

The Importance of Data Science and Artificial Intelligence in Thailand's Private Sector

Dr. Charatpong Chotigavanich, CFA
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Background of Speaker



Dr. Charatpong Chotigavanich, CFA

Co-Founder and CTO – T2P Co., Ltd. ('11 – Present)

Co-Founder and Director – Digitopolis, mobile application development ('07-Present)

Independent Director – Tisco Financial Group Plc. ('18 – '22)

Lecturer – Asian Institute of Technology ('12 – '18)

Business Development, Finance Specialist to Group CFO – True Corporation ('06 - '09)

Co-Founder and Senior Software Engineer – Vaultus Inc. ('99 - '02)

Agenda

Data Science and AI Trends

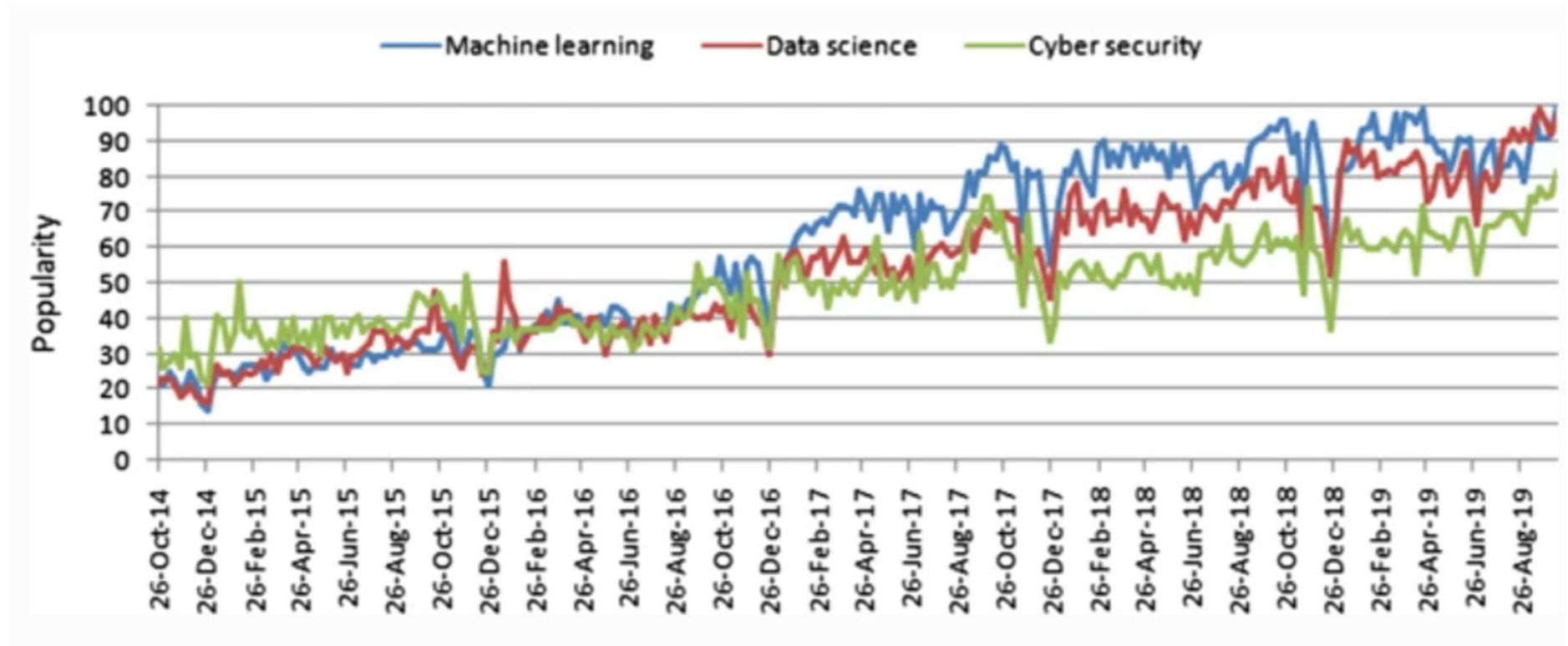
Current Situation in Thailand's Private Sectors

Overcoming the Challenges and Difficulties

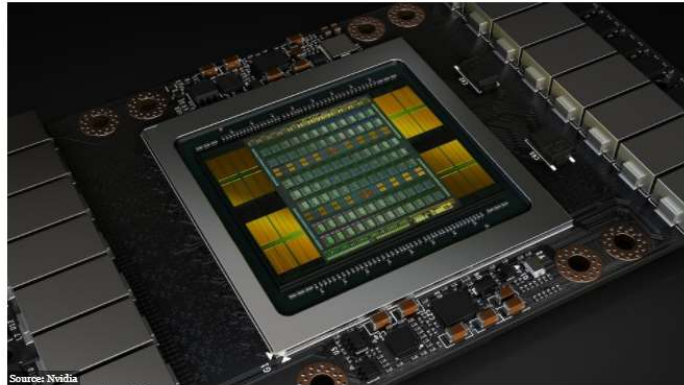
Conclusion, Q&A



Trend of ML and DS



Principal Enablers



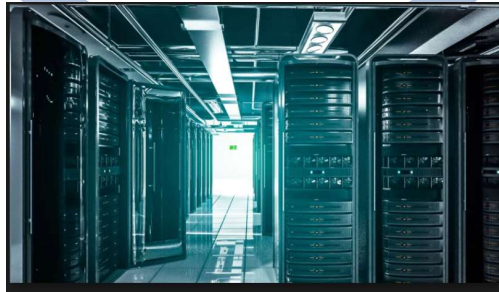
Internet



DS&AI

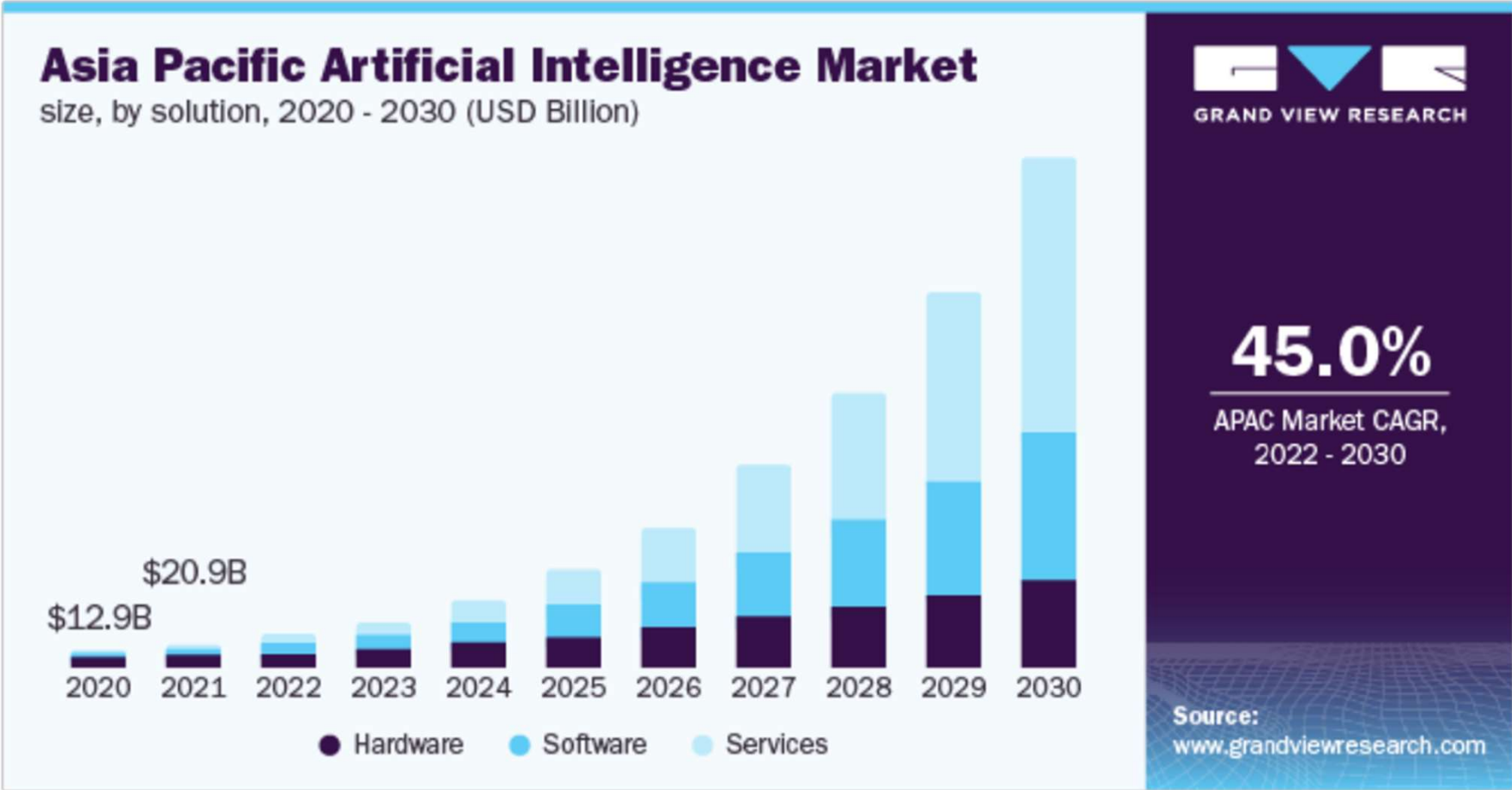
GPU

Storage

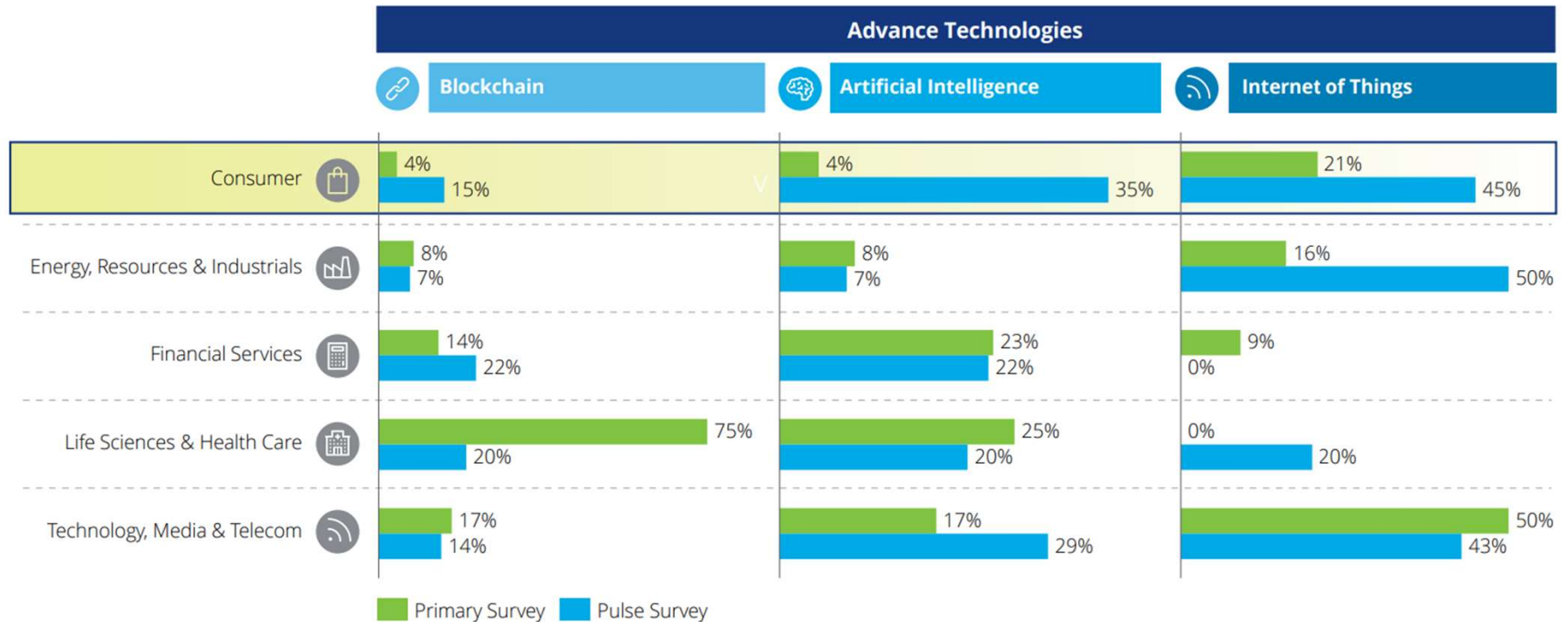


Source: Wired

AI Market Size Expected to Grow at 45% CAGR



AI Ranked Among Top Technologies for Data Transformation Strategy



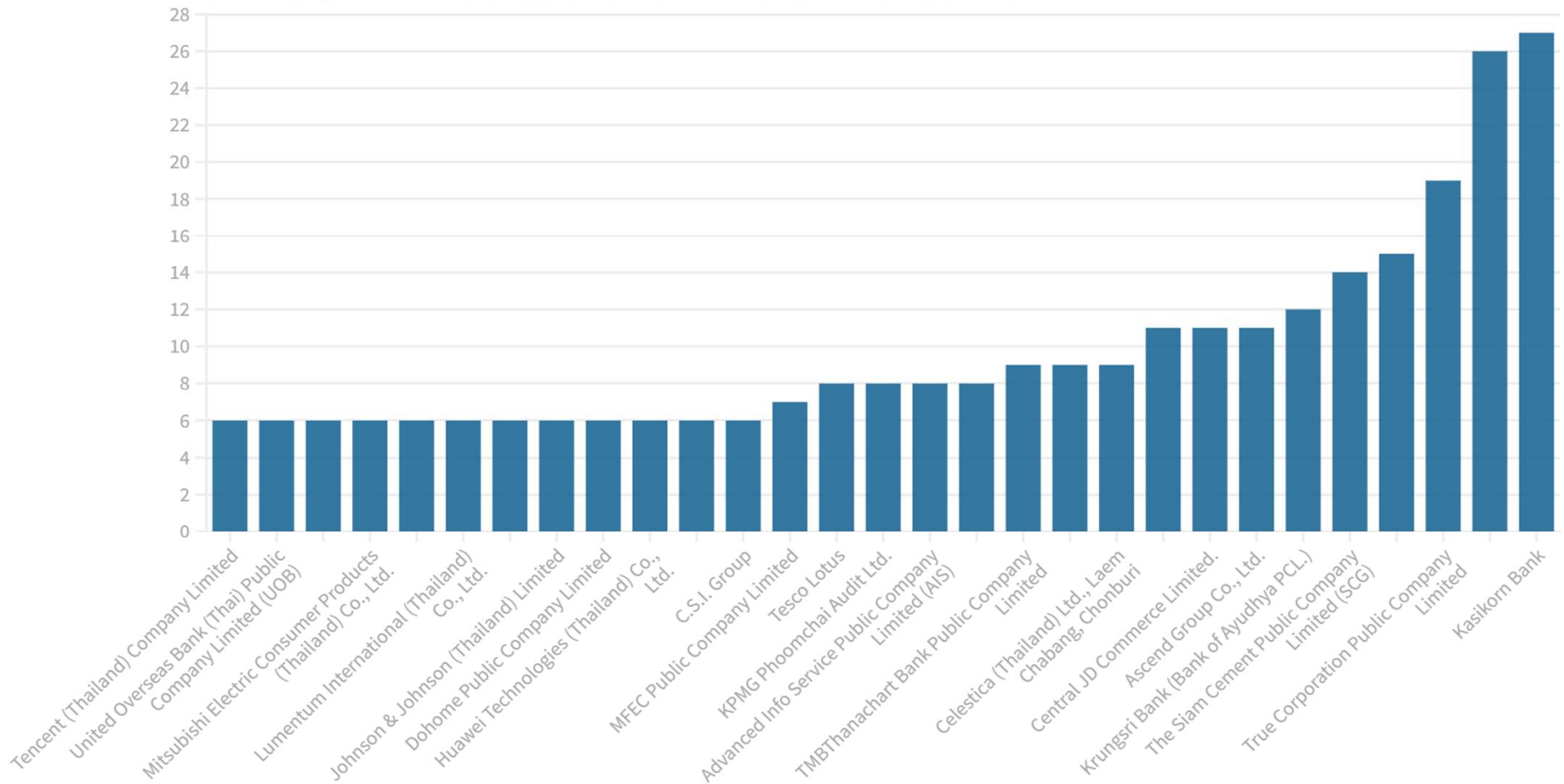
Startup Companies Engaging in AI

<p>Machine Learning-Gen (96 Companies)</p>	<p>Machine Learning-App (201 Companies)</p>	<p>Computer Vision-Gen (97 Companies)</p>	<p>Computer Vision-App (73 Companies)</p>	<p>Smart Robots (52 Companies)</p>
<p>Virtual Personal Assistants (71 Companies)</p>	<p>Artificial Intelligence</p> <p>Contact info@venturescanner.com to see all 826 companies</p>	<p>NLP-Speech Recog. (65 Companies)</p>	<p>NLP-Gen (127 Companies)</p>	
<p>Speech to Speech Trans. (15 Companies)</p>	<p>Context Aware Comp. (28 Companies)</p>	<p>Gesture Control (30 Companies)</p>	<p>Recommendation Eng. (54 Companies)</p>	<p>Video ACR (14 Companies)</p>

Venture Scanner

Thailand's Market Dominated by Large Enterprises

Top Data professionals Employers - Estimated vacancies June 2021

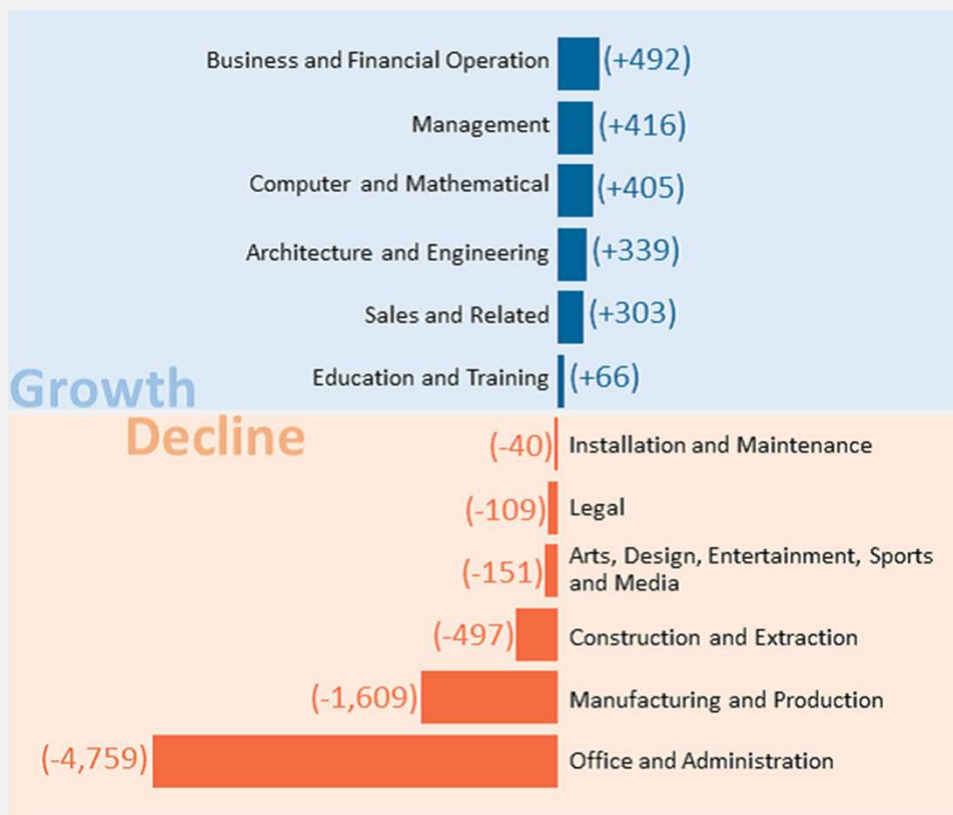


Areas of Applications

1. Deep Learning and Identification
2. Prediction
3. Decision Management
4. Natural Language Processing
5. Speech Recognition and Synthesis
6. Virtual Agent and Bots
7. Robotic Process Automation

Higher Demand for Skilled Labor

Employment outlook: Job change in thousands, 2015-2020



Source: Future of Jobs Report (World Economic Forum)

Thailand's Talent Competitiveness

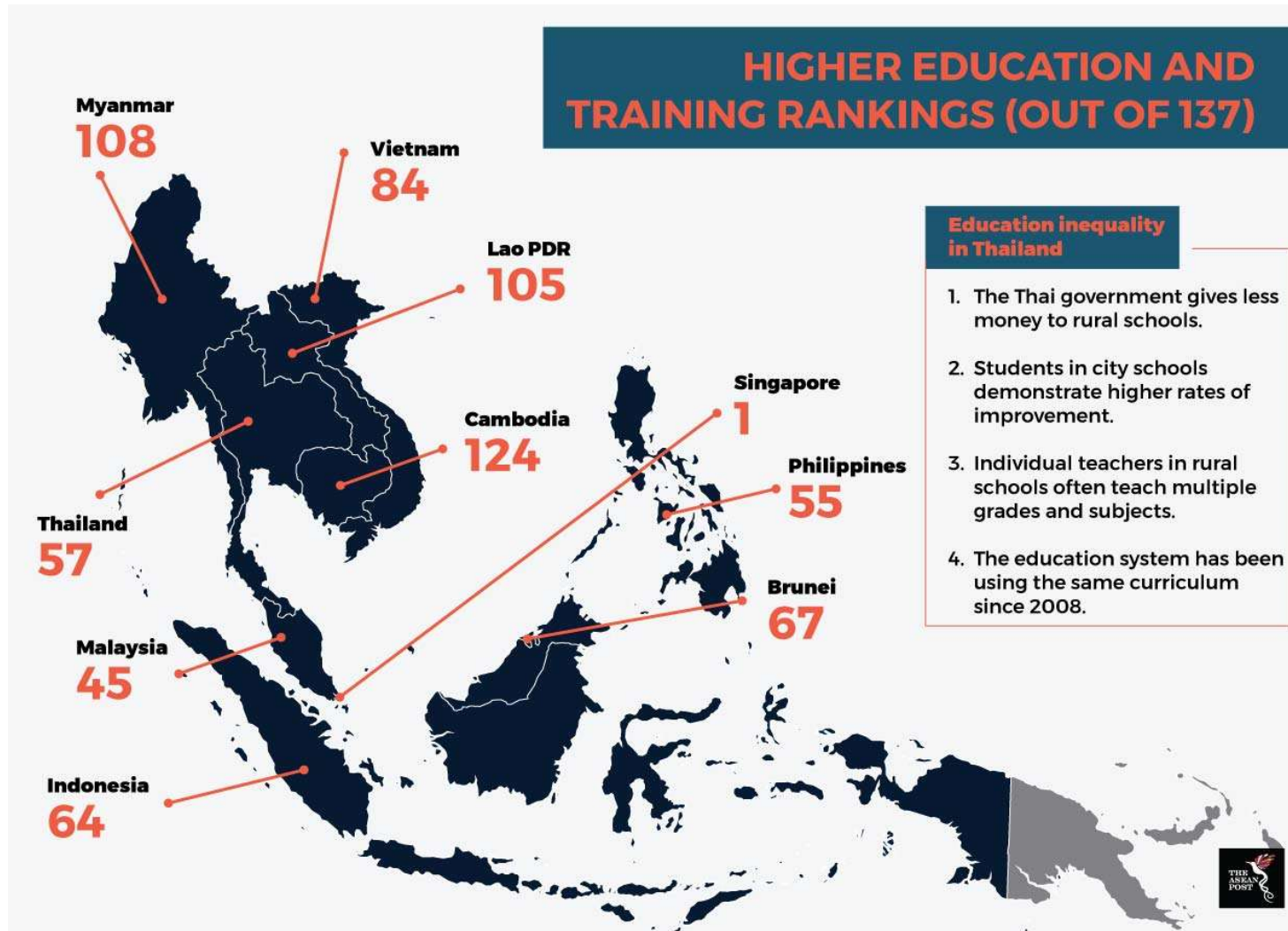
- With the increasing demand of technological skill sets, out of the 400,000 positions available, only a mere 2.5% of graduates are able to fulfil the technological skillset requirement
- Ranked 66th out of 125

Global Talent Competitiveness Index (GTCI) Score 2019

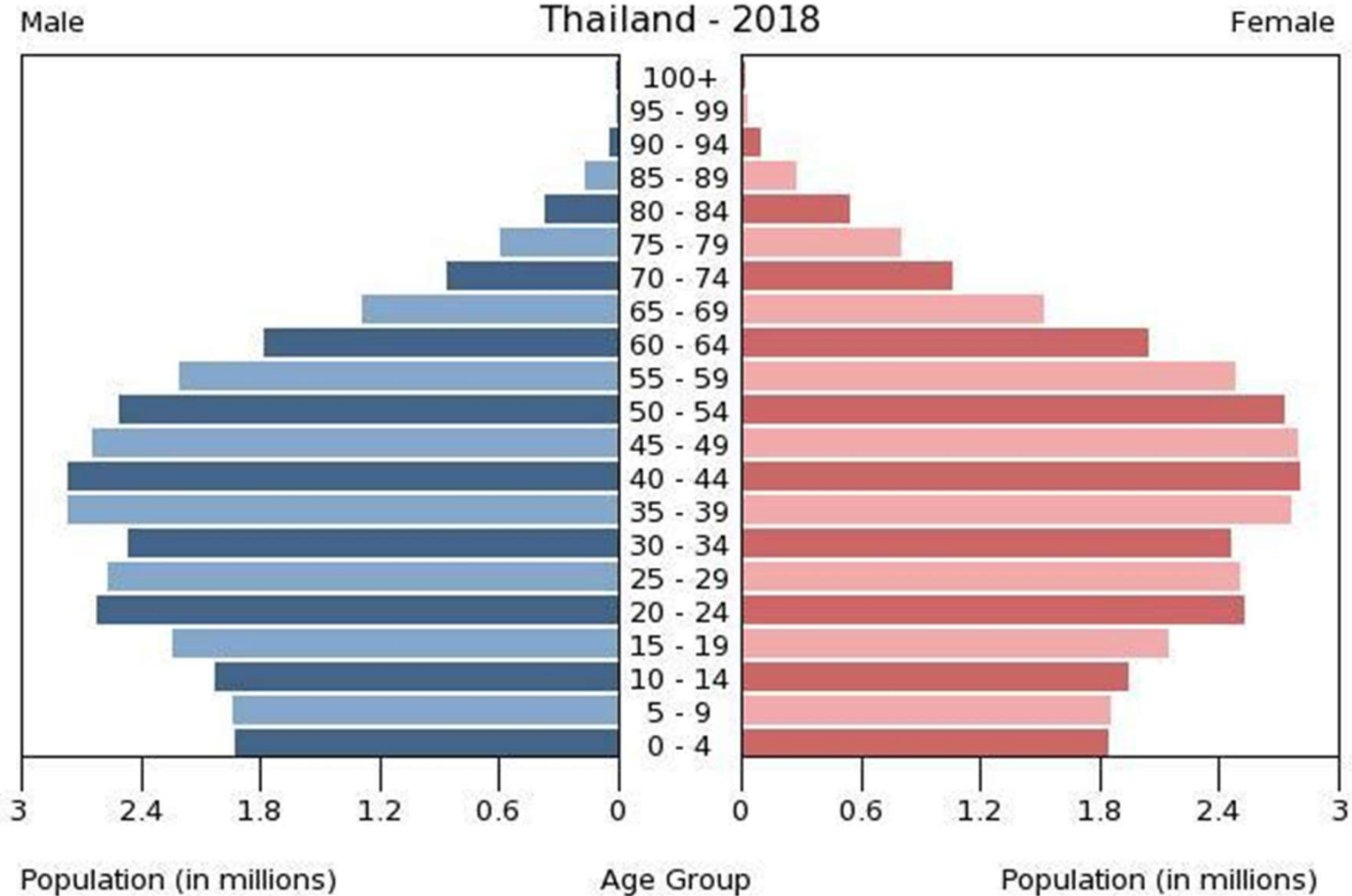


Source: EY

Education Quality Problem Still Persists

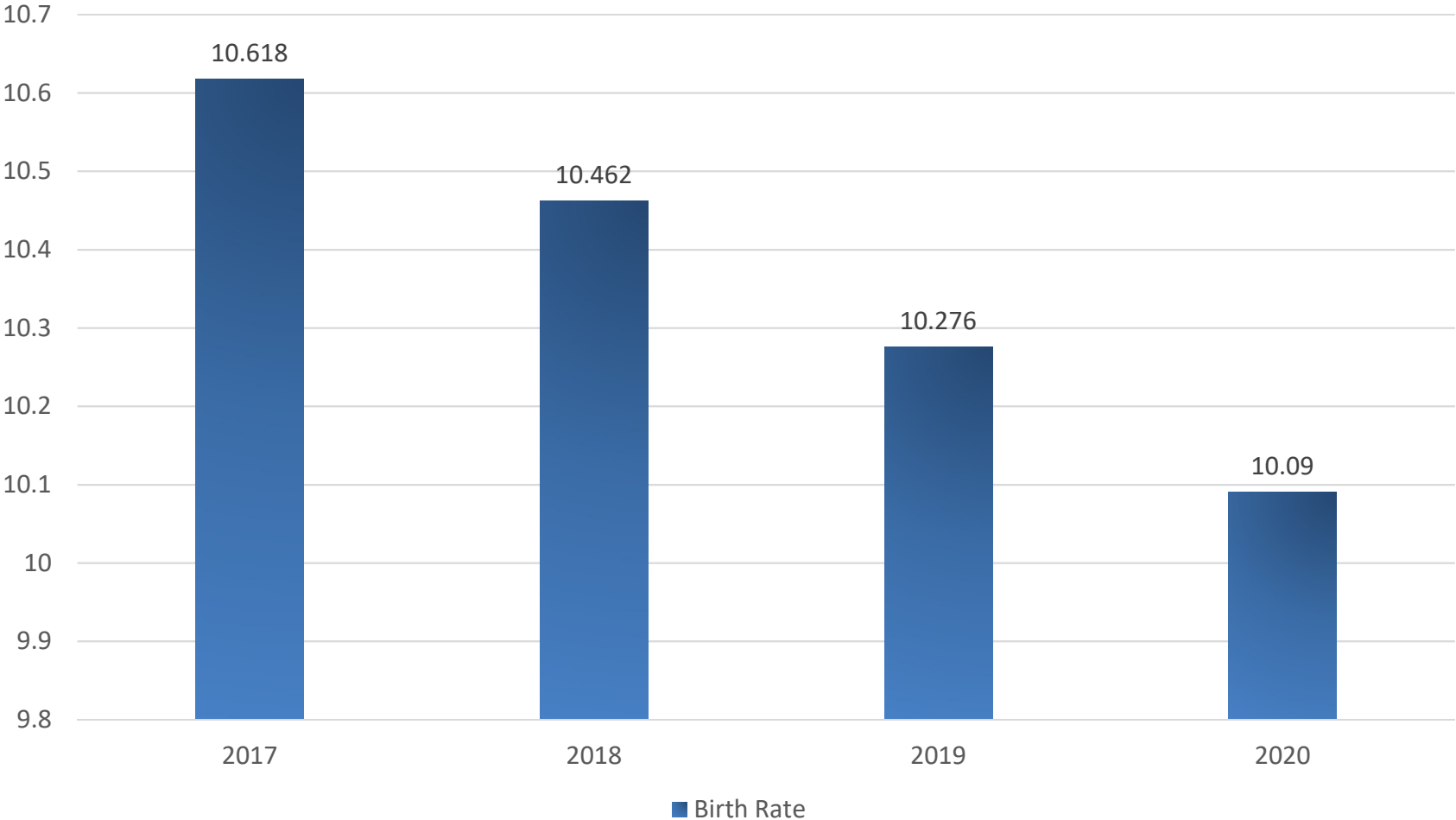


Thailand's Workforce Shrinking



Source: BOI

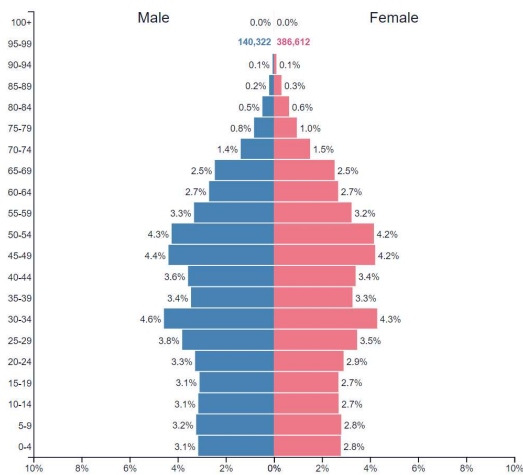
Thailand's Declining Birth Rate



Not Just Thailand...

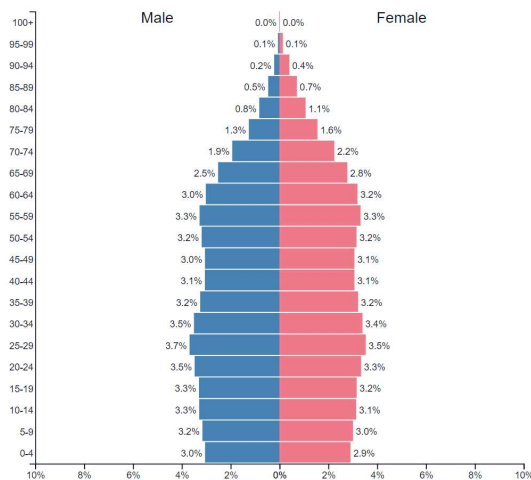
China ▼
2019

Population: 1,433,783,691



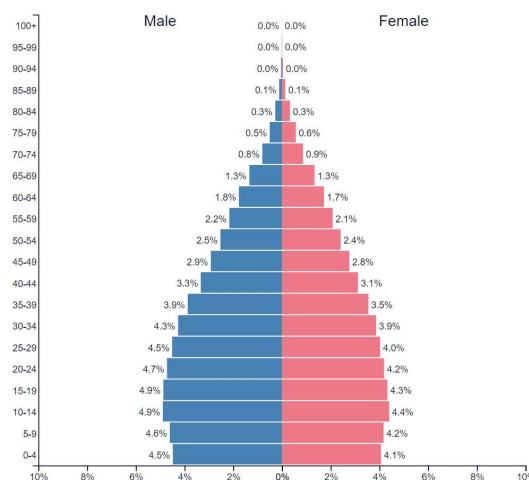
United States of America ▼
2019

Population: 329,064,916



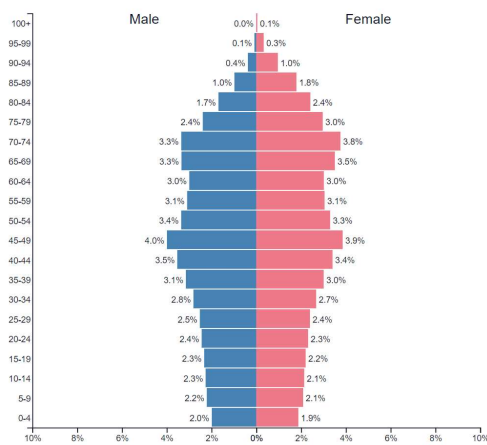
India ▼
2019

Population: 1,366,417,755



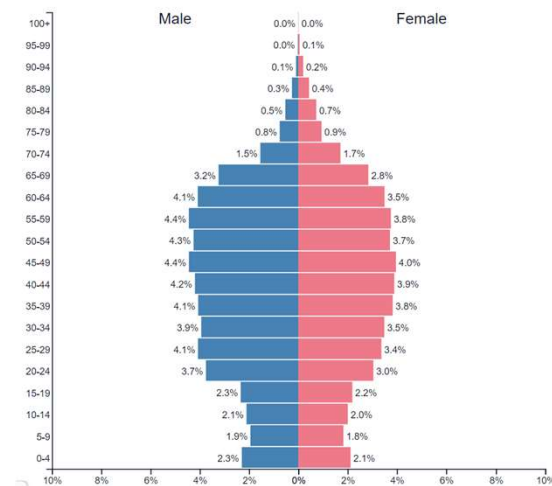
Japan ▼
2019

Population: 126,860,299



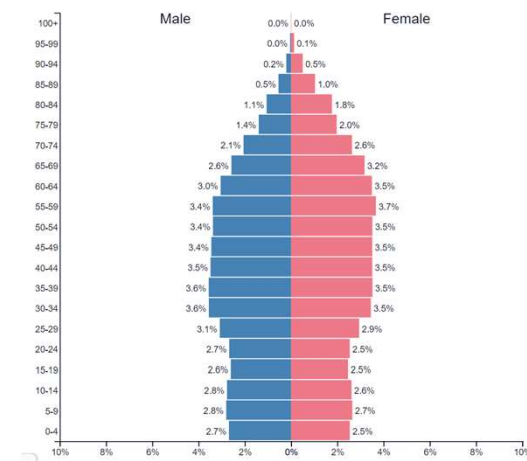
Singapore ▼
2020

Population: 5,850,342



EUROPE ▼
2020

Population: 747,636,045



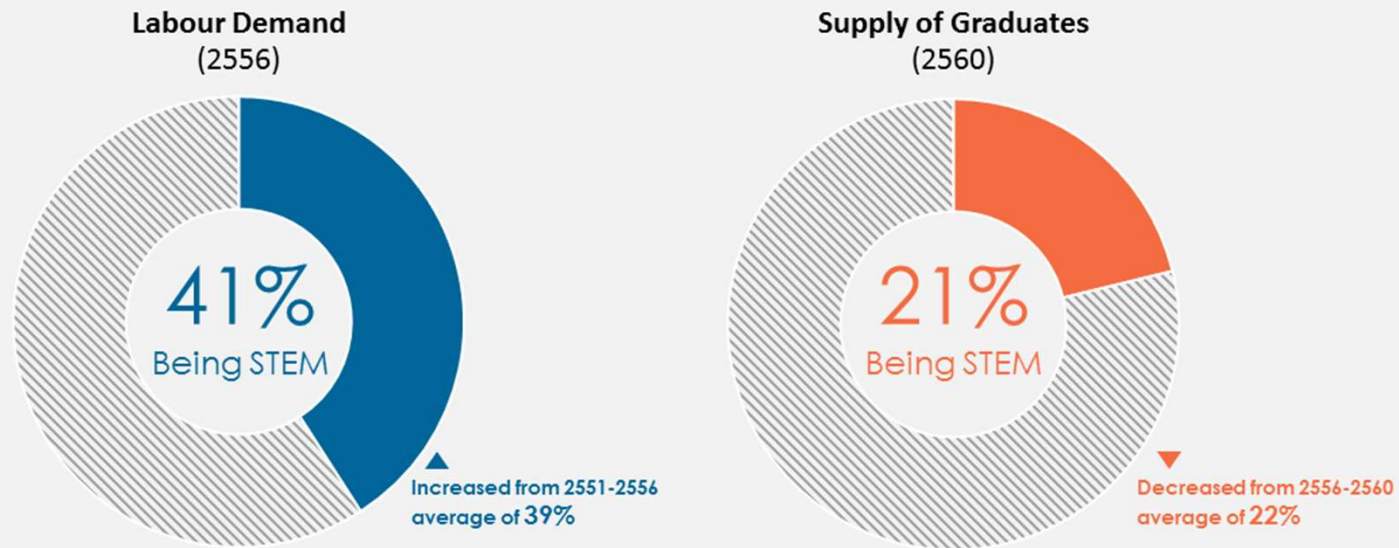
Thailand University Enrollment Declining

“There are just 600,000-700,000 babies born in Thailand per year on average now, compared to 1,000,000 per year from 30 years ago. The National Economic and Social Development Board also expects the number Thais in the school-age group (0-21 years) will fall to 20% of the population in 2040, a sharp drop from 62% in 1980.”

- Arnond Sakworawich, NIDA

Supply Mismatched Labor Market

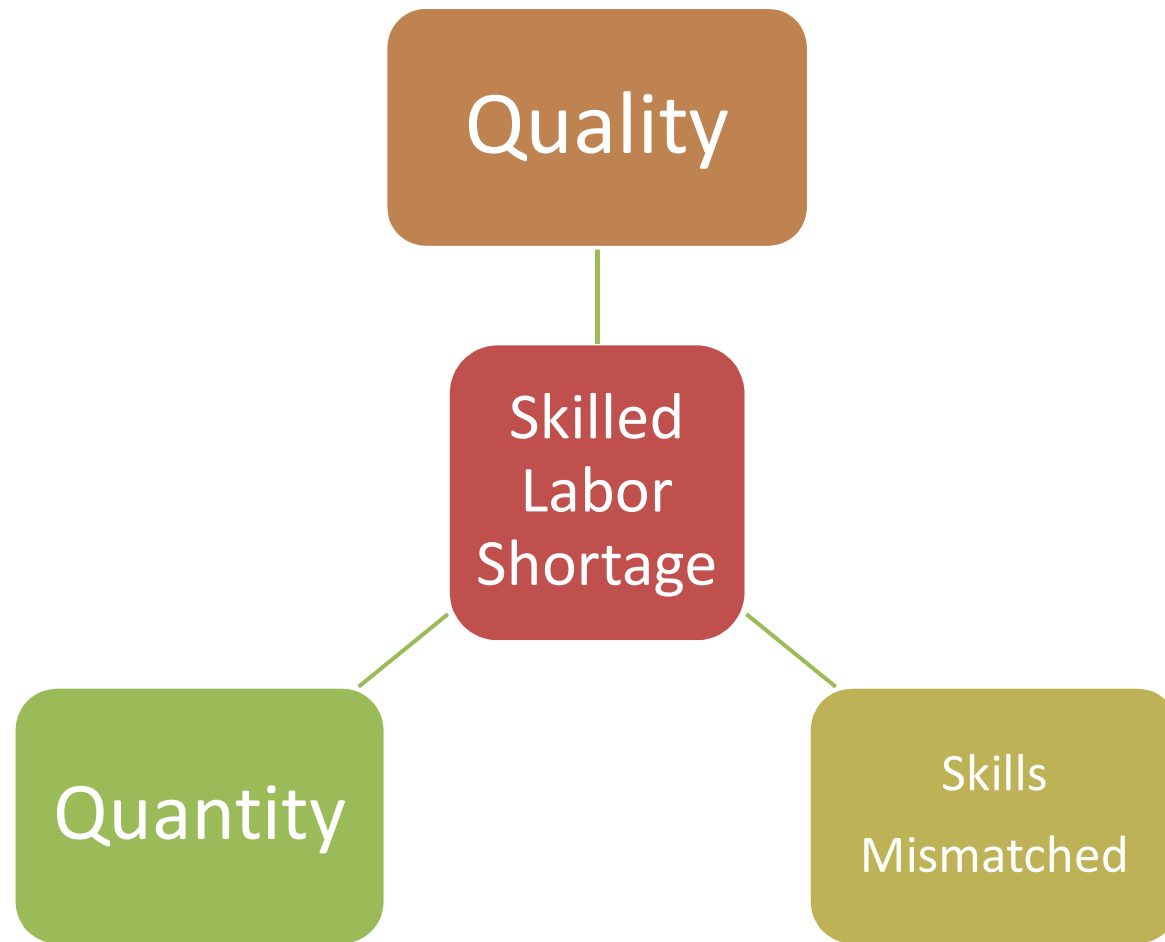
Field of Study Mismatch in Thai Labour Market



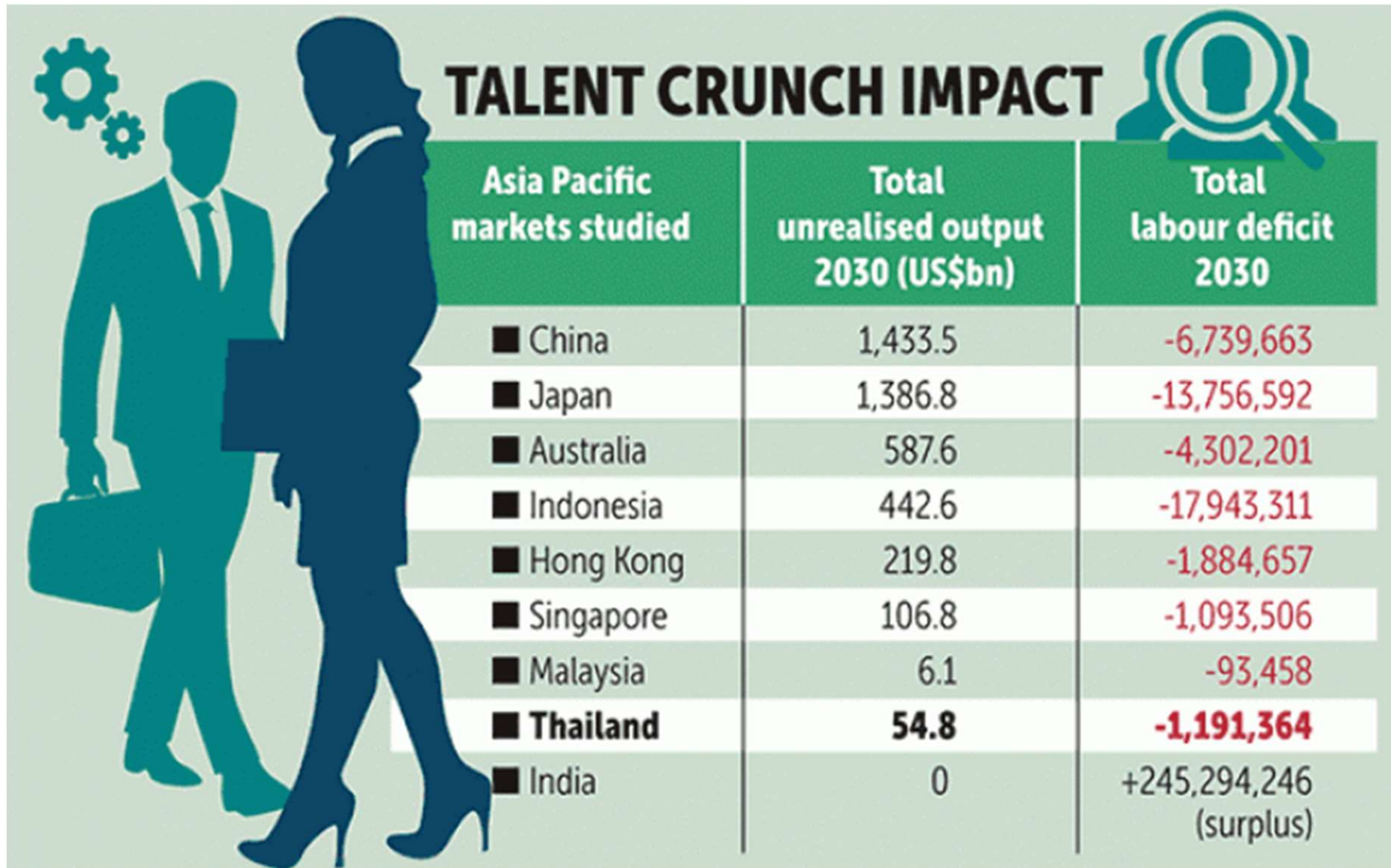
Source: Labour Demand Survey 2551-2556(NSO), Number of new graduates 2556-2560 (Office of Higher Education Commission)

Note: Author's calculation – Computer, Science and Engineering were considered as STEM in Labour Demand while Science and Engineering using UNESCO categorization standard were considered as STEM in supply of graduates

Three Pronged Problem



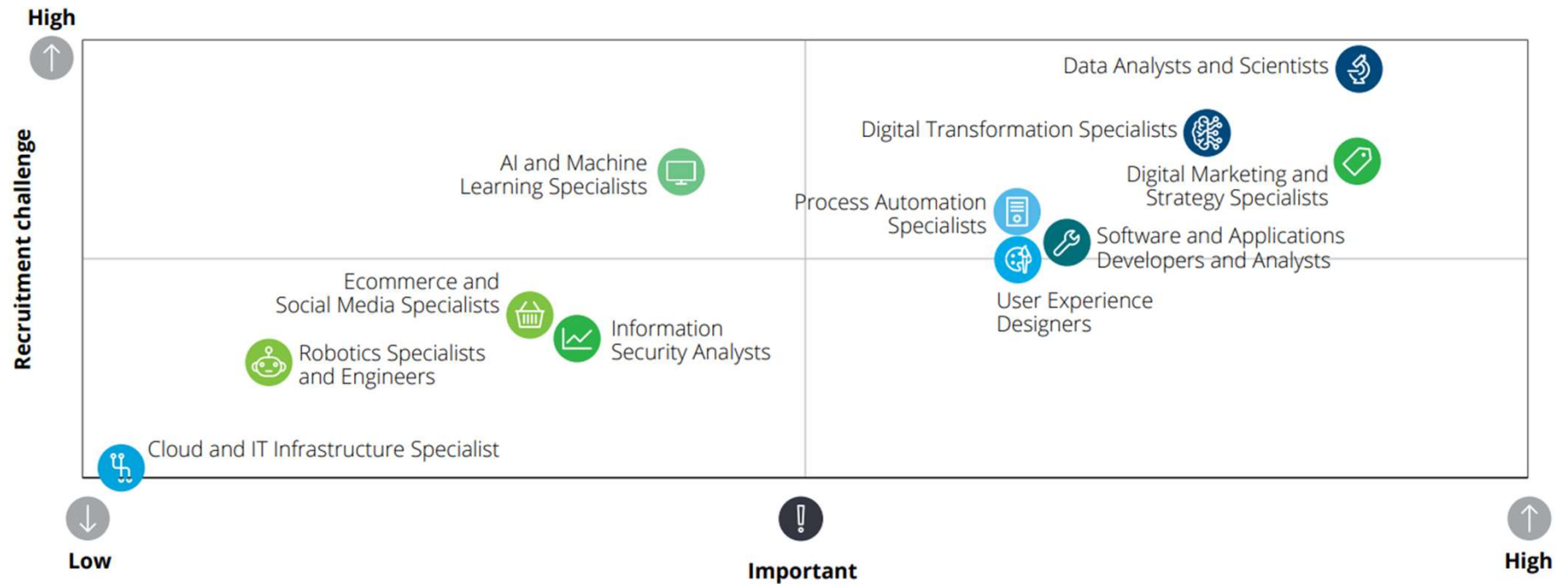
Shortage of Skilled Labor



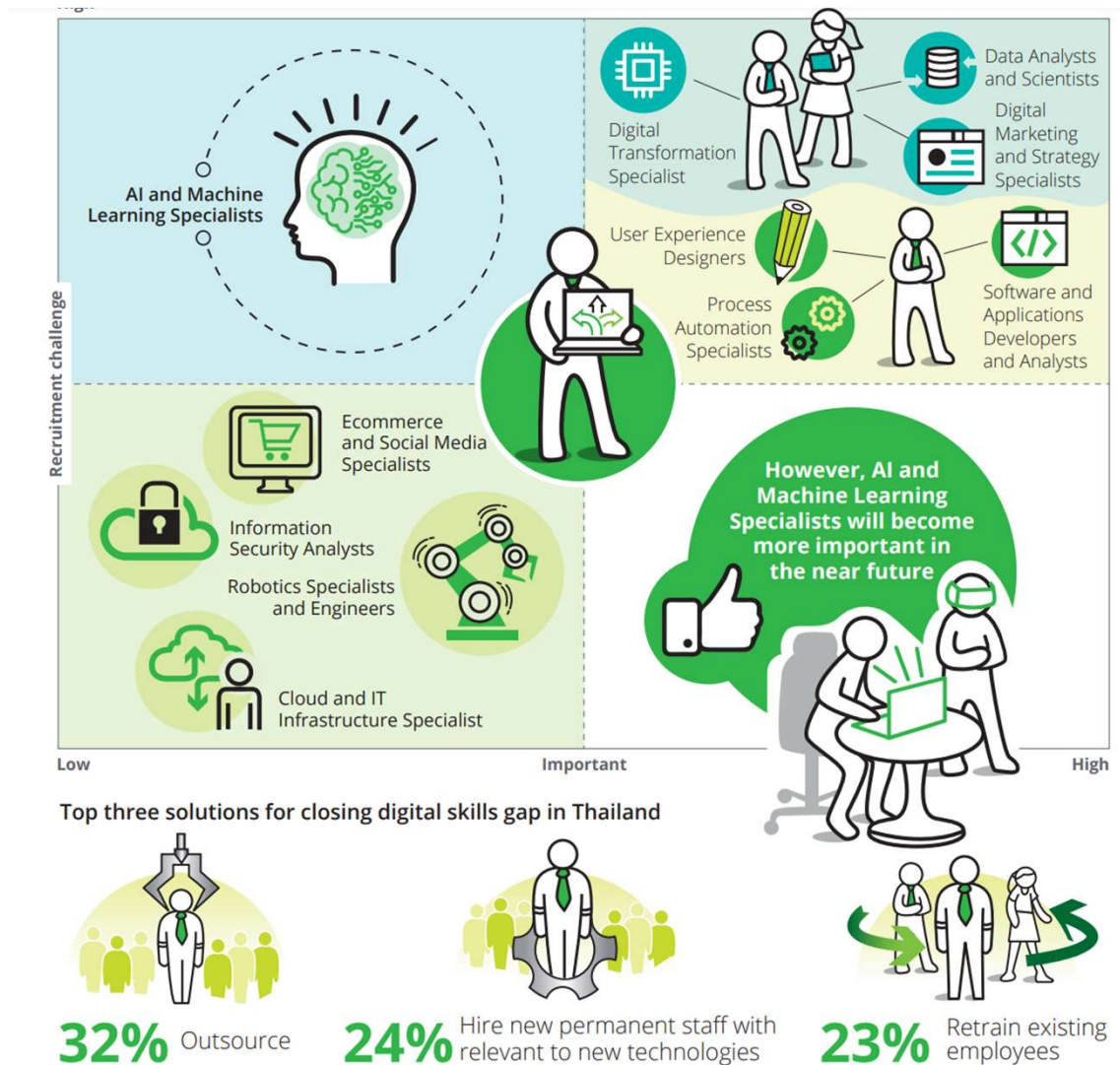
Source: Korn Ferry Global Talent Crunch Stud

BANGKOK POST GRAPHICS

...Resulting Hiring Talent Gap

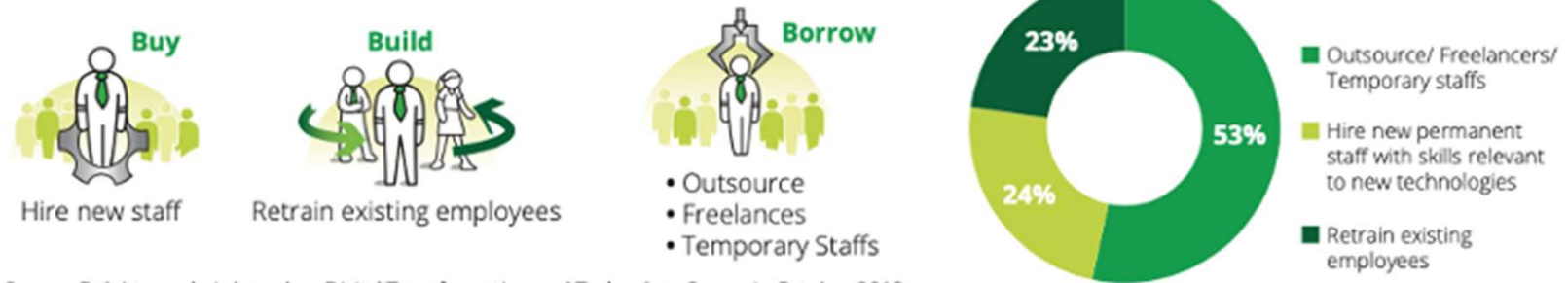


How Private Sector Cope with Situation



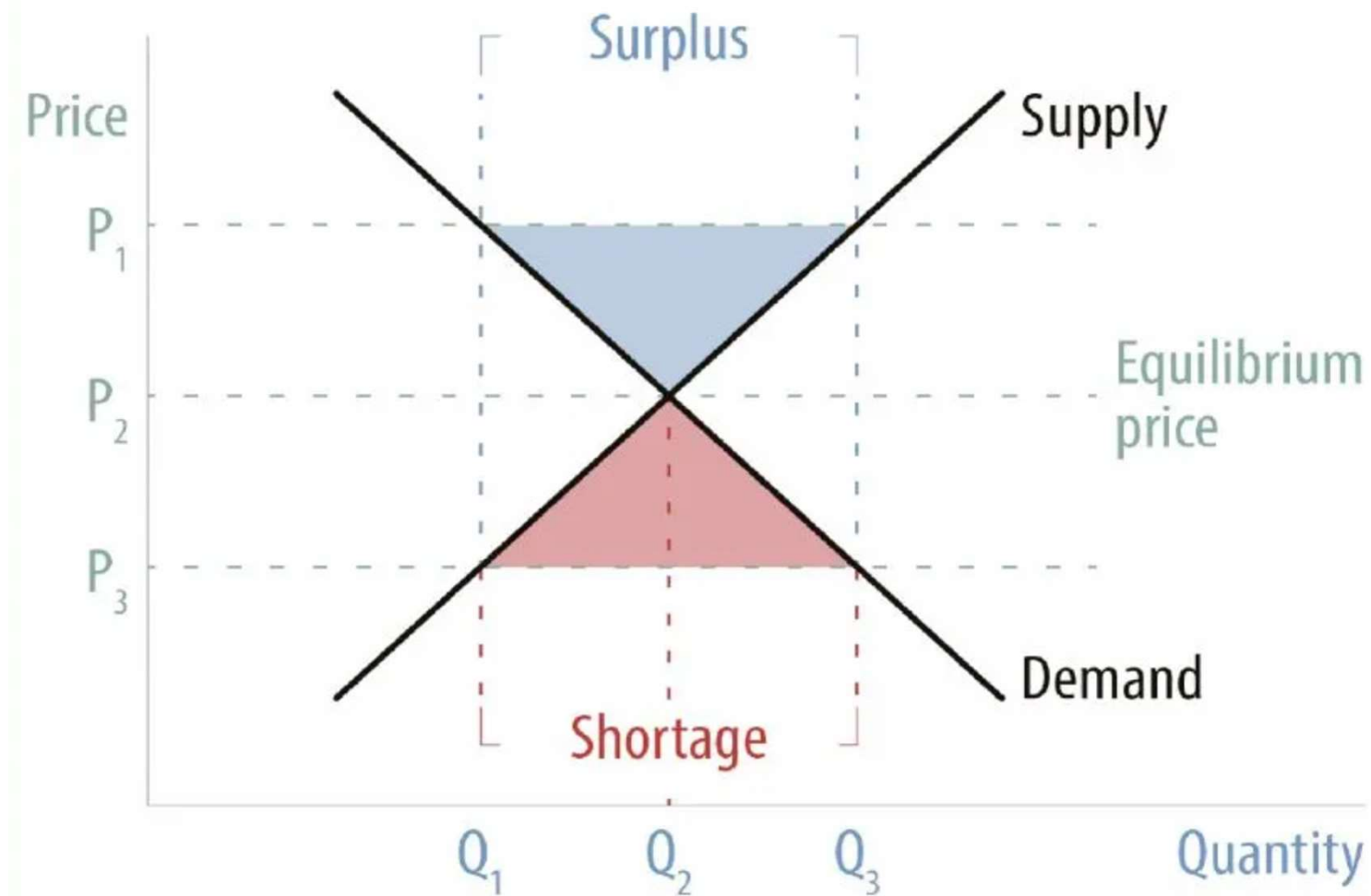
How Private Sector Cope with Situation

Solution for closing digital skills gap (% of respondents, n=77)

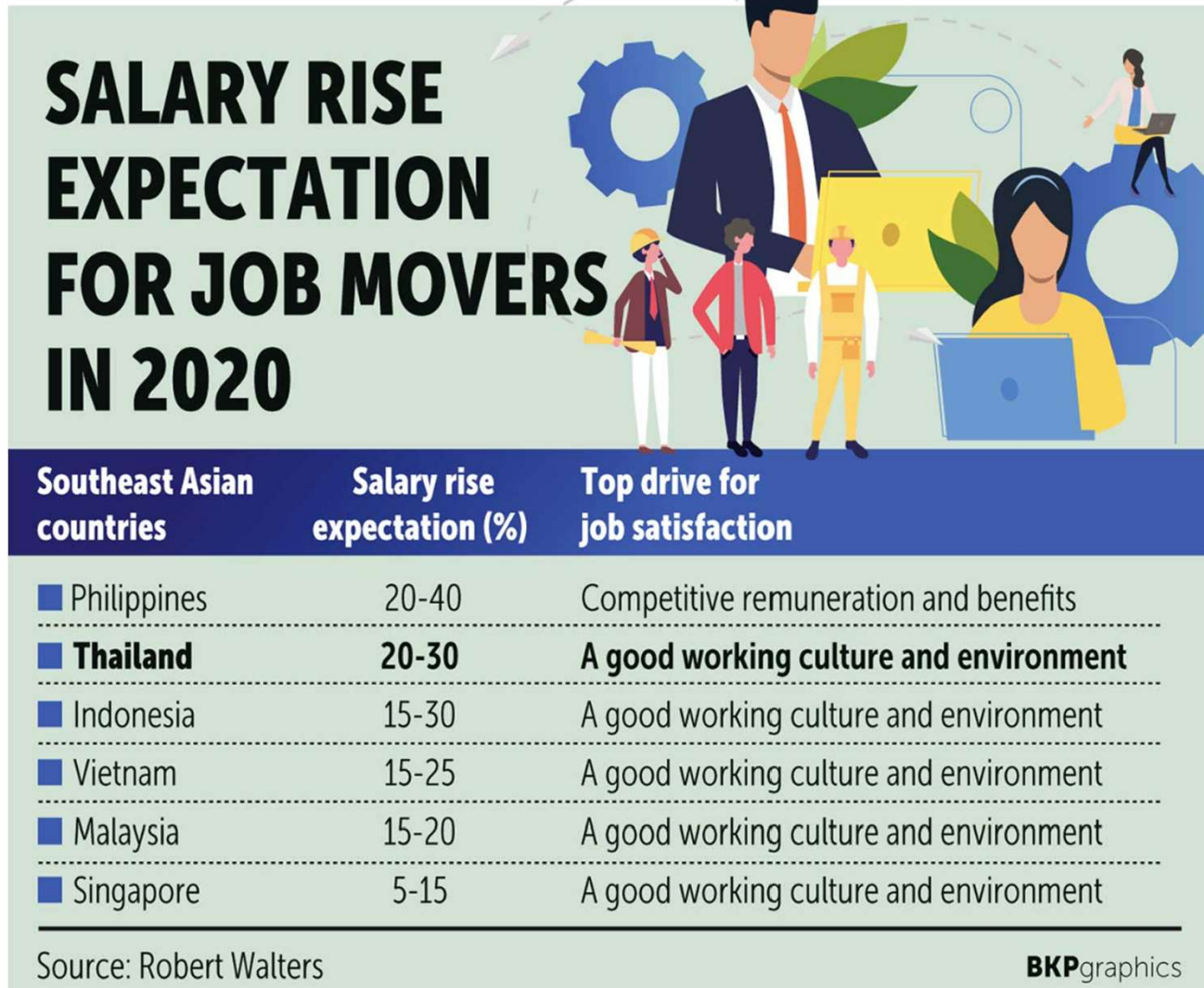


Source: Deloitte analysis based on Digital Transformation and Technology Survey in October 2019

What is happening in the job market...



Skilled Labor Shortage Results in Higher Demand.. And Thus Higher Salary Expectation



AIT Ranked Among Top in DS Education

Schools preparing for Data Science careers in Thailand

The best schools in Thailand to prepare for a Data Analyst / Data analytics career are :

1. Master of Science/Master of Engineering in Data Science and Artificial Intelligence Asian Institute of technology (AIT) – Pathumthani
2. Master of Science in Data Science & Statistics – Chulalongkorn Business School – Bangkok
3. Bachelor of Science in Data Science and Innovation – Thammasat University – Bangkok
4. Bachelor's of Statistics in Statistics and Data Science – Chulalongkorn University, Bangkok
5. Bachelor of Science in Industrial Mathematics and Data Science, Mahidol University, Bangkok
6. Bachelor of Science in Data Science, Silpakorn University, Bangkok
7. Bachelor of Science in Data Science, Chiang Mai University, Chiang Mai
8. Bachelor of Science in Data Science and Business Analytics, King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok
9. Bachelor of Science in Data Science and Analytics, Thai-Nichi Institute of Technology, Bangkok

Areas of High Demand in IT



TOP 5 of IT Permanent in Demand

1	AI and Data <ul style="list-style-type: none">• AI Specialists • Data Scientists • Data Engineer • Big Data Developer• Data Analyst	Average Monthly Salary: 40,000 – 195,000 Baht/month
2	Engineering and Cloud <ul style="list-style-type: none">• Reliability Engineer • DevOps • Cloud Computing • Cloud Architect• Cloud Solutions Consultant • Python Developer	Average Monthly Salary: 35,000 – 155,000 Baht/month
3	Software & Application Developers <ul style="list-style-type: none">• Software Engineer • Application Engineer / Developer • Frontend / Backend / Full Stack Engineer / Developer • Mobile Application Developer • Programmer	Average Monthly Salary: 33,500 – 110,000 Baht/month
4	Product Development <ul style="list-style-type: none">• Product Owner • Quality Assurance Tester / Engineer • Agile Coach• Software Quality Assurance Engineer • Product Analyst • Scrum Master	Average Monthly Salary: 42,000 – 145,000 Baht/month
5	Sales, Marketing and Content <ul style="list-style-type: none">• Social Media Assistant / Content Production • Growth Hacker • Customer Success• Sales Development Representative • Specialist Digital Marketing Specialist	Average Monthly Salary: 28,000 – 108,000 Baht/month

Areas of High Demand in IT

Experis
ManpowerGroup

TOP 5 of IT Staffing in Demand

1	Software / Application / Mobile Developers • Software Engineer • Application Engineer / Developer • Frontend / Backend / Full Stack Engineer / Developer • Mobile Application Developer • Programmer	Average Monthly Salary: 40,000 – 150,000 Baht/month
2	SAP Consultant • SAP FI / CO • SD • MM	Average Monthly Salary: 80,000 – 260,000 Baht/month
3	Project Management / Project Admin / Project Manager / Project Coordinator	Average Monthly Salary: 25,000 – 200,000 Baht/month
4	Helpdesk / IT Support Engineer	Average Monthly Salary: 15,000 – 100,000 Baht/month
5	Software Tester / QA	Average Monthly Salary: 35,000 – 90,000 Baht/month

Experience Accumulation

- Working period between 0 – 2 years, the average monthly salary would be in the range of 15,000 – 35,000 per month
- Working period between 3 – 5 years, the average monthly salary would be in the range of 38,000 – 46,500 per month
- Working period between 6 – 8 years, the average monthly salary would be in the range of 50,000 – 75,000 per month
- Working period between 9 – 10 years, the average monthly salary would be in the range of 82,000 – 105,000 per month
- Working period between 10 years or more, the average monthly salary would be in the range of 118,000 – 250,000 per month
- Working period between 20 years or more, the average monthly salary would be in the range of 280,000 – 650,000 per month

What to Avoid...

1. Expertise in one programming language
2. Configuration and physical machine management
3. Low-end routine IT skills (e.g. IT admin, data entry, data collection)

And...

Do not discount social and emotional skills

- 1) Unlikely to be replaced by technology
- 2) Societal changes mean more social and emotion skills required
- 3) Better prospects for job markets

Thank You

Thank You

Q&A?