SHAPING THE FUTURE OF PORTS AND LOGISTICS

A child’s wondrous imagination transforms a single piece of paper into infinite shapes and structures. We look at the port with a similar sense of adventure. Where others see mere infrastructure, we see a living ecosystem that continues to evolve with boundless possibilities. Together, we are shaping the port and supply chain ecosystems of tomorrow.
YEAR IN REVIEW

SOUTHEAST ASIA

Despite a challenging year for the shipping industry, PSA Singapore charted positive growth, surpassing its record of 36.3 million TEUs in 2018 to handle 36.9 million TEUs in 2019.

Partnerships continue to be a hallmark of PSA Singapore’s bid to strengthen its networking capabilities. In 2019, Magenta Singapore Terminal, a joint venture between PSA Singapore and Ocean Network Express (ONE), commenced operations with four mega container berths and an annual handling capacity of 4 million TEUs. CDS-POA Terminal also launched two new berths and CMR CGM-PSA Lion Terminal added a fifth berth.

To augment and enhance smart port operations for the future, PSA is collaborating with the Infocomm Media Development Authority (IMDA) as an early adopter of 5G capabilities in Singapore. Trials have begun at Pasir Panjang Terminals since November 2019.

In 2019, PSA and SATS signed a Memorandum of Understanding to provide cargo owners and logistics service providers with seamless sea-air connectivity and to promote Singapore as a key multimodal transport hub. PSA Cargo Solutions Southeast Asia has implemented bespoke cargo solutions for cargo owners, helping them to achieve greater supply chain efficiency and optimality.

PSA Singapore unveiled a new chapter with its “Towards Tuas” milestone event on 3 October 2019. As part of the program, a torch relay commemorated the company’s achievements built upon the efforts of generations of staff. The development of Tuas Port is well on track, with the first two berths set to commence operations by the end of 2021.

Envisioned as the world’s largest fully automated container terminal, Tuas Port will be seamlessly integrated with a wider supply chain ecosystem. To develop this ecosystem, government agencies and potential cargo solutions partners have come together in four key verticals: Energy & Chemicals, Advanced Manufacturing, Cold Chain and E-commerce; offering solutions such as forward hubbing and inventory management, among others. The plans for Tuas Port also include the co-location of synergistic industries such as Regional Distribution Centres and Warehousing.

In other parts of Southeast Asia, PSA Thailand inked a partnership with SCG Logistics to co-develop and operate Thai Connectivity Terminal, formerly known as Thai Prosperity Terminal. The joint venture company will serve as a springboard to pursue supply chain-related opportunities across the region, with Thailand as a major focus.

In Indonesia, New Priok Container Terminal One (NPCT1) has rolled out ECON, an e-documentation application which allows customers to process container collection and delivery, and track cargo flow via an online platform. This has allowed our customers to scale up operations without incurring additional manpower, boosting customer satisfaction.

NPCT1 is also collaborating with PSA Cargo Solutions SEA and logistics partner to facilitate the transport of chemical resins from overseas suppliers to Indonesia via an agency model. PSA Cargo Solutions SEA will handle the logistics chain from port to destination with the aid of CALISTRA.

In Vietnam, SIP-PSA International Port continued to build its agri-food business with the aim of being a premier bulk-handling terminal.

NORTH EAST ASIA

In a concerted push towards better supply chain orchestration, through leveraging our terminal and railway networks, PSA China Supply Chain Solutions has begun providing end-to- end services for Beneficial Cargo Owners and Non-Vessel Operating Common Carriers, with service networks set up in seven locations across China.

In June, China United International Railway Container Co. (CIRC) officially started operations, adding 800,000 TEUs of container capacity and 2 million tonnes of handling bulk cargo capacity. CIRC’s Xi’an terminal has also installed k Automated Rail-Mounted Gantry Cranes (RMGCS), making it the first railway container terminal to deploy this technology for train stevedoring in China.

Guangzhou Container Terminal has developed into a sea-rail intermodal hub between South Korea and Chongqing, with the terminal achieving record volumes. It also received Guangzhou Port Group’s Best Safety Terminal Award.

LYG-PSA Container Terminal continued to grow, both in container and general cargo volumes. A key highlight was its breakthrough in executing rail-sea intermodal solutions from Taian and Zhangzhou to Lianyungang, which was cemented in a strategic partnership agreement with China Railway Container Transport Company Headquarters in August 2019.

On the digital front, Bhu Gulf PSA Portnet began operating GLOBAL PORTNET®, offering digital services for Vessel and Container Import documentation to the port community.

In Fujian, PSA signed a joint venture agreement with the Fujian Provincial Communication Transportation Group to develop an integrated supply chain platform that leverages CALISTRA and GLOBAL PORTNET®, as well as performs core functions such as freight booking, trade financing and data analytics.

In another key highlight of 2019, PSA also inked an agreement with Chongqing’s Port and Logistic Bureau to exchange digital status for container events along the International Land-Sea Trade Corridor (ILSTC) as containers move through Chongqing, Qinzhou and Singapore. This further enhances visibility among the ILSTC and reduces cargo transit time along the Singapore-Chongqing route.

In November, PSA signed a strategic framework agreement with Tianjin Port Group on collaborations in supply chain orchestration, advanced port technologies as well as people development. This partnership will strengthen cooperation in the transformation of port business and creation of new horizons.

Over in South Korea, Pusan Newport International Terminal continued its automation push with the conversion of more RMGCS to 28 automated RMGCSs to date. Meanwhile, PSA Hyundai Pusan Newport Port has enhanced its terminal capability by converting its Container Freight Station (CFS) into an empty stacking yard. The terminal can also now accommodate larger vessels after increasing the height of its quay cranes.

MIDDLE EAST SOUTH ASIA

PSA India held trade meets in Kanpur and Hyderabad to reach out to cargo owners, freight forwarders, shipping lines and trade associations in an effort to understand their business needs and to serve them better.

With modern equipment and a young committed team, PSA Mumbai has raised the industry productivity benchmarks in India by achieving vessel productivity of more than 200 moves per hour for four vessels.

PSA Mumbai also launched its regular block train services to key inland container depots in Thughlabad and Tumb, allowing for faster transit from port to hinterland in North and Central India.

PSA Chennai’s 10th anniversary was made even more significant, as the terminal clinched the ‘Container Terminal of the Year’ award for the fourth time and set a new vessel productivity record for South and East India in November 2019.

Additionally, PSA Kolkata received the ‘Smart Container Terminal Award’ for the second time at the Smart Logistics Award 2019. In October 2019, PSA Kolkata achieved a record monthly volume and renewed its equipment with a larger and newer fleet.

In line with the India government’s promotion of coastal shipping to reduce logistics cost, PSA SEALCO added a coastal domestic service by TCI Seaways in October 2019, moving cargo from north-western India to the south-eastern region.

For Saudi Global Ports (SGP), 2019 marked a year of several operational milestones. It welcomed the largest container vessel to call at Saudi Arabia. The terminal hit its highest monthly throughput in September 2019. The terminal also clocked its highest vessel rate and berth productivity during the year.
Adding value to customers, SGP also initiated a new service of container holding facilities to assist shipping lines in handling the delivery of import containers that have dwelled in the yard for more than 30 days, by waiving the need for consignees to deposit a container bond.


EUROPE & THE MEDITERRANEAN

Across Europe and the Mediterranean, the Next Mode of Transport (NMT) project launched in CALISTRA has allowed cargo owners to track the status of their containers in the terminal and plan their next mode of transport.

In Belgium, MSC PSA European Terminal (MPET) achieved several operational milestones. The terminal saw an increase in Gross Crane Rate in 2019 and set a day productivity record. MPET also achieved the record of ‘largest call’ ever in the Port of Antwerp, with the handling of the MSC Aurora during Christmas when 14,500 TEUs were loaded and unloaded during a single vessel visit.

Not only was the productivity streak with the completion of a project to extend the quay crane length, as well as the addition of two dualHoist cranes with the highest lifting capacity in Belgium. Furthermore, expansion is expected to be completed by 2023.

Altogether, the Antwerp terminals ended 2019 with a record volume of 11.05 million TEUs.

PSA Zeelbrugge has been chosen as the port of call for the newly established space sharing agreement between two shipping companies, DFDS and CLdN, which commenced in January 2020. This appointment is expected to triple the container volume at Gothenburg bound for the port of Zeelbrugge.

In Turkey, Mersin International Port took various initiatives to improve operational performance through digital transformation. Using data analytics, the port explored ways to use historical information to make predictions on container activity and improve planning quality. The adoption of a cloud-based email system, as well as customised apps and workflow automation tools, has helped the port protect its assets and improve overall productivity.

PSA Sines in Portugal continued on its digital transformation journey by converting manual machines to automated ones. It is also tapping the potential of data analytics to enhance equipment reliability and productivity, with possible applications in maintenance scheduling and wire rope replacement. The terminal is also developing the Alqueva Data Project, a cloud-based data repository to assist with decision-making.

In Italy, PSA VoltriPra has been rebranded as PSA Genova Pra (PSA GP) to reflect its strategic location within the port of Genoa and its firm commitment to working with the local community in Pra. In recent years, the terminal has invested €250 million ($375 million) in upgrading and future-proofing its facilities and equipment.

The newly established rail connection between PSA GP and Basel, Switzerland, is the first rail intermodal activity of its kind by an Italian container terminal. The service aims to handle volumes generally flowing through the Northern Europe Port Range but that are geographically closer to the Mediterranean. In 2019, PSA Venice pulled ahead among container terminals in Venice in terms of overall throughput and laden containers.

In our first major foray into Eastern Europe, PSA entered into an agreement in May 2019 with the Polish Development Fund and IFM Global Infrastructure Fund to jointly acquire DCT Gdańsk (DCT), the fastest growing container port in Europe. During the year, DCT continued to strengthen its Baltic hub position, especially enhancing feeder connections with the Scandinavian market. It also received 3 new super post-Panamax ship-to-shore cranes.

Following the previous introduction of a vehicle booking system to manage truck inflow at the terminal, DCT also embarked on a Gate Automation Project to fully automate the rail and road gate processes using Optical Character Recognition cameras and off-service kiosks.

In November 2019, DCT saw its first direct transcontinental train from Xi’an, China, with the cargo delivered onwards to Scandinavia. It finished the year by becoming the first Baltic Sea terminal to cross the 2 million TEU mark, handling 2.07 million TEUs.

THE AMERICAS

PSA made its first entry into the United States with the acquisition of Penin Terminals in September 2019. Located on the Delaware River, the terminal is one of the best equipped, privately-owned multipurpose marine terminals on the country’s Eastern Coast. PSA also extended its footprint in Canada with the acquisition of Halferty Container Terminal, now rebranded PSA Halifax.

Elsewhere in Canada, Ashcroft Terminal marked a successful first year out of a three-year expansion project valued at US$28 million ($539 million). All components are progressing on track and the expansion is expected to be completed in the third quarter of 2021.

In Argentina, Exolgan Container Terminal added 500 ground slots to its container yard to increase capacity by 70,000 TEUs per year. The terminal also added four new hybrid rubber-tyred gantry cranes to its existing fleet, to boost yard operations. The construction of Depósito Fiscal Integrado (DFI), an external 8,000 square-meter CFS export facility, has been completed and will be inaugurated in 2023. One of DFI’s main advantages is its direct connection to Exolgan Container Terminal.

In Panama, the logistics corridor connecting PSA Panama to the Centennial Bridge and the main highway network has commenced operations, serving as a key asset for transshipment from the Pacific Coast to the Atlantic Coast. The terminal has also completed its Phase II deepsea berths, handling over 1 million TEUs in its first full year of operations with the new berths.

Over in Colombia, Sociedad Puerto Industrial Agaudulce (SPIA) welcomed the largest vessel to ever call at a Colombian Port, with a capacity of over 14,400 TEUs. Infrastructure development is also underway, including the expansion of a CFS and inspection zone, additional yard space and coastal protection areas. This expansion will allow SPIA to continue building a diverse portfolio of value-adding land services. In the digital realm, SPIA has also invested in solutions to enhance the security of cargo transactions conducted on its portal.

PSA MARINE

PSA Marine deployed its first dual-fuel LNG harbour tug – PSA Aspen – in August 2019. The second dual-fuel LNG harbour tug, PSA Oak, will be joining the fleet in 2020. These are part of PSA Marine’s commitment towards a green and sustainable environment.

In addition, PSA Marine’s vision of a fully autonomous harbour tug took a closer step to reality with the AITelltug project, a collaboration with technology group Wartsila. After successfully installing the first-of-its-kind Dynamic Positioning system onboard the harbour tug PSA Polaris, the project is now being trialled under real-world conditions.
UNWRAPPING INNOVATION AT PSA

Behind every “lightbulb moment” is an untold story of internal challenges, fueled by commitment and perseverance. At PSA, we aim to support and unleash the spirit of innovation among our people, pushing boundaries and creating new advantages for our customers and stakeholders.

FISHING FOR INNOVATION

An innovative organisation is not made through one person’s genius, but achieved through a culture of collaboration – where every idea is considered and diverse perspectives are heard and valued for the good of the Group. Building on our culture of Fish and Fish+ principles, PSA developed the CaiFish Innovation workshop to add to our suite of in-house programs, with the aim of creating a common language for innovation across the Group. The workshop equips our people with various tools and methodologies that nurture a spirit of innovation among individuals and teams. It is supplemented with the Alongside Playbook, which shares tips and tools on how to work collaboratively or individually with a mindset of innovation.

CATCHING THE FIRE

Despite being geographically separate, we continue to find ways to come together as a global team to celebrate and share our journeys in innovation. On April 2019, the 7th Group Innovation Webcast with the theme of “Take Action, Embrace Enablers, Create the Future” was held in Singapore and live-streamed to almost 900 participants from PSA offices around the world.

ICAN, an online platform to share ideas, was developed to enable a vibrant exchange of knowledge across PSA’s global business units. Since its launch in 2016, the platform has been enthusiastically adopted by PSA employees across the Group and received thousands of staff entries on a broad range of topics. Feasible submissions may be adopted, developed or implemented within PSA.

EMBRACING INNOVATION IN GOAL-SETTING

To spur creative and entrepreneurial leadership, we have worked towards incorporating the topic of innovation into our staff development process. In addition to a host of other benchmarks, staff will now be asked to discuss their contributions towards innovation in the past year with their managers.

CELEBRATING TRIALBLAZERS WITH KUA HONG PAK INNOVATION AWARDS

To reward the creativity and ingenuity of PSA innovators, the Kua Hong Pak Innovation Awards (KHPIA) was established. Previously known as the Group Innovation Awards, the award has been renamed in honour of Mr. Kua Hong Pak, one of PSA International’s longest-serving board directors. Since 2013, a total of 1,169 entries from PSA’s various business units have been received. The KHPIA winners play a key role in the spread of innovations across the Group as they share with other PSA business units their applicable winning contributions.

INVESTING IN POTENTIAL

Transforming ideas into reality is no mere flight of fancy: it takes commitment, resources and constant trial and error. Starting from 2013, PSA has encouraged and supported innovative ideas by dedicating an annual US$1 million Group Innovation Fund to testbed new solutions and applications. The Fund also spices business units to adopt solutions that have been successfully implemented elsewhere. 2019 saw an improved rate of adoption for these innovation projects by the PSA family of terminals.

BUILDING OUR INNOVATIVE CAPABILITIES

Over the years, PSA has built up its portfolio of Intellectual Properties, including Patent and Registered Design Registrations applications. The portfolio showcases the expertise, specialisation and technological capacity our employees have demonstrated, and aids in our recruitment and retention of talents. As of 2019, PSA owns seven registered designs and 12 patents.

LEVERAGING STARTUP THINKING

The best ideas rarely happen in a vacuum. Rather, they are the outcome of outreach and collaborations with other industry players. PSA unboxed continues on its mission to support PSA’s businesses by harnessing technology and innovation within the startup ecosystem. In 2019, we saw an increase in strategic engagements across a wider range of applications, from cybersecurity for port equipment to AI for digital trade execution and blockchain for document authentication.

To allow business units within the Group to work more effectively with startups through quick innovation cycles, PSA unboxed has rolled out a new scheme called Developmental Sourcing of Emerging Technologies (DESET). We also launched the ‘Strive Horizon Program’ to match PSA talents to appropriate startups for short-term job assignments, importing startup thinking into PSA while providing valuable corporate expertise to host startups.

On the investment front, PSA unboxed’s portfolio company Haulio has crossed significant milestones in their scale-up journey, securing ComfortDelGro Capital Partners as strategic investors during its pre-Series A funding round. Haulio has plans to expand overseas, capitalising on PSA’s portfolio to scale its business in the region.

SMART TECHNOLOGIES FOR SMART PORTS

The PSA Group was among the first port operators to adopt information technology, operations research, automation, and data analytics in its terminal business and operations. The Group continually updates its technology, migrates to more advanced platforms and invests in the development of new automation facilities. Today, it boasts class-leading infrastructure and the latest port innovations such as a zero-direct-emission, fully-automated electric yard crane system. Automated guided vehicles, fast battery charging and autonomous prime movers are also being tested at PSA’s Living Lab at Pasir Panjang Terminal.

The PSA Group’s key information technology systems are CITIDSP, GTOS (Global Terminal Operating System) and GLOBAL PORTNET®.

GTOS® is PSA’s proprietary terminal management system, first developed in 1988 and fine-tuned through the decades to handle the scale and complexity of container terminals operations in PSA Singapore.

GTOS is another in-house proprietary full-suite solution with applications spanning the entire range of terminal operations, and is used in some of our overseas terminals. It comes equipped with adaptive and pre-emptive features that allow terminals to be operated efficiently and optimally.

GLOBAL PORTNET® is an internet-based collaborative e-business paperless platform serving the port ecosystem, to help manage their complex and integrative network of information. It coordinates efficient workflows between the port, shipping lines, government agencies and supply chain community, reducing turnaround time, delivering higher value and enhancing inter-operability among port users. First developed in Singapore, GLOBAL PORTNET® now supports port ecosystems in other countries.

DIGITALISATION AND THE INTERNET OF LOGISTICS

Beyond the port, PSA recognises the opportunities and key facilitation role that we can play in creating new value for supply chain stakeholders by leveraging digital technologies. We established the Group Cargo Solutions unit in 2018 to offer complementary port solutions to supply chain stakeholders, and launched an open supply chain platform CALISTAR® (Cargo Logistics, Inventory Streamlining & Trade Aggregation) to help shippers better manage the physical movement of goods, trade financing and compliance. In 2019, CALISTAR® has been integrated onto platforms like Singapore’s Networked Trade Platform and other global ocean freight platforms.

In collaboration with CALISTAR® developer GI+S, several proof-of-concepts (POCs) were conducted in 2019 for petrochemical and e-commerce shippers on CALISTAR®. Other new features introduced in 2019 include CALISTAR® Intelligent Agent (IAI) and CALISTAR® Finance.

CALISTAR® IA is a trade advisory tool that unlocks the potential of artificial intelligence and the insights it offers on HS code classifications, with features like route options, free trade agreements, and other value-added services in the pipeline.

CALISTAR® Finance is designed to facilitate cross-border payments and trade finance services with multiple partners from the Fintech industry and banks. In 2019, PSA also launched the Next Mode of Transport (NMoT) function on CALISTAR®, giving cargo owners visibility on the status of their containers in the terminal, and enabling better planning.

Moving forward, PSA will continue to propel supply chain excellence and promote collaboration across the industry, enhancing our business value. Through CALISTAR® and other signature solutions, PSA aims to play an integral part in the Internet of Logistics (IoL) and the future of ports and supply chain logistics. When fully realised, IoI, will drive shipment data and process transparency, enabling cargo owners to easily access information regarding their shipment across multiple nodes of the supply chain, transcending the current limits of logistics.