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The Evolution of Broadcast

from Conventional Rf Transmission to Modern-Day IP Streaming

By Ts. Shasikumar Nandakumaran, Project Manager, Data Centre and IT Infra Development, Tenaga Nasional Berhad (TNB)

The broadcast industry is gradually transitioning from RF-transmission to IP-streaming technology in recent years to meet the demands of the modern world for high quality and seamless services. When the broadcast industry first emerged, radio frequency (RF) transmission played a pivotal part in the development of broadcast from the very beginning.

In general, the term "broadcast" refers to a one-to-all radio frequency signal that is transmitted from a source e.g., geostationary orbit satellite or terrestrial tower to everyone simultaneously so that anybody having an authorised receiver device in the area can access the content.

Radio frequency (RF) is the rate of oscillation in the range of 3kHz to 300GHz, which corresponds to the frequency of the RF spectrum. Despite being large and encompassing of many different types of frequencies, the RF spectrum sits at the lowest portion in the electromagnetic spectrum.

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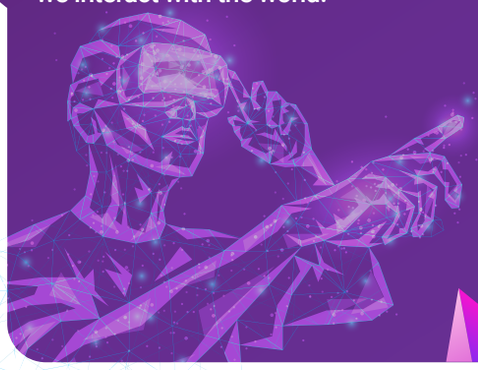
/chief editor's note

Greetings!

We all know that emerging technologies represent the dawn of a new era, where the boundaries of what we thought possible are pushed further each day, and innovation is the driving force. From artificial intelligence and machine learning to blockchain, the Internet of Things, and beyond, emerging technologies reshape industries, revolutionise processes, and redefine the way we interact with the world.



In this 18th edition of TECHIES, we continue to highlight the transformative power and profound impact of emerging technologies with insightful articles and interviews. We will particularly look into how emerging technologies influence the transportation industry and raise awareness of Sustainable Development Goals (SDGs). We will also see how a university-led technology-development project makes its way from conception to successful implementation. Our intention is to provide an understanding of the potential, impact, and implications of the technologies across various sectors. We invite you to join us on this journey of discovery, where knowledge meets innovation, and where the future is shaped by our collective imagination.

Happy reading and thank you.

Datin Ts. Dr. Zuraidah Mohd. Zain

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All known RF transmission systems work in the RF spectrum range including analogue AM/FM radio, Wi-Fi, satellite/terrestrial broadcast, and mobile networks. Due to their relative simplicity of utilisation, radio waves that occupy the lower RF spectrum (3Hz - 300MHz) are typically used for AM/FM radio stations while microwaves, which occupy the upper RF spectrum (300MHz - 300GHz), have a wider range of applications including high-bandwidth data transmission systems like Wi-Fi, satellite/terrestrial broadcast, and mobile networks. For frequencies in the microwave range, IEEE radar bands with the letters S, C, X, Ku, K, or Ka are commonly utilised.

Microwave transmission systems are primarily divided into satellite and terrestrial systems from the perspective of broadcasting. Receiving and transmitting components are necessary for both systems. The transmitting components convert baseband signal to microwave signal, while the receiving components convert microwave signal to baseband signal.

Terrestrial broadcast systems use both analogue and digital modulation techniques. In analogue systems, data signals are frequency multiplexed first and later modulated and upconverted for the transmission using RF antenna. In digital systems, data signals are time multiplexed to form baseband signal. This is later modulated and upconverted for transmission using RF antenna.

In comparison to conventional terrestrial analogue TV broadcast, terrestrial digital TV broadcast is a new format that offers viewers superior quality video and audio signals that are free of noise and ghost images. Transition from analogue to digital transmission has improved the quality and convenience of viewers' experience.

In a satellite broadcast system, baseband signal is uplinked at microwave carrier frequency via a directional antenna from ground station to the satellite. The onboard antenna of the satellite receives the signal. The received frequency is first shifted to another frequency band. The shifted signal is later amplified before being downlinked over a designated area of the earth.

Among the differences between satellite transmission and terrestrial transmission are:

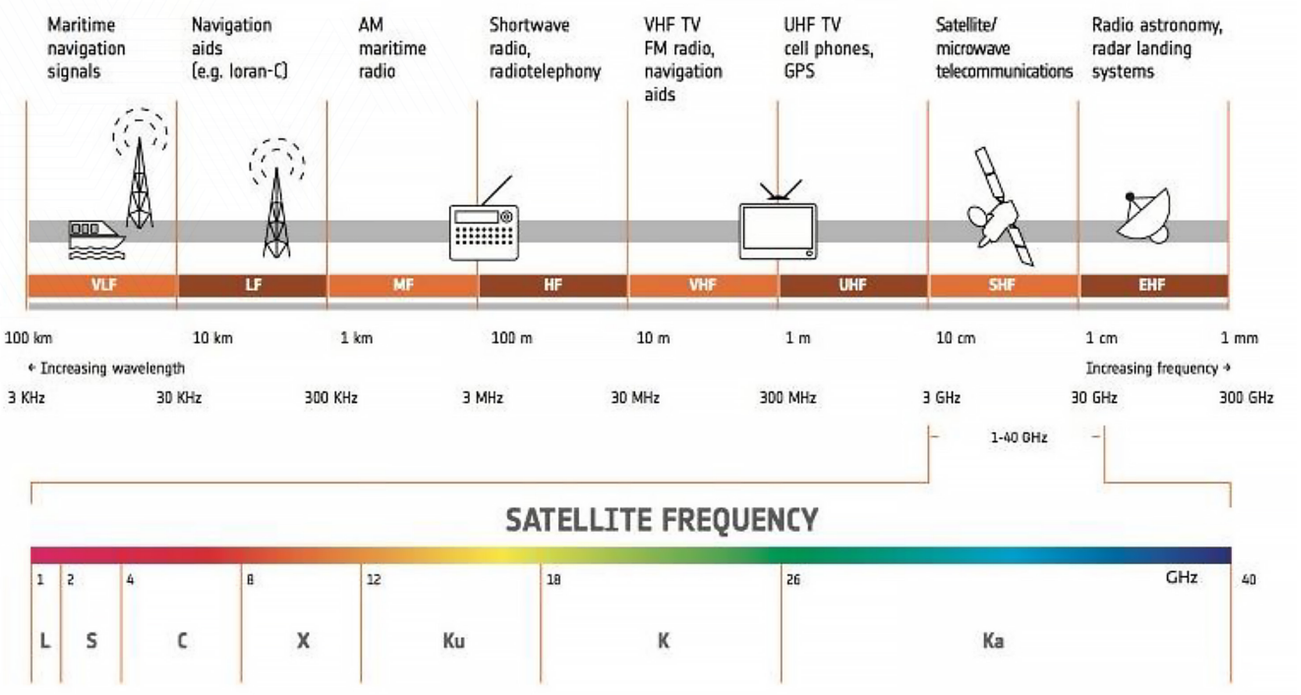
1. Satellite transmission has a larger coverage area than terrestrial transmission.

2. Satellite transmission experiences higher degradation compared to terrestrial transmission, but the quality of the broadcast is still very good.

3. Satellite transmission is capable of carrying very large bandwidths and high data speeds.

4. The cost of satellite transmission is significantly more expensive than that of terrestrial transmission.

The broadcast industry is facing a number of challenges, including the transition to IP streaming platforms, the importance of metadata, and the ageing broadcast infrastructure. In todays' world, IP streaming or streaming over IP has grown indispensable in the way entertainment is consumed, and how businesses collaborate. The development of streaming technology has resulted in significant adjustments along the way.



RF Frequency Range.

There are two main IP streaming technologies, namely, unicast streaming and multicast streaming. Each has a vastly different function. Multicast streaming uses UDP (User Datagram Protocol) to transmit a stream over a closed IP network, such as an IP service providers' network. Multicast streaming is similar to broadcast in the sense that the streamer headend transmits each video stream only once regardless of the number of users that will view it. Multicast streaming is an excellent and most used solution for Internet Protocol Television (IPTV) distribution. The conventional one-to-many "broadcast" programming that is available today can be delivered via IPTV. Source, baseband, encoding, headend, IP-encapsulated signal, ISP network, multicast streams, router, and receiving device are the main components of an IPTV architecture.

The way we consume entertainment, particularly video content, has changed significantly over the last decade. The number of internet users for news, entertainment, education, and video streaming has increased substantially. As a result, unicast streaming is now gradually replacing conventional RF transmission around the world.

What is unicast streaming? The term "unicast" refers to a one-to-one connection that sends streams over the Internet using TCP (Transmission Control Protocol). A user requests information from a server, and the server sends it after establishing a unique connection. Unicast streaming is utilised to deliver Video on Demand (VOD) contents and Over-the-Top (OTT) streaming services like Netflix, Amazon Prime Video, Disney+, etc, via mobile phones, tablets, and smart TVs. OTT architecture typically consists of source, baseband system, encoding system, switches, direct connect link, CDN provider, cloud front, unicast streams, router and receiving device.

Among the benefits of IP streaming for data transmission compared to RF transmission are:

1) High bandwidth and wide coverage - without the need for extra infrastructure or resources, broadcasters can enable IP streaming of live events like sports or concerts to millions of viewers worldwide.

2) Scalability and simplicity – the complexity and expense of network management and maintenance can be reduced since broadcasters can accommodate a high number of viewers without requiring extra connections or protocols.

3) Quality of service (QoS) and encryption mechanisms - QoS can assign bandwidth and resources to various IP streaming applications based on their needs and characteristics. Data communicated through IP streaming can be protected and secured with the use of encryption, which blocks unauthorised or malicious access and modification.

Numerous broadcasters have now advanced by integrating their RF transmission technology with IP streaming capabilities to cater to both RF and IP-based customers. The transition process from a conventional RF-based platform to the latest IP streaming platform is not simple, and it requires dedication and perseverance from the broadcasters to deliver the best possible experience and service to their customers.

An Interview: Euan Smith

Group CEO
Astro Malaysia Holdings Berhad

1. Can you share your experiences on how you started to get involved or started your career in this industry?
I spent the first years of my career as an engineer making ice cream with Unilever, so the move into media was rather unplanned! After a stint running consulting projects at KPMG, a friend of mine who had joined Sky UK asked me to help him solve some issues with the Set Top Box supply chain. From there I gradually became more involved in operations, leading field engineers & contact centres before moving into Technology, and then on to Product, Sales & Marketing.

In media, I have held senior leadership positions with Sky UK, Sky Germany, Fox in the US and as COO at Foxtel in Australia. I never applied for any of the roles; I've just been lucky to be in the right place, with the right boss, when the industry was making step-changes such as the entry into HD and broadband in the UK, and the moves into streaming at Sky Germany, Fox and Foxtel. These collective experiences gave me a solid background to be able to join Astro as CEO of the Pay TV business in 2020, right at the start of the pandemic. Earlier this year, I became the Group CEO, leading the team that is busy building the New Astro.

And what is New Astro? It is Astro for 21st century Malaysia. It is a streaming-first content powerhouse, delivered through hybrid, connected Ultra 4K UHD & Ulti HD boxes that aggregate 11 global apps with our sparkling content, all via an intuitive interface. It is a companion app that lets you take all your Astro 'in your pocket'. It is a dedicated Internet service provider (Astro Fibre) that delivers high quality connectivity at great value. It is sooka, a new, simple OTT platform. And it is much, much more.

2. Which specific areas within the telecommunication industry should Malaysia be focusing on to be better prepared for the challenges to come?
Telecommunications and media have been the essential thread connecting people, businesses, even whole societies during the COVID-19 pandemic. However, the pandemic also accelerated and amplified new trends that were already starting to define the basis for success in the future. A few thoughts on where Malaysia should be investing most:

5G-Enablement: We need to upgrade for a software-defined, cloud heavy, so-called 'hyperplexed' world. The sheer volume of data capable of being transferred will form the bedrock for use cases not yet fully considered. In the immediate future, network modernisation and expansion will be focused on buildouts of 5G capabilities. On the customer-facing side, advances in Artificial Intelligence (AI) and robotics will mean even less need for customers to connect with 'physical' services. On the back end, virtual networks and cloud-based services will help free up specific technical resources to work on more cutting-edge, innovative projects to create future revenue streams.

Beyond this, Web3 is quite a 'loose' notion, with its fair share of detractors, but essentially the changes underway facilitate significant decentralisation (localisation, hugely reduced cost of entry) while block chain technology offer a new paradigm for security and privacy, transforming consumer capabilities beyond what 5G alone offers. Competition in the space will be fierce as established technology corporates jostle with start-ups to remain relevant in a range of industries from automobiles to banking to health care. The trick will be to anticipate which parts of each market are threatened by Web3, the value of these customer segments and how one might invest proactively in new applications that provide innovative **'Web3'** use cases.

We will also see intensified competition from **"hyperscalers"** - the big tech companies such as Microsoft, Apple, Amazon, Google and even streaming OTT players. All are stretching well beyond their original base to increasingly encroach into the territory that telcos and media broadcasters historically dominated. We have no choice but to out-create these companies, developing applications that are more attractive, offering better value, control and flexibility for consumers and businesses. This will require a significant investment

PROFESSIONAL BACKGROUND

Euan is the Group Chief Executive Officer of Astro and is instrumental in the rebranding of New Astro, the OTT aggregation strategy which saw 11 global streaming apps on one platform, the introduction of the connected Ultra 4K UHD and Ulti HD boxes, entry of Astro as an internet service provider via Astro Fibre, the launch of OTT platform sooka, and many more. Euan is an established media executive with a unique skill set spanning both business and technology in media operations and in transformation.

in innovation and increased forging of partnerships with start-ups that are gaining a foothold in these new markets.

Last is the changing demographic. It is clear that Gen Z generally prefers digitally-enabled experiences, on-demand conveniences, frequent small purchasing, and high-quality authenticity in games, shopping, and content. As the biggest content creator in Malaysia, Astro is learning how to connect with Gen Z through our buzzworthy Astro Originals like Projek High Council and One Cent Thief, and through our new sooka OTT streaming service, which offers convenience, flexibility, and a 'snacking' approach for the new generation.

3. Do you have any advice to youngsters who aspire to pursue their studies or dream jobs in the telecommunication field?

The landscape of the industry has changed drastically over the last 20 years. Two decades ago Astro re-invented entertainment in Malaysia via satellite. Now we are pivoting from linear broadcasting to streaming, becoming the digital content provider of choice as we aggregate the best of the international and local apps, all in one place, all on our platform.

This can be demonstrated through our three distinct offerings - our Pay TV product, delivered through connected Ultra/Ulti boxes (that work just the same with a dish or over Broadband), our no-frills proposition, NJOI freemium TV, and sooka, our mobile-first proposition for millennials

We are also finding it important to diversify into adjacent revenue business to offer more value to consumers, the obvious example being our new Astro Fibre Broadband proposition, as well as rethinking whole business models as we have done through the launch of our targeted Addressable Advertising stack

The everchanging landscape of broadcasting is no longer just operating cameras in a studio environment. Technological advances have enabled this industry to be more efficient and have also created many job

"The landscape of the industry has changed drastically over the last 20 years. Two decades ago Astro re-invented entertainment in Malaysia via satellite. Now we are pivoting from linear broadcasting to streaming, becoming the digital content provider of choice as we aggregate the best of the international and local apps, all in one place, all on our platform."

opportunities in tech and data for the industry's products and services. We are leveraging digitisation and data as well as the emergence of advanced analytics, giving us a better insight into customers and market niches, allowing us to personalise our products as never before. Data lets us reimagine our business models.

My advice to anyone entering the industry can be boiled down to a few simple thoughts:

First & foremost, make sure you are working for a great leader, a manager who takes an active interest in your growth. You are looking for someone who is going to push you to excel, in a positive way, who is going to actively challenge you, allow you to experiment (and therefore sometimes fail!) & who genuinely wants to see you grow.

Second, find a role, a skillset, a company for which you have a real passion. The simple test is this – does it excite you to tell your family and friends what you do, what you and your team delivered last week? If it does not, this means you are working mainly for the money. This decision will soon reflect both in the quality of your work and your personal life satisfaction.

Third, make sure that, early in your career, you have a good working understanding of business financials. Too often I find that young technologists and operations people do not see a need to understand P&L, cash flow, etc. and hence put themselves at a real disadvantage later in their working life. You need to know what makes the business tick and how your work directly contributes to the bigger picture.

Last, it is a cliché but it is true. Nobody fails – they succeed or they learn!

We hope Astro is helping to inspire the young generation of the expanding opportunities in the telecommunications industry, which is undergoing great disruption. We frequently hold student tours at our broadcast centre, exciting them about our many products and services and how we are imagining the future. An industry in transition means a lot of opportunity and a high level of creativity to be injected. Our Astro Young Talent and Talent Pipeline programmes are ways in which we are actively looking to grow the next generation of great technology talent.

4. What are the potential challenges the company will be facing in the next few years and what are you doing about them now?

As viewing consumption shifts from linear broadcasting to streaming, and from TV to mobile, Malaysia is transitioning to over-the-top (OTT) services in a streaming world. More and more consumers are looking for convenient ways to fulfil their entertainment needs, paving the way for streaming platforms. However, the growing number of OTT services means that there is increasing saturation in the marketplace. With a proliferation of apps, the OTT space is getting more fragmented and expensive. Customers are not willing to pay for multiple streaming service subscriptions individually, as the costs really start to spiral. Also, it is complex to maintain all these subscriptions, and finding what you want to watch is an increasing challenge.

Recognising how quickly the entertainment and broadcasting industry has evolved, from linear TV to On Demand and streaming, the all-new

Astro experience reflects our transformation from broadcasting to a streaming company. We are continuously innovating and launching new products and services that are exciting for customers and relevant to today's needs.

We introduced the connected Ultra and Ulti Boxes so that customers can enjoy a seamless and uninterrupted viewing experience. Today, we have over 850,000 installs of the connected Ultra and Ulti boxes, with access to over 110,000 titles on demand. There is always something great to watch. Customers are also very pleased with the convenience. As they are hybrid, these 'Plug and Play' boxes, can be couriered directly to homes and customers can easily self-install by connecting them to the internet. No dish required!

We wanted the on-screen video quality to be second to none. That is why the Ultra Box can deliver 4K Ultra High-Definition viewing, and we have recently added HDR (High Dynamic Range) to make content even more vivid.

We also updated all the boxes to enable multi-user profiles, meaning we are now able to tailor viewing recommendations depending on which household member is watching the TV or Astro GO device.

What is more, customers have the ability to enjoy exciting new TV packs and the best streaming apps such as Netflix, Disney+ Hotstar, HBO GO, iQIYI, TVBAnywhere+ and more without having to leave our ecosystem.

To complement this experience, we launched Astro Fibre. By venturing into the Internet Solutions Provider (ISP) sphere, we are offering a one-stop entertainment solution. Our WiFi KENCANG bundle offers Astro content, high-speed internet and mesh WiFi, or customers can opt for the high-speed internet on a standalone basis.

And, to reflect the changing demographics and desires of the market, we launched sooka, which is our own OTT service targeted at millennials. It is built on a completely modern, tech stack with some very neat innovations, offering flexibility and snacking for a whole new market.

Our 'game' has not changed in the last 27 years. Astro is all about creating outstanding local content and live Sports and aggregating that with the best of third-party content. The tech that allows us to do that is ever-changing, our ability to manipulate data, use AI and machine-learning tools ever more powerful. But at the end, we are here to educate, inform and entertain Malaysia, to create 'moments that matter'.

5. What is the most useful lesson you have learnt since taking up the helm of this company?

That everything is different but everything is the same! Malaysia is the fifth Pay TV and entertainment market I have been privileged to be involved in. As the world globalises, it is incredibly important to follow what is happening elsewhere in the world, how the players in those markets are responding, and to find the lessons that can be applied. But in execution it is also important to adopt a 'beginners mind', to be ready to experiment and to adapt to the local market's feedback.

And, last, I have learnt that Malaysia has a rich depth of skills and many eager young talents. The job of us 'older guys' is to help nurture & develop that, to create the telecommunication and entertainment leaders that will boldly take Malaysia forward.

How Education and Digital Humanities Help Achieve Sustainable Development Goals (SDGs)

By Dr. Chong Su Li, Institute of Self-Sustainable Building for Smart Living (ISB), Department of Management and Humanities, Universiti Teknologi PETRONAS (UTP)

Most nations in the world have come together to find new ways of preserving the environment and sustaining human well-being. Through the 17 shared sustainable goals (SDGs), the United Nations has rallied the world to commit towards achieving these goals. However, the SDGs, which address the 5Ps (People, Planet, Prosperity, Peace, and Partnerships), will not be fully realised until they are aligned with perspectives that are local to the community and the land. To this end, digitisation can be the key to aiding the achievement of the goals.

What is digitisation? One of the most significant innovations to emerge from the 20th and 21st centuries is information technology (IT). The application of IT can be regarded as digitisation.

Digitisation has moved at an incredible pace, impacting vast areas of human lives, from STEM (science, technology, engineering, mathematics) considerations in engineering, built structures, and transportation to the humanities like education, justice systems, social psychology and ethics. Understood broadly, this innovation has liberalised and disseminated information to large segments of society. This has radically transformed the way human beings conduct their lives.

However, the upshot of this is that the progress of technology is outpacing our understanding of how it reshapes human experience and cultural norms. In achieving the SDGs, researchers in STEM and in the humanities need to keep up with the effects of technology and examine its impact on human lives so as not to be overwhelmed. The questions are: how do education and digitisation work together to achieve the SDGs, and who are the beneficiaries of the outcome of the process?

The rest of the essay shows an example that connects the act of reading with digitisation and the SDGs. Why and how should these three elements be connected?

As we know, a direct way of raising SDG awareness is through disseminating relevant information to young, impressionable minds. This requires the basic, educational transaction of reading. Thus, combining reading and technology, digitised information can be disseminated in an online format to readers everywhere.

How does digitisation and reading reshape brain circuitry, especially in young readers? In the field of research in brain imaging and neuroplasticity, researchers have been able to see in real time, where, in the reading brain, neuronal connections are made when a child reads from traditional printed text compared to texts on screen-based devices. Early research indicates that there may be a significant shift in human cognition, which sees deep reading (usually associated with printed texts and reading in quiet spaces) being replaced by superficial reading (usually associated with reading digitally, especially through hand-held devices, which is also linked with reading in less 'conventional' places or noisy spaces). The highly popular social media TikTok is one such example of bite-sized information dissemination that provides both knowledge and entertainment at the same time. The impact of this shift warns of a change in intellectual capacities that imply that digital natives may have less resilience for intellectual thought and discussion.

However, this is not to say that digitisation will necessarily cause a deterioration in cognition and reading. What is important is for educationists and technologists to consider the ways in which particular aspects of technological experience can benefit learners and bring about an increase in awareness of current issues like sustainability knowledge and actions. Such considerations are already being examined in the field of digital humanities. Here, questions of the propriety of introducing, applying and utilising technology are raised in terms of what kinds of social, psychological, spiritual and emotional impact these applications can have on newer generations of people.

The suggestion is therefore, for digitisation to be included into learning and reading with the concepts of **mode** and **affordance** to be considered. Mode refers to the vehicle that transmits meaning. For example, a writing system is the most conventional mode for reading. Another especially important mode is pictures. In digitised forms therefore, important

messages of sustainability can be creatively disseminated vis-à-vis the combined multimodal form of writing and pictures.

Affordance refers to a mode's potentials or limitations. For example, writing can only transmit information silently as it does not have an oral voice or sound. To address this limitation, educators can use technology to incorporate recordings of the sound of nature in a learner's local environment so that an alternative resource of knowledge can be applied alongside the conventional resource. This means that through technology, the affordance of writing, drawings and sound can come together as multimodal tools to engage a learner's attention to the SDGs.

More than that, local educationists and technologists can collaborate to produce sustainability messages that are indigenous to their land. Bearing in mind the importance of sustaining deep reading, designers should ensure quality content. When the right kind of sustainability messages are transmitted and shared through engaging and attractive modalities that incorporate local and contextual settings, relevant ways of meaning-making can occur. This is how education and digital humanities merge to achieve the SDGs.

Ultimately, it is important for leaders in the fields of education and technology to understand that the best kind of advancement is one that is rooted in cultural considerations and digital applications. With such a fundamental view, practical problems can be better addressed so that local knowledge and local ways can be utilised to improve day-to-day living.

By Ts. Mohamad Norsazlan Salim, Chartered Member, The Chartered Institute of Logistics and Transport Malaysia (CILTM)

Emerging Technology

Impacting Malaysia's Transportation Industry

The transportation industry in Malaysia has undergone significant changes in recent years, largely due to the impact of emerging technologies. These technologies have transformed the way people and goods are transported, making transportation faster, safer, and more efficient. In this article, we will explore the key emerging technologies, who is involved, and how companies and individuals can leverage the technologies to gain competitive advantage.

What are the said emerging technologies?

Electric vehicles (EVs): EVs run on electricity and produce zero emission, making them an attractive option for consumers who are concerned about the environment. In recent years, there has been a significant increase in the number of EVs on Malaysian roads, thanks in part to government incentives and support for EV adoption.

Autonomous vehicles (AVs): AVs can operate without human intervention. They are equipped with sensors and software that enable them to navigate roads, detect obstacles, and make decisions based on real-time data. While AVs are still in the early stages of development in Malaysia, they have the potential to revolutionise the transportation industry, particularly in terms of reducing accidents and improving road safety.

Intelligent transport systems (ITS): ITS is a broad term that encompasses a range of emerging technologies designed to improve the efficiency and safety of transportation systems. These technologies include smart traffic management systems, real-time traffic information, and vehicle-to-vehicle communication. In Malaysia, the government has been investing in ITS, to improve the transportation system, particularly in urban areas.

Shared mobility: Shared mobility refers to the sharing of transportation resources, such as car-sharing, bike-sharing, and ride-sharing. It is typically facilitated by digital platforms and has become increasingly popular in recent years. Shared mobility has the potential to reduce congestion and improve access to transportation, particularly in urban areas.

When did the impact of emerging technologies begin in the transportation industry in Malaysia?

The impact of emerging technologies has been felt over the past decade, with the introduction of ride-sharing services such as Uber and Grab in 2012. Since then, the industry has seen a rapid evolution, with the introduction of EVs, AVs, and smart traffic management systems in recent years.

Who is impacted by the emerging technologies in the transportation industry in Malaysia?

The impact is felt by various stakeholders, including companies in the industry, drivers, commuters, and the government. Companies involved in the industry, such as ride-sharing services and manufacturers of EVs and AVs, are experiencing significant changes in their business models and operations. Drivers are also impacted, as they are required to adapt to new technologies and regulations. Commuters are benefiting from the increased affordability and accessibility of transportation services, while the government is seeing new opportunities for economic growth and environmental sustainability.

Why are emerging technologies important?

Emerging technologies are important for the transportation industry in Malaysia for several reasons. They provide new opportunities for companies and individuals to improve their operations, increase efficiency, and provide better services to consumers. They also offer new job opportunities and contribute to economic growth. Moreover, emerging technologies can help Malaysia achieve its environmental sustainability goals by reducing emissions and promoting the use of clean energy.

How can companies and individuals take advantage of emerging technologies?

Companies and individuals can do the following:

- **Prioritise innovation** and invest in emerging technologies to remain competitive in the market.
- **Focus on education** and awareness around emerging technologies to build knowledge and help consumers understand the benefits and risks of these technologies.
- **Go for collaboration** between industry players, government agencies, and other stakeholders for the successful integration of emerging technologies in the transportation industry.
- **Implement cybersecurity and robust measures** to protect against cyber attacks and data breaches.

In short, the impact of emerging technologies on the transportation industry in Malaysia is significant and has the potential to transform the way people and goods are transported. With the adoption of EVs, AVs, intelligent transport systems, and shared mobility, the industry can become more efficient, safer, and more sustainable. Companies and individuals involved in the transportation industry can leverage these technologies to gain competitive advantage, improve their services, and contribute to a more sustainable transportation system.

/mbot news

MBOT Borneo Symposium 2023

The MALAYSIA Board of Technologists (MBOT) organised its first-ever MBOT Borneo Symposium 2023 at the Borneo Cultures Museum, Kuching, Sarawak. Themed Preparing a Sustainable Workforce, it was carried out in collaboration with the Association of Professional Technicians and Technologists (APTT) and Universiti Malaysia Sarawak (UNIMAS). The programme aimed to increase the visibility of technologists and technicians in Sabah and Sarawak. The opening ceremony was officiated by YAB Datuk Patinggi Tan Sri Dr. Abang Haji Abdul Rahman Zohari Bin Tun Datuk Abang Haji Openg, Premier of Sarawak.

YAB Datuk Patinggi Tan Sri Dr. Abang Haji Abdul Rahman Zohari in his speech said, "Sarawak needs more professional talents. Realising this, the Government aims to register 10,000 technicians and technologists in Sarawak by 2025,".

In conjunction with the symposium, MBOT launched the MBOT Student Chapter: Talent Upskilling and Networking for Employment (TUNE) - a new initiative aimed at supporting students to pursue vocational and technical programmes with knowledge, skills, and exposure that they need to thrive before venturing into the workforce.

MBOT also ventured into strategic partnership by signing eight Memorandums of Understanding (MoUs), including one tripartite agreement between MBOT, APTT and six partners, namely, Sarawak Skills, I-Cats University College, Wawasan Open University, Swinburne University, Sarawak Digital Economy Corporation (S-Dec), and the Centre for Technology Excellence Sarawak (Centexs). In addition, two MoUs were signed – one with Mega Aerospace Centre Sdn Bhd, and another with Alliance MEP (Sarawak) Sdn Bhd.

Seoul Accord General Annual Meeting

The MALAYSIA Board of Technologists (MBOT) was invited to attend the Seoul Accord General Annual Meeting at Taichung City, Taiwan on 17–18 June, 2023. Prof. Datuk Ts. Ir. Dr. Siti Hamisah Binti Tapsir, President of MBOT, attended the meeting, representing MBOT as a provisional signatory of the Seoul Accord.

During the meeting, Prof. Datuk Ts. Ir.Dr. Siti Hamisah highlighted MBOT's interest in joining the committee responsible for enhancing the governance and regulation of the Seoul Accord. According to her, MBOT is expected to become a full signatory by the first quarter of 2023. She emphasised MBOT's dedication to meeting the required criteria and standards set forth by the Accord.

The Seoul Accord provides mutual recognition of graduates of accredited programmes among the signatories of the Accord. This global recognition brings about positive impact on the quality assurance of related programmes, while increasing the marketability and industry acceptance of graduates generated by the programmes.

The Accord was established in 2008 with nine countries being full signatories and eight countries being provisional signatories.

/mbot registration

41,940	8,537	19,164	2,338
Graduate Technologists	Qualified Technicians	Professional Technologists	Certified Technicians

71,979 Total MBOT Registrants (As of May 2023)

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