NAVIGATING THE 4TH INDUSTRIAL REVOLUTION

FOURTH LEAP

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DIGITAL TRANSFORMATION FOR A BETTER WORLD

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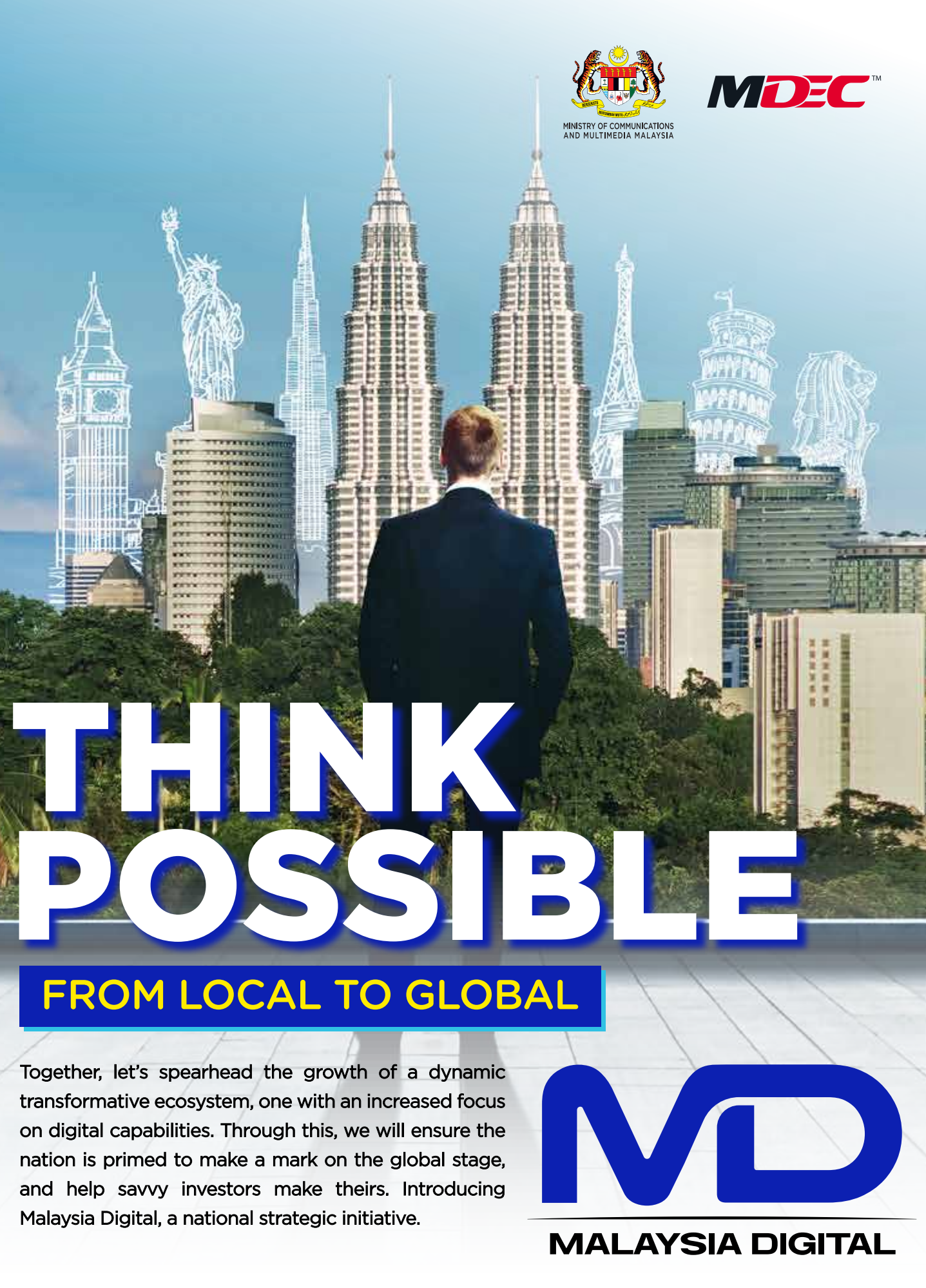
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the**team**

Founder / Editor
SRITHARAN VELLASAMY

EDITORIAL sri@wordlabs.com.my

Deputy Editor **ADLINA HAZWANI**
Graphic Artist **ISMAIL MORTHAR**
Photography **AYLWIN JOSHUA**
Contributors **DR THOMAS TANG, GAURAV DUA, JERRY DURANT, ELSIE LOW, ELAIN LOCKMAN, MARTIN CONBOY, IR. DR MOHD SHAHREEN MADROS & THILOHTHAMAN KASINATHAN**

INFO & SALES

TAMYNE MENON
tamyne@wordlabs.com.my

SCAN ME

WORDLABS GLOBAL

No.617, Block D,
Kelana Square, 17 Jalan SS7/26,
Kelana Jaya,
47301 Petaling Jaya,
Selangor, Malaysia
Tel: +603 7880 4200; +603 7886 4933
Fax: +603 7803 0500
Email: info@wordlabs.com.my
Web: www.wordlabs.com.my

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"What new technology does is create new opportunities to do a job that customers want done."

– Tim O'Reilly

LIVING in the 21st century and simultaneously trying to drive your business with marketing strategies can be daunting and exhausting. However, the digital world is rapidly changing, and it waits for no one but catches up to those willing to seize the opportunity in the vast industry.

Digital transformation can be seen as a struggle or a win for different people with distinctive perspectives. But on the other hand, digitalisation might be associated with utmost unfamiliarity, especially for those who have been comfortable doing business by adopting traditional processes.

One must adopt a digital-first mindset to successfully transform and get a dip in the latest digital tricks. These days, the term "digitalisation" is used so frequently that it might start to sound gimmicky. However, it is a legitimate tactic that aids in long-term sustainability and increases your company's profitability. Businesses can gain from using digital solutions in a variety of ways, including boosting productivity, cutting expenses, entering new markets, expanding their product and service offerings, providing more excellent value to consumers, and, most importantly, fulfilling business objectives.

In Malaysia, numerous business owners and also government sectors are rushing towards implementing digital transformation for a visionary future filled with more spaces for tremendous success.

More awareness and knowledge regarding digital transformation are disseminated like wildfire to educate others. Therefore, it is vital for business owners to share a like-mindedness with people in the industry. This will help to encourage kindred spirits in similar matters, which will simultaneously bind other organisations, government agencies and ministries together to take up plans for more significant digital projects and systematically adopt the parallel methods.

Malaysia is gradually implementing technological changes in its everyday routine and opening up to more new career opportunities. As a result, we can see a progressive country arising in a few years, which appreciates fresh talents in countless fields and is worth defending.

Hence, in this edition of Fourth Leap, we look at shaping the way we think through digital transformation, digital potholes and the upheavals that come with a digitally-infused organisation.

Stay tuned as we share the world's progress with you, dear reader, from the keen minds of leaders, scholars, and independent thinkers. We are certain that our contributors will pique your interests and perhaps spark a need to connect and have a conversation. So feel free to reach out to us, and happy reading!

– Sritharan Vellasamy
(sri@wordlabs.com.my)

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Nokia Maintains Its Support for Malaysia's Industry 4.0 Initiative

ACCORDING to a statement from the Finnish telco vendor, Malaysia has made progress in steering strategic socio-economic transformation with the adoption of Industry 4.0 technologies nationwide.

"Private wireless has proven to be a critical enabler to accelerate Industry 4.0. As Malaysia continues to implement its Industry 4.0 strategies, it is more critical for companies to accelerate the technology adoption and unlock new opportunities to boost Malaysia's economy," said Mohd Rauf Nasir, managing director of Nokia Malaysia, Sri Lanka, and Maldives.

During its recent Nokia Technology Day, the business emphasised how it provides mission-critical solutions for communication service providers and companies in crucial sectors, including manufacturing, oil and gas, and agriculture.

It was highlighted that Malaysia had reached a critical milestone of 27% 5G coverage countrywide, with the objective of 36% anticipated by the end of 2022.

TVET as a Driver of Economic Development

INITIATIVES encouraging local students to specialise in TVET and science, technology, engineering, and mathematics (STEM) courses are intended to generate competent employees per the country's industrial demands.

Local knowledge is required to meet the challenges and capitalise on the possibilities presented by the Fourth Industrial Revolution (IR4.0) through the application of new technologies such as artificial intelligence (AI), the Internet of Things (IoT), and robots.

TVET is crucial from a different standpoint as an alternative to postsecondary education, which may be riddled with many impediments to the student's future. School leavers are forced to choose between pursuing their education and working to support themselves and their families.

The Statistics Department issued a study earlier this year showing that around 390,000 out of 560,000 SPM candidates, or 72.1%, opted to enter the labour field after taking the exam. On the other hand, only 170,000 students expressed a desire to continue their education.

Mednefits Survey Highlights Rising Cost of Healthcare Benefits a Concern for Malaysian Businesses

MEDNEFITS, a digital platform for employee flexible benefits, recently released its 2022 Employee Benefits Trends survey, which includes the findings and analysis of 200 HR professionals in Singapore and Malaysia.

The main issue that has been discovered within the industry is the lack of an up-to-date medical benefits benchmark which made the annual benefits review become much more difficult.

The current norm in administering medical benefits is through costly insurance plans which cover not only hospitalisation but also outpatient treatment. These plans can cause some undue financial strain on the company.

More companies in Malaysia are looking to enhance and review their employee benefits package to stay ahead of the competition in attracting and retaining top talents, and this is where Mednefits come into action.

STEAM Education for a Better Future

A 21st-century student and graduate should have transferrable abilities. The finest educational experiences prepare students for the real world by teaching them to adapt to challenging circumstances.

STEAM education encourages learners to think beyond the box, transforming how they see and navigate the world. It may also assist in preparing people to tackle global issues.

STEAM education may also prepare students for some of Malaysia's most in-demand professions in 2022, including IT, software development, digital marketing, finance, business development, medical, and education. To generate industry-ready graduates, STEAM can provide our young learners with the competitive edge required to navigate future careers, which will only grow in demand.

Malaysia Is Rising in the Digital Nomad Industry

MALAYSIA has joined the countries that grant digital nomad visas to encourage mobility among digital workers in the local tourism sector. Thailand, Estonia, Malta, Croatia, Mexico, Spain, and Portugal have all followed suit.

The visa is part of the DE Rantau Programme, launched on October 1 by Malaysia Digital Economy Corporation Sdn Bhd (MDEC).

It was stated that DE Rantau acquired over 2,000 applications within 18 days of the program's introduction, and locations, including Penang, Langkawi, Kedah, and Kuala Lumpur, were designated digital nomad hubs in its initial phase.

It was also revealed that the initiative aims to generate RM70 billion in revenue and development in the digital economy by 2025.

DIGITAL TRANSFORMATION FOR A BETTER WORLD

Digital has transformed old and inefficient business models into high-performance paradigms, whether it be factory automation or daily customer transactions

The trend of going digital affects everyone, whether intentionally or unintentionally.

FOURTH LEAP

By Dr Thomas Tang

IN the brave new world of economic crises, COVID-19, climate change, and calls for social justice, we face fresh challenges that society has never encountered before and on a scale never envisaged. In the meantime, technology has advanced significantly since 1821, when Charles Babbage first proposed the use of mechanical computing, and a century and a half later, when Tim Berners-Lee introduced the World Wide Web that was to become the precursor to the Internet.

But has technology, notably Artificial Intelligence, Big Data, IoT, cloud computing, and others, become the solution – or the obstacle– towards addressing social and global problems?

Technology has no doubt made our lives easier. More than 3 billion regular Internet users worldwide; about 7.1 billion people have a mobile phone today to manage their lives. The use of technology is pervasive. Everyday appliances possess a smart chip of some sort to automate daily functions, plus machine learning has taken autonomous devices like robots and drones to new levels of performance. We will never replace human skills with AI, but we are getting closer.

Smart healthcare, for instance, uses information technology to diagnose diseases, monitor patients, enable clinical decisions, and even perform surgery. The world is so much better as a result, with lives saved that would otherwise have been lost. Even in the current conditions of COVID-19, monitoring and controlling outbreaks have been possible due to healthcare agencies applying gamification technology and drug researchers using medical information analytics to come up with a possible cure.

But the dark side of technology is that it has made us more demanding and elevated our expectations towards dimensions of avarice and selfishness. The behaviour of society to consume more and worry less about tomorrow has increased, fuelled by the technological convenience of online shopping, supply chain efficiencies, consumer choices, and the ability to make money too fast and too soon. In short, with a growing population, an increase in urban lifestyle, and the globalisation of goods, we are consuming more resources than the planet can comfortably provide.

Even prior to the COVID-19 pandemic, the world was already accelerating in the digital transition.

The Sustainable Development Goals or SDGs developed in 2015 attempt to curb this greed and bring us back in line, particularly SDG 12, which speaks of responsible consumption. But have we let the genie out of the bottle? Is it too late to rein it back in? In SDG 13, we talk about climate action and how the world is in a parlous state due to global warming. Countries now recognise the dangers of sea level rise, elevated temperatures, and weather disasters that can afflict us. Technology is helping us with future model scenarios of 'what-ifs' if we continue on the IPCC warning path to a 1.5-degree or more temperature rise. Still, they are the tools merely holding up a mirror to tell us what we know already, that the world will be in a terrible place by 2050 if we fail to do something now. And yet we continue not to act.

On a more positive outlook, where businesses have committed to improving corporate responsibility, technology has become an essential factor in management. The role of technology in the industry is immense. Digital has transformed old and inefficient business models into high-performance paradigms, whether it be factory automation or daily customer transactions. The speed and efficiency by which computers process data into valuable and strategic information are one of the wonders of the modern world.

Environment, social, and governance or ESG is the new mantra for companies aspiring to become responsible businesses.

Typical ESG issues that companies cover

Environment	Social	Governance
▶ Biodiversity and habitat ▶ Climate change adaptation ▶ Energy consumption ▶ Greenhouse gas emissions ▶ Indoor environmental quality ▶ Material sourcing ▶ Pollution prevention ▶ Renewable energy ▶ Sustainable procurement ▶ Waste management ▶ Water consumption	▶ Child labour ▶ Community development Customer satisfaction ▶ Employee engagement ▶ Employee health & well-being ▶ Employee remuneration ▶ Forced or compulsory labour ▶ Freedom of association ▶ Health and safety: community, contractors, employees, tenants, customers ▶ Human rights ▶ Inclusion and Diversity ▶ Labor standards and working conditions ▶ Stakeholder relations	▶ Bribery and corruption ▶ Cybersecurity ▶ Data protection and privacy ▶ Executive compensation ▶ Fiduciary duty ▶ Fraud ▶ Political contributions ▶ Shareholder rights

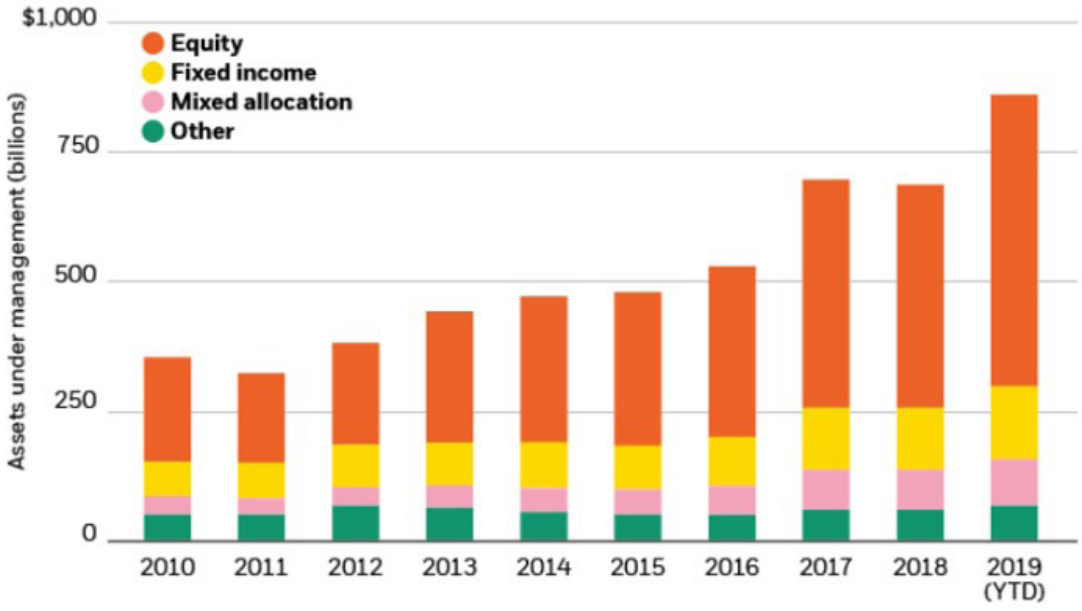
With the attention on tackling climate change, understandably, the ESG agenda is somewhat skewed towards it. Nevertheless, many investors in green finance use ESG as the vehicle to drive sustainable outcomes resulting from their investments in areas such as clean energy, waste reduction, biodiversity conservation, and others.

The growth of sustainable investing

Assets in dedicated sustainable investing strategies have grown at a rapid pace in recent years, and this trend is showing no signs of slowing.

Gathering momentum

Growth in ESG funds under management, 2010–2019



Source: BlackRock Investment Institute, with data from IMF, June 2019. Notes: Data are based on IMF staff calculations using Bloomberg Finance data. Asset under management are in USD billions. The year-to-date (YTD) data are as of June 2019. The chart shows global ESG-mandated funds only.

Data is key to accomplishing these objectives. Technology is vital in capturing and analysing the exponential amounts of data that will emerge from design, construction, and operational processes. Building Information Modelling (BIM) and Geographical Information Systems (GIS) are tools commonly deployed to aid planners and engineers in building and running better sustainable facilities. There are many other applications of technology using sensors, intelligent networks, blockchain, and materials to help sustainability become a reality.

Disclosure of data is important. But to report data – as it now becomes a trend for ESG reporting to be mandated in certain jurisdictions – means that the proper standards have to be adopted for consistency, and the accuracy of the data must be assured. Lastly, reporting relevant data (i.e., fulfilling materiality aspects). Therein lies the dilemma - technology can enable us to collect data from all sources. Still, it is the meshing of different types of metrics into a common realm of understanding that poses the challenge. How does one reconcile the social benefits of a clean water project to the amount of embodied carbon locked into heavy equipment, for instance?

Doubtlessly, some clever scientists and sociologists can come up with the answers to ESG reporting in the future; but danger lurks in misreporting or misrepresentation of information. Just as people develop ingenious ideas for improving society, some operate disingenuously and come up with false news and "greenwash." Even today, there are still climate sceptics on this planet who do not believe fossil fuels cause global warming.

Another problem is the "digital divide," where technology is not evenly distributed to help those who need the assistance that technology brings. As a result, developing countries that could benefit enormously from the right technology often cannot get access. In some cases, budgets are spent on inappropriate technologies that disconnect and isolate the needy and underprivileged.

Dr. Thomas Tang, CEO of PJ Sustainability Consulting Limited, is a professional advisor to corporates on sustainability, climate resilience, urban design and social innovation. He is a UN Scholar, an adjunct professor and an author.

FIVE STEPS IN ENSURING ETHICAL FUTURE USE OF TECHNOLOGY

1. Underpinning the application of technology, there needs to be a code of ethics to ensure that economic and social benefits are evenly spread and that the natural environment is not compromised. There are bodies like the World Commission on the Ethics of Scientific Knowledge and Technology or COMEST that UNESCO has set up for this purpose.

2. Technology should be made available for people to encourage them to do the right thing. Applications to connect citizens should have components of societal contributions like community volunteerism and sustainable lifestyle options (like waste recycling, green mobility, and sustainable food), as well as how to share tips on personal well-being to unite communities.

3. Data for good – collecting and acting upon the correct data. We are often caught up in the paradigm of "paralysis by analysis." It is always the holy grail to get the perfect outcome based on perfect data. This is not real. For example, sea levels are rising, and temperatures are escalating, leading to disruptions in food chains. This is not good for anyone as we try to collect more and more data with little outcome. To change this, data must be actionable.

4. Businesses must deploy responsible technology. The advances in systems mean that so much is possible today, but we must remind ourselves that technologies impact people and the environment. We should design technologies with sustainable outcomes that are transparent and tangible.

5. Lastly, it is time to reconnect technologies with human values. The world is changing, and people need help to adapt to these changes. Let us channel digital and technological transformation into these areas for the common good.

DIGITAL TRANSFORMATION CHANGES THE WAY WE THINK

Being digital is about wrapping speed, agility thinking, and a new business model approach

FOURTH LEAP

By Elsie Low

AFTER my daily workout at the gym, my friend and I discussed how fitness centres operate their business model. The gym uses a subscription-based business model to get continuity and recurring revenue from its regular customers. I took the opportunity to explain and advise her to explore the digital subscription payment mode for her business. She has a stable and flourishing business; however, they were having challenges as some customers failed to make payments and needed to follow up constantly.

Yet she was still concerned as procuring a newer system to manage the subscription will increase resources for her business. I quickly helped her understand better that a subscription-based business model would help her business retain customers and predict and project her finances and revenue. Most importantly, it will ease her in their administration of follow-up payments.

The subscription-based business model is nothing new, and many solutions and application providers in the marketplace are using this model today. It is like practising lean management, where organisations should look into eliminating wastages, focus on strategic tasks, and cultivate efficiencies.

Many businesses are aware of the newer technologies and automation that will help them scale their business, but how many look into the entire business and ecosystem before considering digitalising?

ARE YOU DIGITALISE?

I have always been writing and encouraging businesses and organisations to cultivate "Being Digital" in their digital transformation journey. I have even referenced "being digital" as it is about speed and agility, as described by John Rossman, the author of "think like Amazon." However, many cannot comprehend where they are in their journey to "Being Digital".

Coincidentally, I came across a joint report from Deloitte, ESI Thoughtlab and a coalition of business, government and academic leaders. It is titled "from digital to being digital: transforming service delivery and operations in cities post the pandemic." It's an interesting report as it clearly defines how they view "being digital."

First and foremost, let me set the fundamentals correctly. Some often assume that Digital transformation is a short-term project that can immediately transform into "being digital." On the contrary, Digital Transformation is a long journey. The report elaborates on it in a better light. The digital transformation journey starts with "Beginning Digital," "Doing Digital," "Becoming Digital," and "Being Digital." But what exactly do all these terminologies mean?

This report is specifically related to the U.S. Government. Therefore, I am using these terminologies and adapting them to laymen's perspectives and contexts on how this can be relevant to many local organisations today.

- **Beginning Digital** is the inception of the internet, where businesses use websites or an eCommerce platform to provide marketing, sales, and basic services to consumers. The technology then enhances it so that all smart devices, smartphones, and computers can perform transactions online. Investopedia describes it as a disruptive technology then.

- **Doing Digital** is merely deploying digital technologies to improve customer service. It's like reshaping the older service offerings with newer technologies. For instance, in the above scenario, businesses use the subscription-based model to charge their customers regularly for the services or purchases of a product with them.

  This will ease business transactions and the convenience of payment. Businesses can define the tenure of the subscription to their consumers. Consumers are also allowed to cancel or renew their subscriptions at any time. A service contract has to exist for both parties to understand their obligations along with the terms and conditions.

  As such, by "doing digital," businesses can ease their processes by adopting technologies to improve services to their customers. Deloitte terms it as leveraging digital technologies to extend business capabilities. It's still the same business model, operation and customer models.

- **Becoming Digital** is more toward advanced digital strategies as businesses strategically reposition and shift towards the digital economy. Slightly different from doing digital. This involved changing the way businesses operate by leveraging emerging technologies.

  For instance, many businesses focus on improving their processes to gain customer satisfaction. However, this is different. First, it's about transforming the business model; it involves the entire business ecosystem and a total mindset shift from the existing business. It's a total shift that changes how the business operates to provide more value to customers. It is about customer experiences.

  An online digital platform provides consumers with an end-to-end online shopping experience. These online digital platform solution providers will give seamless engagement with customers. They will not focus on only taking orders; they become the one-stop solution. It works by hosting many retailers and collaboratively working with partners to provide a payment gateway, manage orders, and the logistics process from storage to order fulfilment and delivery, including customer service and other modes of interaction.

  It's a one-stop, end-to-end solution that provides one-touch point engagement with customers to enjoy their shopping seamlessly. As a result, it will increase the importance of end-to-end customer experiences.

  Deloitte terms it as having the business advance its services by leveraging digital technologies. This model will change the current business operation and customer models.

As we view technology as a way to simplify our daily lives, people have been demanding valuable and fast solutions to every problem arising.

- **Being Digital**, based on Deloitte's report, is described as human experiences being elevated by incorporating human-centred design and advanced technologies to transform operating models, thus improving service delivery. The advanced technologies can be Artificial intelligence (AI), Robotic Process Automation (RPA), and other smart technologies. It's about more than just advancing customers' or consumers' digital touchpoints. It's about reimaging the entire business model to engage with the customers. This will impact the organisation and the business mindset, including the corporate outlook and behaviour. It's a new way of engaging with customers.

  I came across one documentary about how China digitally transformed into a Digital and Medical Healthcare in Zhejiang, published by New China TV. They have a 5G functional ambulance equipped with an ECG monitor, ultrasounds equipment, AR glasses, and headphone to free the ambulance paramedic's hand to save lives and transmit information between the ambulance and the hospital. The AR glasses worn by the paramedic come with monitoring capabilities so that the hospital's doctors can see real-live happenings via the AR glasses transmitted through real-time 5G technologies. This eventually helps the doctors to guide the paramedic to the next cause of action and work collaboratively to save lives simultaneously. The hospital will also have real-time information before the patient arrives.

  Therefore, "being digital" is like how John Rossman elaborates it. It is about wrapping speed, agility thinking, and a new business model approach.

Digital evolutions, the differences

The above stages from "Beginning Digital," "Doing Digital," "Becoming Digital," and "Being digital" is all about Digital Transformation and its journey. As such, which stage of the Digital Transformation journey are you now?

Understanding the fundamentals of digital evolution

Digital evolutions started from Industrial Revolutions 3.0 in the early 70s when digitisation was first incepted. Then, it was a shift from analogue to digital, and the inception of the internet resulting enterprises using Information Technology (IT) systems for automation.

Digital transformation can be daunting because all processes and strategies must be addressed down to the core structure and company culture.

Digital transformation necessarily involves the development of new skill sets among employees at all levels and across all departments.

Differences between Digitisation, Digitalisation and Digital Transformation

Digitisation

Digitisation is about converting data into digital format. It can convert non-digital content such as text, documents, pictures, or even sound to a digital format that the computer can process. For better clarity, digitisation became the process of converting text, images, or sound into digital format or digital form. Gartner describes it as a process of changing from analogue to digital format.

Digitisation

Digitalisation improves business processes by adopting and leveraging digital and smart technologies. The idea of digitalisation is the processing of data, automating a business process, thus creating a digital workflow and procedures. In Gartner's definition, a business can use digital technologies to change the business model to have new revenue and value-producing opportunities.

Digital Transformation

Digital transformation is about leveraging emerging and advanced technologies to build a new business model with customers' experiences, business experiences, and employee experiences in mind. Many people know that digital transformation is about people and changing how organisations think and operate.

I-scoop explained it as a cultural, organisational, and operational change. Digital transformation is about the integration of processes and organisation competencies across all levels of functions and digital technologies. Many people advocate that Digital Transformation is about PEOPLE, not technology. It starts with people's mindset, behaviour, cultural change, and not forgetting to Think Digital.

WHERE ARE YOU TODAY?

Have you started your Digital Transformation journey? Are you still in the stage on still beginning digital and still working in the legacy way of adopting the eCommerce platform, or have you gone beyond that stage of Doing Digital that only thinks of improving internal processes?

Perhaps, you may have gone beyond doing digital and have started becoming or being digital.

Regardless of your stage, one must comprehend that digital transformation is not about technology or project. It's about people's mindsets, which require one to think beyond the current way of doing business.

Digital Transformation is about the organisation and yourself, creating more value for your business, customers, and employees. Digital Transformation will not only change the Business or Organisation alone, but it will also change everyone personally. O

Elsie started DXGIG@Valuelab and is a Digital Transformation and Gig Economy Strategist. She now writes, coaches, and mentors one on the fundamentals of Digital Transformation and the Future of Work, the Gig Economy. She believes one should set the right pace and adopt the three core principles of how one is to lead, think and govern their digital journey.

INDUSTRIAL METAVERSE: IS IT THE NEXT BIG THING?

An overview of the industrial metaverse

FOURTH LEAP

By Gaurav Dua

THE notion of the man-machine relationship is getting adopted by an increasing number of industrial powerhouses. It has also opened avenues for Industry 5.0, emphasising human-centric sustainability, growth and flexibility.

Given that the metaverse is based on real-time 3D content, virtual and augmented reality allows people to experience this 3D content much like real life. It builds a virtual world that charts and intermingles with the real industrial economy. It creates an intelligent holographic manufacturing and economic ecosystem, which manages the end-to-end life cycle of industrial products and allows enterprises, partners and consumers to join on that platform.

Many industrial firms are experimenting and trying to leverage Industrial Metaverse to bundle all the company's V.R. and A.R. applications in one centralised location and to make these applications visible and accessible to employees. If put to proper use, the Industrial Metaverse can accelerate work processes and generate higher and more precise quality results while simultaneously reducing workforce use, thereby rationalising costs.

The critical success factor for the Industrial Metaverse's uptake is the ability to scale the usage of V.R. and A.R. throughout the organisation and beyond. Entire work processes and procedures, such as 3D design or training, can only be moved to the Industrial Metaverse if it's all-pervasive and available throughout the company. The Industrial Metaverse gives employees constant access to X.R. applications – regardless of the locally available hardware. At the same time, it provides all the interfaces needed for seamless changes and movements between applications.

The Industrial Metaverse thus combines the benefits of X.R. streaming with the management capabilities of a fully-grown Metaverse ecosystem. As a result, companies can use the Industrial Metaverse to control and scale their V.R. and A.R. content, thereby ensuring the viability of their digital future. Just like Web 3.0, the Industrial Metaverse provides a unique combination of decentralised management while at the same time giving the benefits of a central platform, such as security, ease of use and accessibility. The set of technologies used in the Industrial Metaverse, often referred to as the 'Meta-X' technological suite, includes Digital Twin, AIoT, Blockchain/NFTs, Mixed Reality, Compute Engine and Computer Graphics.

Neal Stephenson created the term "Metaverse" in 1992, and it is currently employed as a mainstream technology in almost every industry.

USE CASES OF THE INDUSTRIAL METAVERSE

The use cases of the industrial metaverse are limited. However, they are gradually getting traction. The conjunction of digital twins and metaverse platforms is expected to benefit different industries through prediction, monitoring, tracking, resource management and allocation, optimisation, and quality control. This has significant potential across multiple sectors, including manufacturing, mobility, mining, agriculture, design and production, retail and e-commerce, IIoT etc.

The next logical step in amalgamating the metaverse and digital twin platforms is to bring in more advanced tools and techniques. It will serve the purpose of generating insights, data generation and visualisation, and predictive behaviour. This includes 3D vision cameras, 4K colour cameras, object cameras, stereo depth cameras, and 3D data generators in real-time; high-speed computing platforms and data tool kits; control management systems for industrial robotic equipment; blockchain, ML/AI platforms.

Metaverse, as the next stage of the internet and social media, provides many economic prospects to businesses all over the globe.

Possible use cases of metaverse utilisation for industrial companies

- Running Virtual presentations and events showcasing various products and services
- Collaborative R&D for design, simulations, and testing of products and services and mutual interaction simulations of machines, plants, supply chains, and even whole ecosystems
- Creating brand awareness through virtual factory walks and interactive assembly lines, and shop floors
- Leveraging the voice of the digital customer to improve real-world customer experience
- Material, component, and service supplier assessment (using a gamification approach)
- Leveraging digital humans for human behaviour simulation
- Selling virtual twin add-ons through marketplaces orchestrated by OEMs or digital technology vendors
- Sales and operations planning optimisation, based on simulations of data captured in the metaverse environment

Adoption of the industrial metaverse

Albeit slowly, industrial use cases are getting established in the metaverse.

Hyundai

Early in January 2022, Hyundai announced a partnership with Unity. Unity is a maker of platforms for real-time 3D content to jointly design, develop and create a new metaverse road map and platform. It is made for a meta-factory, a virtual factory that can be test-run in the metaverse environment.

Siemens AG

In June 2022, Siemens AG announced its partnership with NVIDIA (a leading player in artificial intelligence hardware and software) to enable an industrial Metaverse and increase the application of AI-driven digital twin technology that will help better industrial automation. Additionally, combined with the Siemens Xcelerator platform, a digital twin for industrial purposes will be created.

BMW

Similarly, BMW has created a virtual twin of its Regensburg production centre. BMW expects this novel method to revolutionise planning processes. In addition, the company has partnered with NVIDIA to use its Omniverse to simulate its manufacturing operations, pushing the envelope on smart manufacturing. By leveraging metaverse technology, BMW is working on creating better workflows for its employees and nurturing more efficient manufacturing processes.

A.B. InBev

A global brewing company, A.B. InBev, has created a comprehensive digital model of its breweries and supply chain. Besides that, simulations are currently being tested with digital humans to test how real human beings would respond productivity-wise and ergonomically to new workflows.

Lockheed Martin

Lockheed Martin will be using metaverse technology to simulate and combat fires. The company has partnered with government bodies in the U.S. to analyse wildfire trends better and stop their spread.

The metaverse is where you can find the hybrid world and the digital realm coexist.

FINAL WORD: GETTING READY FOR THE FUTURE

The writing has been on the wall for many years. The blurring lines between physical and digital interactions lend themselves to supporting the idea of a metaverse. Large-scale 5G network deployments globally will provide the capability to support devices and ensure low-latency, high-bandwidth immersive experiences. The future of connectivity and 5G will play an extremely critical role in the large-scale adoption of the industrial metaverse.

Having said that, as with adopting any new and disruptive technology, organisations considering stepping into the industrial metaverse will face hurdles along the path. Accepting virtual inputs from metaverse users, ecosystem participants, and potential clients will take much work. Overcoming this "mental digital gap" must be proactively addressed when organisations embark on the industrial metaverse journey and its potential benefits for the business and different partners across the value chain.

The potential benefits are many. However, firms and players across the value chain must step forward to create new services and solutions that can be utilised in the metaverse environment. If such efforts are successful, the Industrial metaverse could become a pillar of sustainable manufacturing and company journeys to the "Net Zero" goal!

Gaurav Dua is a Partner and Global Head (Growth Analytics/KaaS) at Frost & Sullivan and has had 22+ years of consulting and research experience with clients across sectors. He has worked on cutting-edge technologies and disruptive business models such as Web3, NFTs, Blockchain, Crypto, Metaverse, Applied AI, Cloud & Edge Computing, Immersive Reality, Cybersecurity, AR/VR, ML, 5G/6G, ESG and more. He is also very passionate about building new businesses with a strong focus on accelerating growth.

DIGITAL POTHOLES

We must consider digitisation with great care and intention, not because of predictive speculation but because digitisation creates a significant operating burden

FOURTH LEAP

By Jerry Durant

THERE is absolutely no initiative that takes place without having significant merits. If it weren't for these resounding aspiration endeavours, it would simply be a fool's folly that would never become a reality. The pursuit of digitisation is a case in which ambitions become rich with opportunistic goals to be achieved. However, the endeavour runs into major issues when we create digital solutions without proper consideration for present conditions and their effect on transitioning.

A success path starts with an understanding of where we are. This is only sometimes obvious, and the general leaning is toward superficial reality conditions. Digital consideration begins with an honest realisation that we are moving from a data processing model, whether manual, automated or a hybrid, to one heavily vested in cohesion.

What does this mean?

In short, it bridges the gap between the internalisation of activities to one where inclusion involves all participants of the digital workplace (humans, machines, and systems). Given this condition, the readiness, capabilities, and viewpoints must be carefully examined and conditioned. It then becomes a matter of close examination of present designs with the mindset of reengineering. The absence of a purposeful deep analysis and study of current case conditions will result in disappointing outcomes.

WHERE NOT TO START

Starting is to be timely, and this pertains to each discrete formation of a digital solution. Purposeful restraint amid robust enthusiasm is necessary. First and foremost, we must comprehensively examine present data processing solutions to understand the landscape fully. The commonplace pillars of separated processes are an all too unfortunate condition in these legacy models. bIn a recent case (for the government), we saw that the interaction between revenue taxation units and other units (pension, health, etc.) were independently isolated. This leads citizens to apply at each discrete organisation and receive discrete identification. The lack of cohesion produced duplicity and created a challenging situation for later cohesion. This led to time consumption and duplication that made the potential for errors. Digitisation would have resulted in less duplication, reducing security risk, providing cohesive coordination of services, and offering time efficiency to the citizen customers.

These types of hurdles take work to overcome. Tradition and turf ownership threatens digitisation and produces a high potential for creating GIGO (Garbage-In-Garbage-Out). These separation pillars are not exclusive to the government and exist in every NGO (Non-Governmental-Organisation) enterprise. Additionally, relationship contention produces an unnecessary and highly contentious atmosphere surrounding information and operational ownership. This creates issues involving data and the technical structure and management of information. Digitisation efforts were not the first time we saw this particular issue arise. It was prevalent with introducing and deploying ERP (Enterprise Resource Planning) system solutions. This parallel situation also presented the need for the sanitisation of data and the refinement of data structures that reflected the first step towards inclusive optimisation.

THE NEXT

We are still at the stage of digital development but are close. Assuming that we weathered the trials and tribulations of the 'start,' we are ready to conceptualise and prioritise a digital design framework. Unlike data processing modelling, a digital design framework encompasses a much broader mind's eye towards that of the entire digital audience. The simple needs of the enterprise may reflect significant hurdles for customers. Some of us have already experienced the barriers in sharing personal digital documents and the cumbersome nature of various interactions (including partial interactions). One such example was in a nationwide Covid immunisation system that was producing incomplete records and, despite providing necessary proof, was routinely remiss that required human administration involvement. The fallout was delays and unnecessary intervention, all of which run counter to the ambitions of digitisation (not to mention that it raises questions of authentication integrity).

The deep dive into digitisation not only involves a review of present automation but also requires a comprehensive examination of manual services and absent opportunities that exist. The quality of these efforts is evident in the digitisation deployment. In a recent case, a regulatory body was involved with the application for services that were initiated online but subsequently required supplemental hard documents (some that were actually a repeat of the digitisation process itself). This situation created unnecessary effort and reflected lingering practices. Was it necessary or simply a carryover from years of dependency on disconnected authenticated paperwork?

I am a massive proponent of digitisation advancement. The efficiencies and convenience that it embraces abound. However, I am exceedingly frustrated by the fanfare that fails to acknowledge and address the effort required.
- Jerry Durant

DIGITAL TENTACLES

The venture into the real realms of digitisation will present the realisation that the endeavour is far more reaching than what our commonplace data process thinking involves. Simplistically speaking, the reach goes deep across many disciplines and application resources. As previously mentioned, we are no longer presented with the luxury of soft isolation pillars and now must consider cohesion between digital services and their asset resources. For example, we recently experienced a client case in which there were concerns about data privacy, ultimately leading to the question of security. Although present security was respectable, advancing to a more progressive digital state opened the door. On one side, access to the digital environment requires access by a broader audience; it also bears the potential to traverse the environment somewhat freely. Digital barriers were formed to counteract these situations, but this presented countless problems ranging from latency to excess credential confirmation. After careful consideration, it was determined that a role-based paradigm would be required that not only limited access but the authorities that the role might have. But in addition, role duplicity needed to be curtained to avoid the acquisition of cumulative privileges.

Aside from security, additional digital management services require consideration and often discrete attention, including repository management and dispersion, technology provisioning, interruption control and recovery coordination, and universal naming conventions. This is an example that does not comprehensively represent the impact that digitalisation influences. Orchestrated coordination will be necessary to deploy changes and transition therein.

CONCLUSION

Digitisation is not a fool's folly. It is a serious and hard-earned pursuit that will require the deployment of a broad talent pool. In most cases, our experience may serve as a solid base to start but let us not be misled that there will be many aspects we have never dealt with. Digitisation is more than deploying technology. It is the creation of a pervasive paradigm that some might liken to a robot or a precursory step on the road to AI (artificial intelligence). We must consider this situation with great care and intention, not because of predictive speculation but because digitisation creates a significant operating burden. Volumes increase, interaction elevated, but a more considerable number of people start to grow knowledge that produces varied interests. The interest may be in added needs, curiosity, and even questioning contentions that would have only been seen when the occurrence transpired.

The question is about who will drive the effort, and if not a driver, how will it affect me as a recipient? This can only be answered by the digitisation effort of the whole community, from the government to SMEs (Small-Medium Enterprises). Therefore, it's time to do away with the fanfare proclamations and start the construction of a digitalisation blueprint. This formed paradigm will help to guide grassroots efforts and further the maturing of digital endeavours. o

Jerry Durant is Chairman and Founder of The Clarity Group Global, an established advisory consultancy committed to technological and organisational advancement. Clarity Group is also engaged in various progressive ventures involving the recovery of challenged enterprises, intelligent philanthropic investments, and greenfield research.

A banner for Digital Services may be flying high above your enterprise but be sure that it's reputable and a testimony to your enterprise.

TECHNOLOGICAL INNOVATION IMPACTS ECONOMIC JUSTICE AND WIDESPREAD FINANCIAL ACCESS

Technology has helped bridge the gap for those who previously lacked access to digital payment systems and other forms of financial inclusion

FOURTH LEAP

By Elain Lockman

ACCORDING to the World Bank's new Changing Wealth of Nations report (October 2021), global wealth has grown overall—but at the expense of future prosperity and by ever-increasing inequalities. The society in which we live is increasingly becoming more and more unequal. The distribution of wealth in the world today is extremely imbalanced, with nearly half of the world's net wealth belonging to the top 1%. Whilst the macroeconomic indices have become more favourable, the low-income rarely benefit from these gains.

Many emerging economic markets have seen increased development and economic advancement over the last two decades. During this period, these markets have frequently experienced double-digit economic growth. These markets have adopted many social and economic dynamics that the century's top economies went through. This is specifically evident looking at the dramatic rise of an emerging middle class and the average increase in middle-class income, wealth and spending. However, ironically, at the same time, these emerging markets' social and economic growth has been met by an unprecedented reversal in the processes of wealth production, accumulation and redistribution in the world's once-dominant economies. Families with higher incomes obtain a sizeable portion of their wealth from business equity, financial market assets, and investments such as real estate, bonds, stocks and gold.

Additionally, those from the higher income class would typically have access to as well as a unique and better understanding of financial institutions, qualified financial advisors, and the tools and resources utilised to manage their money. Middle to lower-income families relies more heavily, if not entirely, on income from wages. Savings and home equity make up a significant proportion of wealth accumulation, if any.

Not only our social structures have evolved, but the population, and age demography structures, have also dramatically changed. Millennials and Gen Z make up more than half of the global population. Gen Zs are individuals born after 1997. The key characteristic of Generation Z is that - they are the first digitally native age group, i.e. they are exposed to technology since birth and grow up with technology. Another fact about the Gen Zs, they expect everything to be seamless – easy, simple and smooth to get the result.

Financial inclusion is needed

The World Bank defines financial inclusion as means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit, and insurance – delivered responsibly and sustainably.

Financial inclusion is one of the vital base components of not only a just and equitable society but also of a thriving economy. Increasing financial inclusion and access to finance can contribute significantly to economic development by enabling social mobility and ensuring that the masses, i.e. everyone, can participate fully and effectively in economic life.

TECHNOLOGICAL INNOVATION IS KEY

Alongside the above, the way we work, live and play today is very different from what it was in the previous decade, which was not so long ago. It is undeniable that technology is a crucial impetus to this.

Technology-enabled financial services, or Fintech, started in 2008 or 2009 during the last financial crisis. Fintech has shown how new technologies can disrupt the existing system – changing how things are done now or in the past to widen access to financing and wealth creation, especially for disadvantaged or underserved communities. The disruption has been further fueled in the last ten years through advancements in web, digital and mobile technologies amplified by various social media apps and mobile-commerce platforms.

For those in the mid to lower income bracket, the underserved and marginalised communities, the primary fintech applications would be to improve and close access gaps in payment, credit markets, savings, investment and insurance.

Mobile payment innovation has brought electronic payments to individuals and small or micro businesses that were previously inaccessible due to more expensive and complicated electronic systems such as debit and credit cards. Well-known and proven examples, such as M-Pesa and IndiaStack, have created the infrastructure for an efficient, economic and simple system of mobile payment to replace traditional and more expensive banking services. As a result, millions in Africa and India now have access to basic financial services such as electronic payments and small loans.

Nowadays, digital transformation is not a choice but a need for the industry's continuity.

Equity Crowdfunding (ECF) and Peer-to-Peer (P2P) Crowdfunding platforms that are adopting the use of big data, machine learning, Artificial Intelligence (AI) and digital/social media technologies have proven to support those underserved. It helps them through traditional financial institutions, and they are excluded from the traditional credit and lending systems. The Securities Commission data reported that since ECF and P2P were regulated in Malaysia, RM3.47 billion has been raised for 5,440 businesses. This is just a splinter of MSMEs' total number in the country of 1,226,494 as of 2021, published by the Department of Statistics Malaysia. There is still a huge opportunity to close the funding gap and help more underserved businesses.

Savings and investments are a crucial area whereby Fintech plays a distinctive role in democratising investments, giving the average Joes and Janes access to new savings and investment products that were not previously accessible to them. Equity Crowdfunding (ECF), for example, allows the crowd or everyone to own early equity in businesses at an affordable or low entry point for a potentially huge capital gain. It will enable ordinary people to invest in a company like GRAB or Carsome when they first start out.

One may ask – "How affordable is it? How low is the entry point? What's the upside?".

- In Malaysia, the smallest amount of investment recorded was RM10– Skolafund ECF Campaign on Ata Plus.
- The early equity investment in GreenPro AI Accounting ECF Campaign gave a 20% upside to the investors in just six months.
- Aside from ECF, Robo-advisors also facilitate investments in small denominations into stocks and selected capital market investment products.
- Robo-advisors are digital platforms that use IT, machine learning and AI applications to guide customers through an automated (investment) advisory process. RAIZ and Stashaway are examples of such platforms in Malaysia. Investments can start from as low as RM5.

SO, WHAT'S NEXT?

The next cycle of the technology wave, i.e. Web 3.0, constitutes the combination of blockchain, DeFi or Decentralised Finance, AI, Big Data, and Machine Learning that will further disrupt processes and business models that have been around for decades. This will not only give rise to new financial products but will also make the currently available financial services more efficient, have less friction hence lowering cost, and be more transparent and compliant.

The COVID-19 experience has proven that Fintech is needed more than ever and that the traditional systems are no longer sustainable, relevant or a value-add, especially to the consumer. In addition, the pandemic has also resulted in greater convergence of the physical and digital environments and changes in how we operate remotely.

At the end of the day, the customer is king. So, moving forward, innovations in technology will need to focus on addressing issues of user trust, data security and privacy, transparency and compliance. Plus, stronger ecosystem collaborations amongst the various fintech products and service providers are needed to serve end-user needs.

Elain Lockman, CEO of Ata Plus, has extensive experience in government-linked organisations and start-up businesses, specifically in the areas of management & operations (business strategy, business development, stakeholders relationship management [government, corporates & influencers], branding, marketing and corporate communications).

Digital technology is reshaping the financial industry, altering how and who delivers payments, savings, borrowing, and investing services.

MANAGING DIGITAL TRANSFORMATIONOF HYPER RAPID CHANGE

Being digital is about wrapping speed, agility thinking, and a new business model approach

FOURTH LEAP

By Martin Conboy

THE word "transformation" gets thrown around a lot these days, but it can have different meanings for different individuals and companies. In a world of unprecedented disruption and market turbulence, transformation today revolves around generating new value — to unlock new opportunities, drive further growth, and deliver new efficiencies.

Even before the COVID pandemic, many businesses grappled with the unexpected challenges of technological change, rapidly developing consumer tastes and a reconfiguration of the global economic order.

COVID-19 added further turbulence, disrupting supply chains and causing an all-out war for scarce talent. To say nothing of the incredible work-from-home (WFH) phenomenon that was thrust upon us with no time to prepare for it. In fact, we are still trying to come to terms with it.

The world is in a period of constant change and opportunity. Businesses know they need to reinvent themselves digitally to thrive. But what to do first — and how to do it — may not be so oblivious.

Being at the vanguard of digital transformation, CIOs must stay ahead of ever-changing digital trends to meet rising demands and accelerate their digital transformation.

Every corner of the modern organisation – from procurement and supply chain to finance and human resources needs to be transformed. As the saying goes, if you are not moving forward, you are going backwards. It needs digitisation, breaking out of its protected silo, and connecting with the rest of the business to deliver actual outcomes now and into the future. If ever there was a time to double down on digital transformation to advance operations, drive tech enablement and integrate emerging technologies, then this is that time!

By taking self-assured actions and a business-centric approach to transformation, organisations can be well-positioned to lead and grow with the customer in the middle of the mix.

In today's highly competitive business environment, organisations have little choice but to adopt digital technology to connect and serve their clients and workforce.

THE BIG TRANSFORMATION HAZARDS

A well-executed business transformation means your organisation can survive and prosper as you pursue new innovation-driven opportunities that emerge, respond to shifting market demands, and navigate evolving regulatory hurdles.

Festina Lente (Latin) - One must hasten slowly, i.e., to act with due diligence, focus and attention to detail to avoid mistakes and finish the project in a better position than when the project was started. Going too fast too soon can be disastrous!

Transformation today takes place at dizzying speeds, requiring a level of integration and alignment that many enterprises need to prepare to handle. Because many initiatives that once took years to complete are now being implemented in a year or less, many organisations need to manage mountains of information, compressed timeframes, and countless decisions affecting nearly all aspects of strategy and operations. The risk of failure is significant, but companies that can pull disparate elements into alignment can achieve their objectives now and in the future. It is not easy, but it can be done!

Understanding the strategic keys to achieving breakthrough value, considering the potential risks and aligning all of the elements to get business transformation "right" requires more than an A-to-B roadmap. It requires an integrated approach linking business strategy to transformation ambition to execution discipline to unlock innovative value.

Digital transformation and day-to-day operations should not be mutually exclusive. Many of the most impactful efforts uproot traditional operations and make way for more efficient, insightful, and sustainable practices. While it's important to "keep the lights on," there's no better time to tap into the wealth of data and technology available today — and a moment wasted is one your competitors will gladly take from you."

- Radhika Krishnan, Chief Product Officer of Hitachi Vantara

The reality of digital transformation is a critical part of the executive role today. To drive change, three key focus areas should be top of mind:

- Strategic prioritisation: Identify what to focus on and where to allocate resources while painting a picture of the destination.
- Setting the pace of change: Determine how much difference the organisation can navigate while moving toward the destination.
- Bringing the team along: Change can't be implemented without building the right team and securing buy-in across leadership."

Sumit Dhawan, President of VMware

However, while the digital transformation project continues, the business still needs to operate.

In summary, the different departments need to coordinate and act together to realise enterprises' digital transformation. This will not be an exercise in individualism but a whole organisation approach to collaborating intimately with the project leaders. The digital transformation of enterprises requires adopting a "commonality and individuality" strategy.

Martin Conboy is well recognised as one of the leading voices of the outsourcing industry and its role in facilitating outsourcing success throughout the Asia Pacific region. He is also an accomplished writer and public speaker. He has delivered keynote addresses at BPO - ICT and Shared Services conferences in Australia, Bangladesh, China, Hong Kong, India, Korea, Malaysia, Mauritius, the Middle East, the Philippines, Singapore, Thailand and the USA. Martin is a blockchain enthusiast!

Nowadays, digital transformation is not a choice but a need for the industry's continuity.

SYSTEM CHANGES FOR A BETTER IMPLEMENTATION OF INDUSTRY REVOLUTION

Good leadership is needed for an improvised move towards talent acquisition in the digitally transformed sectors

FOURTH LEAP

By Ir. Dr Mohd Shahreen Madros

INDUSTRY Revolution 4.0 is often seen as a panacea for our economic well-being. Of course, there is some truth that an economy must continue to improve and adopt the latest technology. But, it would be a big mistake and a total misconception if policymakers think that the mere adoption of the latest technology could magically resolve all economic challenges a country faces.

Technology is just an enabler. Like all other factors that enable and accelerate economic growth, it is only one of the many strings of enablers that must work in unison to achieve a meaningful outcome. Fundamental economic factors include readily available assets, access to funds, and a good supply of quality talents necessary to supplement the provision of technology to generate growth.

It is not true, as when we talked about IR4.0, we are adopting technology for the first time. We have been integrating technology for the longest time. We have adopted machines to replace animal power, electrifying many of our industries and streamlining manufacturing processes, and even adopted computers and information technology with our MSC initiatives. Adopting IR4.0 is just another progression in our effort to progress with time.

The real question is, are we progressing enough? In reality, many of the 1.4 million enterprises running our economy are still in IR3.0 or even lower. This only shows that while we are keen to adopt technology, the ability to transform our industry to be fully engaged in, at best, very dismal. What will it be then our likelihood to succeed in genuinely adopting IR4.0? Again, it is about looking at the situation holistically. Do our enterprises have the capacity to acquire assets, provided with sufficient funds, so that they can do what we wish them to become?

Government ministries and agencies play a vital role. We need the right people to provide good leadership for this to happen. Good policies connecting supply and demand ensure our efforts to adopt IR4.0 are sustainable. Our economy is dominated by GLCs that procure many products. Can we have clear guidelines that their demand for products and services is tied to locally developed goods to justify these enterprises' investments? Our current reality does not reflect this. We are happy to be good global citizens of a free open economy. We need to emphasise the spirit of nationalist interest first.

Talent development can be implemented only when local enterprises see the real benefit of investing and adopting IR4.0. Sadly, we have invested many resources in developing talent, but they are released into the economic ecosystem independently. There is a lack of coordination between talent generation and industrial development. This is a failure in policies and coordination efforts. This will only get worst when IR4.0 requires not only new discipline but also the retraining of existing resources.

The inability to tackle all these will become more severe in a globalised economy. Regional economic cooperation such as RCEP, CPTPP and more will give rise to more competition from enterprises from neighbouring nations that can coordinate their effort more systematically than others. Digitalisation will create a two-way trade flow much more aggressively than ever before. While we are a trading nation now, our regional economic partners will rise to compete. With a small population and higher cost, we have little choice but to move towards higher-value goods and services. Time is of the essence, and we need to move faster.

We badly needed good leadership at all levels. Our southern neighbours have been very successful because of their policy of meritocracy, pragmatism and being brutally honest in assessing their situation to survive in the economic competition. We can learn a great deal from this, but we need political stability for this. The future is a connected world. We must learn to decentralise and empower more people. Developing future leaders that have the nation's interest above individual's greed is crucial. Current leaders must learn to let go and be bigger than the problem. The years of experience could be used in coaching and instituting good governance.

With good leaders guiding strategic policies and governance, we can only implement technology adoption IR4.0, talent development, or others. These efforts are not a one-off event but rather a journey. The ability to do continuous incremental growth is a necessity. We don't need much brouhaha or rhetoric but actual work everyone supports.

It's a system problem. The government with the right policies, universities generating promising talents, industries that are connected correctly in the supply-demand ecosystem, everyone needed to be well aligned in a long-term agenda that is all about national development. Only when we can get our act together, however busy we are, doing IR4.0 in an isolated manner will not move the needle much.

Ir. Dr Mohd Shahreen Madros has over 30 years of working experience in various capacities. He was a lecturer at Universiti Kebangsaan Malaysia (UKM), with over 20 years of experience in the Oil & Gas industry. He was also the appointed CEO of MATRADE from early 2017 until Feb 2019, during which he represented Malaysia in many international trade missions. Dr Shahreen is currently an independent advisor to industries, a board member of a publicly-listed company, a certified coach, and an Adjunct Professor at the Graduate School of Business, UKM.

Much discussion on Industry 4.0 has centred on technology and the work that can be done with advanced robots working alongside people.

IT'S TOO GOOD TO BE TRUE: DO WE RECOGNISE INTERNET FRAUD?

The internet enables us to communicate with others regardless of distance, but it also allows internet fraud to enter our businesses, homes, and everyday lives

FOURTH LEAP

By Thilohthaman Kasinathan

INTERNET fraud involves services or software with internet access that attempts to defraud or take advantage of victims. Internet fraud encompasses cyber-criminal activities over the internet, including crimes like identity theft, phishing, and other social engineering activities designed to scam people of their personal information. These scams will target victims through fraudulent activities that rob people of their money, and the figures continue to increase as internet usage expands as cybercrime techniques become sophisticated.

TYPES OF INTERNET FRAUD

A variety of strategies are applied to commit internet fraud. It includes activities done through malicious software, email, and instant messaging services to spread malware and links to spoofed websites that steal user data, along with wide-reaching phishing scams. Internet fraud includes several types of attacks:

- **Phishing and spoofing** - The use of email and online messaging services to convince victims to share personal data, login credentials, and financial details.
- **Data breach** - Stealing confidential, protected, or sensitive data from a secure location and moving it into an untrusted environment consists of stolen data from users and organisations.
- **Denial of service (DoS)** - Disrupting the traffic to an online service, system, or network with malicious intent.
- **Malware** - Malicious software that damages or disables a user's device or by stealing personal and sensitive data.
- **Ransomware** - Malware that prevents users from accessing critical data and then demanding payment in the promise of restoring access. Ransomware is typically delivered via phishing attacks.
- **Business email compromise (BEC)** - A sophisticated attack that targets businesses that operate on wire payments. It compromises legitimate email accounts through social engineering techniques to submit unauthorised charges.

To avoid hackers' internet fraud attempts, users must understand the common examples of internet fraud and tactics.

TACTICAL GAME PLAYED BY SCAMMERS: DO WE KNOW THEM?

Most Internet users have been victims or seen an online scam in which attackers seek to gain personal information such as login profiles or financial information.

Email phishing scams

Email-based phishing scams are among the most prevalent types of internet fraud, which continues to threaten internet users and businesses.

Statistics from Security Boulevard show that in 2020, 22% of all data breaches involved a phishing attack, and 95% of all attacks that targeted business networks were caused by spear phishing. Furthermore, 97% of users could not detect a sophisticated phishing email.

1.5 million new phishing sites are created monthly, and 78% of users understand the risk of hyperlinks in emails but click them nonetheless.

Email-based phishing scams constantly evolve, ranging from simple attacks to more complex threats targeting specific individuals. Email phishing scams see cyber criminals who mask themselves as individuals that their victim knows or would consider reputable. The attack aims to encourage people to click on a link that leads to a malicious or spoofed website designed to look like a legitimate website or open an attachment containing malicious content.

The hacker first compromises a legitimate website or creates a fake website. Then, they acquire a list of email addresses to target and distribute an email message that aims to dupe people into clicking on a link to that website. When a victim clicks the link, they are taken to the website, either requesting a username and password or automatically downloading malware onto their device that steals sensitive information. The hacker can use this data to access a user's online account, steal more data like credit card details and corporate access networks attached to the device or commit wider identity fraud.

Email phishing scammers will often express the need for urgency from their victims. This includes telling them that their online account or credit card is at risk and that they must log in immediately to rectify the issue.

Greeting card scams

Many internet fraud attacks focus on popular events to scam the people celebrating them. This includes birthdays and festive occasions, commonly marked by sharing greeting cards with friends and family members via social media. Hackers typically exploit this by installing malicious software within the greeting card, automatically downloaded into the recipient's device when they open the card.

The consequences can be devastating. The malware takes the form of annoying pop-up ads that affect an application's performance on a smart device. However, the more worrying outcome would be the victim's personal and financial data being stolen and their computer being compromised as a bot within a vast network of computers, also known as - a 'botnet.'

Credit card scams

Credit card fraud typically occurs when hackers fraudulently acquire people's credit or debit card details, to steal money or make purchases.

To obtain these details, fraudsters often use credit card features that are 'too good to be true or through bank loan deals to lure victims. For example, a victim might receive a message from their bank telling them they are eligible for a particular loan or a vast amount of money loaned to them. These activities continue to trick people despite the widespread awareness of suspicious offerings.

Unfortunately, online consumers should be wary of various types of scams propagating on the Internet.

Online dating scams

Another typical example of internet fraud targets various online dating applications and websites. Hackers focus on these apps to lure victims into sending money and sharing personal data with new love interests. Scammers typically create fake profiles to interact with users and develop relationships that slowly build their trust. Then, a phoney story is made, and the attacker requests financial help from a user.

Lottery fee fraud

Another common form of internet fraud is email scams that tell victims they have won the lottery. These scams will inform recipients that they can only claim their prize after paying a small fee.

Lottery fee fraudsters typically craft emails to look and sound believable, which still results in many people falling for the scam. The scam targets people's dreams of winning massive amounts of money, even though they may have never purchased a lottery ticket. Furthermore, no legitimate lottery scheme will ask winners to pay to claim their prize.

The Nigerian prince
A classic internet fraud tactic, the Nigerian Prince scam approach remains common and thriving despite widespread awareness.

The scam uses a premise of a wealthy Nigerian family or individual who wants to share their wealth in return for assistance accessing their inheritance. They use phishing tactics to send emails that outline an emotional backstory, then lure victims into a promise of significant financial reward. The scam typically begins by asking for a small fee to help with legal processes and paperwork with the promise of a large sum of money further down the line.

The scammer will inevitably ask for more extensive fees to cover further administration tasks and transaction costs supported by legitimate-looking confirmation documents. However, the promised return on investment has yet to arrive.

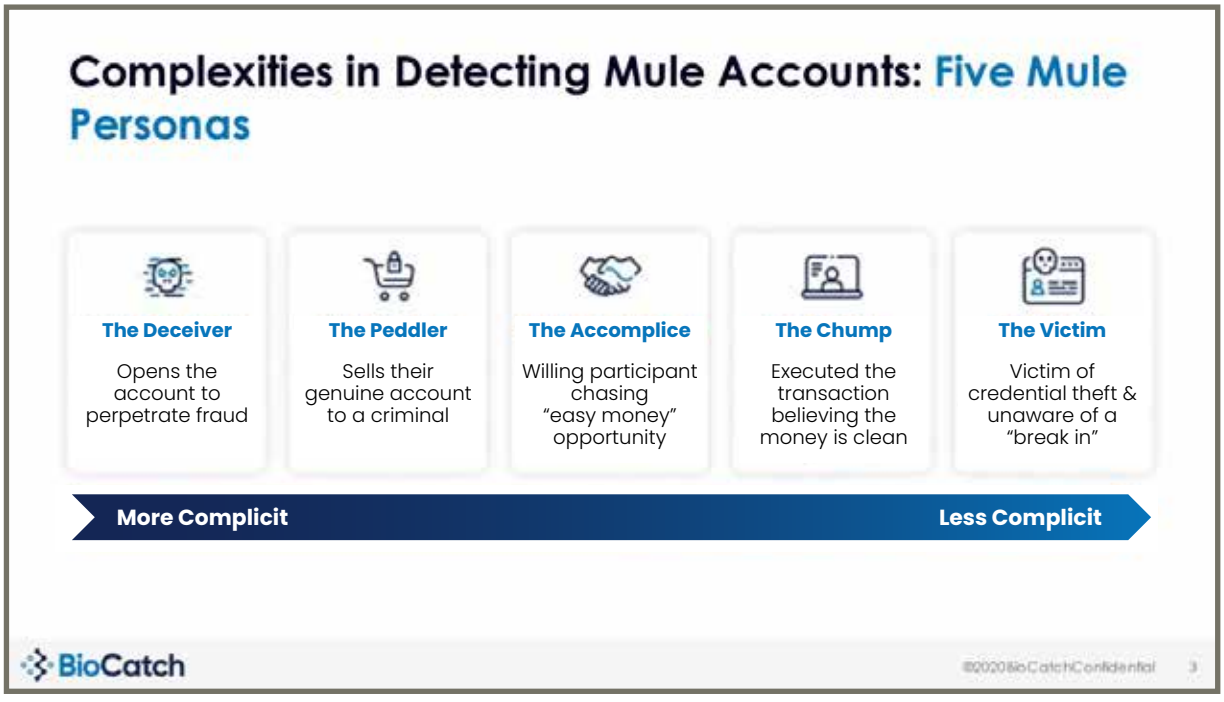
Macau scam
These fraudsters are pretending to be Malaysian Law enforcement agencies such as the - PDRM, LHDN, MCMC, MACC, and the latest scammer tactic, is reported to be calling from – POS Malaysia's express delivery service - POSLAJU.

The MO starts with a call and will convince the victims about the crime they have committed. Hence, they will give their Bank User ID and Password out of fear and release the TAC [Transaction Authorisation Code] to these criminals. Once this information is released, the victim's savings are withdrawn through cash advances through an ATM or transferred to another mule account.

DECRYPTING MULE ACCOUNT HOLDERS AND THEIR INTENT

A mule account is an account that belongs to an individual or company, which allows their bank account to be controlled and used by criminals. It works by handing over an automatic teller machine (ATM) card's PIN or by providing access to online banking credentials to criminals who will then receive money from fraudulent activities. These accounts are offered at RM1,000 per week for renting their account.

Mule account holders can be charged under Section 424 of the Penal Code for fraudulently concealing money. It carries a sentence of imprisonment up to five years, a fine, or both upon conviction, even if such mule account holders are not directly involved in whatever their "renter" does.



APK FILES [ANDROID APPLICATION PACKAGES)

Only download links from recognised websites and social media networks comprising links that probably have APK files hiding to hack your smartphones. These links contain - malware, ransomware, or other less visible viruses that can potentially disrupt an android operating system on your smartphone.

Methods of hacking Android operating systems and how it works:

- Generates a malicious payload with MSFvenom and extracts it as an APK file.
- Injects malicious payloads on legitimate android apps with MSFvenom.
- Both methods will require access to the victim's phone or some form of social engineering on the attacker's part to get their victims to install the malicious APKs on their phones.

Protecting ourselves from an online attack!

- Ensure "Install from Unknown Sources" is disabled in our phone's settings.
- Only download apps from the Google Play Store (much safer than downloading from third-party sources).
- Install anti-virus on our smartphones to scan for malicious apps.
- Review the permissions an app is asking for. If they seem too much, be on your guard (e.g., a flashlight app asking for access to your contacts, SMS, and microphone).
- Carefully review the links we have been sent (beware of misspelt names or "free promotions").
- Allow Google Play Protect to scan when installing an app from unknown sources.

As a constant Internet user, you must constantly safeguard your online identity by securing your logins and passwords.

SAFEGUARDING FROM INTERNET SCAMS

By remaining vigilant of the common types of internet fraud listed above, Internet users can protect themselves and avoid being caught in a phishing line. It is vital to never send money to someone met over the internet and never share personal or financial details with individuals who are not legitimate or trustworthy. Never click on hyperlinks or attachments in emails or instant messages. Once targeted, internet users should report online scammer activity and phishing emails to the authorities. Check all accounts through PDRM's website for every unknown transfer is better.

Credit card fraud can also be avoided by keeping a close eye on bank accounts, setting up notifications on credit card activity, signing up for credit monitoring, and using consumer protection services. In addition, users who suffer credit card fraud must report it to the relevant legal authorities and credit bureaus.

Thilohthaman Kasinathan has 30 years of fraud management and loss prevention expertise in banking and retail, including Hong Leong Bank Berhad, Dairy Farm Group, OCBC Bank (Malaysia), and Mbf Cards Malaysia (now known as Ambank Cards). His current position is as Fraud Investigation Manager for Hong Leong Bank Berhad, a three-year stint as Loss Prevention and Security Head for Dairy Farm Group, and financial crime investigations in the banking sector. Ha has also successfully conducted Fraud Investigation training under the Malaysian Risk Management Task Force ticket to the Royal Malaysian Police force in Langkawi and many others.

"We're installing a USB port so it's easier to recharge you after lunch."

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CONTACT US:
Wordlabs Global Sdn Bhd
D617, Kelana Square, SS7/26, Kelana Jaya
47301 Petaling Jaya, Selangor, Malaysia.
Tel: +603 7880 4200 / +603 7886 4933
Email: info@wordlabs.com.my
Website: www.wordlabs.com.my