

Internet of Things



(Category: internet of things, 2012)

Introduction:

In the year 1999, a member of the Radio Frequency Identification (RFID) development community invented the concept of IoT (Internet of Things).

Due to the growth of cloud computing, data analytics, etc, IoT is rising unexpectedly, applicable to the practical world.

Description:

The definition of IoT is a network of physical objects. Furthermore, IoT not only included computers networks, but it also included numerous types that have evolved into a huge number of devices such as cameras, home appliances, and buildings. There are three categories for IoT, which are people to people, people to machine and machine to machine.

Reflection:

To make a long story short, IoT is the prompt growth of the Internet that helps us to ease our tasks in a faster way. The rise of the Internet of Things enables the system to connect to the physical object to be able to collect and exchange data from time to time using embedded sensors. Speakers, refrigerators, air conditioners, and other electrical devices that we commonly use in our daily life are connectable to the IoT. Other than that, it was an interesting experience for us to know more about 4IR which enhances our daily life to be more convenient to accomplish something that we faced. I'm glad to live in a century where the IoT is becoming more and more improved now and in the future.

Examples of IoT:



(How Connected Cars Are Driving The IoT Network)

Connected Car



(Wearable, 2020)

Wearables



(Shea, 2020)

HOME SMART HOME

Smart Home



Smart Cities

SMART CITY

(Smart Cities and Buildings 2021)

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industry talk 1- FOURTH INDUSTRIAL REVOLUTION

4IR

INTRODUCTION

Industrial Revolution 4.0 (IR4.0) began from 2011 which focused on the manufacturing aspect and continued from 2015 until now as 4th Industrial revolution (4IR) which included all aspects of human life. The Fourth Industrial Revolution is described as the blurring of boundaries between the physical, digital, and biological worlds. It includes the advances in artificial intelligence (AI), the Internet of Things (IoT), robotics, 3D printing, genetic engineering, quantum computing, and other technologies. It's a collective force behind many services and products that are fast becoming indispensable to modern life.



CONTENT

Adoption Area within 4IR

Cloud/Digital

- Digital transformation across business
- more services become digitalize
- work performance increase with mobile and connected workforce



(Yves Mulkers, 2019)

Smart cities

- improve logistic performance
- driving production volume and speed up the sales transaction
- using smart manufacturing solution to manage manufacturing performance
- Smart Water Integrated Management System(SWIMS)



(Smart City, 2019)



5G

- connected everything
- open up wide range of use cases (eMBB, mMTC, uRLLC)
- difference between 4G and 5G
- job creation, talent development, safety and security



(5G, 2019)

REFLECTION

Undeniably, 4IR brings a lot of benefits toward human life. It's changing our lives to become more efficient than before. Digitalization of business and services enhance work performance. Other than that, cities become more advanced and equipped with high technologies which are able to improve logistic performances. The emerging of 5G technology makes it easier for us to connect with everything. It gives advantages in job creations, talent developments, consolidating safety and security. Besides, 4IR has increased the productivity and efficiency of human by easing the challenging work human faced. As a college student nowadays, the risen of 4IR help us a lot especially in this Covid-19 pandemic. For instance, we can communicate virtually using the applications such as Whatsapp, Telegram, Facebook and etc. In contrast, students nowadays would be hard to gain knowledge from the lecturers if there is absent of 4IR due to lag in technology.

Way forward

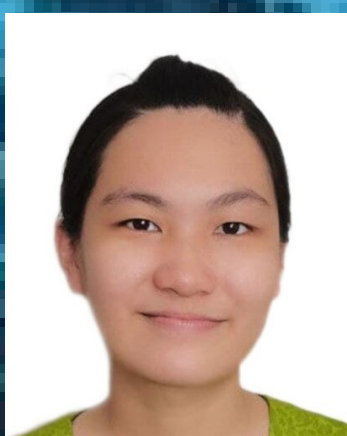
The fourth industrial revolution is the new way of combining traditional manufacturing practices with advanced smart technologies like analytics, cloud computing, machine learning and Internet of Things to predict and diagnose issues without much need of human intervention. Thus, what we are looking at end to end is optimization of manufacturing operations and value chain, not just improving production efficiency, but also to look at how we can take into account the manufacturing supply chain, customer behavior, and customer demands given that the fluctuations are high in the current situation.

(Shanti Darisetty, Corporate Innovation, T-Hub, 2020)

Summary

Malaysia is in the way of transforming toward 4IR which is very significant for our country's future. 4IR not only brings huge amounts of advanced technologies toward us, it also brings a lot of job opportunities towards us. Thus, it is important for us to continue our effort towards 4IR to ensure that our nation can compete with other countries in every aspect.

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Industry talk 2- Cyber security



robotics,2019

Introduction

4th industrial revolution(4IR) is an infusion of automation to the manufacturing sectors. With the rapid development in manufacturing sectors, to go through 4IR, advanced digitisation, advanced technologies and efficient resource utilisation are very important because they can enhance efficiency and drive competitiveness to a country. The drivers that transform us to 4IR are the shift in the global economic order, technology advancement, knowledge & skills, global supply chain, competitiveness, regulations, customer behaviour and others. Thus, the 4IR is changing our daily life, especially in the manufacturing sector.

content

Factors that impact the future of manufacturing in Malaysia

- global value chains and geographies of production are continuing to shift
- quality of labour
- new technologies are disrupting and fostering a technology-based model of production

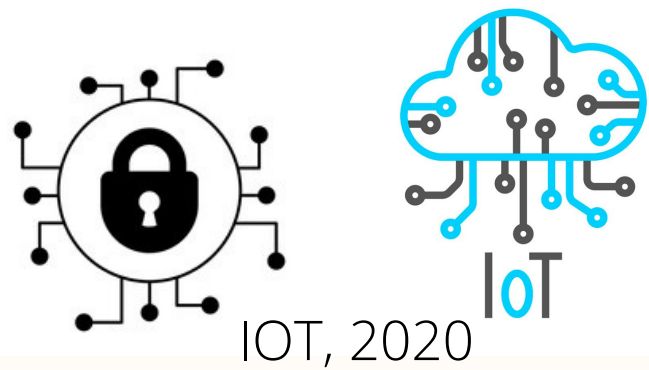
4IR in Malaysia

Malaysia issues & challenges

Demand- innovation, digital readiness & connectivity, skill enhancement, high cost of investment, best practices, awareness
Supply- governance, funding & incentive, ecosystem support, training providers, standards & digital integration, infrastructure

Addressing the issues & challenges

- A-attract
- C-create
- T-transform



IOT, 2020



cyber security,2020

Reflection

In recent years, many sectors have been developing rapidly along with the 4th industrial revolution. Malaysia's government has invested heavily in the 4th IR with the goal of becoming a regional leader in the field. Therefore, the Ministry of communications and multimedia founded a cyber security department to provide cyber security information, training and practices in order to advance the 4IR in Malaysia and boost the development of our country into an advanced country.

In 3IR, all products are using IT systems, computing and robotics. However, at this stage, the internet is still not really good and not changing data into machines. Therefore, 4IR came out in order to advance digitalisation, technologies and efficient resource utilization. 4 IR is a smart factory with automation systems, IoT and machine learning. Any changing data is between machines without human intervention and make fewer errors. Our new generation needs to be creative and initiative when facing problems and try to solve them in higher thinking skills to cultivate talents. This would make our country become more competitive and bring more market value as well as attract more stakeholders. This also will make our country to realise the 4 IR earlier.

Way forward

Malaysia's manufacturing sector is currently ranging between 2.0 Industrial revolution (mass production) and 3.0 industrial revolution (automation). However, many industries in foreign countries, especially Japan, Korea, and Germany already became Industry 4.0. Therefore, our country needs to upskill the workers and learn many new technology skills from advanced countries to ensure our country is able to transform into an advanced country successfully.

Summary

Technology has changed the world in all aspects of human life. The 4 IR changed the world by transforming business, economics, and society. 4 IR brings a lot of opportunities to our country if we make the transformation of 4IR successfully. Therefore, everyone includes government, the new generation and business play big roles in 4IR.

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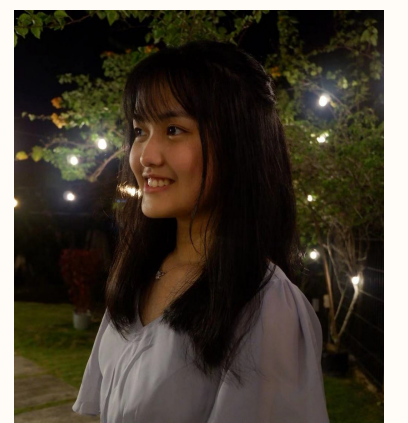
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