INDUSTRIAL TALK IR 4.0

UTM Universiti Teknologi Malaysia
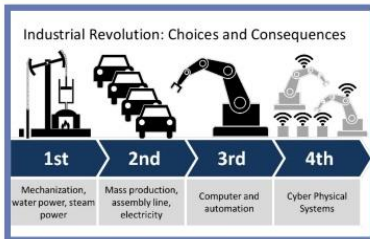
GROUP 8

•PRESENT •FUTURE •PAST

INTRODUCTION

In modern history the Industrial Revolution translates from an agricultural economy to a manufacturing economy dominated by industry and machinery. In the 18th century in Britain, this phase started and spread to other parts of the world. The word 'Industrial Revolution' was first used by the English economic historian Arnold Toynbee (1852−1883)

HISTORY

Industrial Revolution: Choices and Consequences

1st	2nd	3rd	4th
Mechanization, water power, steam power	Mass production, assembly line, electricity	Computer and automation	Cyber Physical Systems

The first industrial revolution happened in the period between the 17th century and 18th century in Europe and the United States. The revolution included the transition from hand production to mechanical power. For example, the increased use of steam energy and of water, machine tools production.

The second industry revolution embraced the massive development of Manufacturing and production technology which allowed the massive production of goods, materials. During this era, the world encountered the first industry assembly line and mass advancement of the machine. For example, electricity power, water supply and etc.

The third industrial revolution is considered a digital evolution because it was the era of computing and the first birth of PLC micro-controller. The third revolution led to the rise of electronics, telecom, and new technologies which paved the way for space expeditions, research, and biotechnology in the Third Industrial Revolution.

INDUSTRIAL REVOLUTION 4.0

The fourth industrial revolution is the continuous automation of conventional manufacture and manufacturing processes using new intelligent technology. Large-scale communication from machine to machine (M2M) and the Internet of Things (IoT) are incorporated for progress in automation, better communication and self-monitoring, and the development of intelligent machines capable of analyzing and diagnosing problems without the need for human interference.

Industry 4.0: Autonomous Robots, Simulation, System Integration, Internet of Things, Cybersecurity, Cloud Computing, Additive Manufacturing, Augmented Reality, Big Data

AUTONOMOUS ROBOTS

Autonomous Robots: Autonomous robots are autonomous machines capable of performing tasks in the world by themselves without specific human involvement. For example, autonomous helicopters to Roomba, the robot vacuum cleaner.

BIG DATA ANALYSTICS

Big data and analytics: The use of advanced computer technology in large sets of data to discover useful associations, patterns, trends and market preference. Big data analysis in Industry 4.0 plays a significant task in several fields.

AUGMENTED REALITY

Augmented reality: is an immersive perception of a real world environment where computer-generate perceptual knowledge, at times through many sensory modes, including visual, auditive, haptical, somatosensory and olfactory, enhances artifacts

CYBER SECURITY

Cyber security is the use of software, mechanisms and controls to secure infrastructure, networks, applications, computers and data from cyber-attacks. It seeks to reduce the risk of cyber threats and to defend against malicious abuse of databases, networks and technology.

REFRENCES

https://en.wikipedia.org/wiki/Industrial_Revolution
https://en.wikipedia.org/wiki/Second_Industrial_Revolution
https://ied.eu/project-updates/the-4th-industrial-revolution-in-todays-business/
https://www.nextgov.com/ideas/2019/08/accelerating-cloud-computing-government-requires-new-management-approach/159202/
https://www.hcamag.com/asia/specialisation/hr-technology/the-most-dangerous-cyber-security-mistakes/229501
https://www.mythinkpositive.com/14-news/83-internet-of-things-iot https://www.mythinkpositive.com/14-news/83-internet-of-things-iot

CLOUD COMPUTING

cloud computing is the distribution of computing services—including servers, storage, databases, networking, applications, analytics, and intelligence—over the Internet ("the cloud") to provide faster growth, accessible infrastructure, and economies of scale.

INTERNET OF THINGS

The Internet of Things or IoT, is a collection of interrelated computing devices, mechanical and digital computers, objects, animals or individuals with specific identifiers and the ability to transmit data across a network without any need for human-to-human or human-to-computer engagement.

INTERNET of THINGS

ADVANTAGES

- **IOT:** communication between the connected devices becomes more transparent and easier.
- **Autonomous Robots:** Minimize operational cost.
- **Cloud Computing:** Scalability, configure and select your storage needs depending on your business.
- **AR:** Better representation for surroundings.
- **E-commerce:** Removes the need for retail outlets and encourages companies to broaden their customer base.

DISADVANTAGES

- **IOT:** with automation, the need of human labor reduces drastically.
- **Autonomous Robots:** high capital cost.
- **Cloud Computing:** Vulnerability to attacks, the internet is not entirely secure and for this reason, there is still the risk of stealing sensitive data.
- **AR:** Cannot be used without the required devices.
- **E-commerce:** Security and credit card theft are both big threats when it comes to online shopping.

PAST JOBS	PRESENT JOBS	FUTURE JOBS
• Computer Operator	• Blogger	• 3D Printing technician
• Printer setter	• Digital marketing specialist	• Computer vision engineer
• Switch board operator	• Social media manager	• Electronic textiles engineer
	• Zomba teacher	• Machine learning engineer
		• Urban agriculturalist
		• Web history archivist

CONCLUSION

Industrial Transformation had leave a great impact on us. It helps manufacturers with current challenges by becoming more flexible and reacting to changes in the market easier. Our lifestyle may be changed massively with this upcoming Industrial Revolution 4.0 era. We need to learn to adapt to this new transformation as it would lead to a better lifestyle.

REFLECTION

This Industrial Talk had widely opened our eyes on the fast-paced growing Industrial Transformation. Telekom Malaysia speaker had shared some information on what is industrial revolution 4.0 and what it will look like in the future. Our life will be totally different 10 years from now as more new technologies will be invented to provide full benefits to the people. This talk had also guide us on playing our role now (as a student) and onwards (as a worker) so that the advantages of the IR4.0 can be fully utilized by the society.

GM SHAHEEN SHAH SHIMON (A20EC0266)   SHAH SAJID (A20EC4050)

HASSAN MUSTAFA IBRAHIM (A20EC4025)   MOHAMMAD SYAZWAN BIN SAHDAN (A20EC0217)