Digital Upskilling: Dissecting the Challenges and Opportunities Malaysia Faces in Embracing Digital Disruption

This paper summarises key findings from a panel discussion hosted by the Social & Economic Research Initiative, on October 22nd 2020. Panelists were as follows:

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For access to the session recording, please visit https://bit.ly/seridds1

Summary

The SARS-COV 2 virus has created an extraordinary health and economic crisis for countries around the world. This pandemic has unleashed and deepened the existing multitude of divides, reminding us of the need to further dissect the healthcare and socio-economic challenges faced by Malaysia; most of which are systemic in nature.

As the country works to protect lives and livelihoods, the digital world and related connectivity become all the more urgent and relevant, particularly in relation to providing skills development opportunities and social protection for the most vulnerable among us.

Current Landscape

Since March 18th 2020, Malaysia has been responding to COVID-19. The nation continues to be in various forms of movement control orders, impacting both lives and livelihoods. People have had to take pay cuts, take on more work to make ends meet, or are faced with the reality of losing their jobs entirely.

Alongside this we have increasing adoption of automation, artificial intelligence, and machine learning, creating fears of further job displacement. As outlined in research conducted by The Centre, Malaysia has an extensive skills development ecosystem with various program offerings and funding options.
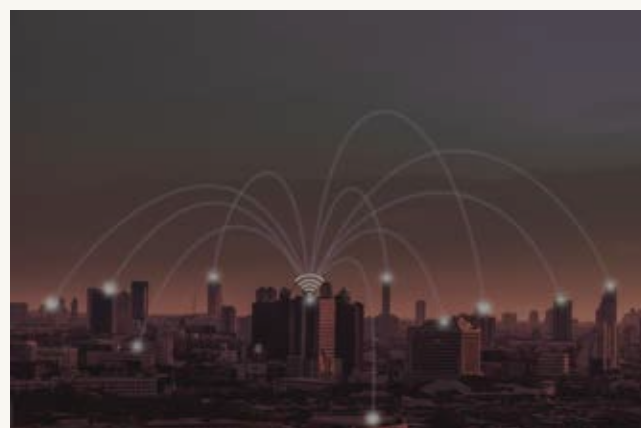
For many workers however, extensive does not mean accessible. There are several challenges that stand in the way of accessing available opportunities and ensuring skills development is accessible to all – people in the workforce, those with precarious roles/at risk of job loss, policymakers, students, and entrepreneurs. This paper summarises the challenges and opportunities presented by digital upskilling and digital disruption.

Key Issues and Challenges

Accessibility to Data

Data is both the lifeblood of the digital economy, and of future-proof policies. While data is the new oil, both data and oil are less valuable in their unrefined state. Policymakers and legislators must have reasonable and timely access to data in order to effectively determine and address gaps.

Today, data silos continue to exist, preventing researchers and policymakers from turning data into actionable insights. Justifications for the inability to share data usually range from policies prohibiting the dissemination of "private data", to technical issues, or privacy concerns.

Only through publicly available data, which concurrently protects the privacy rights of consumers, can we ensure public accountability. In a report by the Khazanah Research Institute published in September 2020, it was revealed that Malaysia did not perform well in all of the established global open data evaluations, and that we have failed to make significant progress on this front over the years.

Malaysia's open data level is behind Indonesia, the Philippines and Singapore as well as many other developing countries. Malaysia's scores have also not improved significantly over the years, reflecting little progress in making government data more open. Clearly this is something we urgently need to work on.

Estonia has led the way in this regard - where 99 percent of all public services are online, and Estonians enjoy access to their respective health information from a decentralised, blockchain-protected database. The government's claim to fame is that they have saved eight hundred years of work time through such connectedness and integrated systems.

Digital Divide

Malaysia's internet penetration rates are well over 100%, indicating that the average Malaysian has at least one way of accessing the internet. However, macro-statistics and averages often do not reveal an accurate picture. Data has to be disaggregated to better understand experiences at the individual level. In Sabah, for example, the internet penetration rate was 80.7% in 2019 – the difficulties of this were illustrated by Vevenoah Mosibin, a Sabahan student who had to spend 24 hours in a tree to take her[1] online examinations.

Internet usage trends show the digital generation gap closing, but the digital gender gap widening. Roland Berger's Digital Inclusion Index assesses ways to reduce digital exclusion, i.e. accessibility, affordability, ability and attitude. This index ranks Malaysia 21st on the list, out of 90 countries, notably significant. Unfortunately, where we perform highly in terms of our ability and attitude, we lag behind in terms of accessibility and affordability.

Exclusion continues to be fuelled by disability, illiteracy, age, wealth, and the concentration of economic activity predominantly in urban areas. Digital and data literacy, data privacy, cyber-safety, and surveillance are just some of the issues that need to be addressed as part of the nation's digital inclusion efforts.

Connectivity

The digital divide is not unique to Malaysia. A recent World Bank report states that half of the global population is still disconnected, highlighting the global need for improved connectivity.

"The importance of applying a comprehensive human rights-based approach in providing and in expanding access to Internet" was affirmed by the United Nations (UN) in 2016. The UN also "request[ed] all States to make efforts to bridge the many forms of digital divide".[2] With the UN's declaration of internet access a human right, several countries such as Costa Rica, Finland, Greece, and India have made it a legal requirement that all their citizens have access to the internet. This does not mean that service is provided at no cost; rather it means that government policy values internet access as a public utility, like water and electricity.[3]

Development of accessible and resilient infrastructure is essential for the functioning of Malaysia's digital economy. What is the way forward? Perhaps it is time for Malaysia to consider treating the internet as a public utility.

Skills development

Connectivity alone is insufficient without the necessary efforts to upskill people and communities. It is important to note that upskilling, while often talked about in relation to technology, is not just about digital skills. While there is increased demand for skills like data analytics and coding, soft skills such as curiosity, innovation, empathy, and adaptability are equally important.

Repetitive tasks are likely to be replaced by technologies such as machine learning and automation, but artificial intelligence cannot replace human emotions and human ingenuity.

Building a culture that will support life-long learning will be foundational to a nation and/or organisation's upskilling journey. The concept of growth mindset must be inculcated from the primary years, in order to create serial learners who view intelligence as a muscle which must be strengthened and developed over time. As technology continues to advance, we too must strive to evolve accordingly, in order to remain relevant.

Education

In 2018 only 44% of Malaysian students were in the STEM stream as compared to 48% in 2012 - an average reduction of around 6,000 students each year. With the closure of schools, the challenges of the digital divide present difficulties for parents and children across Malaysia. 40% of Malaysian students do not have the facilities to participate in online learning, underscoring the fact that remote lessons can only be effective if both teachers and students have the necessary devices and connectivity.

Children today are being educated for jobs that have yet to exist. Are we providing students with the necessary foundation to future-proof themselves, and participate in the jobs of the future?

Talent development

According to the LinkedIn Emerging Jobs Report 2020, Data scientist is the top emerging job in Malaysia, while data engineer is in the top five and data analyst comes in at 12th place. This reflects the government's commitment to secure Malaysia's position as a leader in big data. Initiatives include plans to increase the number of data scientists from 100 to 1,500, while boosting the number of those dealing with data from about 4,000 to 16,000, by 2020.

This supports the contention that while there is structural unemployment and job displacement in certain areas, new jobs are emerging. For instance, quality assurance or maintenance personnel are conventionally expected to conduct in-person physical examinations, and therefore may not be able to work remotely. However, augmented reality (AR) and virtual reality (VR) solutions provide an alternative. Instead of physical examinations, they are able to carry out their roles via technology, and will now have to learn how to use AR and VR technology, as well as remotely operate machinery and/or robots which will aid them in their job responsibilities.

Flattening organizations, reducing bureaucracy, and mainstreaming people with disabilities

- Organizations should strive to be as flat as possible, avoiding unnecessary bureaucracy and hierarchy, and in turn encouraging the flow of talent and ideas across the organization.

- Work is no longer where you go, it is what you do. This allows individuals and entrepreneurs new opportunities and livelihoods, e.g. crowdsourcing, gig-economy, remote and virtual working which allows people with disabilities to be mainstreamed into the digital economy. Before, an inclusive workspace may have required additional physical infrastructure, but today, an organization need only refresh its digital infrastructure to allow people of all abilities to work in the same virtual workspace, if not physical. This transformation brings the need for evolved skillsets, leadership, policies, and workspaces.

Policy Recommendations

While technology has been developing rapidly and has also become a platform to drive inclusivity, we have an opportunity to advance policies by leapfrogging and even replacing policies created for the analogue world, with new policies and regulations more fit for the digital world.

Below are some recommendations:

- **Empower people with individual skills development opportunities**. For instance, providing skills credits which can be redeemed by individuals wishing to upskill or reskill themselves in leading-edge technology such as Artificial Intelligence, Data Science, and Cybersecurity, via Massive Open Online Courseware (MOOCs) such as Coursera and edX. This would cultivate a culture of lifelong learning and increase levels of skills and certification in the country.

- **Democratise access to technology** : Expand access in rural and remote areas to connect everyone, leveraging new technologies such as TV White Space.

- **Develop Open Data platforms to eliminate data silos** and enable a single view of the citizen and/or customer:

  - With the ability to better connect data across an organization, governments (and businesses) can more easily use artificial intelligence and advanced analytics for real-time insights, leveraging critical data to increase efficiency across the organization.

  - In organizations working on critical national developmental areas, anonymized data should be made publicly available, for research and innovation

- **Review education and training systems** to empower people to prosper and workers to succeed in the data economy and digital economy, leveraging digital learning.

  - Jobs of the future increasingly require **a combination of soft skills and hard technical skills.** This hybrid approach must be infused into educational institutions as we work to develop a globally competitive workforce.

Approaches to talent and skills development are often linear, while technology is almost exclusively exponential. The approaches must converge. We can be good at many things, but we should be great at a few things. Malaysia has an opportunity to find her niche, and to achieve this, we must focus our efforts, leverage our strengths and ensure strong linkages between components in our ecosystem.

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[1] *Gong, Rachel. 2020. Digital Inclusion: Assessing meaningful internet connectivity in Malaysia. Kuala Lumpur: Khazanah Research Institute. License: Creative Commons Attribution CC BY 3.0.*

[2] *United Nations Human Rights Council (2016)*

[3] *Gong, Rachel. 2020. Digital Inclusion: Assessing meaningful internet connectivity in Malaysia. Kuala Lumpur: Khazanah Research Institute. License: Creative Commons Attribution CC BY 3.0.*

[4] *https://opengovasia.com/big-data-key-for-achieving-malaysias-digital-economy-aspirations/*

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