4TH INDUSTRIAL REVOLUTION

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Introduction

- **4th industrial revolution is a combination of advances technologies such as simulation, cloud computing , cybersecurity, internet of things, big data and analytic, system integration, additive manufacturing, autonomous robot and augmented reality.**
- **This term was created by Klaus Schweb in 2016.**
- **The important of 4th IR is to ease people burdens and creating a futuristic country.**

SIMULATION

Simulation is a program that can mimic the operation of any systems conduct by a computer. The simulation can assist an organization in better estimating the return of investment before the initiation.

It's can help businesses to save and earn more money. This is because simulation can account for the behavior of any specific jobs by assesing what will happen in manufacturing system at particular time.

K. (2020, February 28). The power of Industry 4.0 Simulation. RESTART. https://restart-project.eu/the-power-of-industry-4-0-simulation/

EXAMPLE

Aircraft simulator for trainers

J. (2018, May 23). Taking off with the iPilot Flight Simulator in Zürich. Newly Swissed Online Magazine. https://www.newlyswissed.com/ipilot-flight-simulator-zurich/

Simulator for factory uses

Yap, S. M. (2021, April 21). Optimize Industrial Automation Systems Using Digital Twins. Ansys. https://www.ansys.com/blog/optimize-industrial-automation-systems-digital-twins

REFLECTION

- **The first information that we gained are simulation technologies are quite important because nowadays there are many types of invention that has been created. In order for it to work, they will need to test it before releasing it to public. This is where the simulation will process and simulated it which will save energy and also time.**
- **Next, the information that we gained are using simulation to have a better understanding on a system or project such as prototypes of any applications and systems.**
- **We also gained that by using the simulation for trainers to get experience on their work such as aircraft pilots and crane operators which are categorized as dangerous work, can reduce amount of accidents happen and making the worker's safety is guaranteed.**

TM HUMANIZING TECHNOLOGY

SPEAKER: HJ NAZRI BIN HJ EDHAM
HEAD OF PRODUCT DESIGN
PLATFORM: WEBEX
DATE : 1ST NOV 2021

EXECUTIVE SUMMARY

In this new era , our world has comes until Forth Industrial Revolution(IR4.0) which helps in manufacturing and industry, It also helps in improving productivity and economic in works and all aspects of human life.

INTRODUCTION

As we revised, Industrial Revolution has keep revolving. As example from Computer Techinian to Software Engineer and maybe there will be a new job such as Cloud and Safety Designer due to the revolution. Therefore, Telekom Nasional Berhad as a national connectivity and digital infrastructure provider has been also contributing itself into the revolution of 4th I.R by enabling digital Malaysia.

DIGITAL MALAYSIA

GOVERNMENT

SOCIETY

ECONOMY

ADAPTION AREAS WITHIN 4IR

- Cloud/digital
- Smart City
- 5G

KEY POINTS OF 4IR:

- Market forces are driving digital transformation in business
- Successful digital transformation requires a strong digital infrastructure
- Increasing execution performance with mobile & connected workforce.
- Driving production volume & speed up sales transaction
- Manage overall manufacturing with smart system manufacturing .

NEW EVOLUTION: 5G

- Connect people, things and cities in terms voice call, texts and machine intelligence
- Open up a wide range of use cases such as eMBB , mMTC and uRLLC.
- Focus more on job creation, talent development and safety security.

REFLECTION:

A motivation or reflection that we got from this talk is that we should work harder on driving out many innovations from our country. Next, we also agree that we should never give up on trying as the technology will keep evolving. Last but not least, students should able to understand and go up with the pace of evolved technology.

Reference :https://www.tm.com.my/Pages/Home.html. Telekom Malaysia.

Industry 4WARD

ATTRACT   CREATE   TRANSFORM

INTRODUCTION

The world is shifting towards implementing IR 4.0 as the new trend of automation processing as well as data exchange by using advanced technologies in the manufacturing industry. These include the Internet of Things (IoT), Industrial IoT, artificial intelligence (AI), cyber-physical systems (CPS), cloud computing, cognitive computing, 3D printing, predictive maintenance, smart sensors, and others.

Technologies

- IOTs
- Big Data
- Simulation
- Cloud Computing
- Cyber Security
- System Integration
- Autonomous Robots
- Augmented Reality
- Additive Manufacturing
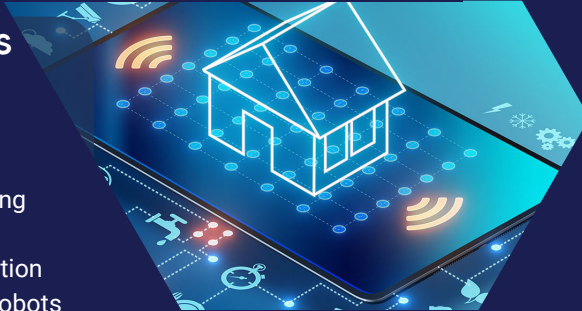
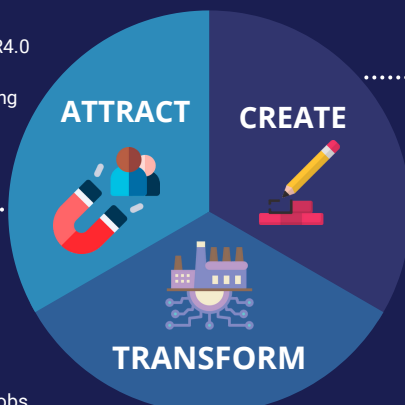## Issues & Challenges

DEMAND
SUPPLY

Some of the common challenges in adopting IR4.0:

- Lack of important skills and knowledge in some of IR4.0 technologies such as IOT, AI etc.
- high cost of implementations and longer payback time.
- Digital transformation is week especially in the manufacturing industry.
- Lack to provide enough training programs that are beneficial to help upskill the existing and the new workforce.
- Understanding and determining customer demands especially custom products and delivery time.
- With advanced technologies, security threats and attacks becomes major issue and a big challenge to tackle.

NATIONAL POLICY

Attract stakeholders
- Adoption of industry IR4.0
- SME Inclusion
- Preferred manufacturing location

ATTRACT   CREATE

TRANSFORM

Create the right ecosystem
- Talent supply & skill levels
- Collaborative platforms
- Digital infrastructure
- Funding support
- Data availability
- Innovation capacity

Transform industry capabilities
- Labour productivity
- Cost efficiency
- Share of high-skilled jobs
- Technology & innovation capabilities
- Local technology development

REFLECTION

What we gained are Malaysia is still developing towards the transformation of 4IR. In order to approach the goals where we want to develop a country with technologies that can compete with other countries like Dubai, China and Japan, there will be some issues and challenges along the way, so we need contribute to overcome the challenges. Everyone has their role in contributing something for the development and we cannot put all of the burdens to the government only, so everyone need to cooperate with the government to ensure that Malaysia can transform well. Next, as students of Computer Science , we also had to be competent with the evolving technology around us . Therefore , it is important for us to develop many skills that can help us in order to achieve the better result and also helps in transforming Malaysia to be a better country with all the cities be a smart cities.

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Is the Manufacturing Industry Ready for Industry 4.0?WP. (2021, February 3). European Springs. https://www.europeansprings.com/is-the-manufacturing-industry-ready-for-industry-4-0/

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