

Challenges - Future Alternatives for Malaysian Higher Education 4.0

SHARIFAH NABIHAH SYED JAAFAR
UNIVERSITI KEBANGSAAN MALAYSIA

IMPACT OF 4IR

Resulting issues from 4IR are **unemployment and displacement** of jobs due to:

- i. automation
- ii. digitization
- iii. robotics
- iv. artificial intelligent (AI)

Study by Oxford Martin School projected the **threat of job loss** among developing countries to be **55-85%** while United Nation agency disclosed that **two thirds of jobs** in developing countries might be **at risk**.

McKinsey Global Institute reported that **49%** of present work activities can be automated and **this represented \$15.8 billion** in wages and **1.1 billion jobs** globally.



Engineering and technologically occupations related to 4IR which are on the rise include AI and Internet of Things (IoT) linked occupations such as software developers, application programmers, systems analysts and data scientists as well as engineering occupations.

The 4IR should also be able to facilitate the Sustainable Development Goals (SDGs).



The global digital economy is monopolized by the USA and China based multinational companies.

These companies dominate various social and economic sectors such as **GOOGLE, AMAZON and ALIBABA and UBER.**

Emergence of a new socio-economic model – Gig economy, **promotes employees who are independent** of employers and are in full control of their time and their services.

Gig economy frees the companies of any **responsibilities, benefits and relationship with the employees.**

On top of that, employees will need to **provide the tools** themselves e.g. **GRAB** (cars) and **AIRBNB** (accommodation).

In Gig economy, companies bid for the **cheapest services** offered by individuals.

In some cases, the fees for services have gone down below the **minimum wage**.

Hence, individuals may suffer the **risk of manipulation** by those companies.

E-commerce promotes commercial transactions electronically on the internet for individuals to capitalize on the convergence of exponential growth of internet economy and cross-border e-commerce activities e.g. **MALAYSIA'S DIGITAL FREE TRADE ZONE.**

In digital economy, business transform by shifting from a Transactional Model, which focuses solely on selling products, to **A RELATIONSHIP MODEL WHICH CENTRES ON SELLING SERVICES AND CREATING DEEPER CONNECTIONS WITH THE CUSTOMERS.**

The emergence of Big Data as a result of data integration **SUPPORTED BY AI, DIGITISATION AND CONNECTIVITY DRIVES INNOVATION ACROSS GROWING NUMBER OF PRODUCT AND SERVICES.**

For example, **machine learning algorithms** analyze billions of transactions, understand the markets, address the clients need and demand as well as make business smarter by anticipating trends in consumer behavior.

This is particularly important for **retail, finance, travel, healthcare and manufacturing industries.**

Non automobile jobs such as sales and marketing that require **NEGOTIATION SKILLS** are sought after and those who possess the skills are at an advantage.

The emergence of new technologies **creates entirely new ways** of serving existing needs and significantly **disrupts existing industry** value chain.

Apart from that, there is a greater demand for **HIGH SKILLED TALENTS IN SERVICE INDUSTRIES** (as currently being practiced by Malaysia) rather than **manufacturing industries**.

Despite concerns for job displacements, automation and digisation create new jobs, e.g. **DATA SCIENTISTS, DATA ANALYSTS, ROBOT DESIGNERS** and **MAINTENANCE ENGINEERS**.



IMPACT OF 4IR ON SOCIETY

Society will be highly reliant on connectedness, automation and technological advancement through social media platforms namely **FACEBOOK, WHATSAPP, YOUTUBE, WECHAT, INSTAGRAM AND SNAPCHAT.**

These social platforms promote the **creation and sharing of information, ideas and other forms of communication via virtual communities and networks.**

Digital revolution provides people with opportunities to **connect, learn and earn in unconventional ways.**

The digital socio-economic platform will **bring** billions of **people into the informal and formal global economy** with access to products and services and to entirely new markets such as **ALIBABA, ETSY and LELONG** without going through middlemen.

Social inequality is expected to widen due to potential disruption of the labor market caused by **digitization and automation**.

While technological advances may improve the scope of surveillance by the authority, privacy and trust will become greater issues of concern due to **massive interconnectivity**.

Similarly, as more **data** are shared and captured on the **daily basis**, society may **lose its privacy**.

More transparency and governance of **technology** are needed as **security models** to boost confidence of society.

Intelligent and connected automation may become a disruptive force and raise questions about the relationship between humans and machines.



The revolutions of biotechnology and AI redefine the notion of life span, health, cognition and capabilities which will subsequently reshape our moral and ethical boundaries.

IMPACT OF 4IR ON GOVERNMENT

The government is highly susceptible to **cyber security threats**. This **creates pressure** for the government to increase leverage on security measures.

For example, the **WannaCry ransomware** which affected more than **150 countries in may 2017** was originally a country's cyber weapon that was hacked.

Social media provides platforms especially among the youths to demonstrate social **discontent and attitude** against establishments.



For example, the **Arab Spring revolutionary waves** which involved a series of anti government protests, uprising and armed rebellions that spread across the Middle East in early 2011.

Instability of **labor market** and **inequality of wealth distribution** may affect **social cohesion**.

This phenomenon gave **rise to anti-establishment behavior** such as BREXIT in the UK and the US Presidential Election of Donald trump and could impact **nation-building efforts**

The 4IR results in the government's existence and sustainability being challenged in areas such as **governance, system and processes, strategies and policies.**

For example, **should a government move towards digitization or remain the status quo?**

Intense and more innovative use of **web technologies** will impact **government's regulation and transparency.**

IMPACT OF 4IR ON MALAYSIAN HIGHER EDUCATION

The **economic interest** in the industrial revolution and advancement of technology has labelled individuals as **human capital** rather than human talent.

This affects the perceptions towards the current educational system which **envisages Higher Learning Institutional (HLIs)** to **produce workers** who can fit the needs of the industry.

Hence, **education** has become a commodity with the expectation to produce **industry-ready graduates for the market**.

Higher education is **confronted** with the following issues:

[1] Changing landscape of **employment trends**. Jobs that are available now may be obsolete in the future but **new types of jobs will emerge** to meet the demands of the 4IR.

[2] Changing landscape of **technologies**. The exponential digital age brings with it unfamiliar technologies, hence there is a need to consistently anticipate and prepare for changing skills and new knowledge.

[3] Changing landscape of **demands**. We may be confronted with unforeseen problems and issues in the future.

Higher education sector is **pressured to accommodate** the needs of digital natives who demonstrate the following criteria:

[1] 20% are addicted to the **internet**.

[2] 90% of children and adults play **video games**.

[3] 28% of people aged 18-34 engage in **literary reading**.

[4] Bored by **traditional lectures** in the classroom.

[5] Demonstrated differences in the **use of internet** – females use the internet for social reasons, while males use the internet for virtual games.

UNESCO commenced a study on digital natives and highlight the following:

[1] Digital natives are the **new citizens** of digital societies.

[2] Digital societies lead to **information societies** and knowledge societies.

[3] Digital natives are involved in **networks, collaborative working and collective intelligence**.

[4] Digital natives **learn in a new way** and must be **taught in a different way**.

[5] Digital natives are informed about the **political stakes** in a digital society.

CONCLUSION

While **digitization and automation** are expected to cause significant **job displacement** all over the world, **new jobs are going to be created as well.**

Job displacements, as a result of digitization and automation, can be addressed through a **reform in education** that would affect **curriculum design, delivery and assessment.**

Another impact of the 4IR is **inequalities between countries** as a result of technologies that are owned by a **handful multinationals.**

Developing countries therefore need to address the inequalities through **domestic and international policies** and regulations in maintaining their interest and sovereignty.