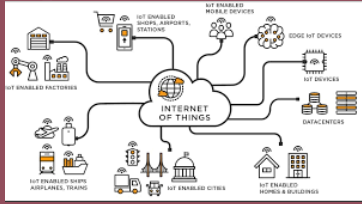


INTRODUCTION

- Refers to any physical items or devices that are inserted with sensors, software and other technologies.
- IoT works by connecting one devices with other devices via the Internet so the detected data from the sensor can be shared among devices.
- Most of the process done by IoT is happening automatically.



Internet of Manufacturing Service (IoMs)



- Mainly to improve performance, preventive maintenance (PM) and productivity of manufacturing service.
- IoMs exist to keep the industrial in manufacture developing and create competitive environment.

-Example:

1. Real-time asset monitoring- to control and manage the asset production and ensure the quantities and qualities produced.
2. Connected operational intelligence- connected with intelligent networks to identify problems and solve it faster and efficiently.

Internet of Service (IoS)

- Based from 2 concepts, Web 2.0 and Service-Oriented architecture.
- These concepts including interactivity, social networks, tagging, web services and designing and constructing Information Technology applications.

-Example:

1. UniFi, Celcom and Digi- telecommunication company to provide Internet connection such as broadband.



Internet of People (IoP)

Help society to connect directly with each other by Internet which allow people to see their similarities of interest based on their privacy limitations.

- Hence, IoP protect user's personal information that was linked with multiple accounts or scraped by unknown party.
- Example : Social media application such as Telegram, Whatsapp or Instagram is use widely by all people around the world to communicate and sharing interest together.



FORMS OF IOT

Daily affairs

- IoT help to control machines or electronic devices at home and also can be used in security system.

- Example : Smartphones with infrared blaster and built software that can control the television, air conditioner and network set top box (STB). The motion detected through closed-circuit television (CCTV) will alerted us through through the system's application.



Health

- IoT devices can help society to track their daily activities, health information and control the quality of air in our house.

- Example : Smart watch : Help to track the user's heart rate and monitor their sleep quality.

- Air purifier : Help to make sure the quality of air in our room is always in a healthy condition.



Manpower

- IoT help some companies to reduce their own staff's manpower by changing a few task into automatically process to increase work productivity.

- Example : Several countries such as Japan and China have successfully applied the IoT by creating robots that are used as servers in restaurants and cafes.



REFLECTION (BENEFITS)

Transportation

- IoT makes the transportation system in the country more safer and orderly. Thus, the introduction of RFID technology to the public helps to facilitate travel especially when on highways that pass through tolls.

- Example : Smart car such as Tesla have that autopilot function and equipped with numerous sensors to make user's travel safer. RFID tag and Smart tag that have radio wave which can detect and transfer the data faster to pay the tolls.



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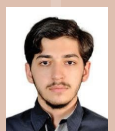
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EXECUTIVE SUMMARY

Since 1946, Telekom Malaysia or TM has been serving Malaysia with its telecommunication services and infrastructures. TM consists of 3 service groups, unifi for local consumers and small businesses, TM Wholesale for wholesale business, and TM One for large enterprises/businesses. Not only do they provide choices of products and services, but TM also contributes to developing technology infrastructure throughout Malaysia to realize the vision of "Digital Malaysia".

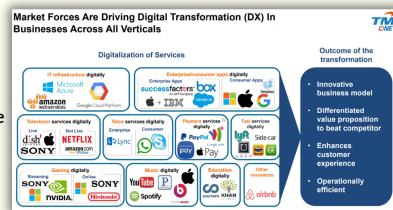
INTRODUCTION

We've been through many industrial revolutions (IR). Starting with the 1st Industrial Revolution in 1784 all the way to the current 4th Industrial Revolution. With the revolution underway, TM has developed future-ready infrastructures like new data centers and cloud services. In this talk, Dr. Nazri Edham will discuss some of the technologies that are essential for the 4th IR, namely digitalization, smart city, and 5G. He will also discuss how TM will enable the industrial revolution.



DIGITALIZATION

In the 4th IR, major services are already beginning to transform to digital formats, like payment, commerce, entertainment, education, and many more. This transformation occurs to improve their services, such as more efficient operations, better customer experience, better value proposition, and more innovative business. In order to do this transformation, these services require a strong digital infrastructure foundation. The foundation consists of its backbone (cloud, IoT, automation), insights (analytics and business insights), and engagement (customer experience, product innovation, access channel). Combine with security and privacy, this foundation will be able to contain the needs of these services.

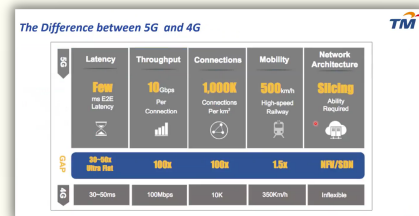
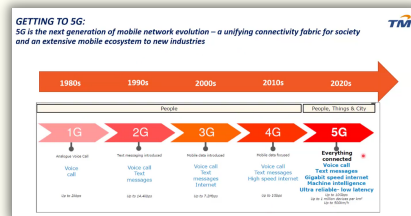


SMART CITY

There are several factors that need to be considered in making a smart city, such as the problem, the city's persona, and sustainability. On top of that, we also need the technology that can intuitively adapt and respond, one of the examples is smart service. Smart services can be built by designing their development blueprint, collaborating with the government and enterprises, and implementation according to their vertical. Smart services can also be built by enhancing existing services like water management, manufacturing, and logistics.

5G

With its great capabilities, 5G will enable new solutions in our everyday life. Thanks to its features like enhanced mobile broadband (eMBB), massive machine type communication (mMTC), and ultra-reliable low latency communication (uRLLC), 5G will become a crucial pillar for developing smart cities and 4th IR. Compared to 4G, 5G has 100 times more speed, 30-50 times lower latency, 100 times better connection range, and has more flexible network architecture. 5G can be used in different cases, like real-time monitoring and tracking, automated solution, virtual reality, and connected tools.



ENABLING THE 4TH IR

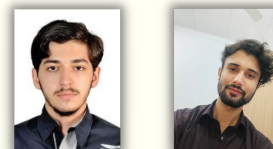
To enabling the 4th IR, TM has made several steps towards their journey. At unifi, they change the way they work by using multiple channels in their business so they can accommodate customers and take the advantage of TM Network Operating Centre to manage massive network and system technology platforms. TM also made 2 latest world-class data centers, namely Iskandar Puteri Core Data Centre and Klang Valley Core Data Centre. They also keep maintaining their Network Operating Centre to support the connectivity infrastructure for the 4th IR.

REFLECTION

This talk had given us some of the core information about the 4th Industrial Revolution. Dr. Nazri had also given us an overview of their plans for the revolution as well. Because of this phenomenon, our lives will change drastically due to the benefits provided by these technologies. We have imagined about how our life in the future, and now that future is almost near. This will be a new direction for us, students, starting from now to accompany us until our upcoming career.

GROUP 3

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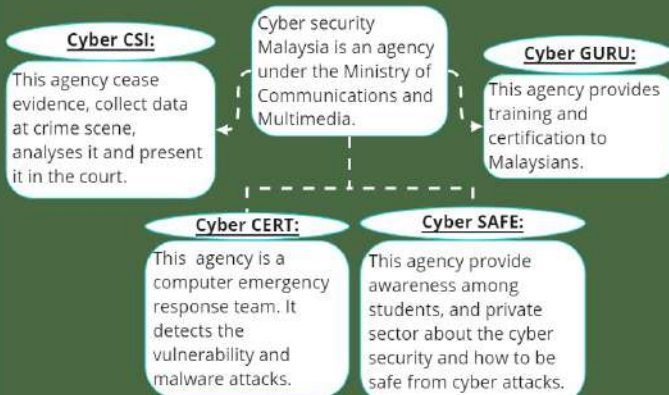


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Executive summary



Introduction to IR 4.0

In the past few years, the manufacturing sector has evolved greatly. Robots are being used in the industries to increase efficiency. Manufacturing industries are constantly evolving with more and more infusion of automation, Advanced digitisation. Efficiency is being enhanced by the use of advanced technologies.

Need of IR 4.0 :

We need to move forward to IR 4.0 because of:

- The shift in the global economic order.
- The rate of technology advancement and its convergence. We need to include technology changes and its application in industry to improve the efficiency.

Example: IOT, cloud computing

- Knowledge and skills
- Global supply chain
- Competitiveness
- Regulations
- Customer behaviour

These factor drive us to move forward to IR 4.0 .

The need to embrace:-

Future of manufacturing in Malaysia is impacted by three factors:

- Global value chains and geographies of production are shifting and relocating to ASEAN. This open opportunities for Malaysia.
- Quality of labor and higher productivity, but not low labor cost.
- Malaysian manufacturing firms need to invest in new technologies to remain competitive.

Enabling technology:-

The digitalization of production based industries are driven by the technological drivers which are now widely used nowadays. For example facial detection features are widely used in cyber security for detecting the face of the criminals at entry and exit point of country.

In the Business and manufacturing industries data analytics is important to predict the market trend.

These following technology drivers are widely used:-

- Artificial Intelligence
- Big data analytics
- Cyber security
- Augmented reality
- IOT
- Simulation
- Cloud computing
- Autonomous Robots
- System integration
- Additive manufacturing
- Advanced materials

Malaysia Issues and Challenges

- There is need of awareness and innovation among workers and small industries
- When people use technology, they expose themselves to cybercrime
- Future skill, so they need skills enhancement
- New technology need high cost of investment and longer period of payback.
- Lack of easily accessible platform for relative skills enhancement and practices
- Lack of governance as each ministry has its own program
- Funding is under utilized
- Limited number of entrepreneurs
- Education syllabus is not matched with industry need
- Limited digitization of government agencies

Addressing the issues and challenges:-

Malaysia under the MITI has developed policy to address the issues and challenges. The overarching philosophy behind this policy is ACT, Attract, Create, Transform.

- Attract stakeholder to industry 4.0 technologies and process to further increase Malaysia's attractiveness as a preferred manufacturing location.
- Create the right ecosystem for IR 4.0
 - Talent supply and skill levels
 - Digital infrastructure
 - Collaborative platform
 - Funding support
 - Data Availability and sharing
 - innovation capacity
- Transform Malaysia's industry capabilities in both a holistic and an accelerated manner
 - Labor productivity
 - Cost efficiency
- Share of high skilled jobs
 - Local technology development

Cyber Security Malaysia:-

- Create knowledge people
- Awareness programs
- Develop process accepted by international standards
- Develop process method, SOP and guidelines
- To setup labs to create and test product
- Pilot project

Reflection

This talk has given us some of the core information about the IR 4.0 and Cybersecurity Malaysia. Enabling IR 4.0 while retaining the nation's policy takes serious attempts and efforts. Its policy and philosophy will be the guideline for us, students, to prepare for the upcoming careers. If we can attain those requirements and tackle those issues, we'll be ready to be the next generation of workers.

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