

OVERVIEW OF ASEAN

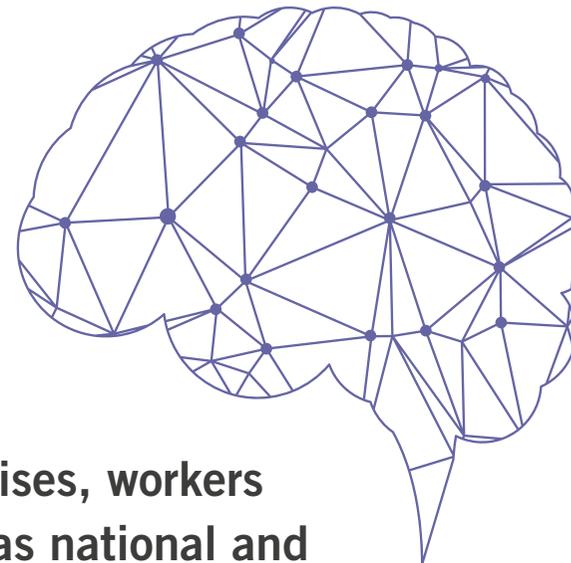
- **Population: 632 million**
- **Expanding middle class: Tripled over the past 20 years**
- **Demographics and urbanization**
 - Population growth is slowing
 - Young women and men account for about 17% of the population
 - Portion of ASEAN urban population has risen above 40%
- **Workforce characteristics**
 - Only 13% are high skilled



RESEARCH OBJECTIVE AND FOCUS

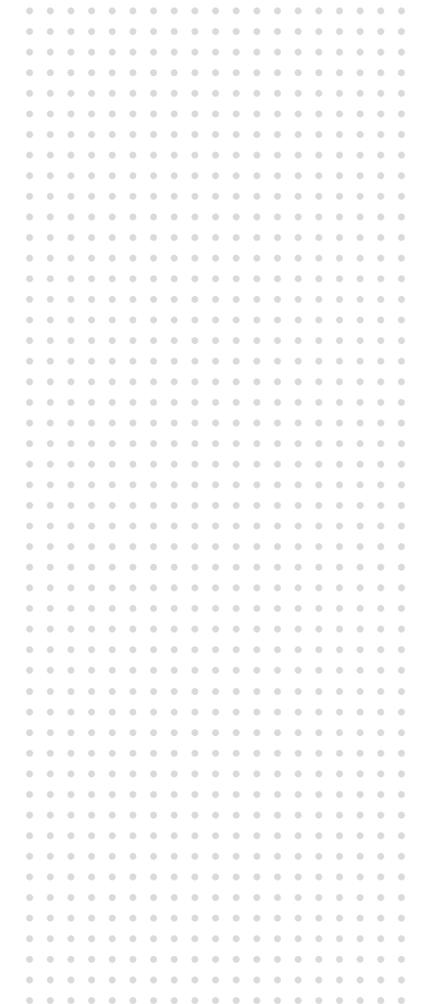
Develop an in-depth understanding of technological trends across different sectors:

- Focus on labour-intensive and economically important sectors
- Assess enterprises' skills needs
- Understand impact on people



Provoke thought and discussion among enterprises, workers and their representative organizations, as well as national and regional policy-makers, on how best to prepare for the discernible changes most likely to come by the year 2025.

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HOW THE RESEARCH WAS CONDUCTED

Research methodology



330
interviews



4,000
enterprise surveys

2,700
student surveys



6 national
and **regional**
consultation meetings



extensive
secondary research

Sectoral approach of five prominent sectors in ASEAN:



Automotive and auto parts



Electrical and electronics (E&E)



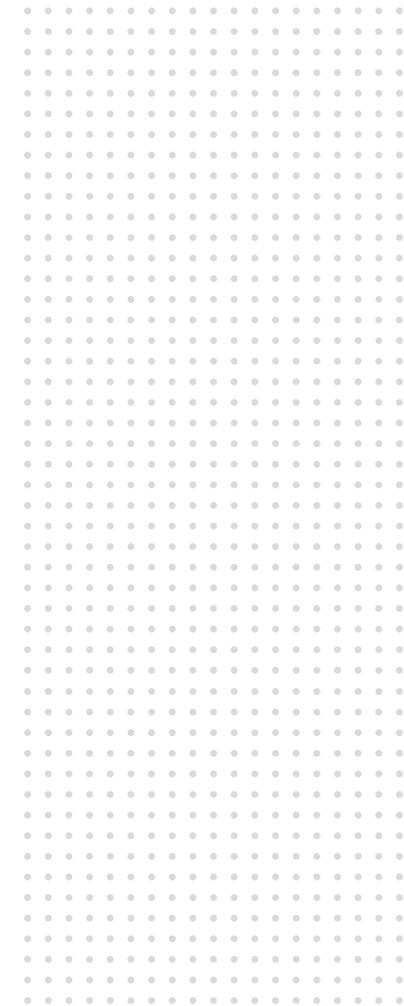
Textiles, clothing and footwear (TCF)



Business process outsourcing (BPO)

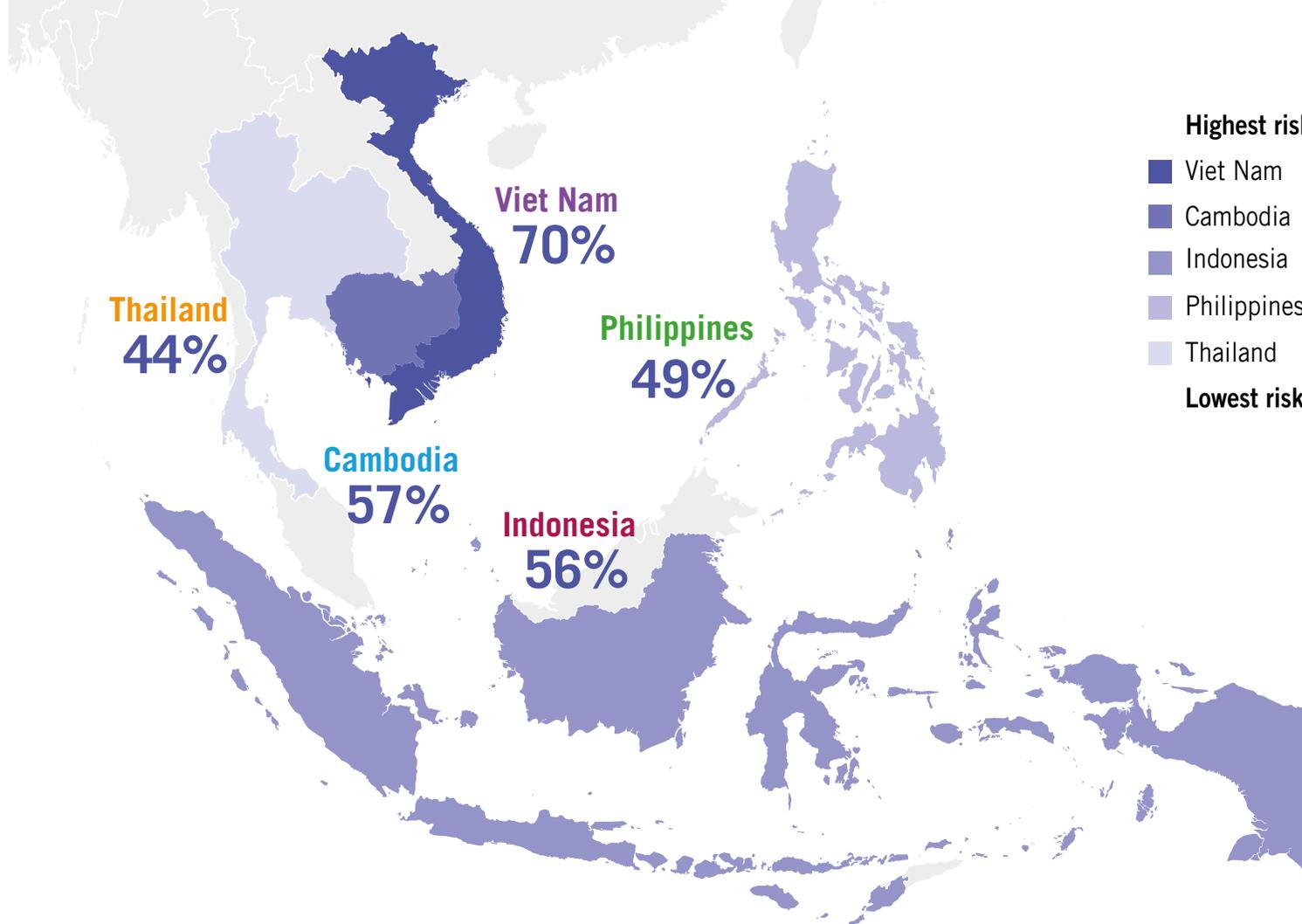


Retail



WORKERS AT HIGH RISK OF AUTOMATION IN ASEAN-5

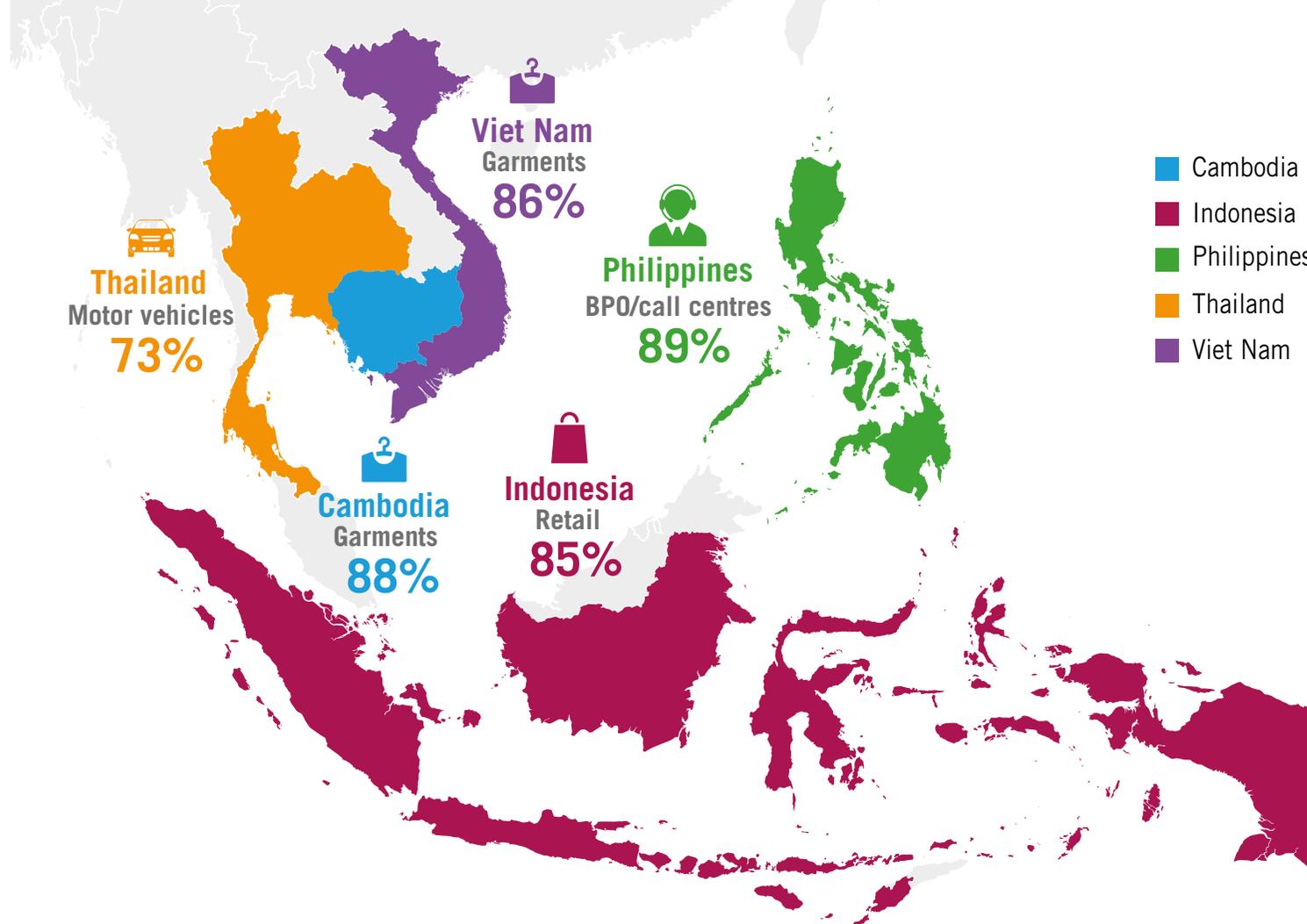
Simulations on jobs susceptible to digitalization



Source: ASEAN in transformation: Future of jobs at risk of automation (ILO, 2016)

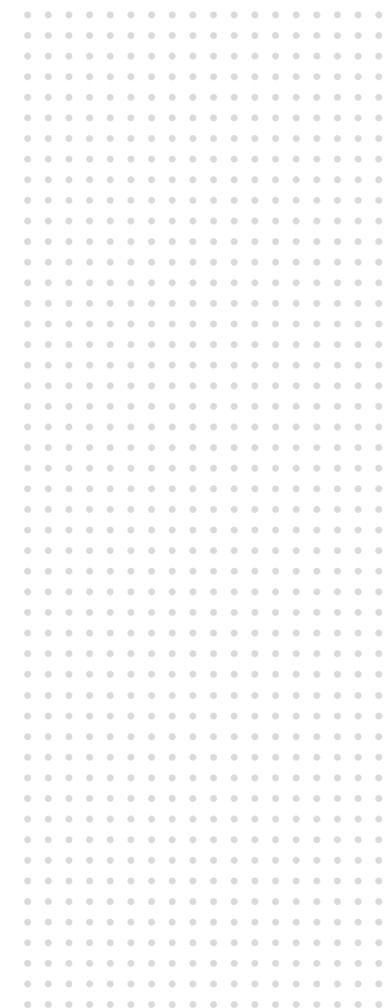
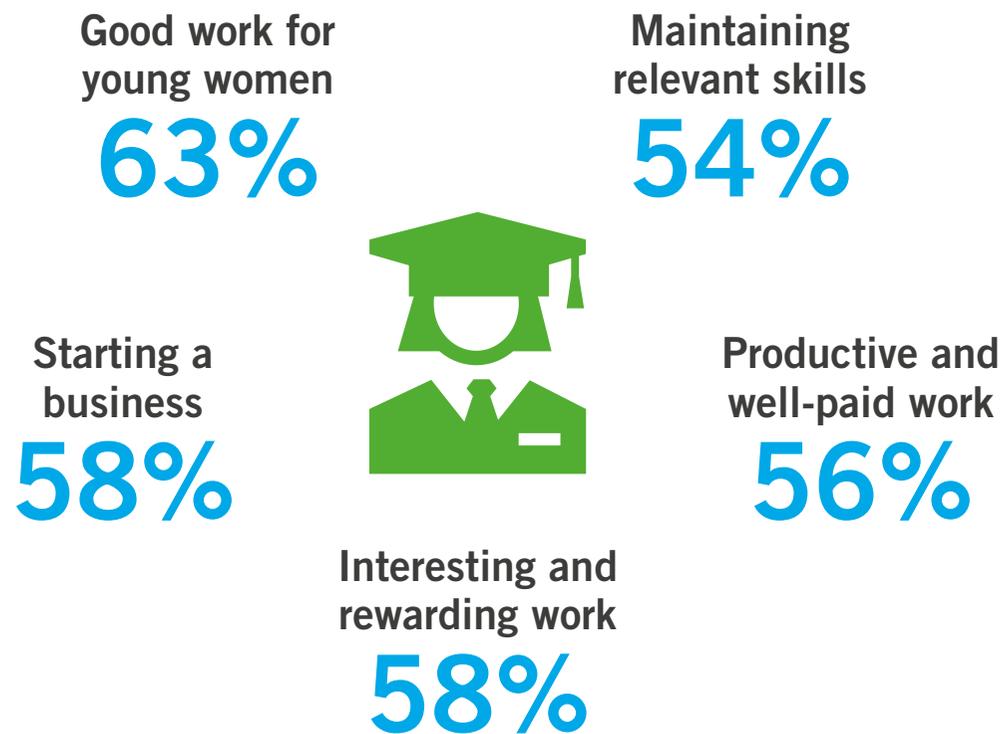
PERCENTAGE OF WAGE WORKERS AT HIGH RISK OF AUTOMATION IN KEY SECTORS IN ASEAN-5

Simulations on jobs susceptible to digitalization



YET ASEAN'S INCOMING WORKFORCE IS OPTIMISTIC ABOUT FUTURE WORK OPPORTUNITIES

2,700 students in ASEAN-10 say 2025 will bring greater opportunities for



YOUNG PEOPLE'S AREA OF INTEREST

Top choice of study: Business, commerce and finance (almost 30%)

STEM uptake



Male student
28%



Female student
17%

Top career choice – Male



ICT
14%



Finance or insurance
9%



Manufacturing
8%

Top career choice – Female



Finance or insurance
11%

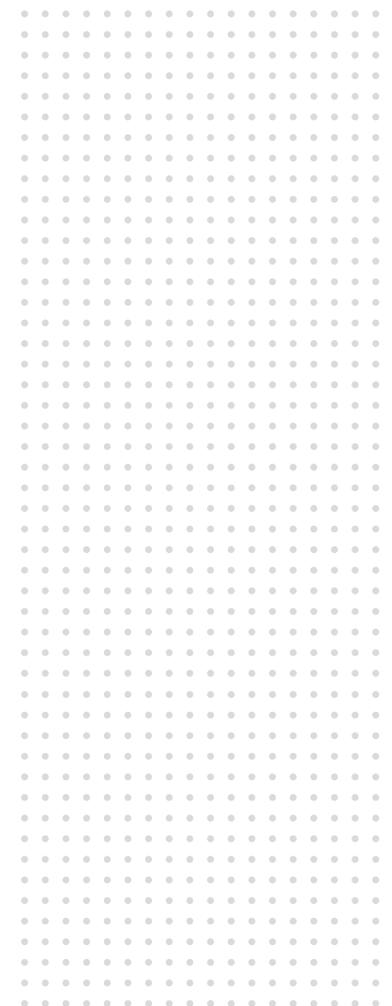


ICT
10%



Arts and entertainment
8%

BUT ARE THEY STUDYING FIELDS ALIGNED WITH GROWTH SECTORS?



ASEAN ENTERPRISES ARE NOT AT THE FOREFRONT OF TECHNOLOGICAL INNOVATION BUT SEE IT'S IMPORTANCE

Of 4,000 enterprises surveyed in ASEAN-10



less than
16%
protect IP



around
20%
invest in R&D

But technology is seen as a positive enabler:



Over 50%
agree that technology will increase
domestic sales, labour productivity, profits and
number of highly skilled workers employed

ENTERPRISE BARRIERS TO TECHNOLOGY UPTAKE

Enterprises report that **affordability and skills** are the **biggest obstacles** to technology implementation



High fixed
capital cost

29%



Lack of high
skilled workers

13%



High
licensing cost

10%

THE WORKFORCE IS NOT FIT FOR PURPOSE

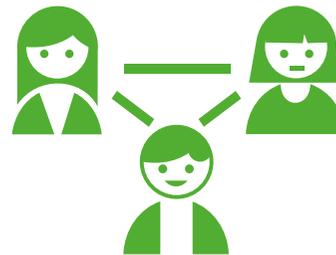
Technology is driving up enterprise demand for technically skilled workers who are difficult to find

Skills most important:



Technical knowledge

40%



Teamwork and communications

33%

Skills most difficult to find:



Strategic thinking and problem solving

32%



Technical knowledge

27%



Innovation

25%



Creativity

25%

ENTERPRISE OUTLOOK IS POSITIVE

Enterprises think 2025 will bring greater opportunities for:



Labour productivity

69%



Profits

65%



High skilled workers
employed

65%



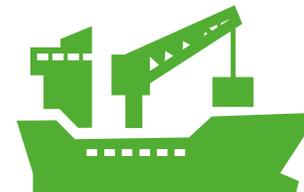
Domestic sales

64%



Women employed

46%

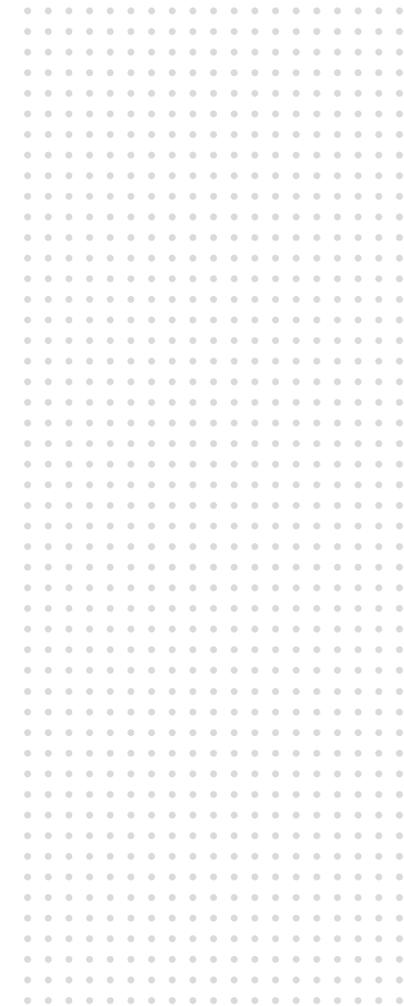
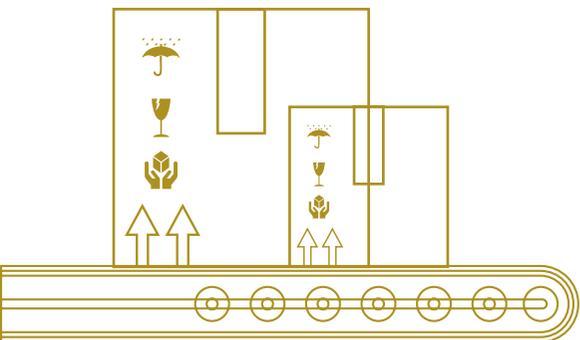


Export

46%

DRIVERS OF TECHNOLOGY ENTERPRISE COMPETITIVENESS

- Continuously improve quality, precision and productivity
- Manage and stabilize total production cost and staff turnover
- Consider movements of key competing countries, like China
- Keep up with technological trends in other sectors



DRIVERS OF TECHNOLOGY

CONSUMER DEMAND AND GOVERNMENT PRESSURE

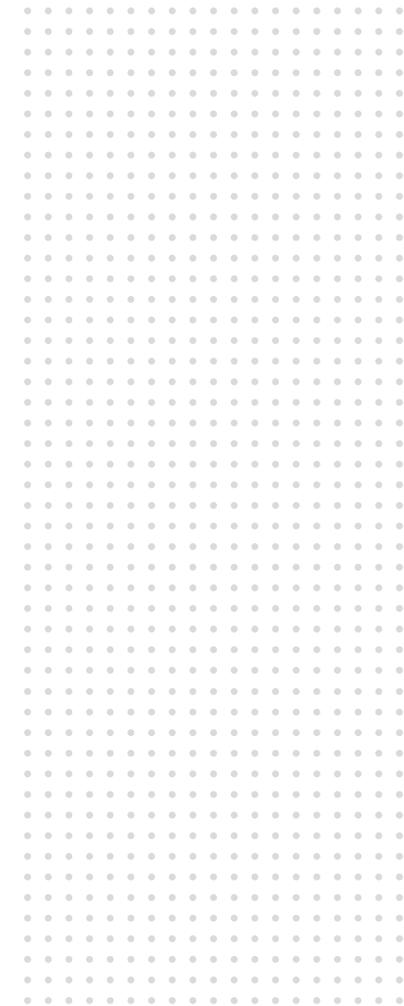
Consumers are:

- Becoming wealthier, with more disposable income in ASEAN
- Demanding sophisticated products
- Seeking instantaneous purchases and want a variety of designs/functions
- Globally, this is accentuated by consumers wanting individualized products



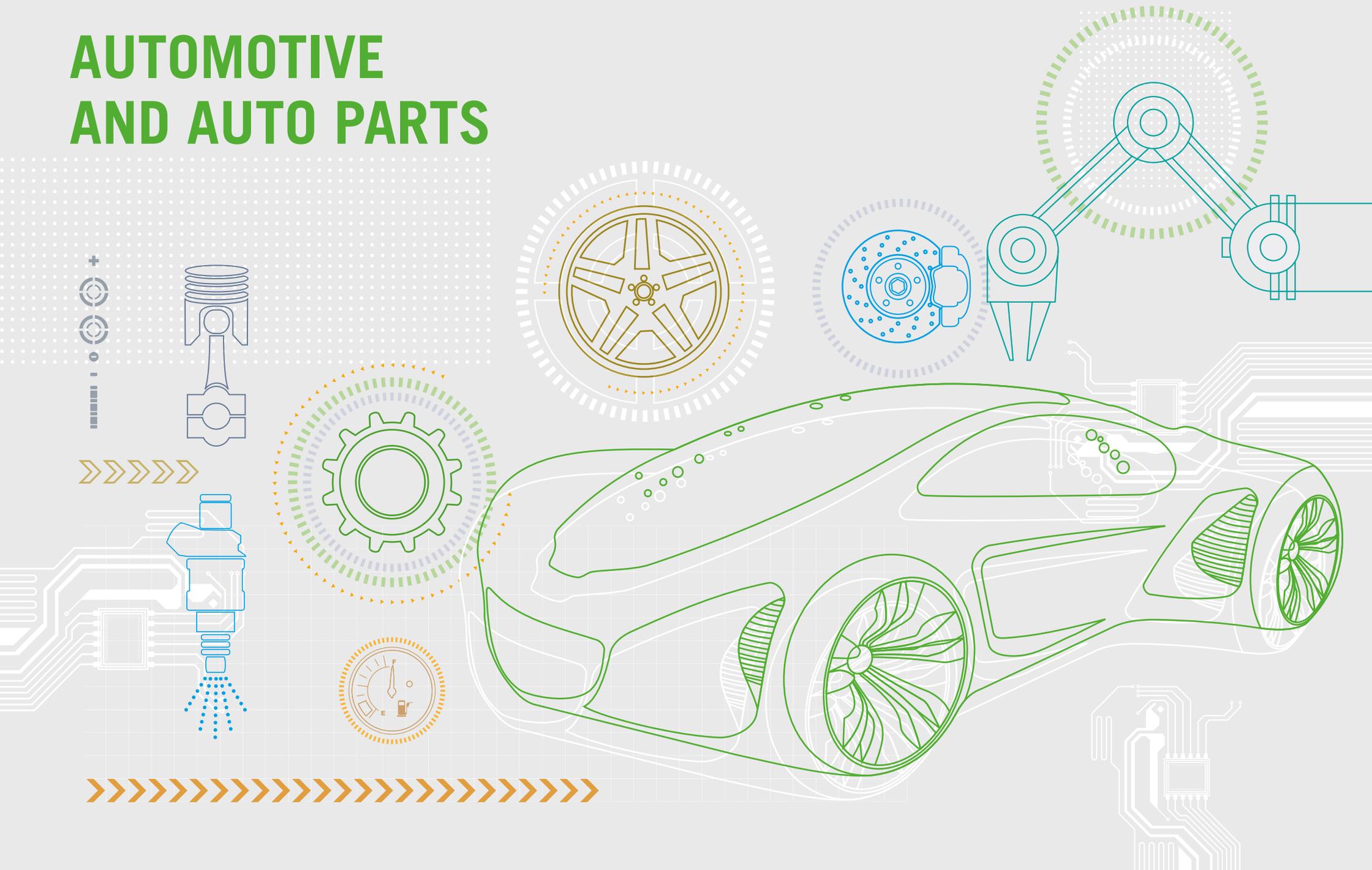
Governments are adding regulations to:

- Address environmental concerns during production and reduce waste
- Create a safer workplace

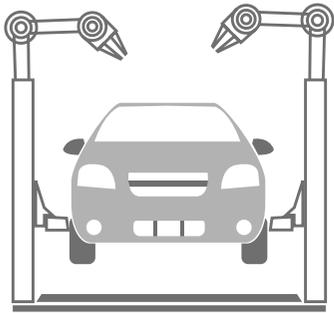


SECTOR ANALYSIS

AUTOMOTIVE AND AUTO PARTS



SECTOR SIGNIFICANCE

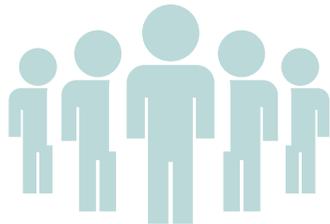


ASEAN was the
7th largest
global
producer
of vehicles
in 2015

More than

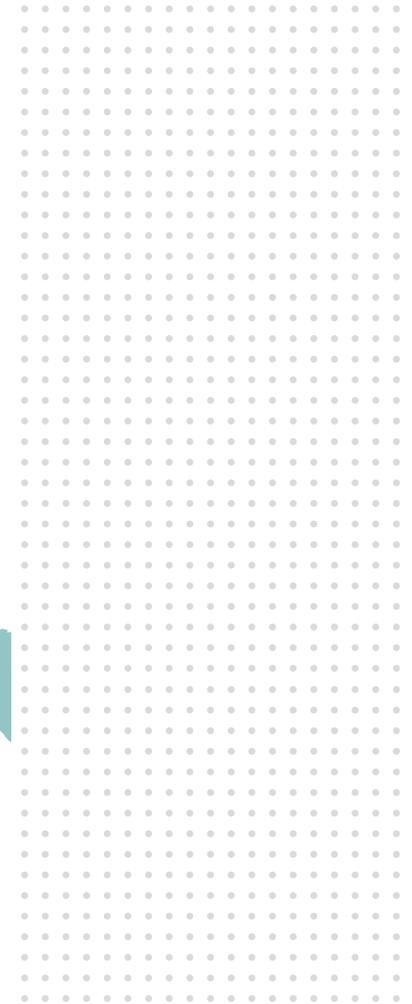
800,000

workers employed



Regional leaders:

**Thailand,
Indonesia**



MAIN TECHNOLOGIES IMPACTING THE SECTOR

Global trends:

- Electric/hybrid electric vehicles
- Advanced, lightweight materials
- Autonomous vehicles

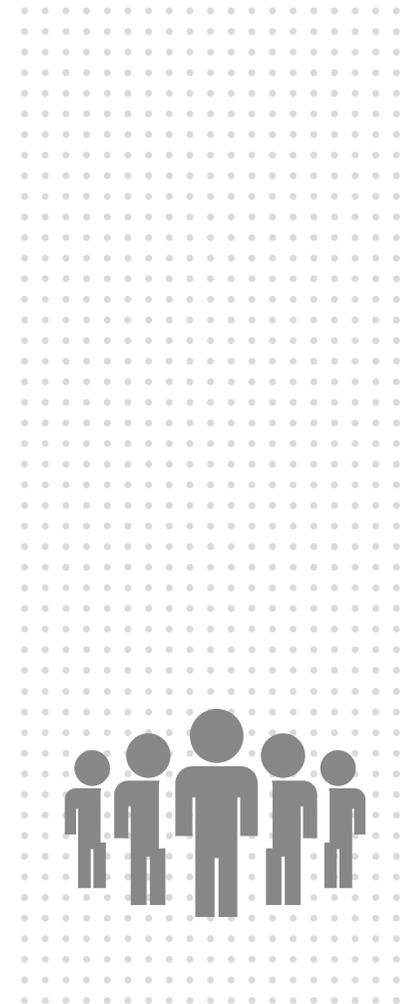
In ASEAN, robotic automation is most prominent

- Production-line robots are becoming smaller, better, cheaper, easier to install, more adaptable and increasingly able to collaborate with people
- Over 60% interviewed have seen significant increases in automation
- Over 70% interviewed say that cost is the major driver for automation

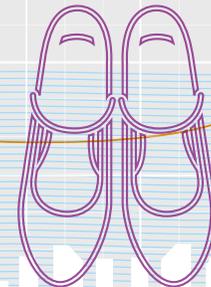
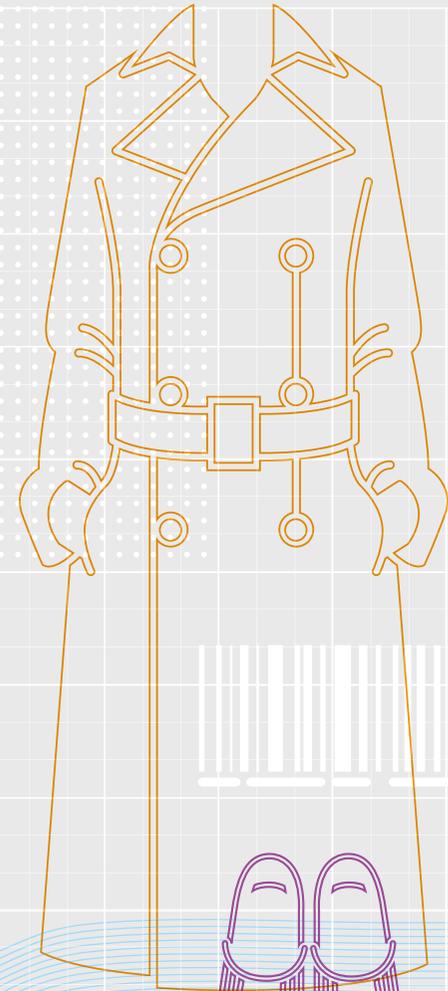
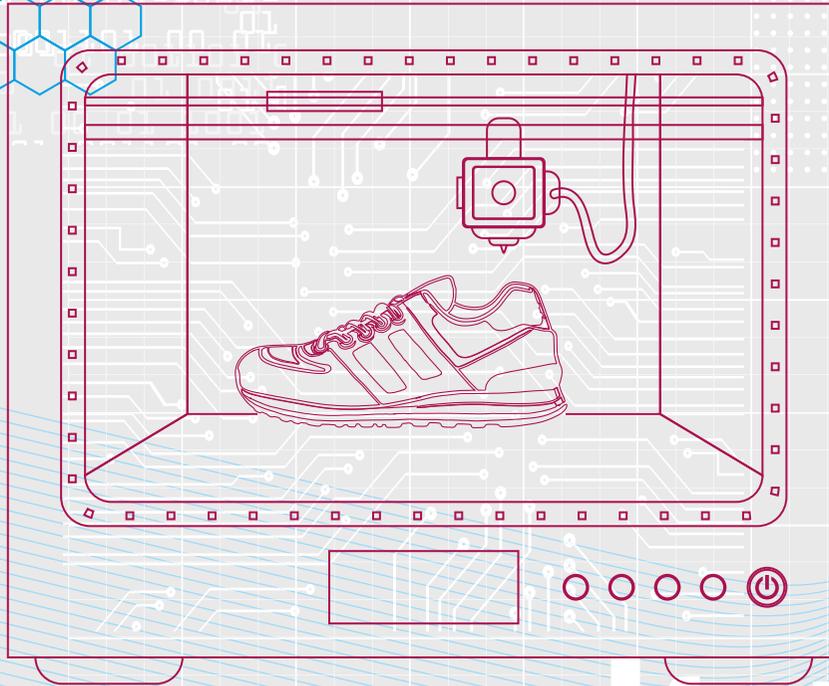
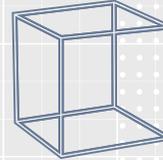
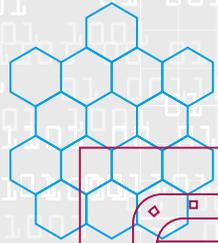


IMPACT ON ENTERPRISES AND PEOPLE

- Robots are replacing lower-skilled jobs
- The industry needs new types of higher-skilled workers who are difficult to find
 - Increased need for engineers with specialized knowledge on automation and robotic programming
 - Increased demand for workers with STEM backgrounds
- The sector needs to rebrand its image among young people and women



TEXTILES, CLOTHING AND FOOTWEAR



SECTOR SIGNIFICANCE

Provides jobs to over

9 million people
in ASEAN,

the majority of whom
are young women



The female share of
employment exceeds

70% in Cambodia, Lao PDR,
the Philippines, Thailand and Viet Nam

While globally, TCF exports are dominated by
China, a number of ASEAN economies like



**Indonesia,
Thailand and
Viet Nam**

**join the top rankings
of TCF exports**

In some ASEAN countries, TCF
accounts for high manufacturing
employment

Cambodia 60%



MAIN TECHNOLOGIES IMPACTING THE SECTOR

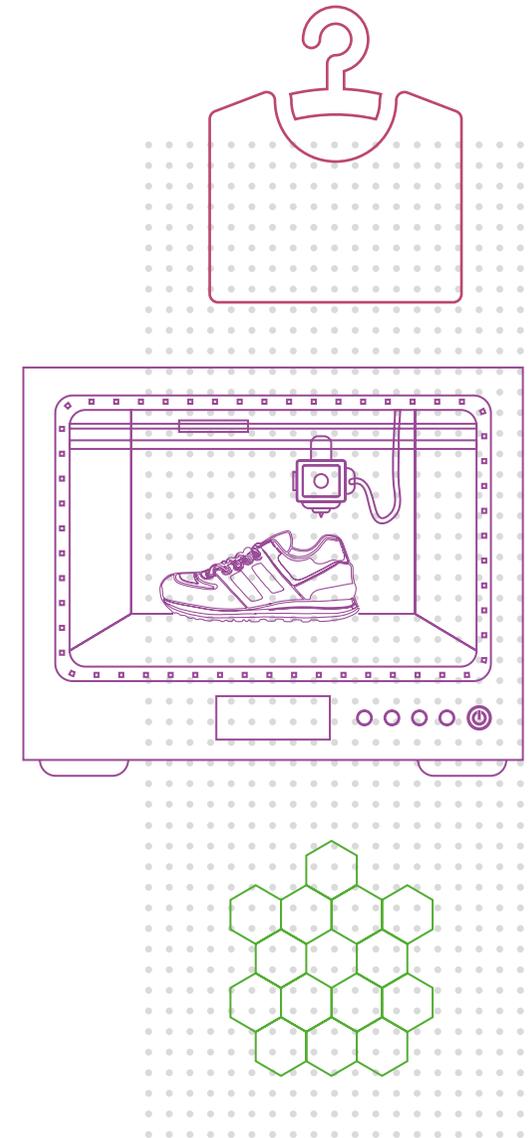
3D printing, body scanning and CAD enable enhanced individualization of apparel.

Smart apparel

- Integrates medical, fitness and wellness features that monitor heart rate, calories burned and other biometric data
- Expected to increase from US\$20 billion in 2015 to US\$70 billion in 2025

Nanotechnology

- Nanoparticles render odour-free, waterproof, UV-blocking or antistatic clothing

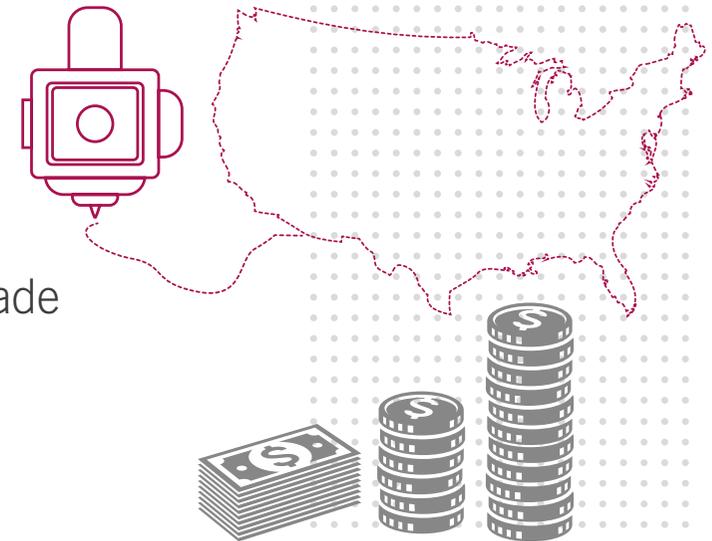


MAIN TECHNOLOGIES IMPACTING THE SECTOR

Robotic automation forms the biggest future threat to both enterprises and workers in ASEAN's TCF sector.

“Sewbots”: robots capable of sewing will change the calculus of apparel production

- Enable reshoring of production closer to destination market
- US sees immediate saving of using sewbots in 2016 of about US\$180,000 over 5 years
- China sees considerable savings if investment in sewbots are made in 2020 (robots are 50% cheaper)

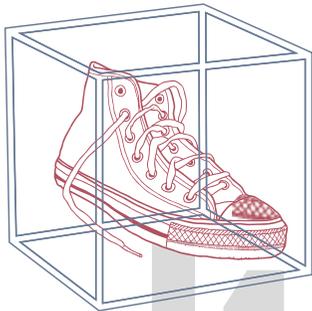


IMPACT ON ENTERPRISES AND PEOPLE

- Immediate term: better skilled production-line workers required
- Of all the sectors analysed, TCF is at highest risk of displaced workers.

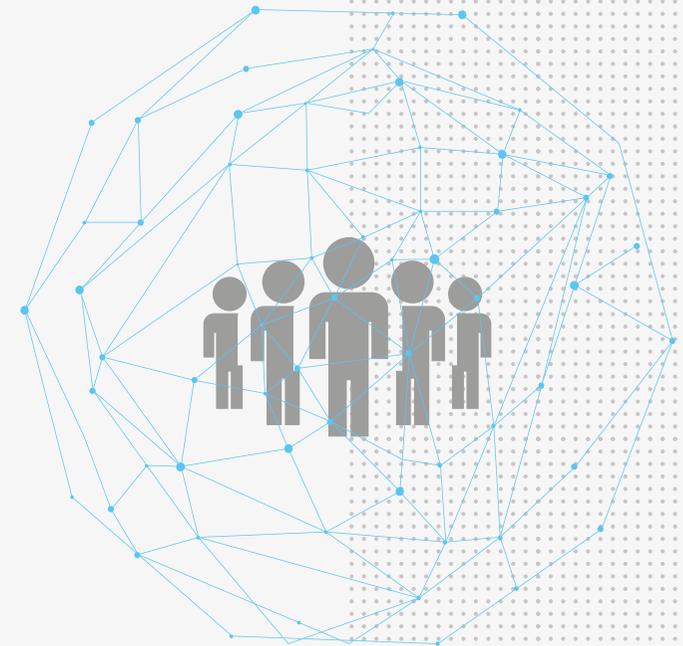
This risk disproportionately affects female workers

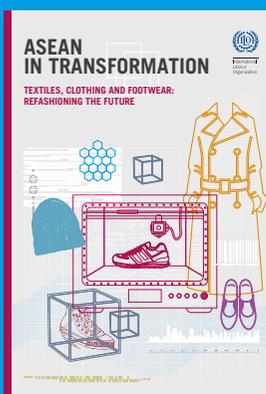
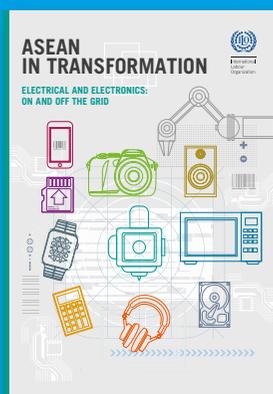
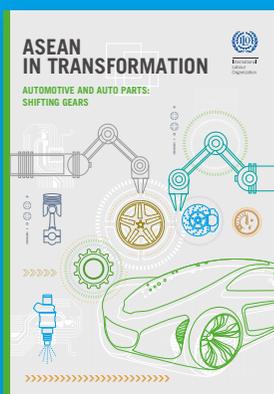
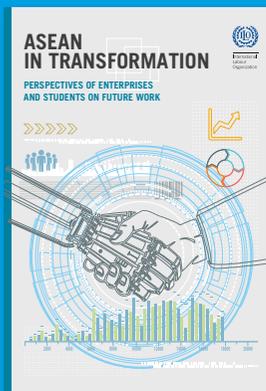
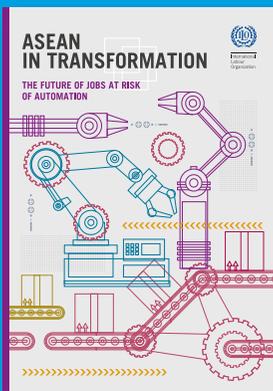
- Enterprises lack higher skilled workers who can manage technology: more engineers and technical experts with backgrounds in medical science, material science and electronics needed



“Progress is not to be measured in technological advancement or innovation, it is to be measured by what we make of the application of that technology or innovation”.

Guy Ryder, Director General, ILO





ACT/EMP
The Bureau for Employers' Activities

Bureau for Employers' Activities (ACT/EMP)

International Labour Office, Route des Morillons 4, CH-1211 Geneva 22, Switzerland

www.ilo.org/employers