

# Industry 4.0 Skills Challenge

**8** DECENT WORK AND  
ECONOMIC GROWTH

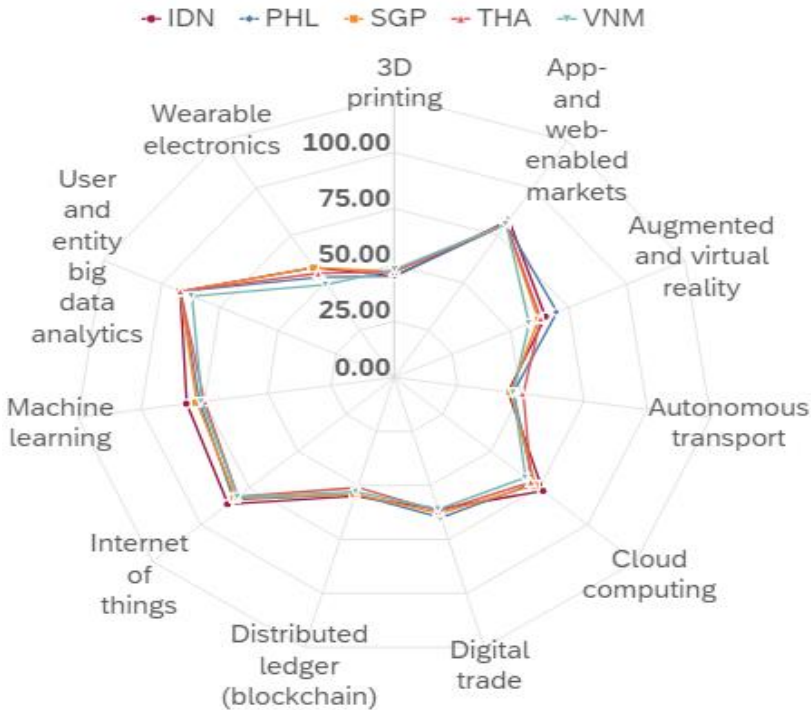


**Team Sustainableblue**

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# The 4th Industrial Revolution is HAPPENING NOW.

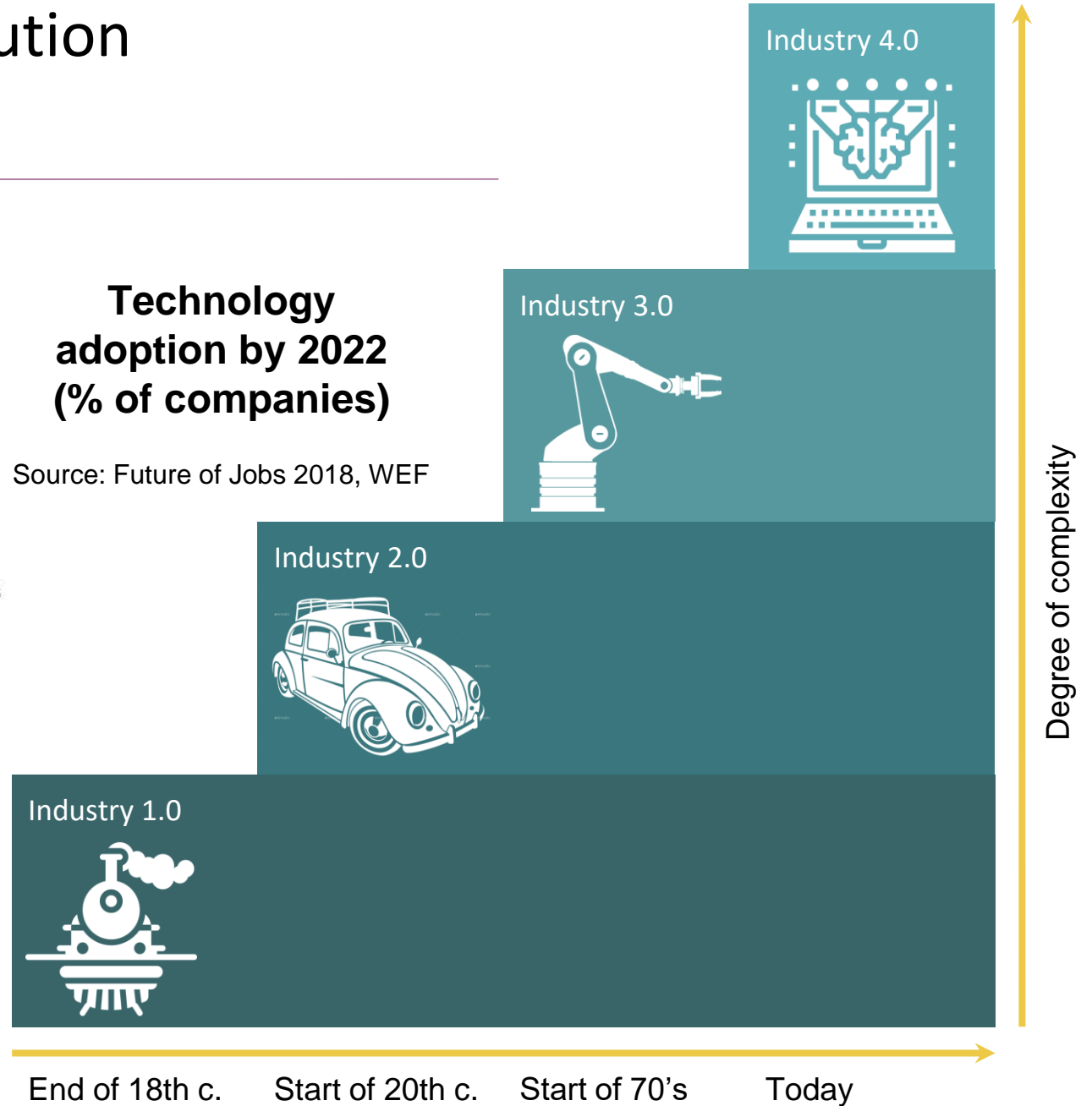


## Technology adoption by 2022 (% of companies)

Source: Future of Jobs 2018, WEF

The world will invest **\$57.6 B** on cognitive and AI systems in 2021.

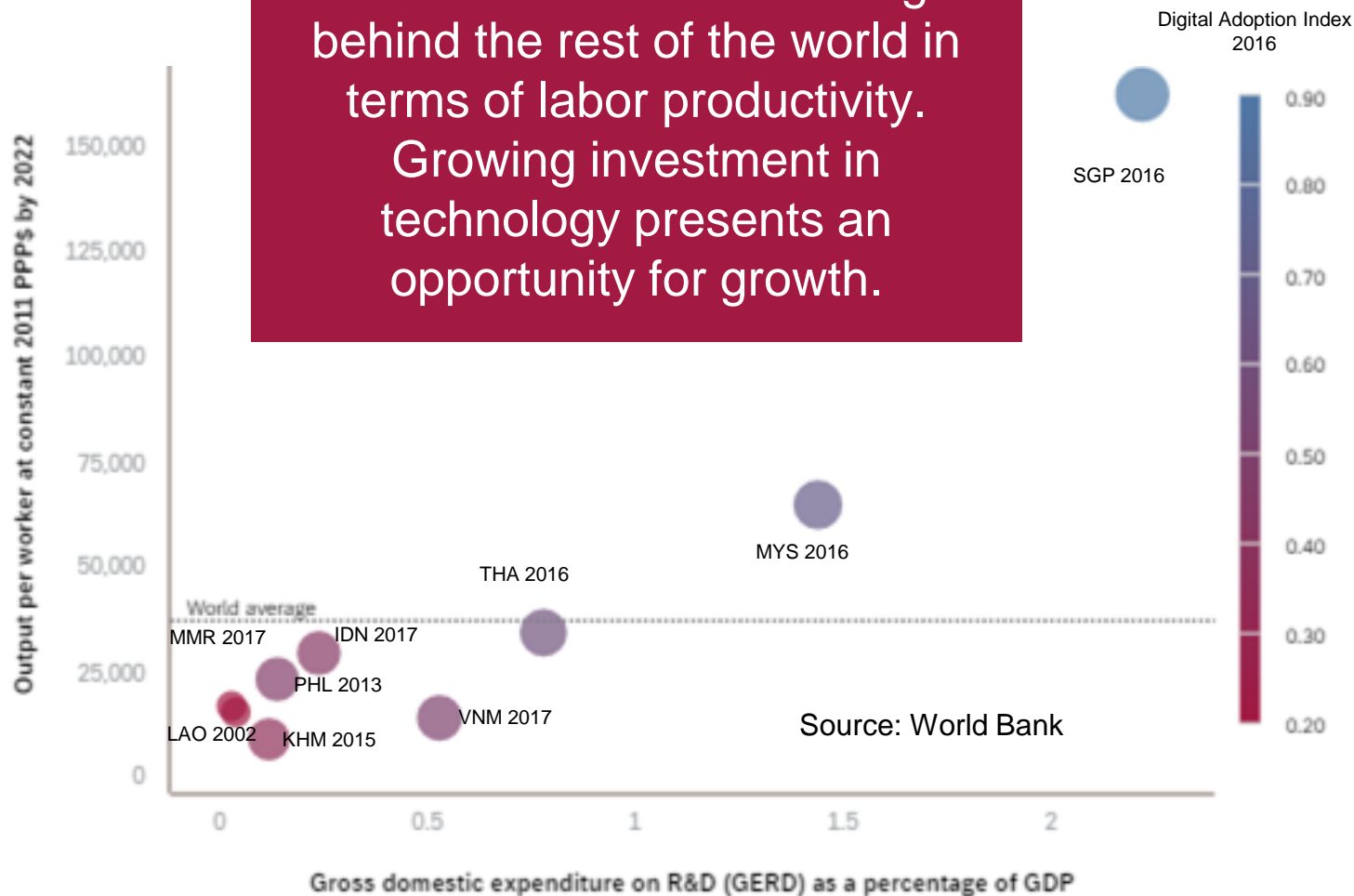
Source: International Data Corporation



Source: Accenture

# The 4th Industrial Revolution is key to boost economic growth.

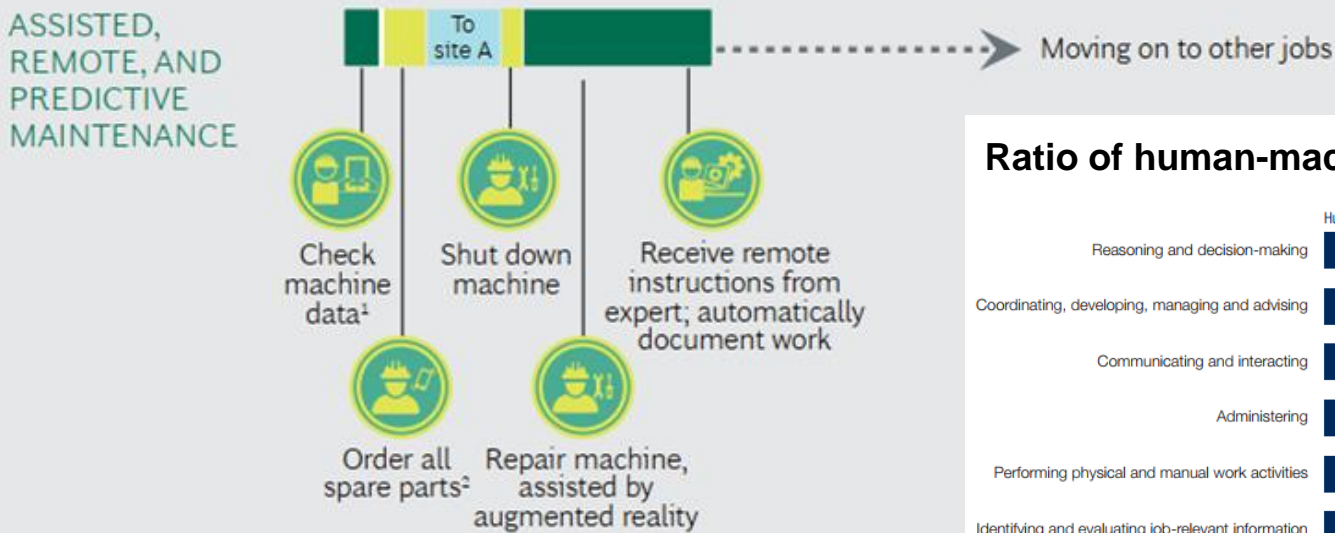
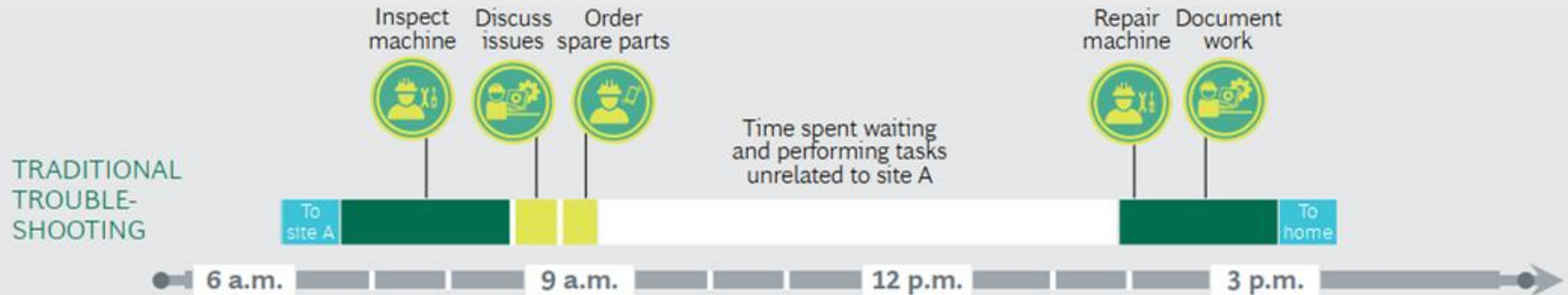
Most ASEAN countries lag behind the rest of the world in terms of labor productivity. Growing investment in technology presents an opportunity for growth.



Deploying disruptive technologies could raise the GDP of ASEAN by up to **12%** by 2030.

Source: J. Woetzel et al.

# Tasks will increasingly be automated, freeing up more time for the workers.

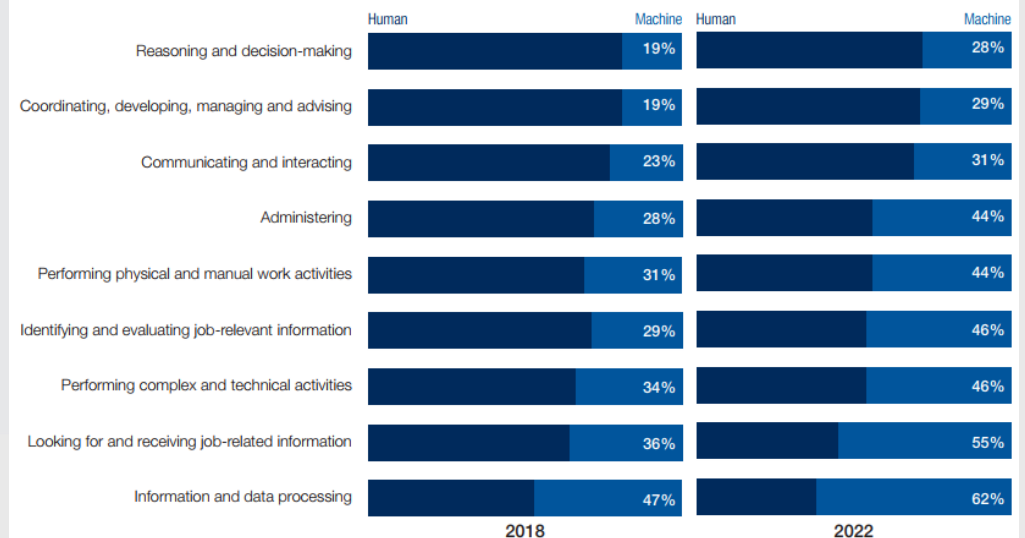


■ Value-added work     ■ Meetings or administrative work  
■ Travel time

<sup>1</sup>Review real-time data from machines' sensors for abnormalities.

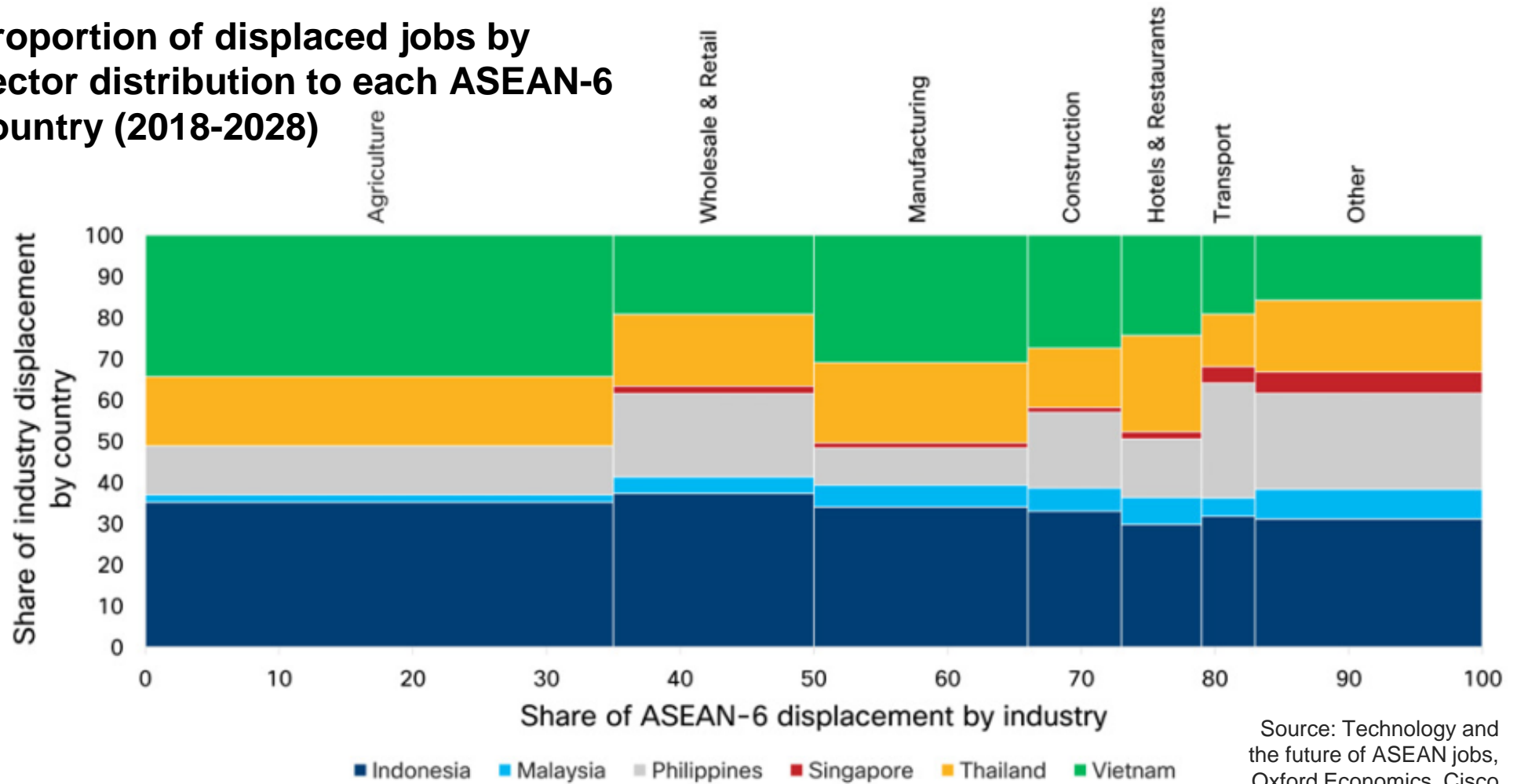
<sup>2</sup>Order spare parts for all machines with abnormalities or damaged parts.

## Ratio of human-machine work hours 2018 vs 2022



However, automation also puts millions of workers at risk of unemployment.

**Proportion of displaced jobs by sector distribution to each ASEAN-6 country (2018-2028)**

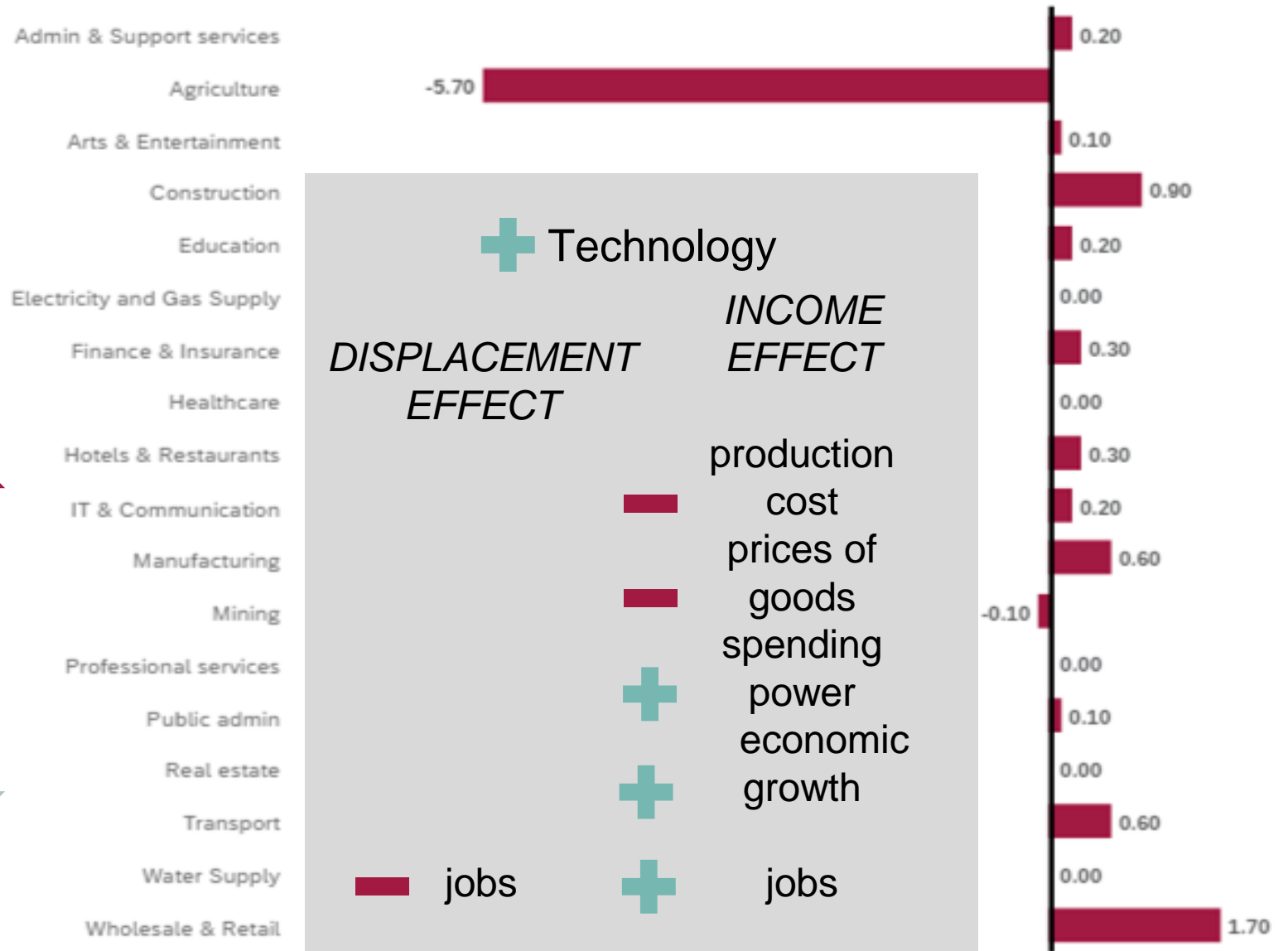
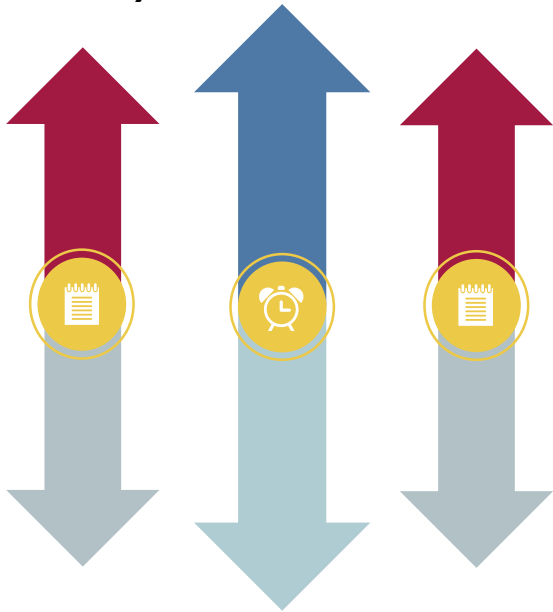


Source: Technology and the future of ASEAN jobs, Oxford Economics, Cisco

In the ASEAN-6, which accounts for more than **80%** of the ASEAN workforce, at least **56%** of wage workers face high risk of automation.

# Job displacement will be offset by job creation.

**Net effect of displacement and income by industry sector, in millions of full-time equivalent (FTE) workers (2018-2028)**



Source: Technology and the future of ASEAN jobs, Oxford Economics, Cisco

Switching roles and industries  
will demand new skills.

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**1 IN EVERY 8  
WORKERS**

may need to switch occupational  
categories by 2030. That's 375 M  
people rebuilding their careers!

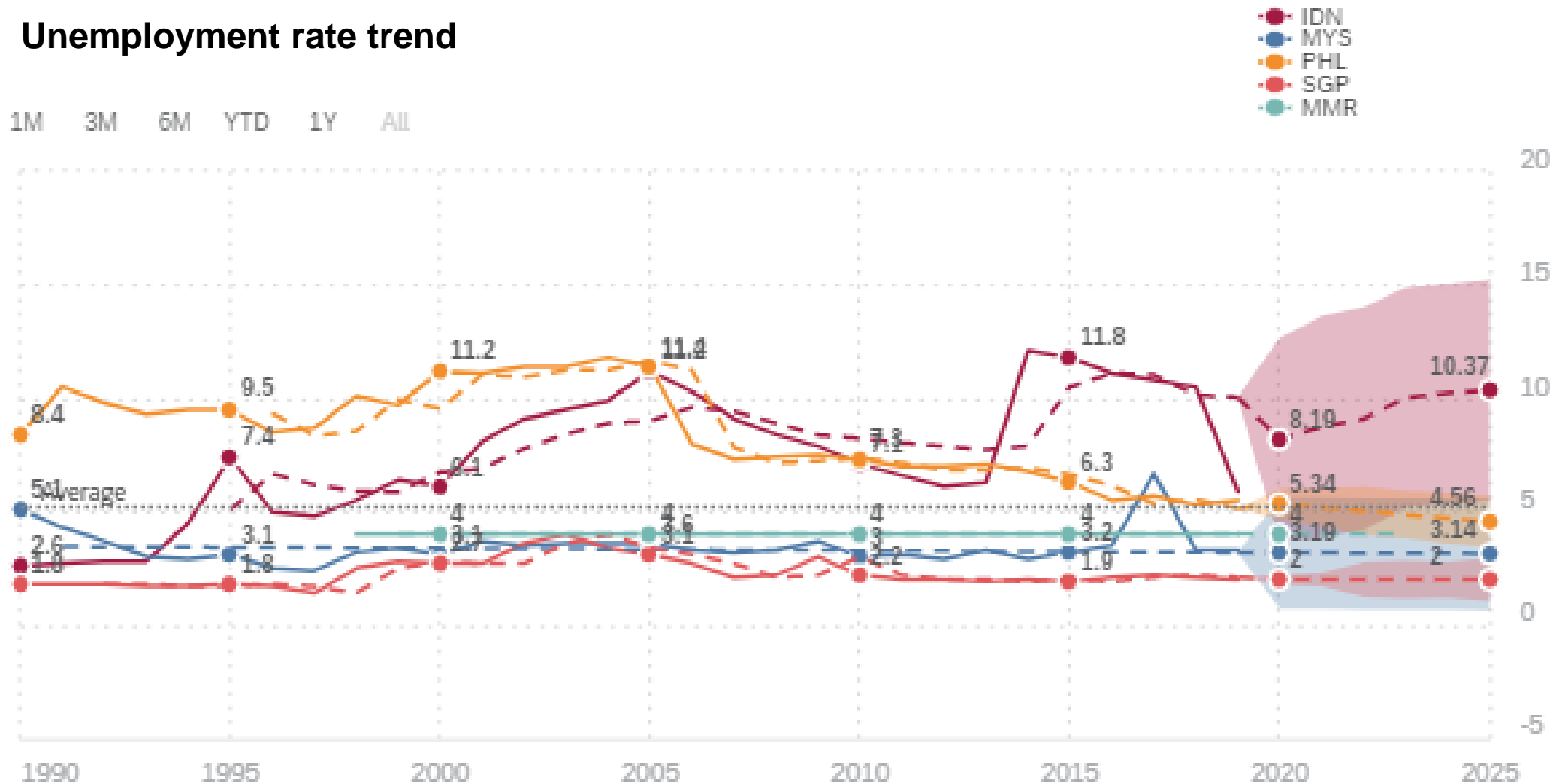
Source: Jobs Lost, Jobs Gained Report 2017, MGI

Of all the  
core skills required  
to perform a job,  
**42%** will change  
from **2018 to 2022.**

Source: Future of Jobs 2018, WEF

If we act now, we can reverse this consequence and improve employment rates.

## Unemployment rate trend



Source: ASEAN Secretariat



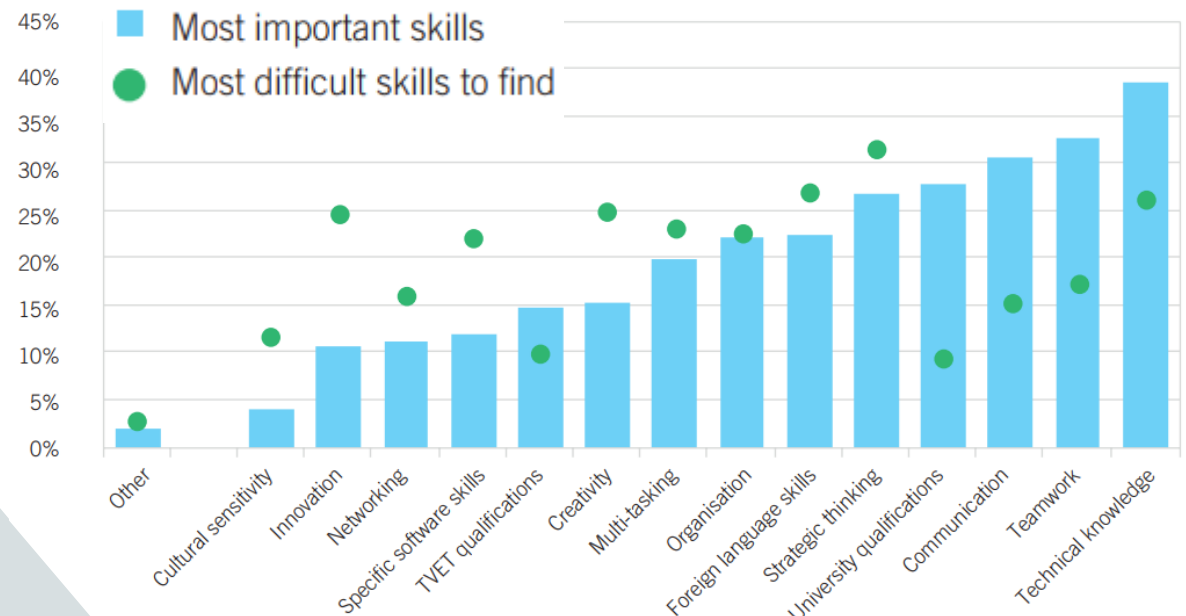
# Recommendation 1: Embrace 4IR, brace workers for the transition



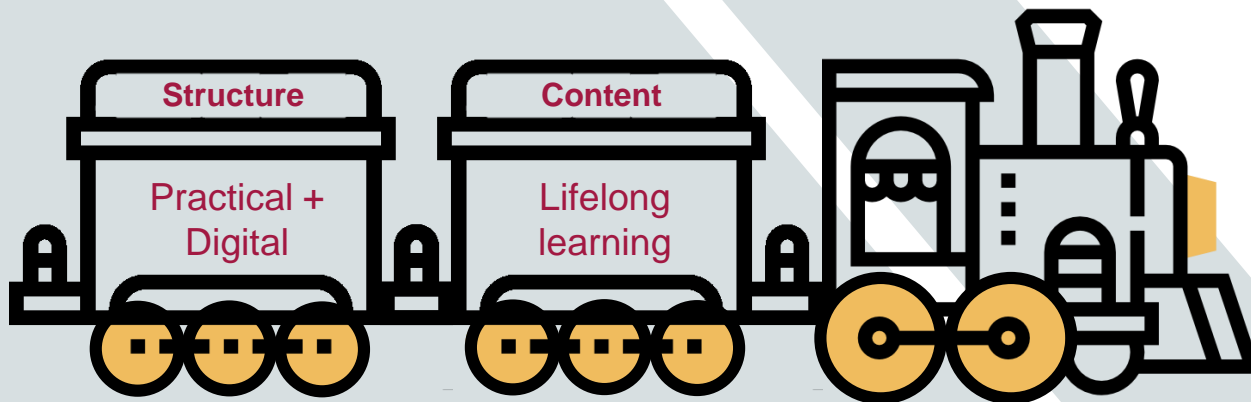
## Talent Shortage

With the rapidly changing nature of work, the skills gap continues to widen. Industry 4.0 critical skills such as strategic thinking and innovation are difficult to find in the ASEAN region.

### Critical skills for enterprises in ASEAN



Source: Education to Employment, MGI



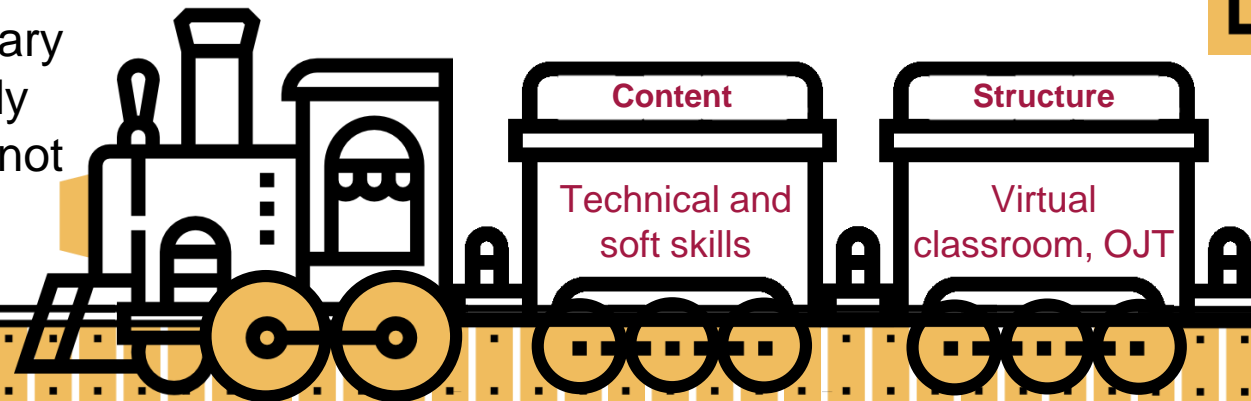
*The capacity to learn is a gift;  
the ability to learn is a skill;  
the willingness to learn is a  
choice.*

Brian Herbert, author

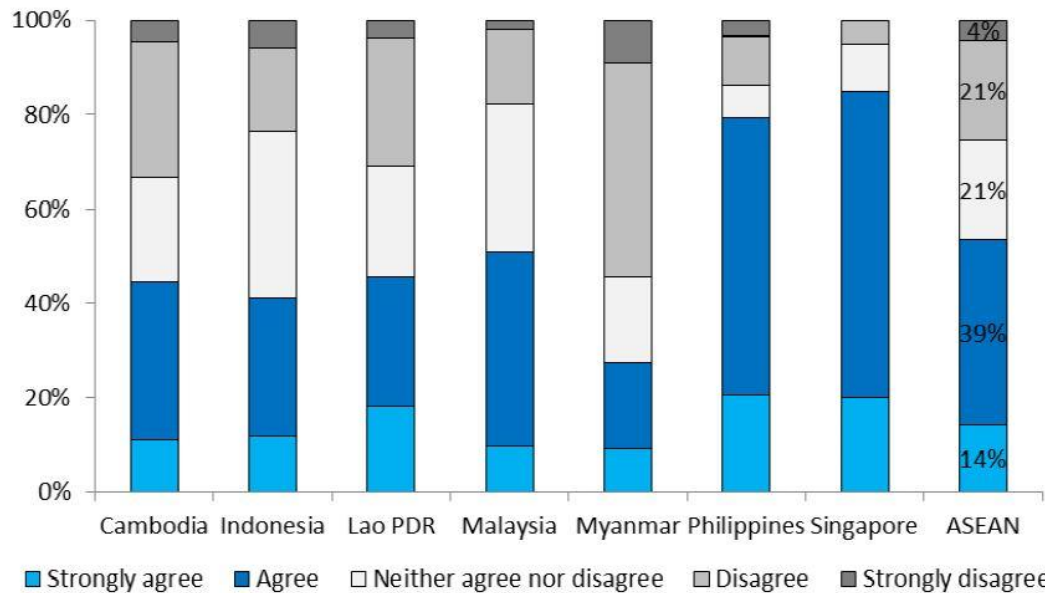
# Educational system that responds to labor market demands

💡 Children entering primary school today will likely end up in jobs that do not yet exist.

Source: Future of Jobs 2018, WEF

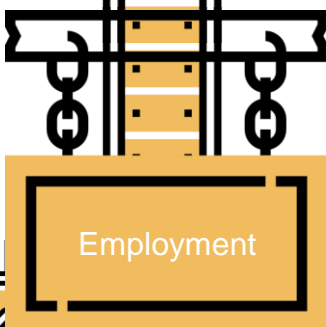


Skills of university graduate do not match enterprise needs



Source: Survey of ASEAN employers on skills and competitiveness 2014, ILO

**MALAYSIA**  
 Graduates who undergo Technical Vocational Education and Training (TVET) have **more than 90% chance of being employed** by large corporations, including multinational companies.  
 Source: MalayMail



# Mid-career training that facilitates viable and desirable job transition

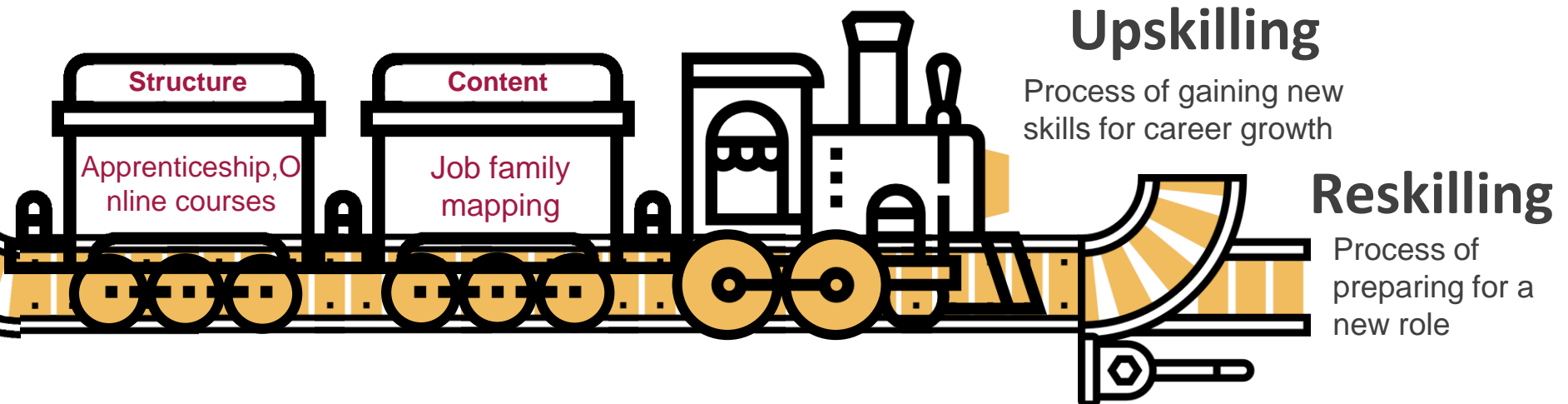
## SINGAPORE

Training grants and SkillsFuture Credit are offered by the government to support individuals and enterprises to pursue skill

training, benefiting over **285,000**

**Singaporeans** as of February  
2018.

Source: Technology and the future of ASEAN jobs, Oxford Economics, Cisco



# Mid-career training especially for the more vulnerable employees



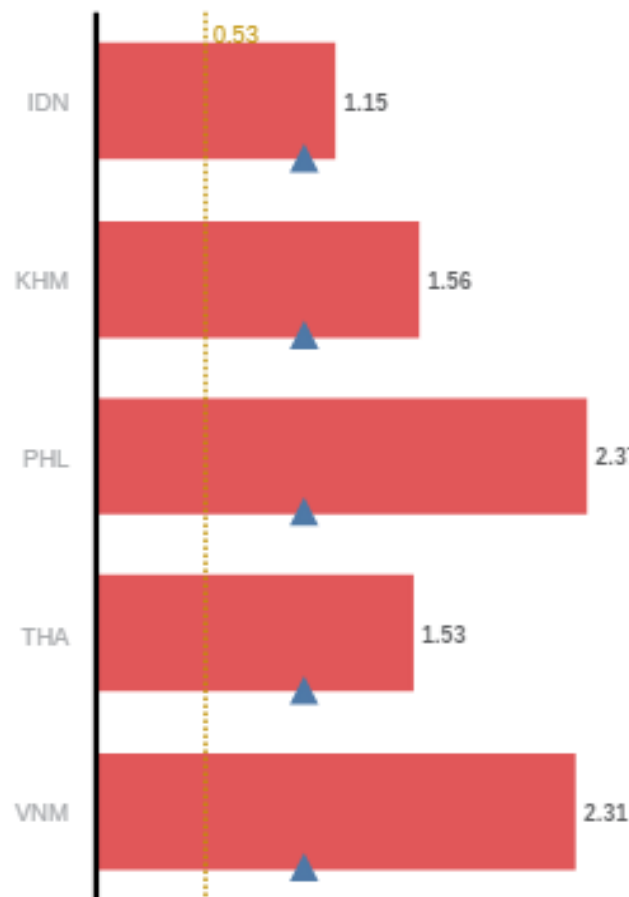
## Growing Inequality

Women and workers with lower skill level and educational attainment are more likely to be displaced yet are less likely to undergo training.



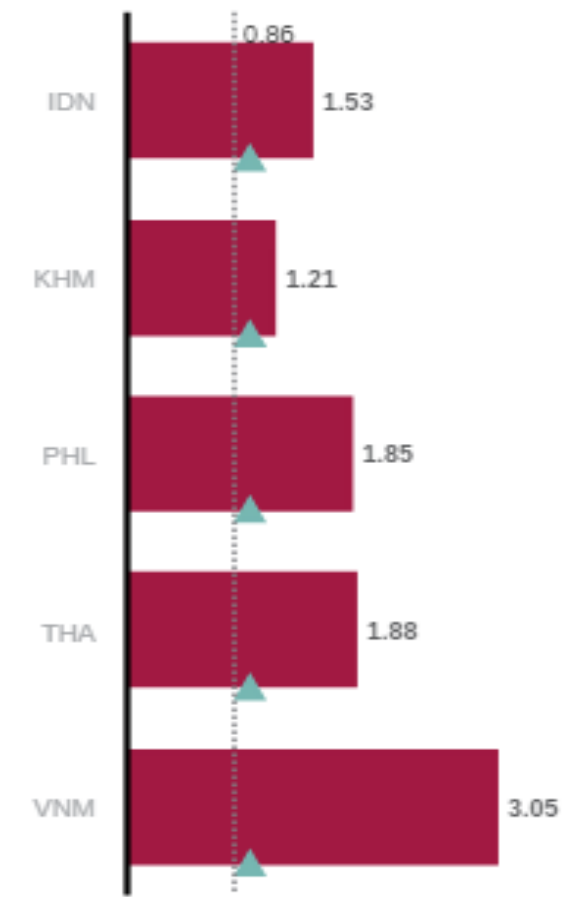
Likelihood of occupying a high-risk, automatable job

Women (red bar), Men (blue triangle), Primary (maroon bar), Post-secondary (teal triangle)



Likelihood of participating in training (OECD)

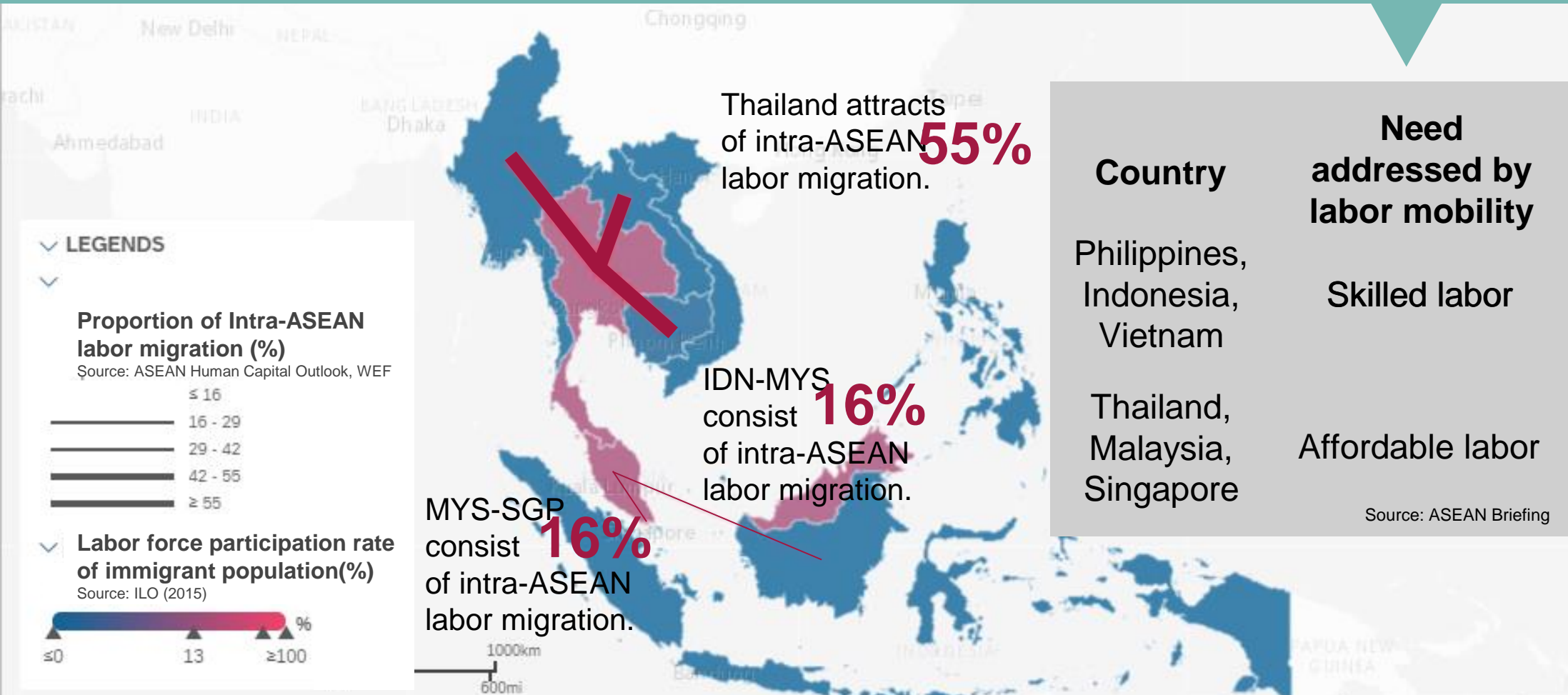
Women (yellow dotted line), Men (blue triangle), Low-skilled (maroon bar), Med to High-skilled (teal triangle)



# Recommendation 2: Build an integrated ASEAN labor market



## To view human capital as a shared regional resource



# Free movement of skilled labor to fill in the gaps

## Aspects



## ASEAN Policy Reviews

## Benchmarking



Transferability and recognition of education and skills

Mutual Recognition Agreements (MRAs)

European Union



Common guidelines for occupational qualifications and standards

ASEAN Qualification Frameworks

North America Free Trade Agreement (NAFTA)



Fluid travel regulations for relocation

ASEAN Agreement on the Movement of Natural Persons (MNP), ASEAN Comprehensive Investment Agreement (ACIA)

Caribbean Community (CARICOM)



Job matching through digital talent platforms

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LinkedIn, Glassdoor

# Industry 4.0 Skills Challenge

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The Fourth Industrial Revolution (4IR) promises economic prosperity, societal progress and individual flourishing, yet our grasp of the opportunities in this new world of work depend crucially on our resilience against the threats of transformation. To prevent a lose-lose scenario — technological change accompanied by talent shortages, mass unemployment and growing inequality — it is critical that businesses engage in developing their existing workforces, that individuals take a proactive approach to their own lifelong learning, and that governments create an enabling environment to assist in these efforts.

**8** DECENT WORK AND  
ECONOMIC GROWTH



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