Ministry of Human Resources

HUMAN RESOURCE CONFERENCE

Labour Market Dynamics & Future of Work

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

10th September 2019 (Tuesday)
SHAFTSBURY ASTERIA CYBERJAYA

Towards Evidence-Based Policy Formulation
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

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

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Email: amir.omar@mohr.gov.my

**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
Content

01 National Policy
Empowering Human Capital

02 Labour Market
Outlook and Prospects

03 Challenges of the Future of Work

04 Industrial Revolution
4.0’s Impact on Malaysia

05 Future of Work – A Human Centered Agenda

06 Conclusion
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*
National Policy Direction Mid Term Review 11MP Pillar IV: Empowering Human Capital

Strategy A1: Generating skilled jobs
Strategy A2: Raising salaries & wages
Strategy A3: Enhancing management of foreign workers
Strategy A4: Improving labour market conditions

Priority Area A: Reforming the labour market

Strategy B1: Strengthening workers’ rights
Strategy B2: Increasing female participation in the labour force

Priority Area B: Improving labour efficiency & productivity

Strategy C1: Raising quality of education
Strategy C2: Prioritising quality over quantity of TVET
Strategy C3: Improving education for all

Priority Area C: Enhancing access to quality education & training

Strategy D1: Developing industry relevant skills
Strategy D2: Promoting contributions of society & industry

Priority Area D: Fostering stronger industry-academia linkages

Source: Mid Term Review, 11th MP (MEA)
National Policy Direction Mid Term Review 11MP Pillar IV: Empowering Human Capital

Reforming the labour market
- 2.9% National labour productivity growth 2018-2020
- 38.0% Compensation of Employees to GDP
- RM 2,400 Monthly median wage

Improving labour efficiency & productivity
- At par with international standards

Enhancing access to quality education & training
- At par with international average
- Malaysia aims to be at least on par with the international average in PISA & TIMSS assessment
- Universal enrolment (≥95%)
- Student enrolment for preschool and secondary level
- 225,000 Intake of SPM leavers into TVET programmes

Fostering greater industry-academia linkages
- 2 in Top 100
- 2 universities in the top 100 of the QS World University Rankings
- 85.0% TVET graduates employed within 6 months of graduation

Source: Mid Term Review, 11th MP (MEA)
National Policy Direction Mid Term Review 11MP Pillar VI: Strengthening Economic Growth (Issues & Challenges)

1. Re-engineering Economic Growth for Greater Prosperity
   - 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

2. Strengthening infrastructure to support economic expansion
   - 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

Source: Mid Term Review, 11th MP (MEA)
National Policy Direction Mid Term Review 11MP Pillar VI: Strengthening Economic Growth

**Priority Area A**
Strengthening sectoral growth and structural reforms

- **Strategy A1**: Enhancing sectoral growth through productivity improvements
- **Strategy A2**: Increasing export capacity
- **Strategy A3**: Improving market efficiency
- **Strategy A4**: Facilitating ease of doing business

**Priority Area B**
Accelerating innovation and technology adoption

- **Strategy B1**: Harnessing the Fourth Industrial Revolution
- **Strategy B2**: Increasing technology adoption
- **Strategy B3**: Aligning research and innovation
- **Strategy B4**: Enhancing capacity building

**Priority Area C**
Providing quality infrastructure

- **Strategy C1**: Developing an integrated transport system
- **Strategy C2**: Strengthening logistics and trade facilitation
- **Strategy C3**: Improving digital infrastructure
- **Strategy C4**: Improving water services
- **Strategy C5**: Sustaining energy supply

Source: Mid Term Review, 11th MP (MEA)
Pillar VI: Selected Targets, 2020

Strengthening sectoral growth and structural reforms

- Growth 2018 - 2020
  - Services sector: 6.3%
  - Manufacturing sector: 4.5%
  - Agriculture sector: 2.0%
  - Construction sector: 4.3%
- Labour productivity 2018 - 2020
  - Services sector: 3.4%
  - Manufacturing sector: 3.8%
  - Agriculture sector: 1.5%
  - Construction sector: 3.0%

Contribution to GDP: 41.0%
Contribution to total exports: 23.0%

Accelerating innovation and technology adoption

- National Industry 4.0 Policy Framework 2018-2025
- Catalysing Industry 4.0: 2.0%
- Gross expenditure on R&D (GERD) to GDP: 70.0%
- Business expenditure on R&D (BERD) to GERD: 70.0%
Malaysia is transitioning from an upper-middle-income economy to a high-income economy against the backdrop of the Fourth Industrial Revolution (IR4.0), guided by the National Industry 4.0 Policy Framework.
Labour Market Outlook and Key Challenges
Malaysia’s journey from upper middle income country to high income

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

Source: Mid Term Review, 11th MP (MEA), World Bank
The profile of job creation – about 1.6 million new job created in the last five years

Employment 2012-2017 (million person)

- CAGR, 2012-2017: 2.4%
- Net increase: 1.6 million

Base year
- 2012: 12.8
- 2013: 13.5
- 2014: 13.9
- 2015: 14.1
- 2016: 14.2
- 2017: 14.5

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)

Source: Labour Force Survey, DOSM
The distribution of job creation

Almost half in the skilled category

28% Composition of skilled worker in 2017

<table>
<thead>
<tr>
<th>Skills Group</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled</td>
<td>47%</td>
<td>768</td>
</tr>
<tr>
<td>Semi Skilled</td>
<td>38%</td>
<td>616</td>
</tr>
<tr>
<td>Low Skilled</td>
<td>15%</td>
<td>246</td>
</tr>
</tbody>
</table>

Dominated by the services and manufacturing industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>79%</td>
<td>1,283</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15%</td>
<td>245</td>
</tr>
<tr>
<td>Construction</td>
<td>5%</td>
<td>81</td>
</tr>
<tr>
<td>Mining</td>
<td>1%</td>
<td>16</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1%</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services sub-sector</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td>28%</td>
<td>356</td>
</tr>
<tr>
<td>Acc &amp; F&amp;B</td>
<td>28%</td>
<td>355</td>
</tr>
<tr>
<td>Government*</td>
<td>24%</td>
<td>311</td>
</tr>
<tr>
<td>Administrative</td>
<td>11%</td>
<td>144</td>
</tr>
<tr>
<td>Others</td>
<td>9%</td>
<td>57</td>
</tr>
</tbody>
</table>

Slightly higher than skilled job creation indicating mismatch

<table>
<thead>
<tr>
<th>Education Attainment</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary</td>
<td>59%</td>
<td>969</td>
</tr>
<tr>
<td>Secondary</td>
<td>57%</td>
<td>936</td>
</tr>
<tr>
<td>Primary &amp; Below</td>
<td>17%</td>
<td>276</td>
</tr>
</tbody>
</table>

The same profile reflected by the education attainment (tertiary)

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.

Source: Labour Force Survey, DOSM

Notes: * aggregation of three sector under MSIC with high concentration of public sector employees (health; education and public admin)
The distribution of job creation

- Relatively higher job creation for non-citizen (25%) as compared to the share to total employment (15%).
- Most of the job created for adult cohort as compared to youth (aged 15-24) which explain the youth unemployment.
- 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).

Source: Labour Force Survey, DOSM; Population estimates, DOSM
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

~ **250,000**
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)

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

Source: Estimation based on Labour Force Survey, DOSM
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 help improve the issues of underutilisation of labour resources, particularly among the educated workforce

Graduate Workforce, 2016 (‘000 person)

- Unemployed
- Semi- & Low-skilled
- High-skilled

24.8% or about 1 out of 4 graduates unemployed or underemployed by skills (mismatch / over qualification)

12.3%

3.2%

4.1%

5X

4X

2016

Unemployed

Semi- & Low-skilled

High-skilled

Graduate qualification mismatch rate

Graduate unemployment rate

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

Source: Statistics of Graduates in the Labour Force, DOSM
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.

Estimation of foreign workers, 1990-2018

- Estimation based on 6P data
- World Bank estimates (1.23 - 1.46 million) undocumented

Estimated number of (legal & illegal) foreign labour to reach 4 mill (26%)

Legal foreign labour stagnant at 2.1 mil since 2007 (15%)

About 25% job created for the foreign workers (25%)

% Increase in employment required to produce 1% increase in GDP

Higher labour utilisation indicating reliance of economy on labor

Source: Labour Force Survey (DOSM); RMK11 (MEA); Pas Lawatan Kerja Sementara (MOHA); Estimating the Number of Foreign Workers (World Bank)
Youth labour market spectrum (employment, job creation and unemployment)

Youth Employment Trend

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment (millions)</th>
<th>CAGR (1982-2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1.6</td>
<td>+1.6%</td>
</tr>
<tr>
<td>1985</td>
<td>1.8</td>
<td>+1.7%</td>
</tr>
<tr>
<td>1990</td>
<td>2.0</td>
<td>+1.2%</td>
</tr>
<tr>
<td>1995</td>
<td>2.2</td>
<td>+1.2%</td>
</tr>
<tr>
<td>2000</td>
<td>2.3</td>
<td>+0.6%</td>
</tr>
<tr>
<td>2005</td>
<td>2.3</td>
<td>+1.1%</td>
</tr>
<tr>
<td>2010</td>
<td>2.3</td>
<td>+1.2%</td>
</tr>
<tr>
<td>2015</td>
<td>2.3</td>
<td>+1.2%</td>
</tr>
<tr>
<td>2017</td>
<td>2.3</td>
<td>+1.3%</td>
</tr>
</tbody>
</table>

Total net job creation (2012-2017)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number of New Jobs (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>1,629</td>
</tr>
<tr>
<td>25-34</td>
<td>43%</td>
</tr>
<tr>
<td>35-44</td>
<td>7%</td>
</tr>
<tr>
<td>45-54</td>
<td>117</td>
</tr>
<tr>
<td>55-64</td>
<td>25%</td>
</tr>
</tbody>
</table>

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

Those who are lacking 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

Youth Unemployment Rate, 1982-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Unemployment Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>8%</td>
</tr>
<tr>
<td>1990</td>
<td>11%</td>
</tr>
<tr>
<td>2000</td>
<td>8%</td>
</tr>
<tr>
<td>2010</td>
<td>12%</td>
</tr>
<tr>
<td>2017</td>
<td>11%</td>
</tr>
</tbody>
</table>

Global Youth Unemployment (Generation at Risk, ILO 2013)

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

Source: estimation based on Labour Force Survey (DOSM)
Improving job creation alone will not suffice without flexibility in the labour market to attract potential workforce.

- Population
  - Female 48%
  - Male 52%

- Public university students
  - Female 64.5%
  - Male 35.5%

Source: Population Estimates 2018, Department of Statistics Malaysia
Source: Output Data of Public University, Ministry of Education, 2017

**Female Labour Force Participation Rate (FLFPR)**

<table>
<thead>
<tr>
<th>Year</th>
<th>FLFPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>46.8%</td>
</tr>
<tr>
<td>2013</td>
<td>52.4%</td>
</tr>
<tr>
<td>2014</td>
<td>53.6%</td>
</tr>
<tr>
<td>2015</td>
<td>54.1%</td>
</tr>
<tr>
<td>2016</td>
<td>54.3%</td>
</tr>
<tr>
<td>2017</td>
<td>54.8%</td>
</tr>
<tr>
<td>2020</td>
<td>59.0%</td>
</tr>
</tbody>
</table>

1 : 0.6 Male to Female ratio in the workforce

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

Source: TalentCorp ACCA Retaining Women in the Workforce Survey, 2013
Issues on salaries and wages

Median monthly wage, 2013-2017

- Average annual Increase

RM 610
RM 115
6.2%
RM 2,160
RM 1,942
RM 2,000
RM 1,800
RM 1,700

2013
2014
2015
2016
2017

Median monthly wage & wage recipients by industry, 2017

- Agriculture
- Mining and quarrying
- Manufacturing
- Electricity
- Water supply
- Construction
- Wholesale and retail trade
- Transportation and storage
- Accommodation and F&B service
- ICT
- Financial...
- Real estate activities
- Professional services
- Administrative service
- Public administration
- Education
- Health & social work
- Arts, entertainment and recreation
- Other service activities

Source: Salaries and Wages Survey (DOSM)
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 exist\(^1\)

54% of all jobs in Malaysia could be at high risk of being displaced by technology in the next two decades\(^2\)

Source:
Five megatrends disrupting the way people work

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

Five megatrends disrupting the way people work

What employers want in 2018

- Analytical thinking and innovation
- Complex problem-solving
- Critical thinking and analysis
- Active learning and strategies
- Creativity and initiative
- Attention to detail, trustworthiness
- Emotional intelligence
- Leadership and social influence

What will be needed by 2022

- Analytical thinking and innovation
- Creativity, originality and initiative
- Emotional Intelligence
- Reasoning, problem-solving and ideation
- System analysis and evaluation
- Leadership and Social Influence
- Technology design and programming

What will be decreasing by 2022

- Memory, verbal, auditory and spatial abilities
- Management of financial and material resources
- Technology installation and maintenance
- Reading, writing, math and active listening
- Management of personnel
- Quality control and safety awareness
- Coordination and time management
- Visual, auditory and speech abilities

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.
“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.”

## Talent 4.0 Across the Globe ... What other countries are doing?

<table>
<thead>
<tr>
<th>Country</th>
<th>Initiative/Report</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>Industrial Value Chain Initiative</td>
<td>Launched by 30 Japanese companies, e.g. Nissan, Mitsubishi, Fujitsu, Panasonic, Focus on Digital Economy and Data Analytics</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>The Future of Work: Jobs and Skills in 2030 (February 2014)</td>
<td>Set up the right institutions to bring together sectors and focus on Science, Research and Innovation, Identifying and addressing sector-specific skills gaps</td>
</tr>
<tr>
<td>Germany</td>
<td>White Paper on Future of Work (November 2016)</td>
<td>Focus on Employment Insurance and Working Time &amp; Flexibility, Skills forecasting and monitoring regionally for specific industries</td>
</tr>
<tr>
<td>Singapore</td>
<td>Report of the Committee on the Future Economy (February 2017)</td>
<td>Build a strong Digital Capabilities, Invest S$19 billion in R&amp;D over the next five years (2016 - 2020)</td>
</tr>
<tr>
<td>China</td>
<td>Made in China 2025</td>
<td>China aims to become a Manufacturing Powerhouse with high-end technology, machine tools &amp; robotics, Increased to 1.26% of USD11.2 trillion ($15.8 billion)</td>
</tr>
</tbody>
</table>

Industrial Revolution 4.0 will impact Malaysia’s workforce and workplaces
Impact of Industrial Revolution 4.0

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

<table>
<thead>
<tr>
<th>Changes in geography of production, distribution and value chains, employment types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs estimated to increase by 2022</td>
</tr>
<tr>
<td>50% automation will lead to some reduction in their full-time workforce by 2022</td>
</tr>
<tr>
<td>38% expect to extend their workforce to new productivity-enhancing roles.</td>
</tr>
<tr>
<td>25% expect automation to lead to creation of new roles in organisations</td>
</tr>
<tr>
<td>75 mil</td>
</tr>
<tr>
<td>59% employers expected to modify on their composition of value chain</td>
</tr>
<tr>
<td>50% expect to modify geographic base of operations</td>
</tr>
<tr>
<td>74% will prioritise the availability of skilled local talent</td>
</tr>
<tr>
<td>1.7 mil Jobs may be displaced by a shift in the division of labour between man and machine</td>
</tr>
</tbody>
</table>

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.

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

Source: ILO; World Bank (2018); The ASEAN Post
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.

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

High-skill to low-skill occupations – including technicians and associate professionals, personal service workers, E&E and ICT mechanics and repairers, and cleaners and helpers.

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

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

Source: Cunningham (2017) and Chuah, Loayza, and Schmillen (2018)
Automatable tasks are those that are both routine and manual

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.

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

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

Source: Cunningham (2017)
The following are the top 10 talent trends for Malaysia in 2019:

<table>
<thead>
<tr>
<th>No.</th>
<th>Talent Trends</th>
<th>Key Explanation</th>
</tr>
</thead>
</table>
| 1   | Surge in Accountancy & Finance positions    | • 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      | • 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           | • 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 | • 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   | • 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. |

Source: Top 10 talent trends for Malaysia in 2019 (Hays, 2019)
The rise in digital transformation is driving demand for talent

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*

<table>
<thead>
<tr>
<th>Industry</th>
<th>Growth Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>13%</td>
</tr>
<tr>
<td>Media &amp; Communications</td>
<td>9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>8%</td>
</tr>
<tr>
<td>Finance</td>
<td>8%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>8%</td>
</tr>
<tr>
<td>Energy &amp; Mining</td>
<td>7%</td>
</tr>
<tr>
<td>Corporate Services</td>
<td>5%</td>
</tr>
<tr>
<td>Health Care</td>
<td>5%</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>5%</td>
</tr>
<tr>
<td>Hardware &amp; Networking</td>
<td>4%</td>
</tr>
</tbody>
</table>

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.

Source: LinkedIn Emerging Jobs Report Malaysia 2019
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

<table>
<thead>
<tr>
<th>Role</th>
<th>Rate of Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Scientist</td>
<td>15.0x</td>
</tr>
<tr>
<td>Full Stack Engineer</td>
<td>9.0x</td>
</tr>
<tr>
<td>Drive Test Engineer</td>
<td>4.0x</td>
</tr>
<tr>
<td>User Experience Designer</td>
<td>4.0x</td>
</tr>
<tr>
<td>Content Writer</td>
<td>3.0x</td>
</tr>
</tbody>
</table>

Rate of growth 2013 - 2017

Source: LinkedIn Emerging Jobs Report Malaysia 2019
The increasing impact of Industry 4.0 is hinting towards the demand for new initiatives in curriculum development for TVET in the near future.

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.

Source: Tech breakthroughs megatrend: How to prepare for its impact (PwC, 2016); TVET Masterplan: Technical and Vocational Education and Training Towards Developed Nation
**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?**

- 66% aged between 21 and 25
- Startups 35%
- MNCs/GLCs 50%
- SMEs 50%

**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
Framework linking the supply-demand perspective

- **Academia**
  - HEIs
  - TVET

- **Governments**
  - Federal
  - State
  - Local authority

- **Institutional**
  - Governance structure
  - Job market policy

- **Educational**
  - Collaboration initiatives

- **Workforce**
  - Skilled jobs
  - Reducing Mismatch
  - Critical occupations
  - Upskilling & reskilling
  - Productivity & wages

- **Investment**
  - High quality investment

- **Local Development**
  - Industry prospect
  - Regulatory
  - Education & training
    - Skilled workers
    - Critical jobs

- **Future Trend**
  - Growth drivers
    - Technology
    - Gig Economy

- **Industry**
  - Firm
  - Businesses
  - Industry Associations
Closing the Talent Ecosystem Loop
Synergized and proactive policy intervention across Ministries and Agencies

STRATEGIC PARTNERSHIP
To ensure right intervention from the start

CURRENT POLICY AND INTERVENTION
To fulfill Malaysia’s current talent gap

Future of Work in partnership with:

- MOE & MOHE – curriculum embedment, industrial revolution 4.0, education reform etc.
- Universities – Talent profiling
- World Bank – predictive analysis of skills required in the future.

Consolidating and synergizing National Talent Agenda:

- MOHR – Labour and Workforce Policy and Regulation, Skills Training and Upskilling
- MEA – Macro policy on Human Capital Development
- MOHA – Immigration Related Policies and Implementation
- MITI – Talent Mobility
- KPWKM – Female Labour Participation

We require a new talent ecosystem for the future
People at the center of future of work

- **Increasing investment in the institutions of work**
  - Incentives to promote investments in key areas for decent and sustainable work
  - Reshaping business incentive structures for longer-term investment approaches incl. human well being

- **Increasing investment in decent and sustainable work**
  - Workers enjoy fundamental workers’ rights
  - Balance between work & life
  - Workers and employers enjoy right to collective bargaining
  - Managing technology for decent work

- **Increasing investment in people’s capabilities**
  - Enables people to acquire skills and to reskill and upskill
  - Institutions, policies and strategies that support people thru FOW transitions
  - Agenda for gender equality
  - Universal social protection

Conclusion
Thank you