

SPEAKER : REDZUAN SHAH BIN YUSSOFF

MODERATOR : NIK KAMAL IZZUDIN BIN NIK IBRAHIM

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INDUSTRIAL REVOLUTION

1.0

Mechanical power
derived by water
& steam engine

2.0

Birth of electricity,
world's first
assembly line,
factories &
machines

3.0

Era of computing

4.0

Emergence of
Artificial
Intelligence

Historically, industrial growth has had a large impact on the economy. Basically there are 4 steps of chronology on how industrial developed. Industry 4.0 is the digital transformation of manufacturing/production and related industries and value creation processes. Forth Industrial Revolution is a new chapter in human development, enabled by extraordinary technology advances commensurate with those of the first (1784), second (1870) and third (1969) industrial revolutions,

9 ELEMENTS



Big Data Analytics

- The use of statistics, graphs and data analysis to measure performance.
- Optimize productivity and goals.
- Such as traffic data reports for local authorities.

Autonomous Robots

- Robots that can function on their own.
- The creation of Lights-Out manufacturing, ability to continue running deep into the night.
- Need minimal human supervision.

Simulation

- The use of visual aids and software to simulate complex processes and designs in every engineering or manufacturing firm.

System Integration

- Integrating all the physical and virtual components into one system.
- Improves cohesiveness of hierarchies within a company.
- Cross-company collaboration will be easier.

Industrial IoT

- Allows decentralization.
- Faster real-time responses.
- Example : TM uses smart traffic light for efficient traffic congestions in Langkawi

Cybersecurity

- With an increased risk of security breaches, there is a need for cybersecurity and defensive measures to safeguard information.
- For instance, TM implemented IR 4.0 into the security of Majlis Perbandaran Langkawi for enhanced safety.

Cloud

- Allows seamless sharing of data and better interconnectivity.
- Deliver services including data storage, servers, databases, networking, and software.
- For example, TM One Cloud Alpha.

Additive Manufacturing

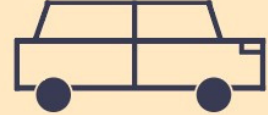
- 3D printing and modelling use for building prototypes and lightweight designs
- Allows companies to translate simulations into reality.

Augmented Reality

- Provide real-time use of information in the form of text, graphics, audio, and other virtual enhancements integrated with real-world objects
- Final frontier in the Industry 4.0 paradigm.
- Use to visualise possible design options.

BENEFITS

Transporting



**Higher productivity,
convenient and reduces cost**

Education



**Very efficient in terms of energy,
Flexibility for
everyone's agenda**



E-Commerce

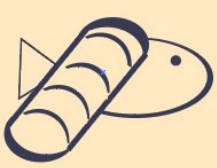
**More profitable through
cheap prices and more
audience**

Future Job Demand



**Increases demand for
technology professionals**

Food



**Food vendors get to increase
income, delivery improves
profit margins**

IMPLEMENTATION

Education 4.0



- Lecture via digital platform
- Make use of Augmented Reality (AR) & Virtual Reality (VR)

Commerce 4.0



- Embracing e-commerce
- Analyze shopping pattern using machine learning
- Example: TM built up a system to analyse retail for MAHB and Nadias Hotel Langkawi.

Smart Car



- Car-to-cloud connectivity
- Fully autonomous
- Example: vehicle tracking and performance monitoring can be done using TM's smart vehicle system

Smart Home



- Connected to the Internet
- IoT home automation
- Example: TM collaborated with Johor Land Berhad, UEM Sunrise and Sime Darby to build smart houses in Nusajaya



Nur Irdina Aliah

In my view, industrial innovations give many benefits, improves health care and education and grow in productivity and incomes. Telekom Malaysia has made Malaysia a better country with their services. It really open my eyes how Technology gives good impacts to us



Nur Izzah Mardhiah

This talk from Telekom Malaysia is really an eye-opening experience for me. It is amusing to know that Malaysia is rapidly working and strives towards IR4.0. I acknowledge how challenging it is to develop new technology from time to time without broadening the digital divide in Malaysia. I believe that it is our responsibility to evolve new technology constantly. There is no better time than now.



Nurarissa Dayana

From my perspective, innovation marks the advancement of society. Humans are driven to improve their life's quality and standard by inventing new and innovative products. For example, breakthroughs in medicine and technology effectiveness. This talk informed me that Industry 4.0 innovations can increase efficiency and value that can improve productivity and low down costs.



Tan Yong Sheng

Throughout this industrial talk, I have learned that innovation plays a significant role in continuing enhance current technology and brings it to greater heights. It allows manufactures to face new problems through versatility and an easier response to demand changes. Besides, it will accelerate the speed of creativity and is very consumer-driven, leading to quicker design processes.



Terence Lorthanathan

From my eyes, The movement of Innovation to assist human life is crucial and through the industrial talk I learned I am going to play a big role in the movement. TM is playing their part providing their services to better the experience of the nation and evolving the nation in the process.