



Ministry of Human Resources

HUMAN RESOURCE CONFERENCE

Labour Market Dynamics & Future of Work

Dato' Amir bin Omar
Secretary-General
Ministry of Human Resources



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SHAFTSBURY ASTERIA CYBERJAYA

Towards Evidence-Based Policy Formulation



Dato' Amir bin Omar
Secretary-General
Ministry of Human Resources

Tel: 03-88865021
Email: amir.omar@mohr.gov.my



Experience and Specialisation

More than 30 years of experience in the public sector focusing on human capital and labour market policy development include:

- Economic modelling – Economic-wide model on HRD and labour market
- Forecasting – demography; labour market; and agriculture sector projection
- Demand side HCD planning – labour market analysis

Technical assistance on HCD planning :

- Sudan – The Long-Term Perspective Plan 2003-2027;
 - Saudi Arabia – The Long-Term Strategy 2005-2025;
 - Philippines – Region of Mindanao
- Involvement in formulation of economic plan documents
 - Undertake Malaysia human capital development programmes
 - Formulate TVET Transformation Plan and Game Changer under the Eleventh Malaysia Plan



Organisation

Economic Planning Unit:

- Human Capital Development
- Agriculture Section

Ministry of Human Resources:

- Director of Institute of Labour Market Analysis and Information (ILMIA)
- Deputy Secretary-General (Policy & International)
- Secretary-General



Education

Bachelor in Economics & Administration
(Rural Economics)
University of Malaya, 1986

Post Graduate Diploma
in Economics, University of
Manchester,
United Kingdom, 1995

Master of Arts in Economics,
University of Manchester,
United Kingdom, 1996

01



National Policy

Empowering Human Capital

02



Labour Market

Outlook and Prospects

03



Challenges of the Future of Work



Industrial Revolution 4.0's *Impact on Malaysia*



Future of Work – A Human Centered Agenda



Conclusion

04

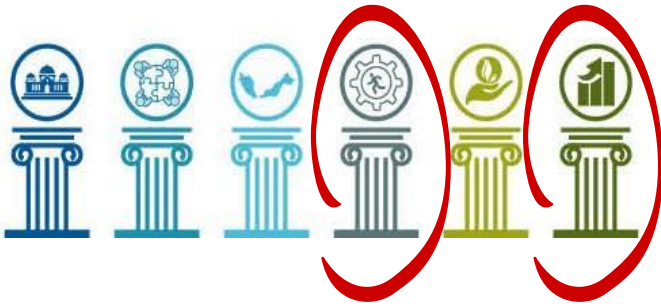
05

06



mid-term review of the
**ELEVENTH
MALAYSIA
PLAN**
2016-2020

new priorities and emphases

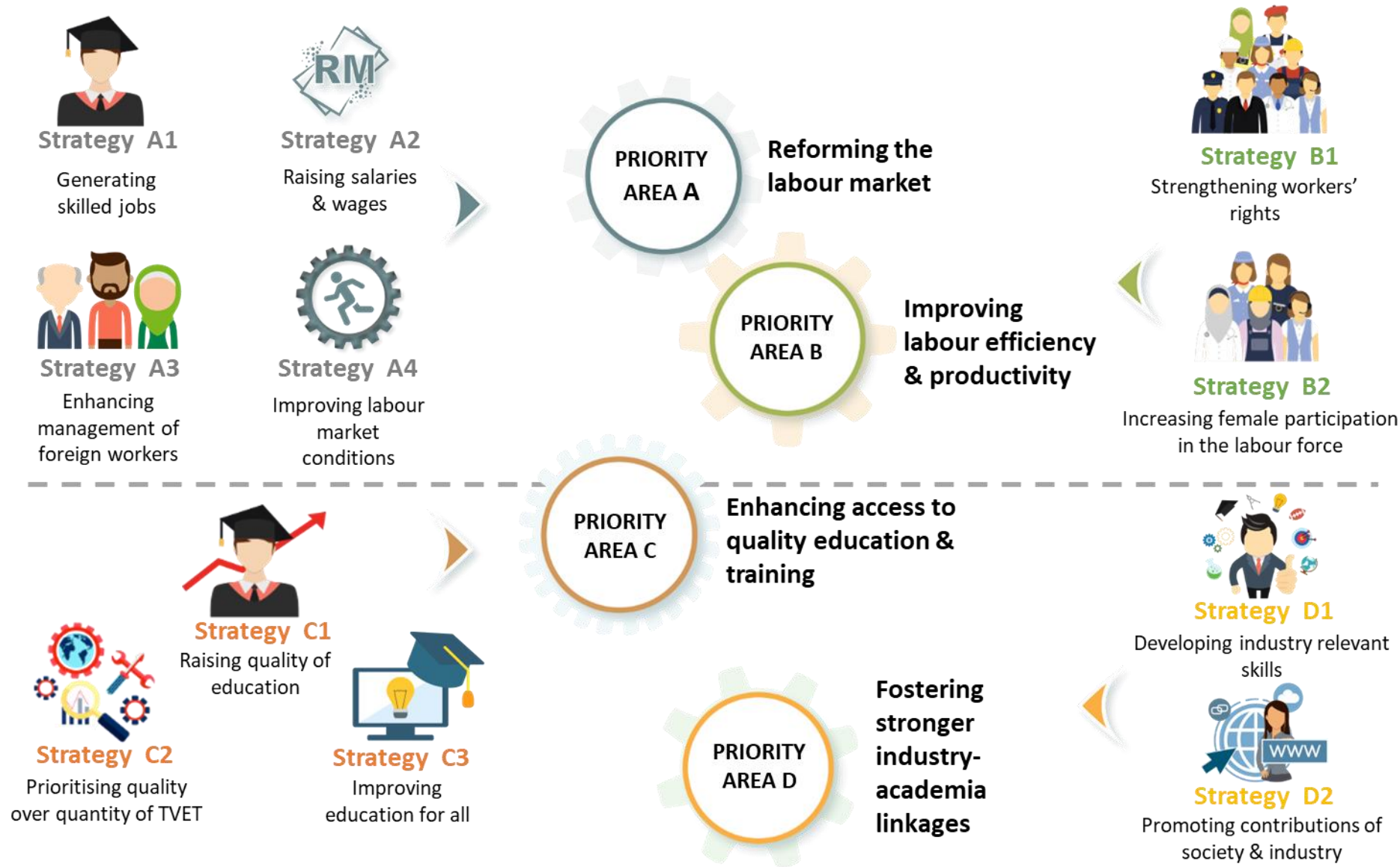


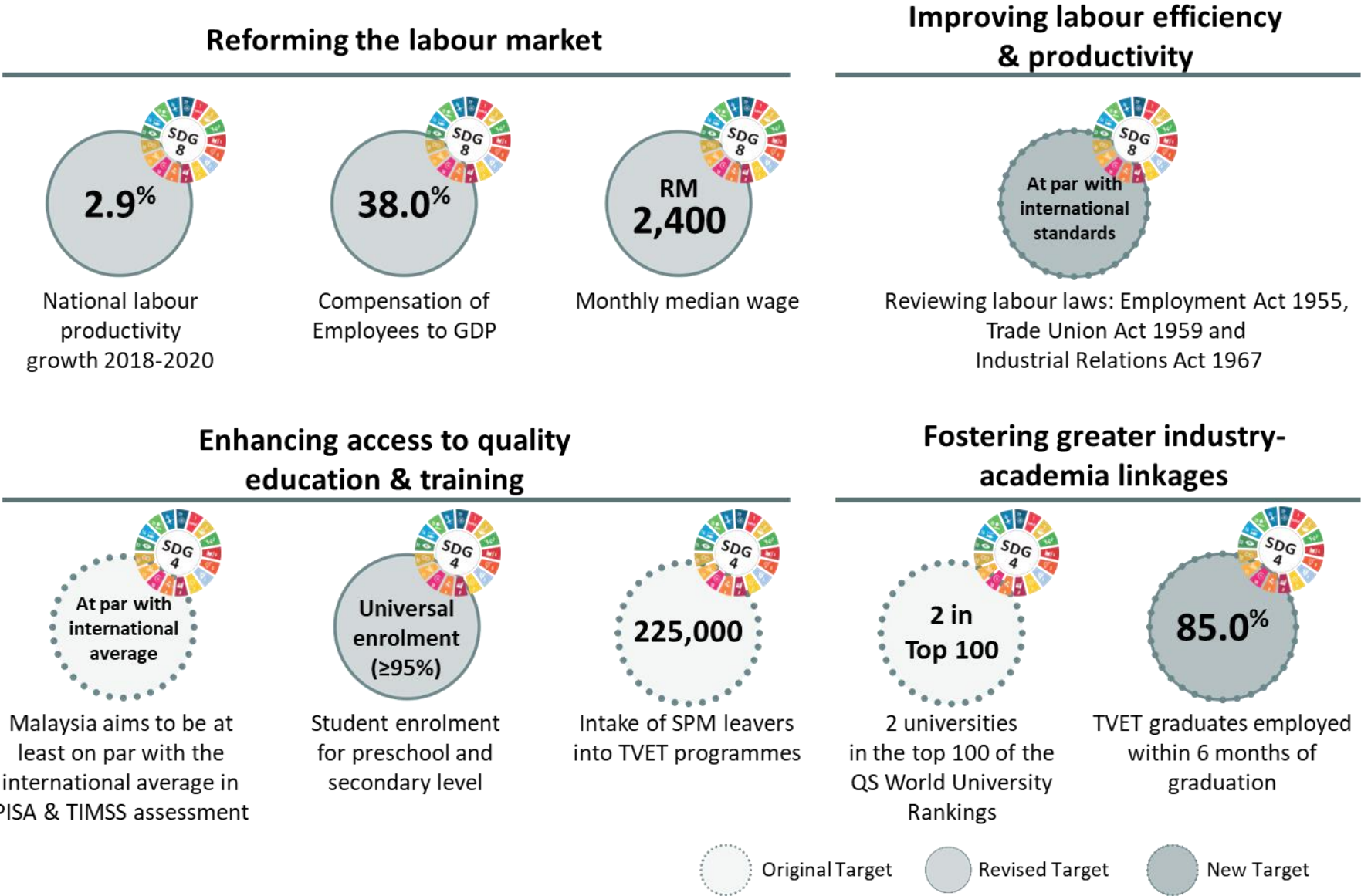
Focus will be given to create skillful, knowledgeable and innovative human capital to meet the requirements of the industry. Human capital development initiatives will provide opportunities for quality employment as well as ensure access to quality education and training towards building a more inclusive, equitable and prosperous nation.

Pillar IV: Human Capital Development

Pillar VI: Strengthening Economic Growth

Mid-Term Review of the 11th Malaysia Plan





- Insufficient **connectivity** of public transport and traffic congestion
- **Poor road maintenance** which limits mobility and increases accident rate
- **Low** public transport modal share
- **Ad-hoc planning** and development of airports and ports
- Regulatory barriers **and weak collaboration** in the logistics industry
- **High cost & low return** on investment in the digital infrastructure deployment
- **Disruptive water services** contributed by high level of NRW, costly infrastructure and insufficient supply of freshwater
- The presence of **multiple agencies** handling energy sector
- **Electricity generation mix** continues to rely heavily on coal

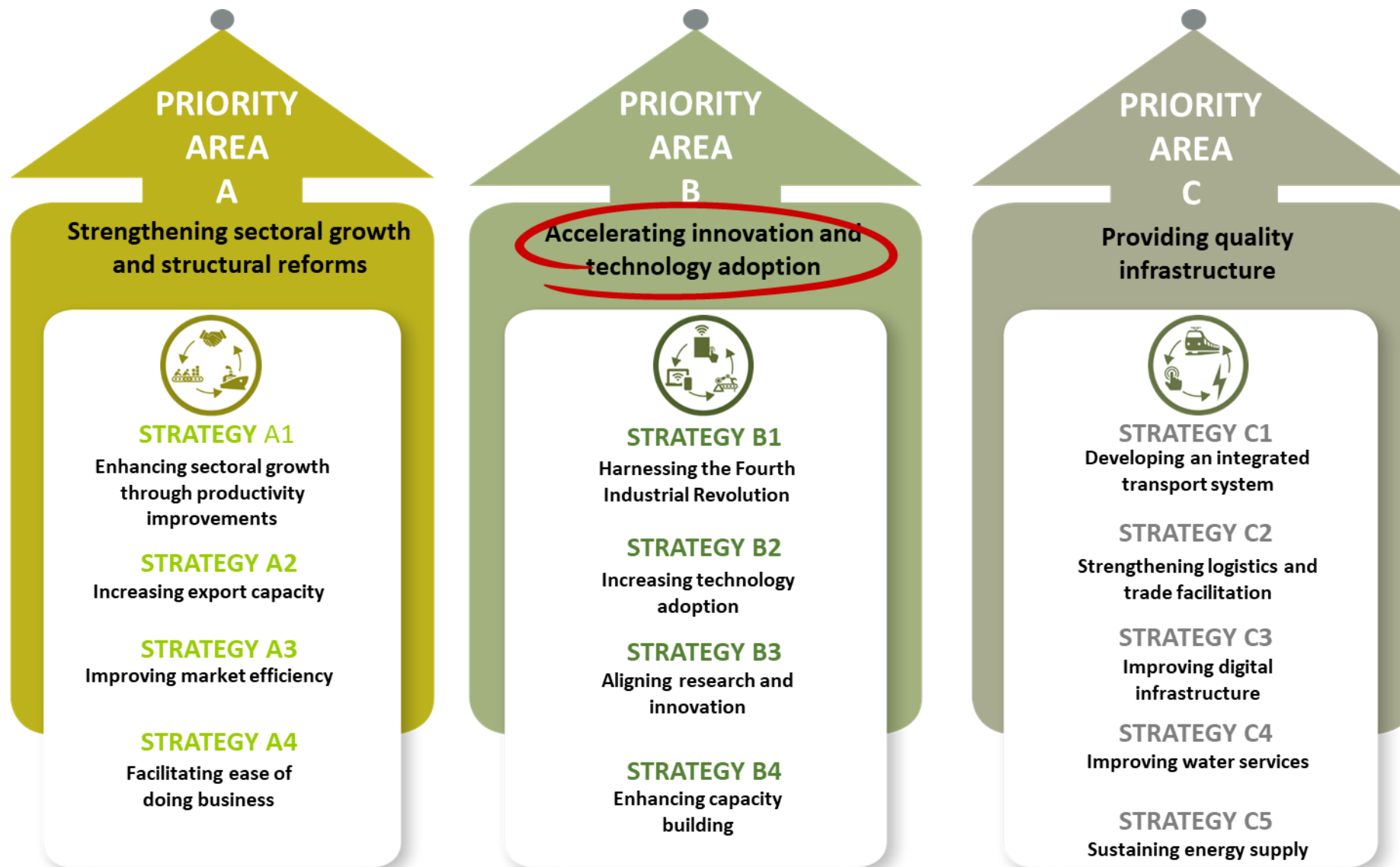
Re-engineering Economic Growth for Greater Prosperity

1

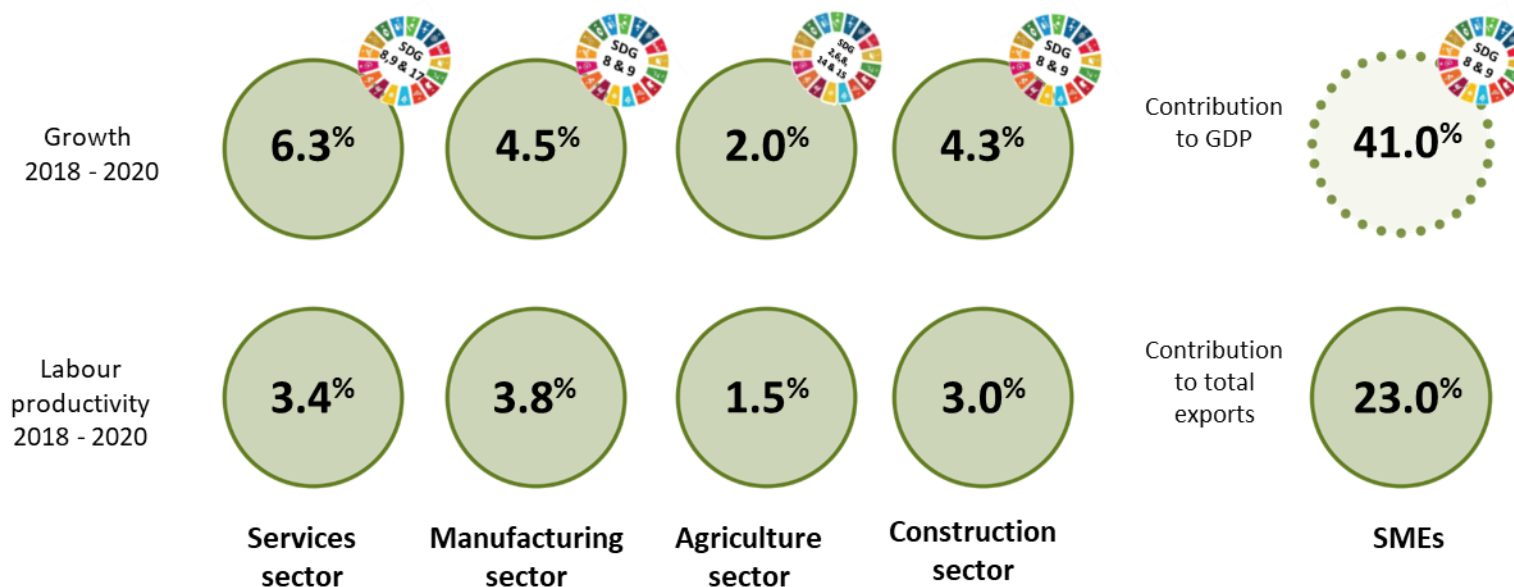
- Mismatch and shortage of specific **skilled workforce**
- Slow pace of adoption & implementation of **emerging new technologies**
- **Lack of access to financing** particularly for SMEs & agriculture-based businesses
- Low level of **exports capacity** and readiness at firm levels
- High food import bill, low productivity, volatile international commodities prices, high production cost and adverse environmental effects

2

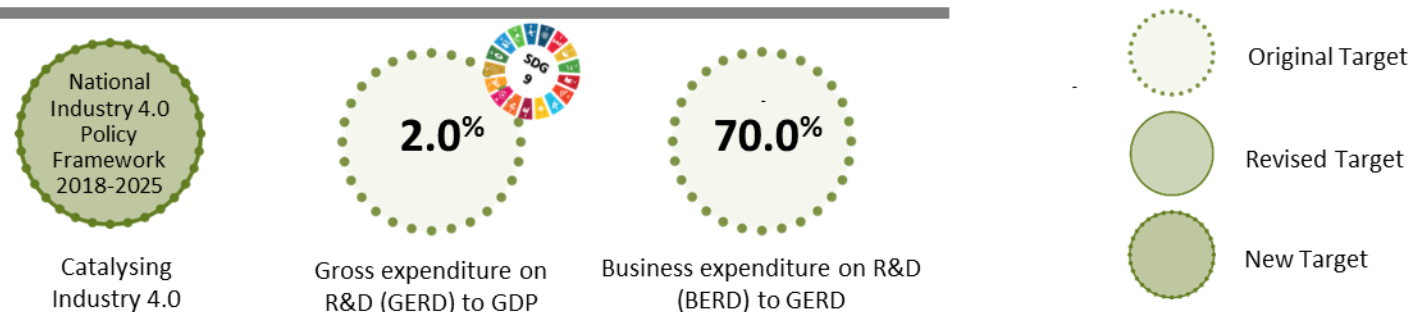
Strengthening infrastructure to support economic expansion

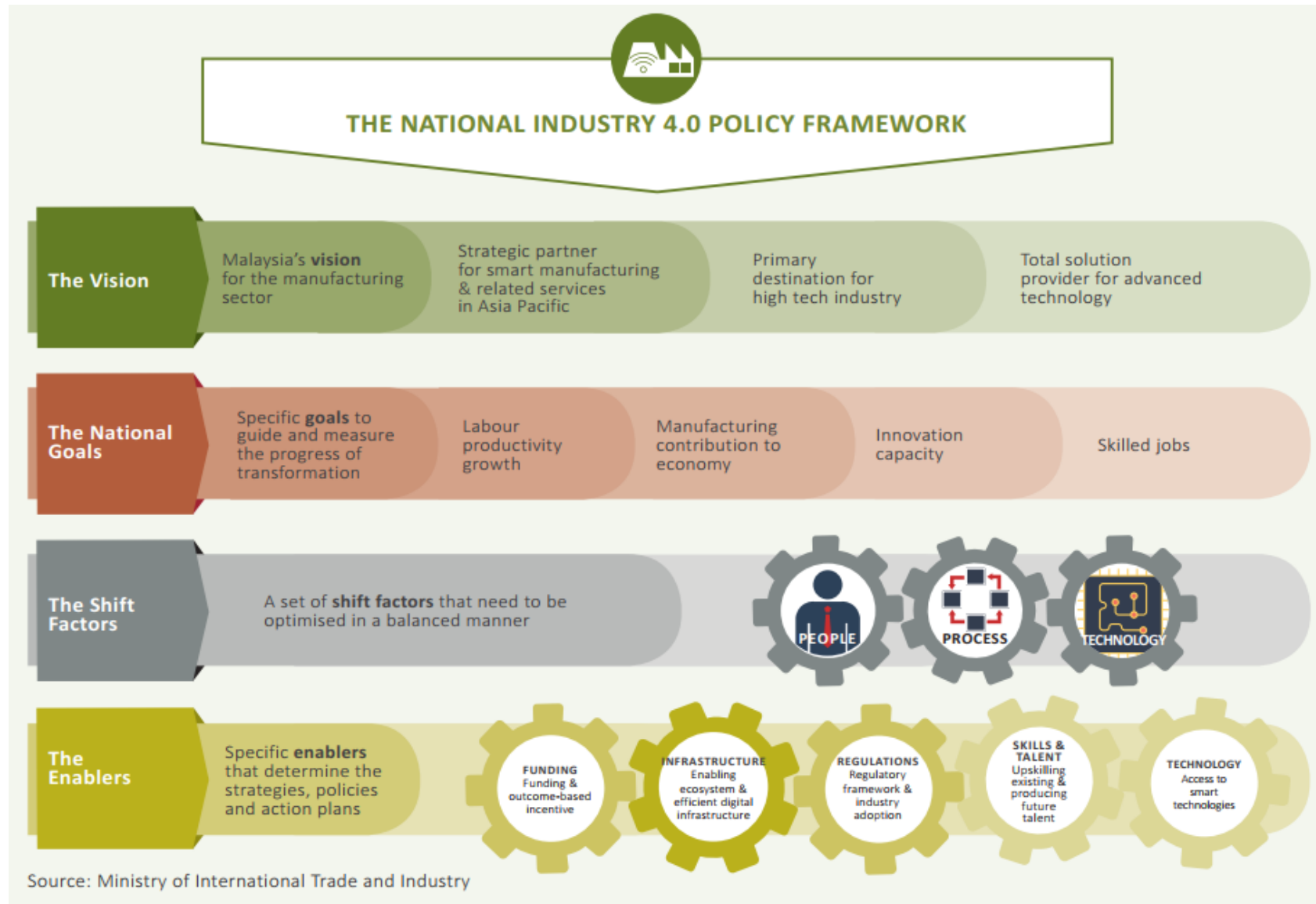


Strengthening sectoral growth and structural reforms



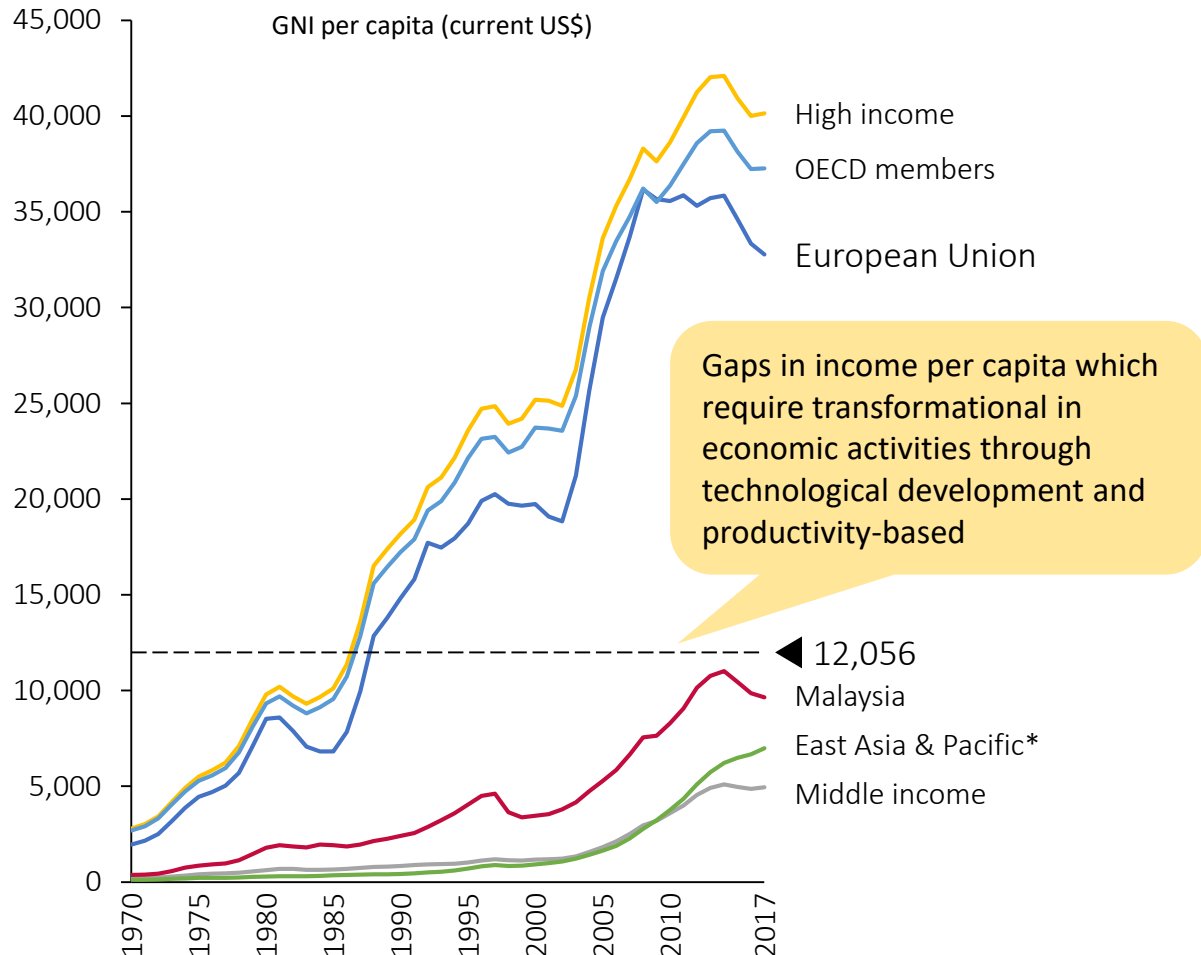
Accelerating innovation and technology adoption





02 Labour Market Outlook and Key Challenges

The aspiration to become a high income country based on the per capita income as well as the new dimensions



From middle to high income economy

- Based on the minimum threshold of a high-income economy set by the World Bank at US\$12,056 for 2017, there was a gap of 21% before Malaysia would graduate from its upper middle-income nation status.
- Based on this growth target, per capita income is expected to reach RM47,720 or US\$11,700 in 2020, below the estimated minimum income threshold of a high-income nation.

Timeline

- Given the current pace of growth parameters, the target of a high-income economy is expected to be achieved post-2020. Malaysia is anticipated to breach the threshold by 2024.

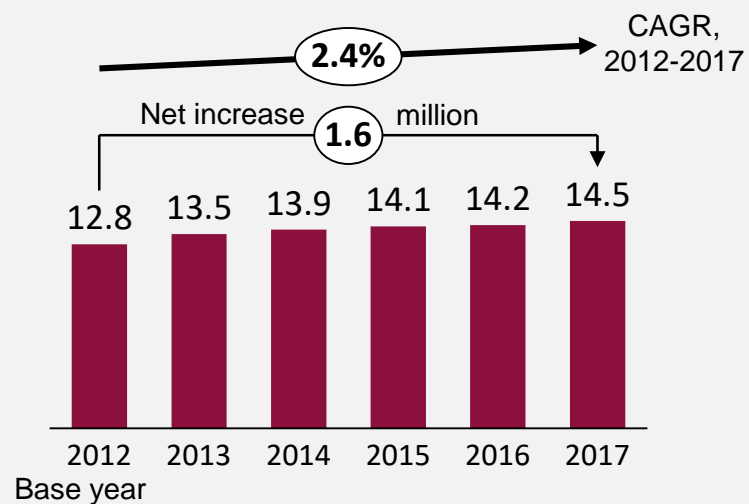
The new dimension

- However, the goal to become a developed and inclusive nation goes beyond attaining a high-income level as it must also be accompanied by higher purchasing power.
- At the same time, the aspiration of becoming a developed nation requires Malaysia to progress in many other dimensions, such as economics, politics, culture, psychology, spiritual and social

The profile of job creation – about 1.6 million new job created in the last five years

1 2 3 4 5 6

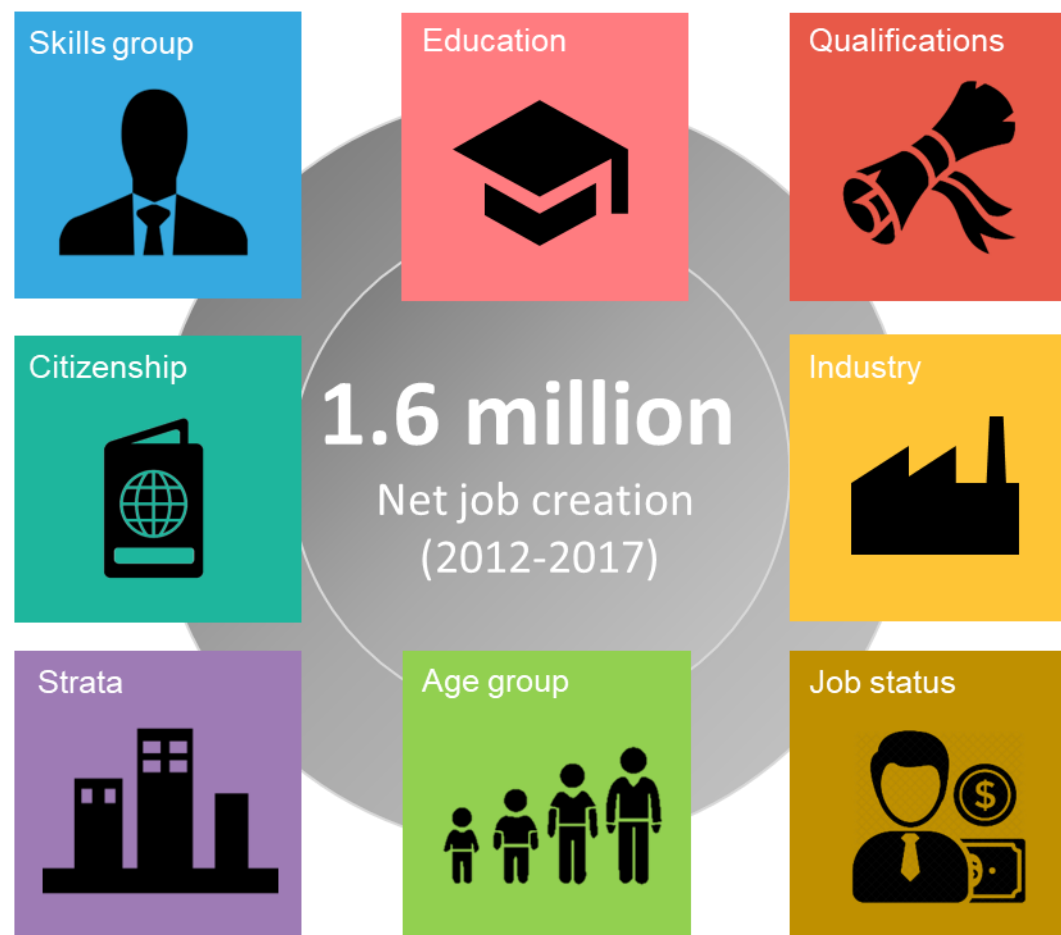
Employment 2012-2017 (million person)



Net job creation approach – additional employment generated in the economy after taking into account attrition due to retirement.

It covers:

- All economic sectors (10 major economic sectors) and
- All level of occupations (3 broad skills category and 9 major occupational groups)
- Formal and informal employment (include - wage employee, employers, unpaid family workers and self-employed)

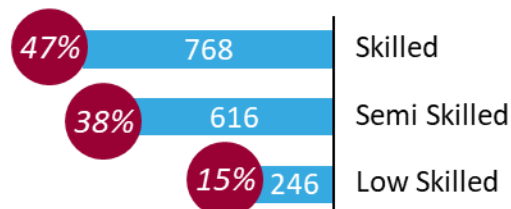


BUKU HARAPAN

P35 1 million quality jobs

Almost half in the skilled category

28%
Composition of skilled worker in 2017

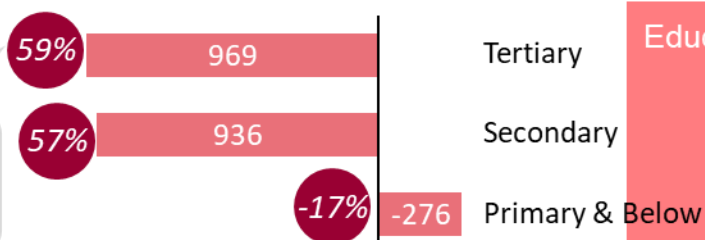
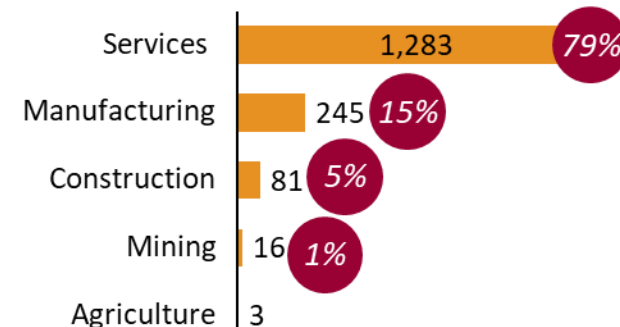


Skills group



Dominated by the services and manufacturing industry

Industry

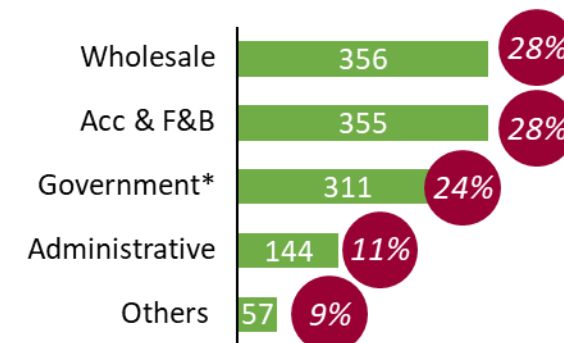


Slightly higher than skilled job creation indicating mismatch

Education



Services sub-sector



Same profile reflected by the education attainment (tertiary)

BUKU HARAPAN

P35 1 million quality jobs

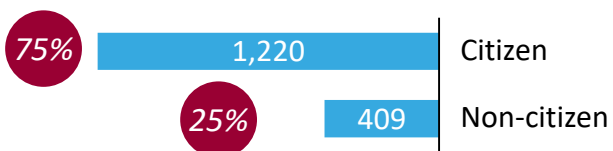
Top sectors within the services

The job market is significantly influenced by robust economic growth and industry development. Targeting job creation will require structural intervention at the various industry level.

Relatively higher job creation for non-citizen (25%) as compared to the share to total employment (15%)

15%

Composition of non-citizen worker in total employment 2017



Citizenship

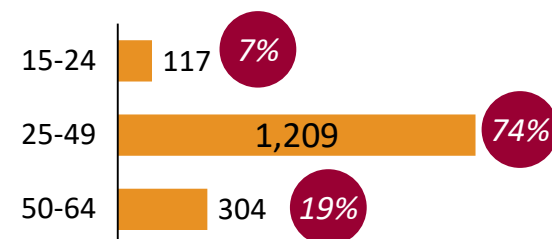


BUKU HARAPAN

SC: Youth

Most of the job created for adult cohort as compared to youth (aged 15-24) which explain the youth unemployment

Age group

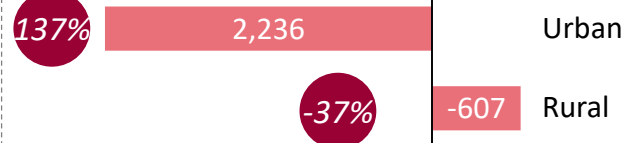


11%

Youth unemployment rate 2017

25%

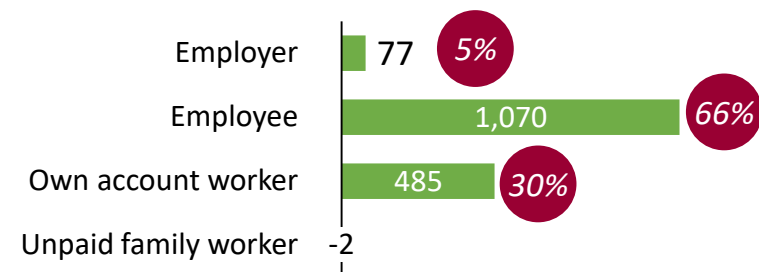
Rural population as (% of total population) 2017



Strata



Job status



Job creation concentrated in the urban with contraction in the rural area

Majority of job creation are among employee (wage employment) with increasing role of own account worker (self employed)

BUKU HARAPAN

P8 & P35 jobs across the country

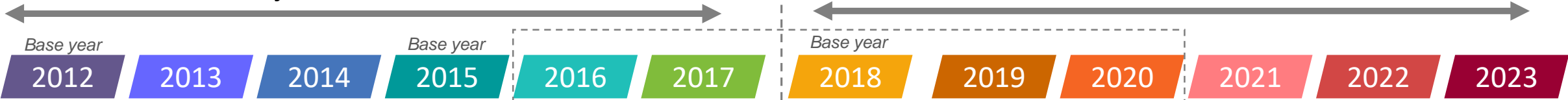
Based on current scenario there will be gaps in meeting the targeted number of job creation

~ **768,000**

Skilled jobs created

~ **1,000,000**

Quality job creation



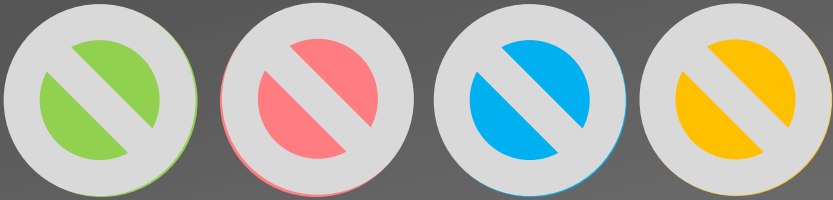
~ **153,000**

Annual average

RMK 11 2016-2020
Base on 30.1% skilled workers target (2020)
1,031,000 (skilled job creation)
or 206,000 (average annual)

~ **250,000**

Annual average



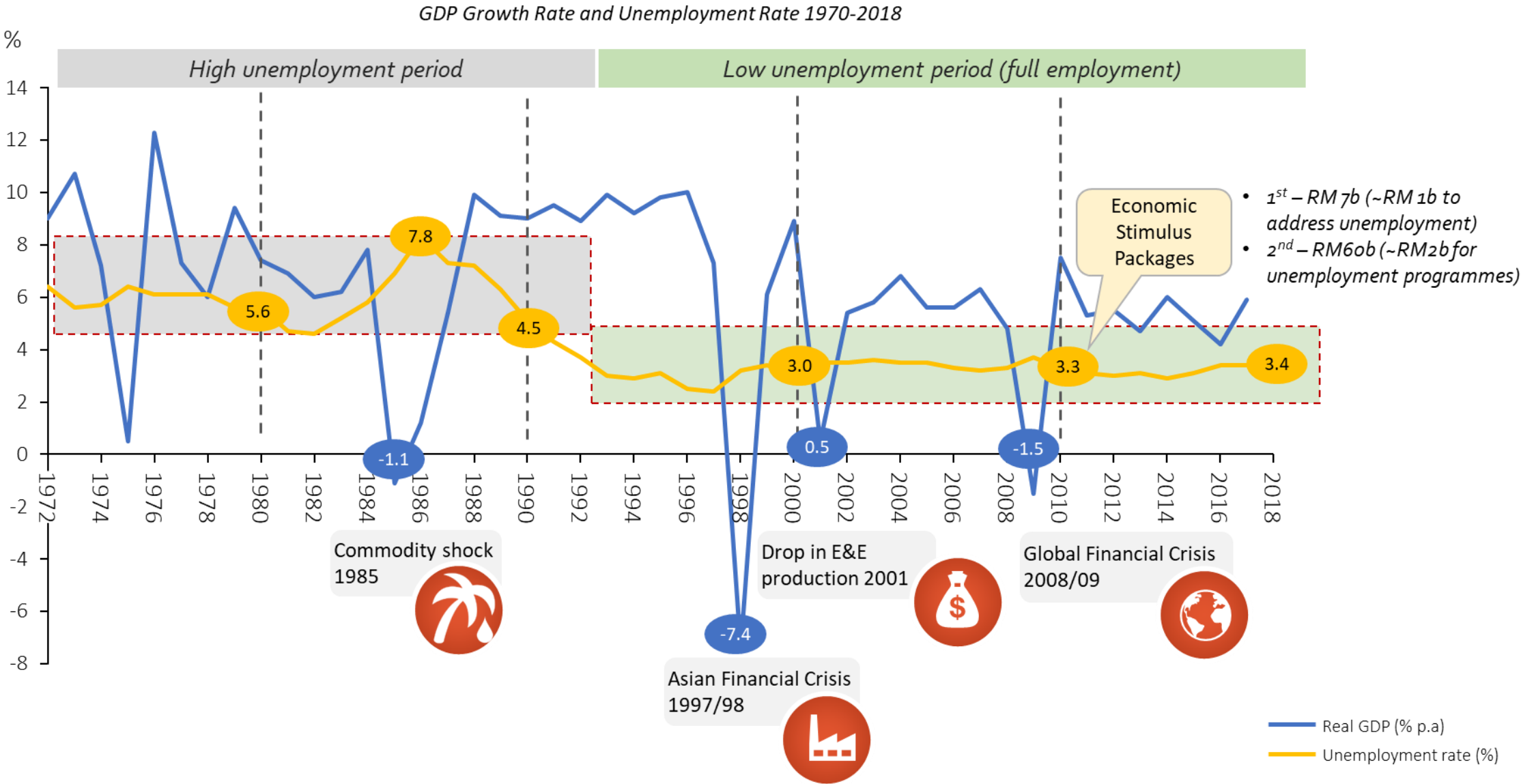
~ **50k to 100k**
Estimated gaps
annually if based
on the current
trend

Jobs distribution and prioritisation



Youth Women High salary Location

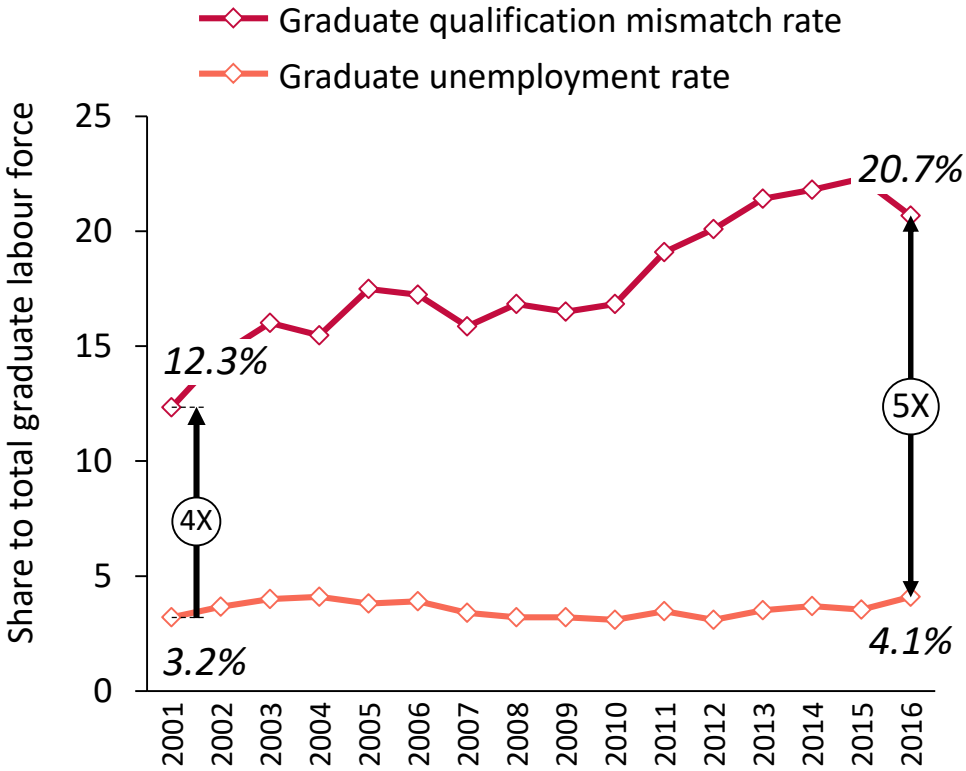
Low unemployment over the years even during recessions - robust labour market at the aggregate level where the economy appears to match labour supply-demand



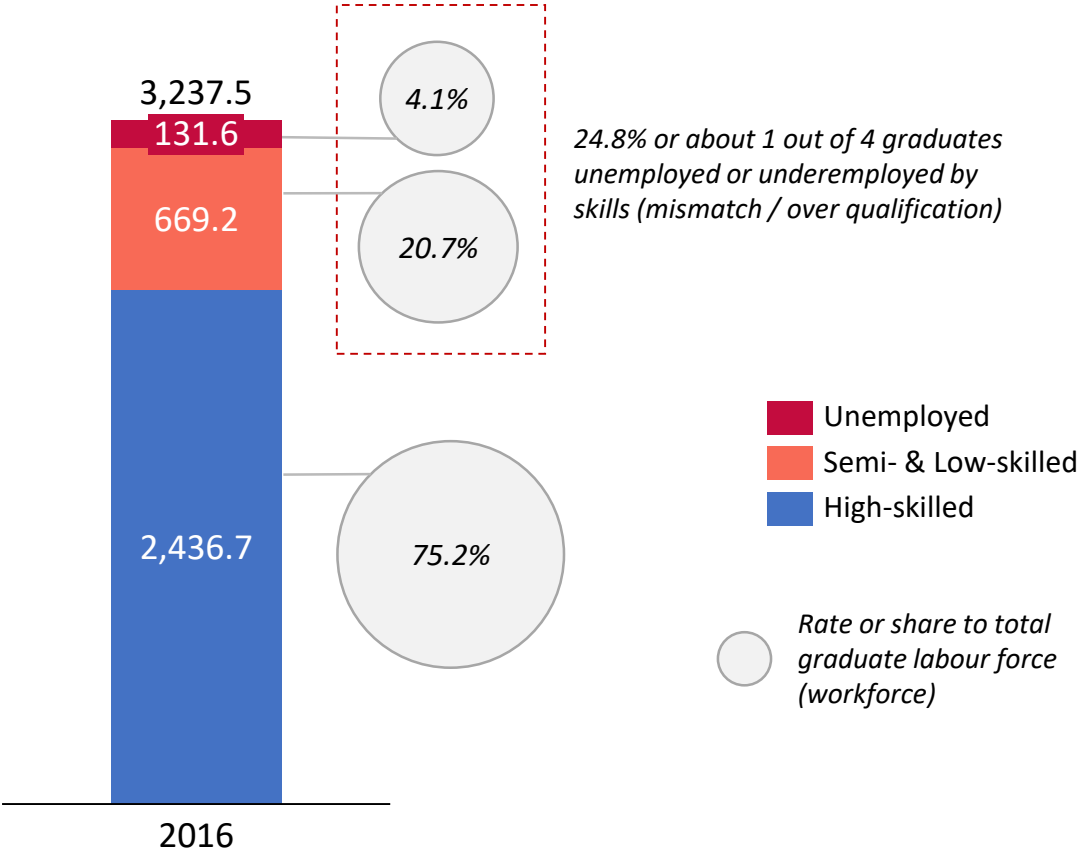
However education mismatches (qualification mismatch) found to be more rampant than unemployment among graduates workforce

Creation of more quality jobs will helps improve the issues of underutilisation of labour resources, particularly among the educated workforce

Graduate unemployment and mismatch rate (percentage of total graduates labour force 2001-2016)



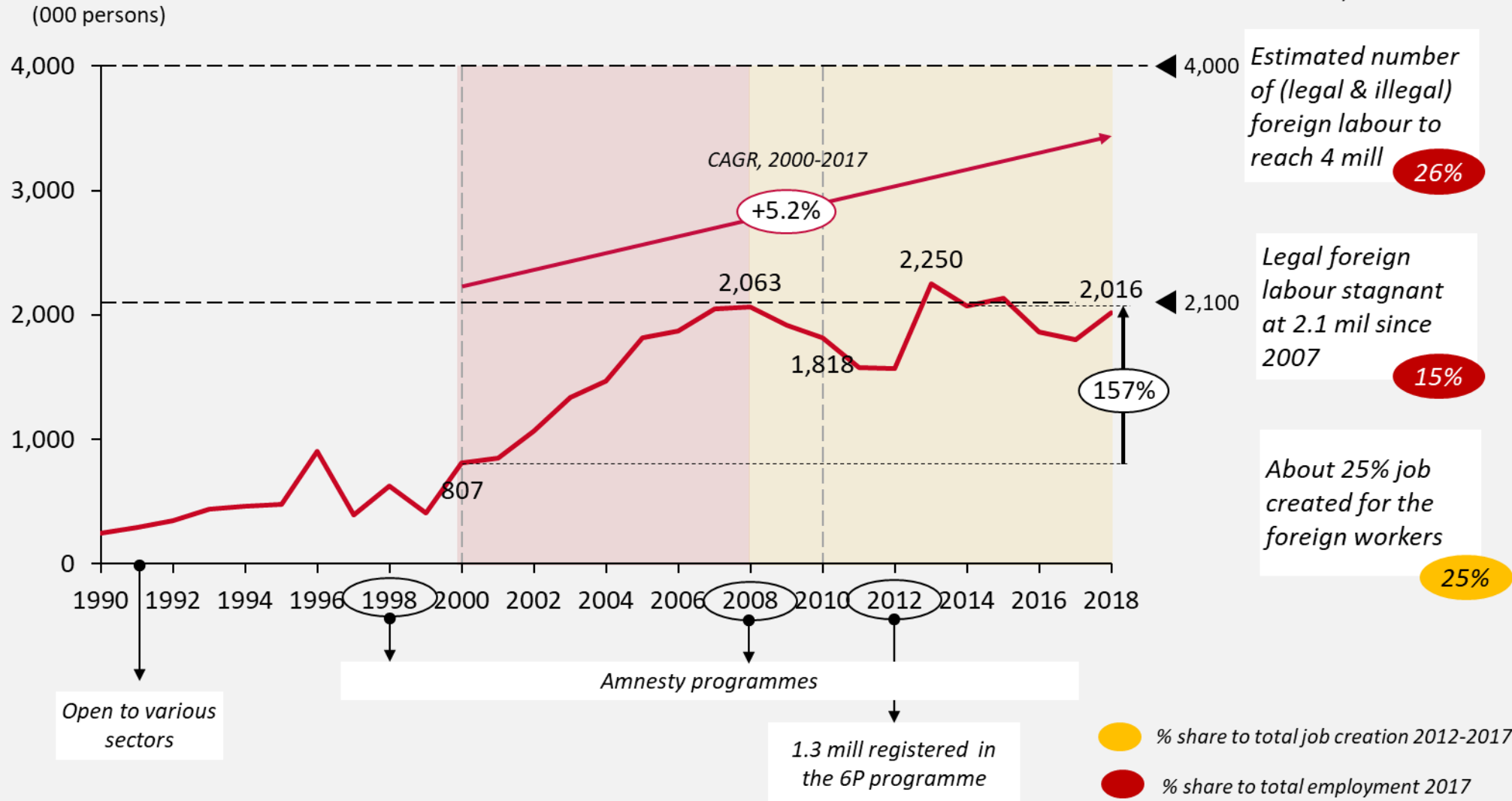
Graduate Workforce, 2016 ('000 person)



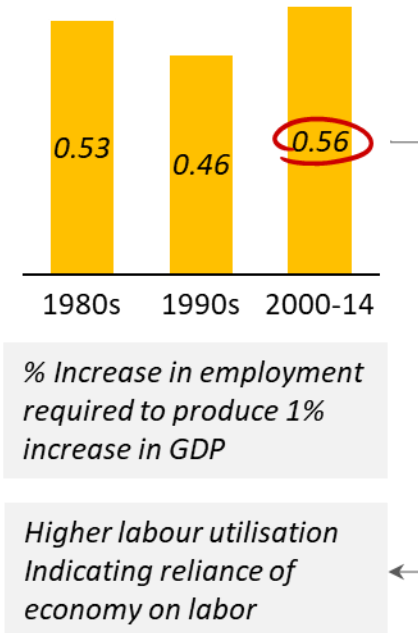
The low unemployment rate in the tight labour market condition has contributed to the demand for foreign workers and created the issues of economic dependency

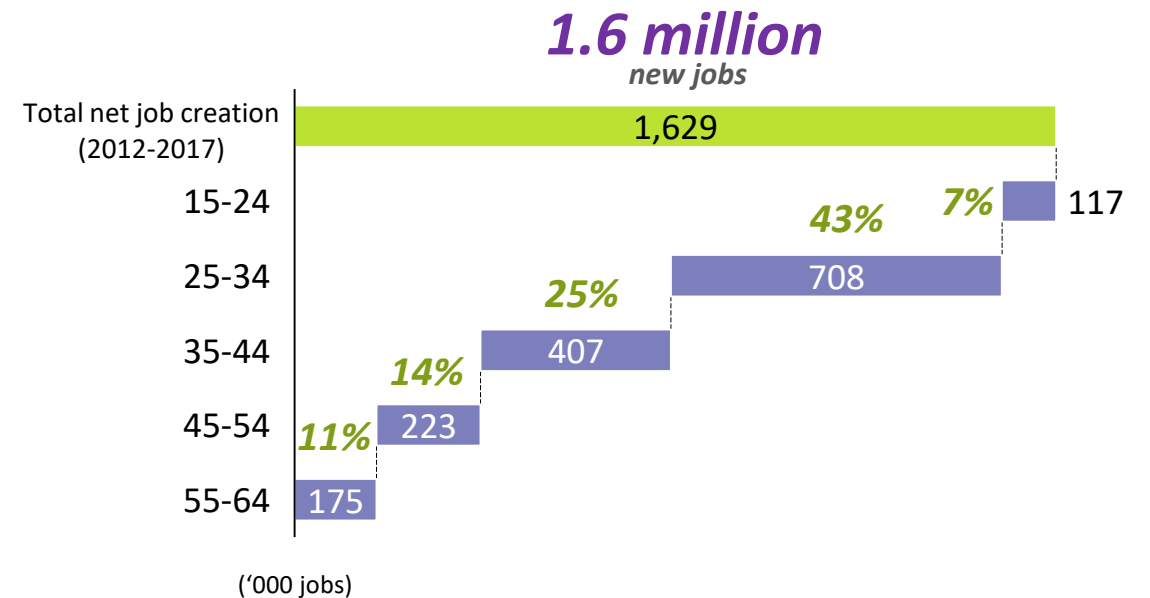
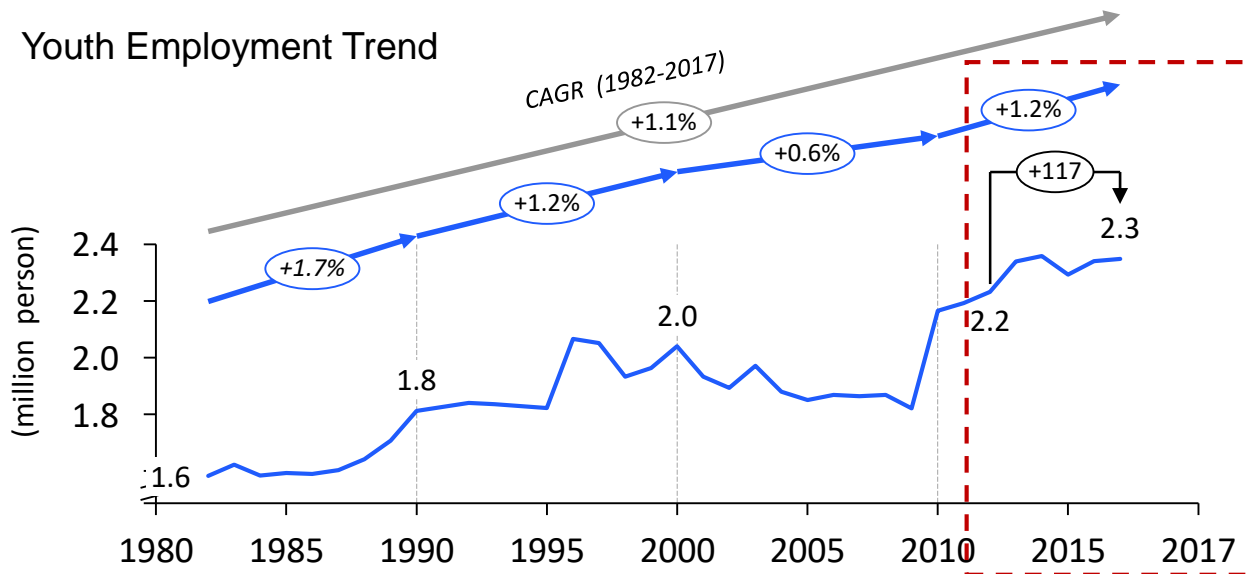
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Estimation of foreign workers, 1990-2018



Coefficient of Employment to GDP





Competition in the labour market

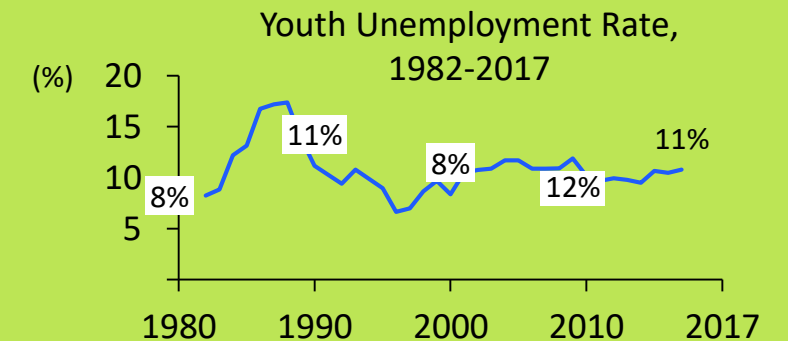
Youth with lack of experience or/and qualification has to compete in the labour market.

Those who are lacking of qualifications will work in the semi- and low-skilled jobs which dominated by the higher supply of foreign labour.

However, despite being in the similar group of employment, youth and the foreign workers might not necessarily be a perfect substitution.

The shift in labour demand

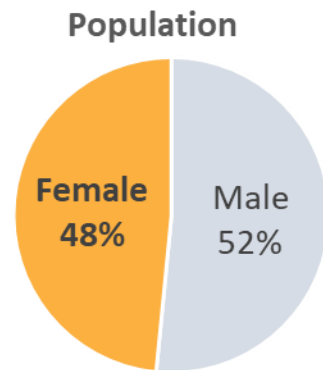
Labour market demand more experienced and qualified workers



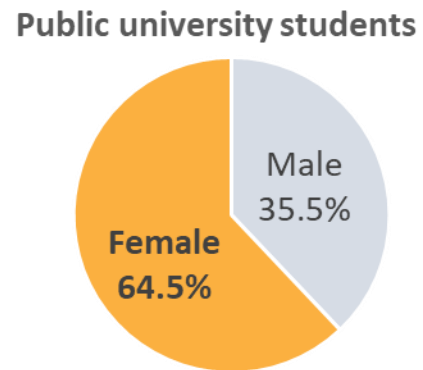
Global Youth Unemployment (Generation at Risk, ILO 2013)



- World ~ 13%
- Developed Economies + EU ~ 18%
- South East Asia & Pacific ~ 13%

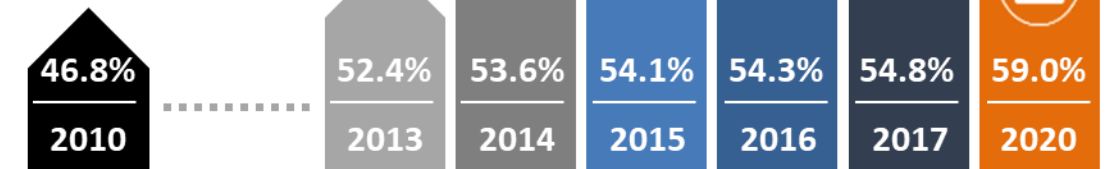


Source: Population Estimates 2018, Department of Statistics Malaysia



Source: Output Data of Public University, Ministry of Education, 2017

Female Labour Force Participation Rate (FLFPR)

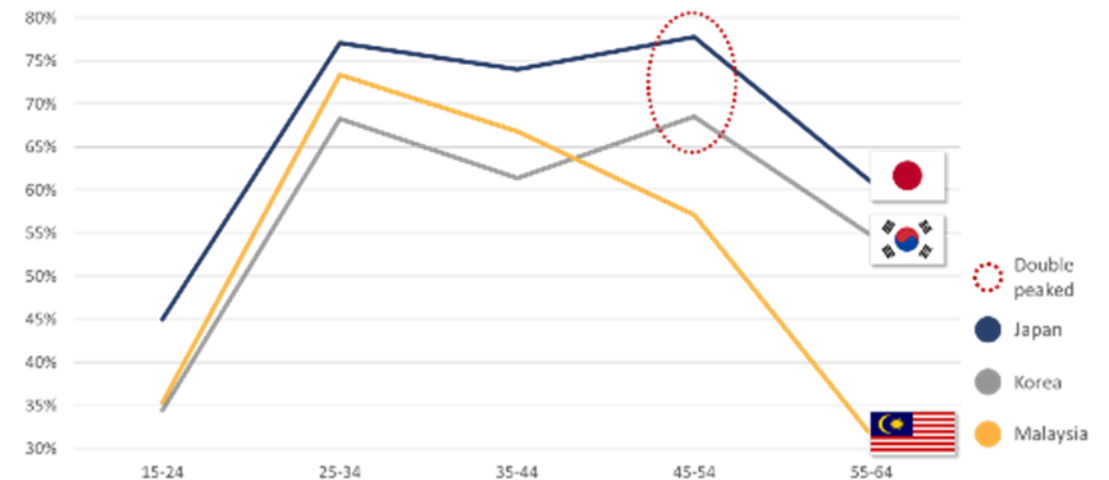


1 : 0.6 Male to Female ratio in the workforce

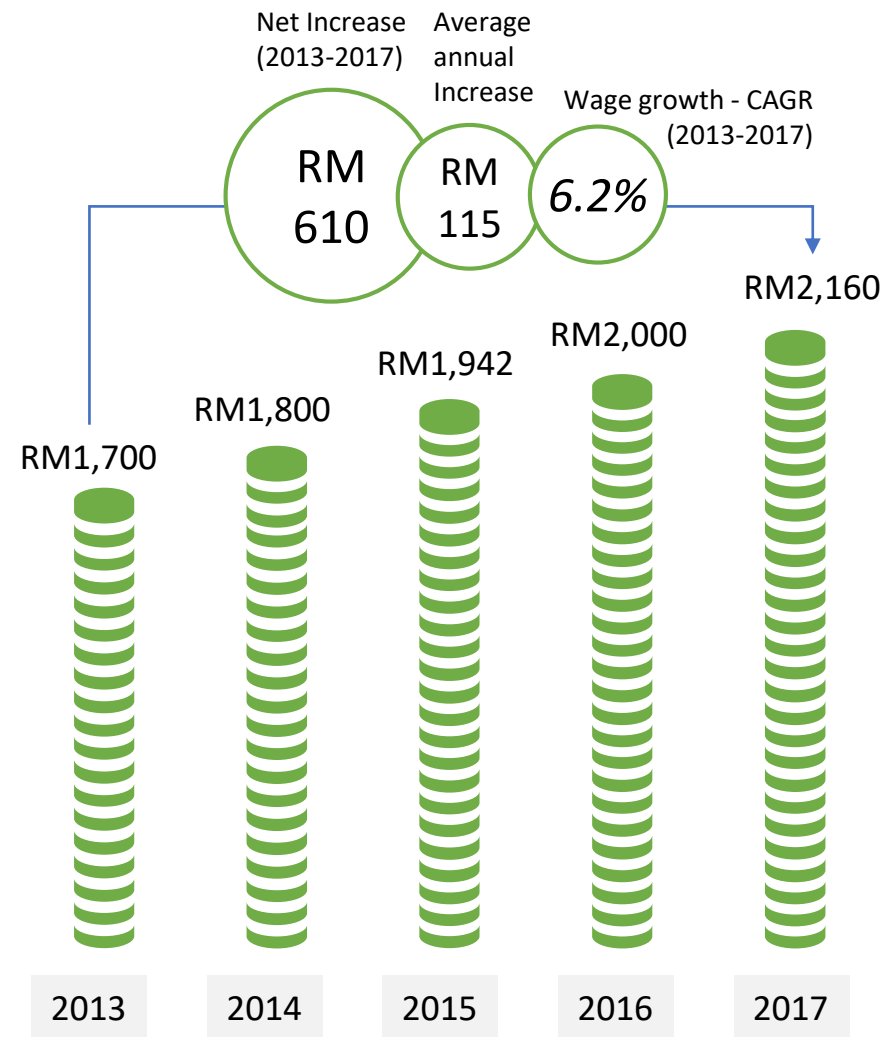
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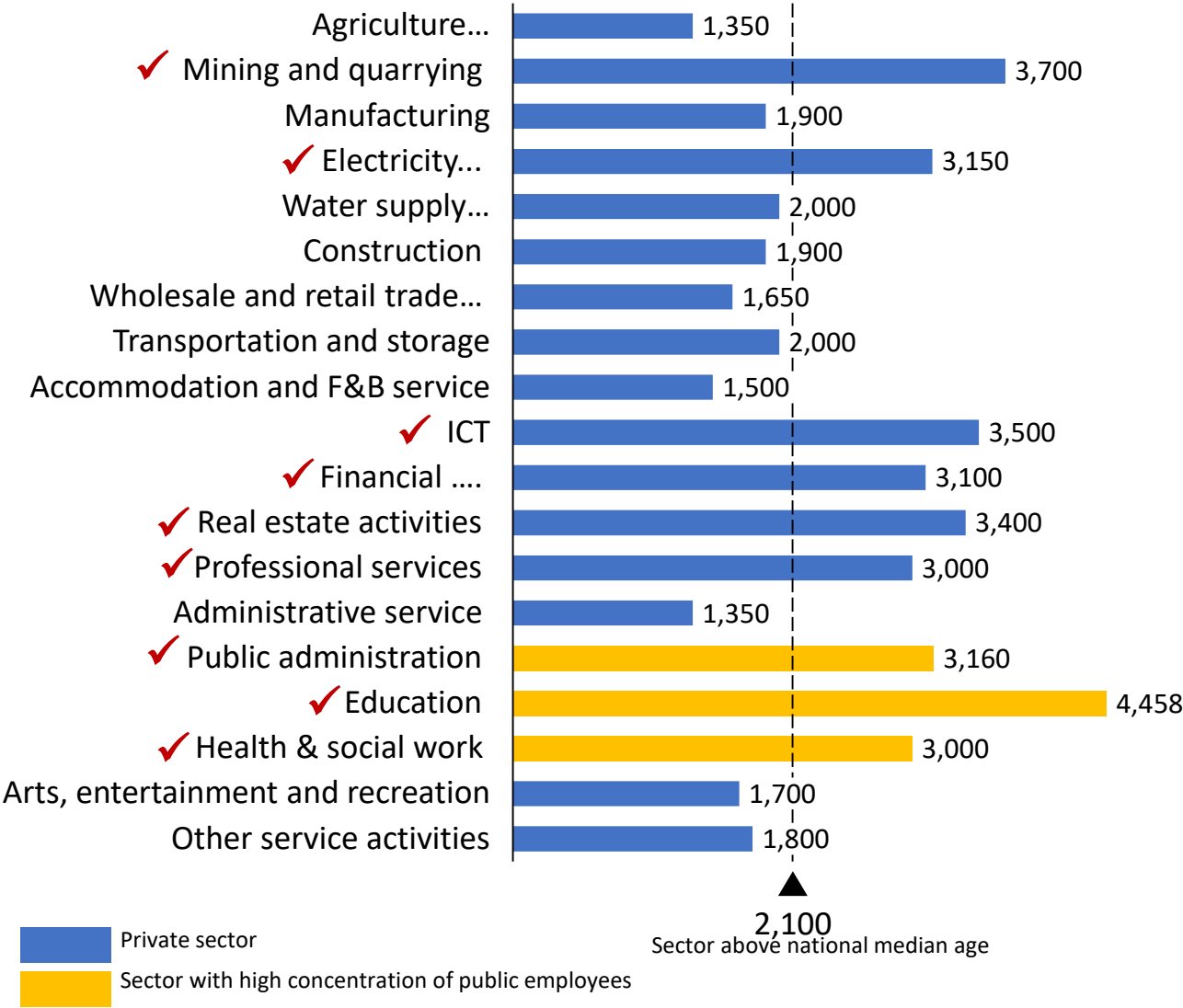
Absence of a “Double Peak” pattern in Malaysia’s FLFPR



Median monthly wage, 2013-2017



Median monthly wage & wage recipients by industry, 2017



03 IDENTIFYING CHALLENGES OF FUTURE WORK

65%

of children entering primary school today will end up working in completely new job types that don't yet exist¹

54%

of all jobs in Malaysia could be at high risk of being displaced by technology in the next two decades²



Source:

1. *The Future of Jobs* (World Economic Forum, 2016)

2. *The Times They Are A-Changin': Technology, Employment, and the Malaysian Economy*, Khazanah Research Institute (2017)

1

**Rapid
urbanisation**

2

**Demographic
shifts**

3

**Shifts
in global
economic
power**

4

**Resource
scarcity &
climate change**

5

**Technological
breakthroughs**

- People & the Internet
- Computing, communications & storage everywhere
- The Internet of Things
- Artificial Intelligence (AI) and big data
- The sharing economy & distributed trust
- The digitization of matter e.g. 3D printing



Data Analysts and Scientists

Software and Applications
Developers

Ecommerce and Social Media
Specialists

Customer Service Workers

Sales and Marketing
Professionals

Training and Development

People and Culture

Organizational Development
Specialists

Innovation Managers

AI and Machine Learning
Specialists

Big Data Specialists

Process Automation Experts

Information Security Analysts

User Experience and Human-
Machine Interaction
Designers

Robotics Engineers

Blockchain Specialists

- Among the range of roles that are set to experience increasing demand in the period up to 2022 are established roles such as:
 - ✓ Data Analysts and Scientists
 - ✓ Software and Applications Developers
- Also expected to grow are roles that leverage distinctively 'human' skills such as Customer Service Workers and Sales and Marketing Professionals
- Accelerating demand for a variety of wholly new specialist roles related to understanding and leveraging the latest emerging technologies such as AI and Machine Learning Specialists.

A close-up photograph of a robotic arm, likely from a manufacturing or assembly line, holding a wooden chess piece (a king) in its gripper. The background is dark and out of focus, emphasizing the mechanical precision of the arm and the traditional nature of the chess piece.

“In many industries and countries, the most in-demand occupations or specialties did not exist 10 or even five years ago, and the pace of change is set to accelerate.”





JAPAN

Industrial Value Chain Initiative

- Launched by 30 Japanese companies, e.g. Nissan, Mitsubishi, Fujitsu, Panasonic
- Focus on **Digital Economy and Data Analytics**



UNITED KINGDOM

The Future of Work: Jobs and Skills in 2030 (February 2014)

- Set up the right institutions to bring together sectors and focus on **Science, Research and Innovation**
- Identifying and addressing sector-specific skills gaps



GERMANY

White Paper on Future of Work (November 2016)

- **Focus on Employment Insurance and Working Time & Flexibility**
- Skills forecasting and monitoring regionally for specific industries



SINGAPORE

Report of the Committee on the Future Economy (February 2017)

- Build a strong **Digital Capabilities**
- Invest S\$19 billion in R&D over the next five years (2016 -2020)



CHINA

Made in China 2025

- China aims to become a **Manufacturing Powerhouse with high-end technology, machine tools & robotics**
- Increased to 1.26% of USD11.2 trillion (\$15.8billion)

04 Industrial Revolution 4.0 will impact Malaysia's workforce and workplaces

01 WORK

Routine, repetitive, predictive work being displaced by automation and algorithm

02 WORKPLACE

New technologies are enabling workplace innovations

03 WORKFORCE

The nature of the contract between employer and employee is changing

Effects of IR 4.0 in production and employment

Changes in geography of production, distribution and value chains, employment types

50% automation will lead to some reduction in their **full-time workforce** by 2022

38% expect to extend their workforce to **new productivity- enhancing** roles.

25% expect automation to lead to creation of **new roles** in organisations

75 mil **jobs estimated to increase** by 2022

59% employers expected to modify on their **composition of value chain**

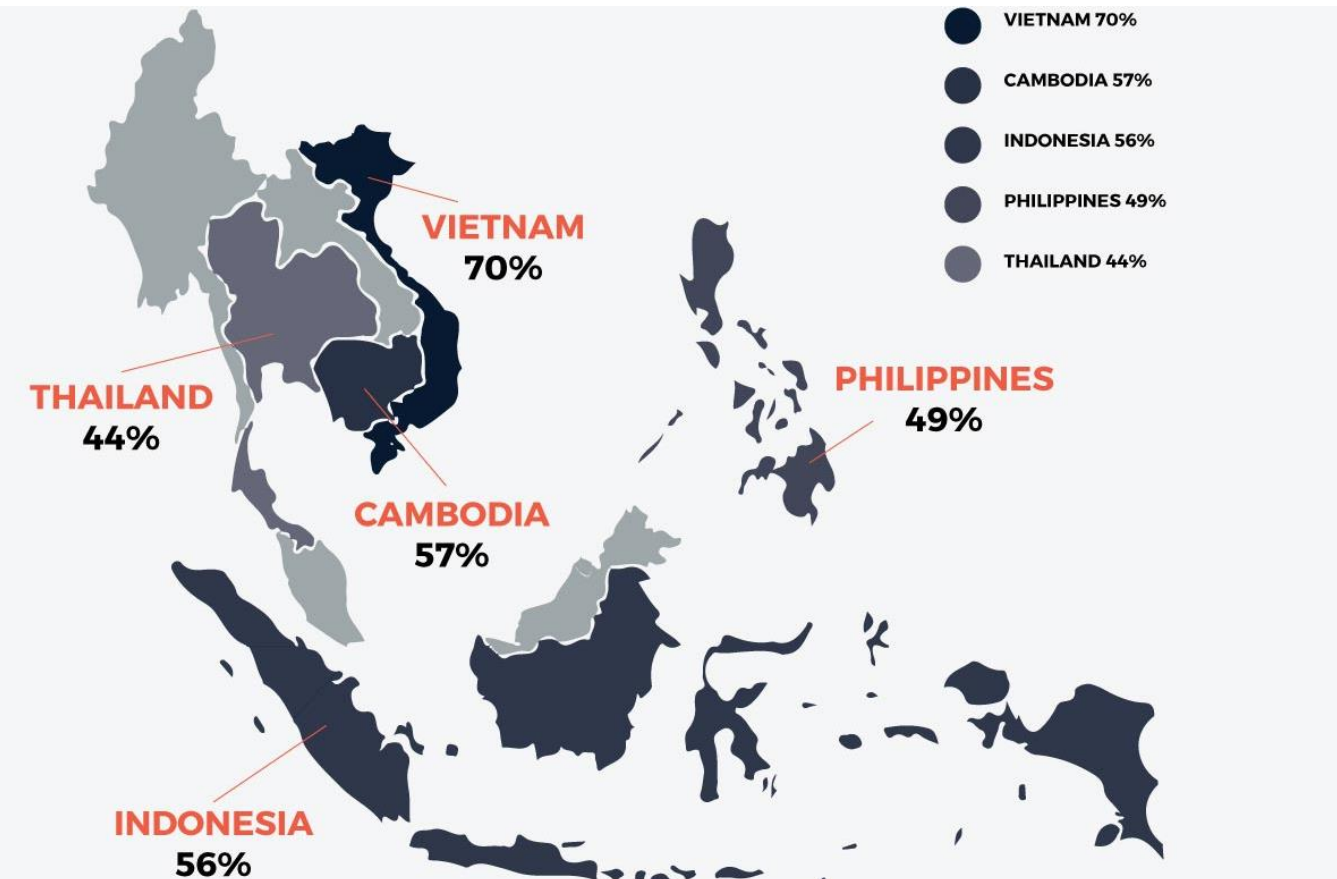
50% expect to modify **geographic** base of operations

74% will prioritise the availability of **skilled local talent**

1.7 mil Jobs may be **displaced** by a shift in the division of labour between man and machine

IR4.0 is defined by technological megatrends including the miniaturisation of super computers and the rise of advanced robotics, artificial intelligence, the internet of things (IoT), blockchain, and 3D printing

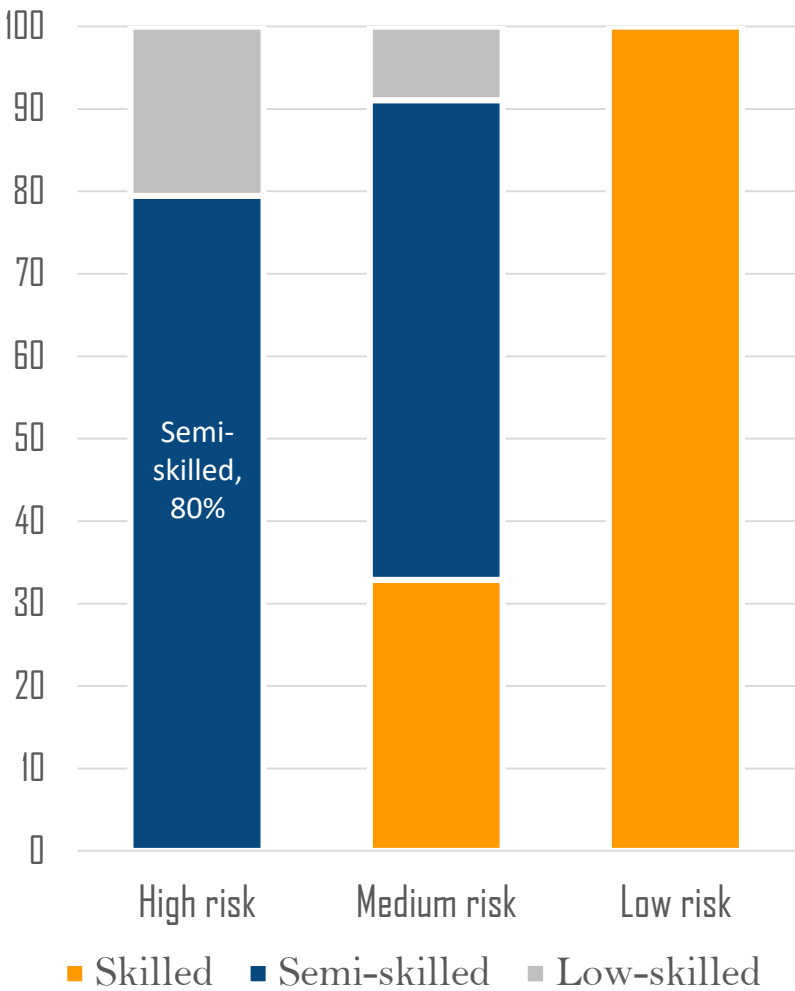
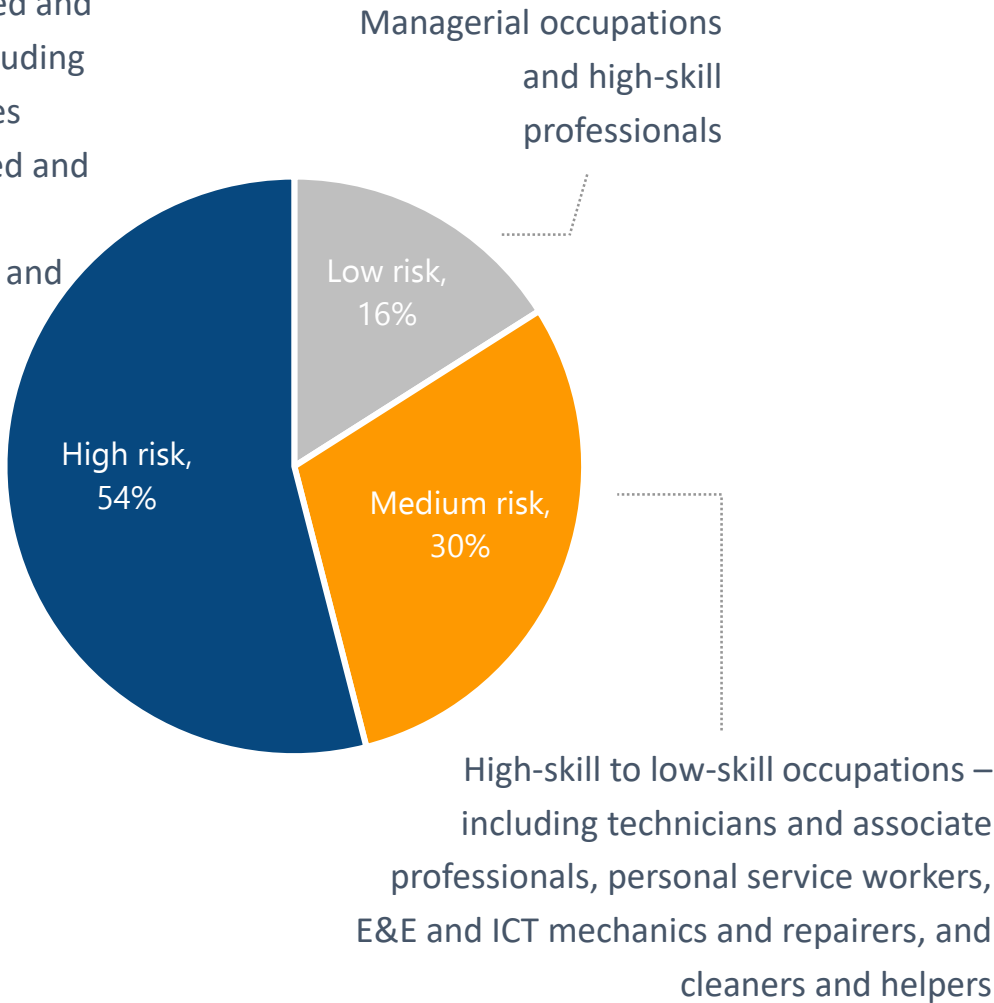
Percentage of workers at high risk of automation



These technological megatrends bring with them the global risk of replacement of workers by automation.

4 out of 5 jobs at high risk of displacement by technology are semi-skilled

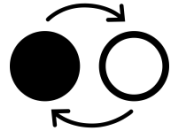
More than 70% of semi-skilled and 80% of low-skilled jobs – including clerical support workers, sales worker, and many semi-skilled and elementary occupations in manufacturing, construction and agriculture



The risk of automation is dependent on the nature of technology,
as well as that of the tasks and the skills required in jobs

1 2 3 4 5 6

Replacing technologies are a substitute for labour, while enabling technologies expand the productivity of labour



REPLACING TECHNOLOGIES

Substitute:

Routine tasks

Manual skills



ENABLING TECHNOLOGIES

Complement:

Non-routine tasks

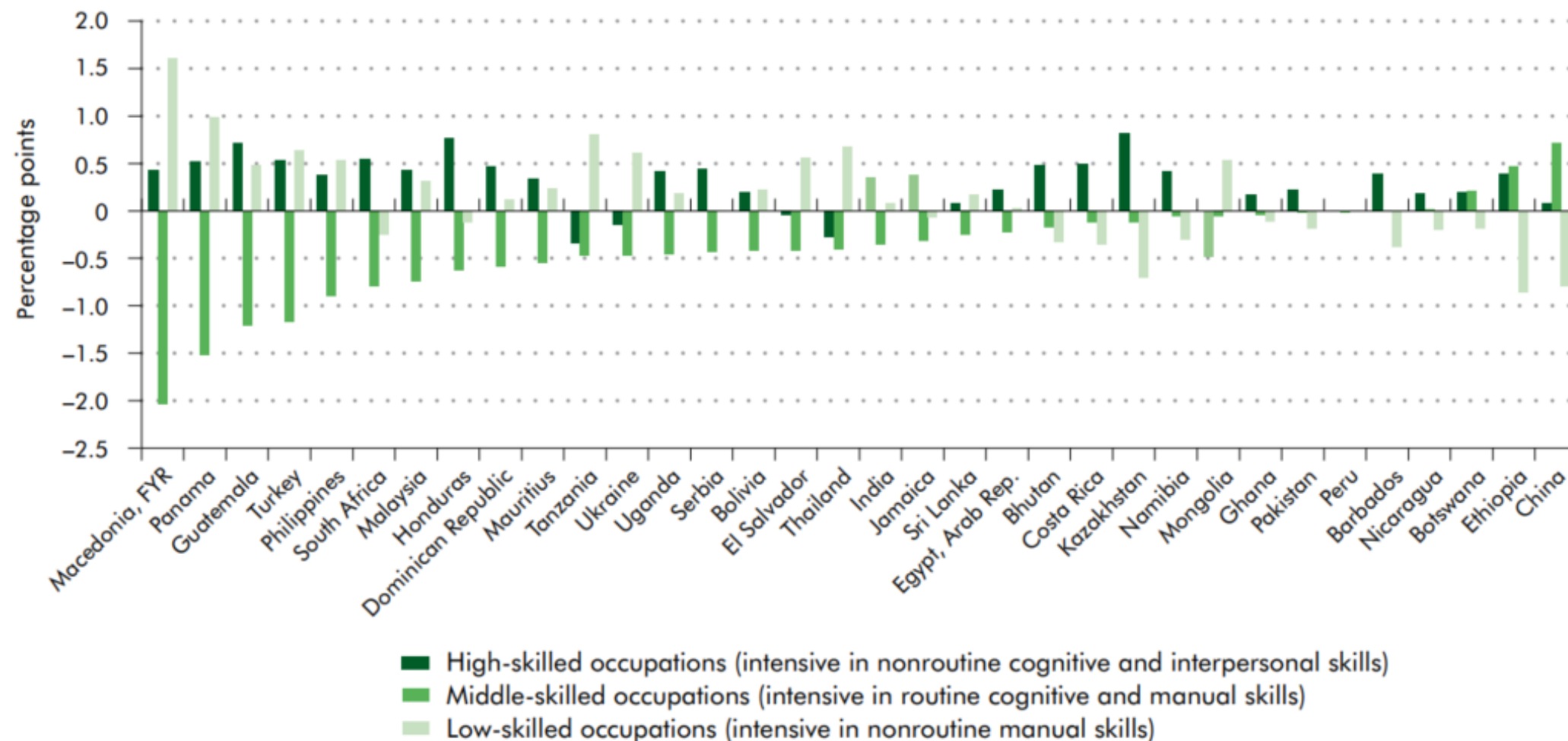
Socio-behavioural and
analytical skills

Automatable tasks are those that are both routine and manual

1 2 3 4 5 6

There is some evidence of employment growth in both low- and high-skilled occupations characterised by non-routine tasks, and decline in employment growth in middle-skilled occupations characterised by routine tasks and manual skills

Annual average change in employment share, circa 1995–circa 2012



The changing nature of jobs – and the skills required in those jobs – requires a change in human resource development.

1 2 3 4 5 6

Traditional	In the digital age
Basic skills, thinking skills, knowledge	Socio-behavioral skills, learning to learn, digital literacy
Education and training while young	Continuous learning throughout the life-time to keep up with technological change
Multi-year educational programs with a strong focus on theory	Short, tailored training courses and learning by doing to keep up with technological change
Education and training in educational institutions	Employer-driven training in response to firm-based technological shifts; web-based training courses

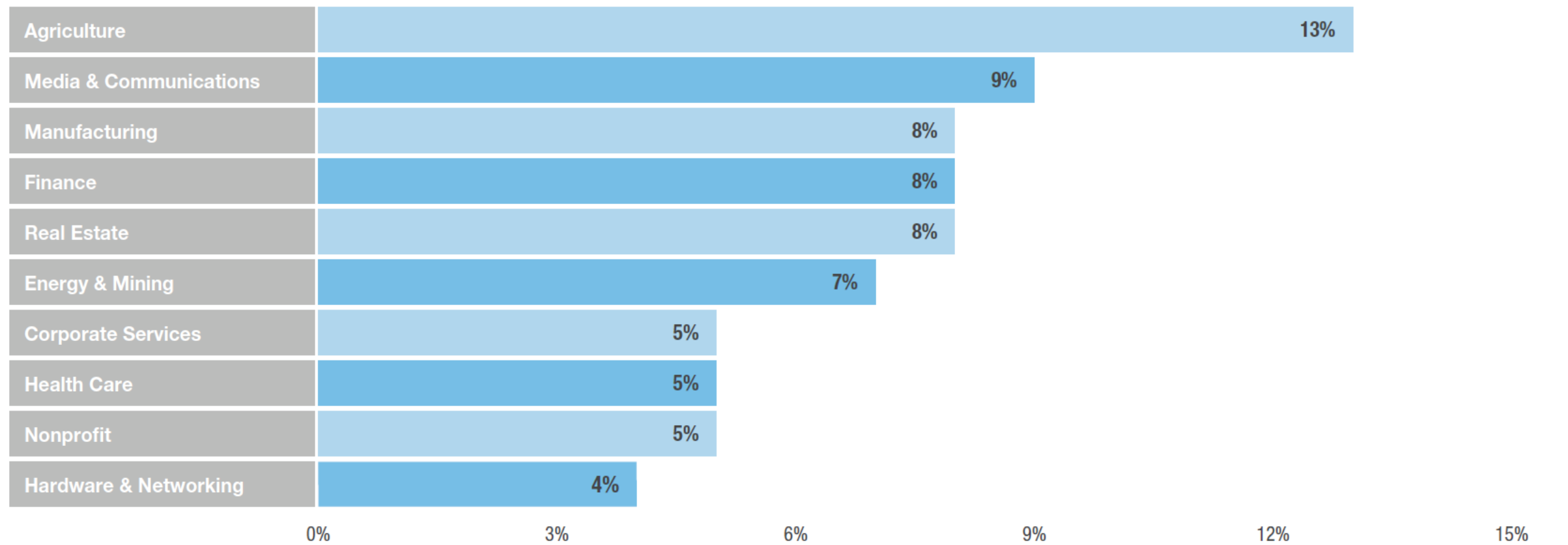


The following are the top 10 talent trends for Malaysia in 2019:

No.	Talent Trends	Key Explanation
1	Surge in Accountancy & Finance positions	<ul style="list-style-type: none"> Malaysia remains a key destination for more MNCs to invest in large Shared Service Centers (SSCs), that houses almost their major finance function to support their offices both locally and across the APAC area. The demand for finance professionals skilled in accounts payable, accounts receivable and general ledger will continue to grow in the coming years.
2	Positive outlook for tax-related roles	<ul style="list-style-type: none"> The new SST has now been implemented and the market is expected to pick up again in terms of hiring on professionals with transfer pricing knowledge in addition to the new SST mechanics.
3	New horizons for legal candidates	<ul style="list-style-type: none"> Rapid growth in fintech and e-commerce is causing increasing demand for lawyers who have experience in dealing with intricate and complicated software and hardware agreements.
4	Compliance, risk and governance roles more vital than ever	<ul style="list-style-type: none"> Banking regulatory changes has resulted in a boost in demand for audit risk compliance, cyber security and HR governance talents.
5	Agile talents are becoming the mainstream	<ul style="list-style-type: none"> Businesses are increasingly looking for individuals who are heavily process-driven with an agile and independent mindset to adapt in working environments as of start-ups. Employers will need to start training and developing potential talent, as well as establishing learning and development teams that create more robust programmes to fill the widening talent gap in technical areas.

Malaysia’s agriculture and manufacturing sectors are also starting to use digital tools like sensors and technologies like IoT to capture data for quality control. Digitally skilled professionals are increasingly being hired in Malaysia, even across more traditional sectors.

Top 10 Growth Industries in Digitally Skilled Hires*

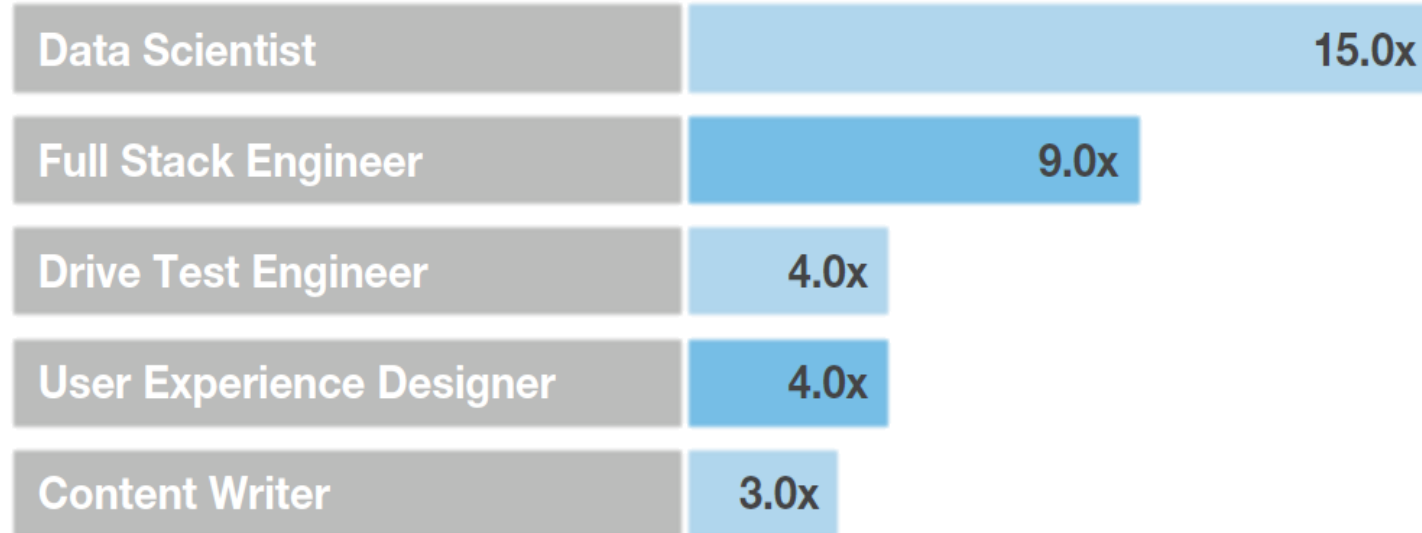


Percentages represent year-over-year growth in the number of digitally skilled hires as a proportion of hires in the industry.
*Digitally skilled hires are defined as new hires made in the last 1 year who possess 1 or more Software Development, Information Technology or Information Science related skills.

The rise in digital transformation is driving demand for talent

Based on LinkedIn's analysis, the top 5 emerging jobs in Malaysia are mainly tech-related. Malaysia's digital transformation is rapidly picking up pace. In 2017, 7% of Malaysia's GDP was delivered from digital products – that's expected to grow more than six times by 2021. This is creating strong demand for talent that can help organizations take their businesses online and implement digital transformation.

The fastest growing roles are largely digital in nature



Rate of growth 2013 - 2017

The increasing impact of Industry 4.0 is hinting towards the demand for new initiatives in curriculum development for TVET in the near future

1 2 3 4 5 6

The following are 8 emerging technologies that matter the most, which will drive Industry 4.0



Artificial Intelligence

Software algorithms that are capable of performing tasks that normally require human intelligence



Augmented Reality

Addition of information or visuals to the physical world to improve user experience for a task or product



Robots

Electro-mechanical or virtual agents that automate or assist human activities, autonomously



Internet of Things

Network of objects embedded with sensors, network connectivity and compute capability, that can collect and exchange data over the internet



Blockchain

Distributed electronic ledger that uses software algorithms to record and confirm transactions with reliability and anonymity



Virtual Reality

Computer generated simulation of a 3-dimensional image or a complete environment, within a defined and contained space



Drones

Air- or water-based devices and vehicles that fly or move without an on-board human pilot



3D Printing

Additive manufacturing techniques use to create 3D objects based on digital models by layering or 'printing' successive layers of material. Relies on innovative 'inks' including plastic, metal, glass and wood

Some of the skills required to meet these technological changes are...



Big Data skills

Automation Skills



Coding Skills

Supply Chain



Digitisation abilities

Business acumen



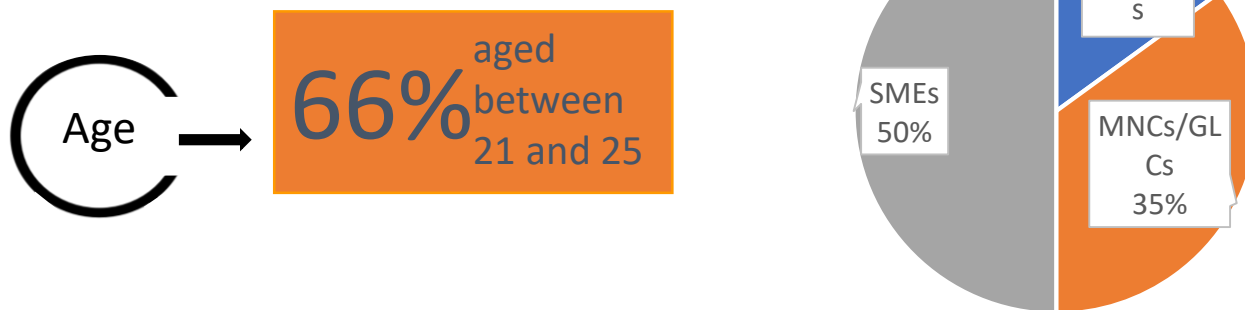
TVET institutions need to prepare their graduates with the right skillsets to not only meet industry requirements but also focus on emerging skills required as a result of Industry 4.0

What is the gig economy?



- Requires a high degree of autonomy
- Payment by task, assignment, or sales
- Short-term relationship between worker and client.

Who is part of the gig economy?



Why do talent opt for gig-type jobs

- ✓ Flexibility to choose jobs or projects
- ✓ Exposure to a more diverse work experience
- ✓ Control over working hours

Top skills identified by freelancers



Communication and business correspondence



Networking



Time management



Interpersonal Skills and negotiation



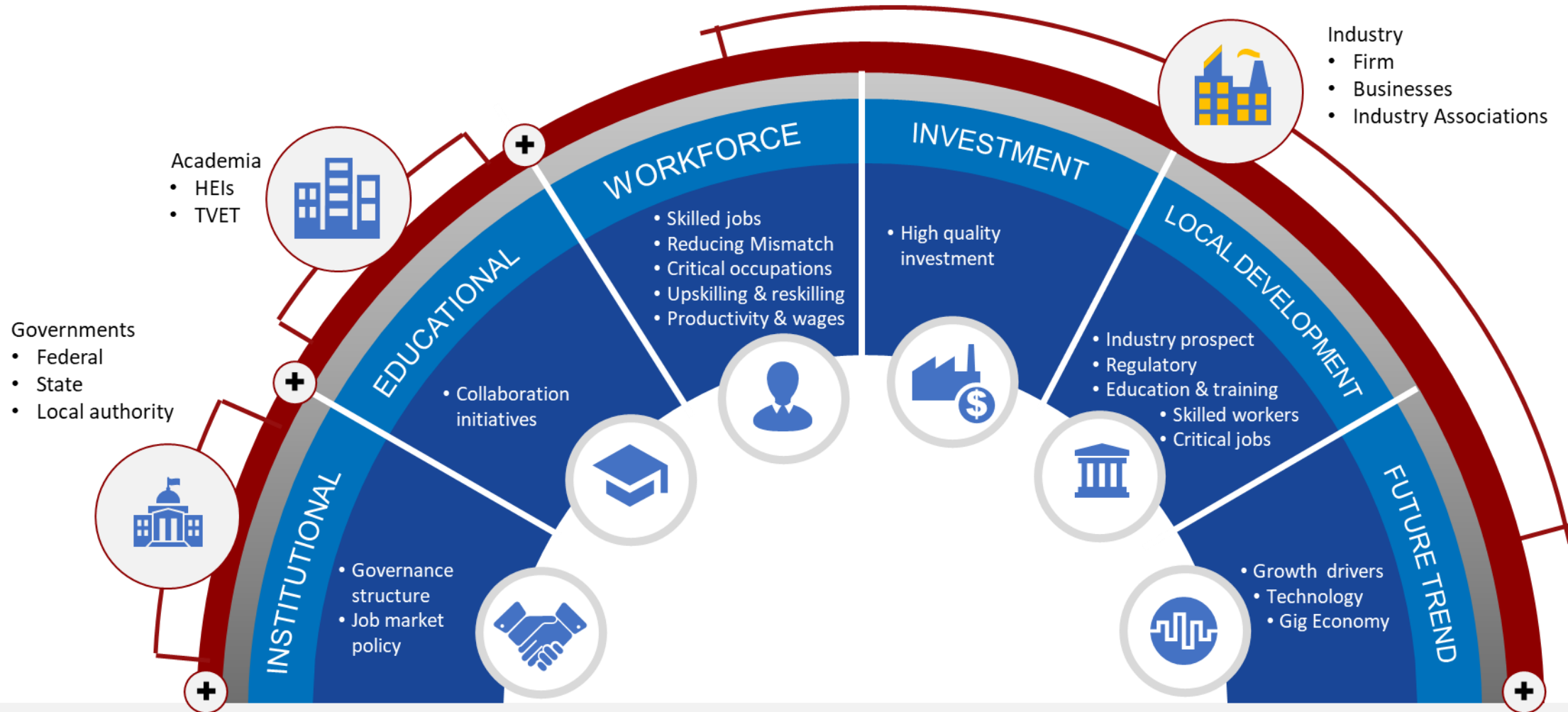
Problem Solving

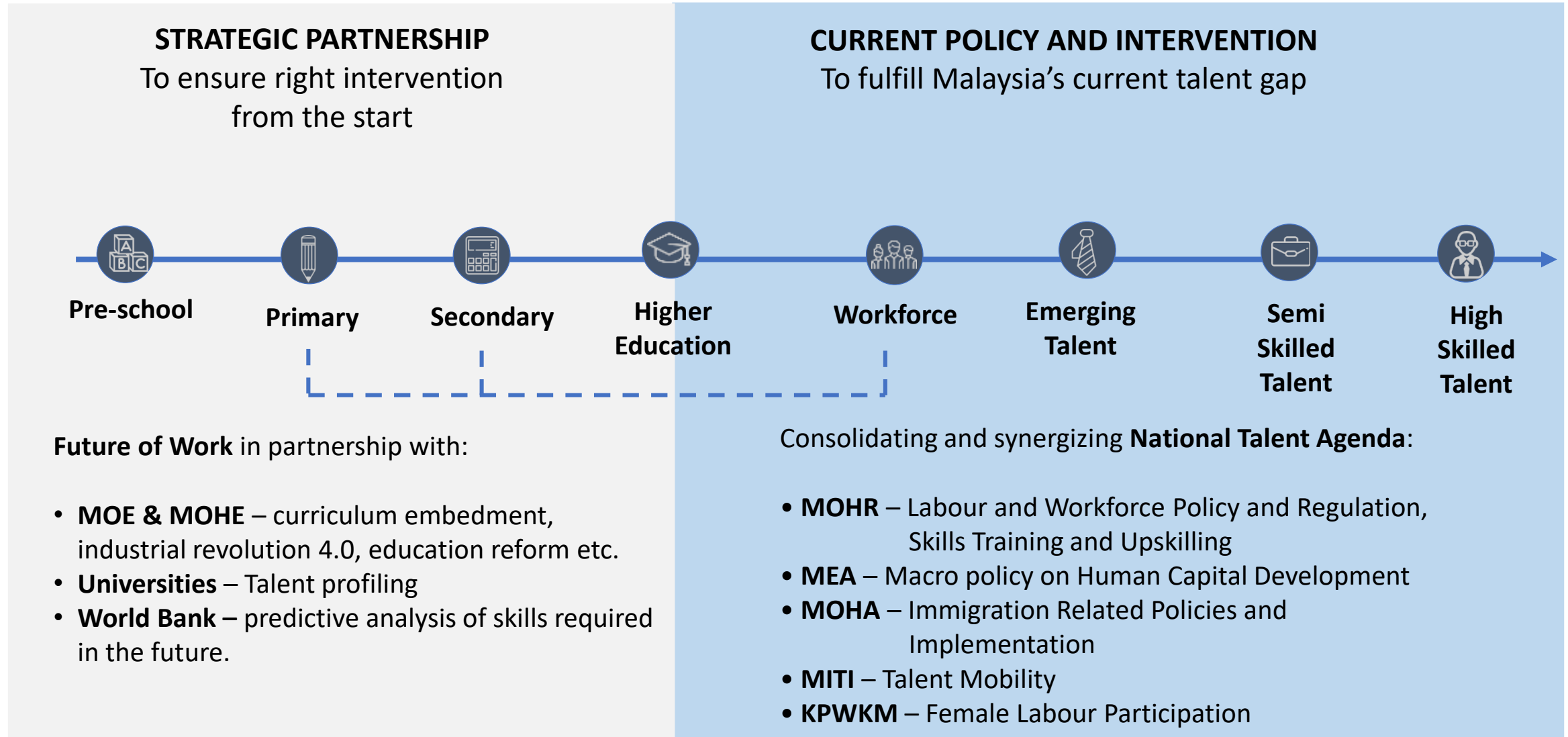
Top 5 regions that employ online labour

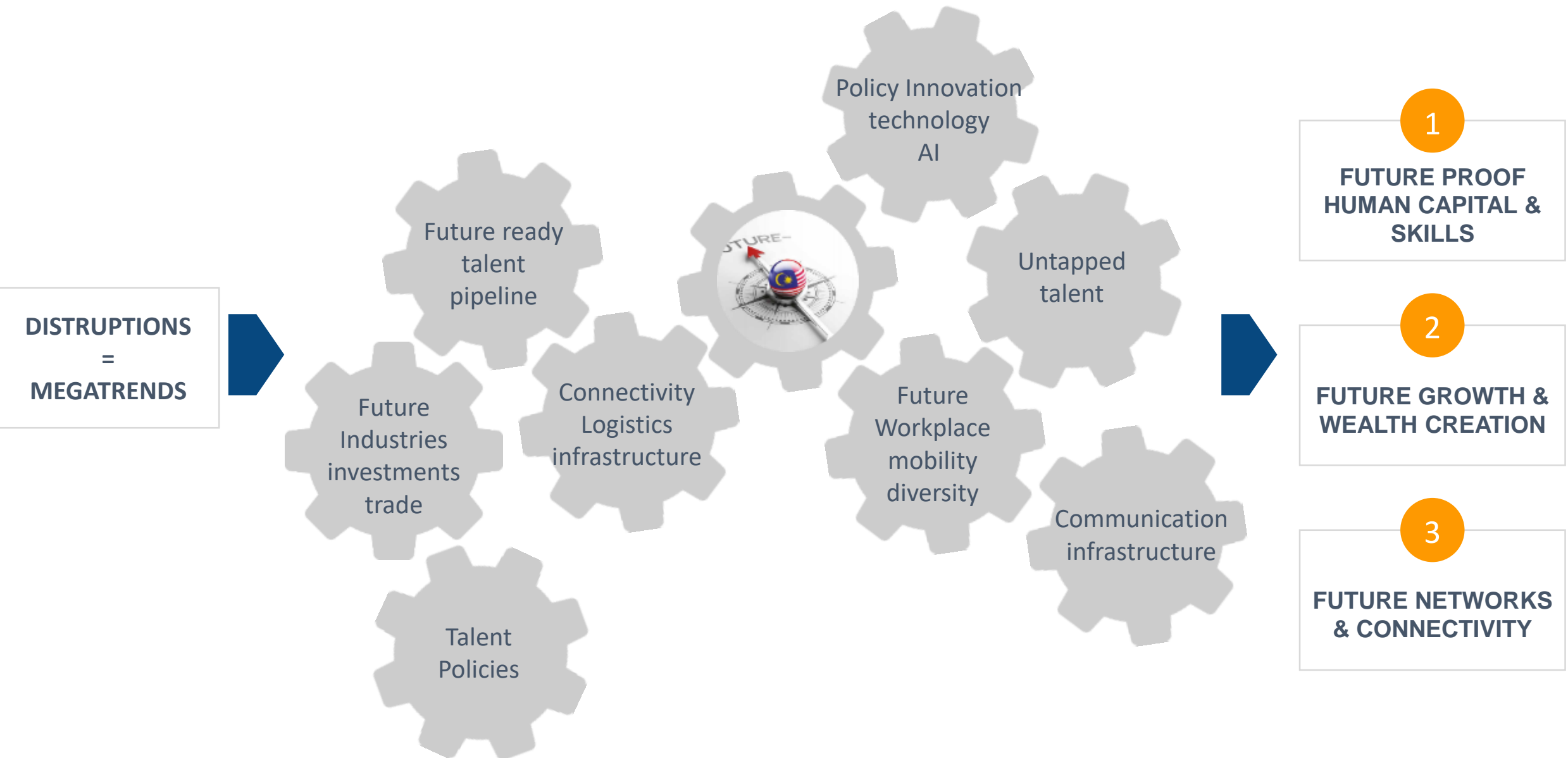


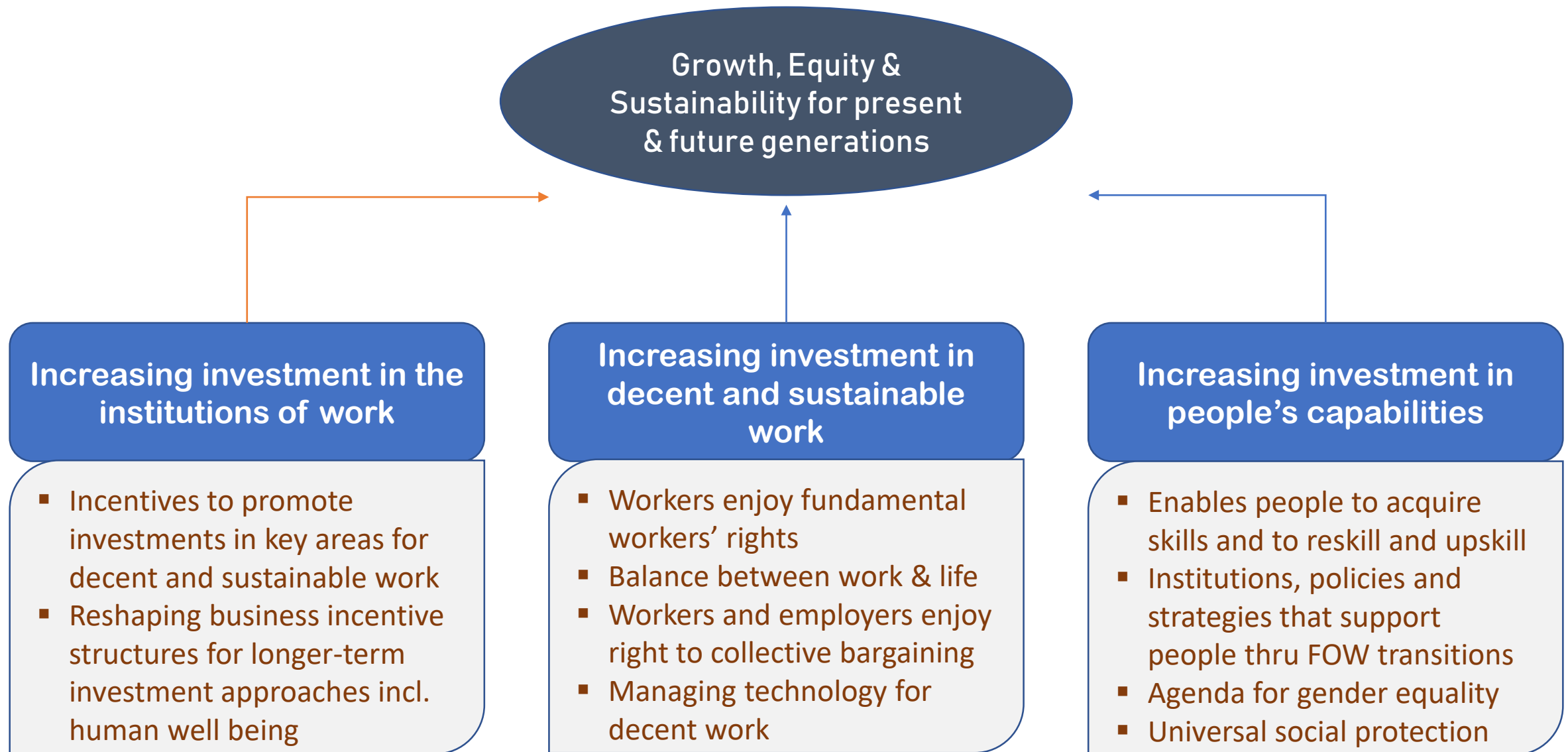
1. United States of America
2. Europe
3. Australia
4. United Kingdom
5. Asia and Oceania

05 Future of Work – a Human Centered Agenda









06 ***Conclusion***



The background features a large light gray triangle pointing downwards, set against a blue background on the left and a dark gray background on the right. In the top left blue area, there is a network diagram with a central node connected to two nodes below it, and a single human icon below that. In the bottom left blue area, there is a single human icon.

Thank you



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