Tech Logistics in SEA

Stanley Sun, Luli Xing, Jun Da Lim, Rymax, Teddy Tran

- ***Private Equity and Venture Capital***

Executive Summary

Driven by (1) the rapid growth of e-commerce, (2) increasing international trade and investment, and (3) improving infrastructure, the Southeast-Asian logistics market is poised for disruption. This deck breaks down the market into the following parts and analyses them in detail: (1) warehousing and fulfilment centres, (2) transportation, (3) last-mile, and (4) cross border logistics.

The warehousing landscape is defined by a general trend for large ecommerce players to internalize their warehousing capabilities, but many opportunities lie in underserved 2nd tier cities and urban areas.

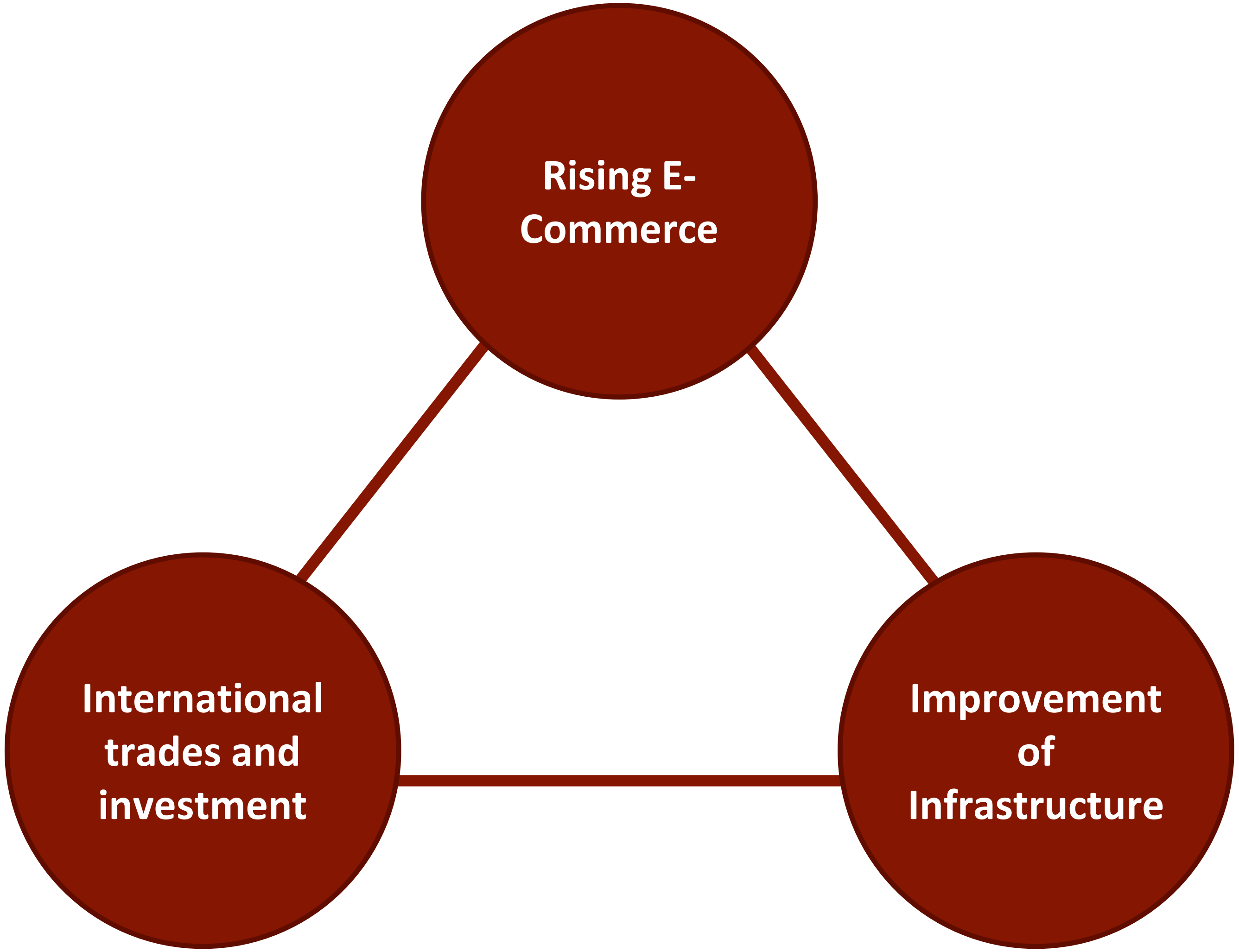
The transportation landscape remains asset-heavy, however it presents unique opportunities for operational excellence (via telematics, route planning) or optimal utilization (via services marketplaces, aggregators and integrative solutions).

The last mile delivery landscape holds many opportunities in fulfilling consumer preferences for quicker deliveries and package tracking, but is facing increasing fragmentation.

As for cross-border logistics, we see high cross-border e-commerce activity in Singapore and Malaysia and foresee the other markets following suit as they mature. This growth, coupled with the lack of existing players with local expertise in customs clearance, indicates a strong area of opportunity in this space.

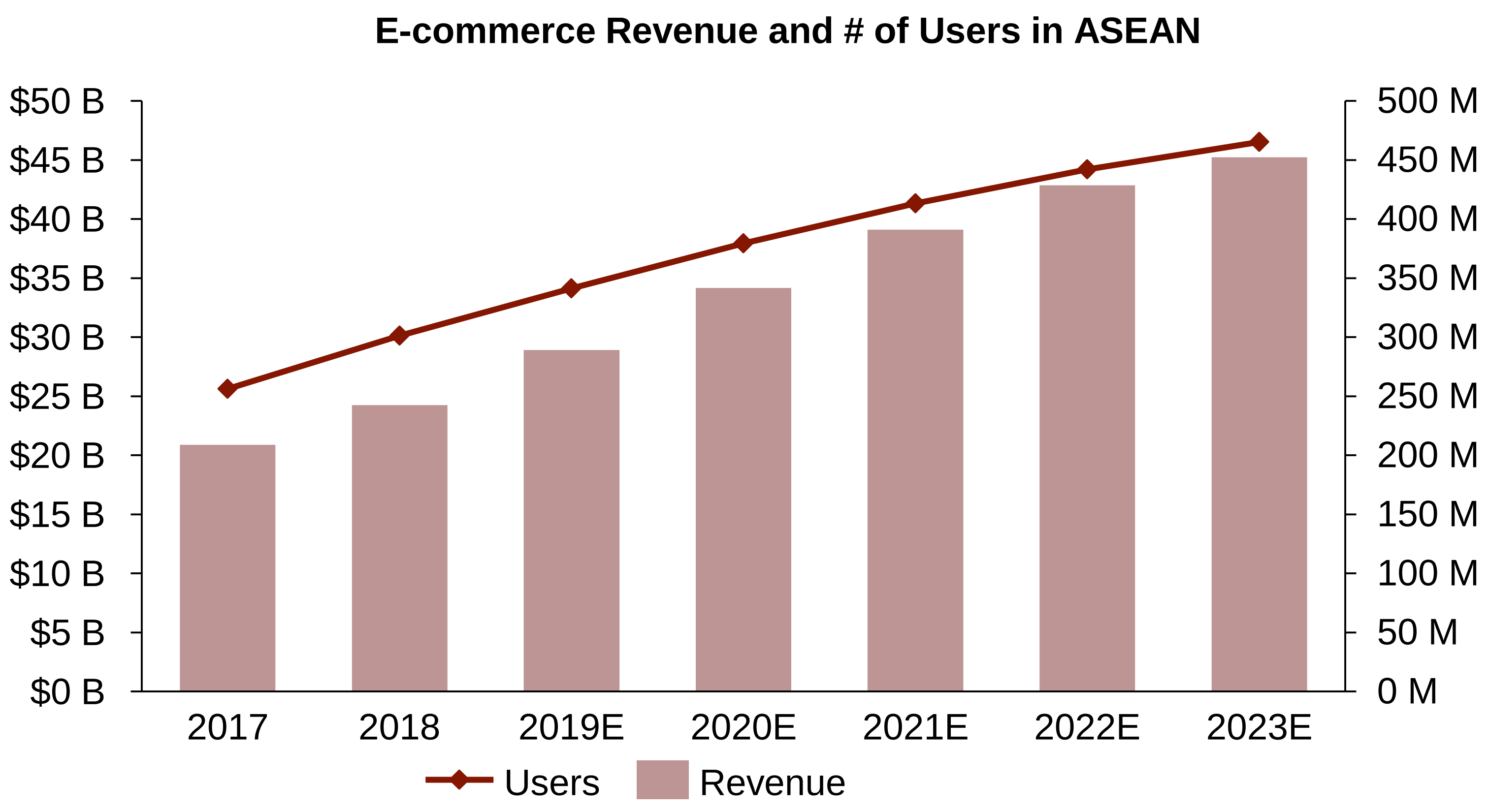
Key Drivers of Logistics in SEA

E-Commerce, international trades and infrastructure improvement are boosting logistics industry in SEA



Driver 1: E-commerce

Rapid development of e-commerce has stimulated the needs for better logistics services especially in the B2C area



Drivers of e-commerce

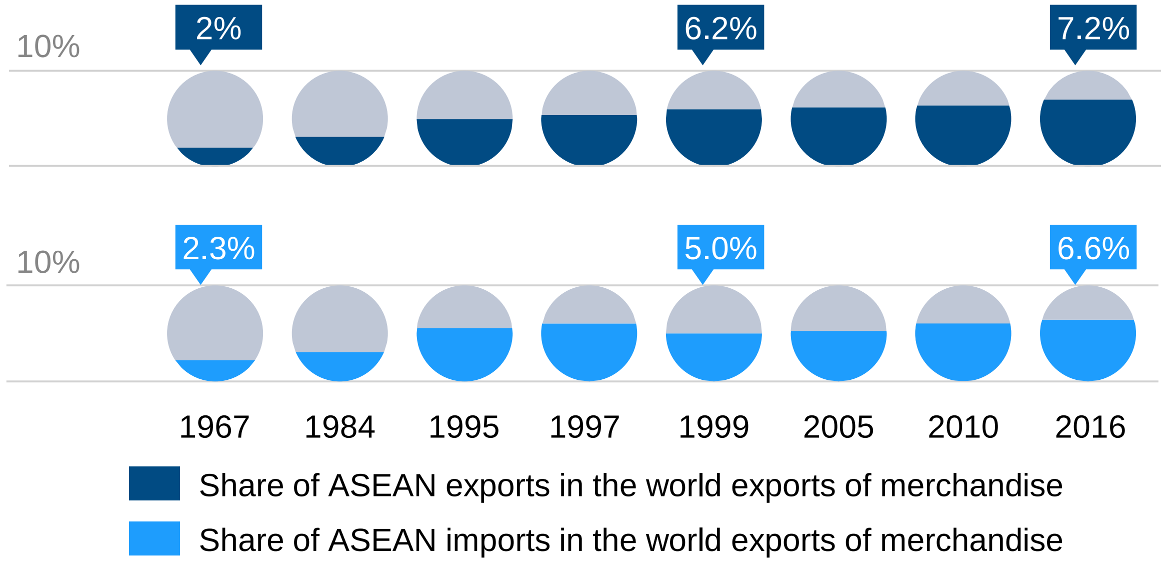
- Rise of the Middle Class
- Mobile & Internet Penetration
- Increasing Logistics Options for ecommerce Players
- Growth in Supply of New eCommerce Players

Source: Stastica

Driver 2: International trades and investment

Further integration into the global economy has increased cross border movements

Shares of ASEAN in world exports and imports
1967-2016 (%)



- ASEAN openness to trade is evident in the expanding size of trade, with the ratio of total merchandise trade to GDP growing from 43.1% in 2967 to 87.0% in 2016.
- Like wise, ASEAN shares in the world exports and imports of merchandise have almost tripled to reach 7.2% and 6.6% respectively in 2016 from the shares in 1967

Foreign Direct Investment Flows in ASEAN
1995-2017 (Billions of dollars)

- FDI flows to ASEAN rose from $123 billion in 2016 to an all-time high of $137 billion in 2017
- Recipients shifting from traditional sectors to wholesale and retail trade

Source: ASEAN Secretariat, ASEAN FDI database

Driver 3: Improved Infrastructure

Infrastructure and urbanization are inter-related and driving further demand for logistics

Technological breakthrough

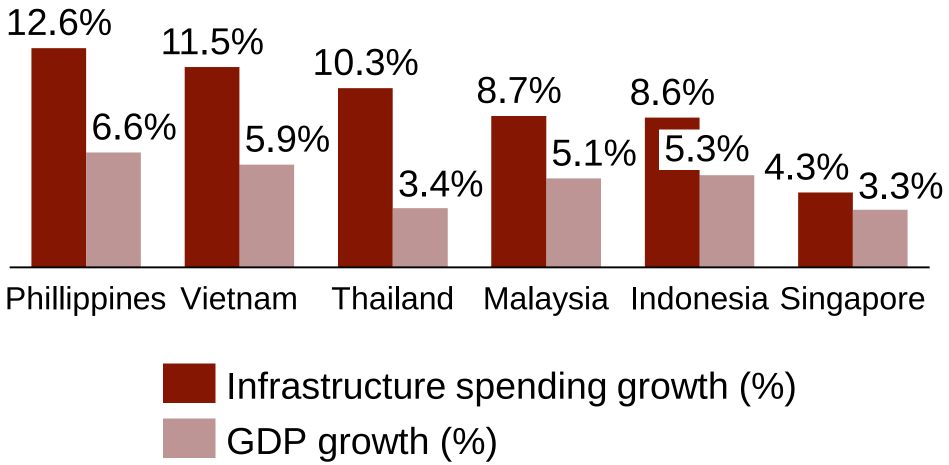
- Rising urbanization drives increased demand for infrastructure

Foreign direct investment

High demand for infrastructure spending

Infrastructure spending and GDP growth

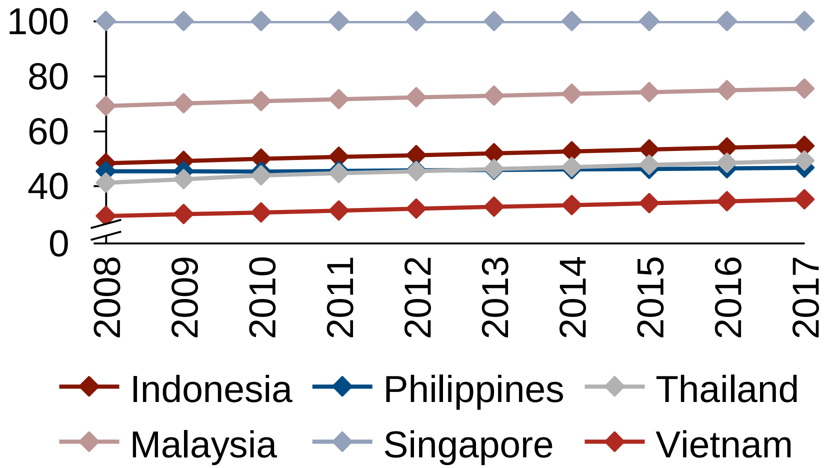
Average growth rates from 2012 - 2016



SEA is witnessing rapid urbanization

Urbanization percentage

2008 - 2017



Trade Competitiveness

- The ASEAN Master Plan on Connectivity 2025 proposes the development of transnational transport corridors to facilitate the movement of goods and (skilled) labour in the region

Participation in global value chains

Source: World Bank, Oxford Ecommerce

Overview of Logistics Ecosystem

Verticals

Logistics Flows

- **Fulfilment Centers**
- **Transportation**
  - **Freight**
  - **Last-mile Delivery**
- **Cross-Border**

Segments/ Trends

Fulfilment Centers	Freight	Last-mile Delivery	Cross-Border
Warehousing → Fulfilment	Airfreight	Motorbikes	Booming E-Commerce
Demand from Tier 2 Cities	Ocean Freight	Cars / Taxis	Adoption of Card Payment
In-House Fulfilment	Long-haul / Heavy-duty Trucks	Lorries & Light-duty Trucks	High De Minims Value

Value Levers

Fulfilment Centers	Freight	Last-mile Delivery	Cross-Border
On-demand Services	Telematics	Enabling E-Commerce	Warehouse at Origin / Destination
End-to-End Providers	Route Planning	Same-Day Delivery	End-to-End Providers
Marketplaces	Aggregators	Tracking Visibility	Aggregators
SaaS	Total Solution Providers		Players with Local Knowledge
Robotics	CVC Investment		

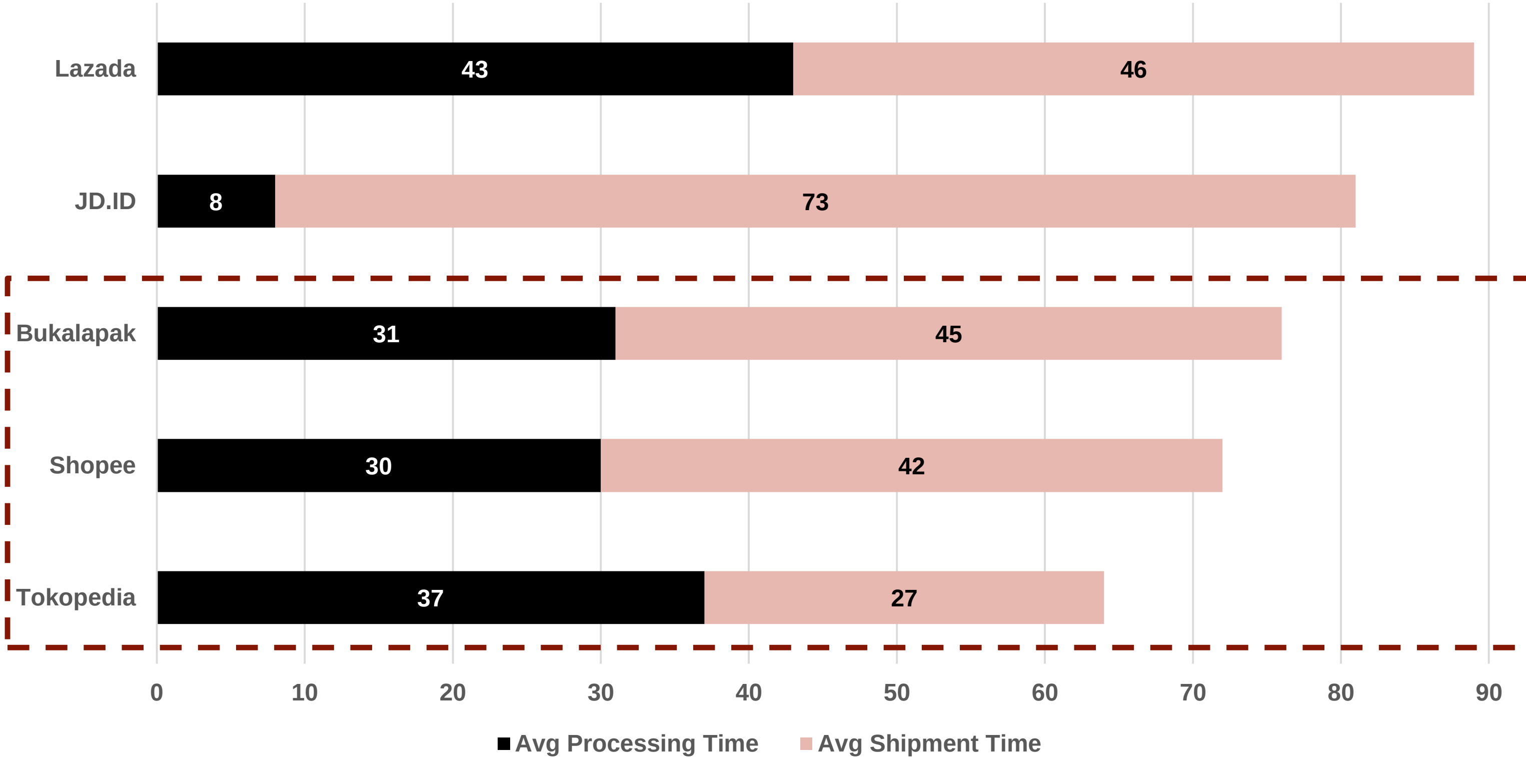
Logistics Ecosystem

Fulfilment Center

Fulfilment Centers: Inhouse vs. 3PL

Despite trends of in-house consolidation on fulfilment services, 3PL providers still have competitive edge in inter-city delivery speed

Inter-City Processing and Shipment Time* (hours)



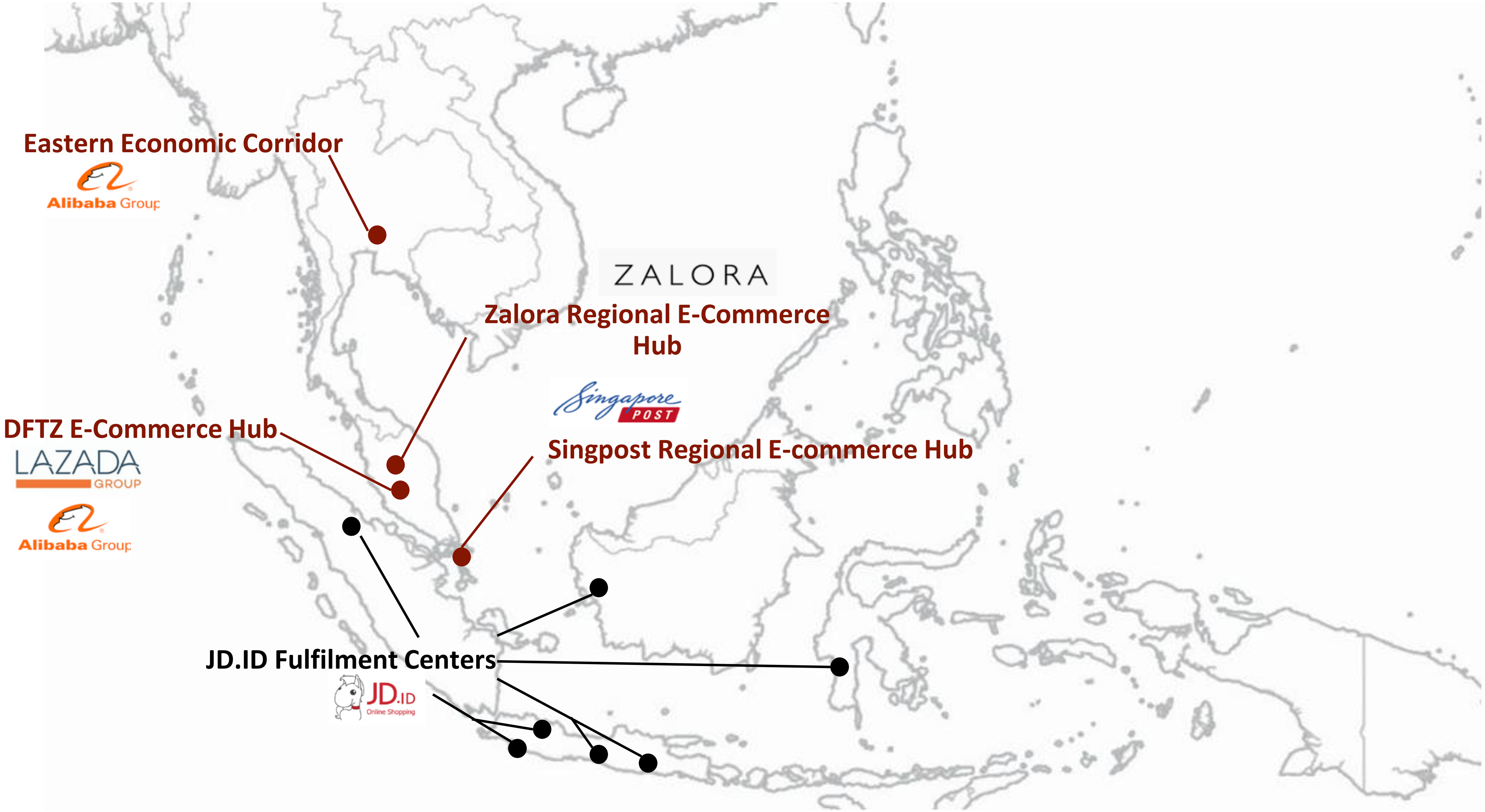
	% of 3PL fulfillment	# of fulfilment Centers
Lazada	40%	6 locations
JD.ID	30%	7 locations
Bukalapak	100%	
Shopee	100%	
Tokopedia	100%	

Tokopedia have started building their own fulfilment centers, while Bukalapak and Shopee are also expected to follow suit. However, these local players currently have no technological know-how to build smart facilities.

*) Source: CLSA E-lation Report published in August 2018. Data is obtained through experiments conducted by CLSA, who executed multiple-transactions from 3 major cities (Medan, Jakarta, Surabaya) and through 5 e-commerce players in Indonesia

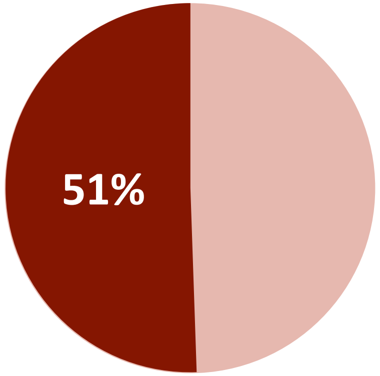
Fulfilment Centers: Inhouse Consolidation

In-house consolidation by major players focuses on large-scale regional fulfilment centers in strategic locations and Tier-1 cities

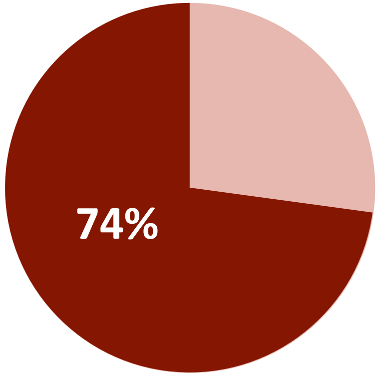


Fulfilment Centers: Opportunities

Opportunities exist for 3PL to build logistics services in Tier-2 cities due to increasing needs for fast delivery

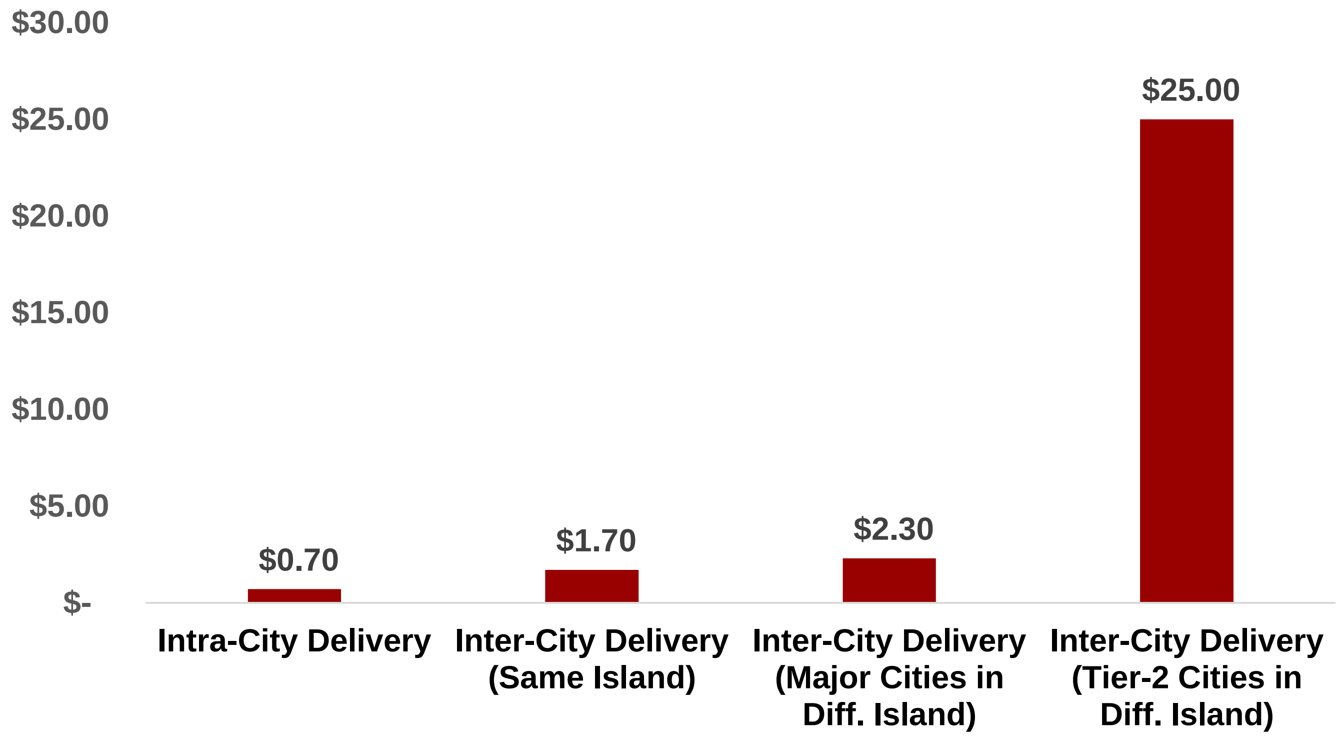


Customers Preferring Same Day Delivery Services*



Customers Who Are Willing to Pay More for Same Day Delivery*

Parcel Delivery Costs in Indonesia**



Delivery costs between major cities are reasonably competitive. However, lack of shipping infrastructures (urban warehouses + distribution network) in Tier-2 cities lead to extremely high prices

*) Source: PwC Consumer Insight Survey 2018, https://www.thejakartapost.com/news/2018/10/17/most-online-purchasers-prefer-same-day-delivery-service.html
**)Source: CSLA E-Lation 2018 Report

Fulfilment Centers: 3PL Providers

Most 3PL incumbents still focus on on-demand warehousing or end-to-end fulfilment services, virtually no players exists in deep tech space

Companies	On-demand Warehouse Services	Shipping / End-to-end Provider	Marketplace	SaaS	Deep Tech (Robotics / Automation)
Waresix			●	◔	**Untapped Demand** Chinese e-commerce players are bringing in-house tech, while local players are scrambling for competing technologies
Crewdible		◑	●	◔	
Mospaze		◑	●	◑	
Anchanto		◑	◔	●	
Sellu Seller				●	
Sirclo Commerce				●	
8 Commerce	●	●		◑	
Haistar	●	●		◔	
Pakde	●	●		◔	
Acommerce	●	●		●	
Iruna	●	●		◔	
Kerry Express		●			

● Core Business ◑ Added Services ◔ Light Features

Fulfilment Centers: Investment Opportunities

Investment opportunities are available in three key growth areas

End-to-end Logistics Provider in Tier-2 Cities

- Despite trends of consolidation, logistics services in Tier-2 cities are still lacking
- Plenty of 3PL providers are already focusing on end-to-end logistics, but significant fundraising is necessary for them to expand their networks

Small-scale Urban Warehouses in Tier-2 Cities

- Smaller-scale facilities in Tier-2 cities are required to bridge distance between regional logistics hubs built by major players and customers
- Aggregation of excess facilities or additional facilities development by 3PL will bring down delivery times and shipping costs to Tier-2 cities

First Mover in ASEAN Deep Tech Development

- Chinese-controlled tech giants (Alibaba, Lazada, JD.ID, etc.) are bringing in-house deep technologies for their own fulfilment facilities in ASEAN
- The local players (Tokopedia, Bukalapak, Shopee, etc.) need to compete on technological efficiencies when they build their own mega-facilities, but they currently have no knowledge / experience on such technology
- Whoever can come up with local solution in automation / robotics will enjoy massive first mover advantage in tech supply to local e-commerce players

Logistics Ecosystem

Transportation

Transportation: SEA Logistics Trends in Media

Media coverage furnished a lens into emerging industry trends and market needs in SEA region

"China, India, and Southeast Asia Region To Grow The Fastest in Automotive OEM Telematics Market by 2023"

Industry Daily Observer, 18 Mar 2019

https://industrydailyobserver.com/china-india-and-southeast-asia-region-to-grow-the-fastest-in-automotive-oem-telematics-market-by-2023/83349/

› Telematics

"Using technology to solve traffic woes"

The ASEAN Post, 23 Mar 2019

https://theaseanpost.com/article/using-technology-solve-traffic-woes

‹ Route Planning

"Southeast Asia's Logistics Startups Are Winning Big By Tailoring Themselves To Local Markets"

Forbes, 5 Oct 2018

https://www.forbes.com/sites/vinnielauria/2018/10/05/southeast-asias-logistics-startups-are-tailoring-themselves-to-local-markets-and-winning-big-by-doing-so/#131264575e35

› Service Marketplace

"Lazada bets on Chinese e-commerce models to win big in burgeoning Southeast Asian markets"

South China Morning Post, 23 Mar 2019

https://www.scmp.com/tech/enterprises/article/3002827/lazada-bets-chinese-e-commerce-models-win-big-burgeoning-southeast

‹ Integrated Logistics

"Singapore corporate venture capital players stay upbeat"

The Business Times, 15 Mar 2019

https://www.businesstimes.com.sg/garage/singapore-corporate-venture-capital-players-stay-upbeat

› CVC's Logistics Investment

Transportation: Key Future Development Areas

Current trends of improving connectivity and prevalence of marketplace business models present unique development potential in SEA industrial logistics industry

Current Industry Trends

With Focus on Business Model Innovation

1. Drivers' smartphones used as data sensors and exchange interface for telematics
2. Predictive analytics with dynamic inputs of real-time delivery orders and traffic
3. Pure-play digital marketplace for transport assets exchange and shared mobility
4. Extension of mobility ecosystem through integrator and aggregator
5. Traditional logistic players' growing interest in growth hacking through Corporate Venture Capital (CVC) investments

Future Development Potential

Future 5~10 Years Horizon

1. Fleet management / performance monitoring system, usage-based motor insurance plans
2. Route optimization planning for better asset productivity and greater fuel savings
3. Online transaction becoming norm for ownership transfer, service appointment, capability booking
4. Emergence of total solution providers that boast one-stop-shop logistics service coverage
5. Early engagement with high-potential investee companies by strategic investors

Transportation: Attractive Growth Levers

Proliferation of players in the marketplace/aggregators sector has indicated high attractiveness while demand in Telematics and Predictive Analytics sectors are still untapped

Country	1. Telematics / Fleet Management	2. Predictive Analytics / Route Planning	3. Marketplace / Aggregators	4. Integrated Solution Providers	5. CVC with Logistics Investment
Singapore	Raxel Telematics, SKYFY Technology, versafleet	Yojee, BASERIDE TECHNOLOGIES	HAULIO, 20Cube, zyllem, FREIGHTKART	sp commerce, LAZADA ELOGISTICS	PSA UNBOXED, MOMENTUM, Singtel innov8
Indonesia	OneStopGPS		andalin, ritase.com, kargo, shipper	PORTER, Paket ID	MDI Metra Digital Inovasi by Telkom Indonesia
Malaysia	KATSANA		easyParcel, Boon4	ezbuy	
Thailand			GIZTIX, deliveree	acommerce, N-SQUARED eCommerce	AddVentures by SCG
Vietnam		ABIVIN	Shiphangnhanh.com.vn, LOGIVAN, ECO TRUCK	TIKI.VN	
Philippines	SPINGINE CORPORATION		XLOG, INTELUCK	BLACK ARROW EXPRESS	

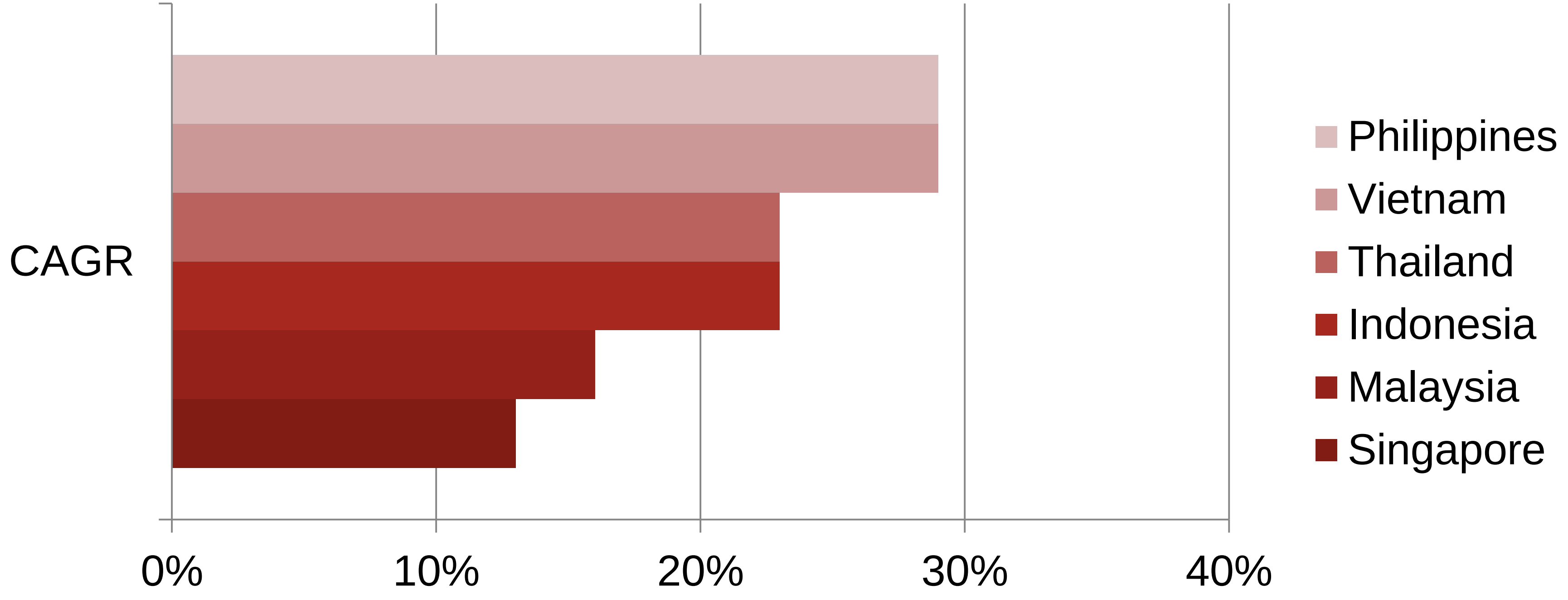
Logistics Ecosystem

Last Mile

Last Mile: SEA Market Overview

Last-mile delivery is growing very fast in Southeast Asia. Rapid advances from industry 'disruptors' operating primarily in the last mile.

Parcel / Express Item Delivery Compound Annual Growth Rate 2015-2020



Source: carPal Fleet

Last Mile: Delivery Startups in SEA

The market in SEA has becomes more fragmented, exploiting new technologies like platform and on demand service solutions

	B2B	B2C
Thailand	GIZTIX, honestbee, INTELUCK	ninja van, THE LORRY.COM, SOKOCHAN, SKOOTAR, deliveree, LINE, alpha, Send ranger, Shipyours, MY CLOUD FULFILLMENT, Grab, LALAMOVE
Indonesia	aCommerce, deliveree, trukita, INTELUCK, BisTip.com, THE LORRY.COM, kargo.co.id	LALAMOVE, Triplogic, GO-JEK, SICEPAT EKSPRES, zyllem, Grab
Singapore	shiplyst, honestbee, IAULIO	ninja van, THE LORRY.COM, FetchMe sg, QOURIER, MOOVAZ, Grab, LALAMOVE
Vietnam	LOGIVAN, gido, ECO TRUCK	GHN, AhaMove, Giaohangtietkiem.vn
Malaysia	honestbee	ninja van, THE LORRY.COM, GOGET, ZOOM, POSTO EXPRESS, zyllem, neon runner, DropIt.my, Grab, LALAMOVE
Philippines	INTELUCK, mober	ninja van, mober, City Delivery, transportify

Last Mile: Trends & Opportunities

Consumers are becoming increasingly sophisticated and are aware of what is possible, leading to the high demand of same-day or instant delivery in high density cities

80%

of shoppers surveyed want same-day shipping, while **61%** want their packages even faster — within 1-3 hours of placing an order

49%

of shoppers say that same-day delivery makes them more likely to shop online

36%

of the global same day delivery market revenue in 2017 is from Asia Pacific

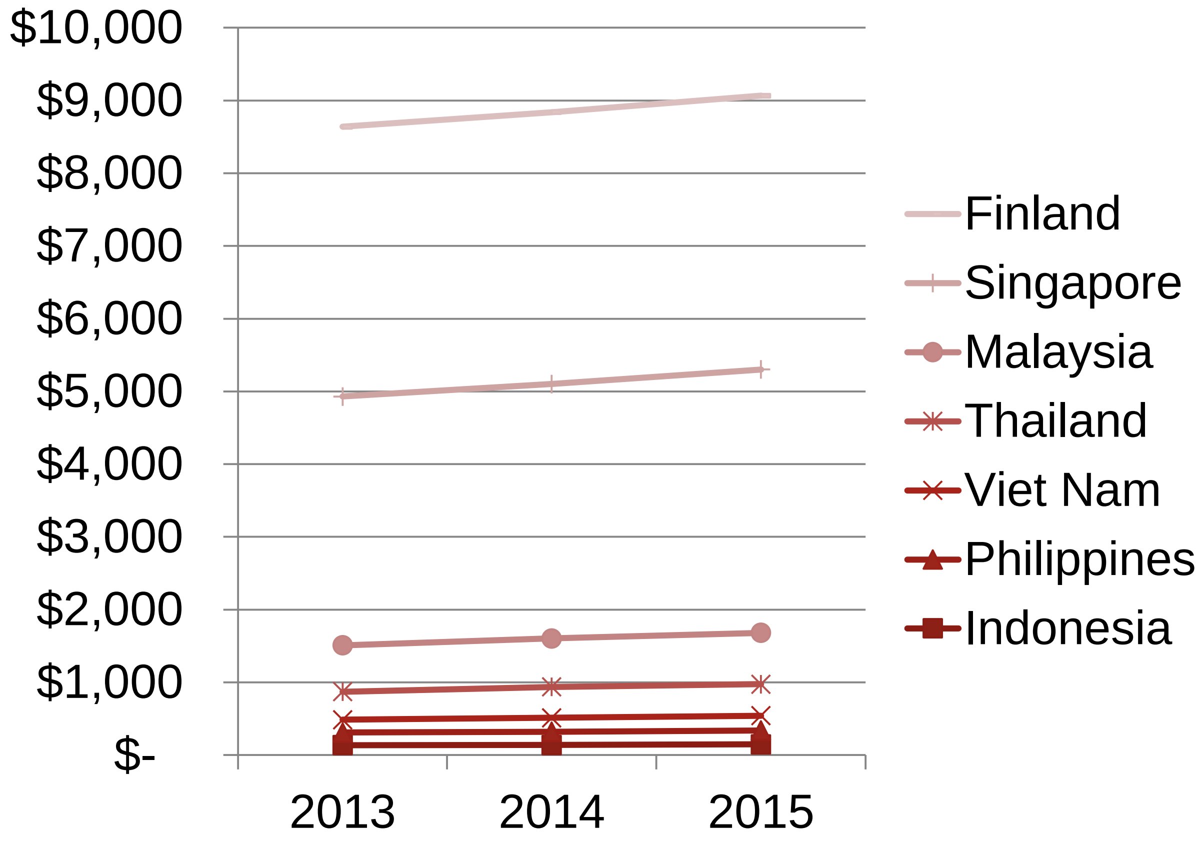
For new entrants, same-day and instant delivery are opportunities for them to move in and compete.

Source: Invespcro; Reuters

Last Mile: Trends & Opportunities

Labor costs will likely remain low enough in some SEA countries to prevent major automation technology change impacting the last mile over the next five to ten years

Nominal Wages in SEA vs The Finland (in USD)

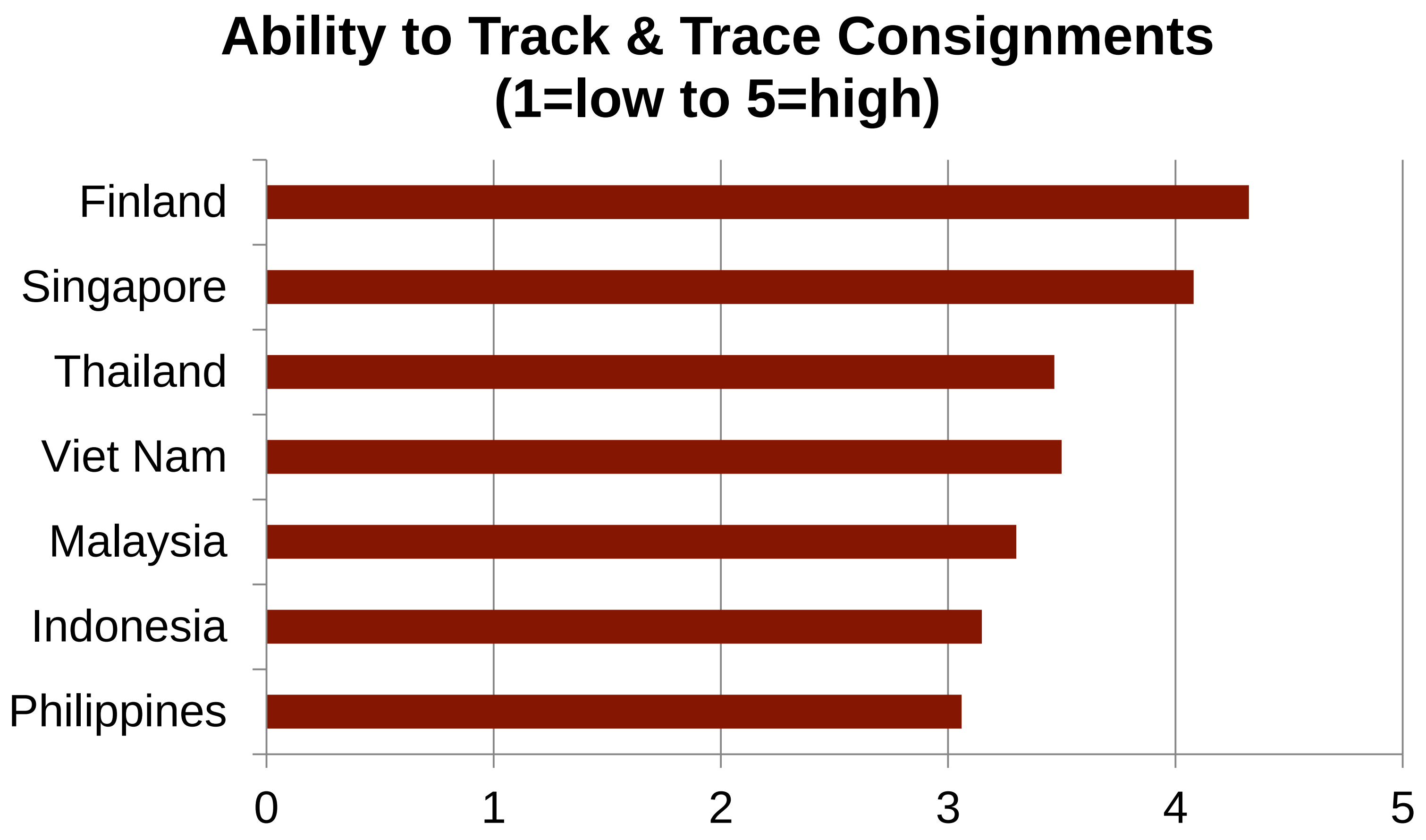


Due to their scalability, on-demand - a lighter logistics model that tackles issues of long delivery periods and limited distribution in rural locations, stays as a good solution for developing or small markets while low labor costs temporary prevent major automation technology change to emerge. Examples in SEA: The Lorry and Deliveree.

Source: Global Wage Report 2016-2017 International Labor Organisation

Last Mile: Trends & Opportunities

Besides Singapore, the logistic tracking system across the region is still average, leaving room for improvement



Data-driven business models such as routing softwares/tracking systems continue to be a main pillars.

Logistics Ecosystem

Cross-border

Cross-border: Growth in overseas ecommerce

Shifting consumer preferences and attractiveness of overseas products fuel growth in proportion of cross-border ecommerce transactions

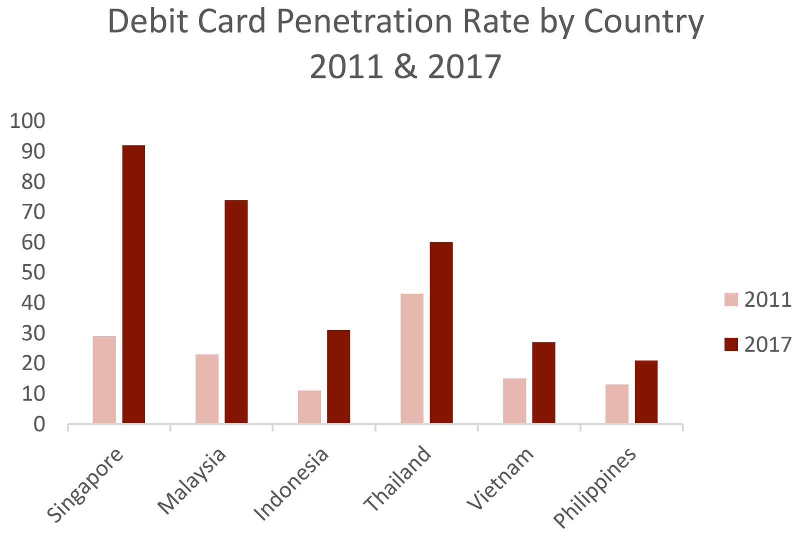
With increasing affluence, consumers look to overseas for more variety

Growing debit/credit card adoption enable purchases from overseas retail sites

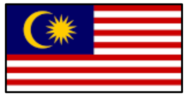
High de minimis allows consumers to buy from overseas tax-free

Higher Projected GDP Growth Rates Indicate Growing Consumer Wealth

3.4%	**6.1%**
World Average (2020 Projection)	Emerging Asia (2019-2023 Projection)



SGD 400
USD 295



MYR 500
USD 121

USD 75

VND 2mn
USD 86

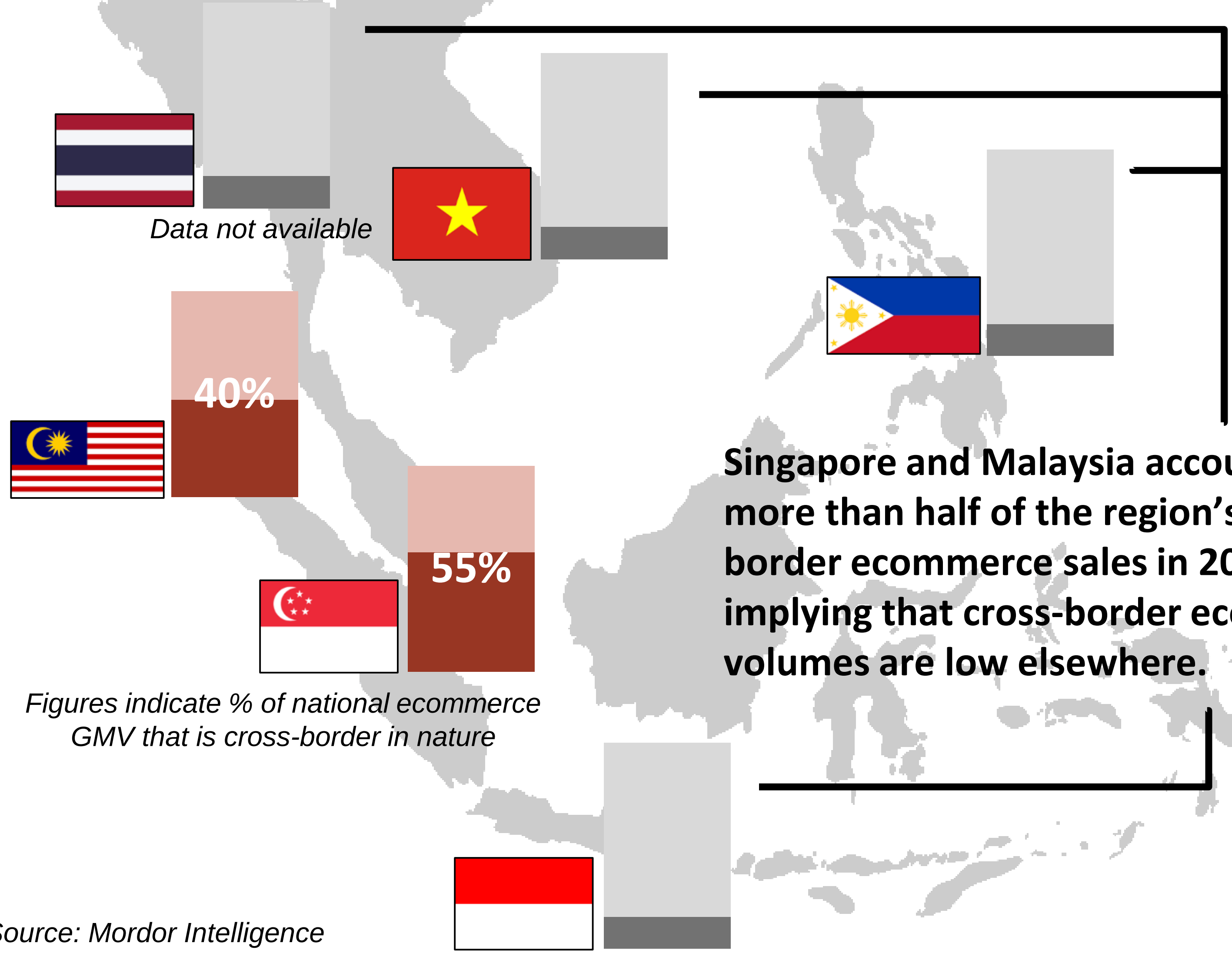
PHP 10,000
USD 194

THB 1500
USD 48

Source: OECD, World Bank

Cross-border: Growth in overseas ecommerce

High proportion of cross-border ecommerce transactions in Singapore and Malaysia already, potential for growth elsewhere in the region



Figures indicate % of national ecommerce GMV that is cross-border in nature

Singapore and Malaysia accounted for more than half of the region's cross-border ecommerce sales in 2017, implying that cross-border ecommerce volumes are low elsewhere.

However, as these markets mature and consumer acceptance of online transactions increase, we see that the proportion of cross-border ecommerce transactions will grow in Indonesia, Vietnam, Thailand and the Philippines over the next 5 years, albeit slowed by lack of developed payment options

Source: Mordor Intelligence

Cross-border: Challenges of cross-border logistics

Cross-border logistics presents its own set of challenges with different ways of tackling them, but relatively few players exist in the space

Warehousing

- Having warehouses in the origin country allows provider to consolidate single-package deliveries before shipping to destination, but fulfilment from these take longer.
- Having warehouses in the destination require sellers to hold inventory there, but fulfilment is faster.

Fulfilment

- Local fulfilment options are often lacking and even when available are fragmented, making it difficult for an overseas vendor to find a solution easily.
- Existing players currently solve this problem by either by building aggregating platforms or offering an end-to-end service themselves.

Customs Clearance

- Paperwork at customs is time consuming and often result in goods being kept at ports for days. This will delay the delivery of goods and worsen customer experience.
- However each country has its own regulations regarding documentation, labelling, taxation and clearance processes.
- Overcoming these challenges require local knowledge.

Warehouse at Origin (Freight Forwarding)	Warehouses at Destination	End-to-end Fulfilment	Aggregating Platform	Local Knowledge
gido	Singapore Post, Siam Shipping	BOXME	anchanto	JANIO, QXPRESS, aCommerce

Cross-border: Relative market immaturity - implications

Overseas vendors unwilling to establish local presence in emerging Asia, implying cross-border ecommerce growth more likely to serviced by the freight forwarding model

Ways for a vendor to sell and ship products overseas

No vendor action (Buyer procures own freight forwarding service) → International shipping (Courier from vendor's origin country) → Warehouse, sell, fulfil by local online marketplace → Establish local brand.com presence, procure own logistics

Low complexity
Low fixed cost
Low control

High complexity
High fixed cost
High control

NOW

Due to market immaturity and lack of small-scale logistics options, foreign vendors selling in SEA are likely to simply ship individual packages from their origin country (freight forwarding and courier) or sell in online marketplaces (which are moving towards integrating their own fulfilment and warehousing internally).

FUTURE

With new entrants across the entire logistics space leveraging on technology to enable micro-level services, foreign vendors are increasingly likely to capitalize on these small-scale logistics capabilities to establish their own presence in the SEA market and bypass the marketplace model.

Conclusion

The Southeast Asia logistics market is evolving very fast, especially with the expansion of e-commerce landscape. The region's logistics sector is originally dominated by third-party logistics service providers, with a few expectations of the big players backed by Chinese tech companies.

The rising expectation of customer experience and service level has created challenges for 3PLs, while presenting an opportunities for tech-enabled start-ups, especially companies in the below fields:

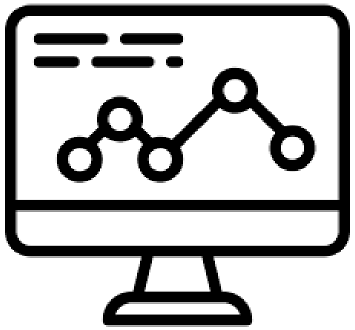
- **Automatic routing and tracking systems**: due to customers' growing demand, information technology capabilities, such as delivery tour planning and routing, will continue to be a main trend in the future
- **Logistics services in Tier-2 cities**: Lack of logistics infrastructure in ASEAN Tier-2 cities presents opportunities for 3PL providers to extend services from regional fulfilment centers in major cities

We believe that two types of start-ups will be more likely to succeed:

- Companies with **deep local knowledge** in each Southeast Asian market
- Companies who can **offer end-to-end solution** by itself or in collaboration with others to facilitate the whole supply chain of the business

As a result, we will expect consolidation to happen both horizontally and vertically after the proliferation of tech start-ups in the field. Investors will need to bet on the next industry consolidator.

Risks to consider



While players are applying discounts to gain market entry, it may be difficult to accurately gauge demand i.e. whether demand will stick after discounts are withdrawn

Given the high rate of technological change, companies that provide solutions purely based on technical innovations (and not business model innovations) may risk obsolescence within a few years

As Southeast Asia market is still highly fragmented, start-ups with better localisation will be more likely to win. As a result, scalability of the business within each domain will remain a risk for the investment.

Appendix

Team Picture

Team Bio

Jun Da Lim

After starting out as a litigation lawyer, Jun Da made the transition to become a business manager as a concurrent role that he held in addition to being the legal counsel of a publicly-listed company. In these 5 years of experience, he has honed a highly diverse skillset that includes corporate investigation, on-the-ground operations experience, and marketing strategy formulation.

Stanley Sun

Stanley started his career in sales of sea-freight services with Maersk Line, where he championed a B2B social selling project apart from client-facing activities and yield management. He subsequently ventured into oil trading and helped a Seoul-headquartered industrial conglomerate set up their trading desk in Singapore. Immediately prior to INSEAD, Stanley pursued an internship with an early-stage digital marketplace startup, where he was in charge of growth hacking and internal workflows.

Luli Xing

Prior to INSEAD, Luli was a management consultant from Casey Quirk by Deloitte. She has advised several world leading asset managers on their growth strategy and business planning. In addition to project work, she was the key member for the firm’s APAC knowledge center and has contributed to a whitepaper regarding China Asset Management Industry outlook which has been quoted by multiple global medias including Financial Times and Bloomberg, etc.

Teddy Tran

Teddy came to INSEAD after spending 5 years in both fast-paced, highly entrepreneurial corporate roles and start-ups. At AccorHotels Digital Marketing Cluster, she trained the hotel teams on deep technical skills, developed and analyzed quantitative models to give advice on digital marketing strategies. Besides, Teddy has founded two start-ups: an architectural firm specializing in architectural animation and illustration, and an agriculture import-export company in Vietnam.

Rymax Joehana

Rymax spent most of his career with Sojitz Corporation, one of the largest trading and investment groups in Japan. He led M&A and Business Development activities within Sojitz energy and mining division, boasting a track record of numerous business innovations across Southeast Asia and Latin America. In addition to launching Sojitz’s first cleantech venture in Indonesia, he also had professional exposures in integrating IoT and drone technologies in mining operation and trading logistics.

INSEAD