



# UTM

UNIVERSITI TEKNOLOGI MALAYSIA

Group C -Technology Information System and Fourth Industrial Revolution

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# THE 4TH INDUSTRIAL REVOLUTION (4IR)

## WHAT IS 4IR?

- THE FOURTH INDUSTRIAL REVOLUTION, ALSO KNOWN AS IR 4.0, IS THE LATEST REVOLUTION THAT THE CURRENT INDUSTRY ARE GOING THROUGH.
- 4IR IS CAUSING MAJOR CHANGES WITHIN THE MANY DIFFERENT INDUSTRIES, MAINLY WITH THE INTEGRATION OF ADVANCED DIGITAL TECHNOLOGY.
- WITH THE ADVANCEMENT OF TECHNOLOGY, SUCH AS THE INTERNET OF THINGS AND CLOUD COMPUTING, THE INDUSTRY ARE GOING THROUGH UPGRADES AND CHANGES ON HOW THEY FUNCTION.
- IN SIMPLER TERMS, 4IR IS THE PROCESS OF AUTOMATING THE INDUSTRY BY INTEGRATING SMART TECHNOLOGY. THIS WILL MAKE THE PROCESSES MORE EFFICIENT, AND MORE SELF-SUSTAINABLE.



## CYBERSECURITY IN 4IR



### WHAT IS CYBERSECURITY?

- CYBERSECURITY IS ONE OF THE TECHNOLOGIES INVOLVED IN 4IR.
- CYBERSECURITY CAN BE CONSIDERED AS A PREVENTIVE MEASURE TAKEN TO PREVENT THE ORG FROM BECOMING A VICTIM OF A CYBER ATTACK
- DUE TO THE INTEGRATION OF MORE ADVANCED TECHNOLOGIES WITHIN THE INDUSTRY SUCH AS CLOUD COMPUTING AND INTERNET OF THINGS, THIS LEADS TO AN INCREASE IN VULNERABILITIES THAT CAN BE USED IN MALICIOUS ATTACKS

### WHEN TO IMPLEMENT IT?

- CYBERSECURITY SHOULD BE IMPLEMENTED WHEN THE ORGANIZATION BEGINS TO USE COMPUTER AND TECHNOLOGIES FOR PROCESSES AND DATA STORAGE.

### WHO MUST USE IT?

- EACH ORGANIZATION SHOULD HAVE AN IT TEAM DEDICATED FOR THE IMPLEMENTATION OF CYBERSECURITY FOR THEIR SYSTEM.
- EACH AND EVERY ORGANIZATION PERSONNEL MUST ALSO ADHERE TO PROPER CYBERSECURITY PRACTICES

### WHY IS IT IMPORTANT?

- A STRONG CYBERSECURITY CAN HELP TO COVER VULNERABILITIES BORN THROUGH THE USE OF ADVANCED DIGITAL TECHNOLOGIES, THUS PREVENTING SENSITIVE AND IMPORTANT DATA FROM BEING LEAKED OR CORRUPTED.

### HOW TO IMPLEMENT A GOOD CYBERSECURITY?

- INSTALL A FIREWALL FOR NETWORK
- USE A CLOSED NETWORK FOR SENSITIVE DATA
- ENCRYPT SENSITIVE DATA & INFORMATION
- BACKS UP DATA AT REGULAR INTERVALS
- DO NOT OPEN SUSPICIOUS LINKS AND EMAILS
- SEPARATE WORK AND PERSONAL EMAILS
- FREQUENTLY SCAN DEVICES FOR VIRUSES
- DO NOT GO TO UNSECURED WEBSITES

### TRIVIA

THE FIRST ANTIVIRUS SOFTWARE WAS CREATED IN 1972 BY RAY TOMLINSON, THE CREATOR OF THE EMAIL SYSTEM. THE ANTIVIRUS PROGRAM WAS NAMED 'REAPER', AND WAS CREATED TO DELETE THE FIRST COMPUTER VIRUS, CALLED 'CREEPER'.

### REFLECTION

- BY HAVING A STRONG AND SECURE CYBERSECURITY, WE WILL BE ABLE TO FOCUS OUR ATTENTION MORE ON THE USE AND DEVELOPMENT OF OTHER TECHNOLOGIES. THIS WILL GIVE US EASE OF MIND, KNOWING THAT THE TECHNOLOGIES INTEGRATED INTO THE ORGANIZATION'S DAILY PROCESSES ARE SECURED.
- THE DATA'S INTEGRITY AND PRIVACY ARE ALSO IMPORTANT, AND A STRONG CYBERSECURITY WILL ENSURE THAT CUSTOMERS AND PERSONNELS ARE WILLING TO STORE SENSITIVE DATA INSIDE THE COMPUTERS FOR MORE EFFICIENT PROCESSES.
- WHILE CYBERSECURITY DOES NOT HELP IN TERMS OF MAKING PROCESSES MORE EFFICIENT AND SIMPLE, IT CANNOT BE IGNORED AS THE RISKS THAT COME WITH THE INTEGRATION OF THE ADVANCED TECHNOLOGIES CAN ONLY BE NEGATED BY A STRONG CYBERSECURITY.



# 4th Industrial Revolution (4IR)



## WHAT IS 4IR?

- 4th Industrial Revolution (4IR) is the latest revolution that today's industry is going through globally.
- It is the advanced manufacturing in the environment.
- Advanced technologies is involved such as **Internet of Things (IoT)**, **Augmented Reality (AR)**, **Artificial Intelligence (AI)**, and many more.
- In short, the 4IR will make the industry a better place as it will cover all aspects of Human Life. It can make the economy more-sustainable, providing a better work-life balance, and gives an opportunity to unite global communities.

## Telekom Malaysia (TM)

### What is TM?

- Telekom Malaysia (TM) is a national connectivity and digital infrastructure provider for Malaysia.

### How does TM supports the evolution of 4IR?

- Understanding on what it means to Malaysia.
- Built the capabilities to support the 4IR in Malaysia through digital government, economy, and society.

### Adoption areas within 4IR

- Cloud/Digital
- Smart City
- 5G



### Cloud/Digital



#### Examples of digitalization services:

- Telco services digitally (**WhatsApp**)
- Television services digitally (**Netflix**)
- Music digitally (**Spotify**)



#### What are the outcomes of the transformation?

- Enhances customer experiences
- Operates efficiently
- Innovative business model

#### How to enable a successful digital transformation?

- Requires a strong digital infrastructure foundation:
  1. Digital Backbone (Process, IoT Automation, etc).
  2. Digital Insights (Business Insights, Product & Customer Analytics).
  3. Digital Engagement (Customer's Experience, Access Channel, etc).

### Smart City



### What is Smart City?

- A technology to intuitively adapt and respond to the needs of the citizens.

#### Examples of technologies in Smart City :

- Traffic lights
- Smart water
- Sensors (Lights, parking lots, etc)



### What is 5G?

- Fifth-generation wireless (5G) is the next generation of mobile network evolution.

#### What can 5G do exactly?

- Faster connection speed
- Improves consumer's experiences
- e-Health
- Autonomous monitoring

#### What is the difference between 4G and 5G?

4G	5G
<ul style="list-style-type: none"> <li>• 30-50ms of latency</li> <li>• 100Mbps per connection</li> <li>• 10K connections per km<sup>2</sup></li> <li>• 350Km/h mobility</li> <li>• Inflexible network architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Few ms E2E latency</li> <li>• 10Gbps per connection</li> <li>• 1,000K connections per km<sup>2</sup></li> <li>• 500Km/h mobility</li> <li>• Slicing ability required in network architecture</li> </ul>

### 5G



### Reflection

- With these advanced technologies, we are able to do things with ease. For example, smart water helps us to monitor our usage of water. Thus, we are able to reduce water wastage.
- With 5G, we are able to do much more than we can imagine. For example, it can even be used to monitor us in real-time for safety purposes with Smart Safety & Security. With that, our safety will be much safer and crimes can be prevented.
- With the 4IR, TM can serve the people with ease and can ensure that Malaysians are connected everywhere with an enriched digital lifestyle. With that, everyone can be satisfied with the technology and services that is being offered.

# What is IR4.0

- Also known as "The fourth industrial revolution"
- The fourth industrial revolution is based on the third industrial revolution, the digital revolution that has occurred since the middle of the last century.
- Infusion of automation to the manufacturing sector
- Featured by technological integration, blurring the boundaries between physical, digital and biological fields.

## People

- To create knowledge workers
- Upskilling
- Certification and job-attachment program
- Awareness

## Process

- Develop process can be accepted by international standards
- Develop process method, SOP and guidelines

## Technology

- Setup labs to create and test product
- Product development & testing
- Pilot project

## What is Cybersecurity Malaysia

An organization under the Ministry of Communications and Multimedia that aims to protect the country's cyberspace.

## How Cybersecurity go toward IR4.0

- Advanced Digitalisation
- Advanced Technologies
- Efficient resource Utilisation
- Higher value-added process

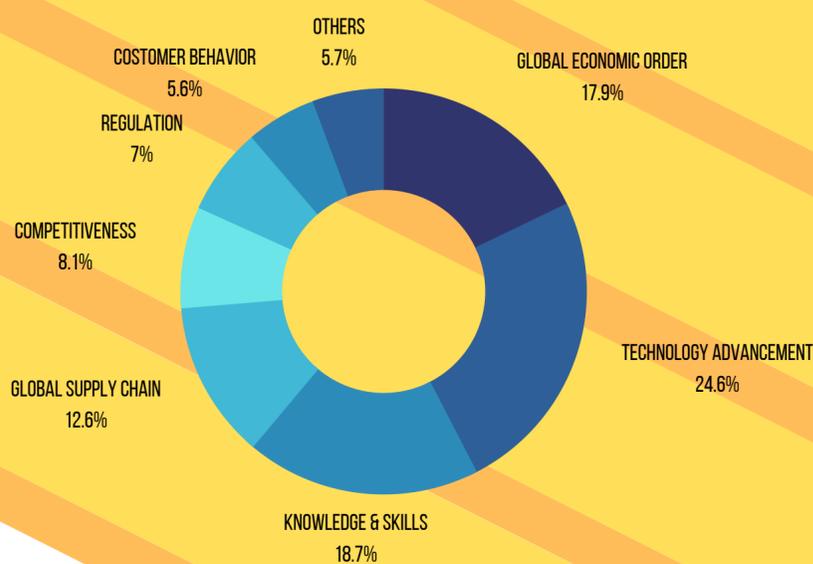
## Why ?

- To enhance efficiency
- Ultimately driving competitiveness
- Bring market value to the service we have

## Factor that impact the Future of Manufacturing in Malaysia

- Global value chains and production areas are constantly changing.
- The labor quality and productivity are high, but the labor cost is not low.
- New technologies are subverting and promoting technology-based production models.

## IR 4.0 Transformation driver



## The National Goals

- Labour Productivity Growth
- Manufacturing Contribution to Economy
- Innovation Capacity
- High-skilled Jobs

## Reflection

- According to the Malaysia Readiness for IR4.0, we can know that our country is in the leading position among 75 country. As we are in the leading position we must exchange knowledge, technology, skills with other country .To enhance our country towards advancement.
- Services related to Industry 4.0 are very important to help Malaysian companies accelerate their transformation, especially in terms of talent training, process transformation and technology application. Therefore, Industry 4.0 service providers need to participate as an integral part of the ecosystem, and often have limited visibility to manufacturing companies, especially small and medium-sized enterprises.

## Issues and Challenges in Malaysia

### DEMAND

- Awareness
- Innovation
- Digital Readiness & Connectivity
- Skill Enhancement
- High Cost of Investment
- Best Practices

### Supply

- Governance
- Funding & Incentive
- Ecosystem Support
- Training Providers
- Standards & Digital Intergration
- Infrastructure

## How to Overcome it?

### Attract stakeholders

- Adoption of Industry 4.0
- SME inclusion
- Preferred manufacturing location

### Create the right ecosystem

- Talent supply & skill levels
- Collaborative platforms
- Digital Infrastructure
- Funding support
- Data availability & sharing
- Innovation capacity

### Transform industry capabilities

- Labour productivity
- Cost efficiency
- Share of high-skilled jobs

### Meeting platform

-Whatsapp

-Google meet

### Credits

-Canva