
Visioning Malaysia's Future Of Work:

A Framework For Action



TalentCorp

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Foreword

The way we live and work has changed. Technology has redefined our everyday lives. Disruption created from megatrends like urbanisation, shifts in global economic power and technological breakthroughs, on top of new consumer concerns including food safety, privacy and labour standards, present a new set of challenges for businesses. Many jobs have been redesigned or in some cases replaced entirely with more automation, robotics and artificial intelligence (AI).

There is a growing and urgent need for talent to be nurtured for jobs of the future, which include science, technology, engineering and mathematics (STEM). There is also a burgeoning interest in industries like energy, information, arts, media and entertainment. Skills requirements are expected to undergo dramatic shifts. The ability to work with data and make decisions based on it, will become an increasingly vital skill.

The country has to be ready for a more dynamic and technologically advanced future. We need to evolve in tandem to meet head-on the challenges facing us. To this end, the Government has embarked on *Transformasi Nasional 2050* (TN50), a national development initiative spanning the years 2020 to 2050 to ensure Malaysia becomes a top 20 nation in economic development, social advancement and innovation.

The world is rapidly changing, and the colossal task of helping our nation navigate its way through these exciting and unpredictable times has been undertaken by various agencies including Talent Corporation Malaysia Berhad (TalentCorp). Established in 2011, TalentCorp attracts, nurtures and retains the best and the right talent to enable Malaysia to meet its aspiration of becoming a dynamic talent hub.

To date, TalentCorp has engaged with nearly 7,000 companies, resulting in more than 5,500 organisations participating in its initiatives and programmes. To ensure its initiatives address the talent needs of Malaysia's employers, TalentCorp also works closely with various industries across the 12 National Key Economic Areas on talent issues.

Staying ahead in a fast-changing world is by no means easy or straightforward. But rather than fear change, we must embrace and where possible, create it. It is only by doing so that we will truly be able to thrive in the exciting future that awaits not only Malaysia but the rest of the world. Through this report by TalentCorp, I am encouraged to see those crucial first steps being taken to help lay the foundation for the nation's future of work. I would also like to call on all Malaysians to work together to ensure that our beloved nation stands tall with other developed countries in the near future.



**DATU' SRI MOHD NAJIB TUN
ABDUL RAZAK
PRIME MINISTER OF MALAYSIA
AND CHAIRMAN OF TALENTCORP**

Executive Summary

Unexpected hurdles have emerged as Malaysia keeps the course towards obtaining the much coveted status of being a developed nation. The country, along with the rest of the world, has rapid technological development to contend with, on top of having to ensure that its future talent can meet global market demands.

Besides Vision 2020, we now have *Transformasi Nasional* (TN50) to steer the course. The initiative plan is designed to help the country be among the top nations in terms of economic development, citizen well-being and innovation.



Beyond 2020: The Need for TN50

Malaysia has evolved immensely since the introduction of Vision 2020 in 1991, and there is now a need to plan beyond this milestone to ensure the advancement of the nation.

TN50 is the new 30-year vision that aims to transform Malaysia into a nation of calibre, with a new mindset. From the vision of becoming a developed nation, we now strive to become a top 20 nation in economic development, social advancement and innovation.

Among the agencies that will be involved in this exciting journey is Talent Corporation Malaysia Berhad (TalentCorp), the national agency for talent that was set up in 2011, as the bridge between talent, industry, academia and the Government to deliver the human capital that Malaysia critically needs. The gaps are filled by

identifying the critical skills needed and finding solutions to talent issues through advocating policies, public-private sector collaborations, research and implementing interventions.

This report highlights the achievements and progress that have been made in the six years following TalentCorp's inception. From 2011 to 2016, TalentCorp collaborated with the Government, academia and industry leaders representing priority sectors on talent matters for Malaysia, ensuring that our initiatives address the talent needs of the industry. Throughout the six years, we have engaged close to 7,000 companies, with over 5,500 taking up our initiatives and participating in our programmes.

However, given the new challenges brought about by the changing global socio-economy and the digital revolution, more needs to be done to create a future-ready Malaysian workforce that is both locally relevant and globally competitive.

The second and third chapters of this report present an overview of the Malaysian talent landscape today, while highlighting areas for improvement. These findings, juxtaposed against global talent landscape data and trends, hope to present a picture of where Malaysia's talent landscape currently stands, as well as the direction it should be headed. Included also is a discussion of skills Malaysian talent needs and the impact of technological innovation on jobs.

Malaysia's Economic Transformation Programme (ETP)

Formulated in 2010 as part of the National Transformation Programme (NTP), the ETP's main goal is to elevate the country to developed-nation status by 2020, targeting a gross national income (GNI) per capita of US\$15,000. The programme aims to achieve this by attracting over US\$440 billion in investments which will, in turn, create 3.3 million new jobs.

The ETP's targets for 2020 are designed to be achieved through the implementation of National Key Economic Areas (NKEAs), representing key economic sectors which account for significant contributions to GNI.

These sectors receive prioritised Government support including funding, top talent, and Prime Ministerial attention due to their significance GNI contribution to drive the nation's economy.

In order to meet employment and GNI growth demands, the population of Greater Kuala Lumpur/Klang Valley (GKL) must grow by an additional four to 10 million workers. Thus, with aims of transforming Malaysia into a high-income nation, TalentCorp was formed to facilitate the attraction and retention of desired talents.

Central to this discussion is the need to answer the question of what Malaysian talent needs to become, in relation to global skills demand. A crucial instrument to help guide us and various stakeholders on this path is the national Critical Occupations List (COL), which presents the annual set of data for high-skill occupations within Malaysia's critical growth sectors. Developed in line with international best practices with guidance by the World Bank, the COL will continue to expand to create a comprehensive map of Malaysia's most demanded skills and talent.

What stands out from external research is that Malaysia needs to move up the high-skill value chain, as the majority of jobs currently in existence remain in the mid-skill range.

How do we then develop a high-skill, future-ready Malaysian workforce? Global findings by the World Economic Forum (WEF) suggest that companies need to pursue a range of innovative workforce strategies, including providing employees with wider exposure to talent mobility programmes, stepping up efforts to target female talent and collaborating more closely with the education sector.

In the final chapter, this report outlines some recommendations that will help us to achieve the nation's talent goals from 2018 to 2020, and beyond. This direction is in tandem with the Government's structural reforms such as labour law, public policies relevant to talent, higher education and wage structure. Other measures that TalentCorp intends to take include talent profiling through the national talent data analytics platform, Nurturing Expert Talent (NEXT), talent segmentation, identifying the jobs of the future and related trends, in strategic interventions that will aid in the preparation of the Malaysian talent for the future. These, and further strategies, are part of a new vision

to transform Malaysia into a global and dynamic, market-oriented talent hub, by attracting, nurturing and retaining the right expertise to spur economic growth. With global and local trends serving as the impetus to change, TalentCorp's signature initiatives and some new ones will take the lead in achieving Malaysia's talent aspirations.

Towards this end, this report is intended to start conversations with key stakeholders in a series of engagements we have planned involving the Government, industry, learning institutions and talent. These bottom-up feedback – which will then be distilled and analysed to be reported in a national talent action plan for the future – will provide actionable guidelines for the Malaysian workforce to prepare for the future of work.



2011-2017: A Review of TalentCorp's Journey

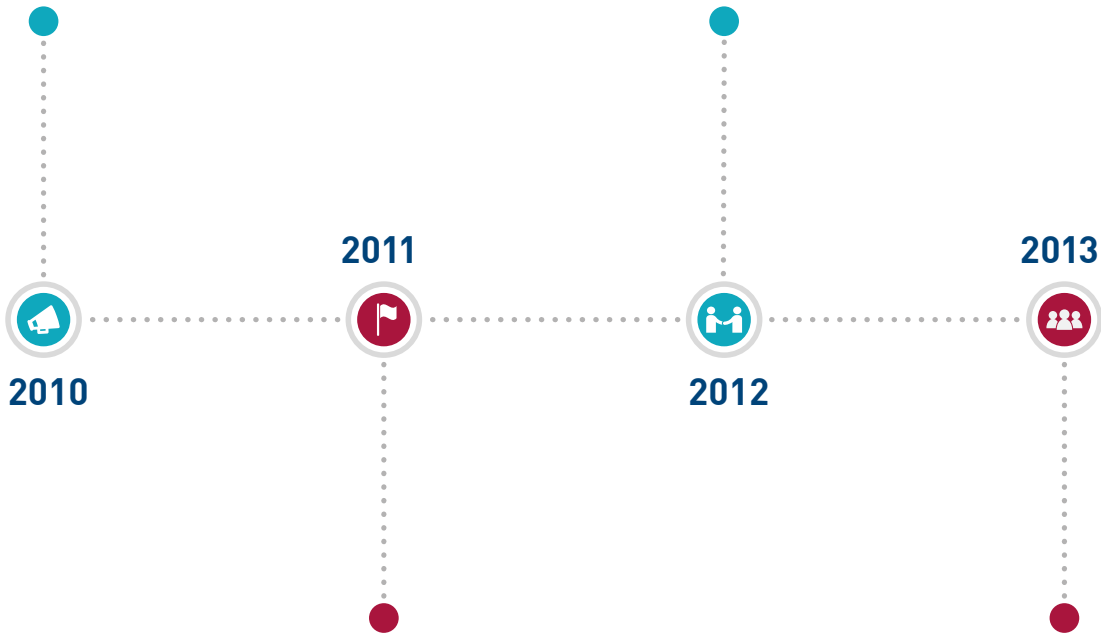
Key TalentCorp Milestones (2011-2017)

From the years 2011 to mid-2017, TalentCorp achieved several important milestones in developing the country's talent pool, as illustrated in the table below:



6 Dec 2010 PM announces establishment of TalentCorp to attract and retain talent

Apr 2012 First Sector Focused Career Fair
 24 Apr 2012 PM launches *Talent Roadmap 2020*
 Dec 2012 Khazanah hands over Graduate Employability Management Scheme (GEMS) to TalentCorp



1 Jan 2011 TalentCorp begins operations under Johan Mahmood Merican
 1 Apr 2011 Implementation of RP-T
 12 Apr 2011 Revisions to REP announced by PM
 22 Aug 2011 Launch of STAR initiative
 30 Dec 2011 TalentCorp issues SIP tax incentives guidelines

8 July 2013 TalentCorp initiates the flexWorkLife.my portal and inaugural Life At Work Awards

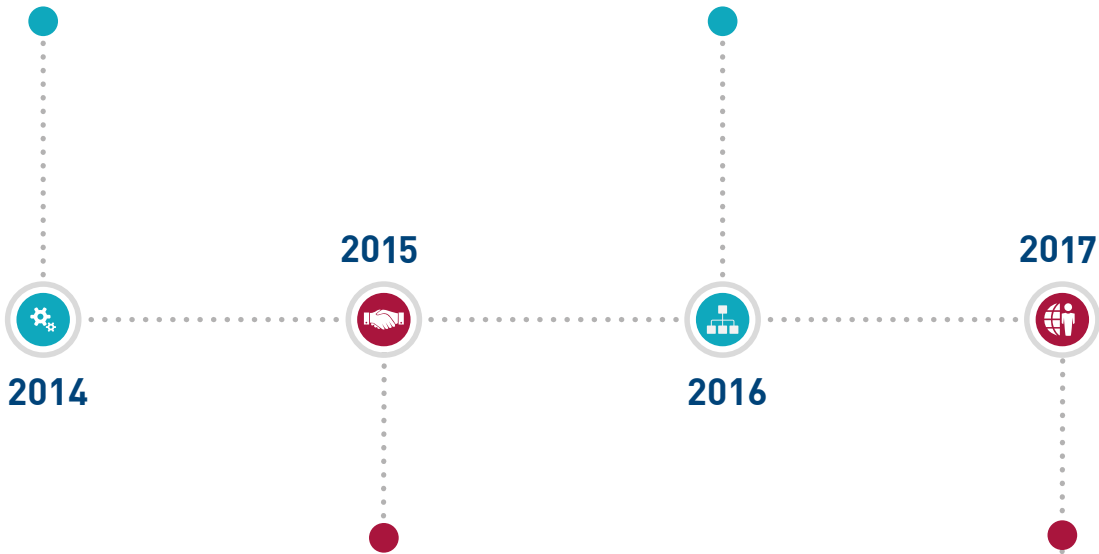




- 16 Apr 2014 Launch of Women in Leadership Malaysia (WIL MY) with ICAEW
- 19 June 2014 PM officiates the new Expatriate Services Division (ESD)
- 26 June 2014 First Women's Summit 2014 (Northern Region)
- 15 Aug 2014 Launch of TalentCorp HR Network and Diversity Advocates
- 15 Sept 2014 Life At Work Awards 2014
- 12 Nov 2014 Launch of first Ind-E-Zone centre in Malaysian public universities



- 1 June 2016 Shareen Shariza Dato' Abdul Ghani assumes role as TalentCorp CEO
- 1 June 2016 Introduction of online payment for ESD
- 19 Aug 2016 Launch of Lead@Work and Rise@Work during HR Circle
- 26 Sept 2016 Launch of IAC for Global Business Services (GBS) sector
- 18 Oct 2016 Launch of MyAPEC YouthConnect
- 16 Dec 2016 Pilot of NEXT Profiling



- 26 Jan 2015 Launch of MyASEAN Internship programme
- 2 Mar 2015 Launch of Career Comeback grants
- 22 Apr 2015 Launch of Industry-Academia Collaboration (IAC) for Electrical & Electronics (E&E) sector
- 1 Sept 2015 MYXpats Centre officially opens
- 9 Sept 2015 Life At Work Awards 2015
- Oct 2015 Launch of tax incentive for industry-recognised professional certification

- 12 Jun 2017 Entered into a MoU with the Indonesian Chamber of Commerce & Industry (KADIN) to promote and implement MyASEAN Internship programme
- 20 Jun 2017 Organised the inaugural MyASEAN Youth Award 2017
- 19 Aug 2017 Launched KNOWMADS in UK
- 31 Oct 2017 ASEAN 5 Job Fair in Busan, South Korea
- 6 Nov 2017 Establishment of Talent Compact 4.0



Talent Corporation Malaysia: An Agency Dedicated to Meeting the Nation's Talent Needs

In the process of developing the New Economic Model in 2010, the National Economic Advisory Council realised that while Malaysia had the Malaysian Investment Development Authority (MIDA) to coordinate attracting financial investment capital, there was no similar agency to obtain skilled human capital to undertake the jobs.

The reality of increasing talent mobility as a response to global demand for skilled workers led to the creation of Talent Corporation Malaysia Berhad (TalentCorp). When first announced in January 2011 by the Prime Minister of Malaysia, Dato' Sri Mohd Najib Tun Razak, TalentCorp was mandated to do the following as first step efforts into addressing the problem of Malaysian's brain drain:

- Catalyse innovative national talent management initiatives
- Facilitate private sector efforts in attracting, creating and motivating a world-class workforce
- Deliver major national talent initiatives across the human capital development pipeline

Having identified the brain drain problem as going beyond the scope of 'skilled Malaysians leaving for greener pastures', TalentCorp's immediate assigned tasks, included the following:

- Leveraging the diaspora of Malaysians abroad
- Simplifying the path for foreign talent to work in Malaysia
- Improving the overall employability of Malaysian university graduates
- Ensuring better working conditions for the skilled workforce through policy interventions



Image 1 TalentCorp assisted in the improvement of graduate employability by partnering with employers to bring career fairs to university students.

In April 2012, TalentCorp unveiled a comprehensive roadmap to set out its strategic focus and initiatives till 2020. Designed to address underlying issues affecting talent availability in Malaysia, the *Talent Roadmap 2020* promised to deliver a sustainable pool of skilled talent needed by the key economic growth sectors.

Underlying the roadmap was the key direction for TalentCorp - to serve as the focal point on national talent issues and drive initiatives anchored on three strategic thrusts:

Strategic Thrusts	Objectives	Action
Optimise Malaysian talent	To ensure home-grown talent secure fulfilling careers	<ul style="list-style-type: none"> • Provide guidance to young talent to make informed decisions on career options aligned with industry needs • Enhance school-to-work transition • Provide early exposure to real work environment for a smooth transition to industry • Build platforms to optimise talent (scholarship management, latent talent, human capital community)
Attract and facilitate global talent	To complement the Malaysian talent pool	<ul style="list-style-type: none"> • Outreach to Malaysians abroad through greater awareness of opportunities and collaborations via outreach and career fairs • Facilitate returning talent through support for returning Malaysians interested in local career and business opportunities • Enhance expatriate facilitation through policies and top-notch services to top foreign talent
Build networks of top talent	To connect top talent to leading employers and vice versa	<ul style="list-style-type: none"> • Build networks of future leaders by developing pool of business leaders from networks of high potentials • Engage the expatriate community by strengthening networks with leading corporations and linkages abroad • Develop diaspora networking platform by establishing networks of key sectors and geographies; easing access to opportunities; and enabling contributors from abroad



Image 2 *Talent Roadmap 2020*, launched on 24 April 2012 by PM Dato' Sri Mohd Najib Tun Razak

In short, TalentCorp's role expanded to:

- Act as a focal point on talent issues and develop interventions for critical skill gaps
- Mediate between the private sector and government agencies for policy changes
- Focus on building collaborations with employers to engage top talent
- Implement catalyst initiatives and refine policies based on experience

TalentCorp's Progress to Date

In the past six years, TalentCorp has dedicated its resources into delivering its mandate. Below are some of the positive outcomes that have been reached since its inception:

Initiative	Details	Achievements
Graduate Employability Management Scheme (GEMS)	<ul style="list-style-type: none"> TalentCorp took over this initiative from Khazanah Nasional Berhad in 2011 Provides job-seeking graduates with industry-relevant training and job placement 	<ul style="list-style-type: none"> More than 22,000 graduates have been trained since 2011 80% of these graduates have been employed by government-linked companies
Structured Internship Programme (SIP)	<ul style="list-style-type: none"> Launched in 2011 Encourages companies to provide meaningful and relevant internship experiences which help undergraduates gain real-life experience 	<ul style="list-style-type: none"> To date, over 70,000 graduates have participated in SIPs of close to 5,000 companies
Scholarship Talent Attraction and Retention (STAR)	<ul style="list-style-type: none"> Launched in 2011 in collaboration with the Public Service Department (JPA) A measure to retain talent, especially high-flight risk foreign-trained scholars, and to ensure a return on investment on the scholarships provided for the benefit of the country's brightest talent JPA scholars can serve their government bond in the private sector as a way of contributing back to the nation 	<ul style="list-style-type: none"> More than 4,000 scholars are serving their bond with more than 2,000 leading employers and participating companies
Industry-Academia Collaboration (IAC)	<ul style="list-style-type: none"> Partnership with the Ministry of Higher Education (MoHE) to bring employers into universities for IAC Aims to address skill gaps in the immediate term, and subsequently, content and syllabus from such programmes will be embedded into the education system to address talent needs in the longer term 	<ul style="list-style-type: none"> Four IAC initiatives have already been launched: <ol style="list-style-type: none"> IAC-E&E (Integrated Circuit Design) IAC-E&E (Embedded Systems) IAC-Global Business Services IAC-Rail

Initiative	Details	Achievements
MyASEAN Internship	<ul style="list-style-type: none"> Launched in 2015 Leading Malaysian and multinational companies with ASEAN presence offer regional internships to high-achieving students from local and overseas universities across ASEAN (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam) 	<ul style="list-style-type: none"> More than 150 top young talent have interned at seven regional locations since 2015
MyAPEC YouthConnect	<ul style="list-style-type: none"> Launched in 2016 Youths are offered short-term working opportunities in Malaysia and various Asia-Pacific Economic Cooperation (APEC) member economies. Partnered close to 40 Malaysian employers – including TM, iflix, Axiata, RHB, and multinational companies such as Intel, KPMG, Kimberly-Clark, and First Solar 	<ul style="list-style-type: none"> Since 2016, close to 250 youth from 11 APEC economies have applied More than 20 youth have undergone successful work placements
Flexible Work Arrangements (FWAs)	<ul style="list-style-type: none"> FWAs are workplace policies that aim to provide greater flexibility to the workplace, help employees achieve better work-life integration and provide support for working parents Published <i>My Work, My Future</i> in 2016 as a practical guide to encourage more Malaysian companies to implement FWAs 	<ul style="list-style-type: none"> More than 60 companies have implemented FWAs since 2013
Career Comeback Programme	<ul style="list-style-type: none"> Launched in 2015 An initiative that facilitates the return of women on career breaks to the workforce 	<ul style="list-style-type: none"> More than 400 women professionals have returned to the workforce since 2015

Initiative	Details	Achievements
Returning Expert Programme (REP)	<ul style="list-style-type: none"> • A programme that facilitates the return of Malaysian professional working overseas • TalentCorp also matches CVs of Malaysians abroad to leading companies in Malaysia 	<ul style="list-style-type: none"> • From 2011-2016, more than 4,100 Malaysians abroad have been approved, of which close to 2,700 have returned and are now working in key sectors such as oil, gas and energy; financial services; E&E; and professional services • Since 2015, more than 80 CVs have been referred to over 60 employers with nine experts successfully placed
Residence Pass-Talent (RP-T)	<ul style="list-style-type: none"> • Launched in 2011 • A 10-year renewable pass for highly qualified expatriates to continue to reside and work in Malaysia, in support of the new economies under the National Key Economic Areas • It also attracts and retains foreign industry captains and key decision makers, giving them more security and confidence to conduct their business in Malaysia 	<ul style="list-style-type: none"> • Up to 2016, close to 5,500 highly-skilled expatriates have been approved • 90% of the approved expatriates have more than 10 years of global working experience, and 90% are C-suites and top management (technical experts in key economic areas)
MYXpats Centre	<ul style="list-style-type: none"> • Jointly launched in June 2015 with the Immigration Department of Malaysia • A service centre for more than 13,200 employers submitting Employment Pass (EP) applications and other related immigration passes for their expatriate employees • Processes and issues EPs for expatriates wanting to work in Malaysia, as well as other expatriate-related passes such as the Dependant Pass and Long Term Social Visit Pass 	<ul style="list-style-type: none"> • 82% of EPs were processed within the 5-day charter in 2016 • More than 13,000 companies registered with the Expatriate Services Division (ESD) online system since 2014 • More than 106,000 applications have been processed via the ESD online system since 2014



Malaysia's Journey to Become A Global Talent Hub



The Malaysian Talent Landscape Today

Malaysia's national labour force participation rate¹ has continued its steady growth for the past few years, recording an increase from 63.7 per cent in 2010 to 67.8 per cent in June 2017. At the same time, unemployment rate in the past six years continues to average around 3.1 per cent, demonstrating a healthy capacity for Malaysia's labour force to absorb supply of workers.

Number of Labour Force and Employed Persons in Malaysia from 2006 to 2016

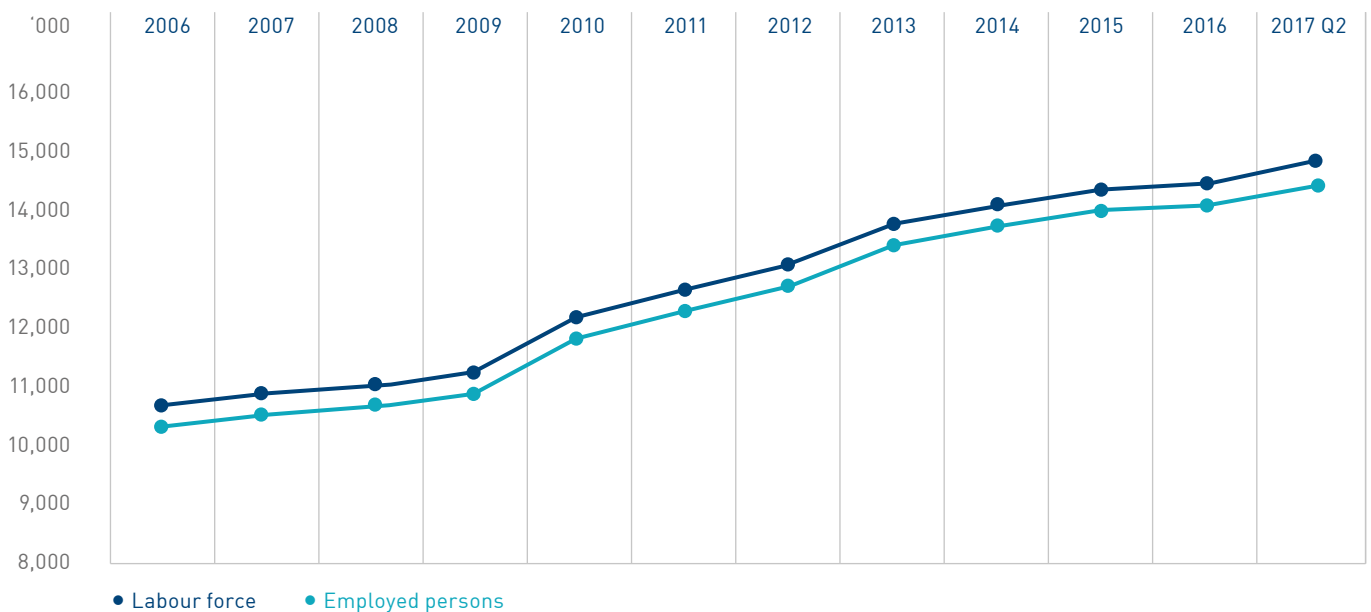


Figure 1 Source: Labour Force Survey (Department of Statistics Malaysia)

Regionally, Malaysia continues to be a **top talent destination**, ranking second in ASEAN for growing, attracting and retaining talent in the 2017 Global Talent Competitiveness Index (GTCI) by INSEAD Business School.

The same index placed us at number

28

out of a total of 118 countries.

We also managed to achieve a positive rank

33

in the 2017 World Economic Forum's Human Capital Index (HCI).

¹ Number of people in the labour force divided by the total working-age (15-64) population

Talent Rankings of Malaysia, Thailand and Singapore from 2013 to 2017

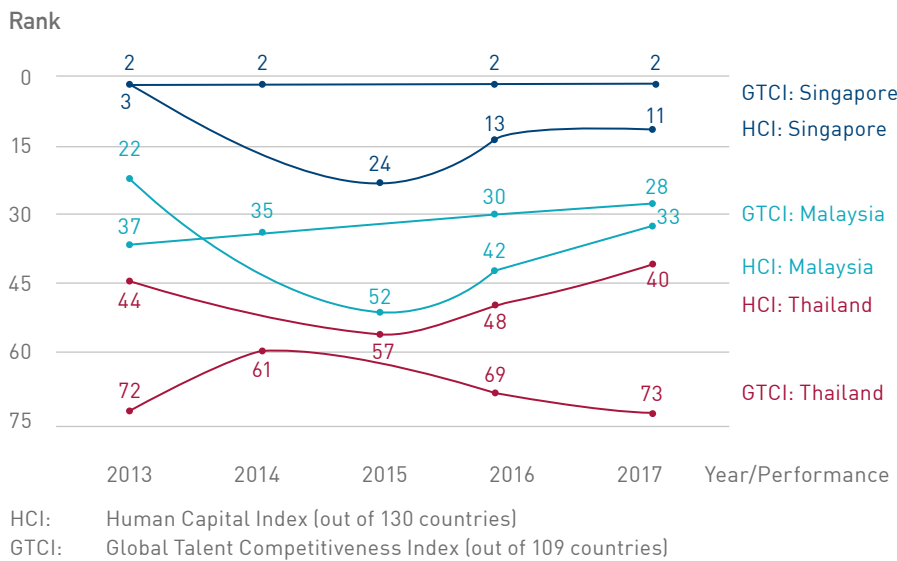


Figure 2 Source: Global Human Capital Index (World Economic Forum) and Global Talent Competitiveness Index (INSEAD)

Malaysia's talent ranking improvement in both the HCI and GTCI can be attributed to several factors, including:

- Increased tertiary enrolment**
 According to UNESCO Institute for Statistics, Malaysia tertiary enrolment rate has increased from 32.37 per cent in 2015 to 38.57 per cent in 2016.

- Mathematics, Reading and Science**
 Malaysian students are improving in Mathematics, Reading and Science under the Programme for International Student Assessment (Pisa) 2015. According to the results released by the Organisation for Economic Cooperation and Development (OECD), Malaysia scored 446 in

Mathematics, 431 in Reading and 443 in Science, an improvement from 2012 when it was 421, 398, and 420 respectively.

- Labour productivity per employee**
 Labour productivity per employee in Malaysia increased from USD59,859 in 2015 to USD62,019 in 2016².
- Employment gender gap**
 In 2016, the ratio of female labour force participation rate (FLFPR) over male is 67.70 per cent. This is an improvement from 2015 where the ratio of FLFPR over male is 66.79 per cent³.

Nevertheless, we need to work harder to continue an upward trend in both indices. Towards this end, TalentCorp is tasked to focus on improving various outcomes for the following talent groups:

- fresh graduates
- professionals in the workforce (including women professionals and expatriate talent)

TalentCorp must also continue to deliver on the needs of employers from key growth sectors.

HCI vs GTCI Global Indices

Developed by the World Economic Forum (WEF), the HCI ranks a total of 130 countries according to how well they are developing and deploying their talent. In undertaking this ranking process, the HCI takes a life-course approach to human capital, evaluating the levels of education, skills and employment available to people in five distinct age groups, starting from under 15 years to over 65 years.

In comparison, the GTCI is an annual benchmarking report, researched by INSEAD with help from Adecco Group and the Human Capital Leadership

Institute. The report ranks 118 countries according to their ability to grow, attract and retain talent. The GTCI framework builds on six pillars: Enable, Attract, Grow, Retain, Labour and Vocational Skills, and Global Knowledge Skills.

A variety of sub-indicators are used for HCI and GTCI measurement processes, which explains the difference in rankings. For example, while both indices examine percentage of tertiary education population, percentage of high-skilled employees and staff training score, the GTCI employs separate sub-indicators to assess items such as cost of living and lifestyle opinions.

In 2015, the WEF adjusted the methodology for the HCI measurement. Prior to the year, the index studied Education, Employment, Health and Enabling Environment as the four key pillars in data collection and analysis. In the new edition of the index, these pillars are replaced by five vertical age bands, selected to capture the major phases in an individual's human capital development lifecycle and countries' demographic structure.

As a result of this change in methodology, participating countries, including Malaysia, experienced a dip in their 2015 index rankings.

² The Conference Board, Total Economy Database: <https://www.conference-board.org/data/economydatabase/>
³ Labour Force Survey, Department of Statistics Malaysia

Potential for Growth in Several Talent Segments

According to the *Malaysian Productivity Report 2017*, Malaysia's labour productivity expanded by 3.5 per cent in 2016 to RM78,218, from RM75,548 in 2015. This achievement rate was 84.7 per cent of the 11th Malaysia Plan's targeted RM92,300 by 2020.

Malaysia's Growth of Jobs by Skill Level (CAGR) from 2005 to 2016

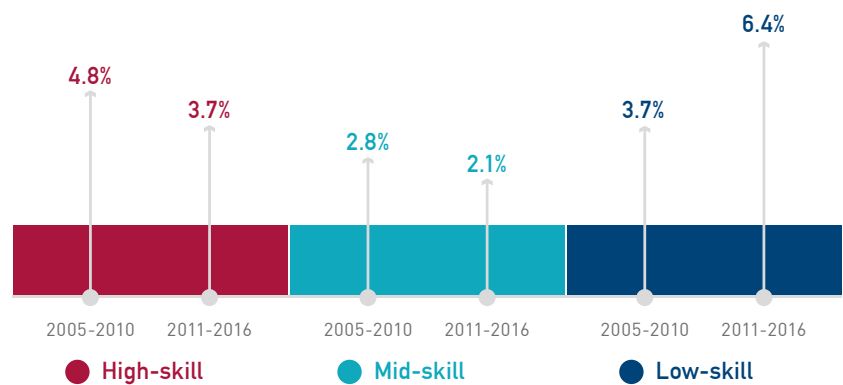


Figure 3 Source: Labour Force Survey (Department of Statistics Malaysia)

Figure 4 shows the proportion of tertiary educated workers and high-skill jobs from 2008 to 2016.

From 2011 onwards, the rising number of tertiary educated people

in the labour force surpassed the number of high-skill jobs in the economy. This increase in university graduates has led to more competition for the limited high-skill jobs available in the economy.

Number of Tertiary Educated Workers vs High-skill Jobs from 2008 to 2016

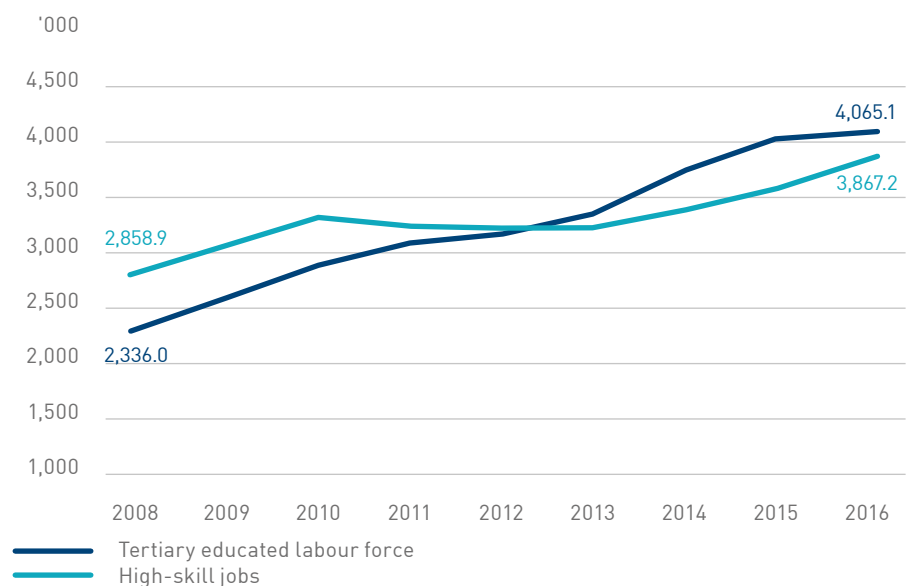


Figure 4 Source: Labour Force Survey (Department of Statistics Malaysia)

Talent Segment 1: Youth

Malaysia is among the few economies in the ASEAN region with an incidence of youth unemployment in the double-digits, despite a low overall unemployment rate⁴. We churn out an average of close to 300,000 university graduates annually, yet the unemployment rate of our youths between the ages of 15 to 24 reached an estimated 10.5 per cent in 2016, more than three times higher than the national unemployment rate of 3.4 per cent.

The *World Bank-TalentCorp Survey on Graduate Employability* found that 90 per cent of companies believe that university graduates should have more industrial training by the time they graduate, and 81 per cent of companies surveyed rated communication skills as a major deficit among graduates. The lack of industry involvement in human capital development has also contributed to the dearth of truly effective training programmes for workers.

Malaysia produces an average of close to 300,000 university graduates annually.

However, the same TalentCorp survey found that 53 per cent of firms have never engaged career centres in their recruitment efforts. This goes to suggest that even though companies may comment that youth lack requisite skills, efforts can still be made to prepare these youths for workforce entry, perhaps through concerted partnerships between industry and academia.

There is a growing proportion of fresh graduates in mid- to low-skill employment. Combined data from Department of Statistics Malaysia (DOSM) and the Ministry of Higher Education (MoHE) also reveals that underemployment is more severe for diploma holders.

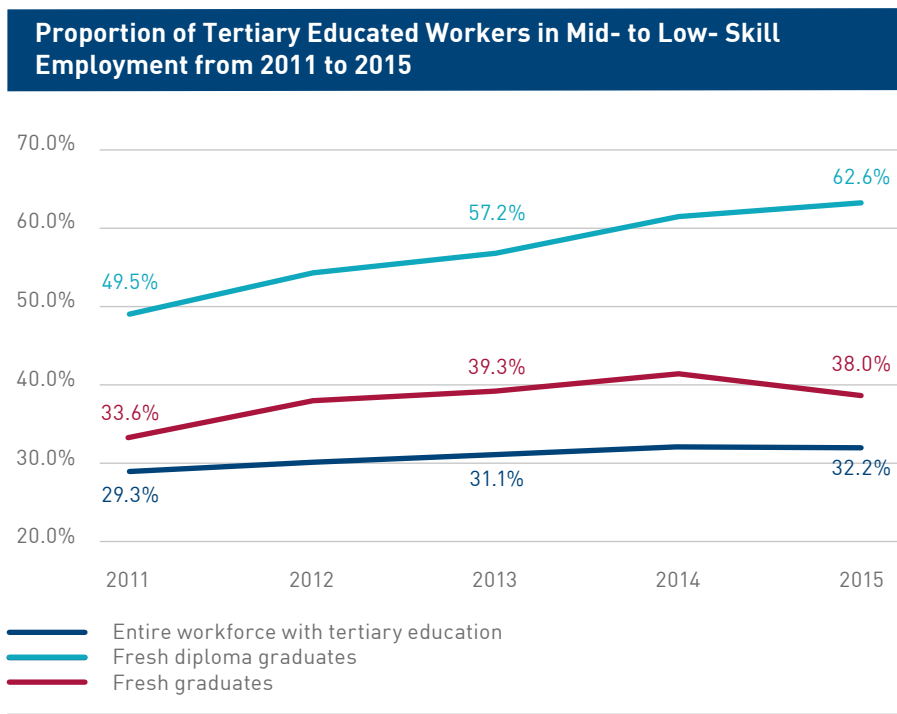


Figure 5 Source: Labour Force Survey (Department of Statistics Malaysia) and Tracer Study (Ministry of Higher Education Malaysia)

⁴ International Labour Organisation and Bank Negara estimates, 2017



Image 3 Malaysian employers continue to cite significant skill gaps among new recruits.

Addressing the Skills Mismatch Among Graduate Talent

Industry leaders now acknowledge that our universities cannot produce work-ready graduates without the academia acquiring a clear, accurate and updated understanding of what companies look for at entry-level hires.

Understanding the urgent need to incorporate these industry-relevant requirements into the current curricula, teaching and assessment methods, TalentCorp's Industry-Academia Collaboration (IAC) aims to increase engagements and

foster greater partnerships between universities and companies to close the skills mismatch.

On top of this, we have also run the Structured Internship Programme (SIP) since 2011, a double tax incentive to encourage employers to implement meaningful internship programmes. The aim of the SIP is to expose students to a variety of career paths and help them develop soft skills in the process of their compulsory practical training.

Talent Segment 2: Women

Women make up half of Malaysia's population and accounted for 62.3 per cent of enrolment in our public universities in the 2014/15 academic year⁵. However, many Malaysian women tend to exit the workforce in their late 20s to early 30s, usually due to family commitments. This includes single women who took career breaks due to personal reasons, including to care for a family member such as their ageing parents, or to

pursue further education qualifications (e.g. MBA, PhD).

Unlike other neighbouring countries, Malaysia's female labour force participation rate (FLFPR) is single peaked. This means that once our women leave the workforce, they do not typically return, unlike other women from Asian countries such as Japan and Korea, whose latent women talent typically return to the workforce in their later years:

Malaysia's female labour force participation rate is single peaked

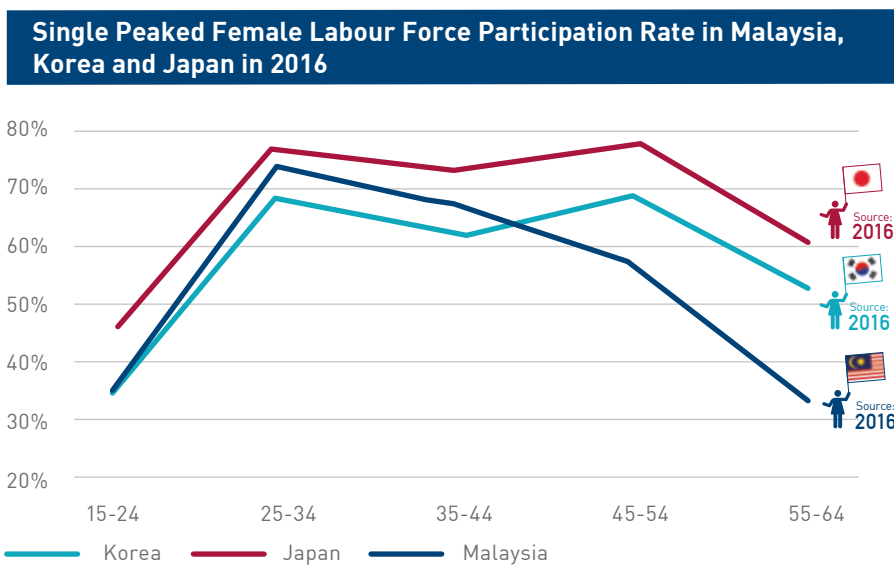


Figure 6 Source: ILOSTAT, International Labour Organization



Image 4 Unlike women from other South East Asia countries such as Japan and Korea, Malaysian women who leave the workforce typically do not return to work.

The Case for the Fairer Gender

Women have been recognised as a key resource to help spur economic growth in many parts of the world. Promoting equitable practices and increasing women's participation in the workforce is not only the right thing to do, but is also a smart economic move as observed below:

- Gender-diverse organisations are more likely to outperform by 15 per cent while ethnically-diverse organisations are more likely to outperform by 35 per cent⁶
- 85 per cent of CEOs whose companies have a formal diversity and inclusiveness strategy believed that diversity has helped improve bottom line and 56 per cent say it has helped them compete in new industries or geographies⁷

⁵ Quick Fact Guide (Ministry of Higher Education Malaysia, 2014)

⁶ Why Diversity Matters (McKinsey & Company, 2015)

⁷ CEO Survey (PwC, 2015)

Women and Diversity: How We Have Fared So Far

To help facilitate the return of women back to the workforce, the **Career Comeback Programme** was announced in 2015 by Prime Minister Dato' Sri Mohd Najib Tun Razak during the Budget 2015 speech.

TalentCorp works to connect these latent talent to job opportunities shared by employers who are open to hiring them.

Additionally, we also promote the adoption of **Flexible Work Arrangements (FWAs)** in the Malaysian corporate sector through extensive private and public partnerships. FWAs represent the future of how work is done and what the workforce of the future expects in their career development.

In 2013, the **Life At Work Awards** was introduced to recognise and celebrate top employers that promote diversity, work-life integration and FWAs. Since then, we have successfully run the Awards for four consecutive years. In 2016, the Awards was enhanced to recognise employers who champion the Diversity and Inclusion (D&I) spirit through their workplace policies.

To assist Malaysian employers embrace and fully understand FWAs, TalentCorp released a 2016 report entitled **MY Work, MY Future: Embracing the Winning Formula for Flexible Work Arrangements**. Based on TalentCorp's work with leading employers since 2013, the publication gives five winning formulas to meet the needs of the future workforce through FWAs.

For at least five years prior to 2009, Malaysia's FLFPR had remained stagnant. The increase from 46.8 per cent (2010) to 54.3 per cent (2016) translated to an additional 780,000 women in the workforce, which the World Bank has estimated to have contributed an additional 0.3 per cent gross domestic product (GDP) growth per annum. This indicates Malaysia is on the right track towards achieving the target FLFPR of 59 per cent by 2020.

With more women entering the labour force on an annual basis, the number of women holding high-skill jobs is on the rise. Despite this, the proportion of women in managerial positions has largely stagnated (see Figure 8). What's more, only 25.6 per cent of top management positions in public-listed companies are currently occupied by women. This is especially acute given that women outnumber men at local universities.

Only 25.6% of top management positions in public-listed companies are currently occupied by women

Malaysia's Female Labour Force Participation Rate from 2010 to 2016

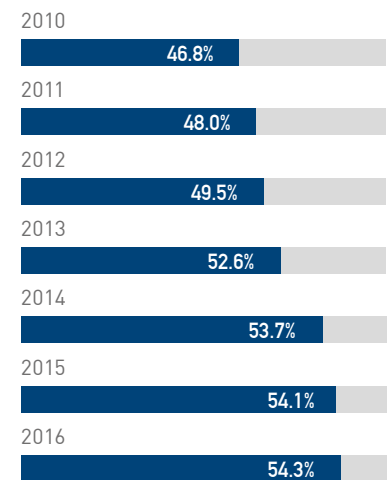


Figure 7 Source: The World Bank

Share of Women in High-skill Jobs and Managerial Positions from 2011 to 2016

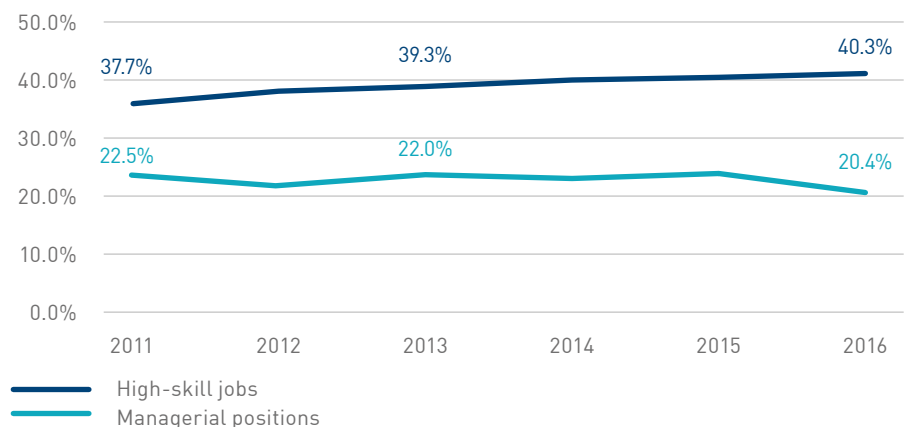


Figure 8 Source: Labour Force Survey (Department of Statistics Malaysia)

Talent Segment 3: Global Talent

A 2010 World Bank report estimated that about 1,000,000 Malaysians are living out of the country. The same source estimates the brain drain level at a third of this total diaspora, about 335,000 people. By 2015, 5.71 per cent of all citizens in Malaysia are reported to be living abroad, putting the total number of outward migrants (men, women and children) at 1,835,252⁸.

By 2015, 5.71% of all citizens in Malaysia are reported to be living abroad.

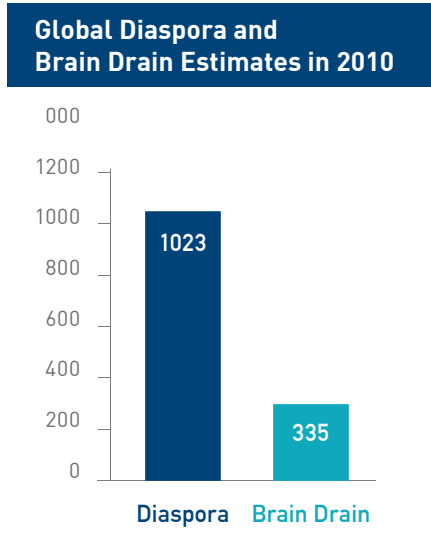


Figure 9 Source: The World Bank

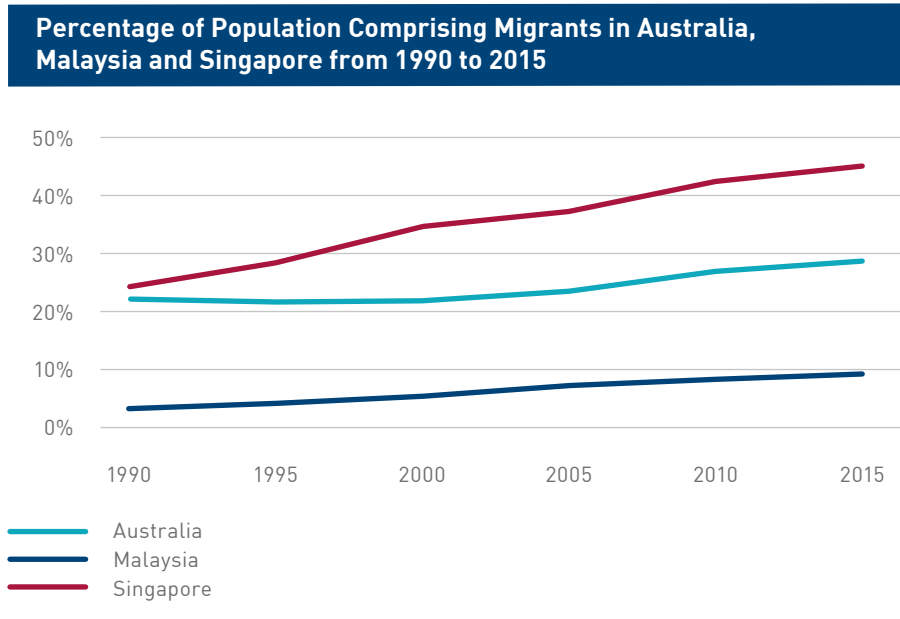


Figure 10 Source: The World Bank

⁸ Trends in International Migrant Stock: Migrants by Destination and Origin (United Nations, Department of Economic and Social Affairs, 2015)

Subsequent surveys conducted by the World Bank have indicated that the top three reasons for Malaysians migrating were:

- Better career prospects abroad due to the lack of suitable high-skill positions⁹
- The attraction of a higher salary and benefits, or both
- Perceptions of social injustice

In 2015, there were approximately 2,500,000 migrants residing in Malaysia, although the number includes non-working migrants¹⁰, making up 8.3 per cent of our total population. In comparison, 45.4 per cent of Singapore's population is made up of migrants while 28.4 per cent of Australia is made up of migrants¹¹.

Whether they are Malaysians living abroad, or expatriate talent who have chosen Malaysia as home, professionals with global experience tend to be highly educated and well-networked, having the advantage of experiencing a diverse variety of socio-cultural beliefs and lifestyles from living abroad.

Global talent are able to contribute to the nation's development by playing the roles of investors, innovators, and first movers in the growth of important sectors and in the development of human capital. Offering their knowledge and expertise to the local workforce, the existence of global talent opens access to many benefits, including the potential for growth in high- and mid-skill jobs, and the opening of access to a global workforce.

Growing a Global Workforce through the REP and RP-T

In the June 2015 report, *Improving the Effectiveness of TalentCorp's Initiatives*, the World Bank assessed the effectiveness of TalentCorp's Returning Expert Programme (REP) and Residence Pass-Talent (RP-T) in increasing brain gain for Malaysia.

Data collected for the report concludes that both the REP and RP-T are successfully attracting individuals to help fill some of Malaysia's skill gaps. The same report also proposed that individuals with international exposure to global markets, new technologies, and broader know-how are perceived as being more likely to contribute to the profitability of a firm. Employers are willing to significantly compensate such talent, with REP recipients earning 2.3 times more, and RP-T recipients earning 4.3 times more than what a comparable local earns.

The **REP** targets Malaysians abroad who are at the top end of the skill/education distribution and provides them with fiscal incentives and legal benefits to return to Malaysia. Through the World Bank's study, the REP is deemed to be effective in attracting people with the skills that Malaysia needs. Additionally, its effectiveness increases by over 40 per cent for individuals who already have a job in Malaysia when they apply for REP.

The **RP-T** was introduced in 2011 in efforts to retain top expatriate talent in Malaysia. The programme offers a 10-year residential pass to highly qualified expatriates who have stayed in Malaysia for at least two years and are keen on continuing their residence in the country for a longer term. Efforts have been made in early 2017 to streamline the application process, such as setting up the Malaysia Expatriate Talent Service Centre (MYXpats Centre).

⁹ *Improving the Effectiveness of Talentcorp's Initiatives: Assessment Of Returning Expert Programme & Residence Pass-Talent* (The World Bank, 2015)

¹⁰ Total International Migrant Stock (World Bank Statistics: <http://bit.ly/2ptEhSG>)

¹¹ International Migrant Stock (% of Population) (World Bank Statistics: <http://bit.ly/2qVbRIR>)

Checkpoint 2018: Where Do We Go From Here?

While Malaysia has progressed in our journey towards becoming a high-income nation, we face increasingly stiff global competition in efforts to grow our talent base. Integral to achieving our national economic development goals is the ability of our workforce to adapt and cope with the increasing demand for skilled capabilities and quality output.

Skills mismatch remains a challenge as the country continues to churn out graduates for the marketplace. Coupled with increased desire from industries for the Government to intervene in human capital policies and initiatives, improved attempts must be made to dissect the profile of our national talent pool in order to enhance talent quality and employability, especially of our graduates.



Image 5 We are at an important crossroad in Malaysia's journey towards becoming a high-income nation.

Addressing Skills Mismatch by Understanding Talent Demand and Supply

In order to help us understand what the market demands of our talent, TalentCorp came up with the national Critical Occupations List (COL). The document, first issued in 2015, presents an annual set of data for high-skill occupations within Malaysia's critical growth sectors. Developed together with the Institute of Labour Market Information and Analysis (ILMIA) under the Ministry of Human Resources (MoHR) in line with international best practices with guidance by the World Bank, the COL will continue to expand to create a comprehensive map of Malaysia's most demanded skills and talent.

As part of a holistic approach to talent strategy, TalentCorp's Nurturing Expert Talent (NEXT) initiative forms vital links between education, employers, and employability. For talent, the NEXT profiling system offers deep insights and helps them understand the environment they may thrive in, based on internationally-recognised research and methods. For employers, NEXT doubles as a talent spotting and management tool, with a framework ready to take on the demands of the future workforce. More importantly, NEXT functions as a national talent data analytics platform that will help TalentCorp map current and future talent, while identifying and forecasting talent and market needs.

While in the earlier years of TalentCorp, the brain drain phenomenon was defined as the physical migration of skilled talent from Malaysia for other countries, today this loss of talent includes the departure of half the nation's workforce. A large number of women, who make up over 60 per cent of the country's graduates, are leaving our workforce in the prime of their careers, most never to return.

Throughout the years, TalentCorp has also learnt that the nation needs to tap on a diverse wealth of backgrounds and experiences to breed a more innovative and productive workforce. The economic growth and transformation we seek as a nation must be built to last, by leveraging on the diversity of the Malaysian people.

As technology continues to shrink global borders, corporations and enterprises are already evolving in the way they source, organise and manage talent. As talent migration is decreasingly considered a threat, employers are increasingly accepting the need to move people around, and to source for talent from around the world. Talent mobility is now regarded as a necessity to help improve and expand the experiences and competencies of our national workforce.

Given that Malaysia has already made commendable strides in the area of talent development, overcoming the above challenges is definitely achievable. By addressing these areas, the country will be poised to become a global talent destination that fulfils the needs of both local and global talent.



The Changing Global Talent Landscape

The Changing Global Talent Landscape

The world has experienced transitional changes brought about by four industrial revolutions within the past 200 years, with each revolution bringing disruptive change in the workplace, society and people.

Although the first three revolutions initiated change, the pace was comfortable and provided sufficient leeway for people to adjust. Each brought about transformational inventions and innovations that eased and improved lifestyles, opening doors and opportunities, offering more jobs and better salaries.

Enter the fourth, new industrial revolution, where billions of people across the world are now being connected by their mobile devices, each containing unprecedented storage capacity and processing power, access to knowledge becomes unlimited and overwhelming. Concepts previously only seen in science fiction movies are now turning into realities: artificial intelligence (AI), autonomous vehicles, energy storage, 3D printing, the Internet of Things, nanotechnology and quantum computing.

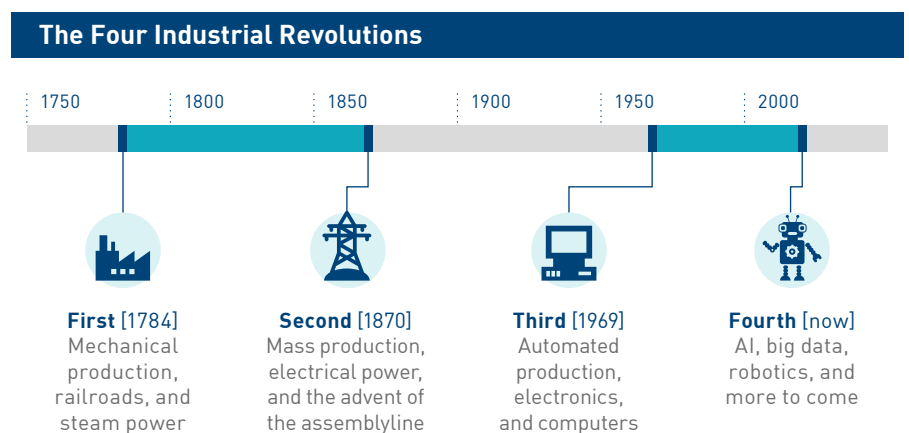


Figure 11 Source: *The Future of Jobs* (World Economic Forum, 2016)

The Fourth Industrial Revolution, building on the technological inventions of the Third, is disrupting industries, replacing and even removing jobs at a higher speed.

The World Economic Forum's (WEF) *Future of Jobs* report states that 65 per cent of children entering primary school today will end up working in jobs that do not exist yet. The report also observes that most specialities currently in demand did not exist five to 10 years ago.

Disruptive labour market changes from the years 2015 to 2020 are expected to lead to significant loss of jobs. The situation is compounded by a global problem: in many countries, talent tends to be produced at varying levels of quality, often instructed in a syllabus belonging to the past. This results in a common problem for many nations – the type and quality of talent that enters the workforce is rarely prepared to meet the ever evolving demands of the new marketplace.

Disruption is Now the Norm

A 2015 PwC survey on the future of work, carried out among 10,000 people in China, India, Germany, the United Kingdom and the United States, identified five megatrends that will transform the way people work over the next five to 10 years.

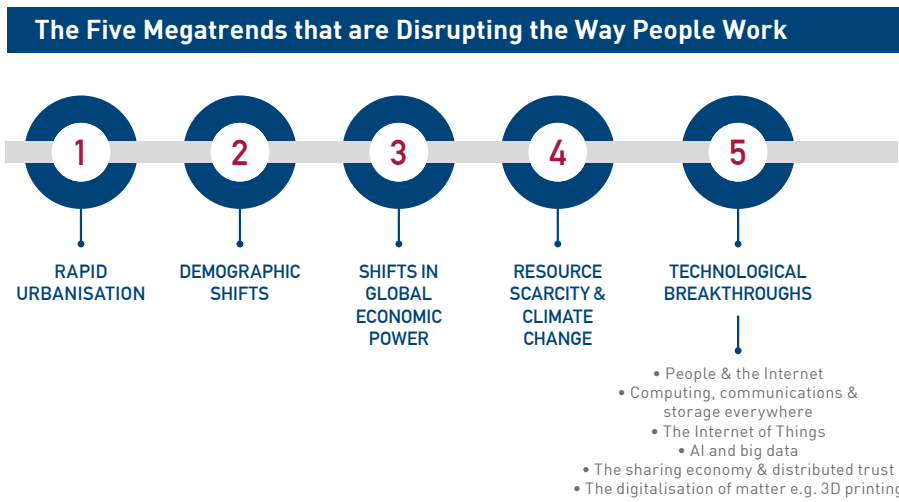


Figure 12 Source: *The Future of Work - A Journey to 2022* (PwC, 2015) and *Deep Shift - Technological Tipping Points and Societal Impact* (World Economic Forum, 2015)

1 - Rapid Urbanisation

The world's urban population is estimated to double between the years of 2010 and 2050 from 2.6 billion to 5.2 billion. In Malaysia's case, this growth is projected to be four per cent on average, making it among the fastest in the region, surpassed only by Lao PDR and Cambodia (both of which have much smaller urban populations) and Vietnam¹².

2 - Demographic Shifts

In many advanced economies, people past the age of 65 are no longer retiring from the workplace. Malaysia is not exempted from this global trend and is expected to be an ageing society by 2035. Data from the Department of Statistics Malaysia (DOSM) indicates that our population will be 41.5 million in 2040, with both genders expected to live longer.

The Employees Provident Fund in Malaysia has asked the public and private sectors to think of ways to leverage on the potential of an ageing society. Among the measures may include legislation that emphasises the rights and protection of the elderly, for example, implementing practices that consider re-employment and elimination of age-based employment policies.

On the other end of the spectrum, developing countries are experiencing a dramatic rise in the amount of college-educated individuals. This has led to the challenge of creating appropriate employability syllabus to help ensure the work-preparedness of the largest employee segment in the talent pipeline.

Women are Gaining Ground

Gender is also proving to be an interesting factor to contend with as women now represent one of the largest pools of untapped labour, where 65 million fewer women are economically active compared to men. Optimised women talent can potentially contribute USD12 trillion to global gross domestic product (GDP) in 2025 - equivalent to the current GDP of Japan, Germany and the UK combined.

The fairer sex has made significant gains in labour force participation and educational attainment, resulting in them playing an increasingly important role in the economy as both consumer and employee. In fact, women will account for USD5 trillion additional consumer spending and more than two thirds of global disposable income over the next 10 years.

¹²East Asia's Changing Urban Landscape: Measuring a Decade of Spatial Growth (World Bank, 2015)



Image 6 China's proposed Belt and Road Initiative focuses on connectivity and cooperation between European countries and China by connecting the Silk Road Economic Belt (orange) and the Maritime Silk Road (blue).

3 - Shifts in Global Economic Power

Power continues to shift from West to East. China is growing more dominant by the day, especially with its Belt and Road Initiative. Many countries are scurrying to sign up for this initiative that China promises to be a boon to a country's economy.

In the West, however, the powerhouse that is the European Union is now seeing problems emerge resulting from the United Kingdom's referendum to exit the bloc. The Brexit has brought a question mark as to what will happen to issues like the movement of human resource within Europe and the United Kingdom.

4 - Resource Scarcity and Climate Change

As our world learns to cope with its increasing population, there is rising concern in terms of how climate change and water risks are linked to food scarcity, with water management already facing immense challenges. The Organisation for Economic Co-operation and Development (OECD) estimates that up to four billion people could be living in water-scarce areas by 2050. The management of water as developing an economy can be a thirsty business.

The science behind this is simple: as countries become industrialised, more fresh water is needed for energy production, with water demand projected to exceed sustainable supply by 40 per cent by 2030. Adding to this, agricultural production will need to increase in the coming decades to feed growing populations and increasing demand for meat¹³.

¹³ *Global Risks Report 2016* (World Economic Forum, 2016)

5 - Technological Breakthroughs

The same PwC report also notes the rapid evolution of technology in six areas, which shows no signs of letting up:



People and the internet

Rapid transformation by a combination of technologies is already taking place in how people connect with others, information and the world around them. Already, a person's "digital presence" can be enhanced through wearable and implantable technologies, allowing new ways to connect people.



Computing, communications and storage

The gargantuan-sized computers of yesteryear have already been replaced by smaller devices, resulting in declining costs of computing and connectivity technologies.

This is driving an exponential growth in the potential to access and leverage the internet. In the future, everyone will have access to a supercomputer in their pocket, with nearly unlimited storage capacity. Some may say this is already happening with mobile technology.



The Internet of Things (IoT)

Internet-connected objects in a similar network that can collect and exchange information through embedded sensors has resulted in groundbreaking strides and lifestyle improvements. Today, the IoT technology has resulted in smaller, cheaper and smarter sensors being created for homes, clothes and accessories, cities, transport and energy networks, and manufacturing processes.



AI and big data

"Bigger, better, faster than ever" is the way of the future, especially in terms of digitisation growing exponentially that in turn creates massive output of data. Naturally, this goes hand in hand with how sophisticated software has become in solving problems. Building on this is the rise of big data usage in decision-making and solution-providing vocations.



The sharing economy and distributed trust

Whole new business models and opportunities for social self-organisation are being created through shifts in networks and platform-based social and economic models, which also means assets can be shared. This in turn creates new meaning to the term 'efficiency'. The emerging technology of blockchain has replaced the need for third-party institutions to provide trust for financial, contract and voting activities.



The digitisation of matter

3D printing is also revolutionising industrial manufacturing, with its fairly low cost of implementation and maintenance resulting in many home-based industries sprouting with new offerings. In the healthcare sector, 3D printing is already enabling a new kind of future, where medical solutions are already moving beyond experimental stages, with researchers in Princeton University using the technology to build fully functional human organs, thus opening the potential for the generation of customised human replacement parts¹⁴.

¹⁴ 3D-Printing is Already Changing Health Care (Harvard Business Review, 2016: <https://hbr.org/2016/03/3d-printing-is-already-changing-health-care>)

While it is difficult to predict the impact of how these new technologies and trends will transform our world, a team of researchers at McKinsey Global Institute have emerged with a list of 12 potentially economically disruptive technologies.

The report, produced in 2013, discusses *Disruptive Technologies: Advances That Will Transform Life, Business and the Global Economy* that could have potential economic impact of between USD14 trillion and USD33 trillion a year in 2025.

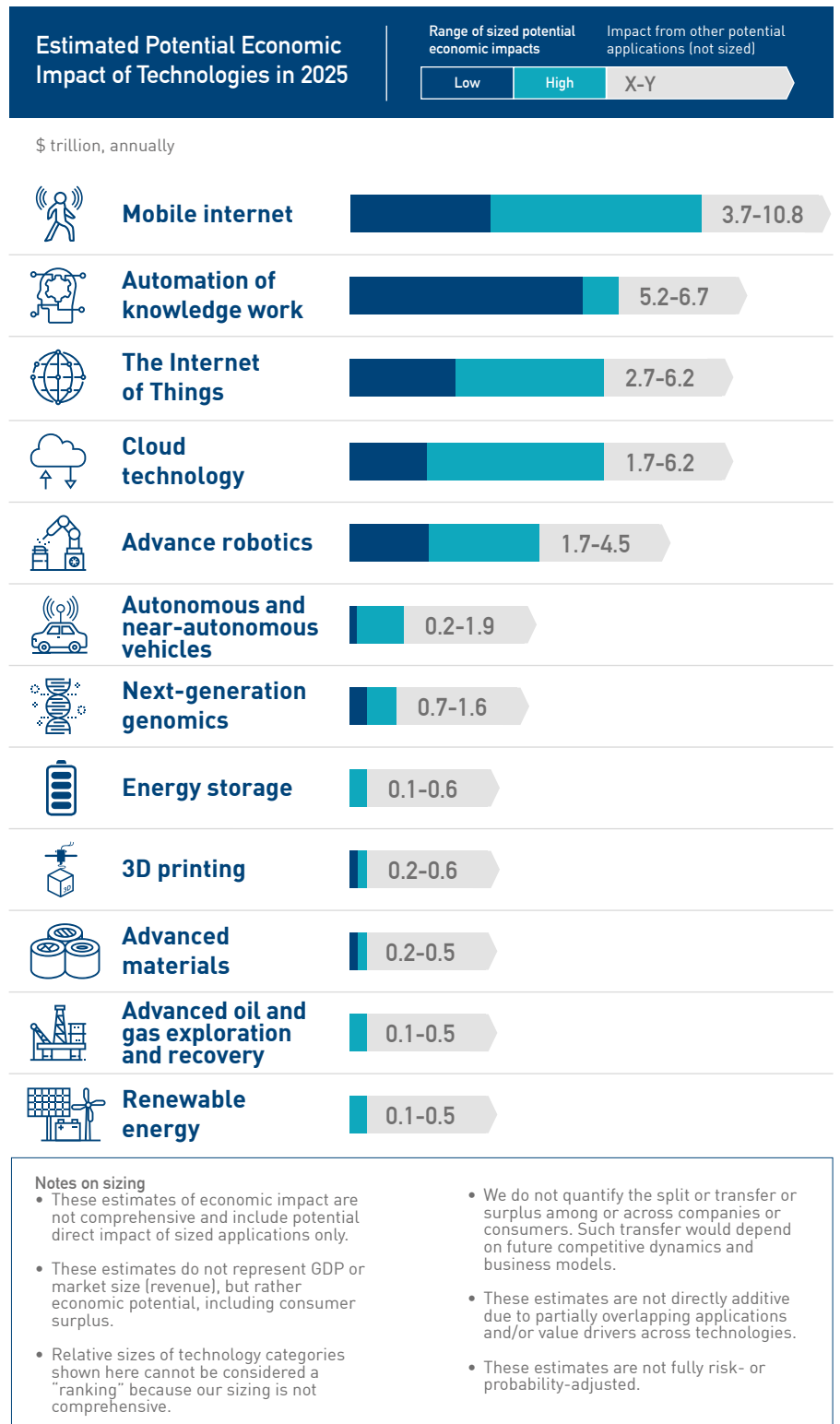


Figure 13 Source: McKinsey Global Institute analysis (McKinsey & Company, May 2013)

The Robots Have Arrived

Most pertinent among disruptions brought about by the Fourth Industrial Revolution would be the challenges on human labour being displaced by automation, robotics and AI. The World Bank estimates that two-thirds of all jobs in the developing world are susceptible to automation¹⁵.

Already, AI is disrupting jobs long considered immune to technological displacement, such as white-collar and creative works. The emergence of technological advances in the financial sector now known as FinTech is already uprooting white-collar work in the financial sector, displacing traditional roles in banking and investment.



Image 7 FinTech has already uprooted and displaced traditional roles in the banking and investment sectors.

AI-driven automation penetrated the healthcare sector some years ago, touching areas of medical expertise such as surgery and diagnosis – specialisations previously thought to be bound to the abilities of a human medical practitioner.



Image 8 The skillsets of surgeons are being replaced by robotics and artificial intelligence designed to give improved patient outcomes.

AI has even moved into spaces once considered exclusive to human creativity. Computers are already able to write articles indistinguishable from those written by humans. In the United States, a tech company called Narrative Science has successfully pioneered a natural language generation software: Quill is a technology able to transform raw data into intelligible reports and articles. This technology has already been adopted by Forbes for its corporate earning reports, and the Associated Press for its financial and sports reports.

In Indonesia, the government implements an odd-even policy in traffic-congested hot spots which only allows cars with odd-numbered car plates to enter the city on odd-numbered calendar dates, and vice versa. To overcome this problem, Grab, the popular ride-hailing service, created a new algorithm to recognise the date, time, location, and car plate number of each ride request and driver, so that Grab drivers are able to enter the congested hot spots at required times.

In Malaysia, UEM Edgenta has implemented the Smart Facilities Management Solution, which employs the IoT to provide energy solutions for smart buildings. The data collected from smart buildings managed by UEM Edgenta goes through their software, allowing it to generate energy-saving solutions based on the information it receives.

¹⁵ World Development Report: 2016: Digital Dividends (The World Bank, 2016)

Gamuda Berhad also introduced its Industrialised Building System (Gamuda IBS), which optimises efficiency through reduced construction time and reliance on manpower. All building elements are completed in a factory-controlled environment, which in turn enhances quality. The building elements are then installed on site in a Lego-like fashion, which reduces wastage and minimises the number of workers on site, subsequently increasing safety levels.

In industry manufacturing, investors are already making the move out of developing countries to developed countries due to advances in AI and robotics. Some businesses have returned to the West where these technologies and talent reside.

The savings obtained from using robots or automation instead of human employees is what attracts investors. Average labour costs in manufacturing in 2025, after adjustments for inflation and other costs and productivity-boosting developments, may be 33 per cent lower in South Korea and 18 to 25 per cent lower in China, Germany, the US and Japan than they otherwise would have been¹⁶.

Closer to home, about 43 per cent of jobs in Malaysia are already at risk of being automated by today's technology¹⁷. For example, increased investment in automation by First Solar in Kulim High Tech Park may result in up to 50 per cent of its human workforce being affected.

While it is true that the effects of AI and automation disruption in countries like Malaysia tend to be moderated by lower wages and slower technology adoption, we should still be cognisant of this fact: the speed of these technological advances will also affect our nation's ability to compete with the world and retain our economic viability.



Image 9 While traditional jobs are being rendered obsolete, opportunities for entirely new vocations, utilising technology and the Internet, are also being created.

In short, we cannot be forever dependent on cheap labour as a buffer against the challenges of the future.

Apart from the challenges from AI and robotics, improved mortality rates are now growing an ageing population that continues to work rather than retire. The demand for experienced expert talent is limiting the number of work opportunities for huge numbers of fresh graduates trying to enter the workforce.

On top of this, there is the issue of climate change, a problem that threatens existing jobs in resource-driven industries, and demands for expertise in skills that can address environmental challenges. In order to gain in our strides as a nation, we must continue to anticipate what lies ahead.

¹⁶ 2017 Global Talent Competitiveness Index (INSEAD)

¹⁷ Khazanah Research Institute

The Future Is Not a Dystopia

Fortunately, while white collar jobs such as office and administrative roles will be negatively affected, those in the science, technology, engineering and mathematics (STEM) fields will gain in the number of jobs. The innovations in technology also offer potential for upskilling, redeployment and productivity enhancement.

Although it is difficult to predict with 100 per cent accuracy which jobs will be created in the future, the WEF has identified the occupations that are on the rise.

Occupations on the Rise

Accountants and Auditors

Biochemical Engineers

Business Servicers and Administration Managers

Commercial and Industrial Designers

Data Analysts

Database and Network Professionals

General and Operations Managers

Geospatial Information Scientist and Technologists

Human Resource Specialist (Managers)

Information Security Analysts

Investment Fund Managers

Managing Directors and Chief Executives

Materials Engineers

Mathematicians, Actuaries and Statisticians

Mechanical Engineers

Organisational Development Specialists

Regulatory and Government Associate Professionals

Sales and Marketing Professionals (Specialised)

Software and Applications Developers and Analysts

Figure 14 Source: The Future of Jobs (World Economic Forum, 2016)

Note: Occupations that are in bold indicate presence in Malaysia's Critical Occupations List 2016/2017

Two jobs are now in critical demand, with increased frequency and consistency in mentions for urgent need: Data Analysts and Specialised Sales Representatives. Increased desire for talent is also seen in industries such as energy, media, information and entertainment.

Clearly, just like all the revolutions before it, this Fourth Industrial Revolution has the potential to create new jobs, raise income levels and improve the quality of life.

Where Malaysia Fits in the Global Skills Scenario

The *Future of Jobs* report by the WEF has stated that on average, by 2020, more than a third of the desired core skill sets of most occupations will comprise skills that are not yet considered crucial to the job today.

As can be seen in the chart below, the highest expected level of skills stability over the 2015–2020 period is found in the media, entertainment and information sector. The biggest amount of skills disruption is expected to occur in the financial services and investors industry.

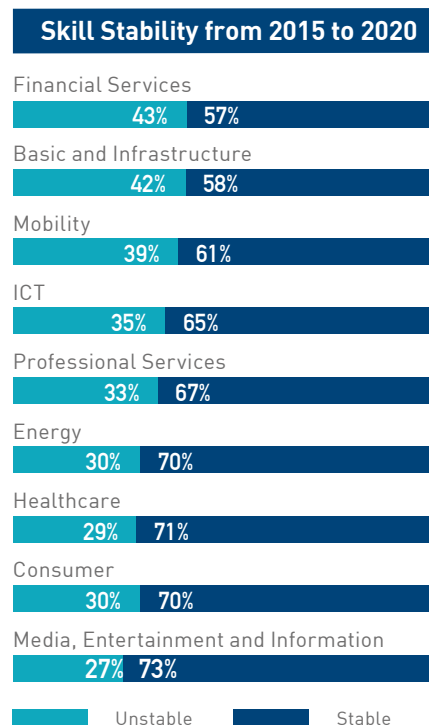


Figure 15 Source: *The Future of Jobs* (World Economic Forum, 2016)

The WEF report identified various reasons for such dramatic shifts in expected skills requirements. For one, in the face of rapidly rising computing power, the ability to work with data and make data-based decisions will become an increasingly vital skill across many job families as employers scramble to build a workforce with solid skills in data analysis and presentation (e.g. through visualisation) and the amount of potentially useful digital information generated and stored keeps increasing exponentially.

Furthermore, businesses in sectors such as energy, financial services, information and communication technology (ICT) are increasingly finding themselves confronted with new consumer concerns about issues such as carbon footprints, food safety, labour standards and privacy.

Therefore, from a skills perspective, businesses will need to learn to more quickly anticipate these new consumer values, to translate them into product offerings and to become ever more knowledgeable about the processes involved in meeting these demands and the impact this may have on their employees' current skill sets and working practices.

As of the third quarter of 2016, the following is a breakdown of employees by sector in Malaysia:

Sector	Number of employees
Financial services	351,400
Mobility	625,300
ICT	219,300
Professional services	367,100
Energy	263,100
Healthcare	599,400
Consumer	5,217,100
Media, entertainment and information	79,300

Note: The numbers are TalentCorp's estimates based on Department of Statistics Malaysia's data

Given that millions of employees in Malaysia are employed in sectors deemed possessing unstable skills, strategic interventions must be done to ensure that their skills are kept up-to-date and not only industry-ready, but future-ready.



Developing a Future-ready Workforce for Malaysia

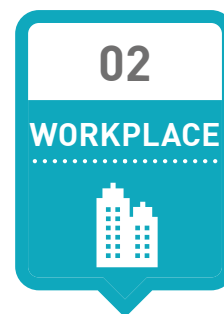
Bracing for the Impact of Industry 4.0

The World Economic Forum's (WEF) *Global Risks Report 2017* very adequately sums up the challenges brought about by the advent of the Fourth Industrial Revolution, or Industry 4.0. Fundamentally changing how people work in three main ways, the Revolution's impact on the global human capital market can be best articulated as follows:

The Impact of Industry 4.0 On the Three Core Human Resource Management Pillars



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



New technologies are enabling workplace innovations



The nature of the contract between employer and employee is changing

Figure 16 Source: *The Global Risks Report 2017* (World Economic Forum, 2017)



Human labour is being displaced

by automation, robotics and artificial intelligence.

While not all jobs will be affected and not all affected jobs will be eliminated, we need to be cognisant that automation can, and will both supplement and replace human labor.



New technologies are enabling workplace innovations

such as remote working, co-working spaces and teleconferencing. This eliminates the need for walled offices in many new businesses, forcing business owners and organisational leaders to be prepared to respond to the demands of a more connected, and therefore, empowered workforce.



Image 10 New technologies enable workplace innovations such as remote working, co-working spaces and teleconferencing which in turn has allowed for a more flexible workforce.



The nature of the contract between employer and employee is changing,

resulting in the standard employment model for core full-time employees giving way to offerings for short-term consulting contractors - who are ever-willing to provide temporary contributions as part of the gig economy.

The shelf life of today's skills are decreasing in light of the accelerating changes brought on by the Fourth Industrial Revolution. At the same time, despite promising disruption, this Revolution also opens up opportunities for growth. The country is now at a critical inflection point, when it comes to our responses to the global mega trends.

For industries and businesses, the Revolution demands for critical and creative responses, or face the possibility of obliteration. While the operational segments of markets must triple up on their efforts to refresh or even, revamp entire business approaches, so must the other relevant stakeholders, including from government agencies, the private sector and the academia.

The expectations are especially higher for skilled practitioners in the human resource management community to collaborate in efforts to face the societal impact of digitalisation and automation.

The question that we need to address is: how Malaysia can seize the upside of disruption? We have already taken the road less travelled with the National Transformation Programme (NTP). The people, regardless of government, private sector or citizen, may have to take the road not yet travelled to survive the foreseeable future. Hard decisions may need to be made.

Malaysia needs to consider five key elements that will define how we face the challenges of the future on our work.

Now that we have realised that Industry 4.0's technological breakthroughs and innovations are forcing us to rise from our comfort zones, we can and should consider the strategies available to help us emerge amongst the winners of the Revolution.

Recommendations



Recommendation 1: Engineering a Robust Talent Ecosystem

Recognising the cards on the table, our imperative and logical next move is to ensure that the national talent ecosystem is adequately robust with the necessary cogs and the machine well-oiled to address challenges from the future's disruptions and upcoming megatrends. This new and future-proof talent ecosystem must be able to ensure the adaptability, sustainability and longevity of our collective human capital skillsets. In turn, this should lead to continued growth and wealth creation for a nation that will reap the benefits of a globally connected network of skilled talent.

Partnerships and strong ecosystems between government, industry, academia and talent need to be forged.

The Government has called for increased public-private partnerships, as industry-academia collaborations are necessary to ensure that our tertiary education syllabus is kept abreast of the latest advancements, and the trends in jobs and opportunities.

Towards this end, the Government has already set up the National Taskforce on Industry 4.0, led by the Ministry of International Trade and Industry (MITI), the Ministry of Higher Education (MoHE) and the Ministry of Science, Technology and Innovation (MOSTI).

TalentCorp, as the national agency tasked to drive Malaysia's talent agenda is also a member of the taskforce, which is made up of five technical working groups led by

- Infrastructure (Malaysian Communications and Multimedia Commission)
- Funding (Ministry of Finance)
- Human Capital (Ministry of Human Resources, MoHE)
- Standards (MOSTI)
- SME (MITI)

Complementary to our responsibilities within the taskforce, TalentCorp is also leading the conversation on the future of work, with a focus on engaging industry players on how best to prepare employers and employees for the challenges of the future on our work, workplace and workforce.

New Talent Ecosystem Required for Malaysia's Future of Work

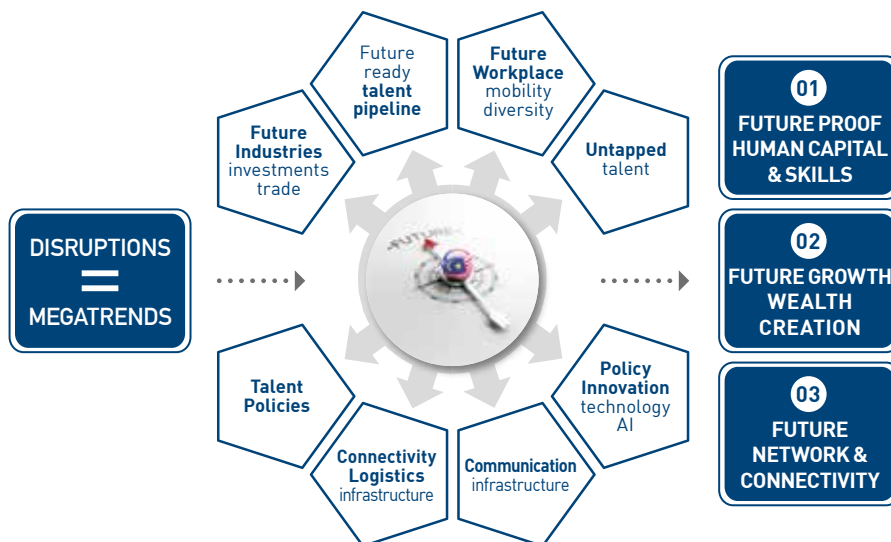


Figure 17 Industry 4.0 presentation (TalentCorp, 2017)



Recommendation 2: Enhancing the Skills and Capacities of Our Workforce

As we seek solutions to quickly populate our high-skill talent pool, we must also address the inequalities between the winners and losers in the technological revolution.

While Industrial Revolution technologies will improve our efficiencies and simplify how we work, it is also replacing jobs of many people, leading to a “skill-biased technical change” where gains of growth will go to those with the right skills. The future promises to create a polarised employment market, one where there are more jobs across the board for high-skill and low-skill workers, but with an increased remuneration gap between the two segments.

Our traditional teaching methods and educational syllabus must be realigned so that we can accelerate education reform towards building 21st century skills. Educators and syllabus designers must admit that today's skills, with their short and decreasing shelf lives, are quickly becoming obsolete.

At the same time, there are gaps in the existing workforce, and therefore a multitude of opportunities to reskill and upskill talent across the levels. The quicker we close the skills gaps within professionals of various education levels, the better will the Malaysia workforce be collectively enabled to react to industrial challenges and impact.



Image 11 Today's children need to be prepared for the workforce of tomorrow.



Recommendation 3: Reforming Our Talent and Human Capital Policies

Through the National Transformation Programme (NTP), we have initiated the necessary moves to ensure Malaysia remains on track in achieving our national economic goal towards becoming a high-income developed nation by 2020. In 2017, the Government declared the need to look further into the future, thus commencing the dialogue to build a blueprint for National Transformation 2050 (TN50).

In light of the possible challenges that lie ahead, we must be willing to reform our policies and programmes related to talent and human capital with the aim of stimulating the right environment for the future of work. New policies that encourage creativity and innovation have led to the growth of Malaysia's very own thriving community of bold, risk-taking start-up entrepreneurs. With support from the Malaysia Digital Economy Corporation (MDEC) and Malaysian Global Innovation & Creativity Centre (MaGIC), these start-ups are embracing the demands of the gig economy, by creating agile business models that cater specifically to the vibrant tech-focused and youthful employee segment.

Concurrently, national-level policies will also encourage shifts in human capital policies within the huge conglomerates in the country, and soon, in the small-to-medium sized enterprises. Since its inception in 2011, TalentCorp has been focused on identifying key strategies and tactical initiatives necessary to drive change in the way we approach our talent.

Acknowledging the demand for more work-life integration and flexibility in the workplace, two requirements of a future-proof workplace has led to the creation of the Life At Work Awards, as well as initiatives to encourage more Malaysian companies to incorporate future-ready tactics into their talent strategies. These includes grants and programmes towards upskilling our fresh graduates, incentives for hiring women who have left the workplace, and finally, grants for employers who take distinctive efforts towards implementing work-life integration policies and facilities in their workplaces.



Recommendation 4: Employing Data to Better Coordinate Our Human Capital Policies

The following list of Top 10 most in-demand skills around the globe in 2016 as reported by LinkedIn strongly suggests that tech skills are going to win the battle for longevity of skillsets, in every industry.

Top 10 Most In-demand Skills Around the Globe

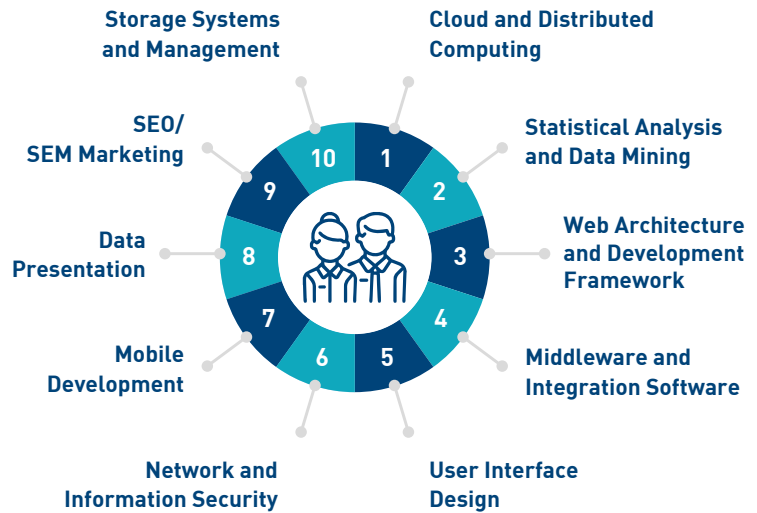


Figure 18 Source: LinkedIn Top Skills of 2016

Indeed, TalentCorp's own undertaking of identifying and matching the right talent with the right market, led to the creation of the annual Critical Occupations List (COL), which is already serving as the cornerstone for Malaysia's talent policies.

The 2016/2017 issue of the COL listed the following top 10 high-skill occupations in demand in our country:

Top 10 Most In-demand Jobs in Malaysia

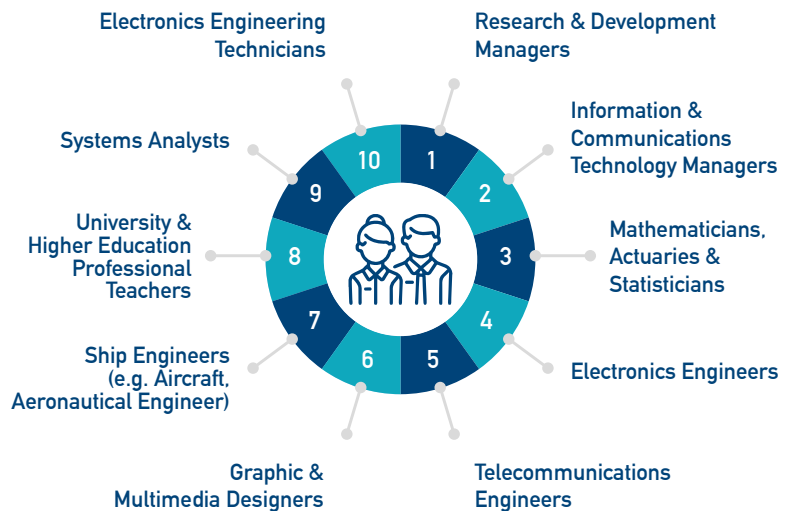


Figure 19 Source: Critical Occupations List 2016/2017 (TalentCorp, 2017)

Both surveys confirm that tech skills are no longer an option – rather, the ability to adapt quickly and pick up digital focused skills will determine a talent's marketability in the future. The reporting of the skills demands aside, both data sets (the LinkedIn version and TalentCorp's COL) were acquired through intense analysis of data points.

We must move away from the mismatched supply of talent, to demand-driven data analytics, so that we can better prepare and predict jobs of the future.

Already in 2016, TalentCorp launched the pilot programme for Nurturing Expert Talent (NEXT), which it believes will become the national talent analytics platform to acquire and analyse information about the quality and ability of the collective Malaysian workforce to meet the demands of our evolving marketplaces.

Clearly, big data is what will provide us with more accurate analysis of the nation's human capital demands and needs. It is also big data that will offer us a transparent understanding of whether our talent pool is sufficiently equipped to face the challenges of the future.



Image 12 Students participating in the pilot programme of Nurturing Expert Talent (NEXT).



Recommendation 5: A National Talent Action Plan for the Future of Work in Malaysia

Finally, we must move beyond recognising the threats and opportunities that come with Industry 4.0 and quickly transit into a concerted planning mode. There is no one-size-fits-all, future-proof strategy that will be available for Malaysia to adopt and implement for our country. Therefore, we need a comprehensive talent action plan tailored specifically to Malaysia's needs.

The establishment of Talent Compact 4.0, the industry advisory panel for talent, aims to address the country's need of an enhanced talent strategy for the future of work, by bringing together expert advice from Malaysia's industry leaders and champions for human capital to convene at least twice a year in meetings to discuss and deliberate on recommendations for the country's future of work.

Chaired by Dato Sri' Idris Jala, a member on TalentCorp's Board of Trustees, the panel will serve as an independent advisory panel to assist in the development of the *National Future of Work Action Plan*.

Talent Compact 4.0 currently consists of the following industry experts and leaders:

- Tan Sri Datuk Dr Rebecca Fatima Sta Maria, former Secretary-general of MITI
- Tan Sri Zarinah Anwar, former Chairman of Securities Commission Malaysia
- Tengku Dato' Sri Zafrul Aziz Tengku Abdul Aziz, Group CEO of CIMB Group
- Datuk Mark Rozario, CEO of General Electric Malaysia
- Datuk Prakash Chandran, President & CEO of Siemens Malaysia
- Dato' Yasmin Mahmood, CEO of MDEC
- Albern Murty, CEO of Digi Telecommunications
- Chong Chye Neo, Managing Director of IBM Malaysia
- Nora Abd Manaf, Group Chief Human Capital Officer of Maybank
- Sajith Sivanandan, Managing Director of Google Malaysia, Vietnam, Philippines and New Emerging Markets.

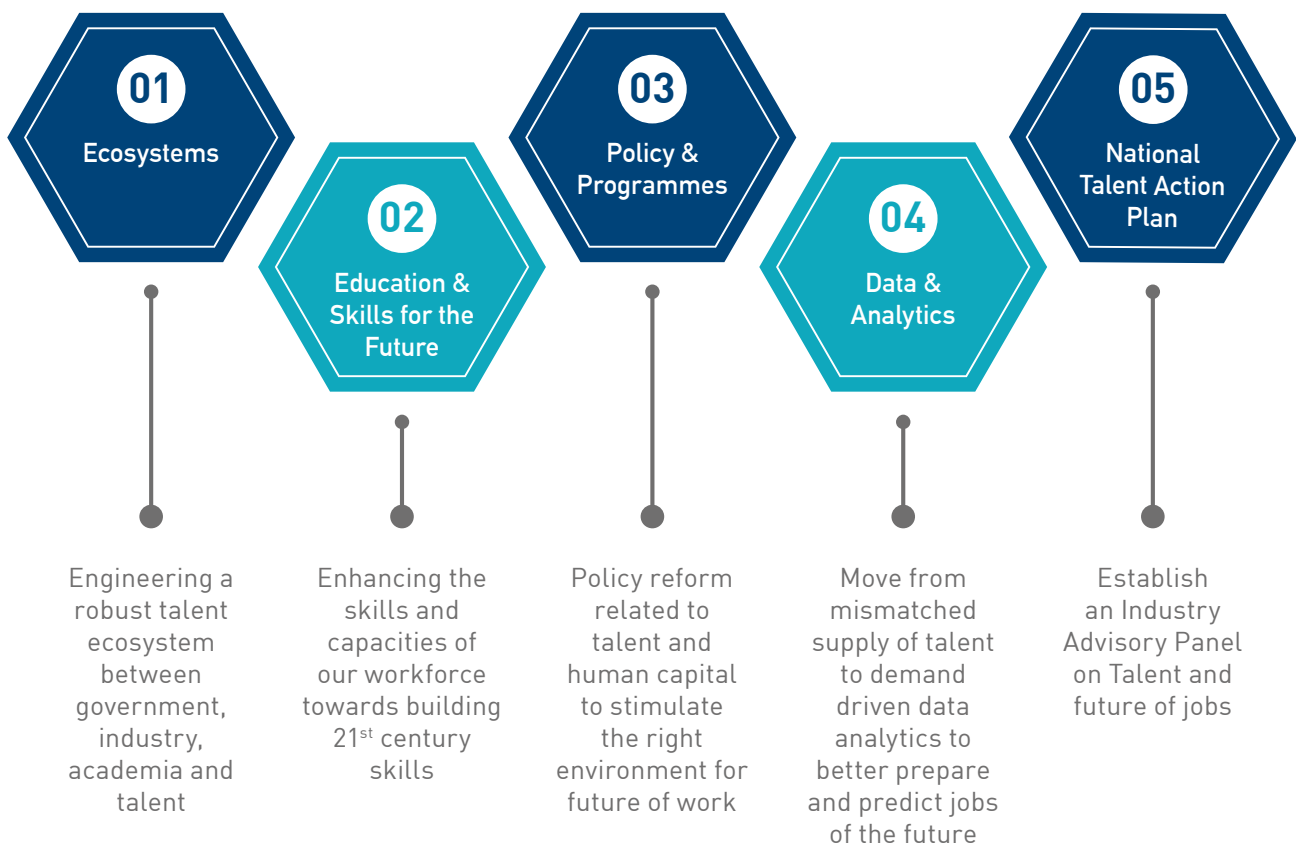


Image 13 The Talent Compact 4.0 panel comprising industry leaders and experts in discussion on recommendations for the country's future of work.

Given that TalentCorp's key priority for 2018 to 2020 is to ensure that Malaysia is able to smoothly transit into a workforce that is ready for the future of work, the commitment of these industry experts and talent advocates as panellists on Talent Compact 4.0 will ensure that TalentCorp takes into account the essential perspectives required for a relevant and actionable national plan.

Talent Compact 4.0 is expected to provide insights and recommend the strategies and interventions needed to ensure the nation's talent ecosystem is sufficiently agile and ready to face the challenges of the future and its disruptions on our work, workplace and workforce.

Summary of Recommendations for Malaysia's Future of Work



What Industry Leaders Say About Malaysia's Future of Work



Alois Hofbauer
Managing Director, Nestlé Malaysia

Malaysia's strong fundamentals, vibrant business ecosystem as well as motivated and highly talented youth already make it a destination of choice for international organisations. Heading towards TN50, it will remain vital for the Malaysian talent of the future not only to be able to anticipate and prepare for, but also to seize the opportunities, presented by fast changing global trends.

The changing face of our work environment is rapidly reshaping the way we do business. The workforce of the future will excel in virtual collaboration, computational and adaptive thinking and social and cross-cultural intelligence in a connected and collaborative digital world.

Using the word "different" to describe the future workforce may be an understatement. Fuelled by changing demographics, business environment, advancement of digital technology, our workforce and work experience are already transforming. Our talent should be nurtured right today to enable them to flourish and win in the future global market. This has to be done fast.

The future workforce is going to be much more diverse and therefore it is important to be able to harness the value of diversity and build positive relationships. We cannot accomplish things alone. Personalised experience, both employee and customer, becomes paramount. People who thrive in this new world would be those who are innovative and who can navigate complexity, collaborate well and embrace diversity.



Dato' Hamidah Naziadin
Group Chief People Officer, CIMB



Haroon Bhatti
Chief Human Resource Officer, Digi Telecommunications Sdn Bhd

Malaysian talent are second to none in the region; they can play a big role in the digital economy that connects our world even more tightly together than before. They have to be developed and nurtured to compete at the global stage, not just at the regional level, so that they can be at the forefront of innovation, creating the next big idea, stepping up to new opportunities in development, and be well-sought after as talent exports.

I envision the workforce of the future to be much larger and more on-demand than today. As the on-demand model helps businesses scale and run development cycles faster while keeping businesses smart on risks and costs, it will also provide more flexibility to professionals and empower them to choose jobs that excite and engage them.



Lai Tak Ming

Director of Group Human Resources & Administration, Gamuda Berhad

In this rapidly changing workspace, it is more crucial than ever that our future talent have learning agility – focusing on their ability to continuously adapt and master the skills of perpetual learning. Critical thinking that allows the intelligent application of knowledge and information into meaningful and effective outcomes, the art of building relationships, and the art of intuition and wisdom are also important skills to have.

The gig economy is a given and will continue to rise in reshaping the business landscape. There would consequently be an increased blurring of lines between work and personal as already happening today. Amplified by the shifting balance of values and demographics, there will be drastic change in the future of our workforce. The big challenge would be how organisations manage and how do they build morale and loyalty of their core employees, how will organisations be structured, how will they deal with and accept contractors or freelancers.

As a nation, we have every possibility to be able to create a space for ourselves in the leadership line-up of successful nations of the future. Human capital development is a critical enabler to drive and sustain our country's growth. With the accelerating pace of disruptions, I hope to see agile and nimble talent, equipped with the skills and expertise to succeed in the world that embodies V.U.C.A., ('Volatility', 'Uncertainty', 'Complexity' and 'Ambiguity').

The skills of yesterday are not going to take us forward into the future. We need to invest greatly in the right education and development approach and eco-system for our people and prepare them now. Our workforce needs to be independent learners, accountable members of society, change-capable, versatile and resilient to seize the endless opportunities of what the future and technology has to offer for growth to be sustainable and inclusive.



Nora Manaf

Group Chief Human Capital Officer, Maybank



Robin Martin

Managing Director, Intel Malaysia

As Intel evolves and reinvents itself, we are looking to grow our workforce with diverse teams, thinking, and leadership styles that will in turn create more opportunities for innovation, creativity, and strategic thinking to drive our growth.

As we move into the future of work, there must be unique points of view that both complement and challenge traditional ways of thinking. We need a workforce that sees potential where most see impossible, that thrives on the cutting edge of technology and transforms the ordinary into anything but. A curious and creative workforce will bring different perspectives, experiences and ideas to the company as we deliver innovative solutions to markets around the world.

Malaysia has strength in diversity – we live in a diverse community and have the ability to adapt to different cultures. This is an asset to most organisations. I hope to see a borderless talent pool in the future, and that we no longer have dialogues on women empowerment as there will be equal representation of women in decision making positions.

As we move into the future of work, we will see our work taking place alongside robotic process automation, from anywhere in the world, anytime in the day and undertaken by various talent segments, including freelancers, seasonal workers and entrepreneurs. Job descriptions will be obsolete; as such, talent who are agile will be highly sought after.



Salika Suksuwan

Executive Director of Human Capital, PwC Malaysia

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