





DIGITAL TALENT INMALAYSIA: Challenges, Opportunities and Trends



'Digital Talent in Malaysia: Challenges, Opportunities and Trends'

summarises findings obtained from a survey to seek input on digital talent needs and challenges faced by private sector organisations based in Malaysia.

In line with MyDIGITAL and the Malaysia Digital Economy Blueprint, the report gathered input on recommendations and strategic enablers to enhance the development of future-ready digital talents who are well-equipped with the skills required to thrive in the global digital workforce.

This survey was conducted through an online form disseminated by e-mail through SERI and SCMO networks from July 1st to 9th 2021 and results were tabulated on an aggregate basis. Questions required respondents to select from within a scale of options (e.g. from 1-5 in significance or impact with 1 being low or insignificant and 5 being extremely significant) for various statements and they were i) not required to force-rank, ii) statements were not expressed as mutually exclusive and iii) scores were then averaged in order to rank statements.

Respondents were also given options to provide written comments and suggestions through open-ended questions and for these responses, the administrators have interpreted and paraphrased the input where necessary, for ease of reference and to enable broader conclusions to be drawn.

We would like to express our gratitude to all 70 respondents who graciously shared their input and recommendations during the course of this survey.

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Contents

- **01** Executive Summary *01*
- **O2** Demographics of respondents *O2*
- **O3** Barriers to adequate and sufficient talent *O3*
- **O4** Significant factors in meeting digital talent needs *05*
- **05** Digital upskilling: tools and resources *0*6
- **06** Emerging Jobs and Skills *10*
- **07** Digital Transformation Professionals *15*
- **08** Parties/Orgs Best Placed to Address Digital *17* Talent Needs
- **09** Recommendations 18
- **10** Best practices, policies and enablers from other jurisdictions which may work well in the 22 Malaysian context



01 Executive Summary

Survey conducted* by the Strategic Change Management Office (SCMO), Economic Planning Unit and the Social & Economic Research Initiative (SERI) to assess Malaysia's digital talent



Most in-demand Digital Skills

- 1. Big Data Analytics
- 2. Digital Marketing
- 3. Artificial Intelligence

Most in-demand Soft Skills

- 1. Critical Thinking & Analysis
- 2. Analytical Thinking & Innovation
- 3. Collaboration

Top 5 tech roles vacant >3 months 0% 20% 40% 60% Big Data Analytics 53% Data Science 48% Cybersecurity 33% Artificial Intelligence 30% Cloud Computing 25%

* Results based on 70 private sector respondents across multiple sectors; ~50% respondents were large enterprise (>75 employess for non-manufacturing sector; >200 employess for manufacturing sector)

Recommendations

Training opportunities for all citizens Centralization of government efforts Clarity on funding for skills & tech.dev.

Transformation of education

Tech Visa & rethink pipeline

* Sector breakdown of respondents



02 Demographics of respondents

Talent is a key element under the MyDIGITAL initiative to transform Malaysia into a digitally enabled and technology-driven high-income nation, and a regional leader in the digital economy.

The Strategic Change Management Office (SCMO) at the Economic Planning Unit, with the support of the Social & Economic Research Initiative (SERI), conducted a survey to seek input on efforts to build agile and competent digital talent - a strategic thrust under the Malaysia Digital Economy Blueprint.

The Digital Talent Survey had 70 respondents across Micro, Small and Medium Enterprises (MSMEs) and large companies, representing a variety of sectors. 46% of companies were from the technology sector, 13% from the Financial & Insurance sector, and 7% from both Healthcare and Professional Services.



03 Barriers to adequate and sufficient talent

Respondents identified the top two barriers to having adequate and sufficient talent as:

- 1. Skills gaps in the local labour market.
- 2. Inability to attract specialized talent.



Some of the other challenges identified in this area included:

I. Costs :

Respondents identified the costs of digitalisation or adoption of latest technologies as a challenge – and this included the costs of the talent required to adopt technology, given the competitiveness of the labour market for such talent:



II. Quality of talent in local labour market :

Respondents elaborated on the local labour market as being unable to furnish talent that had the sufficient level or type of skill, given the availability of foreign talent options.



III. Adequacy of the ecosystem:

Broader factors affecting the ecosystem of talent were also identified as contributing to the barriers that the respondents faced in securing talent. These included the need for larger companies to contribute to growing talent through engaging local companies for projects and improving higher education to meet employers' needs:



IV. Ability to get employment passes :

Respondents had mixed responses on this, with observations that for companies with MSC status, there were no real issues with Employment Passes but also that greater flexibility in visas is required.

04 Significant factors in meeting digital talent needs

Key factors

Respondents identified the top factor affecting ability to meet talent needs as **insufficient qualified candidates with satisfactory soft skills**, and **insufficient candidates with necessary academic / technical qualifications** being the second most significant factor.



Key segments to upskill

Respondents recognised all segments of an organisation as being generally important to upskill for digital needs, but the most important segments to upskill were identified as Senior and Middle Management.



Digital upskilling : tools and resources

Tools or actions

The top 3 most useful tools or actions in meeting needs for digital talent were identified as :

- 1. Internal training.
- 2. Improving compensation packages.
- 3. Training by external providers.



Respondents were also asked if they had any other input on what was important/ effective/ useful in meeting their needs for digital talent. Responses highlighted the need for talents themselves to embrace continuous learning for their skills to remain relevant, as well as reiterated that physical proximity was less important in a digital world :



Most useful tools/actions in digital upskilling

Government resources

More than half the respondents did not use any Government resources in their digital skilling. Reasons given were:



Of respondents that did use Government resources for digital skilling, the top skilling resource used was the Malaysia Digital Economy Corporation (MDEC).



Respondents varied in their responses when asked for further input, with larger corporations indicating they did not tend to use Government resources as much while others appreciated services of MDEC, SME Corp and MATRADE. Comments included:



Of the Government resources, the following were the top ranked in terms of ability to meet requirements (No. of respondents rating 4 and above in terms of effectiveness) :



Prioritisation for Reskilling / Upskilling

Respondents also ranked the significance of the following initiatives in improving the ability of senior management to advance their company's competitiveness in the digital economy as follows:



Further suggestions

Respondents were also invited to share any other suggestions on initiatives or support that would have meaningful impact, and these included:

I. Financial incentives to be provided to encourage and support companies in adopting technology and accelerating upskilling:



II. Culture/ education/ awareness initiatives to create an environment that motivates and galvanises the corporate community to prioritise digital upskilling, whether internally or externally. Examples included:



III. Improvement of Skilling Content to enable companies to meet specific needs was another theme that emerged from respondents, that indicated that current content can be enhanced to be able to meet the particular needs of an industry or business:



More specific training e.g., cyber security and privacy for Directors, as it may have bigger impact to the organization.





To include content on financial literacy skills in relation to digital adoption.





Improved development of training courses / skills needs for business leaders, with pathways based on their respective industries and business direction.



06 Emerging Jobs and Skills

This section will cover digital skills, soft skills, emerging technologies, gig work, and hiring for tech roles.

Digital skills

Respondents were asked to identify which digital skills were necessary for their organisation. Big Data Analytics and Digital Marketing were the digital skills most sought after by employers, followed by Artificial Intelligence, Data Science, Cybersecurity, and Cloud Computing¹.



Most in-demand digital skills

¹ This section will cover digital skills, soft skills, emerging technologies, gig work, and hiring for tech roles

Soft Skills

Respondents were also asked on what soft skills they found most necessary. Critical thinking and analysis, analytical thinking and innovation, and collaboration topped the list of soft skills, followed by English proficiency, and communication.

Below are the soft skills required by employers, ordered according to importance indicated by survey respondents :



Emerging Technologies

According to the World Economic Forum², the following are the technologies likely to be adopted by 2025 :

Cloud Computing	Robots, non-humanoid (Industrial automation, drones)
Big Data Analytics	Augmented and virtual reality
Internet of Things/Connected Devices	E-commerce and digital trade
Encryption and Cybersecurity	Distributed ledger technology (e.g., blockchain)
Artificial Intelligence	3D and 4D printing and modelling
Text, image and voice processing	Quantum Computing

Survey respondents were asked to indicate how well the labour market is able to serve their existing digital talent needs in the above technologies.

WEF_Future_of_Jobs_2020.pdf (weforum.org)

On average, only 4.8% of respondents felt that the existing labour market is able to fully meet their digital talent needs. Even among the top 5 technologies for which the labour market was able to meet talent needs, the degree to which the needs were met was low, with e-commerce and digital trade topping the list at 58%.⁴



Part-time workers, contractors, and freelancers

With the global gig economy estimated to contribute US\$2.7 trillion, or 2% of the global economy by 2025⁵, the Digital Talent Survey sought to understand the extent of part-time or gig workers' involvement in achieving an organisation's digital talent needs.

^{3.} Respondents who identified their need as fully met, averaged across the various technologies. Technology options included: cloud computing, big data analytics, internet of things/connected devices, encryption and cyber security, artificial intelligence, text, image & voice processing, robots & non-humanoids, augmented & virtual reality, e-commerce & digital trade, distributed ledger technology, 3D/4D printing & modelling, quantum computing, systems integration.

^{4.} Average of scores awarded across all respondents expressed as a percentage of maximum potential score for each technology

^{5.} https://www.thestar.com.my/business/business-news/2019/04/06/working-in-the-gig-economy

Percentage of respondents which do not use freelancers, gig workers, or contractors to meet their digital talent needs



The cumulative sector breakdown exceeds 100% due to rounding up of the percentages

Percentage of respondents which only use freelancers, gig workers, part-timers, or contractors to meet their digital talent needs



The cumulative sector breakdown exceeds 100% due to rounding up of the percentages

On average, across all technologies, 55% of survey respondents do not engage part time workers or contractors at all⁶, while 4% exclusively engage contractors, freelancers or part-time workers for the above digital talent functions⁷. The remaining 41% use a mixture of talent resources ranging from freelance to

Hiring for Tech Roles

In Southeast Asia, nearly 70% of tech hiring managers say it takes more than three months to fill an open tech position on their team.

According to survey respondents, the following is the breakdown of which tech roles tend toward remaining vacant for more than three months⁹.



Tech roles vacant more than 3 months

- 8. Robert Walters SEA | Five Lessons in Tackling the Tech Talent Shortage (robertwaltersgroup.com)
- ^{9.} Average score represented as a percentage of the maximum total score.

^{6. 55%} of respondents provided a score of 1 across all technologies, indicating that they do not use freelancers, part-timers, or contractors to meet their digital talent needs.

^{7.} Only 4% of respondents provided a score of 5 across all technologies, indicating that they only use freelancers, part-timers, or contractors to meet their digital talent needs

The reasons for the prolonged vacancies include challenges surrounding the talent ecosystem, skills, budget, and immigration. Below are comments from survey respondents:



99

07 Digital Transformation Professionals

While digital transformation cannot take place without technology, meaningful digital transformation requires a combination of technology, data, process, and people (behaviour, mindset, organisational change, and culture).

According to Harvard Business Review, most digital technologies provide possibilities for increased efficiency and customer satisfaction; however, if people lack the right mindset to change and existing organizational practices are flawed, digital transformation will simply digitalise and magnify those flaws.¹⁰

Digital transformation managers are in charge of leading the development and execution of an organization's digital transformation strategy. They align teams, determine business requirements, and look for technology capabilities within the internal infrastructure as a vital component of the business. Respondents adopt a variety of means to achieve transformation with a clear preference for majority upskilling existing managers to equip them for digital transformation.



08 Parties/Orgs Best Placed to Address Digital Talent Needs

The survey asked respondents to indicate the parties which are best placed to act to address digital talent needs. Responses emphasise the need for :

- 1. Multi-stakeholder collaboration.
- 2. Public-private partnerships.
- 3. Recognition of massive open online courses (MOOCs).
- 4. Transformation of existing education and talent development efforts.

Respondents identified key government stakeholders as the Ministry of Human Resources, MDEC, HRD Corp, MATRADE, MIDA, Ministry of Entrepreneur Development and Cooperatives, Ministry of Higher Education, and the Ministry of Education.

Below are some of the responses provided to the question 'Which parties are best placed to act to address digital talent needs?':



09 Recommendations

This section sets out the recommendations based on comments and feedback received from survey respondents. In summary, they are :

- i. Improve the talent pipeline with reskilling and upskilling
- ii. Greater engagement with the private sector and all stakeholders, and better clarity and access to resources as well as **leverage on Public- Private** Partnerships.
- iii. Education and training :
 - 1. Transform education from as early as pre-school, to respond to needs.
 - 2. *Improve graduate readiness,* e.g. more internships, regular industry engagement.
 - 3. Uplift the status of **technical vocational education** and training as a solution to address talent needs in line with technological innovation.
 - 4. Evaluate relevance of curricula and redefine the role of the Malaysian Qualifications Agency (MQA).

iv. Transformation of Human Resources.

V. Develop Malaysia as a Digital Talent Hub.

A more detailed analysis of the recommendations provided through the survey is set out below:

Improve the talent pipeline with reskilling and upskilling

Recommendations:

- Implement a program to train specialized high demand digital skills for interested individuals and provide priority hiring opportunities for these candidates.
- Close collaboration with industry and enable reskilled and upskilled talents to be channelled directly to the industry.



The war for talent is a gap that will never be filled. Market forces will dictate the way talent is distributed. Supply should be shaped by talent that is developed to be flexible and adaptable in learning new skills and having strong control of soft skills.



Understand private sector challenges

Recommendations:

- Private sector, especially micro, small, and medium enterprises (MSMEs) require more clarity and access to resources and funding for them to train employees. For example, increasing ease of access to information via the consolidation and centralisation of government resources.
- Survey respondents also requested that government regularly engages the private sector to better understand the needs and challenges faced. Cost factors must also be understood, as this greatly impacts hiring ability, particularly for digital talents.
- The Malaysia Digital Economy Corporation (MDEC) Work in Tech (MyWIT) program is one good example of the government's effort to assist the private sector, as one survey respondent shares below:

The current Work In Tech (MyWIT) program from MDEC is very beneficial. It is helping to subsidise our hiring cost, to acquire the right digital talents we need. This support is mostly needed for a period of six months to a year. From there onwards, the results of our digital product sales, increase in efficiency, and higher billings due to increased value will allow us to retain and manage the cost on our own.

Transformation of Education – from Pre-school to Higher Education

Recommendations:

- The education system needs to respond to the requirements of the industry so that we have the right talent for the specific skills and roles.
- To relook and review our education system from as early as pre-school. In addition to tertiary education, our primary and secondary syllabi must advance and keep up with the changing economy.
- Rethink higher education strategy:
 - 1. Higher education system to produce industry-ready individuals by offering relevant courses based on industry needs.
 - 2. Academic programs in tertiary educational organizations must produce graduates that meet industry demand with necessary skills.



Graduate industry-readiness

Recommendations:

- More internships in technology companies
- Regular engagement with industry to understand the gaps and work towards a shared timeline to develop talent for industry

Technical Vocational Education and Training

Recommendations:

- Develop more technical vocational schools and elevate the reputation of vocational training to be on par with universities.
- Recognise that being hands on and technically strong is equally valuable to an academic pathway.
- Learning and earning vocational training enjoys an excellent reputation in Germany. The emphasis is on vocational education combined with academic studies and on-the-job training for apprentices.

The apprenticeship route is a genuinely respected and valued alternative to college or university, in that it is shown to increase productivity and profitability of companies that take part in such programmes.

Malaysia could consider a similar approach, and in line with this, we must ensure that technical vocational graduates have access to high quality employment, economic opportunities, and social protection.

Transformation of Human Resources

Recommendations:

- Human Resources Departments need to do more. E.g. active skills development which ensures all levels of employees have access to talent development.
- Data-driven decisions Match future digital jobs and skills required, look at sources of talent and ensure continuous reskilling.
- Full support and scholarships for those seeking to be trained in digital skills

 This should include those who are early-career, mid-career, and at risk of being displaced.
- More technical trainings which are relevant to industry needs and aligned to digital transformation.

Public-Private Partnerships

Recommendations:

• Education institutions to develop new talent, industry players to upskill existing talent, and government agencies to drive talent programs and position Malaysia as the key location for ASEAN digital talent to meet industry demand for capable digital talent.



The education system needs to be tailormade to meet the requirement of the industry so that we have the right talent for specific skills and jobs.

- Constant Engagement with industry to understand the gaps and also work towards a shared timeline to create talent for industry.
- Co-creation and collaboration for industry to train employees in specific focus areas, half funded by industry and government for at least 24 months.

Malaysia as a Digital Talent Hub

As long as there exist opportunities for local companies to thrive, companies will undertake the training themselves to better align with industry requirements. As curation by government agencies is sometimes not at par with industry requirements, training budgets should be democratised. Offer companies an allocation of training credits for them to utilize within the open market. A model to adopt should be similar to how the SME Digitalization grant is deployed – This is a good model for the private and public sector to collaborate without any preferential treatment.



Recommendations:

- Introduce a tech talent visa to bring in high-skilled foreign talent from around the world.
- Upskilling of talent or importing talent into the country.
- Develop a better gig economy model for the private sector, to enable private sector and digital talent to benefit from flexible working arrangements. This must be paired with appropriate social safety nets.
- Investment into the development of digital talent and a digital hub alongside digital infrastructure. Malaysian made products and talents must be given priority to be pushed into the digital global market.
- Consider the relevance of existing agencies, particularly the need for the Malaysian Qualifications Agency to transform in line with the needs of industry. Expedited accreditation of curricula fit for the digital era including short courses, online courses, and massive open online courses (MOOCs) will accelerate the transformation of post-secondary and higher education.



10 Best practices, policies and enablers from other jurisdictions which may work well in the Malaysian context

This section sets out the best practices and policies from which we can learn, based on comments and feedback received from survey respondents. In summary, they are to create:

- i. Government support.
- ii. Clarity on Technology Funding Processes.
- iii. Enable training opportunities for everyone.
- iv. Focus on Execution.
- v. Consolidation of efforts.
- vi. Structural reforms.

A more detailed analysis is set out below :

1. Government Support

According to survey respondents:

- 1. Government Special Grants, Subsidies, Tax Relief will encourage digital talent development.
- 2. Micro, small, and medium enterprises (MSMEs) face many limitations and require the government's full support in order to sustain themselves, especially in the green technology business.
- State support, e.g. in Germany, a key pillar of support is provided by the Fraunhofer-Gesellschaft, a part publicly funded research organization that provides applied science for companies that would otherwise find the cost prohibitive.



2. Clarity on Technology Funding Processes

According to survey respondents:

- 1. Technology funding is critical to enable companies to acquire funding for skills and technology development.
- 2. Current grant processes are very opaque.
- 3. More transparent funding mechanisms will propel Malaysia forward.

3. Develop Local Digital Talent

Survey respondents suggested that :

- 1. Malaysia looks to India and China as examples for how they have developed talent with digital skills.
- 2. Local GLCs and government entities must prioritise organisations which involve local technology players, directly or within their ecosystem. This will develop local capability.

4. Continuous Learning

Survey respondents made the following recommendations :

- 1. Employees should be empowered to take ownership of their own skills development with access to advisors as they move up to different roles. Singapore has a good model on SkillsFuture and the UK has Skillsets UK.
- 2. Enable training opportunities for all, regardless of age, background, qualification, or employment status.

5. Strengthen Malaysia's Digital Talent Brand

According to survey respondents:

While Singapore's talent strategy has been well recognised, the Malaysian digital talent brand needs to be strengthened.

6. Focus on Execution

According to survey respondents:

While Malaysia is well-known for having the best white papers, strategic roadmaps and blueprints, we can do more to improve on execution and operationalisation of these plans. A democratised model is best.



7. Consolidation of efforts

Survey respondents suggested the following:

Centralisation of government efforts to build digital skills. One agency, one portal, covering all the professional qualifications e.g. AWS certificates, Microsoft certificates.

8. Genuine desire to work together for Malaysia's future

Survey respondents suggested that :

Government agencies must work across silos and ensure alignment to industry and other stakeholders within the talent ecosystem.



9. Structural reforms

According to survey respondents, we should:

- Reduce the number of low-skilled migrant workers and wean companies off foreign labour.
- Leverage the macro trend of permanent remote working to attract and bring in the best tech talent from around the world. This will make Malaysia's labour force more global and competitive.