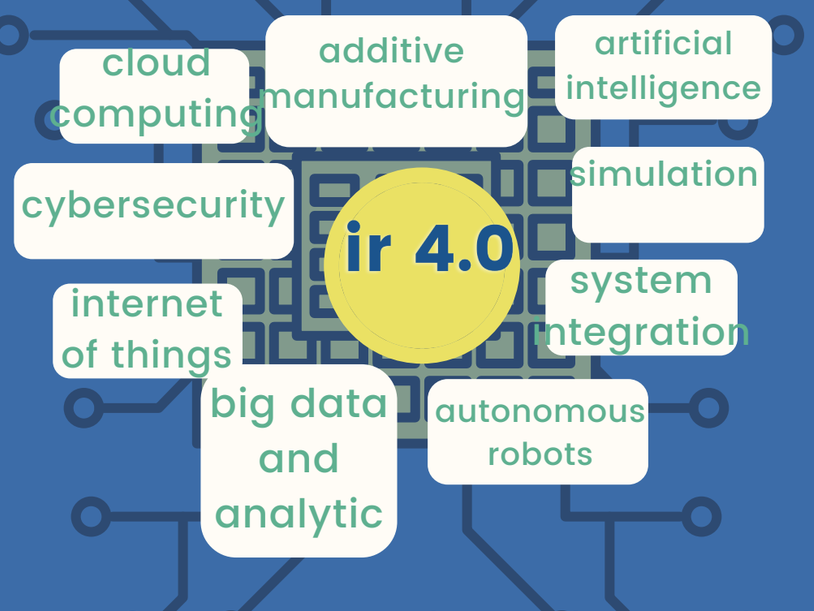
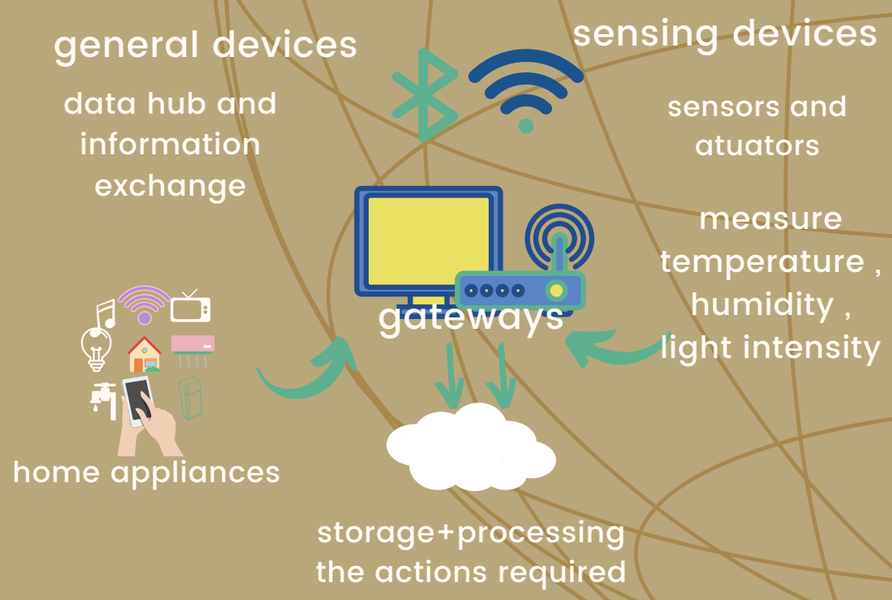
IR4.0 Internet of Things

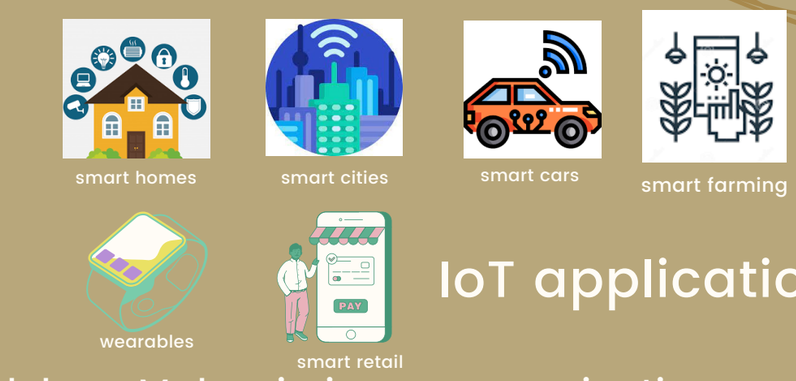
Introduction



There are 9 components that make up Industry Revolution 4.0 and those technologies are utilised to build a "smart factory," in which machines, systems, and humans connect with one another to coordinate and monitor assembly line progress. Sensor data is provided by networked devices, which are controlled digitally. Internet of Things is one of the crucial enabling technology in the Industry 4.0 project as well as a vital component of the digital transformation of businesses, cities and society as a whole . Internet of Things(IoT) is basically focuses on improving the quality of human life, revolutionising the way we live, work, travel and conduct business .

IOT DEVICES



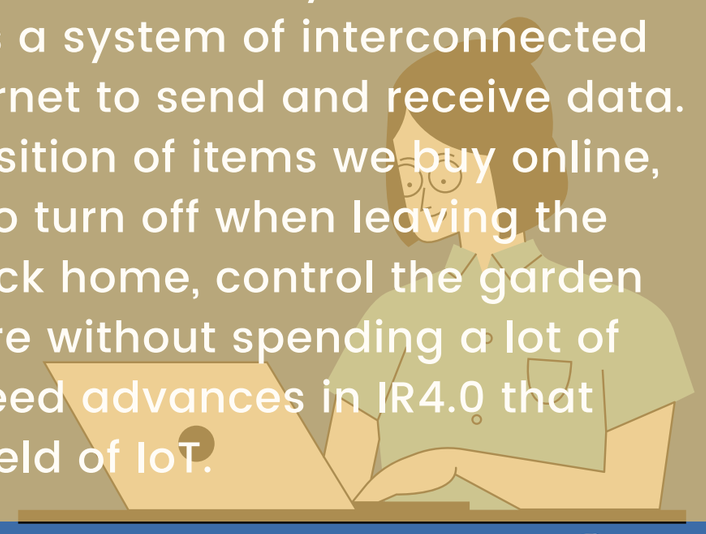


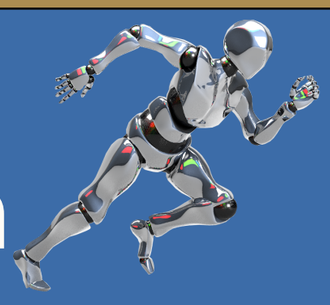
IoT applications

Telekom Malaysia is a communications company that introduces Digital Malaysia which is one of the drivers of industry 4.0 development. Digital Malaysia covers all aspects such as digital environment, digital economy and digital society and all the technologies that are introduced here needed IoT system to function . There are aspects that implement the same technologies (which are listed) showing that it is applicable in our lives in daily basis.

About IoT

Until recently, Internet access was confined to devices such as a PC, tablet, or smartphone, but now, thanks to the Internet of Things, virtually any item can be connected to the Internet and remotely monitored. The Internet of Things (IoT) is a system of interconnected devices that use the internet to send and receive data. o ensure we know the position of items we buy online, turn off lights we forgot to turn off when leaving the house without driving back home, control the garden humidity and temperature without spending a lot of time in the garden, we need advances in IR4.0 that involve expertise in the field of IoT.





Reflection

IoT not only makes life easier in our premises by automating routine chores such as temperature and lighting adjustments, but it can also benefit the environment by ensuring that energy is only used when and where it is needed. TM also introduced SWIMS (smart water integrated management system) which one of the benefits is to reduces water wastage in the country. IoT could also assist people in tracking their own health through wearable devices, providing them more control over their life and health management. With that being said , we are actually enjoying the technologies without leaving environment and health issues behind .

However, our data which stored in cloud are at risk and without deep attention to cybersecurity, important information could be leaked . Therefore, Cybersecurity Malaysia is active through CyberCSI, MyCERT, CyberSAFE and CyberGURU by providing awareness, investigating, protecting information, systems and data in Malaysia so that everything that is worked on (technogies for IR4.0) can run smoothly and rapidly . I am aware that all the developments undertaken by the world are to make our life easier, comfortable, effective and developed .

Based on industry talk with Cybersecurity Malaysia, I found that transformation drivers for IR4.0 also include technology advancement, knowledge and skills. Therefore, I can feel an urge or encouragement that drives me to work hard to master the field that I am involved in so that I can contribute to the progress of IR4.0 in the country . We are living in very wonderful times, and we must take use of the many benefits that technology provides. It's even safe to argue that we're living in its golden era, because it's not overbearing yet, but it is present enough in our lives to make things easier.

4IR: SYSTEM INTEGRATION IN SMART CITIES

INTRODUCTION

A smart city uses information and communication technology (ICT) to improve operational efficiency, share information with the public and provide a better quality of government service and citizen welfare.

LOGISTICS

In terms of logistics, it enables us to see the status of our packages being sent and also make use of digital maps like Google Maps for navigation purposes.

MANUFACTURING

In the manufacturing sector, it allows us to see how well a product is selling in different places at once. This enables us to improve our products in a shorter amount of time from the data obtained.

SMART WATER INTEGRATED SYSTEMS (SWIMS)

System integration also helps to maintain our supply of clean water by giving us the exact data in real time to promote total visibility in the water industry also saves much more time since it doesn't involve manpower

REFLECTION

System integration plays an important role especially in the industrial sector since in the last decade, most of the analysis were done with manpower so there were always flaws and mistakes which makes it hard for companies to promote transparency to its own customers. Now, with the help of 4IR it's all automated and with precise computing processes and 24/7 monitoring by softwares, we are able to make a more accurate analysis and even plan ways on improving the industry in the future.

Therefore, system integration is critical in terms of developing a more advanced and tech savvy country. Most of the tech services involve lots of system integrated so that data is able to be obtained easily.

It is also an eye opener for the public to see how the systems in our country work in order to give us accurate and precise data in real time.

SMART CITY

SUMMARY

During the first talk, we were presented with how TM (Telekom Malaysia) are going to pursue towards a Digital Malaysia. There are also different ways for different situations for instance, if we are going to implement the benefits of system integration in a small rural place it has it's own procedures much different compared to applying it in bigger and more populated areas such as in the city or the suburbs.

As for the second talk, we were presented with how the IT industry is under high demand for IT people. This is because as soon as the country move towards a more digitalised and tech-involved era, we need a higher level of protection in terms of cybersecurity since most of these systems require constant monitoring and frequent updates on the lates security features.

TECHNOLOGY INFORMATION SYSTEM AND FOURTH INDUSTRIAL REVOLUTION

INDUSTRIAL TALK 2 BY CYBERSECURITY MALAYSIA

INTRODUCTION

"SHAPING THE FUTURE OF INDUSTRY"

The Fourth Industrial Revolution is expected to transform how we live, work, and communicate, from self-driving cars to drone-delivered online shopping. We have already seen changes in business models and employment trends. We are now slowly moving past the third industrial revolution and are advancing into Industry 4.0. Unlike the more drastic changes from the previous industrial revolutions, however, Industry 4.0 simply takes the automation and machinery from the third and makes it better. And yet, as artificial intelligence takes over more and more jobs, what do students today need to do to stay in the limelight in future career markets?

ENABLING TECHNOLOGIES

1st Revolution — The industrial revolution begins. Mechanization of manufacturing with the introduction of steam and water power

2nd Revolution — Mass production assembly lines using electrical power

3rd Revolution — Automated production using electronics, programmable logic controllers (PLC), IT systems and robotics

4th Revolution — Autonomous decision making of cyber physical systems using machine learning through cloud technology

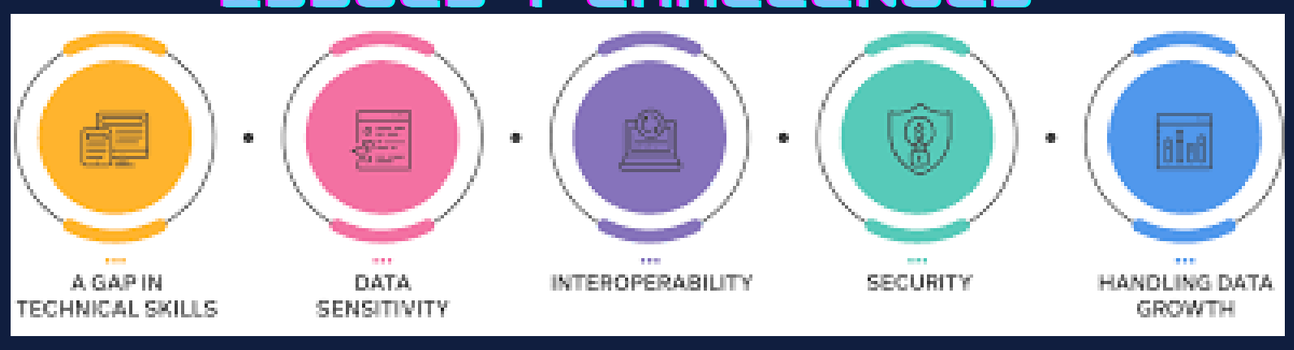
WHAT IS IR4.0 ?

Industry 4.0 transforms the way products are built, designed, delivered, used, and operated. It also enhances and monitors the after-purchase performance like maintenance and servicing. Overall, the 4th Industrial revolution has the ability to transform processes, operations, machinery, supply chain management, and the entire energy footprint of manufacturing firms to create 'smart factories'.

IR 4.0 TRANSFORMATION DRIVERS

1. **Global Economic Order**
2. **Technology Advancement**
3. **Knowledge & Skills**
4. **Global Supply Chains**
5. **Competitiveness**
6. **Regulations**
7. **Customer behaviour**

ISSUES + CHALLENGES



THE NEED TO EMBRACE

1. Global value chains & geographies of production are continuing to shift
2. Quality of labour & higher productivity, but not low labour cost.
3. New technologies are disrupting and fostering a technology based model of production.

MALAYSIA READINESS FOR IR4.0

Malaysia is doing quite well for IR4.0. MITI has launched the National Policy (Industry 4WRD) with the aim of boosting digital transformation in the Malaysian manufacturing sector and its related services to understand their present capabilities in adopting Industry 4.0,

CyberCSI crime scene investigation

CyberSAFE Cyber Security Awareness For Everyone

Cyber Guru

MyCERT Malaysia Computer Emergency Response Team

REFLECTION

From the industrial talk, we have gained a lot of new information about the ongoing process and strategies of Malaysia towards Industrial Revolution 4.0.

Things like cybersecurity, big data, autonomous robots and data systems can make our lives easier and more efficient. Firstly for example, implementation of cybersecurity is important because it protects all categories of data from theft and damage. This includes sensitive data, protected health information (PHI), personal information, intellectual property, governmental and industry information. Having advanced cyber defense programs and mechanisms in place to protect this data is crucial. Everyone in society relies on critical infrastructure such as hospitals and other healthcare institutions and financial service programs. We all rely on the safety of our data and personal information. For example, when logging into an application or when filling in more sensitive data in digital healthcare systems. If these systems, networks, and infrastructures don't have the right protection in place, our data might fall into the wrong hands.

Secondly, knowing the possibilities and the advantages that the Industrial Revolution 4.0 can bring, we can learn from the past and move on with our better lives. Through this revolution of technology, we must appreciate the current technology and its benefits so that we can utilize them to make our country technologically advanced and to compete with other countries internationally.

Therefore, students and graduates need to prep up their skills and knowledge on using and applying technology in everyday life from now on in order to qualify into technologically advanced workplaces. The end goal is for Malaysian manufacturers to be stronger through smart technologies. The government has introduced various initiatives such as readiness assessment, intervention program, high speed broadband connectivity to potential industrial parks. In conclusion, this talk teaches us to pay attention to what happens around us and we need to develop ourselves to be a successful person and be ready for the future changes.

EXECUTIVE SUMMARY

The first half of the talk was filled with a brief explanation and introduction of the industrial revolution such as industry 4.0 transformation drivers and the enabling technologies. This personally gives us a wider and clear view about Malaysia's process to move to IR4.0. After that, she gave a brief explanation regarding Malaysia Readiness for IR4.0, the plan and strategies and also the issues and challenges to transform the whole nation into a brighter future. This section was meant to show how much was the current world and Malaysia's progress and how we as the younger generation can contribute and improvise what we have nowadays.

Other than that, Ms Sarah also shared her experience as Strategic and Project Manager under Digital Forensics Department Cybersecurity Malaysia. Based on Ms.Sarah's experience, she also found out there will be a lot of potential new jobs that are related to IT, especially in the Cybersecurity Field. Some of them were IT security specialist, information security analyst, network security engineer and security engineer. The talk ended with some words of encouragement from Ms.Sarah. She mentioned that it is important for us especially as the students to explore and learn new things within our course. She also highlighted the importance of marketing ourselves to achieve our dream job.

Speaker : Ms. Sarah Khadijah Taylor (Strategic and Project Manager Digital Forensics Department Cybersecurity Malaysia)
Date : 2nd November 2021

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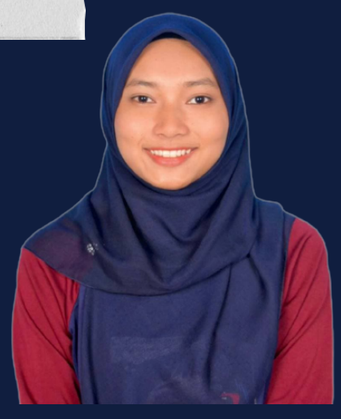
NUR ATHIRA NABILA LUKMAN (A21EC0109)



NORAIN MOHD SULAIMAN (A21EC0106)

CONTENT

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