NEWSLETTER

TM HUMANIZING TECHNOLOGY: TECHNOLOGY INFORMATION SYSTEM AND 4IR

On February 4, Head of Product Design TM, Mr. Nazri Hj Edham delivered an insightful session to Computer Science students at Universiti Teknologi Malaysia (UTM), focusing on the Fourth Industrial Revolution (4IR), Technology Information Systems, and TMNet's crucial role in digital transformation.

As Malaysia's leading telecommunications provider, TMNet is at the forefront of building and enhancing the nation's digital infrastructure. Mr. Nazri elaborated on TMNet's commitment to driving connectivity, fostering innovation, and shaping the future of technology across various industries.

This talk covered key aspects of the Fourth Industrial Revolution (4IR), Technology Information Systems, and TMNet's role in digital transformation. TMNet, Malaysia's premier telecommunications provider, is a key player in connecting the nation through advanced technological infrastructure. This session provided insights into how TMNet contributes to the digitalization of Malaysia, emphasizing connectivity, innovation, and the future of technology in various industries.

During the session, students gained a deeper understanding of how advanced technologies such as AI, IoT, and big data are integrated into Malaysia's digital ecosystem. Mr. Nazri also highlighted the importance of technological advancements in accelerating economic growth and improving digital accessibility nationwide.

The talk provided valuable insights into Malaysia's digitalization journey, sparking thought-provoking discussions among students eager to explore the evolving landscape of technology.

UTM extends its appreciation to Mr. Nazri for sharing his expertise and inspiring the next generation of tech leaders.

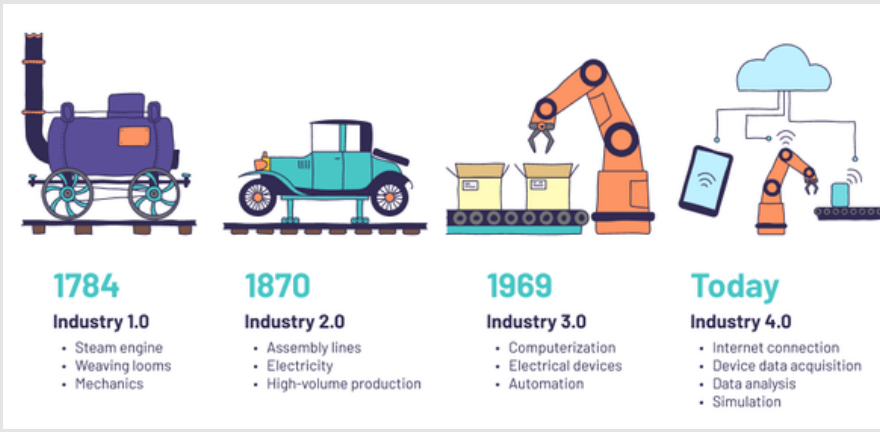
TM: Connecting the Nation in the Fourth Industrial Revolution

Telekom Malaysia (TM) continues to strengthen its role as the nation's leading telecommunications provider, serving 2.7 million home customers, 13,000 enterprises, and over 600 telecom partners globally. With 900,000 km of fiber-optic cables, 30+ international connectivity points, 10,000+ Wi-Fi hotspots, and nine data centers, TM ensures seamless connectivity and high-performance cloud services.

TM operates through three key business clusters: Unifi for consumers and SMEs, TM Wholesale for global connectivity, and TM One for enterprises and the public sector. Collaborating with the government, businesses, and investors, TM plays a pivotal role in enhancing national digital infrastructure, driving innovation, and delivering high-speed broadband. Through continuous advancements, TM remains at the forefront of Malaysia's digital transformation.

TM's Commitment to a Digital Malaysia

As mentioned by Mr. Nazri, TM is dedicated to drive Malaysia's Digital Nation Agenda by connecting communities with cutting-edge technology, enhancing digital lifestyles, supporting national initiatives, and empowering businesses with seamless digital solutions. With its robust infrastructure and strategic initiatives, TM is not only ensuring borderless digital possibilities but also safeguarding national sovereignty by protecting critical infrastructure from cyber threats and disasters.



Fourth Industrial Revolution (4IR) and Its Evolution

The world has undergone four major Industrial Revolutions, each bringing groundbreaking advancements that transformed industries and societies:

- First Industrial Revolution (1784): The era of mechanization, water power, and steam engines, revolutionizing manufacturing.
- Second Industrial Revolution (1870): The rise of mass production, assembly lines, and electricity, driving large-scale industrial growth.
- Third Industrial Revolution (1969): The introduction of computers, automation, and digital technology, shaping the modern information age.
- Fourth Industrial Revolution (2011–Present): The emergence of cyber-physical systems, the Internet of Things (IoT), Artificial Intelligence (AI), cloud computing, and advanced robotics, redefining industries and economies.

With 4IR, industries face unprecedented challenges and opportunities, requiring businesses to adapt and integrate multiple digital technologies. TMNet is at the forefront of this transformation, building strategically located data centers, offering hyper-connected and neutral cloud services, and maintaining global standards and certifications.

By investing in cutting-edge infrastructure and innovative solutions, TMNet continues to play a crucial role in Malaysia's digital evolution, empowering businesses and communities to thrive in the era of smart technology and seamless connectivity.

The best way to predict the future is to invent it.

Digital Transformation and Smart Services

Digitalization is reshaping industries, enhancing productivity, and streamlining services across various sectors:

To achieve successful digital transformation, businesses must establish a strong digital infrastructure that connects enterprises with customers and partners. This foundation is critical for gaining a competitive edge through enhanced digital engagement and real-time analytics. The process involves:

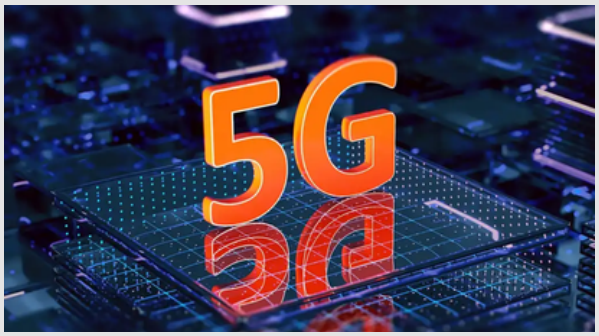
✓ Data Collection: Aggregating engagement data from multiple touchpoints.

✓ Real-Time Analytics: Extracting insights to drive strategic decision-making.

✓ Personalized Engagement: Delivering targeted, customer-centric solutions.

THE FUTURE OF DIGITAL TRANSFORMATION: TM'S ROLE IN 4IR AND 5G

The Fourth Industrial Revolution (4IR) is transforming industries through cyber-physical systems, IoT, AI, cloud computing, and robotics. As businesses undergo digital transformation (DX) across all sectors, market forces are driving the shift toward smart cities, 5G adoption, and cloud-based digital solutions. TM is actively supporting this evolution by providing hyper-connected cloud services, strategic data centers, and globally certified digital infrastructure to enhance connectivity, innovation, and operational efficiency.



5G and Its Role in Future Connectivity

The evolution from 4G to 5G marks a significant leap in speed, connectivity, and efficiency, making it a unifying network fabric for society and industries.

- Latency: 5G reduces delays from 30-50ms (4G) to just 1ms, enabling real-time applications.
- Speed: With speeds up to 10 Gbps, 5G is 100x faster than 4G.
- Device Connectivity: 5G supports 1 million devices/km², compared to 10,000 for 4G.
- Network Slicing: Allows tailored network segments for specific industries.

5G Use Cases

5G is unlocking new possibilities across industries, creating smarter and more efficient solutions:

✓ Enhanced Mobile Broadband (eMBB): Faster speeds and improved digital experiences, supporting virtual and augmented reality (VR/AR).

✓ Massive Machine-Type Communication (mMTC): Powering smart agriculture, smart grids, and IoT automation.

✓ Ultra-Reliable Low Latency Communications (uRLLC): Enabling autonomous vehicles, remote healthcare, smart manufacturing, and industrial automation.

Key Technologies Driving 4IR

Several advanced technologies form the backbone of 4IR, enabling greater efficiency and smarter solutions:

- Internet of Things (IoT): Connected devices exchanging real-time data for optimized decision-making.
- Cloud Computing: Scalable and secure digital infrastructure.
- Artificial Intelligence (AI): Machine learning and data-driven insights for automation.
- Big Data & Analytics: Harnessing vast amounts of data to drive innovation and strategic planning.
- 5G Connectivity: Enabling ultra-fast, low-latency communications for seamless integration across industries.

The Impact of 4IR on Various Sectors

4IR reshapes industries by improving execution performance and operational efficiency.

- Smart City: Smart cities integrate technology, AI, and real-time analytics to address urban challenges and improve quality of life
- Smart Workforce & Field Force Management: Apps like FORCE monitor user performance, manage team reports, handle ticketing, and oversee digital activities.
- Smart Fleet & Logistics Management: Logistics systems now enable real-time tracking, route optimization, and fleet efficiency analytics, benefiting transportation and delivery services.
- Smart Manufacturing Solutions: 4IR enhances production volume, accelerates sales transactions, and improves overall manufacturing performance. These solutions offer insights into product profitability, sales trends, and market coverage.
- Smart Water Integrated Management System (SWIMS): A total water management solution that reduces waste, increases revenue, and provides real-time monitoring and analytics.

A Connected Future with 5G and Smart Solutions

5G is revolutionizing industries with its high-speed connectivity, ultra-low latency, and massive device integration. It is driving advancements in smart retail, agriculture, security, traffic management, tourism, and public safety.

✓ Smart Retail Analytics: Tracks customer behavior in malls, hotels, and restaurants.
✓ Smart Agriculture: Uses automation and AI to improve crop yield.
✓ Smart Safety & Security: Enables real-time crime prevention and surveillance.
✓ Smart Traffic Lights & Smart Parking: Uses AI and IoT to manage congestion and optimize parking availability.
✓ Smart Water Systems: Enhances resource management with centralized control.
✓ Smart Vehicles & Smart Helmets: Provides real-time tracking and workplace safety monitoring.

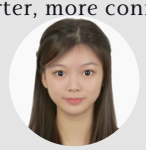
Reflection: Motivation gained from this talk

This talk has been an eye-opening experience, offering valuable insights into how 4IR technologies and digital transformation are shaping the world we live in. We now better understand the critical role that Telekom Malaysia (TM) plays in driving Malaysia's digital future through 5G, AI, IoT, cloud computing, and big data analytics. These innovations are not just advancing industries but also enhancing human life in many ways—improving connectivity, increasing efficiency, and creating smarter solutions for everyday challenges.

One key takeaway is the importance of a strong digital infrastructure in enabling seamless communication, smart city development, and improved public services. The integration of smart traffic systems, AI-driven surveillance, and digital governance highlights how technology can make cities safer and more efficient. Moreover, 5G connectivity and automation are transforming industries like healthcare, logistics, and manufacturing, leading to faster services, smarter decision-making, and optimized resources.

Furthermore, this talk has inspired us to embrace innovation and digital skills as we prepare for our future careers. As future engineers, data scientists, and tech leaders, we recognize the importance of staying ahead in this rapidly evolving digital landscape. The insights shared by Mr. Nazri and TM's commitment to nationwide digitalization motivate us to actively contribute to technological advancements that benefit society. This session has reinforced our belief that technology is not just about progress—it is about creating meaningful change that enhances lives and builds a smarter, more connected world.

Group Members


ELEANOR TING PIK EN
A24CS0247


NORSHALIN
A24CS0149


AFINA SOLEHA BATRISYIA
A24CS0034


RASYID
A24CS0030

References

TM NET
DIGITAL TRANSFORMATION
5G
INDUSTRY REVOLUTION