

SINGAPORE: E-COMMERCE

GATEWAY TO ASEAN AND SOUTHWEST PACIFIC



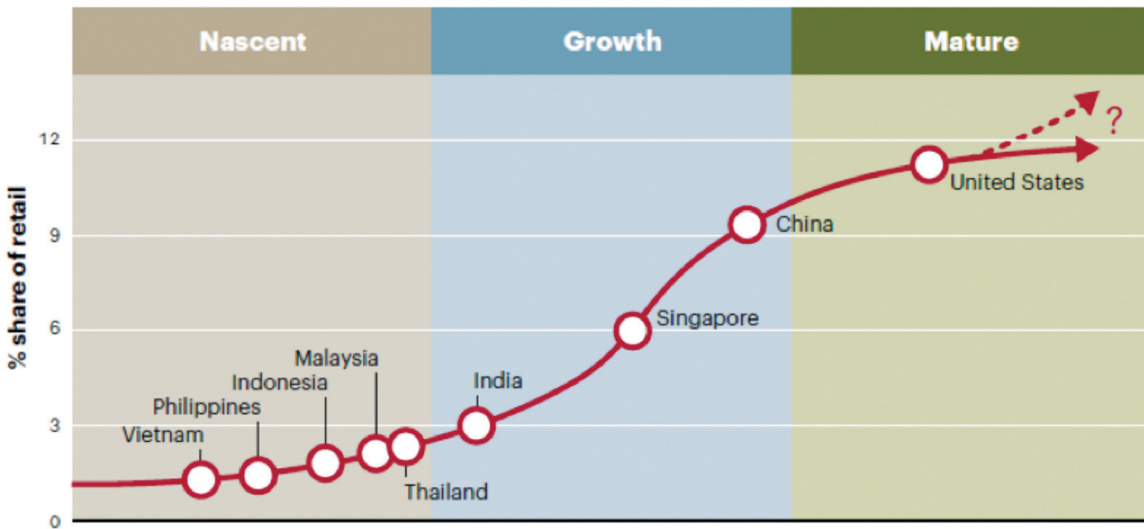


E-COMMERCE IN ASEAN: **THE OPPORTUNITY**

There is no better time than the present to drive ASEAN's e-commerce market. Based on a report by Google and Temasek Holdings, Southeast Asia's (SEA) digital market could exceed US\$200 billion by 2025. With 630 million people, a growing middle class and rising internet penetration, SEA is often considered to be the next gold rush for e-commerce. Singapore and Malaysia generate one-third of total online retail sales in the region, even though they only account for 8% of the region's population.

If ASEAN were a single economy, it would rank third in population size with over 600 million people and seventh in GDP output with \$2.5 trillion recorded in 2016. Yet, in most ASEAN nations (with the exception of Singapore), e-commerce accounts for a small slice of total retail which presents many opportunities for growth.

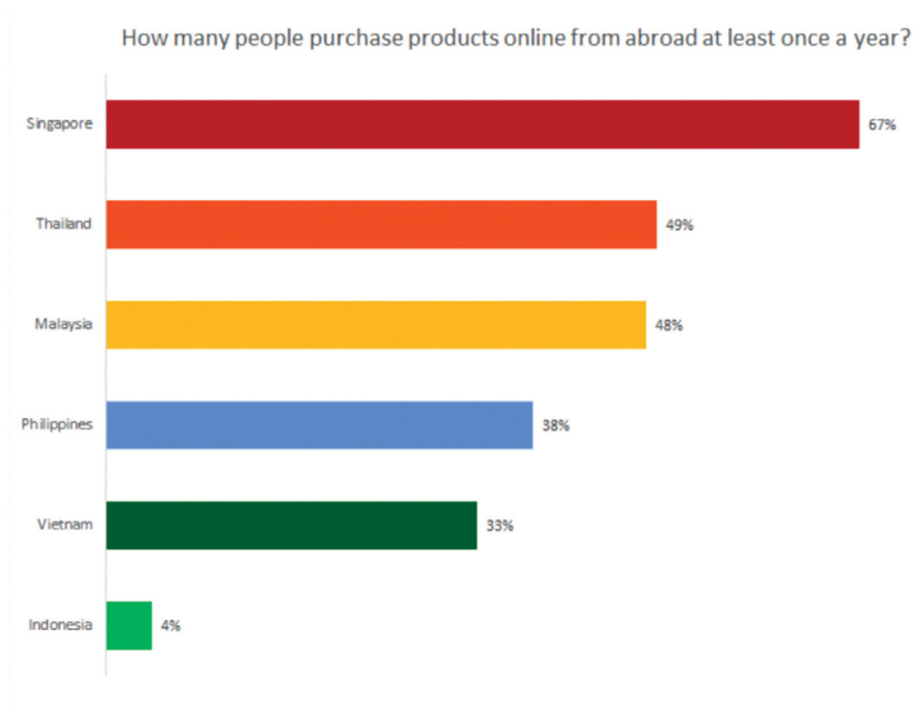
Evolution of e-commerce % of total retail in select countries



Sources: Euromonitor, Planet Retail, eMarketer, iResearch, Technavio; A.T. Kearney analysis

Singaporeans are the most active users in the region purchasing products online from overseas—two out of three people do it once a year. The absence of Goods and Services Tax on imported goods of S\$400 or less is highly attractive to Singaporeans. They are followed by Thais and Malaysians of which nearly every second person buys something online from foreign countries.

The themes for ASEAN this year are innovation and resilience. As ASEAN chair for 2018, Singapore holds a critical mandate in setting the benchmark for progress in digital regulation and the growth of millions of SMEs in the region. In Southeast Asia, the potential of e-commerce is enormous and, therefore, governments are taking a cautious approach to taxation and other issues that could diminish the momentum of e-commerce and impact SMEs in the region.



Source: The Consumer Barometer Survey 2014/15. Base: internet users who have purchased online, n=14174.

E-COMMERCE IN ASEAN: CROSS BORDER CHALLENGES

Payments

Security and reliability of payment is a major concern for most businesses and consumers in Indonesia, Philippines, Thailand and Vietnam. Cash On Delivery (COD) is still the preferred payment method in most of these countries. In Indonesia, as an example, credit card penetration is less than 15%. In some countries, COD can be anywhere from 50–70% total orders shipped. In Malaysia, cross-border payments are getting more acceptances and the overall payment landscape is competitive. On the other hand, Singapore has the most mature eCommerce payment infrastructures in Southeast Asia. Singapore's various payment systems are reliable and the overall credit card penetration is very high, which is attractive as a target market for cross-border e-commerce. Brands and retailers entering the Singapore e-commerce market can expect a mature online shopper with high trust in online payment methods.

Logistics

Southeast Asia has unique last mile delivery challenges. The cost and capability of logistics providers in Malaysia and Thailand are highly ranked, but there are last mile issues in the country that need to be addressed. In Philippines and Vietnam, there are networks of small logistics players in metro regions, but shipping to the rural areas can be challenging. Indonesia comprises of more than 15,000 islands with only 53% of population living in cities, presenting massive logistical issues.

Customs and Border Administration

Amongst most countries in ASEAN, custom transparency, and inconsistent custom procedures remain to be areas for concerns. Today, import procedures, VAT and duties differ across countries and for different product types. Singapore stands out in the region with strong clarity and consistency of the customs and borders process. Customs and tax procedures are straightforward and corruption is at a global record low.

Foreign Market Access

In Indonesia, Philippines, Thailand and Vietnam, challenges remain for smaller international enterprises outside the countries to sell their products and services there, since there is a lack of regulations for e-commerce and non-tariff barriers still apply over a broad range of products. Malaysia has a large number of free trade agreements that allow foreign business access, but there are still some minor hurdles when accessing the market. Only the Singapore government recognises the value of lowering barriers to trade and actively pursues an agenda of open trade borders.

E-commerce Regulatory Environment

In Philippines and Vietnam, dedicated e-commerce offices and agencies have been created to help reshape the regulatory environment. One example is an e-commerce trustmark which is a logo displayed on the website to indicate that the business has been shown to be trustworthy by the issuing organisation (such as TRUSTe and VeriSign). Although intended as a way for shoppers to be reassured that websites are securely processing information, there is still a way to go before consumers are aware and look out for these trustmarks. Furthermore, the trustmark that e-commerce companies can acquire does not appear to be trusted by consumers in some of the developing countries in ASEAN. Indonesia and Thailand lack chapters supporting e-commerce and law supporting businesses going cross-border.

Regulatory Environment for Cross-border

E-commerce in Malaysia is relatively strong but enforcement of existing regulations could be improved. Singapore, on the other hand, has taken the lead across the region in adopting many forward-looking regulations that address e-commerce.



SINGAPORE INDUSTRY INITIATIVES FOR E-COMMERCE

As Singapore prepares to transform itself into a global e-commerce hub in the face of strong global competition, an array of initiatives and grants have been rolled out by various government agencies in support of e-commerce investment and developments in Singapore.

Retail Industry Transformation Map (ITM)

Contributing 1.4% to Singapore's Gross Domestic Product (GDP) with \$33 billion in operating receipts and employing 170,000 employees nationwide, retail is a key sector in Singapore's economy.

Factors that affect the sector include new digital technologies, a growing e-commerce market and overseas market opportunities. The rapidly growing Internet Retailing market is likely to become a key sales channel for the sector. Therefore, as the environment becomes increasingly competitive, retailers need to adapt to the evolving landscape by innovating and upskilling their employees. This will enable them to face new challenges and leverage the growth opportunities, both locally and overseas.

The 2020 vision of the Retail ITM is for Singapore to have a vibrant retail industry. This comprises a mix of highly productive omni-channel retailers and local brand owners with global footprints, all supported by a professional and skilled workforce. With the Retail ITM, retailers can look to strengthen their enterprise capabilities to increase their productivity, and make their presence felt in the global arena with a more vibrant sector supported by a skilled workforce.

Under the Economic Development Board's (EDB) Industry 21 blueprint, the Info-communications Media Development Authority (IMDA) has teamed up with EDB and the industry to define and adopt common IT standards to enhance seamless B2B documents exchange among companies for the electronic cluster. The plan to accelerate the use of e-commerce comprises of five main thrusts, namely to develop an internationally linked e-commerce infrastructure, jump-start Singapore as an e-commerce hub, encourage its strategic usage by businesses, promote its usage by the public, and to harmonise cross-border e-commerce laws and policies.

Start-ups Community

For start-ups looking to enter the e-commerce landscape, the Action Community for Entrepreneurship (ACE) is a support platform designed to provide a holistic package to further nurture a vibrant & connected start-up ecosystem.

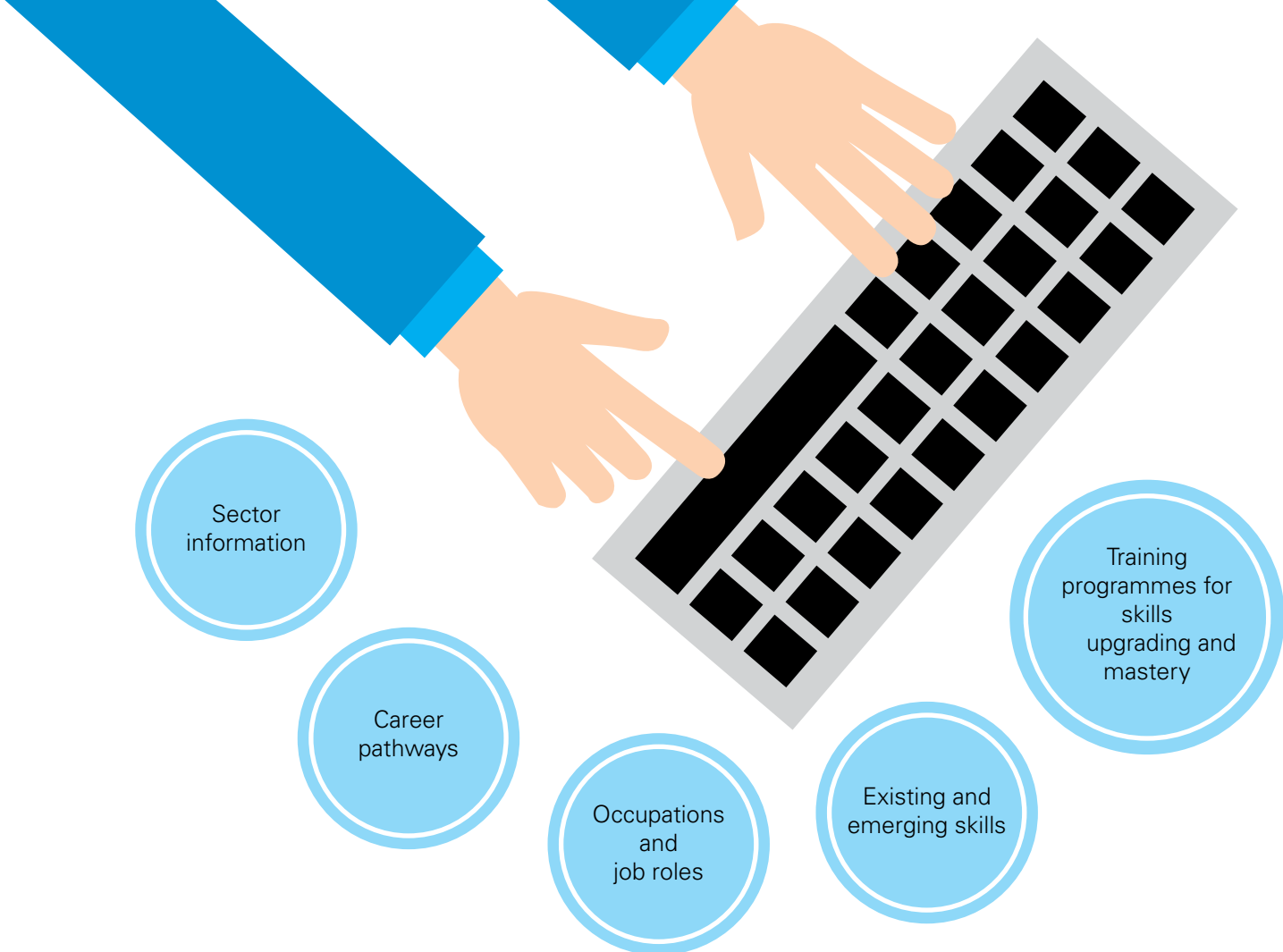
This collaboration between Enterprise Singapore (formerly known as International Enterprise Singapore and Spring Singapore respectively) and JTC Corporation (JTC) provides co-innovation programmes between corporates and start-ups, and favourable tax regimes. E-commerce start-ups are also able to tap on the various support schemes provided by ACE ranging from corporate innovation to peer group mentoring as well as access to international markets and communities championing the global startup scene.

Under Enterprise Singapore, the government has leverage shared platforms to enable small and medium-sized enterprises (SMEs) to pool their resources for more efficient operations – with one of it being a shared e-commerce platform. This e-commerce platform will benefit SMEs looking to enter e-commerce but are unable to afford the initial capital costs. The platform, designed to get them into the online marketplace, will offer support such as integrated warehouse functions, inventory management solutions and order-fulfilment capabilities, allowing the streamlining of the logistics chain, increasing efficiency by up to 45 percent.

ezyCommerce, a partnership between Enterprise Singapore and Singapore Post (SingPost), offers SMEs a subsidised rate for use of its one-stop fulfilment service. Under the Collaborative Industry Projects (CIP) initiative, SMEs including those that deal with e-commerce, will be eligible for up to 70% funding support for qualifying development and/or adoption costs. Software-and equipment-related project cost will be supported at up to 50%. This helps automate many of the fulfilment processes, eliminating a majority of the manual labour that is traditionally needed for an order fulfilment, essentially taking care of deliveries from the warehouse to the last mile delivery

With a majority of venture funds raised by Internet companies being invested in Singapore and recent years' spikes in e-commerce retailing, JTC's LaunchPad @ one-north acts as a platform to further capitalise on this trend. It offers a conducive environment and nurturing ecosystem for e-commerce start-ups, with close proximity to multi-disciplinary R&D environment which includes knowledge-based companies, institutes of higher learning and research institutes that are at the forefront of innovation.





National Trade Platform (NTP)

The Inland Revenue Authority of Singapore (IRAS) has also rolled out its plans to support e-commerce investments in Singapore. The National Trade Platform (NTP) is an advanced trade information management platform to support companies in the trade and logistics industry and adjacent sectors such as trade finance, where importers and exporters would have access to all government-related and commercial trade services. This mainly involves the electronic bill of lading and sea freight e-commerce.

The NTP will help businesses boost productivity by streamlining work processes, reducing inefficiencies of manual trade document exchange, and leveraging data analytics for insights from their trade data, so as to be well-equipped for the digital economy. It also enhances the competitiveness of local SMEs in the field of e-commerce with regards to international trade and promotes Singapore as a strategic destination of choice for traders, shippers, logistics and trade finance companies around the globe.

Ancillary to this, electronic services provider CrimsonLogic has launched its Global eTrade Services (GeTS) to help businesses meet regulatory and compliance requirements across borders more quickly and efficiently, facilitating the electronic exchange of trade documents between traders and foreign government agencies, enabling businesses to clear customs with greater speed and ease.

Talent Development

Support for e-commerce in Singapore can also come in the form of skills upgrading for individuals working in this field and other related sectors, enabling them to adapt their skills to become more competent, increasing productivity overall. Mainly under the large umbrella of SkillsFuture, this collaboration between Workforce Singapore (WSG) and SkillsFuture Singapore (SSG) (formerly Workforce Development Agency) offers a wide range of skills for available for individuals to tap on and increase their competency.

Skills Framework for Retail

The Skills Framework is a SkillsFuture initiative developed for the Singapore workforce to promote skills mastery and lifelong learning, and is an integral component of the Retail Industry Manpower Plan.

Jointly developed by SkillsFuture Singapore (SSG), WSG, and the Enterprise Singapore, together with industry associations, training providers, organisations and unions, the Skills Framework for Retail provides useful information on:

- Sector information;
- Career pathways;
- Occupations and job roles;
- Existing and emerging skills; and
- Training programmes for skills upgrading and mastery.

A special focus training on e-Commerce and Omni-channel is also a part of the Skills Framework for Retail.

SINGAPORE – THE AIRFREIGHT GATEWAY FOR E-COMMERCE DISTRIBUTION TO ASEAN AND SOUTHWEST PACIFIC

Singapore's key geographic location has made it an ideal logistics hub for goods moving through Southeast Asia. Singapore Changi Airport sees more air cargo than any other airport in Southeast Asia.

Singapore Changi Airport is one of the world's busiest airports for international air cargo, handling over 2.13 million tonnes (+7.9%) of airfreight throughput in 2017. In terms of international cargo throughput, Changi Airport is ranked 7th in the world. Changi Airport is the largest air cargo hub in Southeast Asia and Southwest Pacific by international airfreight.

Changi Airfreight Centre (CAC) and Airport Logistics Park of Singapore (ALPS)

The Changi Airfreight Centre (CAC) and the Airport Logistics Park of Singapore (ALPS) spanning over 70 hectares is a 24 hour Free Trade Zone where transshipment cargo can be broken down and reconsolidated with minimal customs formalities. Within the CAC, seven airfreight terminals with a combined handling capacity of three million tonnes are equipped with state-of-the-art material handling system to ensure the efficient handling of cargo. One of Changi Airport's key advantages is its strong connectivity to major international cargo markets. Changi Airport is amongst the best connected airport with more than 7,400 weekly flights serving about 400 city links in about 100 countries, including 24 freighter airlines serving more than 50 destinations. The growth of Changi Airport's passenger flights also help strengthen Changi as a cargo hub in the long term.

The strong growth of e-commerce in Asia is driven by the exponential development of Chinese companies – exporting orders out of China. In 2017, it was a record-breaking year for its market, with online retail sales surpassing US\$1.1 trillion. The China market alone accounts for nearly half of the worldwide retail e-commerce sales with Alibaba Group, JD.Com and Tencent Holdings being the biggest players. Changi Airport is well connected to China with 35 city links, with Singapore Airlines operating to 26 Chinese destinations. One of the carrier's focus verticals is e-commerce.

Last year, SATS, a Singapore airfreight terminal operator, unveiled a S\$21 million eCommerce AirHub. The 6,000 sqm airhub houses new state-of-the-art innovations and technology aimed to improve productivity. There is a fully automated mail sortation system that increases the mailbag processing capacity of SATS to more than 1,800 an hour – up from 500 previously. With a direct

integration with SingPost's airmail consignment operations and the facility's locality within the free trade zone on the airside, mail sortation operation is streamlined to eliminate the need for mailbags to be transported to and from the hub. The combination of these factors has enabled faster mailbag processing – turnaround time reduces by 50 per cent from six to three hours. This allows international eCommerce mail to connect to an earlier flight for faster delivery.

SingPost itself also launched its Regional eCommerce Logistics Hub located at the Tampines Logistics Park. The S\$182 million facility is SingPost's largest eCommerce logistics investment in Singapore to date. It houses two warehousing floors, 150 simultaneous loading bays as well as an office block. The ground floor of the building contains a fully automated parcel sorting facility with a capacity of up to 100,000 parcels a day, end-to-end sorting, shipping and returns management capabilities. All together, these functions enable quicker order fulfilment.

DHL Express Singapore has also launched a \$140 million DHL South Asia Hub, which is a 24-hour express hub facility located within CAC. The 23,600 sqm facility is outfitted with the industry's first fully automated express parcel sorting and processing system in South Asia, and is set to boost its operational capacity and efficiency - offering speedier deliveries for customers. Besides allowing it to handle the growing shipment volumes, some export shipments can now be sent directly to the hub, bypassing the service center. This streamlines its overall operations by reducing travel and shipment handling time. With the hub located within the CAC, the favourable location also improves the flow of goods between the aircraft and facility, allowing consignments to be shipped or transshipped within an hour.

FedEx Express, a subsidiary of FedEx Corp, operates a 282,700-square-foot integrated facility at the CAC. The FedEx Singapore Regional Hub operating facility is the second largest operation facility in the Asia Pacific region (after the Asia Pacific hub located in Guangzhou, southern China), will integrate delivery, pick-up and air operations under one roof. The facility has a five-belt sort system with capacity to sort up to 9,000 packages per hour and house over 250 delivery vans. It will also include airside infrastructure such as two new aircraft parking bays as well as a special on-site facilitation by the Immigration and Checkpoints Authority and Singapore Customs for efficient cargo clearance.

Singapore Airlines Cargo, a division within Singapore Airlines, operates a dedicated freighter fleet and also manages the cargo capacity on passenger flights operated by Singapore Airlines, Scoot, SilkAir and NokScoot. Singapore Airlines Cargo offers more than 900 flights a week from its Singapore hub, at Singapore Changi Airport, linking more than 100 cities in over 35 countries across 6 continents.

In the long run, Changi Airport is also preparing capacity for the future and long term needs of the logistics and aerospace industries. To be completed in 2030, an industrial zone – the Changi East Industrial Zone - will be developed for airfreight, air express and MRO activities, as part of the Changi East development. Together with the remodeled CAC, Changi Airport's handling capabilities will increase from the current 3 to 5.4 million tonnes annually. This development will secure the long-term growth of Singapore's cargo and logistics sectors, and strengthen Changi Airport's position as a major air hub.

With a strong infrastructure to facilitate movement of cargoes and goods, Singapore is well positioned to support the growth of e-commerce in the region.



SINGAPORE - SEA FREIGHT GATEWAY & PORT OF CALLS



PSA – Container Ports & Beyond

Since the inception of its first container terminal in 1972, PSA has leveraged Singapore's location at the maritime crossroads of east-west trade to evolve into the world's largest container transhipment hub, and a key enabler of global trade flow. Expanding beyond Singapore's borders, PSA International has become a global terminal operator, operating more than 40 terminals in 16 countries across Asia, Europe, and the Americas. In 2017, PSA handled 74.2 million TEUs (Twenty-foot Equivalent Units, or one twenty-foot-length container) globally, of which PSA Singapore contributed 33.4 million TEUs.

PSA Singapore does this through its terminals at Pasir Panjang, Tanjong Pagar, Keppel and Brani which operate seamlessly as one integrated facility, handling large-scale complex transshipment operations 24 hours a day, 365 days a year.

PSA Singapore owns Keppel Distripark, a multi-tenanted, modern cargo distribution complex comprising of various warehousing and office facilities. It is located within the Free Trade Zone which allows exemption from the Goods and Services Tax.

In the last few years, PSA International has taken the bold step of moving beyond coastal ports to inland rail terminals by investing in China United International Rail Container Co. Ltd (CUIRC), which is mandated to operate 18 intermodal rail container terminals across China.

PSA is also a key participant in the 3rd government-to-government project between China and Singapore on the Chongqing Connectivity Initiative to develop the Southern Trade Corridor, offering cargo owners a shorter, faster and more direct route connecting Singapore and China via sea-rail intermodal operations.

Building Global Partnerships

Having more than 30 partners across the globe, including local government entities, shipping lines and private companies, PSA continues to develop strategic partnerships with various industry stakeholders to deepen the collaborations on port development, management and operations.

PSA is also working together with Changi Airport Group and players in the air communities such as SATS to offer seamless connectivity for air-sea intermodal operations

Augmenting Future Capabilities with the Latest Technologies

PSA is working closely with the government of Singapore in developing Tuas Port, a mega hub with 65 million TEU capacity annually. With its first berths scheduled to be operational in 2021, and the expected completion around 2040, Tuas Port will operate on a massive scale, capable of handling the world's largest container ships. It will also be the largest single automated container terminal in the world.

As part of a greater ecosystem connecting various stakeholders in the logistics community both digitally and physically, Tuas Port will integrate intermodal supply chain solutions, increasing port productivity and the speed at which goods are moved. Tuas will also bring PSA the opportunity to expand their already developing green agenda, increasing commitments to electrification and alternative sources of energy, including solar power.

Preparations have already begun in earnest, and PSA is leveraging their operational Pasir Panjang Terminals as host to the 'PSA Living Lab', providing a live testbed for key technologies that may feature in Tuas in the future.

In 2016, PSA launched a venture capital arm, PSA unboXed, to provide seed funding for startups in the Fintech and Logtech spaces, bringing strategic value to PSA and the logistics industry. Honing new technologies is key to achieving high performance in the unique operational circumstances of Singapore, and this will allow PSA to tackle growth constraints on space and labour.



PSA'S PORT+ Solutions Enabled by Digital Platform CALISTA™

Recent technological advancements and innovations have changed consumer demands and in turn, shipper requirements have increased, with more focus placed on resilient supply chains driven by real-time tracking and decision making. To fill this gap, PSA has expanded its focus to include terminal adjacencies to enable better and more flexible supply chain management. The outcome, PSA's PORT+ solutions and the Digital Platform CALISTA™.

PSA's PORT+ solutions leverage the unrivalled connectivity at its Singapore hub and global network to enable innovative options for cargo owners and logistics service providers. From marine and inland terminals, to cargo facilities and intermodal connectivity, PSA's PORT+ solutions seek to provide cargo owners with greater flexibility and resilience in their supply chains. This is enabled by Digital Platform CALISTA™, a global supply chain platform that brings together the physical, compliance and financial activities of cargo logistics onto a digital eco-system.

CALISTA™ serves the community of cargo owners and logistics service providers, and aims to improve efficiencies, facilitate trade and enhance the experience of moving cargo to market.

PSA's PORT+ Solutions

Advanced Inventory Management

Better service levels, faster time to market and more cost-effective inventory management through PSA's network and facilities.

Extend Reach to Inland Markets

Seamless and timely cargo movements from seaports to inland container terminals and warehouses.

New Trade Connectivity

Access multimodal transportation options that offer more competitive transit times and costs, e.g. Southern Trade Corridor, Sea-Air Connectivity.



LOGISTICS SERVICE PROVIDERS (LSPs) CASE STUDIES



Riding on the back on e-commerce is growth within the logistics industry. Figure 1 is indicative that logistics performance across ASEAN countries has been generally acceptable over the years. Meanwhile 3rd Party Logistics service providers (3PLs) help by taking over distribution and fulfilment of deliveries.

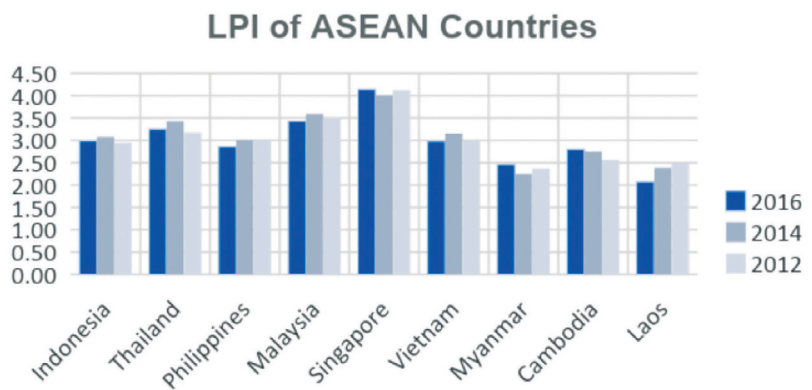


Figure 1. Logistics Performance Index for ASEAN countries.
Source: <https://lpi.worldbank.org/>

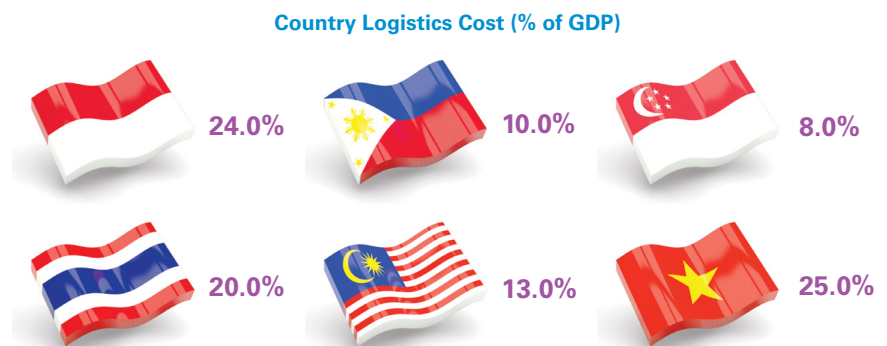


Figure 2. Logistics costs across ASEAN countries
Source: Various sources

To capitalise on regional and global e-commerce potential and to mitigate accompanying challenges posed by the online retailing boom, Singapore's logistics players have invested in new warehouses and systems to ensure they maintain their position ahead of the curve.



Singapore Post (SingPost)

SingPost has invested S\$182m in the eComm Log Hub, a 3-storey regional ecommerce logistics hub. Opened in November 2016, the 553,000 sq ft area allows SingPost an end-to-end automated sorting capacity of 100,000 parcels a day, with 150 loading bays. Coupled with its "PopStation" locker system, SingPost appears to have laid its hands on a share of the Ecommerce pie in ASEAN, with \$190m of revenues generated from ecommerce related activities in the 2nd quarter of 2017.

This system allows recipients to collect parcels at their own time, simultaneously alleviating the problems presented by helping consolidate orders on pickup, while reducing delivery failure rates. The adoption of the locker system does present value in more densely populated regions of ASEAN, however less dense areas may be left out of the equation due to insufficient volume to justify investments in these lockers.

Quantum Solutions

Headquartered in Singapore, Quantum Solutions is an established eCommerce logistics service provider offering fully integrated and scalable end-to-end logistics solutions in Asia Pacific. The company has made significant investments to expand its capabilities and has operations in 19 markets with access to almost every country in the world through its unique postal and commercial network.

Its joint venture with Alibaba has enabled the 3PL player to grow its eCommerce logistics capabilities in Southeast Asia and Oceania, and better serve the region's rapidly growing online retail markets. The collaboration focuses on fortifying end-to-end eCommerce logistics network, and building scale for future profitability.

Quantum Solutions is currently housed in SingPost's Regional eCommerce Logistics Hub which was launched in November 2016. This facility reflects its commitment to the development of a robust eCommerce logistics network. Singapore's regional connectivity makes this hub ideally positioned to be a centre for eCommerce as it leverages on the nation's unique geographic and infrastructural advantage. At this facility, its warehousing and delivery capabilities are consolidated and integrated within one building, with end-to-end solutions from front-end eCommerce platform to delivery for customers.

Automation is also a major feature of the Regional eCommerce Logistics Hub, increasing overall productivity and efficiency. Most importantly, it has been designed to be scalable, allowing new technologies to be retrofitted into its operations flow in the building, and other upgrades to meet the needs of the future.

Quantum Solutions also operates a Regional Transshipment Hub where it consolidates its eCommerce volumes and facilitates transshipment worldwide through the postal and commercial network.

Continuous efforts are made to enhance Quantum Solutions' eCommerce fulfilment platforms, especially with the growing demands of eCommerce logistics solutions. For instance, technology is used to boost agility, with Android device deployed across warehouses to increase capacity and productivity during the eCommerce peak seasons. Additionally, information technology systems across eCommerce platforms and marketplaces are integrated to enable seamless transactions and information sharing at all once.



Caption: The unveiling of UrbanFox on 24 October 2017 was officiated by (from L-R) Mr Joe Choa, MD of UrbanFox; Mr Chua Taik Him, then Senior Advisor, International Enterprise Singapore; Mr Loh Chin Hua, CEO of Keppel Corporation and Chairman of Keppel T&T; Dr Koh Poh Koon, Senior Minister of State, Ministry of Trade & Industry and National Development; Dr Lee Boon Yang, Chairman of Keppel Corporation; Mr Thomas Pang, CEO of Keppel T&T; and Mr Desmond Gay, CEO of Keppel Logistics

Keppel Logistics

Keppel Logistics, the logistics arm of mainboard-listed Keppel Telecommunications & Transportation operates world-class logistics facilities in Singapore, China, Hong Kong, Malaysia, Indonesia, Vietnam and Australia.

Its businesses in Contract Logistics, Port Logistics and Urban Logistics provide integrated end-to-end logistics services in warehousing, transportation, distribution, value-add projects, freight management, consolidation services and last-mile fulfilment.

As a leading logistics services provider, Keppel Logistics sees opportunities arising from ecommerce and changing consumer behaviour shifting towards online channels. Its urban logistics subsidiary, UrbanFox, caters to brands looking to expand in ecommerce with omnichannel logistics and channel management solutions that are powered by the cloud and a combined delivery model comprising both a crowdsourced and fixed fleet.

UrbanFox is enhancing the vibrancy of Singapore's ecommerce landscape by helping brands expand their product offerings on online marketplaces like the UrbanFox Store, Lazada and Shopee, while seamlessly integrating the backend warehousing, inventory and last-mile delivery requirements into a convenient one-stop shop.

Leveraging Keppel Logistics' core strengths in B2B third-party logistics, brands seeking to build an online retail presence can avoid the hassle of managing multiple logistics service providers separately for warehousing, ecommerce retail or fulfilment. For example, depending on their product types, brands can choose from a range of storage options for goods, including temperature-controlled warehouses and bonded (dutyable goods) storage. To date, UrbanFox has successfully delivered innovative omnichannel logistics and channel management solutions to more than 60 brands.

Following initial success with clients in Singapore, UrbanFox and Keppel Logistics will be looking to expand their future-ready blend of solutions to retailers across Southeast Asia this year.



YCH

Founded in 1955 by the late Mr Yap Chwee Hock, YCH began as a modest passenger transportation company. However, in the 1970s, and the family business lost its main contract. With the need to diversify the business, Mr Yap Chwee Hock roped in his eldest son, YCH Group's current Executive Chairman, Dr. Robert Yap in 1977. This marked the start of the company's venture into the cargo transportation business, which subsequently grew to include extended supply chain and logistics services such as warehousing and freight management.

Today, YCH is Singapore's largest home-grown supply chain solutions company and leading regional supply chain management partner to many of the world's leading brands across Asia Pacific. It is also venturing into the eCommerce logistics operations and has a strong presence in Asia Pacific, including China, India and the ASEAN region.

In 2017, the Chinese firm Forchn Holdings announced a partnership with YCH group leveraging on China's Belt and Road initiative to tap into ASEAN's e-commerce growth. The partnership sees S\$100m set aside for acquiring logistical assets across the region, with a key focus on Indonesia and Thailand for starters.

In building this partnership, Forchn Holdings believes that in contrast with the 2-way partnership made by partnering with SEA countries directly, a Singapore partnership can grow to become a "multi-partner investment" should expansion plans come through the pipeline in the future. Moreover, YCH group's position as a technologically savvy logistics player presents opportunities for leveraging on innovations such as RFID tags and drones.

Despite the challenges surfacing in lieu of the e-commerce book of Southeast Asia, many logistics service providers stand ready to answer the call. Moving forward, key strategic positions must be carved out geographically to ensure that the customer's demands are satisfied in a smooth and timely manner. However, cooperation among service providers may yet prove to be key in the face of fierce competition. A collaborative effort will allow 3PL providers to spread risks and manage goods flow, while setting the foundation for greater order consolidation as new coordination technologies surface. Collaborating with authorities to improve logistical processes and improve customs clearance time will also lend strength to 3PL service providers.

LAST MILE DEVELOPMENTS IN SINGAPORE

The urban environment is a specific challenge for logistics companies and particularly so in ASEAN. The last mile of the logistics chain, which accounts for a large proportion of shipment costs and complexity of operations, is often the most inefficient. This distribution inefficiency in urban areas comes from low load factors, long dwell times at loading and unloading points and a high number of delivery requirements to individual customers within a short time.

Two of the major challenges common to the last mile pertain to unconsolidated deliveries and high delivery failure rates. For the former, the lack of order and delivery coordination between retailers has resulted in customers receiving multiple deliveries and a substantial amount of time waiting for their parcels. At the rate that consumers are turning to e-commerce for their needs, this is an issue that needs to be addressed. For the latter, delivery failure rates have exceeded 15% signalling a need for improvement in the current modus operandi. Failed deliveries incur extra delivery costs for companies as they make repeated trips to the same doorstep. As the e-commerce market in ASEAN grows to a predicted US\$88 billion in less than a decade, last mile delivery solutions must develop at the same pace to satisfy the expectations of millions of customers. Singapore is currently undergoing some last mile delivery developments and transformation:

TR46: Technical Reference for Last Mile Delivery Jointly launched by the Singapore Manufacturing Federation-Standards Development Organisation (SMF-SDO), Infocomm Development Authority of Singapore and SPRING Singapore, the TR46:2016 aims to standardise dataset formats and streamline delivery processes between e-commerce retailers and logistics service providers. A common format will vastly improve communication between the various players in the e-commerce supply chain; effectively reducing time, costs, and delivery errors, and enabling a seamless experience for customers.

Smart Lockers

In Singapore, the Infocomm Media Development Authority (IMDA) has been tasked to deploy a nationwide federated locker network to transform the future of last mile deliveries in Singapore and reduce house-to-house delivery inefficiencies, especially given the increase in online shopping. Citing data from logistics providers, IMDA said that more than one in 10 deliveries could not be fulfilled due mostly to recipients not being at home. The locker system proposal will not be tied to any single operator, and can be used by all couriers, potentially benefiting more than 7,600 logistics service providers operating in the country.

Drone Deliveries

The usage of drones is constantly evolving in ASEAN with many developments in various countries. Drone deliveries cost less to operate than traditional ground vehicles resulting in cost savings. Delivery time is also greatly shortened allowing for the fulfillment of same-day delivery for customers.

In September 2015, Singpost successfully conducted a recipient – authenticated delivery via an Unmanned Aerial Vehicle, its payload included a letter and T-shirt. Furthermore, Singpost signed a partnership agreement with Airbus Helicopters in April 2017, with aims to develop an aerial drone delivery system for the urban city.

E-COMMERCE CASE STUDIES IN SINGAPORE

Amazon Prime

In July 2017, Amazon Prime was officially launched in Singapore with a 100,000 square feet facility located in the west part of the country. Prime Now in Singapore marks Amazon's first foray in Southeast Asia and it runs on a new operating model which leverages data and technology such as artificial intelligence to achieve greater resource efficiency and near-real time delivery of goods. Amazon Prime's two-hour delivery service is only made available through the Prime Now mobile app. It gives shoppers in Singapore access to tens of thousands of products ranging from groceries to electronics and sporting goods from its fulfillment centre.

Lazada (www.lazada.com)

Headquartered in Singapore, Lazada Group is a privately owned e-commerce company founded by Rocket Internet in 2011. As of 2014, Lazada Group operated sites in Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam and had raised approximately US\$647 million over several investment rounds from its investors such as Tesco, Temasek Holdings, Summit Partners, JPMorgan Chase, Investment AB Kinnevik and Rocket Internet.

In April 2016, Alibaba Group announced that it intended to acquire a controlling interest in Lazada by paying \$500 million for new shares and buying \$500M worth of shares from existing investors. The British supermarket company Tesco confirmed the sale of 8.6% of its holding in Lazada to Alibaba for \$129 million. In June 2017, Alibaba Group increased its investment in Lazada by an additional \$1 billion, raising its stake from 51% to 83%. Alibaba invested another \$2 billion into Lazada in March 2018.

In Philippines, Lazada was ranked the top e-commerce player by iPrice, garnering a staggering 67,679,800 monthly visits online in April 2018 compared to its nearest pursuer Shopee with 9,165,600 visits a month. In Singapore alone, Lazada has over 5,000 retailers listed on the site, including household names such as Watsons, Best Genki and Gain City.

Redmart (www.redmart.com)

RedMart Limited was incorporated in 2011 and is based in Singapore. RedMart Limited operates an online grocery portal in Singapore. The company allows customers to buy fresh produce, meat and seafood, dairy and chilled, bakery, frozen, beverages, food cupboard, alcohol, health and beauty, household and pet, baby and child, and home and outdoor products online. It also provides home delivery services. As per the transaction announced on November 2, 2016, RedMart Limited operates as a subsidiary of Lazada South East Asia Pte. Ltd.

Reebonz (www.reebonz.com)

Reebonz is an online platform for buying and selling luxury products. They offer premium brands at deep discounts in private sales and are modelled around the concept of 'accessible luxury', where members can shop on web or mobile for an exciting collection of new and pre-owned luxury merchandise. Reebonz is one of the most established online luxury sales companies in Southeast Asia, with business operations in eight countries, Singapore, Malaysia, Indonesia, Taiwan, Hong Kong, Thailand, Australia and South Korea. Reebonz was established in 2009 when e-commerce was just taking off in Asia and there was no clear market leader yet. It was also the year of the Global Financial Crisis and many brands and companies were dealing with overstock and Reebonz provided just the platform for them to liquidate their inventory.

In 2017, Reebonz opened its 250,000 sq ft headquarters in Singapore, housing its regional distribution centre as well as its global procurement and marketing operations. The S\$42 million facility provides the company with a strategic platform to manage its regional cross border distribution from one single centre to serve the region.

SUPPORTING AGENCIES FOR E-COMMERCE DEVELOPMENT IN SINGAPORE



Changi Airport Group (CAG)

CAG has established itself as a leading air cargo and a major transshipment hub in the region. The key factors contributing to its success are: superior connectivity, high operational efficiency, specialised cargo handling capabilities, good infrastructure, as well as a strong logistics ecosystem. Changi Airport achievements in 2018 include the Diamond Award for Airports more than 1million tonne and Best Asia Specialty Cargo Airport Award during Air Cargo World's Air Cargo Excellence Awards 2018. CAG manages multi-tenanted cargo agent buildings in Changi Airfreight Centre (CAC) and works closely with industry partners to ensure the effective and efficiency operations at CAC. Changi's extensive connectivity of more than 7,400 weekly flights to more than 400 cities allows the air freight industry to aggregate shipments and achieves consolidation effects.

CAG anticipates that the e-commerce sector will continue to grow and be amongst the key drivers for Changi Airport's cargo throughput. The airport will continue to work with key partners to strengthen strategic links and deepen connectivity to facilitate this growth.





Action Community for Entrepreneurship (ACE)

For startups looking to enter the e-commerce landscape, ACE exists as a support platform designed to provide a holistic package to further nurture a vibrant & connected Startup ecosystem. This collaboration between Enterprise Singapore and JTC provides co-innovation programmes between corporates and startups favourable tax regimes. E-commerce start-ups are also able to tap on the various support provided by ACE ranging from corporate innovation to peer group mentoring as well as access to international markets and communities championing the global startup scene.



Civil Aviation Authority of Singapore (CAAS)

The Civil Aviation Authority of Singapore (CAAS) is a Statutory Board under the Ministry of Transport.

CAAS' mission is to "Grow a safe, vibrant air hub and civil aviation system, making a key contribution to Singapore's success." CAAS' roles are to enable the growth of the air hub and aviation industry, oversee and promote safety in the industry, provide air navigation services, and develop Singapore as a centre of excellence for aviation knowledge and human resource development.

CAAS had supported the establishment of the eCommerce AirHub under the Aviation Development Fund as part of efforts to transform Singapore Aviation, make the sector more efficient and competitive, create better jobs and improve productivity using technology.



Economic Development Board (EDB)

The Singapore Economic Development Board (EDB), a government agency under the Ministry of Trade and Industry, is responsible for strategies that enhance Singapore's position as a global centre for business, innovation, and talent.

EDB undertakes investment promotion and industry development in the manufacturing and internationally tradable services sectors. Industries within their purview account for more than a third of Singapore's annual GDP. Besides facilitating investments, EDB engage Singapore's existing base of companies to transform their operations and boost productivity, and to generate growth in adjacent and disruptive areas by growing new businesses out of Singapore.

EDB work with companies by providing information, connection to partners and access to government incentives for their investments, as well as their transformation and growth initiatives. They also work closely with other Singapore government agencies to constantly improve our pro-business environment and ensure that the industries are supported by a globally competitive workforce through talent development.

EDB has various schemes and grants ranging from research to productivity as well as training. On top of that, tax incentives are also available to help jumpstart e-commerce related investments. The EBD also has collaborations with other government agencies to roll out different support systems and tap on each others' resources to aid the local e-commerce scene. Further, with the notable joint establishment of the IBM Smarter Commerce Centre of Competency (SCCOC) with IBM, it enables the integration across the different silos of procurement, marketing, selling and fulfillment to enhance the overall flow of e-commerce, enhancing Singapore's global e-commerce footprint.



Enterprise Singapore (a new combined entity of Spring Singapore & International Enterprise Singapore)

International Enterprise Singapore and SPRING Singapore came together on 1 April 2018 as a single agency to form Enterprise Singapore (ESG).

ESG is the government agency championing enterprise development. The agency works with committed companies to build capabilities, innovate and internationalise. They also support the growth of Singapore as a hub for global trading and startups. As the national standards and accreditation body, ESG will continue to build trust in Singapore's products and services through maintaining of quality and standards.

To enable businesses to navigate today's enterprise landscape, ESG has adopted a company-centric approach. They do this by providing programmes and support catered to each company's stage of growth, the industry the company is in, and the overseas markets of interest.

Together with its extensive network of local and overseas partners, ESG support efforts to enhance industry and enterprise competitiveness through the 23 Industry Transformation Maps (ITMs). ESG will work with companies to capture new market share through upgrading and innovation; adoption of new technologies to improve productivity; facilitate expansion into overseas markets; and strengthen leadership capabilities to build the talent pool.

Other forms of support provided by ESG include financial and talent assistances, capability development support as well as market access tools.



Info-communications Media Development Authority (IMDA)

Since the launch of the Infocomm 21 blueprint by the Infocomm Media Development Authority (IMDA) - formerly Infocomm Development Authority (IDA), the IMDA has introduced a revamped masterplan named Connected Singapore. Under the four strategies of this blueprint, the IMDA's vision is to create potential and unleash possibilities through Infocomm which can assist e-commerce development in Singapore via greater connectivity. This is done through training programmes, competency centers and the Infocomm Local Industry Upgrading Programme (iLIUP).



Inland Revenue Authority of Singapore (IRAS)

IRAS has also rolled out its plans to support e-commerce investments in Singapore. The National Trade Platform (NTP) is an advanced trade information management platform to support companies in the trade and logistics industry and adjacent sectors such as trade finance, where importers and exporters would have access to all government-related and commercial trade services. This mainly involves the electronic bill of lading and sea freight e-commerce.

The NTP will help businesses boost productivity by streamlining work processes, reducing inefficiencies of manual trade document exchange, and leveraging data analytics for insights from their trade data, so as to be well-equipped for the digital economy. It also enhances the competitiveness of local SMEs in the field of e-commerce with regards to international trade and promote Singapore as a strategic destination of choice for Traders, Shippers, Logistic and Trade Finance Companies around the globe.



JTC Corporation (JTC)

JTC Corporation (JTC) is the lead agency in Singapore to spearhead the planning, promotion and development of a dynamic industrial landscape. Since its inception in 1968, JTC has played a major role in Singapore's economic development journey by developing land and space to support the transformation of industries and create quality jobs.

JTC's work exemplifies the vital role of infrastructure in economic transformation, and the need to continually push the envelope of innovation. As Singapore transforms itself for the future, JTC will continue to develop specialised land and new innovative space to support and catalyse new industry clusters, in order to support the growth and transformation of industries and enterprises.



PSA Singapore

PSA Singapore is the flagship terminal of PSA International, one of the leading global port groups, with port projects spanning across Asia, Europe and the Americas.

In Singapore, PSA operates a total of 60 berths with a handling capacity of 40 million TEUs yearly at its container terminals in Tanjong Pagar, Keppel, Brani and Pasir Panjang.

In 2017, PSA Singapore handled 33.35 million TEUs of containers. PSA is:

- World's Busiest Transshipment Hub – accounting for almost one-seventh of the world's total container transshipment throughput and more than 4% of global container throughput.
- One of the World's Largest Refrigerated Container (Reefer) Ports – more than 9,000 reefer points; handled almost 1.8 million TEUs of reefers in 2016.
- Excellent Connectivity – connected to 600 ports, with daily sailings to every major port in the world.



SkillsFuture Singapore [Formerly Workforce Development Agency]

Support for e-commerce in Singapore can also come in the form of skills upgrading for individuals working in this field and other related sectors, enabling them to adapt their skills to become more competent, increasing productivity overall. As a collaboration with Workforce Singapore, Skills Future offers a wide range of skills for available for individuals to tap on and increase their competency.

Dedicated bays to accommodate the largest freighter planes. Facilities to handle temperature-sensitive cargo, high value collectibles, and live animals. State-of-the-art cargo express facilities with direct airside access within a 24/7 Free Trade Zone. To learn how Singapore Changi Airport continues to meet the rapidly changing operational demands of your business, visit changiairport.com/cargo today.

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