manila, Philippines

Website
www.ppa.gov.ph

Email
rtsan@ppa.com.ph

Terminals (Operators)
Manila International Container Terminal (ICTSI)
Manila South Harbor (PPA)
Manila North Harbor (PPA)

33 | Jawaharlal Nehru India

JAWAHARLAL Nehru port in Mumbai is India's largest container terminal, handling more than half of the country's seaborne box trade.

Despite the country's rapidly expanding economy, the port only handled 4.5m teu in 2016, a slight increase on the previous year, as it lost the extra volumes to smaller-to-medium sized ports.

It is in any case progressing with its ambitious expansion plans to handle 10m teu by 2023.

To that end, it jointly awarded a contract earlier this year to Dutch company Royal Boskalis Westminster and Luxembourg-based Jan De Nul Group to widen and deepen the access channel to its terminal facilities.

The current channel will be widened to 450 m from 370 m, while the straight reach channel will be lengthened to 35.5 km from 33.5 km. The draft will also be increased to 15 m from 14 m.

The plan is to be able to accommodate larger containerships to stay competitive.

According to the port trust's chairman Anil Diggikar, construction for the fourth container terminal is ongoing, with the first jetty extension of 1 km due to be completed in November 2017 and the second 1 km extension to be finished by November 2022.

It is also working on a Green Port Initiative and as such, has installed solar panels for electricity generation on site.

Recently, the port welcomed a delegation from South Korea to enhance trade relations.

"India is major market especially for the automobile industry and JNPT is one of the largest ports that has the best facilities which will aid us to expand our business in India," South Korea's Gyeonggi provincial government director Jung Woo Yong said in a statement.

2016 throughput
4,516,000 teu ▲ 0.8%

Port authority
Jawaharlal Nehru Port Trust, Sheva, Navi Mumbai, Maharashtra 400702, India

Website
www.jnport.gov.in

Email
manair@jnport.gov.in

Terminals (Operators)
Jawaharlal Nehru Port Container Terminal (JNPCT)
Nhava Sheva International Container Terminal (NSICT-DP World)
Gateway Terminals India (GTI-APM Terminals)

34 | Khorfakkan United Arab Emirates

GULFTAINER'S flagship domestic operation, Khorfakkan Container Terminal, located on UAE emirate Sharjah's eastern coastline on the cusp of the Straits of Hormuz, continued to report healthy volume growth last year.

Container throughput levels increased 4.5% year on year to 4.3m teu in 2016, on the back of both organic growth and new service business, including the IOS/EPIC 2, a joint Gulf/Indian Subcontinent-Europe loop operated by CMA CGM in partnership with German carriers Hapag-Loyd and Hamburg Süd.

As a result of last year's volume increase, KCT achieved a compound annual growth rate between 2012 and 2016 of 14%, compared to the global average of 3.2% during the same five-year period, according to Gulftainer.

With the terminal operator forecasting demand for KCT's services to continue to rise in the short to medium term, expansion plans are ongoing.

Gulftainer says the development of the existing terminal is currently in the planning stages, with an environmental study already under way.

Plans include a lengthened quay, in response to the increasing size and number of ultra large containerships calling the port; an expanded container storage area; larger cranes; and terminal operating systems.

When completed, KCT's annual handling capacity will be increased to approximately 6m teu. Gulftainer expects the expanded terminal to be up and running by the end of next year.

2016 throughput
4,330,200 teu ▲ 4.5%

Port authority
Sharjah Port Authority, PO Box 510, Sharjah, United Arab Emirates

Website
www.sharjahports.gov.ae

Email
shjports@eim.ae

Terminals (Operators)
Khorfakkan Container Terminal (Gulftainer)

35 | Taicang China

PORT throughput growth in China has continued to slow, in line with the pace of economic expansion. The same applies to Taicang.

The Yangtze River's busiest port recorded volume of 4.1m teu in 2016, up 8.5% on year. This compared with a growth of 21.2% in 2015 and 40.9% in 2014.

However, the port has launched several initiatives to keep its throughput growth from falling further.

Since June 2015, Taicang has streamlined its customs operations with neighbouring giant Shanghai. Containers can be exported from Shanghai's Yangshan deepwater port via Taicang, rather than land transport.

According to state-run China Central Television, this would reduce logistics costs by $500 per teu and time by two days, adding 600,000 teu to Taicang's volume every year.

In May, logistics giant Kuehne+Nagel signed a strategic co-operation agreement with Taicang's port authorities to increase shipments via this initiative, suggesting further growth in volume is likely.

Also, Taicang has begun a liner service to Russia's Vostochny this year. It has also sought to attract containerised staple foods in transhipments from North China – those cargoes would then be carried on bulkers to the Yangtze hinterlands.

According to the port, this box-to-bulk shipments is popular among the companies in the hinterland, as transport costs can be reduced.

Those measures have revived Taicang's port volume growth. Box volume reached 1.7m teu in the first five months of this year, up 13.4% from the year-ago period.

As of end-June, Taicang was connected with 187 container services, including 24 shortsea, 40 to Yangshang, 45 non-Yangshang domestic, and 78 Yangtze services.

2016 throughput
4,081,000 teu ▲ 8.5%

Port authority
Jiangsu Taicang Port Administration Committee, 8 Beihuan Rd, Taicang Port Development Area, Jiangsu Province, China

Website
www.tcport.gov.cn

Email
www.tcport.gov.cn/LeadMail.aspx

Terminals (Operators)
Taicang International Container Terminal (Suzhou Port Group, Cosco Pacific and Modern Terminals)
Zhenghe Xinggang Container Terminals (SIPG & Taicang Port)

36 | Felixstowe UK

GROWTH at the UK's biggest container port was largely static in 2016, creeping up a mere 0.5% to hit the 4m teu mark.

Although this was an improvement from the 3% decline reported last year, it was well below the 10% increase seen in 2015.

While the slowdown in container shipping over the past few years may account to some extent for this moribund growth, rival terminals, particularly DP World's London Gateway, have been fighting hard to take a slice of Felixstowe's market share.

Part of the fallout of the container crisis was the collapse of Hanjin Shipping in 2016, which also had an indirect effect on Felixstowe. Like other ports around the world, it suffered as a result of Hanjin boxes being marooned following the South Korean carrier's demise.

Felixstowe chief operating officer Stephen Abraham highlighted how the port's container storage yards were overfull, with as many as 10,000 teu of stranded empties and little chance of immediate evacuation. The Hanjin situation was only exacerbated by a significant number of off-slot vessels and an imbalance between inbound and outbound cargo flows.

In response, Felixstowe was forced to shut out empties for a week in September, increase the number of containers handled by rail, and retain its temporary workforce beyond the end of the summer. It also created a temporary storage space in which to stow empty Hanjin Shipping boxes where they would not affect operations.

The congestion at Felixstowe led Mediterranean Shipping Co, the port's largest customer, to evaluate other terminals temporarily.

The shake-up among the alliances is also affecting Felixstowe. The Alliance, formed of Hapag-Lloyd, the three Japanese carriers and Yang Ming, will be dividing its UK calls between Southampton and London Gateway, with the latter attracting direct Asia services for the first time.

According to Alphaliner, this implies that Yang Ming and K Line will move out their traffic from Felixstowe, which will see its weekly Far East calls slightly reduced. This may well play into 2017 throughput figures.

Meanwhile, moves by Maersk Line and Mediterranean Shipping Co to reduce the number of direct port calls in their 2M network between Asia and northern Europe, in order to maintain competitive transit times, benefited Felixstowe, with the port picking up direct services from Shanghai, Ningbo and Qingdao through changes in MSC's Swan service.

Meanwhile, Felixstowe continues to lead the UK port tables and, with its expanded berths and deepwater alongside, it will remain a major player in the UK despite its growth rate slowing.

That was confirmed this year when the world's largest containership, the 21,413 teu *OOCL Hong Kong*, made its maiden call at Felixstowe, marking the Chinese giant's return to the port after 17 years.

2016 throughput
4,000,000 teu ▲ 0.5%

Port authority
Port of Felixstowe, Tomline House, The Dock, Felixstowe IP11 3SY, UK

Website
www.portoffelixstowe.co.uk

Email
enquiries@fdrc.co.uk

Terminals (Operators)
Trinity Terminal (Hutchison Ports UK)
Berths eight and nine (HPUK)

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37 | Jeddah Saudi Arabia

THE Jeddah Islamic Port saw a 5.5% decline in throughput in 2016, on account of lower levels of discharged and loaded containers

Operated by a juggernaut of private operators, the port remains one of the most important in the region, despite its declining path during the past two years.

Red Sea Gateway Terminal brought in 1.6m teu, boosting its traffic by 2.8% from 2015, primarily on account of beefed-up transhipment volumes, which grew by 22%, according to an RSGT spokesperson.

While the port incurred losses last year, it has also managed to secure new calls from large carriers including APL in 2016, as well as a number of services from Ocean Alliance, which started in April 2017.

Capacity at the port of Jeddah is also about to increase due to an ongoing enlargement project at the RSGT. The terminal will increase its annual capacity to 2.5m teu from 1.8m teu and is expected to be finalised by the fourth quarter of 2017.

RSGT, which can currently handle vessels of more than 20,000 teu, will add four ship-to-shore units, expected to arrive in October 2017.

2016 throughput
3,956,856 teu ▼ 5.5%

Port authority
Jeddah Islamic Port, PO Box 9285, Jeddah 21188, Saudi Arabia

Website
www.ports.gov.sa/English/SAPorts/Jeddah/

Email
pr-jip@ports.gov.sa

Terminals (Operators)
Red Sea Gateway Terminal (RSGT)
Jeddah South Container Terminal (DP World)
Jeddah North Container Terminal (Gulftainer)

38 | Piraeus Greece

IN one of its most memorable years, with the completion of a highly publicised majority stake takeover by Cosco, the Port of Piraeus boosted its container traffic by an impressive 12.2% in 2016, marking the beginning of what could be aggressive expansionist aspirations.

The China Cosco Shipping Group, which in July 2016 bought 51% of the port for €280.5m ($330.8m) and agreed to buy another 16% in five years for €88m, is now the operator of the port's two biggest container terminals.

Throughput figures for Pier II and Pier III of the container terminal, operated by Cosco-subsidiary Piraeus Container Terminal, grew by 14% to 3.5m teu in 2016.

The other terminal, Pier I, operated by Piraeus Port Authority and has the smallest capacity at 1m teu, saw a decrease in throughput from 293,353 teu to 265,666 teu.

The port was able to grow in spite of labour disruptions, ahead of Cosco's privatisation.

While the port's growth is evident, Cosco has its sights set on catapulting it among the world's biggest 30 ports in 2018 and among the largest in Europe, a spokesperson for the port said.

Part of this ambition is being enabled through an ongoing project undertaken by the PCT to build a 1.9m teu West Pier III that will feature a 876 m quay with a depth of between 18.5 m in the south and 19.5 m in the north.

Upon completion of these projects, the capacity of piers II and III will increase to a total of 6.2m teu, up from the current 5.5m teu capacity.

2016 throughput
3,736,644 teu ▲ 12.2%

Port authority
Piraeus Port Authority SA, 10, Akti Miaouli str., 18538 Piraeus, Greece

Website
www.olp.gr

Email
commercial@olp.gr

Terminals (Operators)
Pier II & III: Piraeus Container Terminal (PCT)
Pier I: Piraeus Port Authority (PPA)

39 | Savannah US

THROUGHPUT for the port of Savannah decreased by 2.5% in 2016 (as compared to an 11.7% increase in 2015), reflecting the loss of traffic that had been diverted from the US west coast the year before.

The port, however, is poised to resume its growth trajectory. During the first six months of 2017, containership traffic increased by 11.6% compared to the same period in 2016.

Overall, Georgia Ports Authority moved 33.4m tonnes of cargo across all terminals during fiscal year 2017, which ended on June 30, 2017. This represents an 8.3% year-on-year increase.

Four neo-panamax ship-to-shore cranes are expected to be operational in June 2018. Six additional cranes were recently ordered, at a total cost of $73m, with delivery in 2020. This will bring the total number of cranes to 36, and it is expected to increase total crane capacity by 40%.

Georgia Ports Authority executive director Griff Lynch said: "Our volume growth continues to outpace forecast demand. Shipping lines are moving 13,000 teu and 14,000 teu vessels into service on the east coast more quickly than anticipated."

Billing itself as the hub for containerised trade in the southeastern US, the port of Savannah is investing $128m over five years to increase its rail capacity and cargo-handling velocity, aiming to increase annual container capacity to 6.5m teu.

When the project is completed in 2021, the more efficient use of rail infrastructure will allow Savannah to compete for customers in the American Midwest, by offering global trade options in cities like St Louis and Chicago.

2016 throughput
3,644,521 teu ▼ 2.5%

Port authority
Georgia Ports Authority, PO Box 2406, Savannah, GA 31402, US

Website
www.gaports.com

Email
rmorris@gaports.com

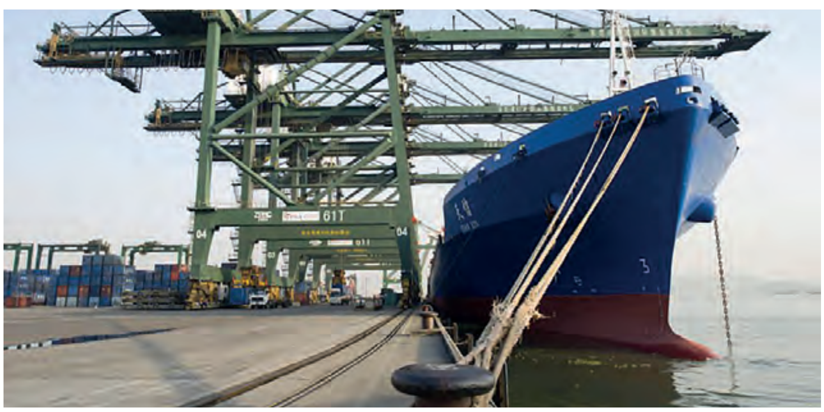
Terminals (Operators)
Garden City Terminal (Georgia Ports Authority)
Ocean Terminal (Georgia Ports Authority)

40 | Dongguan / Humen China

THE Port of Dongguan-Humen in southern China is on a roll, projecting a 10% growth in container traffic for 2017, in addition to what has been several continuous years of stellar growth rates.

Dongguan port, located in Dongguan city, at the centre of the Pearl River delta region – one of the world's most densely populated and industrialised regions – handled 3.64m teu of container throughput in 2016, a staggering 8.2% increase from 3.36m teu in 2015.

It now expects to top 4m teu of container throughput in 2017.



Dongguan is a very important port in Guangdong province and is located in the centre of the economic zones straddling Guangzhou, Dongguan, Shenzhen and Hong Kong, collectively called 'the world's factory'.

It said it is now focusing on the opening of direct flights from Southeast Asia, Japan, Korea and regional hubs, while actively

promoting railway and waterway links with Central Asia and Europe.

This will establish direct links between global economies and one of the world's largest manufacturing bases for 'Made in China' electronics, machinery, textiles, furniture, toys, paper products, etc, while helping it to meet its objectives under the Belt and Road Strategy.

Dongguan city itself is home to manufacturing operations of more than 45 international brands and is promoting its own economic zone and logistics hub, with several kilometres of coastline for berthing vessels, warehousing, transhipment, and other port-related industries.

Dongguan also benefits from being part of the massive Hong Kong-Shenzhen-Dongguan-Huizhou cluster, centred around the Qianhai free trade zone and the development of a technological hub in Shenzhen.

2016 throughput
3,640,000 teu ▲ 8.2%

Port authority
Humen Port, 10,11 Floor Dongguan Humen Port Road, Shatian port area of Humen Port Services Building, China

Website
www.hmport.com/index.asp

Email
yangxianlong@hmport.com

Terminals (Operators)
PSA Dongguan Container Terminal (PSA)
Dongguan Container Terminal (Sinotrans)

41 | Seattle / Tacoma US

THE first full year of operations since the unification of the ports of Seattle and Tacoma came at a good time for the US container trades.

Behind the headline 2.4% increase in volumes for 2016, full import boxes were up 6% and full exports increased by 13%, offsetting a slight fall in domestic volumes. Those increases came despite a relatively strong dollar, which had a severe negative impact on non-containerised cargoes at the port.

The Seaport Alliance's top trading partners in 2016 were China and Japan, accounting for $32.5bn and $17.5bn in trade, respectively, followed by South Korea at $6bn.

In 2016, the port approved its first major investment since the unification. Pier 4 at Husky Terminal is being upgraded to create a continuous berth with capacity to simultaneously handle two 18,000 teu vessels.

The development has been approved to meet an expected rise in the number of mega ships calling at the port over the next few decades. The project will include pier strengthening, channel deepening and an upgrade of the rail yard.

Phase one of the project is expected to be complete in November 2017 ahead of the arrival of super-post-panamax cranes for the pier in February 2018 and completion of the project in spring of the same year. Four further cranes have been ordered for delivery in 2019.

US carrier Matson will, from 2018, use SSA Terminals for its stevedoring and terminal services at the port after its agreement with APM Terminals expires at the end of 2017.

2016 throughput
3,615,752 teu ▲ 2.4%

Port authority
Ports of Seattle and Tacoma, The Northwest Seaport Alliance, PO Box 2985, Tacoma WA 98401-2985, US

Website
www.nwseaportalliance.com

Email
info@nwseaportalliance.com

Terminals (Operators)
Tacoma:
West Sitcum Terminal (APM Terminals)
East Sitcum Terminal (Ports America)
Husky Terminal (West Coast Terminal and Stevedoring)
Pierce County Terminal (Ports America Group)
Washington United Terminals (WUT)
Tote Maritime Alaska Terminal (TMA)
Seattle:
Terminal 5 (Port of Seattle)
Terminal 18 (SSA Terminals)
Terminal 30 (SSA Terminals)
Terminal 46 (Total Terminals International)
Terminal 115 (Alaska Marine Lines)

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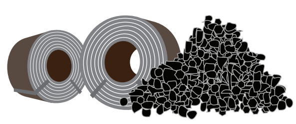

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42 | Santos Brazil

BRAZIL's ongoing economic crisis took a toll on the port of Santos during 2016, leading to a 6.9% decline in the traffic of South America's biggest port.

With a 3.6% drop in gross domestic product in 2016 on the back of a 3.8% decline in 2016, Brazilian demand continued to suffer.

The port also attributed the drop to the depreciation of its currency, the real, something that reduced the competitiveness of Brazilian products with higher added value, amid globally contained demand.

Despite the circumstantial problems, the port is looking forward, having initiated a port avenue remodeling in February 2016. The government-funded project is scheduled to have finished by August 2018.

A spokesperson for the port said two overpasses will divide container traffics from solid bulk plants, thus eliminating rows of container haul truck on the avenue, while the level crossing in the railway line will also be eliminated.

At the same time, this internal line of trains will be expanded and transferred to the edge of the avenue, allowing the densification of areas not currently operational, the spokesperson added.

The port of Santos is able to receive ships of up to 10,000 teu, with an overall length of 330 m or equivalent.

Meanwhile, the port also received private boosts, with Libra Terminal investing BR776.3m ($246.2m) in civil works and investments. It will also integrate three areas that currently operate separately.

In addition, Libra is expected to build a new wharf, increasing the stretch from 1,085 m to 1,312 m, according to the spokesperson. The terminal's cargo-handling capacity currently stands at 900,000 teu per year. With the new configuration, Libra expects to double capacity to 1.8m teu.

2016 throughput
3,393,593 teu ▼ 6.9%

Port authority
Companhia Docas do Estado de São Paulo,
Avenida Conselheiro Rodrigues Alves, s/n
Macuco, Santos - SP, 11015-900, Brazil

Website
www.portodesantos.com.br

Email
codesp@portodesantos.com.br

Terminals (Operators)
Tecon Santos (Santos Brasil)
Terminal 35 (Gruppo Libra)
Terminal 37 (Gruppo Libra)
Tecondi (Ecoporto)
Embraport (Embraport)
Saboo (Rodrimar)
Brasil Terminal Porturtario (Terminal Investment Ltd and APM Terminals)

43 | Tanjung Perak Indonesia

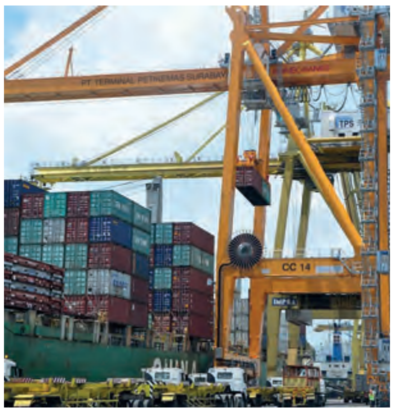
INDONESIA'S second-biggest port, Tanjung Perak, chalked up an impressive container throughput growth of more than 6% to 3.35m teu as more and bigger ships visited the port.

The throughput numbers comprise data from seven terminals – all managed by state-owned Pelabuhan Indonesia III (Pelindo III).

Located at the country's second-biggest city of Surabaya on the island of Java, Tanjung Perak is the gateway to eastern Indonesia and has benefited from the country's increasing flow of goods through the hub port.

Indonesia's economy grew a creditable 5% in 2016 and has forecast 5.2% to 5.4% growth in 2017. Some of that improvement is being reflected in the performance of its ports.

To enhance sea connectivity, the country has been improving existing ports and building new ones, as



well as opening more sea routes.

With more ships plying these routes and greater synergy of shipping schedules and ports' logistics, reduced costs have resulted in prices of goods in Indonesia's eastern regions falling by 20% to 30%, which has further incentivised shipping.

Developments undertaken to enhance Tanjung Perak's operational efficiency include the multipurpose terminal, storage tank and gas installation for energy supply at Nilam terminal, an operational office and parking yard at Mirah Terminal.

In terms of container-handlng equipment, Tanjung Perak port has also acquired four container cranes, one rubber-tyred gantry, four forklifts and two weighbridges to improve its operations.

Among the terminals, TPS is able to benefit from the expertise of Dubai-based global terminal operator DP World, which has a 49% stake, while Pelindo III owns 51%. The facility is notable for a 2 km-long access bridge linking the container yard and deepwater wharf.

2016 throughput
3,354,968 teu ▲ 6.4%

Port authority
PT Pelabuhan Indonesia III (Persero), Jl. Perak Timur No. 610, Surabaya 60165, Indonesia

Website
www.pelindo.co.id

Email
tanjungperak@pelindo.co.id

Terminals (Operators)
Terminal Petikemas Surabaya (Pelindo III/DP World)
Mirah Terminal, Nilam Terminal, Jamrud Terminal, Berlian Terminal, Kalimas Terminal, and Terminal Teluk Lamong (Pelindo III)

44 | Salalah Oman

A STAGGERING 29.4% growth in one year at the Omani port of Salalah might seem improbable until you take into account the 15.3% volume loss the year before.

Even so, Salalah has profited from being one of the hubs that secured a significant portion of the 2M Alliance calls in the region. It now handles five of this alliance's calls, which has attracted back the volumes that were lost in 2015 – and then some.

Terminal operator APM Terminals handled the 19,462 teu, 2016-built MSC Eloane, which calls Salalah as part of the 2M Alliance.

The port has also gained volume from operational consolidation by the world's largest container line Maersk Line over the past two years. It has managed to grow volumes despite the pullout of some Mediterranean Shipping Co volumes in the second half of 2016.

Salalah has sought to attract discretionary transhipment volumes with productivity improvements, including improved move counts in the same berth window.

CMA CGM introduced two weekly services in the first half of 2016, adding to overall volume growth.

Although Salalah continues to be a transhipment terminal, gate volumes have shown growth and have contributed to overall growth in volumes.

In 2016, the port invested in five Cavotec Moormaster systems to replace older units. The new units mitigate the impact of the long waves typical during the monsoon season in Salalah and support faster mooring of vessels, which facilitates quicker turnaround and less idling of vessels and berths. The units are expected to be fully operational in 2017.

IT hardware and software infrastructure has been updated. The port expects to roll out Navis N4 planning and operational systems within the last quarter of 2017.

The terminal purchased 20 new tractor trailers to improve intra-terminal haulage capacity.

Salalah also invested in a new customs inspection facility, which, it says, almost tripled the capacity of the containers that could be inspected.

2016 throughput
3,325,044 teu ▲ 29.4%

Port authority
Salalah Port Authority and offices Salalah Port Services Co. (SAOG), PO Box 369 Postal Code 211, Oman

Website
www.salalahport.com

Email
info@portofsalalah.com

Terminals (Operators)
APM Terminal Salalah (APMT)

45 | Mundra India

MUNDRA port once again had a solid year in 2016, with a 14.7% growth rate in container throughput, thanks to a range of measures taken by the port for infrastructural upgrades and capacity expansion.

The new Adani CMA Mundra Terminal has an annual handling capacity of 1.3m teu, taking the overall capacity at the Adani-owned port to 5.5m teu and making it the largest container port in India.

ACMTPL spans more than 67 acres, with a 650 m long quay and a draught of 16.5 m. It has four rail-mounted quay cranes of 65-tonne capacity, capable of handling 18,000 teu vessels.

The yard equipment includes 12 rubber-tyred gantry cranes with 41-tonne lift , which will accommodate seven rows of containers and one operational lane.

The port has added three new automated rail-mounted gantry cranes at its Mundra container yard to facilitate faster cargo clearance and quicker turnaround of freight trains, according to port authorities.

The parent company, Adani Ports and Special Economic Zone, already operates ports at 10 different locations in India.

However, APSEZ is not stopping there and has already entered into an agreement with Malaysia's MMC Port Holdings, a wholly-owned subsidiary of MMC Corporation Berhad, to assess the feasibility of constructing a greenfield multipurpose port, meant largely for container handling on Carey Island, about 30 miles southwest of Kuala Lumpur.

Adani Ports plans to operate two transhipment ports in tandem – Vizhinjam, in the southern part of India, and Carey Island, located to the south of Port Klang in Malaysia – in order to gain supply chain synergies.

"Vizhinjam will help position India as a competitive global transhipment hub and stake a claim to the annual one million-plus teu of Indian cargo transhipped through foreign ports like Colombo in Sri Lanka," Mundra port chief Karan Adani said in a statement.

"Malaysia is very strategic to the APSEZ global strategy and, with the Straits of Malacca being a global shipping route, it helps us to drive our global transhipment strategy further," Mr Adani added.

2016 throughput
3,320,285 teu ▲ 14.7%

Port authority
Adani Ports and SEZ Ltd. Navinal Island, Mundra, Kachchh, Gujarat, 370421, India

Website
www.adaniports.com

Email
houssam.haddad@adani.com

Terminals (Operators)
Adani Mundra Container Terminal (Adani Ports)
Adani International Container Terminal (Adani Ports)
Mundra International Container Terminal (DP World)
Adani CMA Mundra Terminal (CMA Terminals)

46 | Colon Panama

PANAMA'S Colon port complex suffered in much the same way others in Latin America did last year, reporting a slump in throughput number as transhipment trade fell by the wayside.

With the enhanced Panama Canal allowing for the safe transit of larger ships, it has reduced the need for hub and spoke operations in the region, while the overall slowdown in the growth of global box trade has also played its part.

In the case of Colon, this led to an 8.9% year-on-year drop in box traffic in 2016 to 3.3m teu.

Colon's largest of three deepwater container facilities, Manzanillo International Terminal, operated by US-based SSA Marine, saw volumes drop 6%, with exports to the US, China, Ecuador, Hong Kong, Spain and Brazil all down on 2015 levels.

Hutchison subsidiary Panama Ports' Cristobal container terminal reported a 2.3% fall in traffic, while Colon Container Terminal, Evergreen's Caribbean hub, witnessed a near 20% decline in teu numbers.

Volumes may have been on the wane last year, but the port was still busy upgrading its facilities to cater for the influx of larger ships.

CCT is currently constructing a fourth berth as part of its third-phase expansion, which will ultimately increase capacity to 2.4m teu. MIT is also in the process of deepening its navigational channel, turning basin and piers 5, 6, 7 and 8.

The good news is there are signs that throughput numbers are set to rebound in 2017 to warrant such investments.

At the halfway stage Colon's trio of terminals all managed an improved performance on the first six months of last year, amid a healthier environment among the major world economies. Cristobal, for example, saw volumes climb more than 50%.

2016 throughput
3,258,381 teu ▼ 8.9%

Port authority
Panama Maritime Authority

Website
www.amp.gob.pa

Email
ampadmon@amp.gob.pa

Terminals (Operators)
Manzanillo International Terminal (SSA Group)
Colon Container Terminal (Evergreen)
Cristobal (Panama Ports Co)

47 | Marsaxlokk Malta

DESPITE the continuance of the global containership downturn, the port of Marsaxlokk was able to marginally increase its throughput levels and have another record-breaking year in 2016.

Located in southeast Malta, between the European and African mainlands, the port offers a point of entry to the European Union and a prime location in the Mediterranean Sea. Both container terminals at the port are operated by Malta Freeport Terminals.

Malta Freeport said studies are currently being undertaken to see if its current 3.8m teu capacity could be expanded.

Like its counterparts in other corners of the world, Marsaxlokk lost an important customer in Hanjin Shipping, which went bankrupt in late August.

The port, however, was able to generate new business, pushing its throughput up by 0.7% to 3.1m teu, thanks to continued business from main customers CMA CGM, Maersk and United Arab Shipping Co, according to a Malta Freeport spokesperson.

Having already secured the 2M Alliance as a customer since 2015, the port expects to benefit from the operation of the Ocean Alliance, increasing the services handled while maintaining the current traffic volumes at the port.

After years of investments, which included quay developments and expansions, equipment and dredging, Malta Freeport purchased 16 new MOL tractors and also procured two empty handlers in 2016.

The port can currently service 18,000 teu vessels and above. The biggest vessel it has handled was the 19,224 teu *MSC Sveva* in August 2016.

The port is currently in the final stages of upgrading its terminal-operating system that will

2016 throughput
3,084,309 teu ▲ 0.7%

Port authority
Malta Freeport Corp Limited, Freeport Centre Port of Marsaxlokk, Kalafrana, Malta, BBG 3011

Website
www.maltafreeport.gov.mt

Email
info@mfc.gov.mt

Terminals (Operators)
Marsaxlokk container terminals (Malta Freeport Terminals)

optimise the long-term operational efficiency and strengthen the intelligent movement of cargo through the container terminal, according to the spokesperson.

Malta Freeport has also recently saw its operating license extended by a further 30 years having fulfilled concessional obligations.

48 | Nanjing China

THE Port of Nanjing saw slowing throughput growth in 2016, as it continued to lag behind Taicang as the top port on the Yangtze River.

The port's box volume increased 4.9% to 3.1m teu last year, compared to the 2015 growth rate of 6.5%.

However, the 2016 growth was stronger than the 2014 level of 3.4%. This showed that the pace of Nanjing's decline in growth may have stabilised.

Even as Taicang has been winning transhipment volumes related to the neighbouring giant of Shanghai, Nanjing has been trying hard to establish its own niche.

The port has created a rail link to Europe via Moscow. The volume was small for this trade, with only 186 teu recorded in 2016, but Nanjing Port Group hopes that a shortened transport time via land could point to future growth.

Also, Nanjing has sought to enhance Chinese coastal services. In 2016, it opened a direct service to Yingkou in Liaoning, North China.

Other measures to improve port performances include subsidies for domestic trades during the Lunar New Year and more liquefied natural gas-fueled trailers in Longtan, where Nanjing's main box terminal is located.

In addition, NPG, the port's main port operator, has signed strategic co-operation agreements with Shanghai International Port Group and Ningbo-Zhoushan Port Group. This is likely an attempt to attract more transhipment volume to and from those giant sea ports.

With all its efforts, the port's growth is resilient this year. According to the local port association, Nanjing's box throughput reached 758,700 teu in January-March 2017, up 4.5% on the same period in the previous year.

2016 throughput
3,083,900 teu ▲ 4.9%

Port authority
Nanjing Port Group Co, 19 Jiangbian Rd, Nanjing, Jiangsu Prov, China

Website
www.njp.com.cn

Email
www.njp.com.cn/into/email.html

Terminals (Operators)
Nanjing Port Longtan Container Co (Nanjing Port, Shanghai International Port Group, Cosco Shipping Ports and Sinotrans Logistics)

49 | Port Said Egypt

EGYPT's bold move in 2014 to undertake an $8bn expansion plan for the 97km Suez Canal, which opened in 2015, was offset by the opening in 2016 of the third set of locks at the rival Panama Canal.

The Central American canal has, in the past year, seen a huge increase in volumes for containerships, as vessels of up to 11,000 teu now transit the canal, compared to the 5,000-teu constraint of its original locks.

Much of that volume has been from increased use of the Panama Canal as a backhaul route to Asia following vessel calls at US east coast ports, although a greater number of larger vessels are utilising the canal to access US ports that have themselves been undergoing major upgrades to accommodate larger ships.

Port Said, located at the northern entrance to the Suez Canal at the edge of the Mediterranean, has felt the impact of this removal of tonnage from Suez in favour of the westbound route back to Asia, and saw volumes drop by 12.3% in 2016, following a 14% fall in 2015.

The Suez Canal backhaul route was also affected in 2016 by carriers choosing to take the long way back to Asia around the Cape of Good Hope. This was done as falling oil prices and bunker costs meant the increased consumption of fuel still outweighed the cost of transit fees for Suez.

This comes despite additional efforts by the Suez Canal Authority to improve access to Port Said, particularly East Port, where APM Terminals holds the majority stake in the Suez Canal Container Terminal.

In 2016, the SCA completed dredging on the eastern approach channel to the Suez Canal, something that was agreed with the Egyptian government in the original concession for East Port.

The new channel, which has been dredged to 18 m, saves an estimated eight to 10 hours' waiting time off voyages to East Port Said.

Due to draught constraints in the approaches from the Mediterranean, vessels entering the canal previously could only join through two prescribed approaches. Vessels destined for SCCT, which uses another entrance, had to wait until ships going straight to the canal had passed before they could enter East Port.

Because of the canal's convoy system, which bunched together six southbound vessels, this could lead to vessels heading for East Port Said waiting for up to half a day.

The new channel allows direct access from the open sea, so vessels calling directly at SCCT can join the main canal, or return directly to the Mediterranean.

It was originally due to open by 2012, but political disruptions in Egypt since 2011 had delayed the plan.

2016 throughput
3,035,900 teu ▼ 12.3%

Port authority
Port Said Port Authority, Mostafa Kamel and Azmy Streets, Port Said, Egypt

Website
www.psdports.org

Email
info@psdports.org

Terminals (Operators)
Abbas Quay, Container Terminal (Port Said Container & Cargo Handling)
Suez Canal Container Terminal (SCCT)

50 | Rizhao China

THE port of Rizhao, located in China's eastern Shandong province, saw container throughput rise 7.1% on year to 3m teu in 2016.

The result does not look as glittering as the 16% growth seen in 2015, but is still quite commendable. It was achieved against the country's lacklustre foreign trade and an anti-graft campaign that brought down several top executives at Rizhao Port Group, the main port operator.

In June 2016, former RPG chairman Du Chuanzhi unveiled his ambitious plan to boost the port's box throughput to 5m teu in 2020, when interviewed by local press.

In November, Mr Du resigned from his post and was promoted as the party secretary of Rizhao City's state-owned Assets Supervision and Administration Commission.

But just one month later, Mr Du

2016 throughput
3,010,000 teu ▲ 7.1%

Port authority
Rizhao Port & Shipping Administrative Bureau, No. 369, Jining Road, Rizhao City, Shandong

Website
www.rzkagh.gov.cn

Email
rzpcl@rzport.com

Terminals (Operators)
Berths 1, 2, 3 & 4 (Rizhao Container Terminal Development Co)

was taken away by the Commission for Discipline Inspection, China's anti-corruption agency, due to serious misconduct.

In the next six months, a number of senior executives in RPG and its subsidiaries, including RPG's vice-chairman Kong Xianlei and two deputy-presidents Zhang Dongsheng and Meng Fanxiang, were taken away and put under investigation.

And misfortunes never come singly. While RPG boasted the launch of its new weekly express services to Australia, with a deployment of five 5,000 teu ships, in September last year, the business came to a premature end.

RPG's partner, Australian container line Great Southern Shipping, filed for insolvency in December. Before going bust, the carrier managed only three sailings, of which none was completed, due to disputes over unpaid charter hire, according to Alphaliner.

Nevertheless, the port, equipped with four box-only berths and a 1m sq m container storage yard, seems to hold up well.

For the first half of this year, total handling volume stood at 1.6m teu, representing 6.9% growth year on year.

Rizhao still has a good access to box cargoes from Guangzhou, Guangxi and Fujian provinces. Part of these cargoes will be dispatched to Rizhao's hinterland in Shandong; part will be hauled to central and west China and central Asia via the port's developed railway networks; and part will be transhipped to Japan and South Korea.

Backed by China's Belt and Road initiative, RPG, together with the railway administrations in Jinan and Chengdu, launched a weekly freight train service in May that links Rizhao to Poland in a 15-day trip.

51 | Tanger Med Morocco

TANGER Med was unable to improve on its annual handling figures for a second successive year in 2016, as growth in transhipment activity in the region continues to level following a period of exponential traffic gains.

Volumes shifted across the docks of the Moroccan port's two container terminals, operated by European giants Eurogate and APM Terminals as part of the Tanger Med I development, rose only marginally on 2015 levels. Throughput numbers were up by just 0.1% to remain slightly below 3m teu.

Nevertheless, these numbers are still impressive, given that the port, located on Africa's northwest coast near the mouth

of the Mediterranean Sea on the Strait of Gibraltar, opened just over a decade ago.

In teu terms, Tanger Med is already the second-busiest box port in Africa behind Egypt's Port Said, making the most of its strategic location, allowing for minimal deviation for carriers operating the east-west trades.

Its success thus far has not gone unnoticed and it stands to reason why APMT has pledged its future to the port, having recently signed a lengthy concession to develop and operate the hugely ambitious Tanger Med II container facility.

APMT says it will use Tanger Med II and its existing terminal at the port as a base for the bulk of its Mediterranean transhipment business.

Sister company Maersk Line, as part of the Maersk group's wider strategy, has already been earmarked as playing a crucial role in this strategy as a core customer.

Construction works have already broken ground on the project. The Tanger Med Port Authority is currently putting the finishing touches to the initial superstructure, including a 2.8 km quay and breakwaters measuring 4.8 km end-to-end.

APMT is responsible for the development of the terminal yard, surface, buildings, container-handling equipment and integrated automated systems, incurring a cost of approximately €758m ($858.4m).

Tanger Med II is expected to welcome its first commercial ship in early 2019 and, at full build-out, will boast a capacity of around 5m teu, increasing the port's overall capacity to close to 9m teu.

2016 throughput
2,964,278 teu ▲ 0.1%

Port authority
Tanger Med Port Authority, Zone Franche Ksar el-Majaz, Oued R'mel, BP 80 Tangier, Morocco

Website
www.tmpa.ma

Email
tmsa.port@tmsa.ma

Terminals (Operators)
APM Terminals Tangier (APM Terminals)
Eurogate Tanger (Eurogate)

52 | Vancouver Canada

A WEAK Canadian dollar and a slowdown in industrial investment and development were behind a 4.1% fall in container throughput at Vancouver in 2016.

The decline almost completely reversed a gain made in 2015, when the port broke the 3m teu mark, and was reflected in a 17% fall in metals and project cargo imports at the diversified multi-terminal port.

Total cargo volume at the port fell to 136m tonnes, down 1.8% on 2015, with sectors such as bulk grains helping to boost the overall figure as container throughput declined.

Four container terminals vie for cargoes in Vancouver: DP World's Centerm, CGT's Deltaport and Vanterm, and Fraser Surrey Docks.

The Roberts Bank Terminal 2 (RBT2) project is a proposed new three-ship container terminal at Roberts Bank in Delta. The project will provide 2.4m teu of container capacity, which the port says is needed to meet forecast demand for container throughput.

At Centerm Terminal, located

on the south shore of Vancouver's inner harbour, the proposed expansion project is part of the port authority's long-term strategy to ensure the port is ready to handle Canada's growing trade in containers.

The proposed expansion is set to increase the number of containers that can be handled at the terminal by approximately two-thirds. Subject to regulatory approvals, this project could be complete by 2020.

Meanwhile, the Deltaport terminal, road and rail improvement project in Delta will see a series of improvements to increase efficiency and capacity, with completion anticipated this year.

2016 throughput
2,929,585 teu ▼ 4.1%

Port authority
Vancouver Fraser Port Authority, 100 The Point, 999 Canada Place, Vancouver, BC V6C 3T4

Website
www.portvancouver.com

Email
info@portmetrovancouver.com

Terminals (Operators)
Centerm (DP World Vancouver)
Deltaport (GCT Canada)
Fraser Surrey Docks (Fraser Surrey Docks)
Vanterm (GCT Canada)

53 | Balboa Panama

PANAMA's premier port, Balboa, picked up in 2016 where it left off the previous year, as throughput numbers continued to disappoint.

Figures in 2015 were largely weighed down by Latin America's stumbling economies. Yet even as some showed at least an element of recovery last year, it was the expansion of the Panama Canal that proved to be Balboa's downfall.

The enhanced waterway has changed container shipping dynamics in the region, whereby more cargo is being retained by larger vessels. This has lessened the need for transhipment activity in Balboa, as Asian imports bound for North America's east coast can now be unloaded closer to its destination market. Hence why ports such as Savannah, Miami and Charleston have noted a considerable uptick in transhipment volumes.

However, Balboa has managed to offset these losses to some extent by securing new business from Asian carriers and from an explosive growth in exports from west coast South America, according to the port's terminal operator Panama Ports Co.

The latter, it explained, has come off the back of an influx of reefers being moved through the port to connect with mother tonnage en route to the US east coast and Europe.

Although Balboa has effectively lost business as a result of larger tonnage making the journey through Panama, this is not to say it was ill-prepared for their arrival. PPC says it recognised very early on that Balboa needed to keep pace and has invested more than $1.5bn since the turn of the century to cater for their needs.

Indeed, the port can already lay claim to being able to accommodate vessels of up to 20,000 teu, even though the canal can currently only handle vessels, at a stretch, of up 14,000 teu.

With transhipment business in the region ever more competitive ,this quayside advantage could prove vital.

2016 throughput
2,831,893 teu ▼ 8%

Port authority
Panama Ports Company, Edif 39, Av Amulfo Arias Madrid, Apartado 637, Balboa, Ancon, Panama

Website
www.ppc.com.pa

Email
comunicacion@ppc.com

Terminals (Operators)
Port of Balboa (Panama Ports Company)

54 | Ambarli Turkey

THROUGHPUT at the port of Ambarli continued to decline for the second year running, as Turkey's biggest container port faced significant losses from divergent performances in its various terminals.

The port remains a point of entry in the Black Sea through the Mediterranean Sea, and as such the continued sanctions against Russia have hit volumes hard.

A 9.3% decrease in throughput means the port dropped below the 3m teu threshold, something that has not happened before – at least not from 2012 onwards, when throughput data first became available.

The decline, however, did not reflect a uniform drop across the port's container terminals; Marport-controlled terminals in the port recorded an impressive year, boosting their throughput by 16.5% to 1.8m teu.

On the other hand, the China Merchants Holdings and Cosco Pacific-controlled Kumport terminal suffered a massive 43.1% drop in traffic, to 665,000 teu, the lowest figure seen since 2010. The 2015 acquisition did not prove fruitful in restoring a path of expansion for the terminal.

Meanwhile, the Mardas terminal also incurred losses, with traffic dropping by 13.2% to 291,138 teu in 2016.

Can the port take advantage of its location and recover in the year's ahead? Europe remains a vital consumer market and in April, Cosco launched a new service, along with OOCL, connecting Kumport and Northern Europe.

2016 throughput
2,803,133 teu ▼ 9.3%

Port authority
Atlas (Ambarli Liman Tesisleri AS), Ambarli Liman Tesisleri, Angurya Cifligi Mevkii, 34904 Yakuplu Buyuk Cekmecec, Istanbul, Turkey

Website
www.altasliman.com

Email
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Terminals (Operators)
West, Main and Limas (Marport Terminals)
Kumport (China Merchants Holdings (International) and Cosco Pacific)
Mardas (Mardaşport)

55 | Kobe Japan

KOBE has continued to benefit from Japan's strategic port policies and has hit a fresh annual high of 2.8m teu since the Great Hanshin-Awaji earthquake in 1995.

In August 2010, the Japanese government designated key ports as strategic international container ports to provide financial assistance to help them better compete with rivals in other Asian countries, such as the port of Busan in South Korea.

Since then, Kobe has contributed to the Japanese government's policy by promoting consolidation of freight, mainly from ports of western Japan, as well as working on the expansion of the trunk lines to and from North America and Europe, a port spokesperson said.

The improvement is also the result of increased domestic feeder service networks with Chugoku, Shikoku and Kyusyu ports, he added.

Port of Kobe's traffic growth of 3.5% has outstripped the growth rate witnessed by fellow ports, making it the second-largest container gateway in Japan after the Port of Tokyo.

While no new terminals were set up in 2016, the port has unveiled plans to set up a large-scale container terminal on an artificial island just south of Rokko Island. However, details regarding the plan remain sketchy.

In 2016, Kobe set up a 16 m deep port island berth with a length of 1,150 m – one of the largest-scale facilities in Japan.

Two new gantry cranes which brings the total to eight, allows the port to handle 22 rows of containers of more than 150,000 dwt at the same time.

Last year, the port also worked on enhancing its ability to resist earthquakes – a key concern, given Japan's history of natural disasters.


RSGT
www.rsgt.com
EXPANDING TO MEET YOUR HORIZONS
Extension of berth length from 1,069m to 1,324m, capable of handling 3 mega vessels berthing simultaneously
Deep navigation channel of -17 meters deepest channel in Jeddah Islamic Port
Unique capability to handle 20,000TEU class in Jeddah
Water depth alongside of -18.0 meters
Annual handling capacity increased by 40% to 2.5 mil TEU
محطة بوابة البحر الأحمر
RED SEA GATEWAY TERMINAL

2016 throughput
2,801,160 teu ▲ 3.5%

Port authority
Port and Urban Projects Bureau, City of Kobe, 6-5-1 Kano-cho, Chuo-ku, Kobe, 650-8570, Japan

Website
www.city.kobe.lg.jp

Email
kobeport@office.city.kobe.lg.jp

Terminals (Operators)
PC13 (Kamigumi/Sumitomo Warehouse)
PC14 (Nissin)
C15 & PC16 & PC17 (Shosen Koun/ Sankyu/ Sumitomo Warehouse/ Nickel & Lyons)
PC18 (Kamigumi)
RC2 (Mitsui-Soko)
RC4 & RC5 (NTL/Mitsubishi Logistics)
RC6 & RC7 (NCT/Mitsubishi Logistics/Uni-X)
Mitsubishi Logistics/Uni-X)

56 | Gioia Tauro Italy

CONTAINER traffic handled by Contship Italia's Medcenter Container Terminal in Gioia Tauro was up 9.8% last year to almost 2.8m teu.

This followed a 14.2% decline in 2015 to 2.5m teu amid fierce competition between Mediterranean transhipment hubs, and a somewhat smaller drop in 2014.

Back in 2013, the terminal handled more than 3m teu, while annual capacity is 4.2m teu.

Contship – which also has facilities in La Spezia, Cagliari, Ravenna, and Salerno, plus an interest in Eurogate Tanger – attributed the recovery to its cost-reduction measures at a time when the container shipping industry was suffering financially from supply and demand imbalances and rock-bottom freight rates.

During a year of immense upheaval in the container trades, which was dominated by merger and acquisition activity, Contship also said the improved volumes demonstrated its ability to adapt quickly to market demand and provide reliable stevedoring services.

These 2016 figures "show that the Contship Italia Group offers a viable and attractive solution to the customers at a time when they need it most", said Contship Italia Group president Cecilia Eckelmann-Battistello.

"The container shipping business continues to face instability, competition, with shipping lines reorganising their networks. Delivering fully integrated port-to-door solutions for the global supply chain is Contship's main objective."

She added the group remained committed to long-term investment in the business, with projects in the works including a new free zone area, a drydock for ship maintenance, and plans to improve rail services to and from Gioia Tauro.

The terminal is able to receive the biggest ships in service, with the arrival of the 20,000 teu-class *MSC Ingy* late last year marking the first time that a vessel of that size had called at an Italian port.

2016 throughput
2,797,000 teu ▲ 9.8%

Port authority
Contrada Lamia, 89013 Gioia Tauro, Italy

Website
www.portodigioiatauro.it

Email
info@portodigioiatauro.it

Terminals (Operators)
Medcenter Container Terminal (Contship Italia Group)

57 | Yokohama Japan

A MAJOR port for more than a century, Japan's Yokohama is building more capacity to reverse declining volumes seen in recent years.

Located south of the country's capital of Tokyo, Yokohama port was opened in 1859 and has played a key role since then in the rise of Japan as a major industrial and trading nation.

However, its fortunes have been less than stellar in recent years, amid slower economic growth in Japan and weak global trade in general, resulting in container throughput being flat in some years and declining in others.

More optimistically, there are signs of recovery not just in the dry bulk market but also in container shipping. Maersk, for example, expects global container shipping volumes to grow 2% to 4% in 2017, compared to 1.5% to 2% in 2016.

The expected growth in global trade is borne out at Yokohama, where foreign cargo – especially from Mexico and Australia – has increased. The slightly lower overall volume was due to a decrease in domestic cargo.

Yokohama is expanding capacity to allow for bigger volumes and has been constructing a new container terminal at Minami Honmoku Pier.

The pier is touted as the first port on the trade route from North America to east Asia and the last port for the east Asia to North America route. The new container terminals are located nearest to Tokyo Bay, which reduces the navigation time for ships.

Operations have already begun in in three out of the four terminals, with the last terminal still under construction and due to open in 2019.

2016 throughput
2,780,628 teu ▼ 0.2%

Port authority
City of Yokohama - Port and Harbor Bureau, 2 Yamashita-cho Naka-ku, Yokohama 231-0023, Japan

Website
www.city.yokohama.lg.jp/kowan/english/

Email
kw-butsuryukikaku@city.yokohama.jp

Terminals (Operators)
BC (Yokohama Port Megaterminal)
D-4 (American President Lines)
D-5 (Mitsui OSK Lines)
C-3 (Nippon Express/Kamigumi)
C-4 (K Line)
T-9 (Mitsui-Soko)
MC-1 (AP Moller Maersk/Nisshin)
MC-2: (AP Moller Maersk)
MC-3: (Mitsubishi Logistics)

58 | Incheon South Korea

INCHEON Port Authority recorded an impressive 12.7% growth in container throughput in 2016, easily surpassing the 2.5m teu mark. Both imported and exported goods saw double-digit growth rates.

China is Incheon's largest trading partner, accounting for 58% of imports and 62% of exports. Incheon has taken advantage of its strategic location, vis-à-vis ports in northern China, as well as the expansion of its cargo-handling capacity with the opening of Incheon New Port, to rapidly increase trade with its neighbour.

Incheon New Port is located at the southern end of Songdo International City. It first opened in 2015 as part of Incheon's KRW2.5trn ($2.19bn) New Port Development Project. It consists of two container terminals, Sun-Kwang New Container Terminal, which opened in June 2015, and Hanjin Incheon Container Terminal, which opened in March 2016.

The two terminals have a combined length of 1,600 m and available seawater and dockwater depth of 16 m. They have a cargo-handling capacity of 2.1m teu and can accommodate containerships with

2016 throughput
2,679,504 teu ▲ 12.7%

Port authority
Incheon Port Authority, (22332) New JungSeok Building, 366, Seohae-daero, Jung-gu, Incheon Metropolitan City, South Korea

Website
www.icpa.or.kr/eng

Email
mykim08@icpa.or.kr

Terminals (Operators)
ICT (ICT/PSA)
E1 Container Terminal (E1CT)
CJ Korea Express (CJKE)
Sun Kwang Incheon Container Terminal (SNCT)
Hanjin Container Terminal (HJIT)

a capacity of up to 12,000 teu.

The port of Incheon has also enjoyed robust growth in passenger and freight transportation to 10 major cities in northern China, with more than one million passengers (including cruise passengers) having transited through its International Passenger Terminals.

Incheon is in prime position to become a leading logistics and forwarding hub in the Yellow Sea.

59 | Nagoya Japan

LOCATED along the Pacific coast in central Japan, Nagoya is the country's busiest port, benefiting from its closeness to major manufacturing hubs producing goods such as cars, including the well-known Toyota.

It has grown steadily since opening in 1907 and total volumes, including general, bulk cargo and containers, reached 193m tonnes in 2016. Proximity and convenience to the vehicle manufacturers has driven Nagoya's role as key export port for cars and it typically ships 1.4m vehicles annually.

Container throughput increased in 2016 but it lags behind Tokyo, Yokohama and Kobe, where there is less competition from other segments for berths and cargo space.

To grow throughput, Nagoya provides incentives such as reductions in port dues and dockage fees. And to reduce costs, centralised control of all its container terminals through computer systems enables more efficient cargo-handling operations and reduced processing time.

Nagoya is also promoting the establishment of advanced distribution functions to form logistics hub to serve the port's customers even better.

To further grow in the segment, it has created a joint venture with the Yokkaichi container terminal to become more competitive for international transhipment cargo. By integrating their operations, the two ports aim to reduce costs and compete effectively against major rival ports in Asia, such as South Korea's Busan.

The Japanese government has encouraged joint ventures between the country's ports to improve their competitiveness and support economic growth.

2016 throughput
2,658,481 teu ▲ 1.1%

Port authority
Nagoya Port Authority 1-11 Minato-machi, Minato-ku, Nagoya, 455-0033, Japan

Website
www.port-of-nagoya.jp/english

Email
info@union.nagoyako.lg.jp

Terminals (Operators)
Tobishima Pier North & South (Asahi Unyu Kaisha/Fujitrans/Isewan Terminal Service/Kamigumi/Meiko Trans/Mitsubishi Logistics/Mitsui-Soko/Nippon Express/Tokai Kyowa)
NCB Terminal (Asahi Unyu Kaisha/Fujitrans/Isewan Terminal Service/Kamigumi/Meiko Trans/Tokai Kyowa)
Nabetha Pier (Fujitrans/Isewan Terminal Service/Kamigumi/Meiko Trans/Mitsubishi Logistics/Mitsui-Soko/Nippon Express/Tokai Kyowa)
Tobishima Pier South Side (TCB)

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Maritime intelligence | informa

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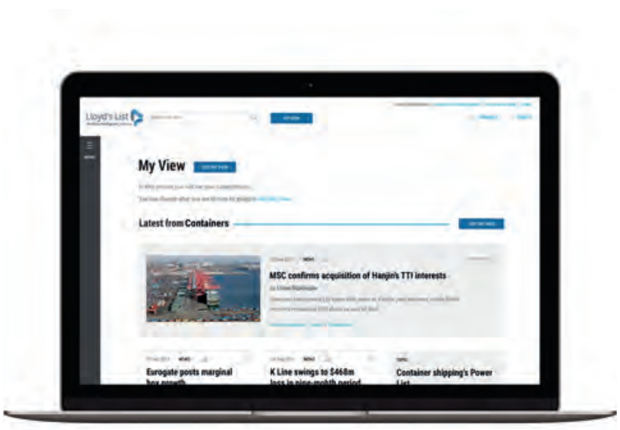

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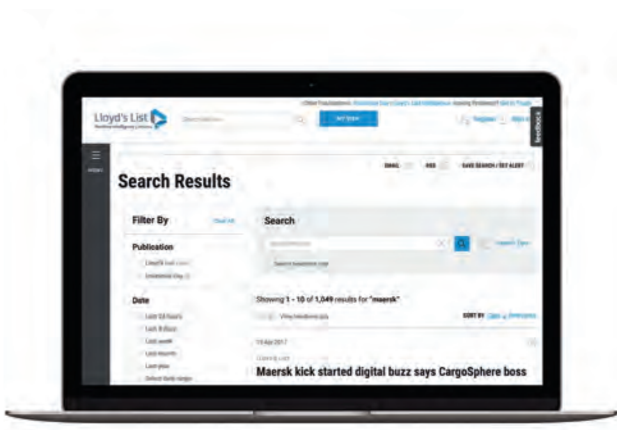

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60 | Virginia US

THE port of Virginia continued its impressive run of increased container traffic as investments, new leasing deals and expansionist plans signal long-term expectations and commitments for the US east coast port.

Backed by a growth in throughput during nine out of 12 months of the past year, the port continued its stretch of successive positive growth years since 2010 with a 4.2% increase to 2.6m teu in 2016.

Events in 2016 indicate the port is set to maintain this growth trend.The government of Virginia announced a $350m investment plan in July 2016 aimed at increasing the capacity of its biggest terminal, the Norfolk International Terminal – which can currently handle up to 1.4m teu – by 46% through an expansion at its south berth.

At the moment, the terminal can service vessels between 12,000 teu and 14,000 teu. The expansion project is set to be concluded by 2020 and includes the installation of 60 automated stacking cranes.

Planned investments on existing facilities do not end there. The port signed a 40-year lease extension for the Richmond Marine Terminal in February, until 2056, announcing investments to expand the terminal's capacity by 50%.

Although it is still too early to assess the exact effect on American ports, the widely anticipated Panama Canal expansion also bore some fruit for the port of Virginia, with the first containership passing through the new canal calling at the port in June.

The port authority, however, is not satisfied with its existing infrastructure and is eyeing a new terminal in the future. It will develop a new terminal, called the Craney Island Marine Terminal, in light of expected traffic from fellow US east coast ports and from the expansion of the Panama Canal.

2016 throughput
2,655,705 teu ▲ 4.2%

Port authority
Virginia Port Authority, 600 World Trade Centre, Norfolk VA 23510, US

Website
www.portofvirginia.com

Email
www.portofvirginia.com/contact/contact.aspx

Terminals (Operators)
Virginia International Gateway (Virginia International Terminals)
Norfolk International Terminal (Virginia International Terminals)
Virginia Inland Port (Virginia International Terminals)
Portsmouth Marine Terminal (Virginia International Terminals)
Newport News Marine Terminal (Virginia International Terminals)

61 | Fuzhou China

FUZHOU saw a 9.1% year-on-year increase in box volumes handled over 2016 to 2.6m teu as port authorities continued to develop new markets, introduce new services and as trade conditions improved somewhat towards year-end.

During the year, the port saw Fuzhou Port (Pingtan) International Company introduce the Kaohsiung-Kinmen-Pingtan same-day service, which creates a direct link to Taiwan island. Meanwhile Fujian Oriental Shipping, part of the Oriental Container Logistics Group, launched the Zhangjiagang-Wenzhou-Fuzhou-Zhangjiagang weekly service.

Additionally, at the port's Fujian Jiangyin International Container Terminal, Ningbo Port-Shunda Logistics Co launched

a domestic offering calling at Ningbo, Jiangyin and Xiamen. The company deployed a 300 teu vessel on the weekly route.

In international trade, Cosco Shipping, Evergreen Marine, Wan Hai Shipping and PIL jointly launched the inaugural India to Pakistan direct route from the port's Fujian Jiangyin International Container Terminal in September 2016, in an attempt to boost trade with these emerging markets.

The four shipping lines deployed five boxships, which can hold on average 4,000 standard containers per vessel for the service.

The port has also been ramping up facilities and infrastructure with Fuzhou Qingzhou Container Terminal, adding one container gantry crane capable of lifting up to 61 tonnes or 73 tonnes, depending on the mode of operation.

On the intermodal front, the port commenced its first once-a-week express train service in August 2016 to transport containers from neighbouring Jiangxi province to Fujian province.

Operated by Nanchang Railway Corporation in Jiangxi, the Jiangxi-Fuzhou Port container express train service starts in Yichun city's Zhangjiashan station in the province and ends at Port of Fuzhou's Fujian Jiangyin International Container Terminal, with plans to increase the service frequency depending on cargo demand.

The venture is a result of a strategic co-operation agreement signed between Fuzhou Port Container Company and Jiangxi Cosco International Freight Company in June 2016 to expedites container transportation to and from land-locked Jiangxi's hinterland to the port of Fuzhou.

To cope with increasing competition in the industry, the port's Fujian Jiangyin International Container Terminal started work in December on a Yuan1.42bn ($208.7m) project to build Berth No 6 and Berth No 7, with a total pier length of 648 m, spanning an area of 648,000 sq m.

With a targeted completion and operation deadline of June 2019, the two berths will have a capacity of 80,000 teu per year.

The port is currently able to accommodate boxships up to 14,000 teu.

2016 throughput
2,650,000 teu ▲ 9.1%

Port authority
Fuzhou Port Group, No 356 Jiangbin Zhongda Avenue, Taijiang District, Fuzhou, China, 350009

Website
www.fzport.com

Email
webmaster@fzport.com

Terminals (Operators)
Fuzhou Qingzhou Container Terminal (Fuzhou Port Group and PSA)
Fuzhou International Container Terminal (Fuzhou Port Group and PSA)
Fujian Jiangyin International Container Terminal (Fuzhou Port Group and PSA)

62 | Melbourne Australia

MELBOURNE's modest growth streak has continued, with total throughput rising by 2.4% to 2.6m teu.

A 3.5% increase in full container imports offset a 0.7% drop in exports, while empty container movements were up 4.3%.

All eyes will be on Melbourne's performance in 2017, as operations at a new state-of-the-art terminal begin.

The first phase of the Victoria International Container Terminal was completed ahead of schedule at the end of 2016.

The phase has an estimated annual capacity of 350,000 teu and consists of a 660 m berth served by five robotic ship-to-shore cranes and fully automated operations from gate to quayside.

Phase two, scheduled for completion by the end of 2017, will expand capacity to 1m teu through the addition of two extra cranes and extra storage areas.

The terminal is the result of a public-private partnership deal signed in May 2014 for a 26-year concession between VICT, its owners International Container Terminal Services Inc and the Port of Melbourne Corporation.

VICT adds to two terminals at Swanson Dock, which both handle containers: Swanson Dock West, which is operated by DP World; and Swanson Dock East, which is operated by Patrick Stevedores.

2016 throughput
2,640,000 teu ▲ 2.4%

Port authority
Port of Melbourne, GPO Box 2149, Melbourne, Victoria 3001, Australia

Website
www.portofmelbourne.com

Email
information@portofmelbourne.com

Terminals (Operators)
Swanson Dock East (Patrick Stevedores)
Swanson Dock West (DP World)
Webb Dock East international container terminal (Victorian International Container Terminal Ltd)
Webb Dock West – under construction (Melbourne International Ro-Ro Automotive Terminal)
Station Pier/TT-Line Terminal (Port of Melbourne, as a leaseholder/tenant)
Webb Dock East berth one (Toll Shipping)
Webb Dock East berth two (SeaRoad Shipping)

63 | Durban South Africa

WITH Durban going through an expansion programme, deepening and lengthening berths to enable larger containerships to call, there has been a decline in throughput during the construction work. Economic factors also weakened traffic numbers.

According to Dynamar figures derived from Transnet, the national ports authority, volumes through the port's two container terminals declined by 5.4% to 2.6m teu in 2016.

The port authority said last year that capacity would likely fall to 2m teu as the works progressed through the decade.

Officials at Transnet did not respond to emails and phone calls seeking comments about throughput and updates to the expansion schedule.

According to a report on Transnet's website: "Volumes in the container sector were impacted by weaker demand, both locally and internationally, as a result of the global economic slowdown", which, in turn, led to a drop in transhipments, smaller parcel sizes, and the "cancellation of some services". In addition, anticipated Christmas peak volumes did not materialise.

The terminals were also impacted by berth outages and a lower draught, which limited the ability of shipping lines to bring in additional transhipment volumes.

The Port of Durban's expansion project will see capacity at its Pier 2 container terminal rise to 2.9m teu from the current 2.1m teu, while phase two of Pier 1 – also known as the Salisbury Island project – will result in a capacity increase to 2m teu in 2024 from the current 680,000 teu.

While the Pier 2 project is back on track after stalling, Pier 1's progress is less clear, according to Dynamar's senior consultant Frans Waals. The new project on the location of the old airport has also been put on hold, he said, adding that given the figures, there was no need for so much capacity.

But the investments are necessary due to the fact that Durban, southern Africa's busiest and largest port, is facing stiff competition from neighbouring Maputo, which has Dubai's DP World as its operator.

Durban may be able to stimulate interest in the port's development story by playing host to TOC's first event in Africa in early December in conjunction with Transnet.

2016 throughput
2,620,000 teu ▼ 5.4%

Port authority
Transnet, Ocean Terminal Building, Port of Durban, 4001, South Africa

Website
www.transnet.net/Divisions/Pages/TPT.aspx

Email
customercare@transnet.net

Terminals (Operators)
Pier 1 (Transnet)
Pier 2 (Transnet)

64 | Yantai China

YANTAI had a good year in 2016, meeting its official target of box throughput – just.

The port recorded container volume of 2.6m teu, up 6% on year. The growth pace was stronger than 4.1% in 2015, but slower than 9.8% in 2014.

The plan of main port operator Yantai Port Group to establish its own services appears to be working. At least three Chinese coastal services were opened by end-2016.

According to the port operator, these services can enhance Yantai's exports, expand cargo sources and improve core competitiveness.

Another initiative is to enhance feeder services within the Bohai Economic Rim. YPG said it had offered containerised bauxite shipping in this region, which it hoped can reduce logistics costs for its clients.

This was taking advantage of Yantai's status as a top bauxite import hub in China. The commodity would be shipped into the port on bulk carriers from overseas producers before being containerised for domestic clients.

Yantai also signed a strategic co-operation agreement with nearby Dongying Guangli port

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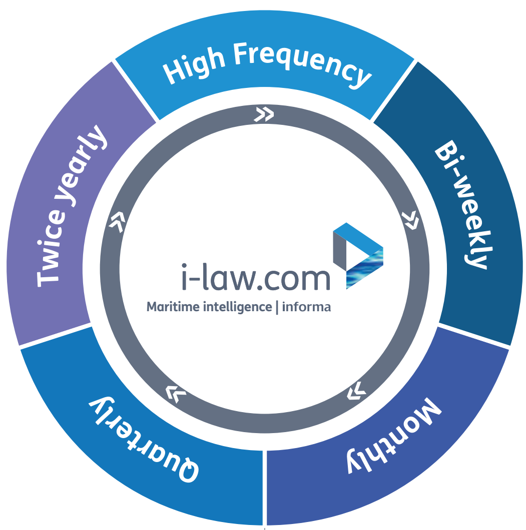

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2016 throughput
2,600,000 teu ▲ 6%

Port authority
Yantai Port & Navigation Administration, No. 2, Huanhai Road, Yantai City, China

Website
www.fzport.com

Email
ytghjbgs@163.com

Terminals (Operators)
Long Kou Port (YPG subsidiary)
Yantai Container Terminal (Yantai Port Co)
Yantai International Container Terminals (ICTSI Hong Kong, YPC and DP World)

in November 2016. Such a deal may pave the way for future joint venture opportunities, which demonstrates Yantai's intention to enhance domestic volumes.

The importance of Yantai in the region will not change, though. Within Shandong, Qingdao will remain the largest port that can receives megaships, while Yantai and Rizhao play more of a supplementing role.

The port operator said this year's main task would be to increase "efficiencies". Specifically, YPG aims to increased revenues, cut costs, raise profit margins and reduce business risks.

In 2017, Yantai is aiming for a volume of 2.7m teu. This is a moderate target, which likely will not be difficult to achieve.

65 | Manzanillo Mexico

MEXICO's Manzanillo port saw volumes rise 1.6% to 2.6m teu last year, despite a slowdown in the country's economy.

Annual GDP growth slowed to 2.3% last year from 2.6% the previous year, but remaining growth came largely from private consumption driving throughput numbers at the port. For example, Focus Economics figures reveal sales in the retail sector were up 8.7% in 2016 on the previous year.

Yet there are major concerns regarding the short- to medium-term prospects of Mexican trade in light of a potential renegotiation of the North American Free Trade Agreement (Nafta). This uncertainty is already holding back gross fixed investment in Mexico – particularly, as recently highlighted by the World Bank, within the vital automotive industry.

However, Manzanillo, located on the Pacific coast in the state of Colima, is not holding back with its expansion plans, seemingly undeterred by these wider economic uncertainties. Indeed, all three terminals at the port have added to their container-handling equipment portfolio over the past year – or plan to do so in the coming months.

More significant, though, is how Contecon Manzanillo SA, or CMSA, a subsidiary of Philippine-based container terminal operator International Container Terminal Services Inc, is not scaling back plans in the continued development of its Specialised Container Terminal 2.

Two new super-post-panamax cranes have been delivered and will begin loading operations before the end of the year, increasing capacity to 1m teu in the process and completing first-phase expansion.

A further two phases of development are planned, bringing the total target capacity at full-build to 2.2m teu.

2016 throughput
2,580,660 teu ▲ 1.6%

Port authority
Administración Portuaria Integral de Manzanillo, Av Teniente Azueta 9, Col Burocrata, 28250 Manzanillo, Mexico

Website
www.puertomanzanillo.com.mx

Email
gcomercial@puertomanzanillo.com.mx

Terminals (Operators)
Contecon Manzanillo SA (International Container Terminal Services Inc)
Manilla International Terminal (SSA Mexico)
Terminal Internacional de Manzanillo (Hutchison)

66 | London UK

CONTAINER volumes handled by London terminals jumped almost 14.4% in 2016 as DP World's London Gateway continued to attract new business and Tilbury's London Container Terminal also saw throughput grow.

In total, container traffic moving through terminals located on the section of the River Thames managed by the Port of London Authority, including Ford Motor's facility and Cobelfret's two sites in Purfleet and Dagenham, as well as the big two, amounted to 2.5m teu last year. The figures include roll-on/roll-off as well as lift-on/lift-off container traffic.

Underpinning much of the growth was London Gateway's success in landing some major new customers, such as The Alliance of Hapag-Lloyd, the merged Japanese ONE group, and Yang Ming, with an Asia-Europe service call; and Mediterranean Shipping Co's West Africa service.

The DP World facility, which opened in 2013 and will eventually have an annual capacity of 3.5m teu, has also berthed 20,000 teu-class ships, although not on a regular basis. Last year, volumes were approaching 1m teu as DP World started to win new business during the ocean carrier shake-up.

Meanwhile, Forth Port's London Container Terminal handled 810,000 teu in 2016, a strong rebound from 720,000 teu in 2015, while Tilbury has unveiled ambitious development plans that will include containerised cargo.

Consultations began over the summer on Tilbury 2, consisting of development of a 152-acre site that would act as a satellite to the main port. Facilities would consist of a ro-ro ferry terminal for importing and exporting containers and trailers, as well as space to process bulk construction materials for the UK building industry.

Brexit, of course, looms large over UK ports, and particularly those such as Tilbury, specialising in shortsea services, where any border delays could have a severe impact on productivity.

However, as Tilbury stated in its expansion prospectus, its location "makes it a natural point for distribution, with 18m people living within 75 miles".

For all the PLA facilities, one of their prime advantages is the fact they have good road and rail links to and from the capital and across the southeast, where 50% of the population lives and works.

2016 throughput
2,537,000 teu ▲ 14.4%

Port authority
Port of London Authority, London River House, Royal Pier Road, Gravesend, Kent DA12 2BG, UK

Website
www.pla.co.uk

Email
glenda.frost@pla.co.uk

Terminals (Operators)
London Gateway (DP World)
London Container Terminal, Tilbury (Forth Ports)
Ford Dagenham Terminal (Ford Motors)
C.RO Ports Purfleet (Cobelfret)
C.RO Ports Dartford (Cobelfret)

67 | Cartagena Colombia

ON the back of near double-digit growth in 2015, Cartagena saw a complete reversal in fortunes last year, as volumes slumped nearly 4% to 2.5m teu.

Throughput figures in the Colombian capital plummeted upon the reorganisation of several transhipment services calling at the port in the second half of the year, while regional volumes also suffered following the collapse of the Venezuelan economy.

Trade between Cartagena and Venezuela has dropped by around 70% over the past three years.

Despite the volume setback, Cartagena is still planning big for the future, as it looks to positon itself as the most important box hub in the Caribbean.

Today the port may be heavily underutilised, with a capacity approaching 3.5m teu – approximately 1m teu more than the box numbers handled last year – but upgrades to superstructures and yard equipment will see this increased to as much as 5.5m teu by 2020.

Sociedad Portuaria Regional de Cartagena, responsible for operating two of the port's trio of container terminals, namely Contecar and the Manga Sea Terminal, has numerous projects under way geared towards fulfilling the port's ambitious expansion plans.

For example, SPRC is adding an additional six hectares of storage capacity at the Contecar terminal, plus inspection platforms, as many as 2,780 reefer slots, and 1,100 sq m of warehouse space.

At the Manga Sea Terminal, pier upgrades have helped to raise the bar for ship capacity, enabling vessels of up to 12,000 teu to berth alongside.

In terms of equipment procurement, in 2016 alone, SPRC added six ship-to-shore cranes to serve neo-panamax ships, nine empty container handlers, 26 yard trucks and 26 container trailers; while 19 rubber-tyred gantry cranes have been converted from diesel to electric power usage.

APMT, which signed an agreement to operate Terminal Compas Cartagena as part of a joint venture with the Colombian-based port and terminal-operating company Compañia de Puertos Asociados (Compas SA) last year, is also in the middle of a $200m investment programme to triple the terminal's capacity.

2016 throughput
2,510,093 teu ▼ 3.8%

Port authority
Sociedad Portuaria Regional de Cartagena SA, Manga Terminal Marítimo, Cartagena de Indias, Colombia

Website
www.puertocartagena.com

Email
comunicaciones@sprc.com.co

Terminals (Operators)
Manga Sea Terminal (Sociedad Portuaria Regional de Cartagena)
Terminal de Contenedores de Cartagena (Sociedad Portuaria Regional de Cartagena)
Terminal Compas Cartagena (APM Terminals)

68 | Le Havre France

THE three ports that make up Haropa – Le Havre, Rouen and Paris – experienced a 2% decrease in aggregate container volumes to 2.6m teu in 2016, mainly due to a 9% drop in transhipment volumes at the port of Le Havre.

The ports have been suffering from the effects of consolidation in the global container line sector and the further introduction of megaships in 2015.

Container services at Le Havre have been facing considerable change since 2015, as the big alliances replaced previous services operated by separate members of these groups.

These changes continued in 2016 on the news of even greater industry consolidation and alliance restructuring. Maersk and Mediterranean Shipping Co cut a number of 2M direct port calls on its Asia-North Europe service. From mid-2016, Le Havre was served via the Lion service instead of the Albatross service.

The merger of CSAV and Hapag-Lloyd also had consequences on the previous partnerships of the two shipping lines with other stakeholders. No doubt the secondary merger with UASC by the expanded entity will exacerbate this further.

As such, it seems Haropa would prefer to focus on domestic wins. Le Havre's 2016 container volumes from and to the French market went up by 0.6% to around 2m teu, according to the port authority.

Haropa's market share of container volumes handled via the North European range represents 6.4%, a 10% rise since 2011, it says.

Approximately €77m ($91m) was invested in the three ports during 2016, with another €95m planned for 2017. A total of €527m in private and public investments were made to ports on the River Seine corridor in 2016. This will be increased to €690m in 2017, an increase of 30%.

New regulations for barge access via the river at Port 2000 in Le Havre increased operational capacity in 2016.

Feasibility studies are now under way for the creation of an opening in the breakwater and a new protective seawall to allow easier and protected barge access to Port 2000.

The Port 2000 multimodal terminal is now in full operation, with all river and rail operators now in business. Some 40% of containers are handled by river and 60% by rail.

Access improvement works at the Port of Rouen were carried out in 2016 to enable large containerships to call and to strengthen its strategic location.

Le Havre container terminals can handle the largest containerships in operation in the world.

2016 throughput
2,510,000 teu ▼ 2%

Port authority
Grand Port Maritime du Havre, Terre-Plein de la Barre, CS 81413, 76067, Le Havre, Cedex, France

Website
www.havre-port.fr

Email
dir.marketing@havre-port.fr

Terminals (Operators)
Terminal de l'Atlantique (Compagnie Nouvelle de Manutention Portuaire)
Terminal Nord (Generale de Manutention Portuaire)
Port 2000 GMP (GMP)
Port 2000 Terminal Porte Oceane (TPO)
Port 2000 Terminal Normandie (TNMSC)

69 | Oakland US

OAKLAND is a classic example of how to turn a negative into a positive.

At the beginning of 2016, the Californian port was faced with the sudden bankruptcy filing of one of its biggest tenants, Ports America's Outer Harbor Terminal, and all the ensuing confusion, as alternative arrangements had to be hurriedly made for customers.

Yet Oakland appears to have emerged from that episode unscathed, with the port posting record revenues for 2016 and healthy container volumes. Total throughput came to 2.4m teu, broadly in line with the numbers for 2010-2014, before a dip in 2015 as labour and other issues took their toll.

The port received a boost in early 2016 when it handled the 18,000 teu-class *CMA CGM Benjamin Franklin*, but ships of this capacity are not yet being deployed on a regular basis in the Pacific trades.

Nevertheless, the average size of ships serving Oakland is increasing, with fewer vessels calls in 2016, even though throughput was up.

With that in mind, Stevedoring Services of America's Oakland International Container Terminal is raising four of its cranes by 27 ft, while TraPac is heightening two as part of a broader expansion plan.

Construction has started on the 283,000 sq ft Cool Port Oakland, a refrigerated distribution able to receive up to 36 rail cars at one time laden with chilled or frozen meat.

Also under way are negotiations to build the 400,000 sq ft first phase of Seaport Logistics Complex, a major transload facility next to the railyard and across the street from marine terminals.

Because Oakland has a distinct catchment area of northern California and western Nevada, it is largely unaffected by competition from the Panama Canal for Asia-US midwest cargo, or from ports in the Pacific Northwest.

2016 throughput
2,370,000 teu ▲ 4.1%

Port authority
Port of Oakland, 530 Water Street, Oakland, CA 94607, US

Website
www.portofoakland.com

Email
maritime@portoakland.com

Terminals (Operators)
TraPac Terminal (TraPac)
Ben E. Nutter Terminal (Everport Terminal Services)
Oakland International Container Terminal (Stevedoring Services of America)
Matson Terminal (Stevedoring Services of America)

70 | Sydney Australia

GROWTH of 2.2% in 2016 is another chapter in a tale of steady but slowing growth in recent years for Sydney's main container port, Port Botany.

As the consortium running Port Botany and neighbouring ports and logistics centres settles into its stride, the focus seems squarely on connecting the port to the city through efficient intermodal facilities.

In early April, work began on the development of the Moorebank Logistics Park, which sits alongside the Enfield Intermodal Logistics Centre in NSW Ports' plans to improve the flow of containers between port and city.

Australia's second largest port played a small role in the fallout from Hanjin's collapse, as *Hanjin California* was arrested at Port Botany at the end of August 2016 for unpaid debts to Glencore Singapore.

In November 2016, a call from Maersk's 8,530 teu *Seroja Enam* broke the port's record for the largest vessel handled, calling at the Patrick container terminal to collect 1,800 empty boxes.

Berths at the port can typically take vessels of 10,000 teu at all tides, with a select berth capable of handling a 13,500 teu call.

In 2017, NSW (New South Wales) Ports had to defend an increase in rents to its stevedores, an increase that was in line with agreements made between the stevedores and local government before the consortium took control of the port.

2016 throughput
2,362,014 teu ▲ 2.3%

Port authority
NSW Ports, PO Box 297, Botany NSW 1455, Australia

Website
nswports.com.au

Email
enquiries@nswports.com.au

Terminals (Operators)
Brotherson Dock, north side (Patrick Stevedores)
Brotherson Dock, south side (DP World Australia)
Hayes Dock (SICTL, Hutchison Ports Australia)

71 | Chittagong Bangladesh

CHITTAGONG continued to grow at a steady pace in 2016, with a 16% increase in box handling last year.

Over the years, Bangladesh's main port has benefited from expansion, which includes the setting up of new equipment and modernising existing facilities to increase the cargo-handling capacity of the port, deepening vessel berths and improving the flow of traffic to and from the port.

However, its ambitions do not stop there. Chittagong has laid out a masterplan, budgeted at $1.9bn and funded by the Asian Development Bank, to facilitate further growth in the years to come.

The port has nine projects on the development list, including the construction of Patenga Bay terminal, as well as the multi-purpose terminal at Laldia, to beef up the growing number of container vessels calling at the port.

Investment has also been made for the construction of a new port on a 1,200-acre island in the Bay of Bengal, off the coast of Patenga and in proximity to Chittagong. Named the Bay Terminal, this would have a draught of up to 13 m or 14 m.

Currently, the biggest challenge with Chittagong is that it has a draught of just 9.5 m, which is definitely not deep enough for many modern container vessels.

Meanwhile, the procurement of three reconditioned container vessels by the port last year also enhanced the transhipment of cargoes from Chittagong to Pangaon inland container terminal.

The port authority brought in two rubber-tyred gantry crane and four units of forklift trucks as the part of the port's expansion programme.

Chittagong, positioned a little way up the Karnaphuli River, on the northeast curve of the Bay of Bengal, has always been the largest and by far the most important port in Bangladesh, handling around 92% of the total cargo volume in the country.

2016 throughput
2,346,909 teu ▲ 15.9%

Port authority
Chittagong Port Authority, Bandar Bhaban,Chittagong-4100, Bangladesh

Website
www.cpa.gov.bd

Email
secretary@cpa.gov.bd

Terminals (Operators)
Chittagong Container Terminal (Chittagong Port Authority)
New Mooring Container Terminal (Chittagong Port Authority)

72 | Genoa Italy

ITALY's Genoa reported volumes close to 2.3m teu in 2016, but there were mixed fortunes over the course of the year for the Tyrrhenian Sea port's five dedicated container terminals.

PSA Voltri-Prà, formerly known as Voltri Terminal Europac – and responsible for around 60% of Genoa's containerised trade – fared the best of the five, with throughput numbers surging by double-digit proportions from 1.2m teu to figures approaching 1.4m teu, a rise of 11.2% year on year.

Singaporean giant PSA attributed the volume hike to both the overall market recovery in the latter stages of the year, and containers diverted to Genoa in the fallout of the Hanjin collapse.

Gavio Group's Terminal San Giorgio and Genoa-based carrier Messina Line's aptly named Messina Terminal also reported a rise in volumes for 2016, up 5.6% and 2.5% year on year, respectively.

Spinelli's Genoa Port Terminal saw volumes fall – albeit marginally, by 0.7% – while the Terminal Contenitori Porto di Genova-operated Southern European Container Hub had a year to forget, on the back of a 23.7% drop in box traffic.

Genoa, acting predominately as a gateway port, with only around 10% of trade representing transhipment business, is finally moving ahead with its long-delayed new container terminal.

Land reclamation works for the new Calata Bettolo facility – being built by the Bettollo Consortium, in which MSC holds a controlling share – will be capable of handling upwards of 500,000 teu. The terminal is now slated to open for business in 2019.

2016 throughput
2,297,917 teu ▲ 2.5%

Port authority
Autorita Portuale di Genova Palazzo San Giorgio, Via della Mercanzia 2, 1-16124 Genoa, Italy

Website
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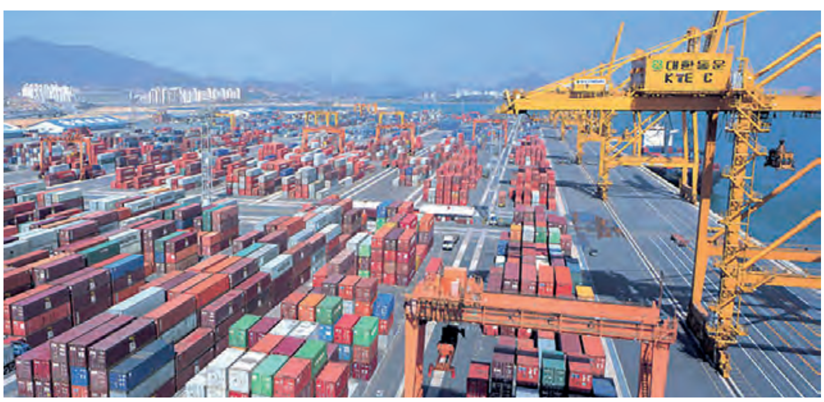
Email
promo@porto.genova.it

Terminals (Operators)
PSA Voltri-Prà (PSA International)
SECH, Southern European Container Hub (Terminal Contenitori Porto di Genova Spa)
Messina Terminal (Messina Line)
TSG, Terminal San Giorgio (Gavio group)
GPT, Genoa Port Terminal (Spinelli Group)

73 | Yeosu Gwangyang South Korea



THE port of Yeosu Gwangyang, South Korea's second-largest by volume, posted another year of contraction in container throughput numbers as the stagnation of the wider regional economy and shrinking trade volumes continued to hurt.

Its container throughput fell for the second consecutive year, by 3.3% to 2.25m teu, compared to a decline of just 0.5% in 2015, according to data from the Ministry of Oceans and Fisheries.

However, Yeosu Gwangyang, which is located in southern Korea, is still betting on its expansion plans under the government's master plan for nationwide port development, to become a key hub in Northeast Asia by 2020.

While the Yeosu section of the port is dedicated to passenger terminals and petrochemicals, the Gwangyang container terminal benefits from being one of the few domestic deepwater terminals that can accommodate 18,000 teu containerships.

The Gwangyang port development project will develop a logistics cluster, connecting cargo terminals, port hinterlands and industrial complexes, including the nearby Pohang Iron and Steel Corp (Posco) industrial complex, and the Hyundai Steel industrial complex.

Yeosu Gwangyang, which operates container services to Northeast Asia and Southeast Asia, is one of the four major 'distriparks' being developed by the government on the lines of China's free trade zones designed to attract companies and investors in large-scale projects at low taxes.

The other three industrial and port clusters in South Korea are the Busan Port cluster, Incheon Port and Pyeongtaek Port clusters.

While Gwangyang is located close to Busan, its specialised operation in containers, steel and petrochemicals give it certain advantages. The port said it already links 122 major global ports and handles annual cargo volume of 250m tonnes.

It plans to handle 3.4m teu by 2020 and 4m teu by 2025, and expects total cargo throughput to hit 350m tonnes in the same period.

2016 throughput
2,249,558 teu ▼ 3.3%

Port authority
Yeosu Gwangyang Port Authority, (57771) World-Marine Center, 465 Hangmandaero, Gwangyang si, Jeollanam-do

Website
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Email
jbb012@korea.kr

Terminals (Operators)
Gwangyang International Container Terminal (GICT Co)
Hutchison Ports Gwangyang Terminal (Hutchison Korea)
Korea Express International Kwangyang (Korea Express)
Dongbu Kwangyang Container Terminal (Dongbu Express)
Korea International Container Terminal (Korea International Terminals)
Sebang Terminal (Sebang)
SM Line Gwangyang Terminal (SM Line Corp)
Port 2000 Terminal Normandie (TNMSC)

74 | Barcelona Spain

THE Port of Barcelona reported a boost in container throughput in 2016, rising by 14.5% to see more than 2.2m teu passing through its two box terminals.

The port said it saw rises across the board, with increases in import and export trade, cabotage to the Balearic and Canary Islands, and transhipment.

It added that foreign trade containers continued to increase, reflecting the efforts of the hinterland producers to open up to international markets and showing a clear recovery in domestic consumption.

Export container numbers grew by 3.8% to reach 683,527 teu, while import containers grew by 8.7% to 518,480 teu.

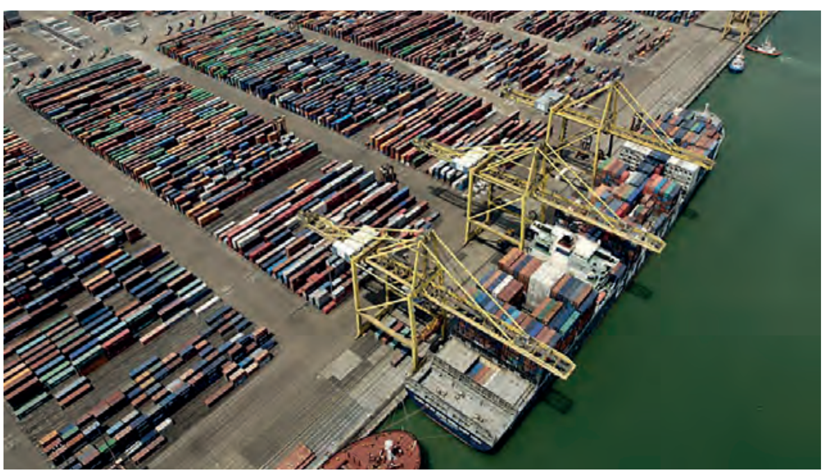
Containerised cargo in cabotage to the Spanish islands surged 10% to 124,455 teu and containers in transhipment increased by 47% to 431,750 teu. Transhipment figures had been severely affected during the financial crisis.

Barcelona is a multipurpose port and saw increased volumes in vehicle trades and in passenger movements.

Asia remains the main source of origin for container traffic at Barcelona, accounting for 77% of imports and 43% of exports. The Americas account for 25% of exports and 9% of imports.

Barcelona also handled more than 370,500 intermodal transport units of ro-ro traffic, up 2.9% year on year. This business segment includes exchanges of ro-ro cargo with the islands and traffic on the 'motorways of the sea', which channeled more than 135,000 itu, with several destinations in Italy and North Africa.

The port reported cashflow of €86.2m ($101.8m) during 2016, a year-on-year increase of 17%. Net turnover remained stable compared to the previous year, at €155.3m, despite the significant cuts to port fees applied to concessions, the result of new land valuation.



Provisional figures for the close of the financial year indicate the port of Barcelona made a profit of €33.2m, down 16%, due mainly to the fact that extraordinary profits were obtained in 2015 from the sale of various financial assets.

During 2016, the port invested €26m, the most significant amount of which included several works projects related to rail access, development of the Prat wharf, extending the rail terminal on the South Dock and new road and rail access.

APM Terminals now has a major interest in Barcelona, after purchasing the remaining 39% shareholding of Grup Maritim TCB to become the sole controlling shareholder of the group, which has 11 container terminals with an annual throughput capacity of 4.3m teu and an estimated annual container volume of 3.5m teu.

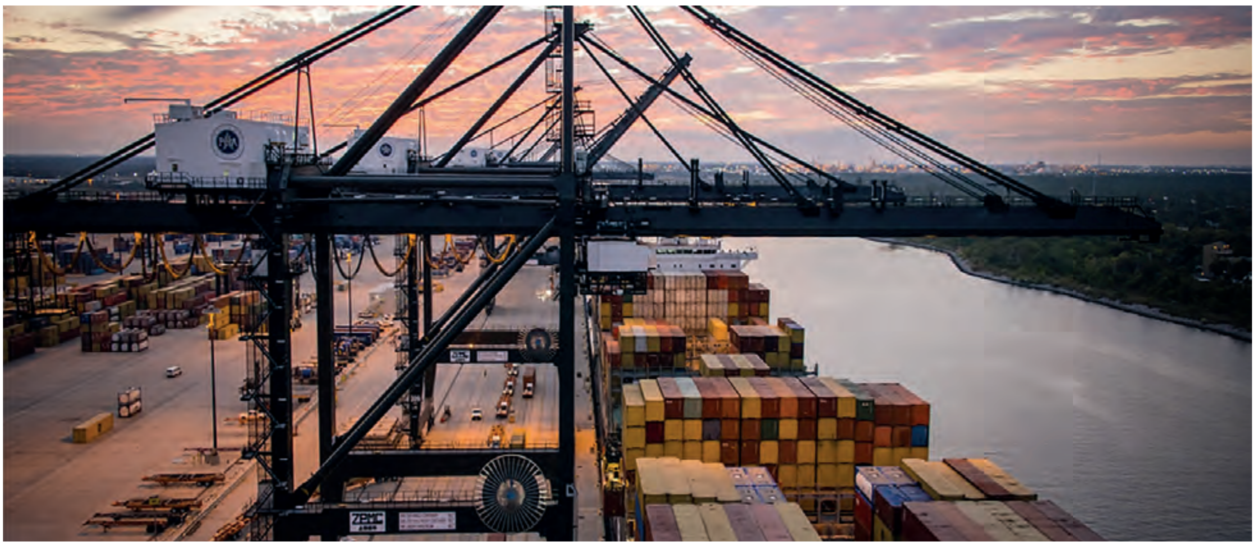
2016 throughput
2,236,960 teu ▲ 14.5%

Port authority
Barcelona Port Authority, World Trade Center, Barcelona wharf 08039, Barcelona, Spain

Website
www.portdebarcelona.cat

Email
sac@portdebarcelona.cat

Terminals (Operators)
Barcelona Europe South Terminal (Hutchison Port Holdings)
APM Terminals Barcelona (APMT)



75 | Houston US

CONTAINER volumes for Houston increased by 2% in 2016 to nearly 2.2m teu, and has grown by 11% over the past three years.

Three new super post-panamax cranes, purchased for a total of $33m, are slated to replace three older ones at Barbours Cut, the first container terminal to serve the US Gulf, which is celebrating its 40th year of operation in 2017.

The new cranes are part of a $700m modernisation programme under way at Barbours Cut, and they will be added to four others commissioned in 2015. The new cranes and other wharf and yard improvements are expected to increase the terminal's annual handling capacity to 2m teu from 1.2m teu.

The completion of an $80m dredging maintenance project in the Houston ship channel in June 2017 will allow both container terminals, Barbours Cut and Bayport, to serve 45-ft draught vessels. The two terminals are responsible for nearly 70% of all the container traffic along the US Gulf coast.

The new ethane export terminal at Morgan's Point loaded its first export cargo of ethane in September 2016. The facility is the largest of its kind in the world, with an aggregate loading rate of approximately 10,000 barrels per hour of fully refrigerated ethane.

The facility will provide an additional export destination for surplus US ethane production capacity, and will offer the global petrochemical industry a low-cost feedstock option and supply diversification.

2016 throughput
2,174,000 teu ▲ 2%

Port authority
Port of Houston Authority, 111 East Loop North Houston, Texas 77029, US

Website
www.portofhouston.com

Email
lashley@poha.com

Terminals (Operators)
Barbours Cut Container Terminal (Ports America)
Bayport Container Terminal (Ports America)

76 | Bandar Abbas Iran

FOLLOWING the lifting of sanctions against Iran, many container lines resumed services into the country, leading to a near 27% increase in throughput last year.

Of the country's 10 ports, Bandar Abbas – or Shahid Rajaee, as it is also known – is the biggest.

The port, which is located on the southern coast, has ambitions to grow to 9.8m teu annually by 2020, according to official government data.

It can currently handle 3m teu, which represents about 84% of Iran's container traffic, a presentation prepared by the ports and logistics consultancy Pearl of Hormuz shows.

The next phase of expansion, which is under construction and "almost ready", is projected to add another 3m teu from 2018, says Parisa Kaveh, general manager of private family-run transport company Kaveh Logistics.

Iran, which has been isolated for decades on political grounds, now has a high demand for consumer goods, including electronics, designer clothes and bags, and automobiles.

With a population of 80 million and GDP growth projected to hover around the 4% level out to 2020, there is real opportunity for trade, especially in the containers business.

And thus the growth seen in 2016 is expected to continue, with the port's two container terminals – Shahid Rajaee 1 and 2 – forecast to handle 2.5m teu.

"Bandar Abbas, with increasing volumes and capacity, will attract more direct lines," says Drewry's maritime research analyst Shailesh Garg.

The container capacity increase would not only support imports of consumer goods for the domestic market but also act as a transit point, he said, adding exports would focus on fruit and agricultural products, which require refrigerated containers or reefers.

There is interest, too, in developing the other ports in the country, with the aim of just about tripling container overall container capacity to 14m teu by the end of the decade.

2016 throughput
2,130,000 teu ▲ 26.9%

Port authority
Shahid Rajaee Port Complex, Bandar Abbas, Hormozgan Province, Iran

Website
www.shahidrajaee.pmo.ir

Email
info@bpa.ir

Terminals (Operators)
SRCT1 (Sina Port and Maritime Co)
SRCT 2 (Sina Port and Maritime Co)

77 | Karachi Pakistan

PAKISTAN'S gateway port, Karachi, saw container throughput growth of almost 7.7% last year, at 2.1m teu from just below 2m teu handled in 2015.

The port handled 758 containerships against the previous year's 738 vessels.

This was partly to do with the new terminal, Pakistan Deep Water Container Port, which increased the annual capacity of the port by 3.1m teu.

The deepwater terminal located at the estuary of the Keamari Groyne basin, has four container berths with a total quay of 1,500 m, a draft of 18 m, 210 acres of yard space, and modern service equipment, including 12 quay cranes and 52 rubber-tyred gantry cranes.

The $1.4bn project, initiated in

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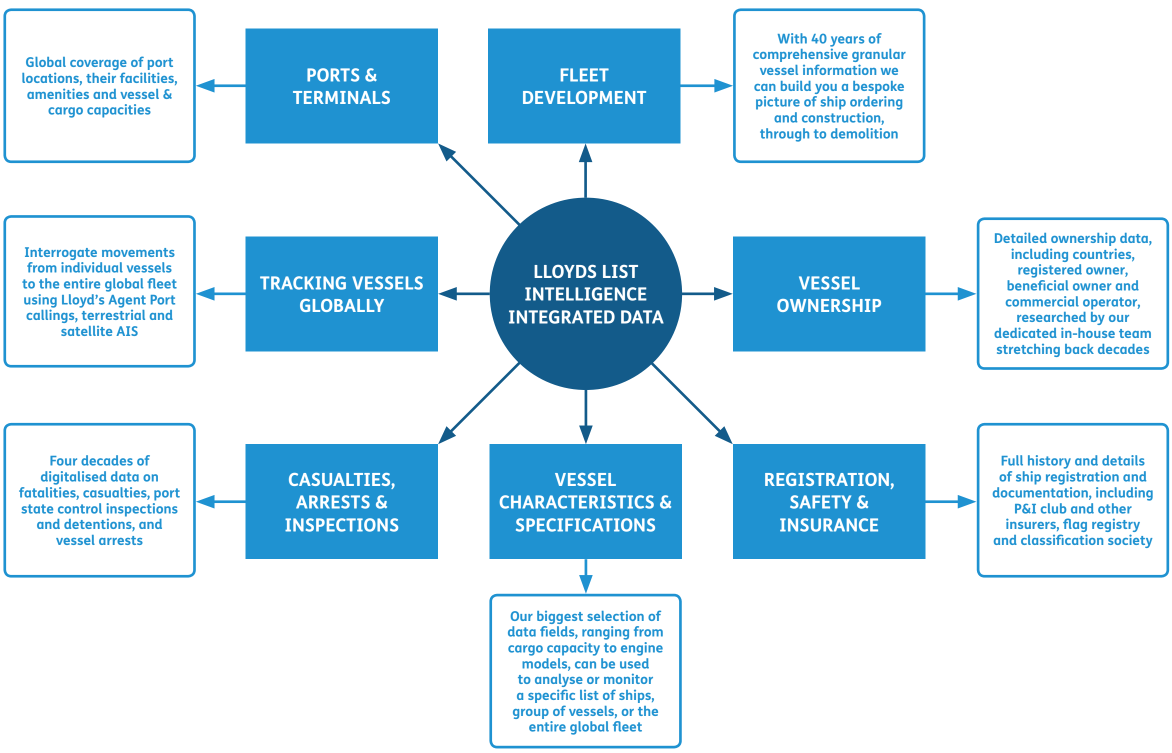

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2007, was originally scheduled to commence operations in 2011-12. However, major delays in dredging kept postponing the start of operations.

Karachi, which handles around 60% of Pakistan's seaborne trade, upgraded most of its existing berths as well, by deepening them up to 13 m from 11.5 m, thus enabling them to berth vessels with 100,000 dwt, having 305 m length overall, according to media reports.

Meanwhile, trade in the region is expected to grow in the coming years due to the momentum provided by Beijing's One Belt, One Road initiative.

Pakistan has already signed a $46bn deal with China for a network of roads, railways and pipelines along the China Pakistan Economic Corridor that will connect Xinjiang to Pakistani ports.

Although being the premier sea port of the country, with a total of 30 berths at East and West wharves, as well as three oil piers, Karachi port still suffered the worst congestion in Asia last year, which had a major impact on liner schedules.

2016 throughput
2,100,000 teu ▲ 7.7%

Port authority
Karachi Port Trust, Eduljee Dinshaw Road, Karachi, Pakistan 74000

Website
www.kpt.gov.pk

Email
chairman@kpt.gov.pk

Terminals (Operators)
Karachi International Container Terminal (HPH)
Pakistan International Container Terminal (ICTSI)
Qasim International Container Terminal (Karachi Port Trust)
Pakistan Deep Water Container Port (South Asia Pakistan Terminals)

78 | Quanzhou China

GONE are the days when Quanzhou was crowned as the largest port of the orient some 1,000 years ago. However, the city in Fujian province, south eastern China, remains home to one of the world's busiest container harbours today.

Box throughput reached nearly 2.1m teu in 2016, a 4.6% increase compared to the previous year. The growth slowed down from 2015's level of 6.1%, amid declined trade volume in China.

The port's principle container facility, the Quanzhou Pacific Container Terminal, a joint venture between Cosco Pacific and the state-owned Quanzhou Harbour Group, saw handling up 7.7% to 1.3m teu.

The total throughput figure still falls short of the government's goal for 2020, when Quanzhou's container volume should hit 2.5m teu.

As a result, local port authorities have been ramping up efforts to encourage investment in new berths and development of new routes.

In June 2016, the port launched its first container lane to Vietnam and Thailand. Its previous services were concentrated on coastal trade in China and routes that led to the country's three major neighboring trading partners,

Japan, South Korea and Taiwan.

In October last year, QPCT started the construction of the fifth and sixth berths at Shihu Terminal, which will boost the port's handling capacity to 3m teu when completed in 2020. The project investment is about Yuan1.8bn ($268.9m).

Quanzhou government also published a guidance to further facilitate the port's container traffic, pledging to offer an annual incentive scheme totaling Yuan5m, starting from 2016. The funds are used to reward shipping and port companies that have made significant contribution to lift the box volume.

At the same time, a one-off reward of Yuan2m will be given to any carrier that can develop new foreign trade routes for Quanzhou.

2016 throughput
2,091,500 teu ▲ 4.6%

Port authority
Quanzhou Pacific Container Terminal Co Ltd, Shihu Port, Shisi, Quanzhou City, Fujian Province, 362700, China

Website
www.qzgw.com or www.qpct.com.cn

Email
master@qpct.com.cn (QPCT)

Terminals (Operators)
Quanzhou Pacific Container Terminal (Cosco Pacific and Quanzhou Harbour Group)
Hou Zhu Terminal (Quanzhou Harbour Group)
Quanzhou Shenhu Terminal (Quanzhou Harbour Group)

79 | Callao Peru

PERU's premier box port hub saw volumes rebound last year off the back of the ongoing recovery in the Latin American nation's economy.

Combined, DP World and APM Terminals handled 8.1% more containerised trade in 2016 than the previous year, as volumes climbed to more than 2m teu.

According to DP World, imports grew moderately in line with GDP growth, while a significant increase in mineral shipments and fish products to the Far East helped drive box numbers further.

Callao's transhipment market also showed encouraging signs of recovery, the terminal operator added.

Like other Latin American hubs, Callao too is investing heavily to meet the needs of ultra large containerships, a trend that has gathered pace since last year's inauguration of the expanded Panama Canal.

DP World is in the process of upgrading its gate complex. The Dubai-based terminal operator is increasing its terminal's pre-gate capacity, adding truck lanes and weigh bridges, as well as installing semi-automatic gate technology.

In the yard, it is also planning to add further rubber-tyred gantry units to its crane fleet and increase reefer plug capacity. In total, the upgrades will tally to a cost of up to $20m and are slated for completion before the end of 2017.

Not to be left out, APMT has also recently signed off on the second phase of an extensive investment agreed as part of its Callao concession.

Funds were used to equip the multi-purpose facility with equipment for general and non-containerised cargo, but also acquire four ship-to-shore cranes and dredging of up to 16 m to welcome post-panamax ships.

2016 throughput
2,054,970 teu ▲ 8.1%

Port authority
Autoridad Portuaria Nacional (APN), Av. Santa Rosa N° 135. La Perla, Callao. Peru

Website
www.apn.gob.pe/site

Email
atencionalusuario@apn.gob.pe

Terminals (Operators)
DP World Callao (DP World)
Muelle Norte (APM Terminals Callao)

80 | Charleston US

SOUTH Carolina Ports, focused on Charleston, handled almost 2m teu in 2016, as container traffic continued to increase in this fast-growing part of the US.

The record performance, representing a 1.2% increase over 2015, was again underpinned by the motor industry, with automotive manufacturing in the region boosting demand for imported materials and components, and increasing exports of finished products.

Containerised imports through Charleston are also being lifted by population growth in the area, with larger ships now calling as the port's hinterland becomes increasingly attractive to the world's leading ocean carriers.

The average size of ships served by Charleston is now around 8,000 teu-10,000 teu, but with one weekly service operated by vessels of up to 14,000 teu, and another string of similar-class ships expected before the end of the year. The biggest vessels to call so far are the 13,200 teu *OOCL France* and *OOCL Chongqing*.

The port authority, which operates all the container terminals in the complex, is investing in significant infrastructure upgrades, with construction of a new container facility, the Hugh K. Leatherman Terminal, making good progress and on schedule to open in 2020.

Plans have also been announced to develop a second inland port at Dillon, having already opened Inland Port Greer.

The Charleston harbour deepening project, increasing depth

2016 throughput
1,996,282 teu ▲ 1.2%

Port authority
South Carolina Ports Authority,176 Concord Street, Charleston, South Carolina 29401, US

Website
www.scspa.com

Terminals (Operators)
Wando Welch Terminal, Charleston (SCPA)
North Charleston Terminal (SCPA)
Columbus Street Terminal, Charleston (SCPA)
Inland Port Greer (SCPA)

to 52 ft, will begin this autumn, making Charleston the deepest harbour on the east coast, with the ability to serve the growing manufacturing cargo base in the southeast, by accommodating big ships loaded heavy with export cargo without tidal restriction.

Charleston received two new super post-panamax cranes in late 2016, with another two on order.

The port is also more than halfway through a major wharf modernisation project at the Wando Welch Terminal.

Infrastructure projects elsewhere are also helping Charleston, with both the expansion of the Panama Canal and completion of the Bayonne Bridge heightening project bringing larger containerships to the US east coast.

Volumes have remained strong in 2017, with throughput in the first seven months of the year up 13%, and July the best month on record for container traffic.

81 | Dandong China

DANDONG Port saw an 8.7% rise in box throughput over 2016.

The provincial government is pushing ahead with plans to grow the port into a key logistics hub in northeast China.

Firstly, it is using it as a starting point on the Liaoning-Mongolia-Europe trade route, through the combination of shipping and railway intermodal transportation, to expand commercial links to Mongolia, Russia and the whole of Europe.

On the domestic front, port authorities are partnering the pilot free trade zone set up in Liaoning province to build an integrated logistics hub in northeast China.

Port officials have also been working with Tonghua city in neighbouring Jilin province on a project worth Yuan5.3bn ($778.9m) to build an international inland port.

Authorities from both sides established the Tonghua Port Stocks Limited Company to jointly operate the inland port.

Construction work on the project site commenced in August 2016.

To accommodate larger container vessels, Dandong Port Group embarked on a Yuan1.5bn plan in August 2016 to build the number 302 container berth, with a 381 m shoreline and covering 852,600 sq m.

When completed, it will have an annual box throughput capacity of about 600,000 teu.

The port is currently able to handle containerships up to 10,000 teu and aims to boost that to 14,000 teu.

All these measures to increase domestic and global trade may have come at a good time, as the UN and nations, such as the US and China, continue to ratchet up the pressure on North Korea, due to its proliferation of weapons of mass destruction.

Dandong city has historically been North Korea’s largest trading partner, with a substantial volume of cargo moving through the port due to its proximity to the North Korean city of Sinuiju.

2016 throughput
1,990,000 teu ▲ 8.7%

Port authority
Dandong Port Authority, 7 Xingwu Road, Zhenxing 118000, Liaoning, China

Website
www.dandongport.com

Email
ddgwj@dandongport.com

Terminals (Operators)
Dadong Port Area (Dandong Port Group)
Langtou Port Area (Dandong Port Group)
Haiyanghong Port Area (Dandong Port Group)

82 | Southampton UK

DP WORLD's Hampshire hub reported its second successive year of moderate box growth in 2016, as container volumes in Southampton increased 1.2% year on year to just shy of 2m teu.

Whereas throughput numbers stood relatively still, the port has managed to make significant strides over the past 12 months in both the procurement of container-handling equipment and ensuring the big liner operators continue to call its docks.

The alliance shake-up earlier this year saw Southampton come out the other side relatively unscathed, and it would have been more than happy after becoming the only UK port to tie down regular calls from all three of the major consortia, 2M, the Ocean Alliance and The Alliance.

DP World now boasts exclusivity to the latter, which only calls in Southampton and the terminal operator's other UK operation, London Gateway, located on the north bank of the River Thames.

The alliance success came off the back of the return of the world's largest carrier, Maersk Line, to the port after a four-year hiatus in 2015.

To meet the needs of its customers' appetite for ultra large containerships, DP World moved to acquire 11.2 acres of land adjacent to its newest berth, SCT5, last year, creating 640 extra ground spaces to store containers.

The Dubai-based firm is also in the process of a major straddle carrier renewal programme, in which 17 units will replace older models, while two new ship-to-shore cranes are due for delivery in early next year, allowing for simultaneous handling of three ULCs.

2016 throughput
1,957,000 teu ▲ 1.2%

Port authority
DP World Southampton, Western Docks, Southampton, SO15 1DA, UK

Website
dpworldsouthampton.com

Email
info@dpworldsouthampton.com

Terminals (Operators)
DP World Southampton (DP World)

83 | Osaka Japan

JAPAN's third-largest port in teu terms, Osaka continued to feel the brunt of the ongoing slowdown in the country's economy, as throughput numbers stagnated in 2016.

Nevertheless, a 0.9% drop in volumes last year to 1.95m teu is still an improvement on the slump in volumes recorded in 2015 and 2014, respectively.

In addition to its domestic issues, Osaka has also suffered significantly at the hands of slowing growth in the economy of neighbouring China, accountable for around 60% of total foreign box numbers moved through the port.

News that China's ports have reported a considerable uptick in containerised traffic during the first six months of 2017, however, should help Osaka's plight, while government initiatives to help further the scope of Japanese ports and compete with rival facilities in the region should also aid Osaka's cause.

Meanwhile, the port is not resting on its laurels, with a number of infrastructural projects geared toward enhancing its regional position.

Osaka is progressing with an expansive dredging project that will see all mainline waterways deepened to 16 m and a minimum width of 560 m to meet the requirements of ultra

2016 throughput
1,952,372 teu ▼ 0.9%

Port authority
Port & Harbor Bureau, City of Osaka, Japan

Website
www.city.osaka.lg.jp/port

Email
na0004@city.osaka.lg.jp

Terminals (Operators)
C1, 2, 3 & 4 (Tatsumi Shokai Co)
C6 (Sumitomo Warehouse Co)
C7 (Sankyu Inc)
C8 (Kamigumi, Nitto Total Logistics)
C9 (Mitsubishi Logistics Co, Mitsui Warehouse Terminal Service Co)
C10,11 &12 (Dream Island Container Terminal Co & Tatsumi Shokai Co)

large containerships. The project began in 2011 and is expected to be completed by 2026.

Elsewhere, Osaka's C12 berth has been extended by a further 250 m and reinforced to earthquake-proof standard. The new wharf was successfully commissioned in February of this year.

This followed on from the opening of Yumeshima Container Terminals in 2016, a 250 m long new berth, with a 16 m draught.

The port has also made a number of additions to its container-handling portfolio, including the procurement of two gantry cranes and exchange of straddle carriers to 10 sets of rubber-tyred gantry cranes in support of operations at the Nanko C-9 terminal.

84 | Tangshan China

TANGSHAN has maintained its status as a rising star in container shipping.

Having entered our list of top 100 ports for the first time in 2015, the Hebei-based feeder port continued to enjoy astonishing growth last year.

Tangshan recorded container throughput of 1.9m teu in 2016, up 27.2% on year. This expansion pace was amazing, even though it was slower than the 2015 growth rate of 37%.

The main growth driver is its co-ordination with neighbouring giant Tianjin, one of the 10 busiest ports in China.

In 2016, Tangshan Port Group and Tianjin Port Group, the two ports' main operators, set up a joint venture named Jintang International Container Terminal.

The entity, 60% owned by Tangshan and 40% by Tianjin, operates container terminals in Jintang. According to the Hebei provincial government, this joint venture will promote shipments between both Tangshan and Tianjin via integration of their resources and services.

In practice, this means China's Tangshan could become the de facto transhipment hub of Tianjin.

2016 throughput
1,932,000 teu ▲ 27.2%

Port authority
Tangshan Ganghang Management Bureau, No 125, Dali Road, Lubei District, Tangshan City, China

Website
www.tsjtys.com

Email
tstraffic@126.com

Terminals (Operators)
Berths 10,11, 18 & 19 (Tangshan Port Co)
Jintang International Container Terminal (TPG & Tianjin Port Group)

85 | Guayaquil Ecuador

GUAYAQUIL, responsible for handling approximately 70% of Ecuador's seaborne trade, reported another healthy year of box traffic growth in 2016.

Philippine port operator International Terminal Container Services Inc subsidiary Contecon Guayaquil, handling the lion's share of container volumes at the port, saw volumes increase to slightly over 1.6m teu on the back of a number of new liner services.

CGSA's volume hike helped offset a significant drop in box numbers at the smaller Terminal Portuaria Guayaquil, located in the south of the city's port complex. Volumes at TPG fell 32% from 305,000 teu to 218,000 teu year on year.

Combined, this meant Guayaquil handled a record 1.8m teu last year, a rise of 3.2% on 2015 levels.

Despite last year's disappointment, TPG executive chairman Enrique Brito expects volumes to rebound significantly in 2017 to levels approaching 600,000 teu. TPG has invested around $60m in the development of the terminal, including the extension of its quay and new yard equipment, in a bid to attract deepsea customers.

These investments are starting to pay off, having secured a number of new service contracts over the past 12 months, according to Mr Brito. TPG also now lays claim to hosting the largest boxship to call in Ecuador, when the 11,000 teu *CMA CGM Rodolphe* berthed at the terminal at the start of 2017.

There is, however, a lingering threat to the progress of Guayaquil's existing container terminals.

DP World is currently constructing a new deepwater facility 65 km south of the port that will be able to accommodate vessels upwards of 18,000 teu.

But what will more attractive to carriers is its location closer to the Panama Canal, allowing for shorter transit times for both inbound and outbound Ecuadorian services crossing the Central American artery.

2016 throughput
1,821,654 teu ▲ 3.2%

Port authority
Autoridad Portuaria de Guayaquil, Av. de La Marina vía Puerto Maritimo Guayaquil, Ecuador

Website
www.apg.gob.ec/

Terminals (Operators)
Contecon Guayaquil (ICTSI)
Terminal Portuaria Guayaquil (SAAM)

86 | Dammam Saudi Arabia

THE Saudi port of Dammam, or King Abdulaziz, saw volumes fall back 8.7% in 2016, as the country's economic resilience continues to be tested by the low oil price.

However, there were contrasting fortunes for the two terminals in Dammam, serving as a gateway to the capital Riyad and the other major cities in the eastern and central provinces of the country.

The smaller of the pair, Saudi Global Ports, a joint venture between PSA International and the Saudi Public Investment Fund, which opened in April 2015, continued to see volumes ramp up.

Container throughput figures at SPG, boasting a 700 m quay dotted with six ship-to-shore cranes, grew nearly six-fold, from around 70,000 teu to more than 400,000 teu, having secured business from Far East carriers Cosco and OOCL.

Meanwhile, the terminal operated by International Port Services, a subsidiary of Hutchison Port Holdings, formed as a joint venture partnership with Maritime Company for Navigation and recently rebranded as Hutchison Ports Dammam, saw volumes slump by around 30%.

There were at least some positives, nonetheless, for HPD last year. The terminal secured a number of new services, including the maiden call of Korean carrier Hyundai Merchant Marine. HMM's KME loop, connecting Dammam with Korea and port majors in China, is jointly operated with Emirates Shipping Line.

2016 throughput
1,785,000 teu ▼ 8.7%

Port authority
King Abdulaziz Port, PO Box 28062, Dammam 311188 Saudi Arabia

Website
www.ports.gov.sa/English/SAports/Dammam

Email
info@ports.gov.sa

Terminals (Operators)
Hutchison Ports Dammam (International Port Services)
Saudi Global Ports (PSA & Saudi Public Investment Fund)

87 | Alexandria Egypt

SITUATED 150 miles to the west of its larger rival, Port Said, and the entrance of the Suez Canal, the combined port of Alexandria and El-Dekheila forms Egypt's second-largest port complex.

Its position away from the Suez Canal means its main role is as an import and export facility, rather than a transhipment hub.

Its position at the top of the Nile Delta, however, gives it better transport links than rival, East Port Said, which is only accessible via barges across the Nile following the closure of bridges to Sinai for security reasons.

Between the two ports, Alexandria handles around 60% of Egypt's trade.

Both Alexandria to the east and El-Dekheila to the west have two terminals, one each operated by Alexandria International Container Terminals and Alexandria Container and Cargo Handling.

AICT is owned by Dubai-based Fajr Capital's MENA Infrastructure fund and operated by Hutchison Ports.

ACCH, is owned by Egypt's state-owned Holding Company for Maritime & Land Transport, the APA and private shareholders.

2016 throughput
1,633,600 teu ▼ 3.2%

Port authority
Alexandria Port Authority, 106 El- Horyiea Avenue, Alexandria, Egypt

Website
www.apa.gov.eg

Email
info@apa.gov.eg

Terminals (Operators)
AICT terminal (Alexandria International Container Terminals)
ACCH terminal (Alexandria Container and Cargo Handling Co)

88 | Kingston Jamaica

THE slowdown in global containerised trade growth has hit Latin America's major box hubs hard. Kingston, too, felt the brunt in 2016.

Declining transhipment traffic at the Kingston Container Terminal, the largest of the Jamaican port's two terminals, reflected the economic headwinds faced in the region, resulting in a 5.2% drop in volumes year on year to 1.6m teu.

There were, however, at least some encouraging signs of recovery in the final quarter, when trade picked up slightly, according to the Port Authority of Jamaica.

Last year also saw the transfer of both managerial and operational responsibilities of KCT to Kingston Freeport Terminal, under a 30-year concession agreed by the PAJ. KFTL is a joint venture between CMA CGM, through its terminal-operating arm Terminal Link, and China Merchant Holdings, holding shares of 51% and 49%, respectively.

KFTL has already started to upgrade the box facility, embarking on the first phase of a $490m capital investment programme in the latter stages of last year. The funds will be used to increase the draft of the port's berths, turning circles and access channel from its existing 13 m to 15.5 m, as well as new terminal and yard equipment.

Not to be left out, Kingston Wharves has also continued in the upgrade of its terminal. KWL is currently putting the finishing touches to a new 160,000 sq ft logistics facility, scheduled to open in late 2017, while a new mobile harbour crane was also added to enhance bulk and container-handling capabilities.

2016 throughput
1,567,442 teu ▼ 5.2%

Port authority
The Port Authority of Jamaica, 15 -17 Duke Street, Kingston, Jamaica; mailing address: PO Box CSO, Kingston, Jamaica

Website
www.portjam.com

Email
paj@portjam.com

Terminals (Operators)
Kingston Freeport Terminal Ltd (CMA CGM/ Terminal Link & China Merchant Holdings)
Port Bustamante (Kingston Wharves Ltd)
Investment Fund)

89 | Abu Dhabi United Arab Emirates

VOLUME growth in Abu Dhabi in 2016 may not have reached the dizzy heights of 2015, when box numbers surged by more than 30%, but it still came in at a more than respectable 3%.

The UAE port, which only began operations in 2012 – making its top 100 rankings debut last year – handled 1.6m teu in 2016.

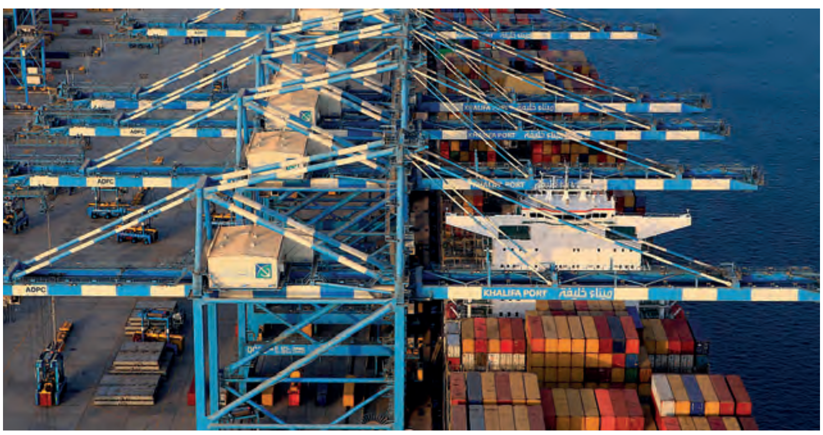
Containerised trade is centered at Abu Dhabi's Khalifa Port Container Terminal, operated by Abu Dhabi Ports' subsidiary Abu Dhabi Terminals, charged with matching the huge ambition for the port set by the emirate from which it takes its name.

However, volumes since inception – although impressive – are merely the start, with plans in place to further its rise to prominence in the Middle East and challenge the monopoly held in the region by domestic rival Jebel Ali.

Last year, ADP certainly turned a few heads in Dubai upon the news it had signed off on a major container terminal concession agreement with Chinese giant Cosco Shipping Ports.

The deal will see Cosco inherit a greenfield site, offering a draft of 18 m, as well as 1,200 m of quay wall and adjacent land, in a move that ADP says will significantly enhance trade between the UAE and the economic powerhouse China.

In addition to the new Cosco hub, ADP is also busy adding an extra kilometre of quay wall at the existing terminal to cope with demand, while Khalifa's main channel and basin is also being dredged to a depth of 18 m to better suit the needs of ultra large containerships.



2016 throughput
1,550,000 teu ▲ 3%

Port authority
Abu Dhabi Ports Company (ADPC), Al Meena, Mina St, Abu Dhabi, United Arab Emirates, PO Box 54477

Website
www.adports.ae

Email
customerservice@adports.ae

Terminals (Operators)
Khalifa Port Container Terminal (Abu Dhabi Terminals)

90 | Taichung Taiwan

TAICHUNG saw total container volumes handled in 2016 rise by 6.1% over the previous year, as the island experienced an increase in the amount of direct cargoes transported between Taiwan and mainland China.

In geographical terms, the port is the closest in proximity to mainland China the island.

To date, the port is able to handle containerships of up to 5,000 teu.

In October 2016, Taichung completed the construction of Berths 44 and 45 ahead of the expected completion date of end-2016, along with facilities for firms that import or export bulk commodities.

Dimensions-wise, the new berths have a total length of 460 m, a maximum draft of 12 m, while the existing Berth 43 has been lengthened by 50 m.

There are also new reinforced embankments, vehicle access roads, drainage facilities, a water supply network, electrical lines, lighting and surveillance facilities.

Accordingly, the new facilities are able to accommodate 30,000 dwt to 40,000 dwt handysize bulk carriers.

The land surrounding the new berths has been made available to these firms to invest in storage facilities, which will have to comply with the local environmental protection regulations.

State-owned port operator Taiwan International Ports Corp secured EcoPorts certification, a port environmental review system overseen by the European Seaports Organisation for Taichung at end-2015.

Port authorities continue to actively promote the Taichung Port Economic Processing Zone through the private sector lease and industrial investment tender model, as they try to optimise land utilisation in the port area by attracting international as well as local firms to establish their production facilities and shipping logistics operations in the designated free trade zone.

2016 throughput
1,535,011 teu ▲ 6.1%

Port authority
Port of Taichung, Taiwan International Ports Corporation: No. 2 Sec 10, Taiwan Boulevard, Wu-Chi District, Taichung, Taiwan

Website
www.twport.com.tw/en/

Email
T01534@twport.com.tw

Terminals (Operators)
Terminal 1, Berths No. 10-11: China Container Terminal Corporation
Terminal 2: Berths No. 32-33: Evergreen International Corporation, Berths No. 34-35: Wan Hai Lines

91 | Sines Portugal

THE Portuguese port of Sines debuts in the Lloyd's List rankings on the back of a double-digit jump in container traffic in 2016.

Located in the southwest of the country, on the Alentejo coast, 100 km south of Lisbon, Sines handled 1.5m teu last year, as volumes rose 13.6% from 1.3m teu.

The port's success has come twofold. Firstly, it has the advantage of an internationally recognised terminal operator orchestrating proceedings in the shape of Singaporean giant PSA; but is also a haven for transhipment.

Strategically positioned at Europe's most westerly point, Sines is at the crossroads of the principal north/south and east/west maritime routes. This allows carriers the option of feeding traffic either to the north of the continent, east through the Mediterranean, or south to West Africa.

Although Sines also acts as the main gateway to Portugal and an access point to the wider Iberian market, it was transhipment activity that was highlighted by the port authority as the overriding factor behind last year's surge in traffic, having secured a number of new hub and spoke services.

The port authority is expecting a repeat performance in 2017, with volumes anticipated to swell to somewhere in the region of 1.7m teu.

With traffic on the rise, PSA has been steadily building capacity and last year completed the North Quay expansion of its Terminal XXI facility, adding an extra 200 m of quay to increase capacity from

1.7m teu to 2.1m teu per annum.

Plans are already in place to increase capacity at the port's sole box facility further still, to 3.3m teu.

However, Sines is not stopping there. With an international tender on the table to build a new container terminal at the port – Terminal Vasco da Gama, which will offer a 3m teu in its first phase – Sines' entry into the top 100 listing looks to be no flash in the pan.

2016 throughput
1,513,083 teu ▲ 13.6%

Port authority
Administração dos Portos de Sines e do Algarve, SA, Apartado 16, EC Sines | 7521-953 Sines, Portugal

Website
www.portodesines.pt/en/

Email
geral@apsinesalgarve.pt

Terminals (Operators)
Terminal XXI (PSA Sines)

92 | Bangkok Thailand

A LOOK at Bangkok's headline throughput figure for 2016 might suggest that Thailand's export-driven economy fell on hard times last year, but growth in gross domestic product actually accelerated slightly; it was just the port that suffered, not the country.

Despite growth in Thailand's economy, and volume growth at neighbouring port Laem Chabang, Bangkok's throughput fell by 2.6% in 2016.

Plans from the Port Authority of Thailand show that Bangkok is not being left to fade away as its competitors grow, however, as a 20-year plan for the port was revealed.

PAT has identified under-utilised areas of the port for development to increase efficiency and drive economic growth.

For container exports, this means the long-mooted development of the 20G coastal berth at Terminal 2 to handle larger vessels, as well as a move to dedicated import-export container freight stations. A budget has been allocated for the construction of the container freight stations.

The export station will have an annual capacity of 140,000 teu per year and cover an area of 72,000 sq m; construction is slated to start in 2017 for completion in 2018.

The station will include a 9,800 sq m CFS building with loading equipment, a container yard of around 9,017 sq m to accommodate 792 outbound cargo containers, a truck parking area, four-storey office building and three e-gates.

As part of the first stage of development, the export station is expected to improve traffic flow and turnaround time and will be followed by the import station and 20G redevelopment.

Desk operations at the port will also be consolidated into one place, with the creation of a 'one-stop service centre', construction of which is due to start in 2019.

2016 throughput
1,498,009 teu ▼ 2.6%

Port authority
Port Authority of Thailand, 444 Tarua Road, Klongtoey, Bangkok, 10110 Thailand

Website
www.port.co.th

Email
info@port.co.th

Terminals (Operators)
Siam Bangkok Terminal (Siam Bangkok)
TPT Terminal (Thai Prosperity)
Unithai Container Terminal (United Thai Shipping)
Bangkok Modern Terminal (BMT Pacific)

93 | Chennai India

CHENNAI, which handles around 25% of container traffic through India's major ports, took a hit in 2016.

Container throughput was down 4.5% to just under 1.5m teu, thanks to the sluggish trade growth and tax extensions by the Indian government.

To some extent, Chennai port is living in the shadow of two other regional ports, Kattupalli and Krishnapatnam. These ports have soaked up a considerable number of ship calls due to truck congestion at the terminals in Chennai.

To tackle this issue, Chennai Port Authority has co-ordinated with state-owned rail operator Container Corporation of India to add new train services, including time-guaranteed runs, and implemented tariff incentives on truck routes.

The port authority told Lloyds List the port also has two road connectivity projects ongoing, namely Chennai-Ennore Port Road Connectivity Project for the northern corridor to the national highways, and the Elevated Port Link Road to Maduravoyal for the southern and western approaches to the hinterland.

"Road network inside the port is being augmented through widening of existing roads to improve the internal flow of traffic and ease congestion," a spokesperson said.

As Chennai's capacity utilisation is under heavy pressure amid growing competition from private rivals, the port has taken several measures like concessions on vessel-related charges for containerships and additional concessions on vessel-related charges for longhaul and shorthaul container services.

Chennai hosts two main container-handling facilities – DP World-operated Chennai Container Terminal and PSA International's Chennai International Terminals – with a combined capacity of 3m teu.

During the year, Chennai Container Terminal has deepened its draft to 15.5 m, as it prepares to handle ever-larger containerships calling at its terminal and more port traffic.

The port authority added Chennai port is fully geared to handle all commercial transactions online through an enhanced EDI system.

2016 throughput
1,495,000 teu ▼ 4.5%

Port authority
Chennai Port Trust, 1 Rajaji Salai, Chennai 600 001, Tamil Nadu, India

Website
www.chennaiport.gov.in

Email
info@chennaiport.gov.in

Terminals (Operators)
Chennai Container Terminal (DP World)
Chennai International Terminal (PSA International)

94 | Taipei Taiwan

THROUGHPUT at Taiwan's third-largest container port jumped by more than 10% in 2016.

While still dwarfed by the country's largest port, Kaohsiung, Taipei has managed to draw cargo away from neighbouring Keelung, which, in 2015, handled 1.4m teu but fell back to 1.3m teu in 2016.

Given Taiwan's export-driven economy, it is no surprise that export volumes make up the bulk of Taipei's throughput. Although throughput figures for both inbound (721,000 teu) and outbound (755,000 teu) containers was similar, more than 100,000 teu of the inbound containers were empties.

Taipei Port Container Terminal was founded in 2003 through a build-operate-transfer concession awarded for 50 years. It was jointly developed by Evergreen Marine, Wan Hai and Yang Ming.

Port landlord, Taiwan International Ports Corp, is continuing to develop the facility, and is in the process of rolling out a four-stage project to gradually reclaim new land for the Taipei Port Logistics and Warehouse District.

This project will add new cargo warehousing and dispatch capacity. The first stage, completed in March 2016, reclaimed 48 ha of land from the adjacent waters of the Taiwan Strait.

Furthermore, work on this project will significantly deepen the water depths of Port of Taipei wharves and facilitate the development of the port's free trade zone.

Construction of the stage two retaining wall, which commenced in 2012, formed a total dyke length of 2,285 metres. The dyke was closed in September 2016 and deliveries of soil shipments from the temporary storage yard began the same month. Stage two is expected to expand the total area of reclaimed land to 123 ha.

Taipei Port Container Terminal is a highly automated terminal. Optical character recognition is used in gate operations for monitoring and registering every container and truck, while gate kiosks allow drivers to conduct self-service check-in and check-out.

Automated rail-mounted gantries are monitored and managed from a centralised control centre on the terminal.

2016 throughput
1,477,330 teu ▲ 10.7%

Port authority
Taiwan International Ports Corp, 10 Penglai Road, Gushan District, Kaohsiung City, Taiwan

Website
www.twport.com.tw

Email
public@twport.com.tw

Terminals (Operators)
Berths N3-N6 (Taipei Port Container Terminal)

95 | St Petersburg Russia

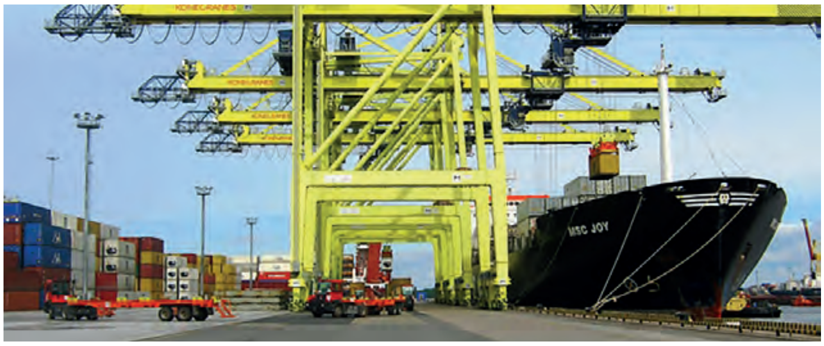
ST PETERSBURG's woes extended into 2016, with volumes tumbling by a further 15% to below 1.5m teu, as ongoing sanctions and a weak Russian economy continued to take their toll.

Global Ports Investments, responsible for the lion's share of container handling at Russia's biggest box hub, saw volumes at all three of its terminals decline year on year.

Petrolesport, the largest, came off worst. Volumes here fell nearly 30%, while First Container Terminal and Moby Dik had another year to forget, as volumes fell by 16.8% and 7.9%, respectively.

A repeat performance at GPI's facilities in 2017 and St Petersburg could fall out of Lloyd's List's top 100 ranking table altogether. However, there are at least some positives to take from 2016.

Whereas GPI's box numbers slumped, volumes at UCL Port's



Container Terminal St Petersburg grew 40%, to a record 557,800 teu, upon the delivery of a number of new service contracts. This trend has prolonged into 2017. At the halfway point in the year, CTSP reported a further 10.7% traffic hike.

For GPI, there are also indications that the worst could be over.

The London-listed company is more optimistic for 2017, amid signs of an improvement in Russia's broader economy.

2016 throughput
1,457,800 teu ▼ 15%

Port authority
Port Authority of St Petersburg, 10 Gapsalskaya St, 198035 St Petersburg, Russia

Website
www.pasp.ru

Email
public@mail.pasp.ru

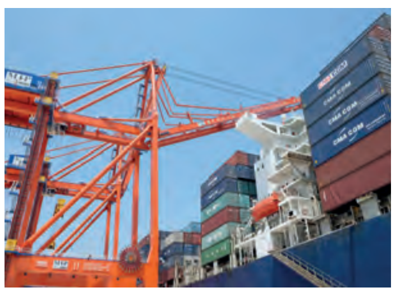
Terminals (Operators)
Moby Dik, Petrolesport & First Container Terminal (Global Ports Investments)
Container Terminal St Petersburg (UCL Port)

96 | Mersin Turkey

DESPITE a dip in 2016 throughput, due in part to political unrest and currency fluctuations, Mersin International Port, marking its 10th anniversary, envisages greater volumes to pass through in future and has been hosting a number of dignitaries this year.

With that in mind, its East Med Hub Project, which started operations in August 2016, allows mega containerships to call due to its 500 m linear berth and 15.8 m maximum depth, giving it a capacity of 2.6m teu.

The port is also looking towards East Med Hub 2, which aims to double the berth



capacity and lead Mersin to the "champion's league" of the international maritime circuit, according to the port.

A private venture between Singapore's PSA International and domestic firm Akfen Holding, Mersin is the leading sea gateway to the east Mediterranean region. It is Turkey's largest multi-purpose port.

Mersin has welcomed many shipping lines this year, including CMA CGM, Hapag-Lloyd, Mediterranean Shipping Co, as well as directors from the United Nations World Food Programme. The latter sees Mersin as the preferred stop for the movement of cargoes to war-torn countries in the Middle East region.

Officials from Turkmenistan and Lıthuania also visited the port in the first quarter of 2017.

2016 throughput
1,453,000 teu ▼ 0.9%

Port authority
MIP, Yenimah 101, Cad 5307, Sok. No: 5 33100, Mersin, Turkey

Website
www.mersinport.com.tr

Email
info@mersinport.com.tr

Terminals (Operators)
Berths 1-9 (PSA and Akfen Holding)

97 | Montreal Canada

CONTAINERISED cargo moved through Montreal was relatively unchanged in 2016 against the previous year, rising by a marginal 0.1% to throughput figures still slightly below 1.5m teu.

The Montreal Port Authority said trade with Asia's emerging markets helped to offset the stagnation of container volume growth from more traditional markets.

It also noted the previous year's box numbers were boosted by the one-off gain stemming from the much-documented labour dispute at ports on the US west coast, leading to a large portion of traffic being diverted to North America's east coast.

However, volumes picked up in the final quarter, in line with the

overall improvement in global box volumes – particularly in November, when the MPA reported record monthly figures at the Canadian port of around 140,000 teu.

November also saw the inception of Montreal's new Viau Container Terminal, opening with an initial capacity of 350,000 teu. At a cost of C$197m ($155m), VCT, a partnership between the Federal Government and private enterprise, will be expanded to a capacity of 600,000 teu. This will bring Montreal's overall capacity to 2.1m teu.

2016 throughput
1,447,566 teu ▲ 0.1%

Port authority
MPA, Port of Montreal Building, 2100 Pierre-Dupuy Ave, Wing 1, Montreal, QC H3C 3R5, Canada

Website
www.port-montreal.com

Email
communications@port-montreal.com

Terminals (Operators)
Bickerdike Terminal (Empire Stevedoring)
Cast Terminal & Racine Terminal (Montreal Gateway Terminals Partnership)
Maisonneuve & Viau Container Terminal (Termont Montreal)

98 | Ashdod Israel

THE Israeli port of Ashdod returns to the top 100 rankings after a one-year absence on the back of a more than respectable 10.4% upswing in container traffic.

Located a little over 50 km east of the Israeli capital, Jerusalem and 40 km south of the country's financial centre,Tel Aviv, Ashdod handled 1.4m teu in 2016 as box numbers were lifted by continuing growth in the country's economy.

The east Mediterranean port also started 2017 on a strong footing, after securing a regular slot on the rotations of both The Alliance and the Ocean Alliance in the latest shake-up of the carrier consortia.

Indeed, Ashdod boasts nearly all the major liner operators on its customer portfolio. Although it does not form part of the 2M's network in the region, it does boast weekly calls from each alliance partner, and remains a central hub for domestic carrier Zim.

Despite having a strong presence on the respective carrier networks, however, Ashdod, like other Israeli ports, is struggling to meet the increasing demand in the country for international trade.

Latest forecasts from the Israel Ports Co, serving as Ashdod's landlord alongside the country's two other major box hubs, Haifa and Eilat, calculate Israel's containerised trade to grow 4.3% incrementally over the next decade.

With existing facilities unable to cope with anticipated demand growth, the IPC was directed by the government to issue tenders for two greenfield terminals, one in Haifa and the other in Ashdod.

Terminal Investment Ltd, the Dutch terminal-operating arm of MSC, held off competition from Eurogate to operate the new 2m teu capacity box facility, which will be capable of handling the largest boxships on the water today when it opens for business in 2021.

2016 throughput
1,443,000 teu ▲ 10.4%

Port authority
Ashdod Port Co., ILASH01 179151

Website
www.AshdodPort.co.il

Email
elibr@ashdodport.co.il

Terminals (Operators)
Quay 1 (Ashdod Port Company Ltd)
Quay 2 (Ashdod Port Company Ltd)
Eitan Terminal (Ashdod Port Company Ltd)

99 | Penang Malaysia

PENANG re-enters the top 100 rankings on the back of securing a number of new liner customers to cope with increasing demand for the Malaysian port's services.

Throughput numbers grew 9.1% year on year to 1.4m teu at the oldest and longest-established port in Malaysia, located along the Straits of Malacca.

The major recent news coming out of Penanag, however, is a change of ownership.

Domestic utilities and infrastructure group MMC Corp took full control of the port in April 2017, buying the remaining 51% stake it did not own from Seaport Terminal, a company linked to local tycoon Tan Sri Syed Mokhtar Al-Bukhary.

Seaport Terminal only took charge of Penang in 2012, when it was put up for sale on a limited open tender basis, in a deal fraught with controversy, amid claims from the state government the port was heavily undervalued.

It is hoped Malaysia-listed MMC, which also has Tanjung Pelepas, Johor Port and Northport (Malaysia) among its port portfolio, will put an end to the long-running dispute over Penang's privatisation.

However, perhaps more important will be revitalising plans to deepen the port's North Channel, allowing the call of larger containerships to safeguard the port's future.

2016 throughput
1,437,120 teu ▲ 9.1%

Port authority
Penang Port Sdn. Bhd., No.1. Pesara King Edward, Georgetown, 10300 Penang, Malaysia

Website
www.penangport.gov.my

Email
info@penangport.com.my

Terminals (Operators)
North Butterworth Container Terminal (Penang Port Sdn. Bhd.)

100 | King Abdullah Saudi Arabia

KING Abdullah only welcomed its first commercial ship to its docks in 2014, yet has already established itself as one of the world's top 100 ports.

Following in the footsteps of Jebel Ali, it too has looked to capitalise on the Gulf region's ever-attractiveness as a maritime hub lying on the main Asia-Europe trunk line.

Its Red Sea location, 150 km north of Jeddah, not only places it in the middle of one of the world's busiest shipping lanes, but also at the heart of Saudi Arabia's industrial and population centres.

Despite its relative infancy, King Abdullah lays claim to some of the most reputable names in the liner business. Maersk Line, Mediterranean Shipping Co and CMA CGM all have services calling the port.

Run by the Ports Development Co, King Abdullah is the kingdom's first box port to be fully owned, developed and operated by the private sector.

Having witnessed exponential year-on-year growth since inception, last year's figures of slightly over 1.4m teu represented a 7.8% uptick on 2015 and just enough to prevent China's Haikou from making its own ranking's debut.

However, King Abdullah

looks set to be a mainstay.

The port has recently completed construction works on its fifth and sixth deepwater berths to swell annual capacity up to 4m teu.

Yet this is just the start. The plan through to 2025 is to keep on building and, come the middle of the next decade, at full build-out, King Abdullah will be able to handle 20m teu per annum along its vast 11 km quay.

2016 throughput
1,402,225 teu ▲ 7.8%

Port authority
Ports Development Co, 46 Entaj St, King Abdullah Economic City 23989, Saudi Arabia

Website
www.kingabdullahport.com.sa/

Email
info@portsdevco.com

Terminals (Operators)
King Abdullah Container Terminal (Ports Development Co)

The top 100 Ports in 2016

	Port	2016 annual throughput (teu)	% +/-
89	Abu Dhabi	1,550,000	▲ 3.0%
87	Alexandria	1,633,600	▼ -3.2%
28	Algeciras	4,761,428	▲ 5.4%
54	Ambarli	2,803,133	▼ -9.3%
14	Antwerp	10,037,341	▲ 4.0%
98	Ashdod	1,443,000	▲ 10.4%
53	Balboa	2,831,893	▼ -8.0%
76	Bandar Abbas	2,130,000	▲ 26.9%
92	Bangkok	1,498,009	▼ -2.6%
74	Barcelona	2,236,960	▲ 14.5%
26	Bremen/ Bremerhaven	5,535,000	▲ 1.0%
5	Busan	19,850,000	▲ 2.0%
79	Callao	2,054,970	▲ 8.1%
67	Cartagena	2,510,093	▼ -3.8%
80	Charleston	1,996,282	▲ 1.2%
93	Chennai	1,495,000	▼ -4.5%
71	Chittagong	2,346,909	▲ 15.9%
25	Colombo	5,734,923	▲ 10.6%
46	Colon	3,258,381	▼ -8.9%
15	Dalian	9,614,000	▲ 1.7%
86	Dammam	1,785,000	▼ -8.7%
81	Dandong	1,990,000	▲ 8.7%
40	Dongguan/Humen	3,640,000	▲ 8.2%
9	Dubai	14,772,000	▼ -5.3%
63	Durban	2,620,000	▼ -5.4%
36	Felixstowe	4,000,000	▲ 0.5%
61	Fuzhou	2,650,000	▲ 9.1%
72	Genoa	2,297,917	▲ 2.5%
56	Gioia Tauro	2,797,000	▲ 9.8%
7	Guangzhou	18,857,700	▲ 7.0%
85	Guayaquil	1,821,654	▲ 3.2%
17	Hamburg	8,910,000	▲ 1.0%
24	Ho Chi Minh City	5,986,747	▲ 3.4%
6	Hong Kong	19,813,000	▼ -1.3%

	Port	2016 annual throughput (teu)	% +/-
75	Houston	2,174,000	▲ 2.0%
58	Incheon	2,679,504	▲ 12.7%
33	Jawaharlal Nehru	4,517,587	▲ 0.8%
37	Jeddah	3,956,856	▼ -5.5%
13	Kaohsiung	10,464,860	▲ 2.0%
77	Karachi	2,100,000	▲ 7.7%
34	Khorfakkan	4,330,200	▲ 4.5%
100	King Abdullah	1,402,225	▲ 7.8%
88	Kingston	1,567,442	▼ -5.2%
55	Kobe	2,801,160	▲ 3.5%
20	Laem Chabang	7,227,431	▲ 6.6%
68	Le Havre	2,510,000	▼ -2.0%
30	Lianyungang	4,703,300	▼ -6.1%
66	London	2,537,000	▲ 14.4%
21	Long Beach	6,775,171	▼ -5.8%
18	Los Angeles	8,856,783	▲ 8.5%
32	Manila	4,523,339	▲ 13.8%
65	Manzanillo	2,580,660	▲ 1.6%
47	Marsaxlokk	3,084,309	▲ 0.7%
62	Melbourne	2,640,000	▲ 2.4%
96	Mersin	1,453,000	▼ -0.9%
97	Montreal	1,447,566	▲ 0.1%
45	Mundra	3,320,285	▲ 14.7%
59	Nagoya	2,658,481	▲ 1.1%
48	Nanjing	3,083,900	▲ 4.9%
22	New York/New Jersey	6,251,953	▼ -1.9%
4	Ningbo-Zhoushan	21,560,000	▲ 4.6%
69	Oakland	2,370,000	▲ 4.1%
83	Osaka	1,952,372	▼ -0.9%
99	Penang	1,437,120	▲ 9.1%
38	Piraeus	3,736,644	▲ 12.2%
11	Port Klang	13,169,577	▲ 10.8%
49	Port Said	3,035,900	▼ -12.3%
8	Qingdao	18,010,000	▲ 2.9%

	Port	2016 annual throughput (teu)	% +/-
78	Quanzhou	2,091,500	▲ 4.6%
50	Rizhao	3,010,000	▲ 7.1%
12	Rotterdam	12,385,168	▲ 1.2%
44	Salalah	3,325,044	▲ 29.4%
42	Santos	3,393,593	▼ -6.9%
39	Savannah	3,644,521	▼ -2.5%
41	Seattle/Tacoma	3,615,752	▲ 2.5%
1	Shanghai	37,133,000	▲ 1.6%
3	Shenzhen	23,979,300	▼ -0.9%
91	Sines	1,513,083	▲ 13.6%
2	Singapore	30,903,600	▼ -0.1%
82	Southampton	1,957,000	▲ 1.2%
95	St Petersburg	1,457,800	▼ -15.0%
70	Sydney	2,363,780	▲ 2.3%
35	Taicang	4,081,000	▲ 8.5%
90	Taichung	1,535,011	▲ 6.1%
94	Taipei	1,477,330	▲ 10.7%
51	Tanger Med	2,964,278	▲ 0.1%
84	Tangshan	1,932,000	▲ 27.2%
19	Tanjung Pelepas	8,280,661	▼ -9.2%
43	Tanjung Perak (Surabaya)	3,354,968	▲ 6.4%
27	Tanjung Priok	5,514,694	▲ 6.0%
10	Tianjin	14,490,000	▲ 2.8%
31	Tokyo	4,700,000	▲ 1.5%
29	Valencia	4,722,000	▲ 2.3%
52	Vancouver	2,929,585	▼ -4.1%
60	Virginia	2,655,705	▲ 4.2%
16	Xiamen	9,613,679	▲ 4.7%
64	Yantai	2,600,000	▲ 6.0%
73	Yeosu Gwangyang	2,249,558	▼ -3.3%
23	Yingkou	6,086,000	▲ 2.8%
57	Yokohama	2,780,628	▼ -0.2%