

'Excellence in Logistics Through Training' Singapore's Perspectives



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Current & Future Trends...



Source: World Economic Forum (WEF)

Industrial Revolution 4.0





How will the Future of Education look like ?



Education 4.0

'Transforming the Future of Education'



Prepared & edited by Thomas Sim – Aug 2019



How will the Future of Education look like?





How will the Future of Education look like?









'Employment, Skills & Education'

- 02:26mins

(World Economic Forum)

Prepared & edited by Thomas Sim – Aug 2019





Global Shift in Logistics Sector



Geographical Shift

•Emergence of Asia and ASEAN markets (ASEAN is expected to contribute significant proportion of world logistics)

 Change in production/ manufacturing locations
 (Global manufacturing bases are changing; major players have multiple manufacturing and assembly locations; inventory is decentralised; 3-D printing may disrupt traditional production models)

Shift in Customer Requirements

- Preference for specialisation (customers in specific segments like O&G, chemicals, etc. prefer to work with logistics companies that have specialised skills)
- Increasing preference for ontime delivery (customers both in B2B and B2C are emphasizing on-time delivery)
- Emergence of eCommerce (significant volume in logistics is driven by eCommerce)

Shift in Technology

 Increasing emphasis on automation and robotics (e.g., ASRS, Drone deliveries, etc.)

•Localisation, Big Data & Location Intelligence (these are expected to make a significant difference to the decisionmaking process)

 Internet of Things (making various SMART options available in logistics)

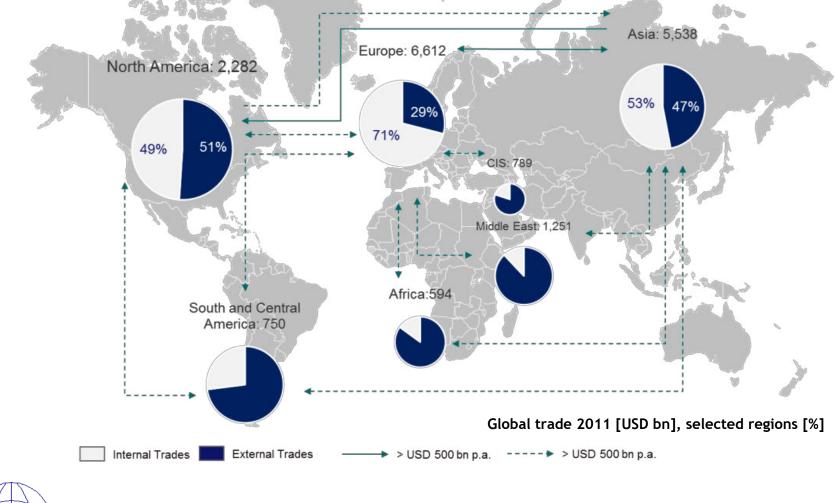
Sources: Hay Group Analysis



Geographic Shift – Emergence of Asia

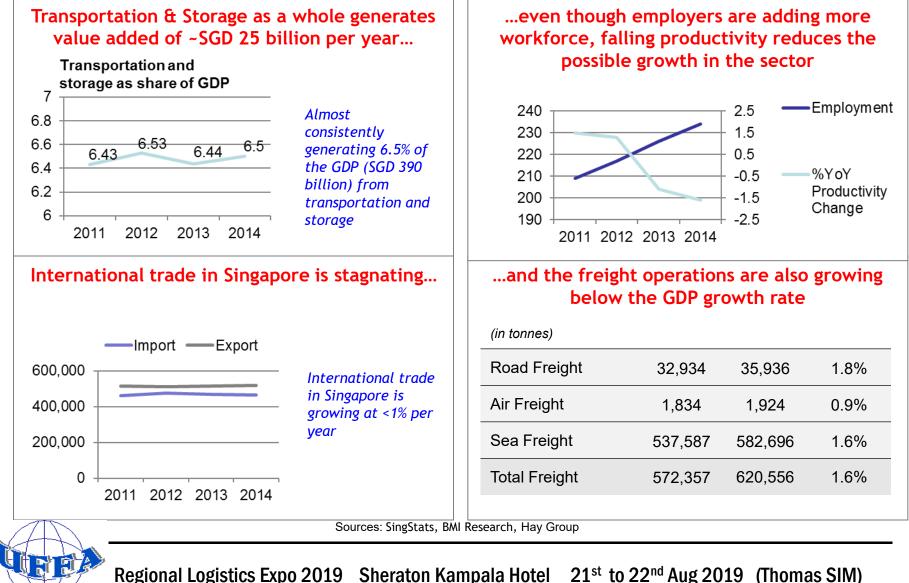


Sources: Forrestor Transport Intelligence; SP eCommerce Research; EDB; Nielsen Survey; Nielsen Global Consumer Confidence Survey, Q4 2013; LPI (World Bank); WTO; HSBC Trade Analysis; OECD 2010; Hay Group analysis



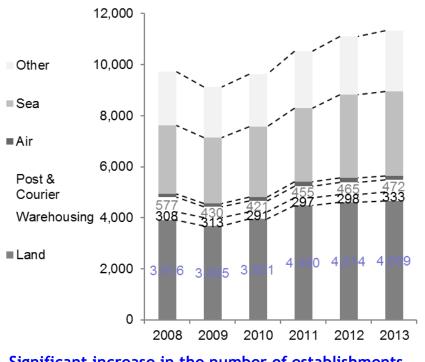
Overview of Singapore Logistics Market





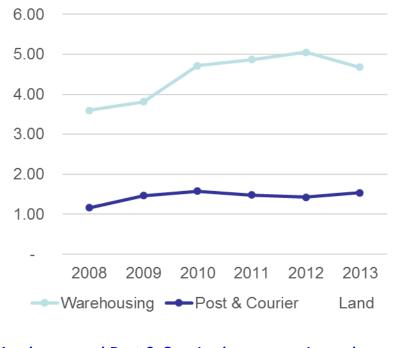


Number of Establishments in Logistics have been steadily growing for the last few years...



Significant increase in the number of establishments for Land Transportation for last 5 years.





Warehouse and Post & Courier have experienced an improvement in value added per establishment, but no change in Land Transport

*Decimals rounded up to the nearest whole number

Sources: SingStat - Key Indicators by Industry Group in Transport & Storage Services, 2008 - 2013; Hay Group Analysis



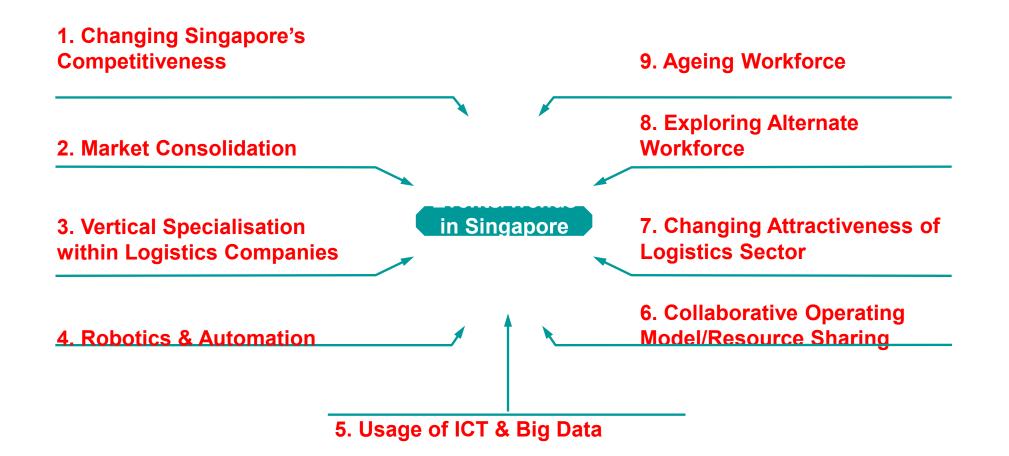




Key Events/Trends in Singapore Logistics Sector









SWOT Analysis for Sin Logistics Sector



HELPFUL

HARMFUL

Strengths Good connectivity (physical infrastructure, location) Stable political, economic and social conditions; strong legal system and business friendly tax structure Strong support for SME in logistics pool (growing

Weaknesses

- Ageing population
- Limited availability of blue color staff members
- Increasing restrictions on foreign labor workforce
- Poor productivity for small companies

Opportunities

ASEAN trade volume expected to be up to USD 5 trillion by 2025 (Singapore is trying to tap on this)

with the help of government agencies)

EXTERNAL

NTERNAL

- Increasing supply chain complexities along with limited logistics capabilities of other countries in ASEAN
- Relocation of manufacturing and distribution bases to other regional hubs (e.g., Indonesia, Vietnam)

Improving logistics infrastructure and capabilities in other ASEAN countries (specifically by Taiwan, Hong Kong, China, Korea and Japan)





Trends	Details	Implication on Jobs
1 Changing Singapore's Competitiveness	 Logistics Solution becomes critical in providing flexibility, predictability, and cost optimization to customers if Singapore is to be a ASEAN logistics hub (physical and expertise and control) This is also a significant value-add to help customer optimize their network, cost and efficiency 	Logistics Solutions
2 Vertical Specialization within Logistics Companies	 Vertical specialization in logistics companies is gaining traction, especially SMEs need to identify an unique area to focus its proposition and resources. Program management skills and the ability to integrate across businesses areas and multiple touch points is also critical 	Vertical Specialists
3 Robotics & Automation	• With manpower crunch, and greater demand from customers in cost and efficiency, professionals with industrial engineering background in optimization and automation of warehouse space and work flow to improve productivity and efficiency is critical	Innovation and Process Improvements
4 Usage of ICT & Big Data	 Seamless integration with customer production and distribution systems is imperative in providing efficient delivery With improved data availability, it is expected that big data will facilitate operational efficiency and customer experience, It can be used in network redesign, product life cycle etc 	Logistics Information System
5 Collaborative Operating Model / Resource Sharing	• Collaborative Operating Model / Resource Sharing requires development of new commercial models, techniques in fostering collaboration (sector level) and long-term thinking	Expert panel reflected low probability in 2020, and hence it will not to be featured for 2020 future jobs. Likely implications would be on IT and big data capability and



Managerial	Managers with team lead roles / manager having to manage across function and activities	 In charge of planning, integration and management of department e.g business operations and grow, people management (development, resourcing etc). 				
Professional		• Work under supervision but fairly independent, knowledge typically acquired through advanced specialized training or broad work experiences. Problem to be solved are less standardized and hence greater thinking challenges. Some have team lead responsibility	How points	 Solving points	 ability points	
Executive	Individual Contributors	 Jobs are clerical, repetitive, standardized, and typically requires higher professional know-how and problem solving skills 	Know	 Problem	 Accountability	
Rank and File		 Jobs are physical, repetitive, highly standardized and focused in specific area and functions 				

Four Levels of Work and Competency Level - PMET



Managerial	Level 6 (Evaluation) of Bloom's Taxonomy of Learning The ability to make decisions and supporting views that require an understanding of varying degrees of perspectives and complexities.	
Professional	Level 4 (Analysis) & 5 (Synthesis) of Bloom's Taxonomy of Learning The ability to identify component arrangements; determine logic and semantics as well as to combine information to form a unique solution that requires creativity, criticality of thought and originality.	ability points
Executive	Level 3 (Application) of Bloom's Taxonomy of Learning The ability to use information to solve problems; transfering abstract or theoretical ideas to practical situations as well as in identifying connections and relationships and how they apply.	Account
Rank and File	Level 1 (Knowledge) & 2 (Comprehension) of Bloom's Taxonomy of Learning The ability to memorise verbatim information and restate in one's words through paraphrasing, summarising and translating. These are essentially the bottom tiers of the learning pyramid where the skillsets required are basic and lower in order of objectives.	

Relating it to the Bloom's Taxonomy





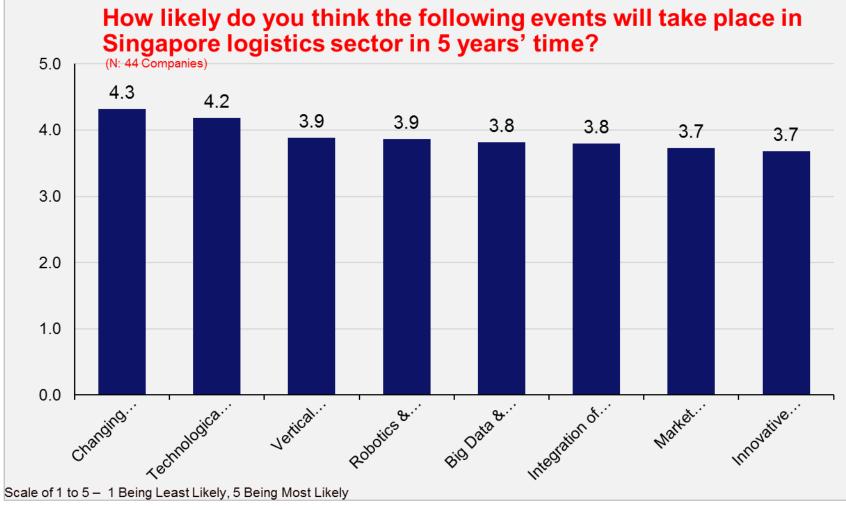




Singapore Logistics Industry Trends...









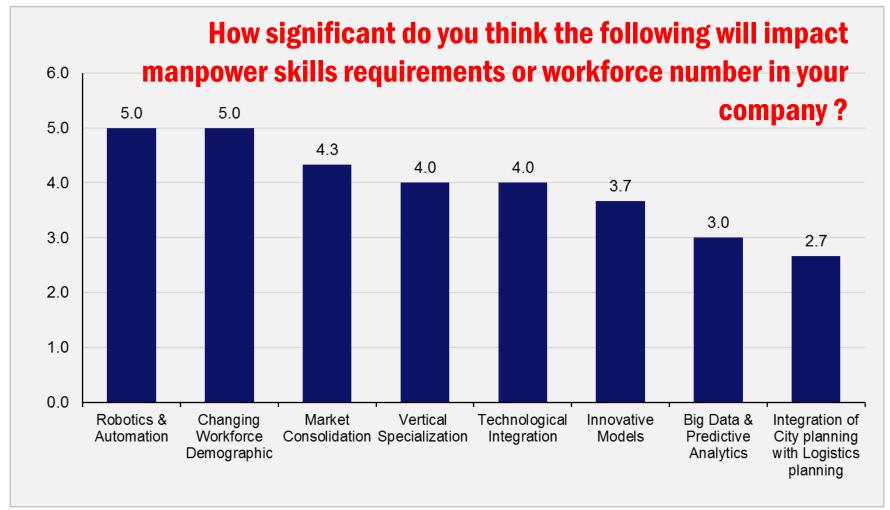


How likely do you think the following events will take place in Singapore logistics sector in the next 5 years ?

	Freight Forwarding			Land Transportation			Warehousing & Sto	orage
	Trends	Score		Trends	Score		Trends	Score
1	Changing Workforce Demographic	4.2	1	Changing Workforce Demographic	4.4	1	Changing Workforce Demographic	4.3
2	Technological Integration	4.1	2	Technological Integration	4.3	2	Technological Integration	4.3
3	Vertical Specialization	4.0	3	Big Data & Predictive Analytics	3.9	3	Big Data & Predictive Analytics	3.9
4	Big Data & Predictive Analytics	3.9	4	Robotics & Automation	3.9	4	Robotics & Automation	3.9
5	Integration of City planning with Logistics planning	3.9	5	Vertical Specialization	3.9	5	Vertical Specialization	3.9
6	Robotics & Automation	3.8	6	Integration of City planning with Logistics planning	3.9	6	Integration of City planning with Logistics planning	3.9
7	Innovative Models	3.7	7	Innovative Models	3.8	7	Market Consolidation	3.7
8	Market Consolidation	3.7	8	Market Consolidation	3.8	8	Innovative Models	3.7







Scale of 1 to 5 - 1 Being Least Likely, 5 Being Most Likely





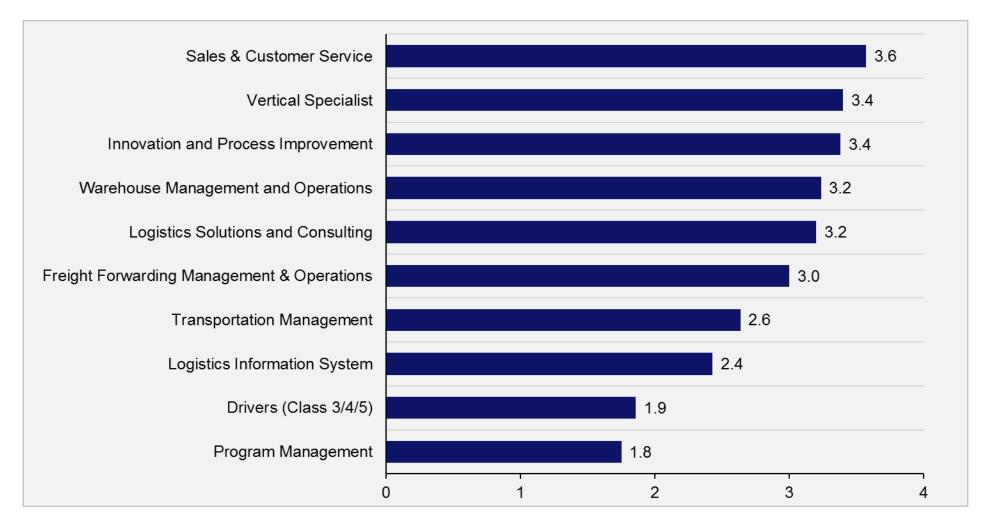


Survey on Manpower and Skills





Job functions that are the most important to enhance companies' competitiveness in the next 5 years





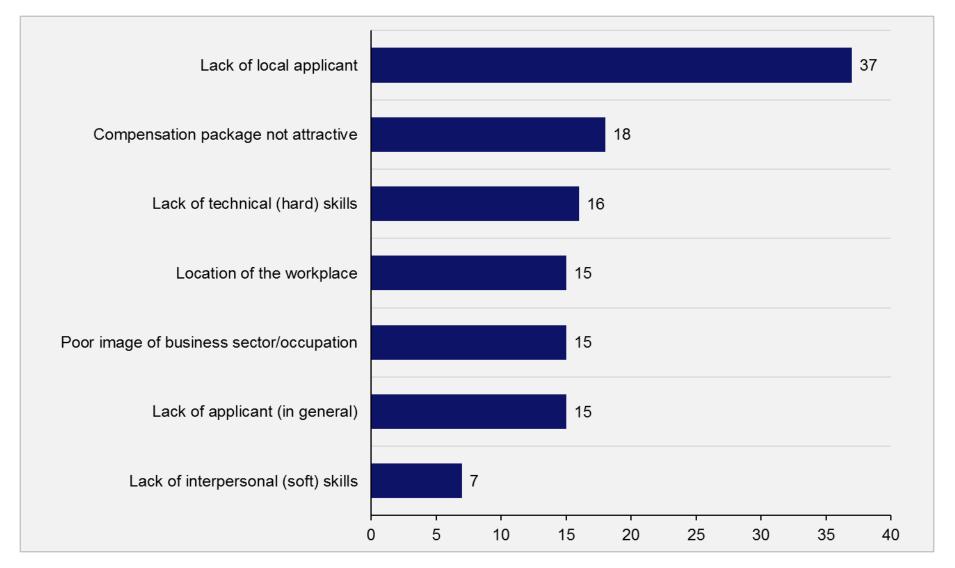
Job functions company has difficulties filling with locals (Singapore Citizens or Permanent Residents)



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Most commonly-cited reasons for difficulties in filling jobs ?





Company Survey on Education and Training





The job functions organization engages trainers for training





The 3 "Industry Skills" that will be critical to company's competitiveness

in the next 5 years ?

	Freight Forwarding			Land Transportation			Warehousing & Sto	rage
	Trends	Score		Trends	Score		Trends	Score
1	Process optimization (e.g.: Lean, Six Sigma)	16	1	Transportation / Distribution Optimization	20	1	Process optimization (e.g.: Lean, Six Sigma)	22
2	Transportation / Distribution Optimization	15	2	Process optimization (e.g.: Lean, Six Sigma)	19	2	Transportation / Distribution Optimization	20
3	Management of Automated/Automation Technology	13	3	Management of Automated/Automation Technology	17	3	Management of Automated/Automation Technology	19
4	Specialized Goods Handling	10	4	Specialized Goods Handling	9	4	Occupational Safety and Health Planning	9
5	International Trading Practices	9	5	Occupational Safety and Health Planning	8	5	Specialized Goods Handling	8
6	Multi-modal Transportation	5	6	Multi-modal Transportation	7	6	International Trading Practices	7
7	Occupational Safety and Health Planning	5	7	International Trading Practices	6	7	Multi-modal Transportation	6
8	Contract Management	5	8	Import/Export Documents Handling	6	8	Import/Export Documents Handling	5
9	Import/Export Documents Handling	5	9	Contract Management	4	9	Freight Brokering	4
10	Freight Brokering	4	10	Freight Brokering	3	10	Contract Management	4
11	Environmental Compliance	2	11	Environmental Compliance	2	11	Environmental Compliance	4
12	Forklift Truck Operation	1	12	Forklift Truck Operation	2	12	Forklift Truck Operation	3



The 3 "Industry Skills" that will be critical to company's competitiveness in the next 5

years ? (Revenue Size)

	> SGD 100M			SGD 50 – 100M			SGD 10 – 50M		
	Trends	Score		Trends	Score		Trends	Score	
1	Process optimization (e.g.: Lean, Six Sigma)	10	1	Occupational Safety and Health Planning	4	1	Process optimization (e.g.: Lean, Six Sigma)	11	
2	Management of Automated/Automation Technology	9	2	Multi-modal Transportation	3	2	Transportation / Distribution Optimization	9	
3	Transportation / Distribution Optimization	8	3	Transportation / Distribution Optimization	2	3	Management of Automated/Automation Technology	9	
4	Specialized Goods Handling	3	4	Management of Automated/Automation Technology	2	4	International Trading Practices	6	
5	Multi-modal Transportation	2	5	Import/Export Documents Handling	2	5	Specialized Goods Handling	6	
6	International Trading Practices	2	6	Specialized Goods Handling	2	6	Occupational Safety and Health Planning	5	
7	Freight Brokering	1	7	Environmental Compliance	2	7	Contract Management	5	
8	Occupational Safety and Health Planning	1	8	Freight Brokering	1	8	Import/Export Documents Handling	4	
9	Contract Management	1	9	Contract Management	1	9	Multi-modal Transportation	3	
10	Import/Export Documents Handling	1	10	Forklift Truck Operation	1	10	Freight Brokering	3	
11	Forklift Truck Operation	1	11	Process optimization (e.g.: Lean, Six Sigma)	1	11	Environmental Compliance	2	
12	Environmental Compliance	0	12	International Trading Practices	0	12	Forklift Truck Operation	0	

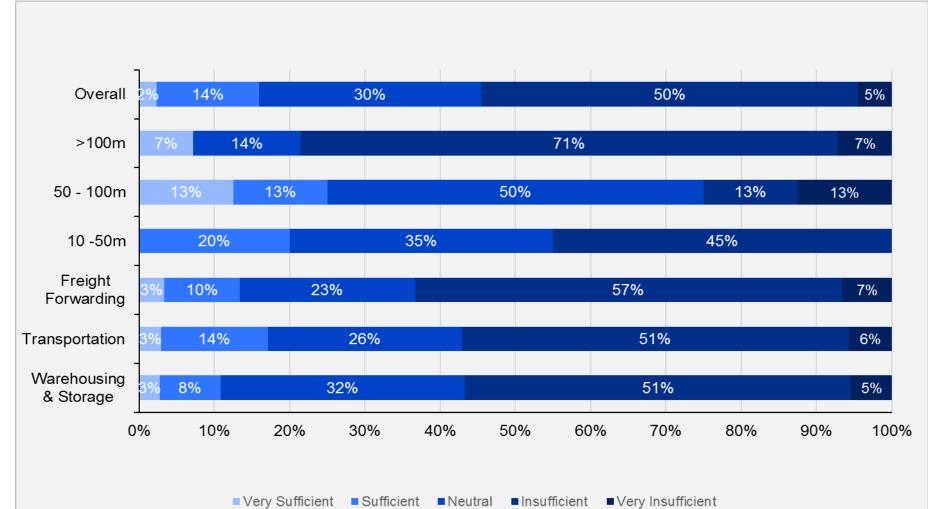


The 3 "General/Soft Skills" that will be critical to company's competitiveness in the next 5 years.

	Freight Forwarding			Land Transportation			Warehousing & Sto	orage
	Trends	Score		Trends	Score		Trends	Score
1	Operational Planning	17	1	Operational Planning	21	1	Operational Planning	23
2	Technology / Computer	16	2	Technology / Computer	19	2	Technology / Computer	21
3	Analytical and Problem Solving	16	3	Analytical and Problem Solving	18	3	Analytical and Problem Solving	18
4	Customer Relations Skills	12	4	Customer Relations Skills	14	4	Customer Relations Skills	14
5	Cost Analysis & Budgets	12	5	Project Management	13	5	Cost Analysis & Budgets	14
6	Project Management	9	6	Cost Analysis & Budgets	12	6	Project Management	13
7	Negotiation	3	7	Interpersonal Skills	4	7	Interpersonal Skills	4
8	Interpersonal Skills	3	8	Time Management	2	8	Time Management	2
9	Time Management	2	9	Negotiation	1	9	Negotiation	1

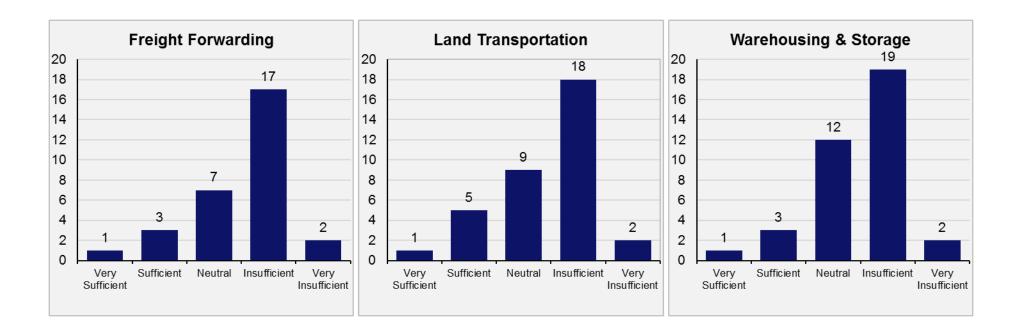


Do you think the skill level of workforce in the logistics sector is sufficient ? (Overall)





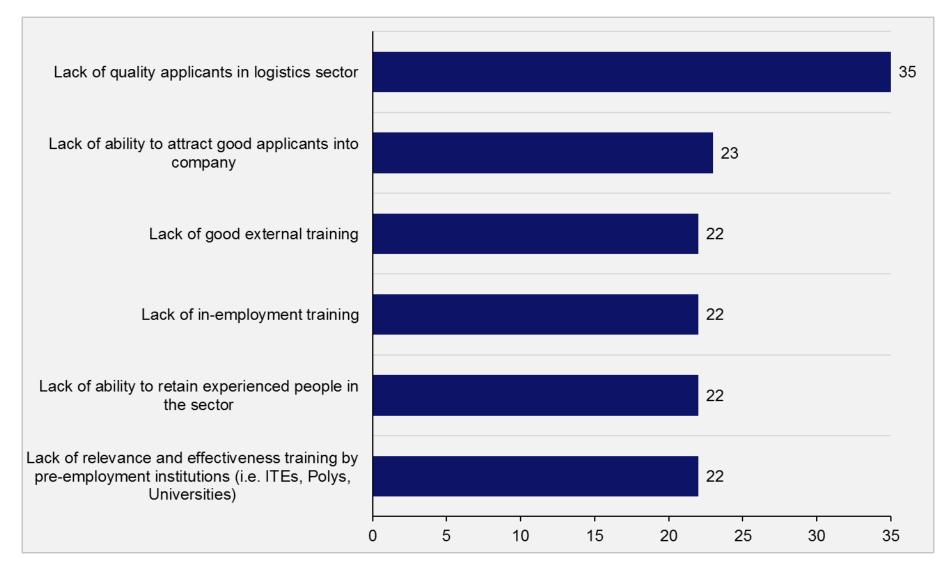
Do you think the skill level of workforce in the logistics sector is sufficient ? (Subsectors)







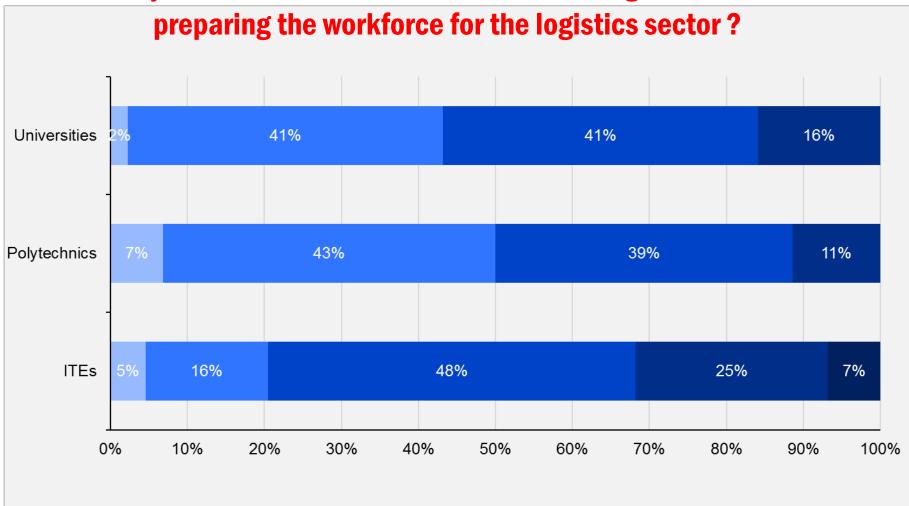
What do you think are the primary reasons behind the lack of skill level?



33



How would you rate the effectiveness of the existing local institutions in



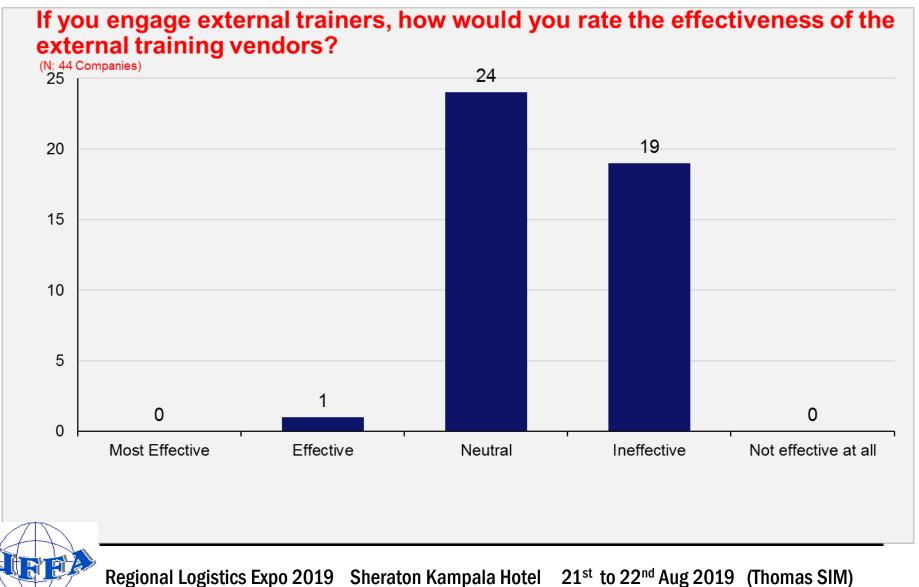


What do you think are the top 3 shortfalls in your company's

training structure ?











Singapore's Future Growth Strategy





Singapore's growth strategy is reaching its limits...

- Economy grew by 2.9%, slower growth than before. The expected range is 2 to 4 per cent every year until 2020 because the economy is more mature and the Government has slowed down foreign worker inflow.
- Emphasis on economic pursuits are being balanced by other priorities such as social and public infrastructure enhancements. However, growth remains important as it allows investments in healthcare, education and our people for the future.





Singapore's growth strategy is reaching its limits...

- fresh approach needed new strategy is embodied by the 'SkillsFuture' movement. SkillsFuture aims to better attract and retain Singaporeans for the industry, groom talent for leadership roles, improve job quality, and identify emerging skills needs.
- Series of Sectoral Manpower Plans (SMPs) are being announced. The Manpower Sectoral Study for the Logistics Sector is one of several commissioned by the Government to help Singapore in this strategic shift.
- Subsectors: Warehousing and Storage, Freight Forwarding and Land Transportation





Skills Framework (SF)

 serve as a common skills reference framework to profile workplace competencies for the purpose of education and training, career planning, lifelong learning and human capital development





Dev of Skills Framework for Log Sector



Launching of the Industry Transformation Map (ITM) for the Transport Logistics Sector

Develop the 'Logistics Career Guide'



Road map to boost Singapore's role as global logistics hub



Minister S Iswaran viewing the exhibit showcase for the Logistics Industry Career Guide, PHOTO: JTC

S PUBLISHED 4 HOURS AGO





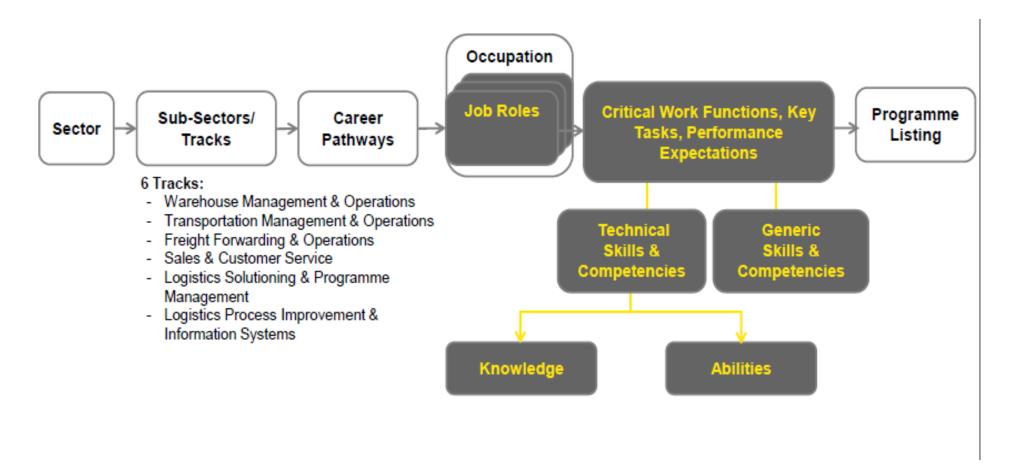
Stakeholders will refer to the SF to help them in the following:

- Individuals: Make informed choices on education, training, career development and career progression
 Employers: Make informed decisions about CE (compulsory education) and training investments, and strategise their talent recruitment, development and management
- Training Providers: Enhance the way education and training programmes are designed and delivered, to achieve better alignment with industry needs



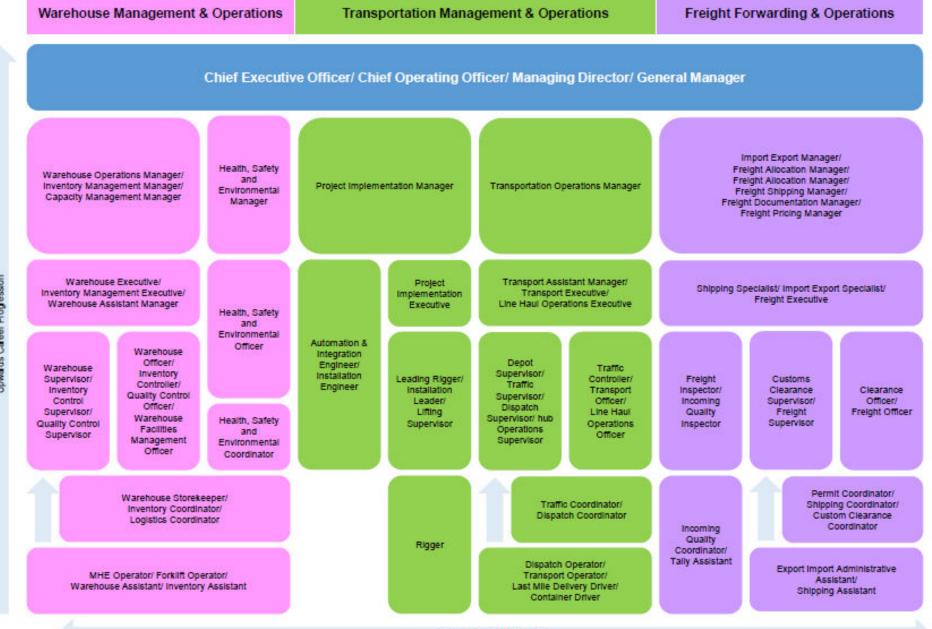
Components of Skills Framework for Logistics







Skills Framework for Logistics – Career Mapping (1)

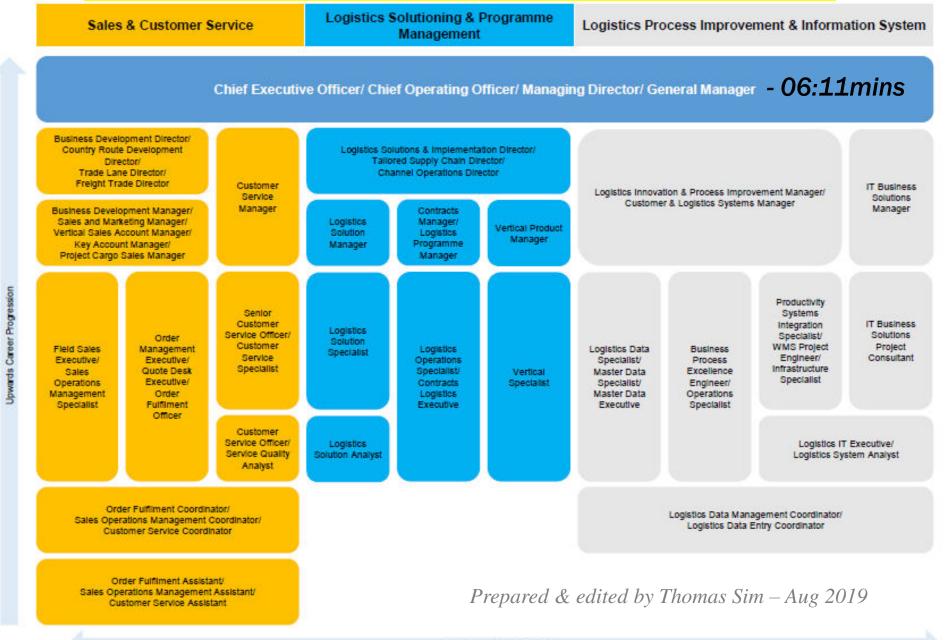


Lateral Career Progression

Progressi Career Jowards

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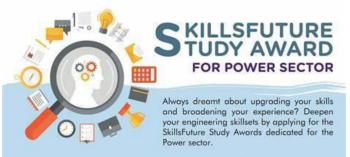
Skills Framework for Logistics – Career Mapping (2)



Lateral Career Progression

Skills Development in Logistics





Successful applicants will receive a **monetary award of \$5,000**. The award is **bond-free**!

WHO CAN APPLY?

- ✓ Singaporean
 - who has at least two years of engineering work experience in the Power sector or related sectors; or
 - who is a Licensed Electrical Worker/Licensed Gas Service Worker/Licensed Cable
 Detection Worker; or
 - who has at least two years of relevant Power Engineering skillsets in other sectors.
- ✓ Intending to pursue relevant engineering courses offered by local government institutions, Singapore Institute of Power and Gas or BCA Academy.

HOW TO APPLY?

Applications are open all year round.

You may submit your application at www.skillsfuture.sg/studyawards/power

For more information, contact us at enquiries@poweringlives.sg





Overview of Singapore's SkillsFuture Initiative

SkillsFuture's Thrusts

2



Help individuals make wellinformed choices in education, training and careers

Develop an integrated, high-quality system of education and training that responds to constantly evolving industry needs

Promote employer recognition and career development based on skills and mastery

3

Foster a culture that supports and celebrates lifelong learning



SkillsFuture Vision of a Vibrant Training Landscape







Individuals empowered to take ownership for acquiring new skills and deepening skill sets throughout their careers *Employers* invest in employee training and developing career progression pathways, and benefit from pipeline of skilled employees





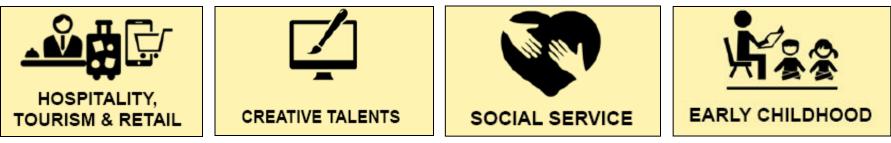
Significant Economic Opportunities Ahead



... in Key Growth Clusters



... and Priority Sectors



Need to develop our people so that they can be fully equipped and ready to take on these good opportunities...



SkillsFuture

Your Skills, Your Asset, Your Future,

Programmes you can look forward to under SkillsFuture

SECTORAL MANPOWER PLANS EDUCATION AND CAREER SKILLS FUTURE EARN AND LEARN PROGRAMME SKILLS-FOCUSED MODULAR COURSES Placement with structured on-the-job and Wider range and scale of short skills-focused Developing pipeline of skilled workers. GUIDANCE (ECG) institution-based training to give fresh ITE and Counsellors to help students make modular courses relevant to Industry needs. Progression and development framework to polytechnic graduates a career headstart in provide every worker with career pathways well-informed decisions on education, training based on skills. chosen sectors. SKILLSFUTURE STUDY AWARDS and careers. Monetary awards to help individuals develop and ENHANCED INTERNSHIP SKILLSFUTURE CREDIT deepen their skills in growth clusters. SKILLSFUTURE LEADERSHIP Structured programmes and enhanced Learning credits for all Singaporeans aged DEVELOPMENT INITIATIVE 25 years and above to pay for course fees for INCREASED COURSE SUBSIDIES Internships will better support career Funding to support increased collaboration exploration and workplace learning. work-skills-related courses supported by All Singaporeans aged 40 years and above to with companies to develop and stretch public agencies. receive a minimum of 90% course subsidy for high-potential talent. YOUNG TALENT PROGRAMME (YTP) MOE-funded and WDA-supported courses. More overseas market immersion opportunities SKILLSFUTURE MENTORS for ITE, polytechnic and university students. SKILLSFUTURE FELLOWSHIPS SMEs can access pool of mentors with deep industry skills and experience to provide Cash sponsorship for individuals with deep INDIVIDUAL LEARNING PORTFOLIO skills expertise to achieve mastery in their guidance in their implementation of skills An online, one-stop education, training and respective fields. deepening initiatives. career guidance portal for every Singaporean to SKILLSFUTURE CREDIT plan their education, training and career path. Regular top-ups in learning credits for all Singaporeans to support skills deepening. In School Starting Work **Growing your Career SkillsFuture** GOVERNMENT EDUCATION UNIONS INDIVIDUALS EMPLOYEES

STUDENTS, PARENTS & TEACHERS

EMPLOYERS

& TRAINING

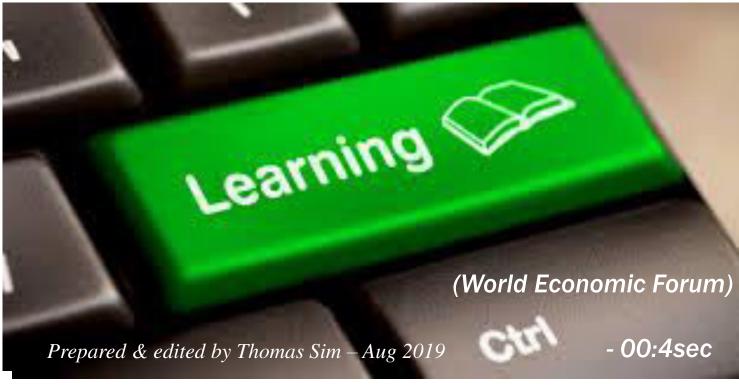
INSTITUTIONS

& INDUSTRY ASSOCIATIONS





The 10 Skills You Need to Thrive in the 4th Industrial Revolution

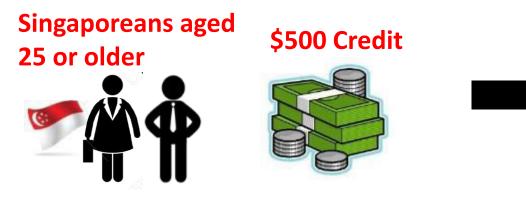




SkillsFuture Credit



To empower Singaporeans in their learning and development and to deepen and broaden their skills.



Education & Training



- Credits will not expire and can be accumulated
- Can be used on top of existing course fee subsidies
- Singapore Government will provide top-ups at regular intervals

Applicable to work-skills related education and training:

- Courses subsidised by WDA
- Courses offered by the Ministry of Education (MOE)-funded Post-Secondary Education Institutions and selected courses from UniSIM, LaSalle and NAFA
- Courses supported by other public agencies

SkillsFuture Study Awards



To encourage and support early to mid-career Singaporeans develop and deepen specialist skills needed in priority sectors



Up to \$5,000 Monetary Award



No bond period, about 2,000 awards annually



- Given on top of existing course fee subsidies
- Can be used to pay for out-of-pocket cost of course fees, course materials and other work-related training costs
- Individuals can apply or be nominated by their employers

SkillsFuture Mentors



To develop a pool of SkillsFuture mentors to help SMEs develop the potential of their workforce.



Match mentors to SMEs



Appoint industry partners (e.g. TACs, Centres of Innovation) to help recruit, manage and match mentors to interested SMEs, starting Q3 2015 Shared pool of mentors to help SMEs implement measures to deepen skills of workforce, and help their supervisors/managers to develop coaching skills

 Mentors will have relevant sector-specific experience and appreciation of training & development framework

SkillsFuture Earn & Learn Programme



To provide fresh graduates from polytechnics and ITE a head-start in careers related to their discipline of study.



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Work-Study Programme

- Structured on-the-job training and mentorship
- Participants are matched to employers related to their discipline of study

Benefits

- Industry-recognised certifications
- Skills-based wage increments
- Meaningful career advancement pathways
- Better skilled workforce

SkillsFuture 'Earn and Learn' Programme for Logistics

KEY SUMMARY

*12 months work-study leading to Specialist Diploma in Supply Chain Management (SD (SCM))
*SD (SCM) offered by RP & skills deepening through company-based work-place training programme.
*Companies to take reference to OJT blueprints developed by RP to ensure robust coverage.
*Deepening of skills as Logistics Officer (Warehouse, Freight Forwarding, Transport, Supply Chain)
*Projected 5 - 8% wage increment



Programme Structure Target Audience Senior Logistics Trainee. Officer Logistics/Supply Chain Diploma (~ 2 years) Graduates from: Diploma in Supply Chain Individuals Management by RP •Skills deepening through Diploma in Industrial & Logistics • Skills deepening work-place training and <u>_</u>___ **Operations Management by RP** Officer through company based projects Diploma in Logistics & (\$1,900 -OJT/work-place **Operations Management by TP** Part-time •Specialist Diploma \$2,150*) training and facilitated Diploma in International <u>_</u>___ company based •Wage increment and sign training by RP Logistics and Supply Chain projects in on bonus (270 hours~70%) Management by NP Companies with up to 20% **Diploma in Business** (120 hours~30%) Logistics Mentoring via e-learning Administration (Logistics and Company Officer by company Supply Chain) by SP •Support talent attraction assigned (\$1,800 -**Diploma in Business** mentor & grooming \$2,000*) Management (Supply Chain Training aligned to Management) by NYP **Related Business Diploma** business needs Work-Study 12 months All Maritime Diploma • All Engineering Diploma • Participating Companies All Information Technology •From Singapore Logistics Diploma Association Memberships •From the Transport \$ POLYTECHNIC Company. **REPUBLIC** POLYTECHNIC Logistics Industry in Logistics companies keen to hire Incentives and train fresh graduates in areas Singapore •Sign On Incentives for such as: •MNCs Air Freight Operations trainees Logistics Operations Programme Manager Certifications •Grants (e.g. mentor •Sea Freight Operations •Training delivery •Specialist Diploma in SCM support, OJT, absentee Business Solutions Company support payroll, admin grant) Customer Service •OJT blueprint •Supply Chain Planning for companies development

* Basic salary excluding OT and allowances which may amount to 5%-10%

Skills Development in Logistics





Pre-Employment Initiatives



Enhanced Internships



To provide students with a more meaningful internship experience and better support for structured workplace learning.

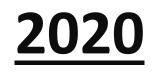
2015/2016

Enhancements to

- Half of ITE courses
- Two-thirds of polytechnic courses

Enhancements to ITE and polytechnic internship curriculum





Enhancements to ALL ITE and polytechnic courses



- More defined learning outcomes and structured activities
 - Better integration of internship and classroom learning
- Extended internships to support better learning and enhancement of skills

SINGAPORE LOGISTICS **Enhanced Internships** ASSOCIATION **Student joins the industry** Ready to Internship Training by Work Training Current Graduation company Independently (Project (6 months) driven) Ready to Work Enhanced Independently Graduation Enhanced Internship SkillsFuture

Commitment from Companies (Pilot Phase)



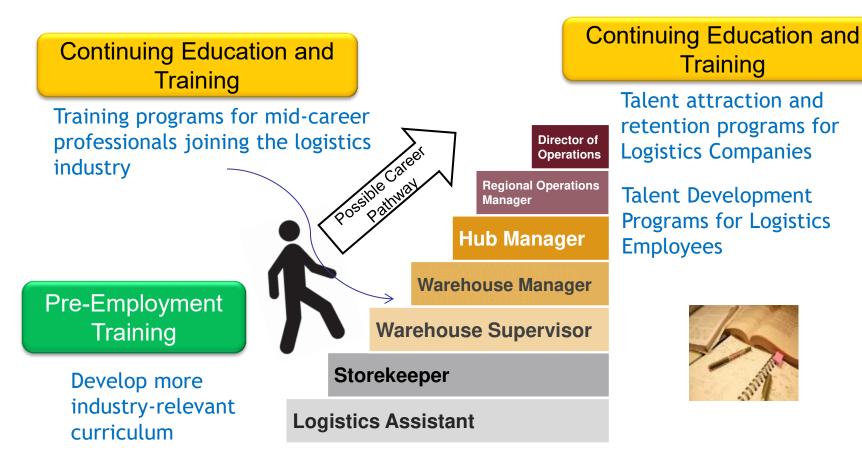
Dedicate Resources to develop:

- ✓Workplace Curriculum
- ✓ Learning outcomes at workplace
- ✓Common Grading System for students
- ✓ Participation in Train-the-Trainers Program
- ✓ Joint Marketing-Campaign at Schools



Commitment from Companies (Pilot Phase)





Equipping the Singapore workforce with the necessary skills



Skills Development in Logistics



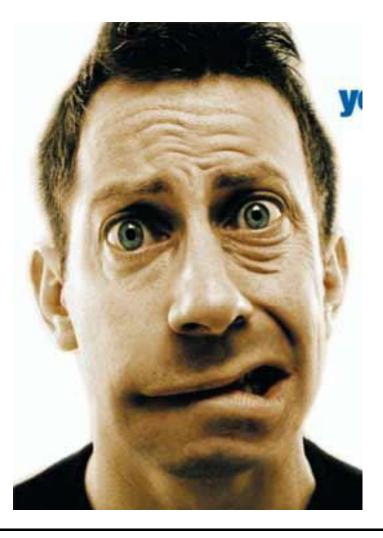






Global Trends (Ready ?)...







Skills Development in Logistics







And Finally: What can be learnt from other supply chains? What was the last innovation that came out of the logistics industry?

