MiGHT
Malaysian Industry-Government Group for High Technology

my**Foresight**®
MALAYSIA'S NATIONAL FORESIGHT MAGAZINE

37th
edition

The **Future** of
Health and **Well-being**

Contents 37th Edition

myForesight

Managing Well-being: Our Determining Future

Well-being
/ˌwɛlˈbiːɪŋ/
noun

the state of being comfortable, healthy, or happy

This is the definition according to Oxford dictionary.

If we were to take this literal definition of well-being as the state of being comfortable, healthy and happy, this will include physical, mental and social aspects, which is dependent on one's lifestyle. It includes factors such as nutrition intake, being involved in activities, having positive emotions and satisfying relationships, as well as a sense of purpose and meaning in life. However, well-being is a multifaceted concept and different people may have different priorities and values when it comes to their own well-being.

Therefore, to achieve a state of well-being will require to keep everyone comfortable and happy. Realistically, that is not possible, as each person has their own unique needs, wants and desires, which define their comfort and happiness level. Furthermore, happiness is relative to an event, state or situation as it will have different level of happiness for each individual.

Let us look at the tenth World Happiness Report, produced in 2022 by the Sustainable Development Solutions Network,

Top 10
Ranking of Happiness 2019-2021 from the World Happiness Report 2022

		Average Life Evaluation Score	
1.		Finland	7.821
2.		Denmark	7.636
3.		Iceland	7.557
4.		Switzerland	7.512
5.		Netherlands	7.415
6.		Luxembourg*	7.404
7.		Sweden	7.384
8.		Norway	7.365
9.		Israel	7.364
10.		New Zealand	7.200
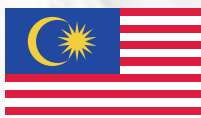
MALAYSIA
Average Life Evaluation
5.711

MALAYSIA is ranked 70th in World Happiness Report

GDP per capita
1.689

Healthy Life Expectancy
0.620

Perceptions of Corruption
0.126

Social Support
0.938

Generosity
0.213

Dystopia (1:83) +Residual
1.471

Source: World Happiness Report 2022

The above rankings are an extract from the World Happiness Report 2022, which uses data from the Gallup World Poll surveys from 2019 to 2021.

They are based entirely on the survey scores, using the Gallup weights to make the estimates representative.

The sub-bars shown above for Malaysia, is the estimated extent to which each of six factors (levels of GDP, life expectancy, generosity, social support, freedom, and corruption) is estimated to contribute to making life evaluations higher in each country than in Dystopia.

Dystopia is a hypothetical country with values equal to the world's lowest national averages for each of the six factors. The sub-bars have no impact on the total score reported for each country but instead are just a way of explaining the implications of the model estimated in the whole table.

Question is, *would you be willing to trade places and live in the countries that is listed above Malaysia?*

Happiness is a complex emotion that cannot be controlled or guaranteed for anyone else, but we can all strive to create a positive and supportive environment for ourselves and those around us.

In 1938, Harvard researchers undertook one of the longest study on happiness, called The Study on Adult Development. The researchers gathered health records from 724 people from all over the world, of which 19 of them were still alive in their mid-90s, as at 2017. The study asked detailed questions about their lives at two-year intervals. The study also questioned retirement as the respondents reached mid- and late-life. The data showed that the main challenge people encounter when they retire is that they are unable to replace the experience of having a social connection. Retirees don't miss working, they miss the people! Therefore, an important conclusion from the study is that to work on having sustainable relationships now to retire happy.

What is certain is that post pandemic, any conversation about the future of well-being will involve a greater emphasis on mental health and a more holistic approach to wellness. Advancements in technology and medicine provide new tools for monitoring and improving well-being, but it will also be important to address social and environmental factors that impact health. There will likely be a growing recognition of the link between physical, mental and social health, and a shift towards more preventative and personalised approaches to promoting well-being.

According to the World Economic Forum (WEF), these are the 6 trends that will define the future of health and wellness.

An ageing population

With many medical advances, it means people are living longer. An ageing population will impact the growing caregiving crisis and how products and services are innovated to meet their needs.

More virtual healthcare

COVID-19 has placed massive burdens on healthcare systems around the world, but in response to restrictions preventing in-person consultations with doctors, telemedicine - using video calls and remote monitoring - has come to the fore. This is evident now in Malaysia and many hospitals are now providing this service.

Customised personal diets

It has long been known that diet plays a key part in health. However, a study conducted by Ipsos cited by WEF, shows people want to be able to tailor their diets to meet their health needs.

Removing mental-health taboos

According to Ipsos, younger generations are much more in tune with their mental health with almost a fifth of Generation Z and 13% of millennials consulting a mental health professional at least three times each year.

Environmental concerns

We all know that walking is healthy, but for many people in the cities, pollution and traffic can make it hazardous. And although most people are concerned about climate change and its impact on their well-being, only a minority are changing their lifestyle to help tackle it.

Tech to the rescue

So, can technology help us improve our wellness? There is already a plethora of wearable devices that measure exercise, heart rate and blood oxygen. The researchers say more advanced technology, which could give users a readout of their state of health every day, offers the possibility of enabling people to regulate their behaviour to optimise their health.

> **"Happiness is a complex emotion that cannot be controlled or guaranteed for anyone else, but we can all strive to create a positive and supportive environment for ourselves and those around us."**

The World Health Organization (WHO) defines well-being as a positive state experienced by individuals and societies. Similar to health, it is a resource for daily life and is determined by social, economic and environmental conditions. Well-being encompasses quality of life and the ability of people and societies to contribute to the world with a sense of meaning and purpose. Focusing on well-being supports the tracking of equitable distribution of resources, overall thriving and sustainability. A society's well-being can be determined by the extent to which they are resilient, build capacity for action, and are prepared to transcend challenges.

The Geneva Charter for Well-being outlines 5 key action areas:

1. Design an equitable economy that serves human development within planetary boundaries

2. Create public policy for the common good

3. Achieve universal health coverage

4. Address the digital transformation to counteract harm and disempowerment and to strengthen the benefits; and

5. Value and preserve the planet

Therefore, in preparing for the future, the well-being agenda is a major driver of policy coherence across sectors and industries.

I do hope what is presented in this magazine continues to be of interest to you and adds value to the work you are doing. We welcome any contributions of content, either in the form of viewpoints or insights that you may want to share. Of course, comments are also welcome.

I look forward to hearing your thoughts on these matters.
For #BetterFutures.

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Datuk Dr. Mohd Yusoff Sulaiman

PRESIDENT AND CHIEF EXECUTIVE OFFICER
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Well-being Through Mobility: The EVs' Perspectives

One particular environmental challenge we face today can be attributed to mobility. We need efficient networks of vehicles and transportation systems to support our daily activities. However, the huge number of cars, public transports, such as buses and trains, and logistic vehicles like trucks and vans, can leave irreversible impact on the environment.

Blending technologies through engineering techniques, advanced materials in construction, innovation in information and communication technologies (ICTs) etc, can play a significant role in providing solutions to address environmental challenges resulting from mobility.

For example, traffic flow become more efficient, as information and updates on routes and facilities are readily available. Furthermore, the use of machine-to-machine communication (M2M) and ergonomic vehicle designs, can increase the usability of public transportations and hopefully avoid road casualties.

Another technology breakthrough for mobility is the use of electric vehicles (EVs). EV or electric mobility has been seen to pave a promising path for sustainable mobility and contribute to cleaner environment. It replaces fossil fuels and uses electricity as a power source. Renewable energy (RE) sources such as biomass, solar, geothermal, and wind energy are widely used nowadays. Backed by maturing technology, RE is not only eco-friendly as it reduces emissions,

but it should be noted that they are sustainable too.

The pros and cons of electric vehicles have been widely discussed, and continuous responses are in the form of research and technology development, government policy interventions, new business ventures, campaigns for awareness amongst consumers and many others. One of the main issues is the lack of proper cooperation between stakeholders – fragmented as different organisations work independently in adopting the best and latest in the market. The solo attitude is fine in their individual industries but is seen as a major drawback when it comes to communication and cohesion, especially on the topic of EVs' adoption.

In MIGHT, we have an approach called F.I.R.S.T. This approach allows us to look at initiatives from a more holistic perspective. F.I.R.S.T stands for Funding and finance, Infrastructure, Regulations, Skills and talents and Technology.

Like a puzzle, these perspectives are looked at together and explored to find gaps, potential opportunities and threats before developing further recommendations and responses.

Let us look at electric vehicles not just as a car but a very sophisticated computer on wheels for us to move forward in the industry and to provide a more sustainable green environment for the country. With the rise of the sharing economy, EVs have the potential to develop and diversify a lot of businesses, for instance, using mobility as a service.

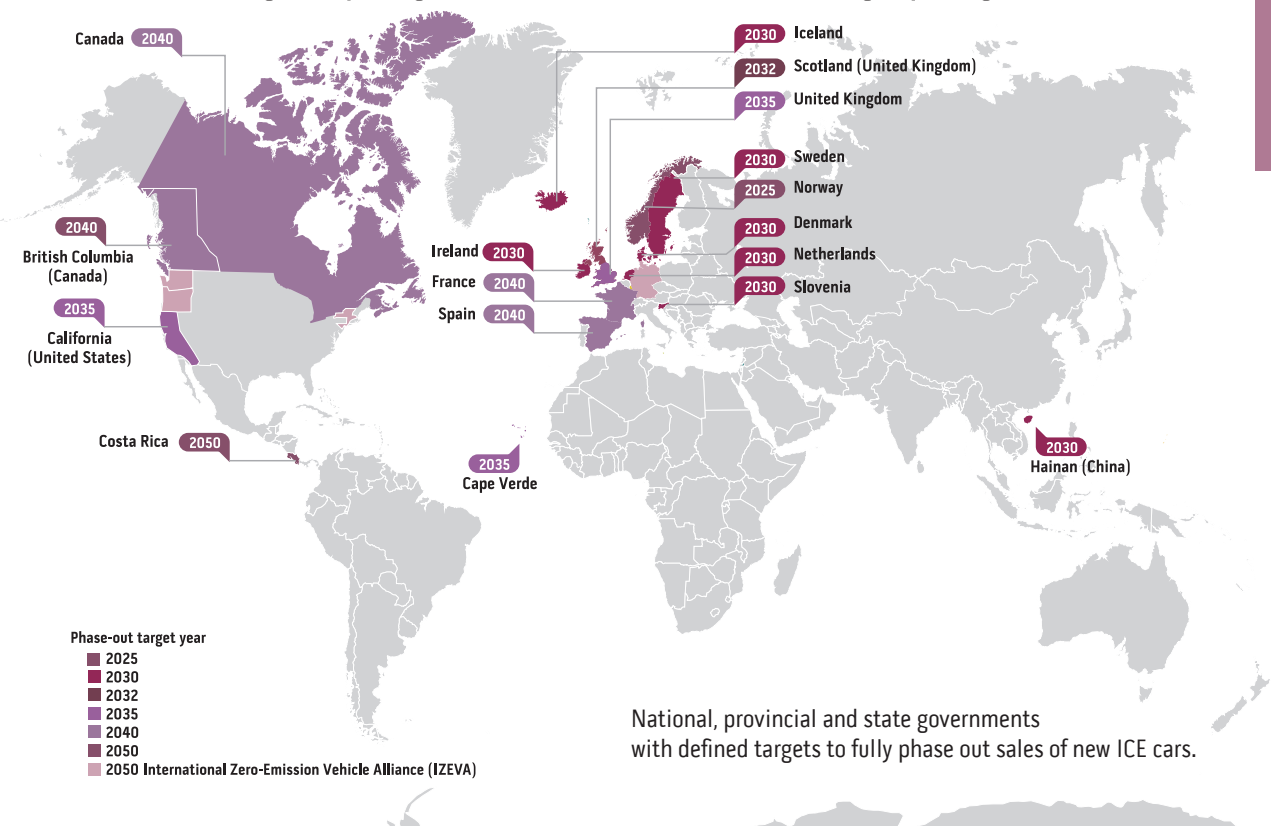From the **Funding** and finance perspective, we need the government to really invest in this kind of development. Government is the first mover and act as a facilitator to support industry development. For example, to use EVs as the official cars. By doing so, about a few thousand or even a hundred thousand cars or vehicles are able to be brought into the market. In China, local governments of at least a dozen cities and provinces started offering cash subsidies of as much as $1,400 per model to new car buyers. This is an example of strong government support that can actually spur a demand for EVs.

And when we talk about the **Infrastructure** of EVs, the main concerns will be about the charging facilities and workshops for maintenance of the cars, which leads to talents availability or supply to execute these tasks. Some of these potential solutions can be supplied by the private sector and will unlock more business diversifications and services. For example, starting an electric vehicle charging station business, installing charging points in one's building or property and offer it for rental. However, these advancements need to be backed and executed by detailed regulations to protect all parties.

The third perspective is the **Regulations** and policies. Some countries have already announced that they will phase out internal combustion engine (ICE) vehicles by 2040. The announcements and commitments are an important signal leading to a full transition to zero-emission vehicles. This will bring a jolt to countries that have thus far been hesitant to commit to a defined phase-out target. How about Malaysia, then? Through the National Energy Policy 2022-2040, many decarbonisation targets, including energy efficiency levels for businesses, EVs on roads and low-carbon transportation, were set. This commitment also aims to grow the EVs market share to 38% by 2040.

Governments with set targets for phasing out all new sales of internal combustion engine passenger cars

Canada 2040
British Columbia (Canada) 2040
California (United States) 2035
Costa Rica 2050
Cape Verde 2035
Ireland 2030
France 2040
Spain 2040
Iceland 2030
Scotland (United Kingdom) 2032
United Kingdom 2035
Sweden 2030
Norway 2025
Denmark 2030
Netherlands 2030
Slovenia 2030
Hainan (China) 2030

Phase-out target year
■ 2025
■ 2030
■ 2032
■ 2035
■ 2040
■ 2050
■ 2050 International Zero-Emission Vehicle Alliance (IZEVA)

National, provincial and state governments with defined targets to fully phase out sales of new ICE cars.

Source: International Council on Clean Transportation, 2020

Developing and maintaining EVs can be avenues to create new **Skills** and talents. Looking at EVs as vehicles, there are so many technologies involved - sensors, entertainment, communication and plenty of other products can be created. Moreover, from a services point of view, maintenance of these technologies can be monetised and offer job opportunities. The future of EVs is in software development. Accessible, smart and dynamic software products are essential parts of the transition to EVs. Without the intelligent use of data and an easy-to-use platform to access it, many consumers, fleet managers and their drivers will not feel confident enough to make the transition to a greener transportation choice. Thus, the pool of human capital and expertise in software development will be essential and a key turning point for the next industrial development.

Last but not least, is the **Technology** perspective. Not only technology on the vehicles, but the technology for the infrastructures that support the whole ecosystem - the road, charging stations, safety features, communication aspects and maintenance of these all are backed by technology. The World Economic Forum's recent The Future of the Last-Mile Ecosystem report notes that if current trends continue unabated, the number of delivery vehicles in the largest 100 cities globally will increase by 36% in the next decade – causing a 32% increase in carbon emissions compared to their output today. Are we ready? Do we have enough capacity? Can we create and become a business in this EVs platform?

Ministries and agencies need to come together and put their efforts in creating a viable ecosystem for the EV industry to flourish. In Cyberjaya, we have a community of CEOs from different agencies that meet up together over a cup of coffee. We call ourselves the Malaysia Advanced Technology Nurturing Network (MAGNET). We believe this kind of informal platform is more effective and is a more casual environment to discuss because we are there as friends.

I personally think that looking at things from different perspectives will help us gather information and have an unbiased view before we can analyse, come to a conclusion and propose a resolution. Taking EVs as an example, towards furthering societal well-being, we cannot discount and be selective in areas of improvement - the individual, the society and the environment, either human-made or natural, are all interconnected. We have to look at how the government, private sectors and academia can work together to deliver what they need to do in their roles to make it a complete ecosystem for the EV industry development.

In person with...

Dr. Rabindra Abeyasinghe

An interview with Dr Rabindra Abeyasinghe, on the Sustainable Development Goals (SDG) of promoting and ensuring the health of people at all ages.

Health and Well-being: Leaving No One Behind

Dr Rabindra Abeyasinghe is currently the World Health Organisation (WHO) Representative and Head of the WHO Country Office to Malaysia, Brunei Darussalam and Singapore, based in Kuala Lumpur, Malaysia. He was also the acting Director of Health Security and Emergencies at World Health Organisation's Regional Office for the Western Pacific (WPRO) based in Manila, Philippines. By understanding the SDG of encouraging improved health amongst Malaysians and other regions, people would benefit greatly from Dr Rabi's extensive knowledge and expertise from the viewpoints of health and well-being. His perspectives on the SDG framework and strategies for enhancing well-being around the globe, would be a valuable addition to this article.

SDG 3 – "Good Health and Well-being," and the current state of the world, as seen from WHO's perspective

The Sustainable Development Goals Report published in 2022, prepared by the United Nations, notes that cascading and interlinked crises are endangering the 2030 Agenda for Sustainable Development, highlighting the severity and magnitude of the challenges before us. Global crises, including COVID-19, climate change and conflicts, have affected and continue to exacerbate existing challenges with equity in access to food and nutrition, health, education, healthy environment, as well as peace and security, and affecting the SDGs as a whole. Specific to SDG 3, the pandemic disrupted essential health services, which resulted in increased morbidity from Noncommunicable Diseases (NCDs), drop in routine immunisation programmes, and increase in deaths from tuberculosis and malaria, for example. Unfortunately, the pandemic has also impacted adversely on healthcare providers and intensified challenges faced by many countries, worsening access to quality healthcare services for many vulnerable populations due to human resource constraints.

Urgent action is required from all stakeholders to continue making progress on our goals, but it is also important to note that these challenges have exposed many opportunities to work together, better and smarter. Knowledge and information sharing have enhanced our collaboration and innovation, cultivating pathways for technology transfer and allowing us to develop COVID-19 vaccines in just over a year since the outbreak began. To the point that, for the first time ever, WHO also recommended a Malaria vaccine to prevent malaria in children living in regions with moderate to high transmission. Health is a cross cutting subject featured across a number of SDGs, but SDG 3, "Good Health and Well-being" calls upon countries to specifically ensure healthy living and promote well-being for all ages. Globally, this SDG has made fair progress in some areas but continuous efforts are required, especially with continuous health essentials like routine immunisation, prevention and treatment of communicable and non-communicable diseases (NCDs) including mental health and supporting healthy ageing of the population.

NCDs are the main cause of death and disability in Malaysia. It is estimated that 1 in 5 adult Malaysians is living with diabetes, 1 in 3 is living with hypertension, and nearly half are overweight or obese. NCDs are a significant burden and a public health challenge to Malaysia, and whilst the age distribution of Malaysia's population is still young, relative to most high-income countries, we are moving towards an ageing society more rapidly than our peers in the region. The United Nations' recent estimates suggest that Malaysians aged 65 years old or above will reach 14.5% of her population in 2045, an increase from 7.2% in 2020 – suggesting a double increment in only 25 years.

Focal issues ageing Malaysians confront are diseases, declining physical capabilities, building designs and/or services that are not age-friendly, as well as isolation or lack of social connections.

Those working in healthcare, town planning, building management and the likes, will find urbanisation and ageing population a challenge in creating a safe haven for the dwellers. Environmental pollution, food scarcity, lack of physical activities, inaccessible transportations, inadequate infrastructure, drug and alcohol misuse, and insufficient healthcare services, are just a few perils that exist within metropolitan living.

It is crucial for older people to have the chance to strengthen their social connections and current ties. An age-friendly environment can help people enhance their social connections and receive enough support, which is good for sustaining health and well-being. Relationships grow steadily and more vital, as people age. An age-friendly environment should be created to foster social connectivity, involvement and integration amongst the aged, in order to increase the well-being of the ageing population.

The WHO Representative Office in Malaysia, together with other stakeholders including relevant United Nations organisations intend to provide support to government entities and stakeholders in these critical areas of work at the programme and policy level, to support healthy ageing, prevent NCDs and promoting age-friendly cities and communities, including strengthening community-based integrated care.

Whilst Malaysia's population is still young, relative to most high-income countries, we are moving towards an ageing society more rapidly than our peers in the region. The United Nations' recent estimates suggest that Malaysians aged 65 years old or above will reach 14.5% of her population in 2045, an increase from 7.2% in 2020 — suggesting a double increment in only 25 years.

Frameworks and health information systems' adequacy for monitoring the SDGs related to health

The SDG Report 2022 notes that investment in data and information infrastructure should be a priority for governments and the international community. Malaysia has invested in strengthening information systems for many decades and is continuing to strengthen its capacities in this respect.

Malaysia has embraced and implemented the 17 SDGs in a systematic and measurable manner, putting in place an enabling environment with the establishment of a multi-stakeholder, participatory governance structure that has representation across multiple sectors and at the statutory, policy and operational levels. It includes representatives from the Ministry of Economic Affairs, tasked to formulate an SDGs Roadmap, monitor progress of targets and identify issues; to the Department of Statistics, Malaysia (DOSM) which serves as a focal point in the development of SDG indicators and coordinates data collection across ministries and agencies, including the Ministry of Health.

There are regular Voluntary National Reviews of progress as well as working committees that identifies gaps and opportunities for each goal, plan and implement programmes, as well as reporting on their progress. These committees involve relevant Government ministries

and agencies, the private sector, civil society organisations (CSOs), academia, as well as youth and international organisations, including WHO.

An example would be through secured computer networks, electronic health records (EHRs) are produced from integrated health information systems. Authorised healthcare professionals have access to these networks for consultation and information exchange across healthcare settings. In Malaysia, the Total Hospital Information System (THIS), often known as the EHR, is utilised to generate EHRs in order to provide complete hospital automation and coordinated care delivery across different providers.

Whilst data for measuring progress towards most health-related SDG indicators are routinely collected in Malaysia, there remain a few gaps where data need to be collected through surveys. The collection and interpretation of these data are important to measure progress towards the SDGs and to ensure that no one is left behind. Malaysia boasts of a robust and diverse framework for monitoring and reporting on progress with inclusive participation. The government is strengthening data readiness and filling data gaps to develop a comprehensive dataset for SDG implementation which will continue to capture progress on the 2030 goals.

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The SDG Global Action Plan-based (GAP) strategy to improve global well-being for Malaysia and many countries

During COVID, we saw just how important collaboration is for advancing health agendas – from research consortiums to the coordination of vaccine development, stronger collaboration truly does lead to better health outcomes.

Stronger collaboration truly does lead to better health outcomes

Since over a decade ago, the market for digital health has grown to include a wide range of technologies, including mobile health apps, connected wearables and telemedicine. The coronavirus pandemic also serves as a driving force behind the explosive adoption of digital health in Asia and beyond. In the middle of a prolonged movement restrictions and constraints on physical engagement, digital health is still a constant and people are becoming more aware of remote monitoring and self-care.

The signatories of the GAP plan itself, commit to work with countries to identify priorities and plans, to act together (engage), to implement and support countries within specific areas of work including gender equality, R&D and community engagement (accelerate), to harmonise operational and financial strategies and approaches (align) and review progress and learn together to enhance shared accountability (account).

Through the GAP, countries can expect more purposeful and country-focused, accountability collaboration amongst multilateral organisations. WHO will play a supporting role in coordination to help facilitate joint-action.

Conclusion

Through combined efforts of many stakeholders, particularly in the provision of high-quality healthcare, as well as safe and conducive living environment, social well-being could greatly be improved.

Whilst we seek to find the balance to combat the ills of urban living like the rising number of diseases, lack of affordable housing, shifting criminal patterns, reckless driving, social polarisation, and inactive lifestyles – there is much that Malaysia has done and will continue to do in improving her people's quality of life, particularly in the urban areas.

Improved, targeted and affordable healthcare will definitely be important issues at hand – paying closer attention to our ageing society and making medical help accessible to them. Connected, comfortable and safe living conditions, are also a must – leveraging on numerous crime prevention, road safety and emergency measures where needed.

Malaysia's national cohesion must be built upon the strength of her people, and this starts by making the society feel safe, connected, healthy, active, empathetic and well-provided for.

Matt Van Leeuwen
Chief Innovation Officer of Sunway Group

Health and Well-being through City Development

By 2050, it is estimated that about 2 to 3 billion people need to be housed in cities, with more than a million people moving in and out of cities on a weekly basis – hence, creating a need for adequate infrastructure and services. The way urban settlements are planned, designed, developed and managed, will affect human health, well-being, safety and security. There is also the equally important need for robust environment for the economy to thrive. Sunway has established a healthy reputation that is not only in developing innovative residential, commercial and retail properties, but also in providing communities with access to quality healthcare and education. Hence, myForesight® magazine is pleased to feature Sunway Group and its Chief Innovation Officer, Matt Van Leeuwen, to gauge the perspective of a city developer in shaping the future of holistic societal health and well-being.

Smart is Not Just About Tech

Smart cities are built upon technology and data. Yet, learning from the Songdo experience – a smart city in South Korea, conceptualised as a completely sustainable, high-tech city, for a future without cars, pollution and overcrowded spaces – a fully integrated technology bound city even with the noble intention of making people's lives easier, can fail to attract vibrant communities if the soft touches are excluded.

Since more than 60% of the world's population are now city dwellers, with the percentage still rising, it is important for smart cities to adopt operating models and management systems that can also address socio-economic issues and challenges within urban living, such as environmental and social decay, inadequate healthcare services or inaccessible facilities to select groups.

We have positioned Sunway City Kuala Lumpur as a model smart and sustainable city in Malaysia, not only integrating technology and innovation in every facet of our town planning, but addressing its socio-economic needs as well – from transportation and energy management; to commerce, education, healthcare and hospitality.

There are also a lot of non-tech approaches that make Sunway City Kuala Lumpur smart and a township that truly cares. Social interactions or simply having a sense of belonging, should not be overlooked as viable solutions for certain people.

'Social prescribing', an approach used by the UK and Dutch national health services that link communities through voluntary and community activities, such as the arts, gardening, cookery or sports, are being promoted within Sunway City Kuala Lumpur. Platforms that enable community-centred initiatives, can complement traditional health services and improve the well-being of marginalised and vulnerable groups.

Having said that, whilst technology should never be the goal in building smart cities, it can however be used to explore multi-disciplinary solutions to make cities more sustainable and livable. This includes:

- **safety and security, including resilience against adverse weather and climate effects,** e.g. flood mitigation via effective water and drainage solutions

- **renewable energy production, energy-efficient LED lights distribution and sustainable consumption,** e.g. rooftop solar panels

- **mobility efficiency,** e.g. transport information platforms, reducing issues such as congestion and parking

- **creating connected and inclusive communities,** e.g. vibrant cultural hubs, and green spaces, such as parks and urban farms

What we should ultimately aim for is not to keep chasing technology, but make technology the vehicle to make cities more liveable and sustainable.

Leave No One Behind

Accessibility and inclusivity are important aspects in urban development. More than 1 billion people worldwide currently live with a disability, and many of them encounter challenges and impediments when travelling.

According to the National Health and Morbidity Survey (NHMS) 2019, 11.1% Malaysians above 18 years old have disabilities, whilst 4.7% children aged 2-17 years old, and 1 in 4 adults experience functional difficulties. To top this up, Malaysia is expected to be an aged nation by 2030 and super-aged by 2050. Challenges faced by these vulnerable groups include hearing, vision, communication, learning, mobility and emotions.

Sunway has fully embraced the 17 United Nation's Sustainable Development Goals (SDG) and ensures that adequate amenities, support and services are readied in order to ensure that no communities are marginalised.

Significant efforts and resources will be invested to prepare a community that can cope with the transforming demographics, as well as shifts in societal knowledge and attitude towards the ageing population and people living with disabilities.

Accessibility and inclusivity are also featured in our town planning. We ensure adequate facilities and infrastructure to increase accessibility for persons with mobility challenges (e.g. ramps for wheelchairs, designated parking and washrooms for people with disabilities). In addition, we are making sure that access to economic opportunities and quality education are made available for all.

For example, 42KL, a revolutionary tech talent development school run by Sunway Education Group, democratises coding education by offering free education to students who meet the entry requirements regardless of any physical disabilities, financial background or education experience. Digital literacy programmes are also made available to ensure that as technology becomes increasingly integrated into cities, certain communities are not unintentionally marginalised or excluded.

Through our #SunwayforGood CSR programmes, we address the needs of the underserved and underprivilleged in our communities through educational and food aid initiatives, reaching those hardest hit financially by the pandemic.

Healthcare is another area where increased demand and changing requirements, are anticipated. Whilst the efforts cut across all facets of society, emphasis must also be placed to enable older adults to continue to contribute to their families, communities and the broader society.

In this regard, Sunway Healthcare Group provides independent and assisted living for seniors with dedicated healthcare from professionals located within reach, personalised senior living facilities and curated lifestyle events. This retirement community concept is modeled after retirement villages in countries like Japan and Australia.

To create smart cities catering to an aged population, technology is a crucial enabler to achieve effective healthcare services and delivery (e.g. telemedicine, remote healthcare monitoring and wearables, precision personalised medicine, and general advances in healthcare detection, treatment, surgery, etc.). Health technology can also ensure that the community enjoys an increased quality of life in line with the projected increase in lifespan.

Blurred Line Between Urban and Rural

It is an exciting future ahead where town planning and development is concerned. Multitude of advanced technologies are empowering and enabling citizens to experience some of the most beneficial technologies in communal living today. Examples include smart parking, cashless payments, smart energy management, shared transportations and 5G-enabled facilities. Other exciting new capabilities such as augmented and virtual reality technology, and centralised, AI-driven security and surveillance systems, have also been deployed.

What is interesting is that with the advent of these technologies, communities are able to spread out and take root away from the urban areas. In the next ten years, the lines between rural and urban living will very much diminish or become indistinct. This is because whilst people chose to live in the cities because of the conveniences and the economic opportunities that they offer, they also thrive in environments with clean air and green spaces surrounded by nature.

Hence, if urban centric conveniences are made available away from the concrete jungle, what is stopping society to enjoy rural life with urban accessibilities? Even as we speak, technological advances have enabled the practice of remote work, reducing the need for office spaces and long, daily commutes.

So, future settlements may blur the lines between urban and rural dwellings. Cities may cease to be defined by skyscrapers, offices and cars, but become more about hubs for culture and lifestyle. Conversely, rural settlements may thrive with proper infrastructure for connectivity, allowing rural communities access to amenities, conveniences and economic opportunities, without the need to relocate to the cities – thus, reducing urban congestions and long commutes.

Then, cities all around the country will truly be smart and sustainable where residents are happy and healthy.

MiGHT

Health: Childhood Prevention vs. Ageing Cures

by
Liz Alexander, PhD Futurist.
Author. Consultant. Speaker.

Dr. Liz Alexander has been named one of the world's top female futurists. She combines futures thinking with over 30 years' communications expertise to produce publications that showcase the advice of fellow futurists on issues including the future of education, and how businesses can practically benefit from working with the futures community.

Dr. Liz is the author/co-author of 22 nonfiction books published worldwide, that have reached a million global readers, and has contributed to leading US technology magazine Fast Company, Psychology Today, and journals such as Knowledge Futures, and World Futures Review. She earned her PhD in Educational Psychology at The University of Texas at Austin.

I had a wonderful childhood. Not just because of two loving parents, a secure home, food on the table, and excellent educational opportunities, but because of the additional benefits that have enabled me to live into "older age" relatively fit, healthy, and mentally sharp.

Mealtimes might not have always been to my liking. Tongue, tripe, liver, and kidneys were typically fed to us weekly. I have chosen not to eat red meat for decades since. However, my mother taught me to cook and to understand the value of a nutritious, well-balanced diet, rather than the empty calories and low nutritional value of most 'fast foods' and pre-packaged meals.

I also took several years' worth of Home Economics courses at school. There were no computers, cell phones nor video games to keep us indoors, so as children we engaged our imaginations out in the fresh air. With none of today's obsessions with keeping children out of the dirt and ultra-clean, my siblings and I became imbued with extremely strong immune systems. That includes (so far) my resistance to COVID-19 and its variants.

Arguably, I am not the kind of person that government agencies worldwide are concerned about as they grapple with the challenge of population ageing. In most countries across the globe, economies are being increasingly strained by having to cope with non-communicable, age- and lifestyle-related diseases including arthritis, cancers, diabetes, obesity, dementia, and heart disease.

Yet, having read a wide range of reports in preparation for writing this article, it seems that by focusing too narrowly on our current ageing populations, the 'experts' risk overlooking what causes most of these problems in the first place. If, as one report entitled *Why Population Aging Matters: A Global Perspective* suggests we need to act to 'plan for the future', then I suggest we look more seriously at how to prevent the ill-health of future generations *now*.

It certainly appears that childhood health and well-being does not receive the same financial commitment given to the undesirable yet entirely avoidable consequences of our ageing populations. According to OECD findings, countries spend an average of 1.5% of GDP on long-term care for the elderly and infirm . These contributions of national wealth are said to be largely outpacing overall health spending and GDP growth. That's a big problem. In comparison, "OECD countries spend on average just over 0.7% of GDP on early childhood education and care ." This varies considerably, with the Nordic countries (Denmark, Norway, Sweden, Finland and Iceland) investing the most, as they do with their long-term care for elderly citizens. But it seems clear that countries spend far more on dealing

"The health and well-being of our current child population determines the health of our future adult population."

~ Children's Research Network: The impact of early childhood on future health

with the *consequences* of their citizens' poor health and well-being than they do on childhood prevention.

Why this happens is not entirely clear to me. Except to say that as a futurist I have noticed a tendency, within those who manage the purse strings, to focus on the urgent needs of the moment at the cost of *avoiding* them in the first place. But there is more to this issue even than that, as evidenced by one of the very few case studies I was able to find that identified innovative ways to significantly improve childhood health.

Communication is Everything

As one article on promoting health literacy so poignantly pointed out: "Health professionals typically define health education as a one-way approach to information dissemination. Generally, they do not take into consideration the actual use of information to improve the health of the individual receiving the information."

I would suggest that this is particularly true in the case of children. How many programmes and initiatives design materials that speak directly to children in a way they can most appreciate and understand, for example? And how many *involve* children in the design of such programmes? Yet, the results shared through one case study in Bangladesh are illustrative of the benefits of doing both. They also highlight the value of focusing on a single healthcare challenge rather than operating too broadly.

In Bangladesh, diarrhoea, a preventable disease, remains one of the leading causes of child death, along with the malnutrition that

diarrhoea exacerbates. Earlier health efforts in rural areas with largely illiterate populations had done the usual: talked to villagers about the link between faecal contamination and diarrhoea and presented them with standardised leaflets and other information. Such efforts had shown minimal change in people's behaviours, and so children continued to suffer from both the malnutrition caused by diarrhoea as well as the illness itself. A new approach was needed. Not least to change the success criteria from simply measuring exposure to health communications, to achieving the kind of health literacy that brings about long-term change in behaviours.

Bangladesh's Sanitation and Family Education (SAFE) programme was set up differently right from the start. Over eighteen months it fielded partners of community change rather than 'experts' who would impose pre-packaged, standardised solutions on their audience. Teachers disseminating facts were replaced by facilitators who would support and encourage new learning, according to what the community itself could relate to. Undoubtedly, this is more time-consuming than the traditional "here's a leaflet with information, go away and read it," approach. It also requires a very special kind of facilitator with the flexibility and experience needed to adjust to community and individual needs. In this case, that included the involvement of children.

Undoubtedly, this is more time-consuming than the traditional "here's a leaflet with information, go away and read it," approach.

The pilot scheme designers were sensible enough to discover what everyday behaviours and beliefs these children had absorbed from their parents and to develop strategies that connected what they were already familiar with to better hygiene habits.

Child-focus Materials

I have never understood why people tend to treat children as lesser individuals, unable to contribute to their own health and well-being. In my experience, the more you expect of someone, even as young as four or five, the more likely it is that they will rise to the occasion — especially if you make doing so fun. And so it was in the case of SAFE.

One of the pilot models they ran included separate educational sessions for children, with information that accommodated their level of understanding by using poems, pictures, stories and songs. But again, it was not the case of someone from outside the community imposing these on the audience. The pilot scheme designers were sensible enough to discover what everyday behaviours and beliefs these children had absorbed from their parents and to develop strategies that connected what they were already familiar with to better hygiene habits. The younger members of the community played interactive games with a health-focused message based on already-familiar indigenous activities such as 'ludu' (snakes and ladders). Children also took part in discussions sparked by observations of what they and their parents did in the real world as opposed to self-reported actions. Indeed, young people were encouraged to lead many of the programmes rather than take a back seat as passive recipients to an outsider's good intentions. As the final report on this initiative stated, "The child-to-child approach to promote hygiene education seems to be one of the most important."

I remember from my own school days how much more effective it was when we monitored each other rather than relied on adults to do so. In the case of the SAFE programme, school children would tell their peers to wash their hands before eating and defecate in toilets rather than in open areas. They would act out 'good' and 'bad' behaviours to each other as a means not only of showing the differences but explaining why they led to different health outcomes.

SAFE turned out to be as a highly successful initiative with a strong impact on actual health outcomes, although I do wonder, since it was conducted in the mid-1990s, whether there has been any follow-up or exposure in other areas and countries since.

Money is Not Everything

When it comes to our citizens' health, it is not simply a question of throwing more money at a problem but thinking more creatively as to how it might be addressed. The United States is a prime example. According to The Commonwealth Fund's report entitled *Mirror, Mirror 2026: Reflecting Poorly*, the US ranks last overall of eleven high-income countries "on measures of healthcare affordability, administrative efficiency, equity and outcomes", despite the fact that its spending on health, far exceeds any other country included in OECD data. Indeed, in an article by a US doctor entitled *The Price Paid for Not Preventing Diseases* , "fully 38 percent of all deaths in the US are attributable to four health behaviours: smoking, unhealthy diet, lack of physical activity and problem drinking". I would argue that it is easier and more effective to instil good lifestyle habits in the young, than it is to try and wean adults off unhealthy behaviours later. It is certainly more expensive to have to deal with the social and economic effects of non-communicable diseases in the elderly than it is in preventing them in the first place.

So, whilst it is laudable to address the challenges of the current ageing population, let us not ignore the nurturing of today's young citizens. They will undoubtedly benefit from health-focused education that operates in more creative, organic and life-enhancing ways, and I am living proof that it works.

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Vaccine Technology: From Lab to Jab

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Today, the national health system in many countries is transforming from 'sick care' to healthcare. There is an increase in awareness and practice of preventive healthcare amongst nations. Many of them are now aware of its impact on the country's healthcare system, economy and society. However, we fail to realise that preventive healthcare has been practised in the past decades and centuries, mainly through vaccination programmes.

A vaccine is a mixture of chemical agents that stimulate one's immune system to produce antibodies to function in a way similar to the body's exposure to the disease, without actually contracting the disease. Vaccines are highly effective at tackling infectious diseases as part of a wider array of complementary measures. From the first inoculation against smallpox discovered by English physician Edward Jenner in the 18th century, to the current cocktails of COVID-19 shots, vaccine development has progressed from minimalistic use of technologies from earlier days, to a more robust approach aided by molecular genetics in recent years.

▶▶ Development of vaccines

Vaccines developed using live-attenuated vaccines, inactivated vaccines, toxoid vaccines, subunit vaccines, virus-like particle vaccines and bacterial outer membrane vesicle vaccines technologies, often take 10-15 years to reach the market.

VACCINES INNOVATION
Most vaccines take years to develop, but scientists created multiple vaccines for SARS-CoV-2 within a year.
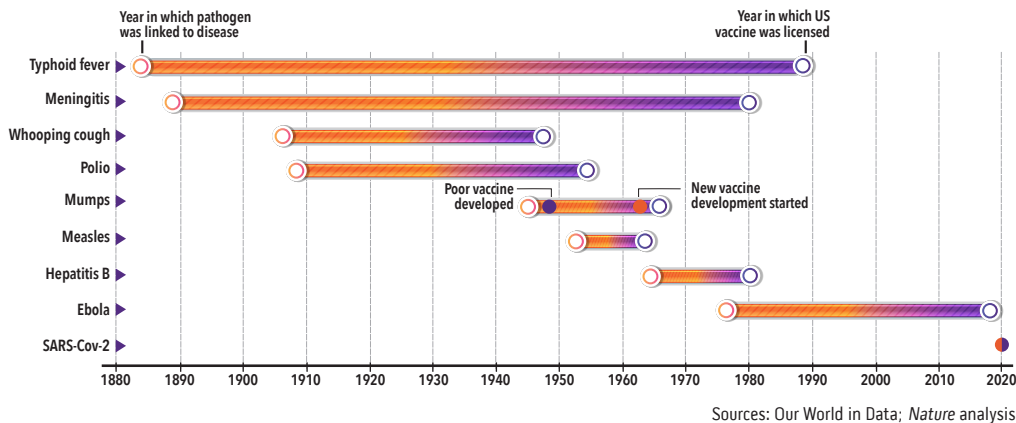
They often need biological systems (i.e. chicken eggs, cell cultures of bacteria or yeast, or plant or animal cells) for the propagation of pathogens or their parts, requiring appropriate biocontainment levels to prevent their release into the wider environment.

Sources: Our World in Data; *Nature* analysis

Figure 1 Most vaccines take years to develop due to running efficacy and safety tests on animals and then in humans.

▶▶ Approaches to developing vaccines

Live-attenuated vaccines:
use a weakened version of the pathogen, such as the MMR (measles, mumps and rubella) vaccine.

Inactivated vaccines:
use a 'killed' version of the pathogen, such as the Salk polio vaccine (a component of the 6-in-1 vaccine). .

Toxoid vaccines:
use chemically inactivated toxins produced by the pathogen, such as the tetanus vaccine. These vaccines train the immune system to tackle harmful components of a pathogen, rather than the pathogen itself.

Subunit vaccines:
use purified fragments of the pathogen. Some, such as the pertussis (whooping cough) vaccine, use purified proteins from the pathogen's surface. Others, such as the pneumococcal polysaccharide vaccine (PPV), use long chains of sugar ('polysaccharides') found on the surface of some bacteria. In some cases, such as for the pneumococcal conjugate vaccine (PCV), polysaccharides can be attached ('conjugated') to a protein.

Virus-like particle (VLP) vaccines:
use structures similar to viruses, but without the virus' genetic material that are recognised by the immune system, such as the human papillomavirus (HPV) vaccine.

Bacterial outer membrane vesicle (OMV) vaccines:
use 'bubble-like' structures from the bacterial surface, such as the Bexsero Meningitis B vaccine.

New research is currently exploring the use of 'cell-free' systems or chemical synthesis to facilitate the production of some of these vaccines. Platform-based technologies (often called 'plug-and-play' technologies) are being used to create vaccines that can be quickly and easily modified.

Many platform-based vaccines have been developed and tested on animals for veterinary use before being translated into humans. The most recently approved platform-based vaccines for human use are based on the pathogen's genetic information, delivered directly to the body in diverse ways.

▶▶ Examples of 'plug and play' technologies

DNA vaccines:
use part of the pathogen's DNA. Once administered in the body, this will be copied into mRNA, which will then be 'read' by the body to produce some of the pathogen's proteins and stimulate an immune response. Research on animals has shown that DNA vaccines can provide effective immunity to the influenza, HIV and rabies virus. The ZyCoV-D COVID-19 vaccine is the first DNA-based vaccine to be approved for emergency use in humans in India.

mRNA vaccines:
use 'ready to read' mRNA to provoke the body to produce a pathogen's protein and stimulate the immune response. Because of their 'readable' form, mRNA vaccines tend to be more efficient than DNA vaccines, needing lower doses and fewer vaccinations per individual. Examples include the Pfizer/BioNTech and the Moderna COVID-19 vaccines (in use) and the self-amplifying RNA vaccine in development by Imperial College London.

Viral vector vaccines:
use a harmless virus (the vector), modified to contain part of the DNA of a target pathogen such as the Oxford-AstraZeneca COVID-19 vaccine.

Given that these platforms can be quickly adapted by changing the genetic information they carry, they can be chosen to quickly respond to new infectious diseases. However, these technologies do not work well for all pathogens, hence progress across the entire range of vaccine technologies is still needed to ensure preparedness for future threats.

▶▶ Manufacturing and distribution

Often the importance of technology is emphasised or prioritised in the vaccine design. At times, the function and application of technology in the entire supply chain are overlooked. Vaccine supply chains often need to be temperature-controlled, from production to delivery and administration (known as the 'cold chain' and 'ultracold chain'). Completely synthetic vaccines, such as those that are mRNA-based, are easier to manufacture at scale, although they require particularly low temperatures for transport and storage – which, unfortunately, are not readily available in many situations. Nevertheless, advances in vaccine formulations may improve their ability to be stable at higher temperatures and consequently simplify cold chains.

The COVID-19 pandemic is a good example of how the importance of access to vaccine manufacturing is a national security priority, worldwide. As top pharmaceutical companies and well-to-do countries raced to develop vaccines for their people, those less fortunate countries were forced to fork out from their coffers to purchase these expensive vaccines for their people. Perhaps by sharing technologies and decentralising production (i.e. setting up larger numbers of manufacturing facilities at various locations) could simplify distribution and improve global access. This may spark new challenges in quality assurance and control, whilst at the same time, pose a need for stricter monitoring on vaccine manufacturing and distribution. However, these factors, as well as examining the efficacy of a vaccine's effectiveness on a population, can be simplified with the aid of technology in due course.

Globally, the World Health Organisation estimates immunisation prevents 3.5 to 5 million deaths yearly from diseases such as diphtheria, tetanus, pertussis, influenza and measles. Currently, there are vaccines that can prevent more than 20 life-threatening diseases, enabling many people of all ages to live longer and lead healthier lives.

Societies and nations stand to gain many advantages from the health, economic and social aspects if vaccination is accessible and affordable to their people. Although funding is needed for these vaccines to be made available, it could cost lesser if these vaccines are developed from endogenous technologies. Therefore, having the right talent pool, research and development capabilities, as well as infrastructures that enable the materialisation of homegrown vaccine supply chains, are crucial for the future of a society's well-being.
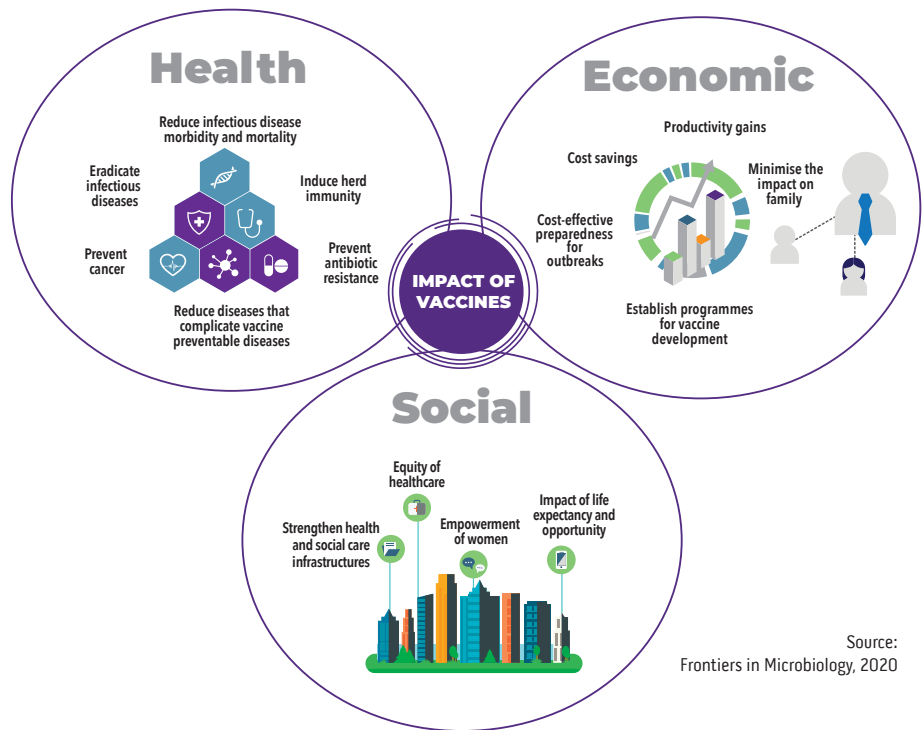
Source:
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Figure 2 Benefits of vaccination from the perspectives of health, economic and social framework

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MiGHT

Ageing Nation:
Its Impact on Malaysia

By
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The levels of health of our elderly vary. Some are active, whilst others are not. In Malaysia, we still see our elderly as active, an extreme example being a 97-year-old man who contested in the national 15th general election.

With an upward trend from 2010 to date, Malaysia is expected to be a fully ageing nation by 2050. Those above 60 years old is estimated to make up 3.6 million or 11.1% of the population in 2022, compared to 2.2 million or 8% in 2010.

POPULATION AGED 60 YEARS AND OVER

2010
2.2 Mil.
8%

2020
3.3 Mil.
10.3%

2021
3.5 Mil.
10.7%

2022
3.6 Mil.
11.1%
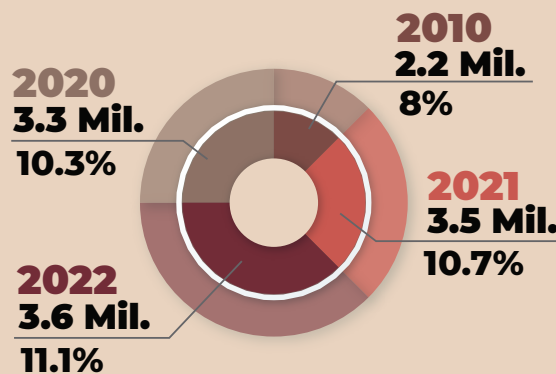
The Department of Statistics Malaysia (DoSM) also observed that the country's ageing population is growing at a faster-than-expected rate where more than 15% of its population will be above the age of 65 by 2050. This makes the country qualify as an ageing nation.

The percentage of global elderly population i.e. those older than 65, is expected to more than double to 1.5 billion by 2050. The most significant growth at 312 million people is projected to occur in East and South-East Asia, growing from 261 million in 2019 to 573 million in 2050.

This is due to people living longer and healthier, with improved awareness and knowledge on health. The definition of health is synonymous with good and satisfying life. An essential part of this is mindfulness i.e. conscious awareness and experience of the present moment. The goal is overall health of the body and soul, that gives strength and vital energy.

Globally, life expectancy has increased in six years between 2000 and 2019 – from 66.8 years in 2000 to 73.4 years in 2019. Healthy Life Expectancy (HALE) has also increased by 8% from 58.3 years in 2000, to 63.7 years in 2019, mainly due to declining mortality, rather than reduced years lived with disability.

How does this impact
our Nation?

As the share of the elderly population becomes larger, public expenditure will be higher to cover the expected increase in spending on healthcare, pension and long-term care. Therefore, it is important for everyone to adapt to the changing needs and structural demographics that carry impacts on the government, industry and society.

Government
- Increased government cost due to a shrinking workforce and lower productivity will have a negative impact on government tax revenues. An ageing population also imposes tax burdens through increased public healthcare costs and increased social protection and pension schemes.
- In 2021, the government's final consumption expenditure on social protection provided to senior citizens increased to RM2.4 billion from RM2.3 billion, and RM1.4 billion recorded in 2020 and 2015, respectively.
- The government has also spent a total of RM28 billion on pension expenditure involving approximately 887,000 public pensioners, where 28.3% represents payments for those aged 65 and over.

Industry
- An increase in the ageing population might result in a decline in productivity, higher labour costs, slower business expansion and reduced international competitiveness.
This can be supported by Börsch-Supan et al. (11), who found that older individuals will lead to less productive work outputs after a certain age. Therefore, an increase in the ageing population will likely slow down the productivity of a country.

Society
- Rising healthcare costs and the proportion of older people in the population raise the question of how best to fund retirement.
- Some families do not have the resources to care for the elderly in the family, as the children themselves must work, leaving the elderly at home alone. This is an unsafe situation especially if the elder person needs round the clock care.

What has been done?

A key challenge we face in tackling 'ageism', is battling the perception that the elderly is weak and do not possess the capacity to make decisions.

Many amongst us cannot seem to differentiate between the normal ageing process and that which is pathological. Without realising, this causes the elderly to be neglected or forgotten in terms of medical care, whether physically, psychologically or socially.

Malaysia has planned initiatives and programmes in preparation to handle this challenge. Ministries, namely the Ministry of Health and the Ministry of Women, Family and Community Development (KPWKM), have introduced the National Health Policy for Older Persons and the National Policy for Older Persons with the purpose to ensure healthy, positive, active, supportive and productive ageing by empowering the elderly, family and community with knowledge, skills, enabling environment and provision of optimal healthcare services at all levels and by all sectors.

Apart from these policies, here are other examples of initiatives introduced for our senior citizens

Senior citizen activity centres - Since March 2018, approximately 129 senior citizen activity centres or Pusat Aktiviti Warga Emas (PAWE) have been set up for the elderly who are healthy, independent, or who follow pro-active lifestyles. These centres are available nationwide at 222 parliamentary constituencies.

Care giver incentives - For house-bound elderly who are reliant on round-the-clock care, the Government provides incentives for family caregivers via old-age support allowances and income tax rebates. The same practice is done in the United States, Canada and Australia

Senior citizen allowances - Via KPWKM's Bantuan Warga Emas programme, the government provides allowances of RM500 per month per senior citizen, who has a household income of less than RM1,169

Cash assistance - The government also provides cash assistance from time to time, like the Bantuan Keluarga Malaysia assistance 2022. This assistance involved an allocation of RM7.8 billion benefitting around 8.6 million recipients in 2022 comprising 1.8 million 65 year-olds and over, with assistance amounting to RM1.7 billion

Moving forward

In conclusion, to ensure that no one is left behind while improving the well-being of all Malaysians, particularly the elderly, here are recommendations that can be considered to ensure that the elderly can live healthy, active and productive lives

Empower the elderly with self-care knowledge
- Emphasise and strengthen healthcare efforts for the elderly
- Advocate self-care such that individuals are responsible for their own health and well-being
- Promote active and healthy lifestyle, good nutrition, active physical activities and regular health screening

Promote senior at work programme
- Provide incentives for hiring elderly to work
- Tax relief and support for retraining or rehiring elderly

Promote sustainable ageing in place
- Professionalise care economy to cater the increasing need in the caretaker's sector

Strengthen family institution
- Provide incentives such as allowance for the elderly for the family who is taking care of their elderly

Enhance education and awareness in elderly care
- Educate the younger generation on ageing and ageing-related issues to inculcate positive attitudes and respect for elderly

Encourage community participation
- Establish a one-stop centre for community and intergenerational activities

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Managing a Smart City: Expect the Unexpected

In our 28th Edition of myForesight®, published in 2019, we highlighted the term Unintended Consequences, a social sciences terminology, defined as unanticipated or unforeseen consequences, which are outcomes of a purposeful action that are not intended or foreseen. Preparation of having people and organisations to look at the unintended consequences is needful as things do not always work out the way we expected or planned.
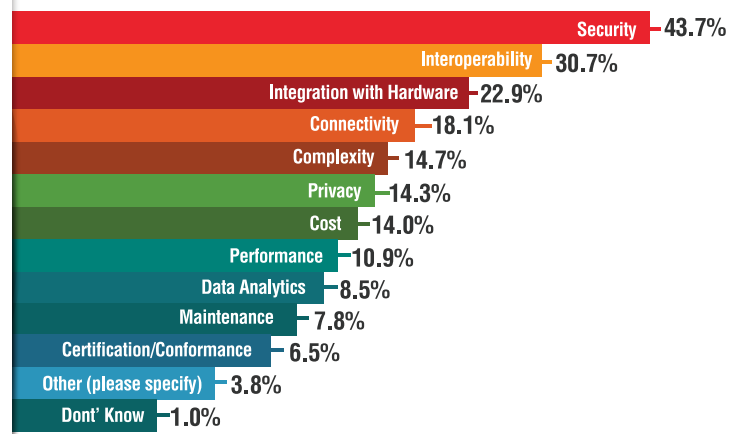
Smart city initiatives globally are part of current and future urban life. The association of urbanisation and digitalisation since the '90s and the transformation of urban spaces into smart cities over the last decades have revolutionised cities and urban living in many ways. Solution providers, industry players and urban planners have collaborated to develop new technological solutions to urban challenges and presented the smart city to improve quality of life, foster economic growth, increase urban resilience and sustainability as well as encourage societal involvement. However, there was little attention initially given to the social, environment, economic or even political implications of all technological advances and potential unintended consequences that emerge now and in the future as a result of applying these smart solutions.

Surveillance and Privacy Violations

By
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Smart cities depend on data gathered from citizens and services they use. This supports surveillance, introduces new forms of social regulation, curb violation of privacy, enabling predictive profiling and fostering social categorisation, which may influence citizens' behaviour. For instance, smart cities are equipped with modern technologies like cameras with facial recognition or sensors that measure crowd density in busy areas. Though the technologies implemented in smart cities are designed to make lives easier and safer, the data collected could be misused, such as racial bias, or masquerading as another person or stalking, if the data falls into the wrong hands. The governance aspect of data security is the the utmost priority to be in place.

Security and Privacy Risks in a Smart City

Category	Percentage
Security	43.7%
Interoperability	30.7%
Integration with Hardware	22.9%
Connectivity	18.1%
Complexity	14.7%
Privacy	14.3%
Cost	14.0%
Performance	10.9%
Data Analytics	8.5%
Maintenance	7.8%
Certification/Conformance	6.5%
Other (please specify)	3.8%
Dont' Know	1.0%

Source: Security and Privacy Issues in Smart City, Badouch A.& Krit S.E

Socio-Economic Disparity

Smart cities may reinforce digital divides, inequality and deepen existing socio-economic divisions, instead of producing societies that are more just, equal and inclusive. A smart city is synonymous to a digital city, whereby digital technology is used to control consumption and reduce carbon emissions. This digitisation, however much it is portrayed as bettering the lives of residents and making services provided by the government more accessible, in effect locks out a city's resident who do not have access to devices such as smartphones and laptops to access certain services. For instance, Indonesia has seen autonomous, spontaneous public spaces disappear through the rise of rideshare app Gojek, as its algorithm complicates informal urban regions as the application operates based on the proximity of its drivers with customers. Therefore, if customers are not in the drivers' radars, they will not have the opportunity to use the service. Developed nations such as South Korea, as another example, has been criticised for the lack of human-centred design of the Songdo City development location. The smart city is part of the Incheon Free Economic Zone, a targeted to creating an urban 'work and live' setting for well-off foreign workers.

Thus, it is essential to address these potential issues and work to ensure that the benefits of smart city technologies are accessible to all, regardless of socio-economic status or other factors. By prioritising inclusivity and equity in the design and implementation of smart city projects, it may be possible to mitigate these potential risks and create more just and equitable societies.

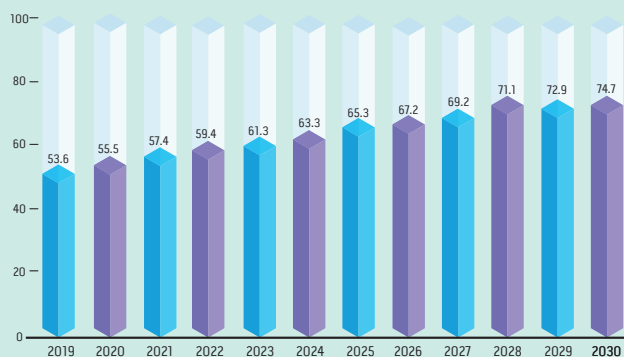# Considerable Increase in Electronic Waste (eWaste)

Whilst many of the technological advancements in modern cities are put in place to help with waste collection, energy reduction and environmental protection, the needs of nature should not be ignored by cities. Smart devices that are installed by municipalities require electricity or a power source, adding dependence to the power grid. However, these devices are becoming more efficient, and the power supply is becoming more environmentally-friendly, whereas personal devices, computers, monitors and smart devices will inevitably become outdated one day and be discarded. These electronic wastes are difficult to dispose of and often contains harmful chemicals (such as in the batteries). City authorities have a responsibility to ensure that electronic devices are disposed of correctly. They can work with eWaste collectors to help residents to discard their unwanted devices responsibly. Just as technology, devices, data and networks have important places in future, eWaste too need to be managed efficiently, so that they do not pose a threat to the environment or human life.

Projected electronic waste generation worldwide from 2019 to 2030 (in million metric tonnes)*

Year	Value
2019	53.6
2020	55.5
2021	57.4
2022	59.4
2023	61.3
2024	63.3
2025	65.3
2026	67.2
2027	69.2
2028	71.1
2029	72.9
2030	74.7

Source: Satista, UN University

Unexpected Trends
Trigger New Policies and Processes

It is understandable that innovators are eager to create breakthrough technologies and disruptive platforms. However, they sometimes collide with an existing regulatory and policy-making processes. Start-ups often discovered that safety and regulatory issues, including the lack of regulations in most situations has led to conflict between authorities and citizens. For instance, in the early days of eScooter sharing, city authorities were unprepared by its sudden popularity and the unexpected issues involving street clutter, endangerment to the infrastructure, recycling issues and mobility safety risks.

Globally, many countries and cities could not find a solution for eScooter regulatory and safety issues in the short-term. Therefore, the use of eScooters was banned until further evaluation. Eventually, eScooter policies, regulations and local rules were introduced and continued to evolve in each country and city. For the long term, urban planners and policy makers should consider that micromobility disruption in the future may (and most likely will) occur from unexpected sources. Perhaps the next wave of innovators will follow the path of e-scooter role models and act aggressively to launch services, capture market share as well as to think on the consequences.

As a conclusion, in addressing implications and unintended consequences of smart cities, it is important for policy makers to have a contextual condition that includes the country's social development, economic policy and financial capacity; the technological literacy and willingness of citizens to participate in smart city development; and unique cultural factors are important for smart city development in developing countries. To foster an innovation-enabling environment, countries should outline not only common technical standards and procedures for data collection and sharing, but also legal frameworks with a clear mechanism that protects privacy and intellectual property rights.

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Microplastics and Microbeads Pollution:
Time to be Proactive

By
Azuraien Japper
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Plastics' ubiquity is unimaginable. It exists in parts throughout every segment of our lives, our clothes, in our car, kitchen, workspaces and schools. What is worrying is the spread of the plastic wastes. They are present in the seas, soil, air and even in our water and food. It has even been found on Mount Everest, as well as at an ocean depth of more than 10,000 metres in the Mariana Trench.

In 2019, 460 million metric tonnes of plastic were used. Out of which only 9% of plastic waste was recycled, 19% incinerated, almost 50% went to sanitary landfills whilst the remaining was disposed in uncontrolled dumpsites, burned in open pits or leaked into the environment (OECD, 2022). The 3 most important sources of plastic pollution are plastic bags, disposable single use plastic items and microbeads (United Nations, 2018). The increase of plastic waste generation is driven by urbanisation, industrialisation, economic growth and lifestyle change. About 47% of mismanaged plastic waste makes its way into the ocean with more than 11 million tonnes of plastic enter the ocean every year. About half of the plastic waste that ends up in the ocean comes from China, Indonesia, the Philippines, Thailand and Vietnam.

> **About 47% of mismanaged plastic waste makes its way into the ocean with more than 11 million tonnes of plastic enter the ocean every year.**

▶▶ Risks of plastic pollution

Plastic pollutes the environment throughout its lifecycle and value chain. The extraction of its raw material and processing by the petrochemical industry are already hot topics in the climate change community with regards to the greenhouse gas emissions. Plastics have been reported to contribute to 3.4% of the global greenhouse emissions in 2019, where 90% of it came from the process of conversion from fossil fuel and production of plastic. Some plastics are disposed by burning in open fires releasing black carbon which has a global warming potential of up to 5,000 times greater than carbon dioxide (WWF, 2021).

Plastic itself possesses many health risks due to the various chemicals added into the base plastics to change its characteristics. Over 170 substances used in fracking of the plastic feedstock are known to cause cancer, reproductive and developmental disorders, and damage to the immune system (Heinrich Böll Foundation, 2019). A report by WWF highlighted that higher concentrations of fracking wells are associated with higher inpatient hospitalisation for cardiac or neurological problems (WWF, 2021). Absorption of plastics and their additives into the human body through ingestion, breathing and skin contact has been linked to cancer and hormone disorders (Institute for Global Environmental Strategies, 2021). Harmful compounds are also formed when plastic like PVC is burned in open fires. There is evidence that the compounds can damage the brain and disrupt hormones (WWF, 2021). The accumulation of plastic in soils can also lead to potentially irreversible soil degradation (WWF, 2021).
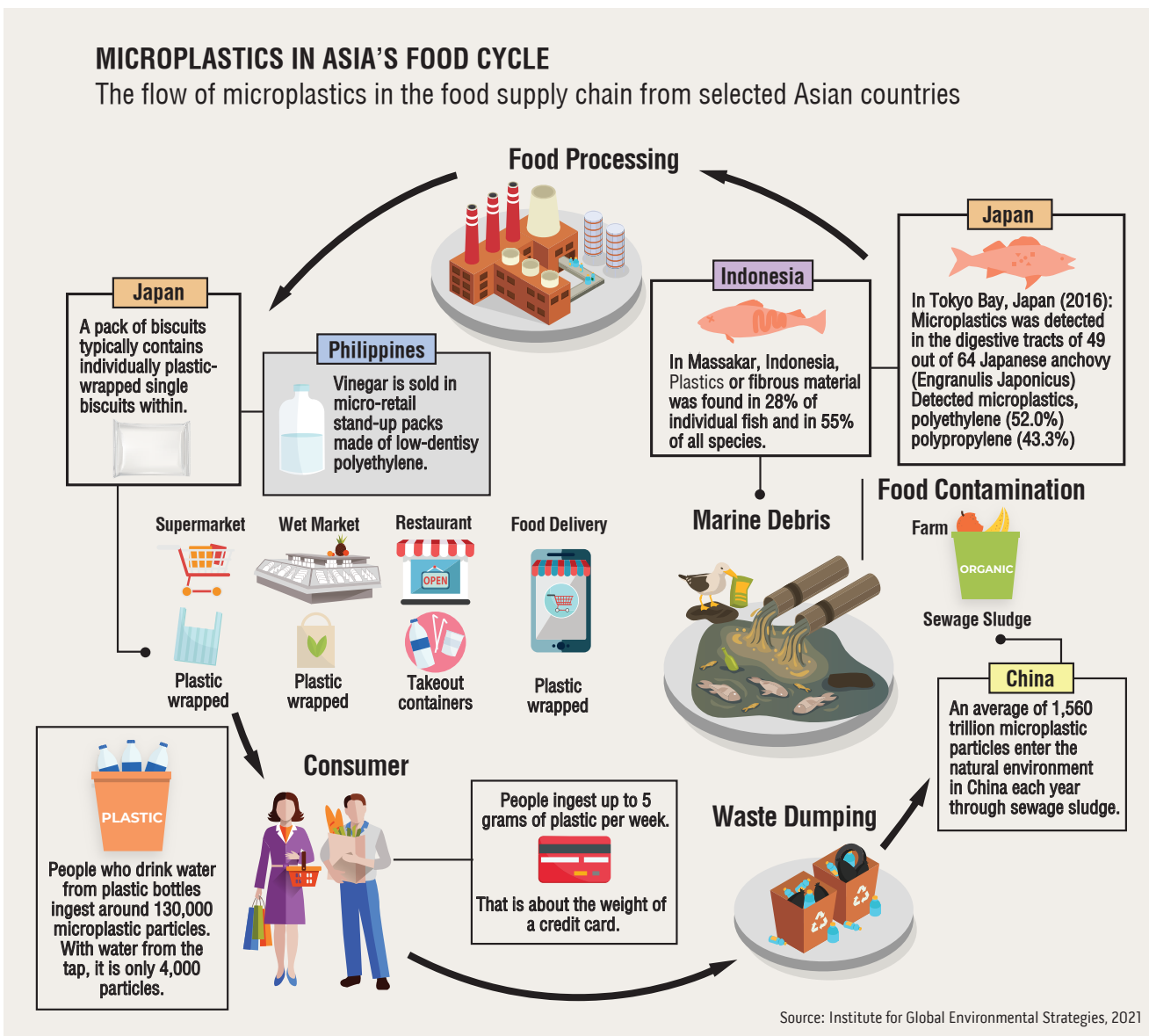
▶▶ Microplastics and Its Risks

Whilst plastic pollution is a serious concern, there are also discussions on the microplastic contamination. Microplastics or microbeads are tiny plastic particles of less than 5mm in diameter found in the environment. Primary microplastics are produced and designed for commercial use. They are intentionally added to the consumer and industrial products for their abrasive or exfoliating properties (United Nations, 2018). The consumer products that utilise microplastics include cosmetics, microfibers shed from clothing and other textiles such as fishing nets, household cleaning products, printer toners, products for medical applications and in industrial processes such as abrasive media for blasting, oil and gas exploration, textile printing, and automotive molding. Secondary microplastics occur as a result of the breakdown of large plastic debris caused by environmental factors such as exposure to the sun's radiation and ocean waves. The primary sources of secondary microplastics are large plastics, clothing, manufactured goods, coastal tourism, shipping and natural calamities such as flooding.

The sources of the microplastic pollution were found to be from the wastewater and sewage treatment plants. Current standard of water treatment cannot remove all traces of microplastics. Increasing concerns have been raised on the discharge of microplastics into the marine environment. The main source of microplastics found in the ocean was reported to come from synthetic textiles, followed by car tires caused by erosion whilst driving. Microplastics are dangerous as it can be mistaken for food by marine animals. These microplastics can block the digestive system of animals and result in low levels of oxygen and consequently result in reduced energy levels whilst some embed in the animal tissues. They are passed across the food chain, and eventually find their way to humans through ingestion and respiration.

MICROPLASTICS IN ASIA'S FOOD CYCLE
The flow of microplastics in the food supply chain from selected Asian countries

Food Processing

Japan
A pack of biscuits typically contains individually plastic-wrapped single biscuits within.

Philippines
Vinegar is sold in micro-retail stand-up packs made of low-dentisy polyethylene.

Indonesia
In Massakar, Indonesia, Plastics or fibrous material was found in 28% of individual fish and in 55% of all species.

Japan
In Tokyo Bay, Japan (2016): Microplastics was detected in the digestive tracts of 49 out of 64 Japanese anchovy (Engranulis Japonicus) Detected microplastics, polyethylene (52.0%) polypropylene (43.3%)

Food Contamination

Supermarket — Plastic wrapped

Wet Market — Plastic wrapped

Restaurant — Takeout containers

Food Delivery — Plastic wrapped

Marine Debris

Farm — ORGANIC

Sewage Sludge

China
An average of 1,560 trillion microplastic particles enter the natural environment in China each year through sewage sludge.

Consumer

People who drink water from plastic bottles ingest around 130,000 microplastic particles. With water from the tap, it is only 4,000 particles.

People ingest up to 5 grams of plastic per week.
That is about the weight of a credit card.

Waste Dumping

Source: Institute for Global Environmental Strategies, 2021

The environmental and health impacts of microplastics are actively being researched and is yet to be conclusive. Although the effects are still unknown, potential pathways for harm have been proposed. It has been suggested that once microplastics are in the gut, constituent monomers as well as additives and absorbed toxins can be released which can cause physiological harm ranging from oxidative stress to carcinogenic effects.

Marine microplastic pollution has also been shown to interfere with the extent to which oceans are able to capture carbon (Villarrubia-Gómez et al. 2018). Currently the ocean plays a critical role in removing carbon dioxide from the atmosphere by absorbing more than 25% of all CO_2 emissions. Studies have also shown that ingestion of microplastics by the fish may decrease the fish stocks and the quality of catch.
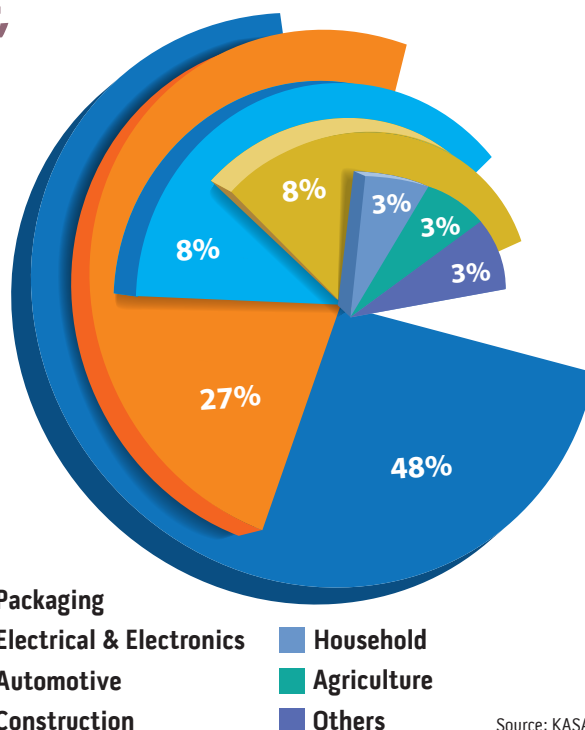
The effects and impacts of microplastics on the environment and human health are also anticipated to be similar to macroplastics. If microplastic pollution continues at the present rate, it is possible that the risks of exposure (digestion and inhalation) and other negative impacts will increase.

▶▶ Malaysia as a Plastic Producer, Recycler and User

Malaysia is a global player in the plastic industry with currently about 1,300 plastic manufacturers. It is a vibrant growth segment due to the well-established petroleum industry in Malaysia which provides steady feedstock supply. In 2019, 48% of the local plastic production is for the packaging industry, followed by electrical and electronics and automotive.

In Malaysia, more than 30,000 tonnes of municipal solid waste (MSW) daily are disposed with bulk of the waste coming from food followed by plastic, paper, mixed organic, wood, and others. The country's current recycling rate is around 31%.

A more granular study conducted by the World Bank on plastic circularity in Malaysia indicated that 24% of plastics (from four main resins (PET, PP, LDPE/LLDPE and HDPE)) introduced to the market in 2019 were recycled. 13% were either being processed for energy recovery or being sent to sanitary landfill, whilst the remaining 63% were not recycled or disposed of in proper facilities, which contributed to leakage into the environment. In 2019, Malaysia is the 6th country that produced the most plastic waste per capita and the 15th country with the most mismanaged plastics waste.

Legend:
- Packaging
- Electrical & Electronics
- Automotive
- Construction
- Household
- Agriculture
- Others

Source: KASA, 2021

Figure 3: Plastic end-use by sector in Malaysia in 2019

▶▶ Policies on Plastic Pollution Around the World

Some countries are already placing some form of plastic waste measures through bans of tax. As of 2018, 127 countries have adopted some form of legislation to regulate plastic. Many focuses on the single use plastics, which are often referred to as disposable plastics and are commonly used plastic packaging. The single use plastics are normally 1/3 of the global production of plastics (United Nations, 2018).

The legislations and actions against microplastic, however, are not as ubiquitous (United Nations, 2018) (Nicholas Institute for Environmental Policy Soln, 2020).

As of 2019,

- Nine countries have established bans of microbeads through national laws or regulations, starting 2015 with the "Microbead-Free Waters Act" by the United States. They are Australia, Canada, France, Italy, Republic of Korea, New Zealand, Sweden, the United Kingdom and the United States of America. Eight of the nine national policies were adopted within the last five years. However, only New Zealand's microbead law covers a wider range of microbeads which includes personal care wash-off products, abrasive household, car and industrial cleaning products whilst the rest only covers personal care products. The instruments adopted in these nine policies are either regulatory bans or planning requirements

- Of these nine policies, eight instruments are on requirements for planning or future actions, whilst 11 were for regulatory instruments to ban microbeads

- Four countries, Belgium, Brazil, India, and Ireland have proposed new laws or regulations banning microbeads at the national level

- In 2015, the Government of Australia has also engaged with companies to secure voluntary commitments to phase-out of microbeads in personal care, cosmetic and cleaning products by 2018

- However, there is currently no specific policy in Malaysia to address the issues of microplastics and microbeads

▶▶ **Policy Considerations**

With the vast amount of plastic wastes polluting our environment especially the rivers and the ocean, as well as the potential health impacts, a forward-thinking government would take proactive actions and introduce anticipative policies. Plastic pollution is a wicked and complex problem, it has long persisted as it takes hundreds and thousands of years to degrade. There is no unique and easy solution for this. Hence, the issue of plastic pollution should be tackled at the source, where the manufacture and trade activities are controlled, followed by downstream solutions.

Considering the success of policies in other countries, similar approach can be undertaken and localised for Malaysia. However, since the awareness level of existing policies on plastic pollution (IPSOS, 2019) as well as the effects of microplastics to the environment and public health is low, public education campaign should be put in place as a prerequisite. To increase the chance of success, international collaboration should also take place. This initiative can run concurrently with the initiative to ban the import, export and/or manufacture products with primary microplastics and introduction of environmental tax to consumers for purchasing products with microplastics, amongst others, whilst subsidies are to be given out for the use of sustainable materials in product design and manufacturing.

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Infographic

By
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Moody Over Media:
Is Social Media Safe for Your Mental Health?

Are you constantly on your social media?

Is checking your accounts the first thing you do in the morning, and the last before you sleep?

Do you periodically scroll in for quick updates? Or even binge for hours on end?
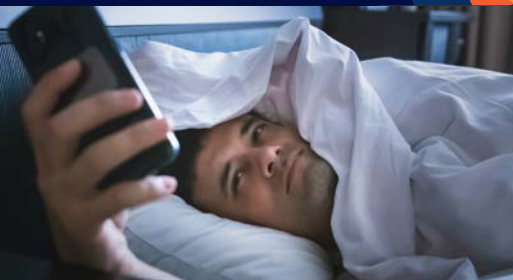
Human beings are social creatures.
We need companionship to thrive in life, and the strength of our connections has a huge impact on our mental health and happiness. Being socially connected with others can ease stress, anxiety and depression, boost self-worth, provide comfort and joy, prevent loneliness, and even add years to your life. Lacking strong social connections can pose serious risks to your mental and emotional health.

However, if the connections are made through digital means, and some of them are truly virtual, to the point of being fake – can they still be considered as making you socially connected?

Do these social media influences pose unrealistic expectations upon yourself? Can these cybernetic connections make you blossom?

Or will they make you wither instead?

What is Social Media?

Social Media is a collective term for websites and applications that focus on communication, community-based input, interaction, content-sharing and collaboration.

What is Mental Health?

Mental health is a state of mind that helps us control our emotional, psychological and social well-being. It affects how we think, feel and act, and determine how we handle stress and make choices.

Source: www.ravemobilesafety.com

SOCIAL MEDIA (NON EXHAUSTIVE)

ADVANTAGES	DISADVANTAGES
Connectivity	Cyberbullying
Education & Info	Fraud & Identity Theft
Assistance (medical, safety etc)	Privacy Breach
Crime Detection	Predators
Reputation & Feedback	Fake News

Social media has its good and bad sides, and if its usage is not controlled, it can be addictive and to some extent, abusive.
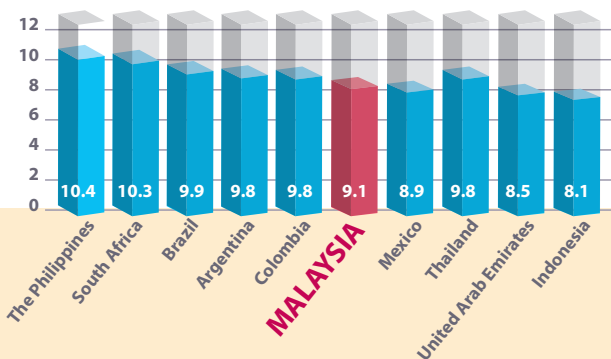
Worth to note that the number of social media users in Malaysia is on the rise. Should this be a cause of concern?

2021 - **27.78 mil** ...

2022 - **28.56 mil** ...

2025 - **30.38 mil** ...
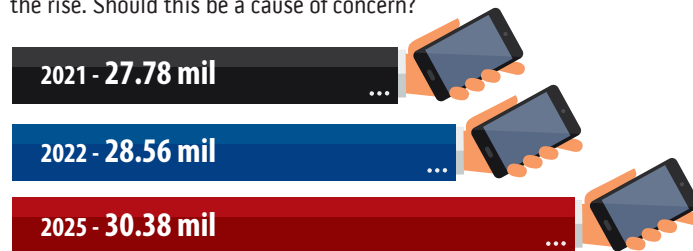
Is the Use of Social Media and our Mental Health Related?

Despite the multiple pandemic lock-downs, society was still connected, thanks to the digital space we live in. Social media platforms such as Facebook, Twitter, Snapchat, YouTube and Instagram gave us the much needed connection we crave for during those times of isolation; and the younger the generation, the more savvy they are in being part of this virtual society.

As at July 2022, Malaysia is 6th placed of the countries that spend the most time on the Internet per day; with Youtube being the most visited application.

Countries That Spend the Most Time on the Internet Per Day via Any Device (From 16 to 64 Years Old)

The Philippines	South Africa	Brazil	Argentina	Colombia	MALAYSIA	Mexico	Thailand	United Arab Emirates	Indonesia
10.4	10.3	9.9	9.8	9.8	9.1	8.9	9.8	8.5	8.1

Source: We Are Social and Hootsuite

However, whilst these platforms served as lifelines during trying times, they can never be replacements for real-world human connections. In-person contact with others is still needed to alleviate stress and make you feel happier, healthier and more positive.

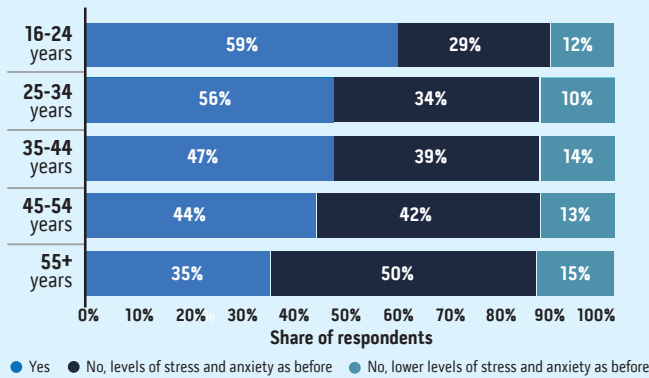Ironically, the very technology that is designed to bring people closer together, plays a huge role in causing the declining state of our mental wellness. Unregulated social media usage leads to the constant fear of missing out, often referred to as FOMO.

Post pandemic, surveyed Malaysians experience a higher level of stress or anxiety, especially amongst the youth.

Why is this so? Can taking them away from their peers and friends be a damper on their morale? Can over indulgence on technology devices take them away from physical activities? Can reliance on Social Media also be a factor?

People suffering from higher levels of stress or anxiety Malaysia, May 2022, by age group

Age group	Yes	No, levels of stress and anxiety as before	No, lower levels of stress and anxiety as before
16-24 years	59%	29%	12%
25-34 years	56%	34%	10%
35-44 years	47%	39%	14%
45-54 years	44%	42%	13%
55+ years	35%	50%	15%

Share of respondents (0% – 100%)

● Yes ● No, levels of stress and anxiety as before ● No, lower levels of stress and anxiety as before

Source: Statista

Social Media Addiction and Mental Health Amongst 208 IIUM Nursing Students, 2021

- 5.3% Highly Addicted
- 3.4% Not Addicted
- 37% Moderately Addicted
- 54.3% Sighly Addicted

Mild Stress
8.47

Moderately Severe Depression/ Anxiety
28.99

Source: International Journal Of Care Scholars 2021

It is time to re-evaluate your online behaviour if the time spent on your socials prompts you towards melancholia, dissatisfaction, irritation and loneliness – affecting your life and relationships.

May Day! May Day!
Signs that social media is impacting you negatively

- Suffering from sleep problems
- Facing anxiety or depression
- Engaging in risky behaviour to gain likes
- Spending more time on social media than real world friends
- Experiencing cyberbullying
- No time for self-reaction
- Being distracted at school or work
- Comparing yourself unfavourably to others

Source: www.helpguide.org

DON'T WORRY, BE HAPPY!
Ways to stop social media from affecting your mental health

- Avoid reading mean comments
- Limit screen time & the platforms you use
- Find other hobbies or activities
- Unfollow accounts that make you feel bad
- Leave positive comments for others
- Go out & meet up with 'real' friends

Source: verywell

Should you still exhibit signs of social media obsession, consult your doctor, or speak with any family member or friend. Let our mind remain healthy and the media remain friendly.

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myForesight® in the News

Knowledge Sharing Session: Megatrends 2050 for PETRONAS

Kuala Lumpur Convention Centre
17th October 2022

Knowledge sharing session on Megatrends 2050 for MIGHT's Lead Member PETRONAS. The session kicked-off with Mr Rushdi sharing on how MIGHT approaches Megatrends identification and Mr Azammi with the Foresight team facilitating group activities to identify, consolidate and filter Megatrends that will matter most for PETRONAS moving towards 2050.

The megatrends and innovation are linked through the future opportunities that are generated from the understanding of changes and needs of the future. Since megatrends showed the paradigm shift that creates future opportunities, innovation on the other hand, captures the understanding of principles and concepts from research, development as well as analysis, bringing them to the commercialised world to be utilised by others to seize future opportunities. Therefore, revisiting megatrends help to provide the right path as it works deliberately to the innovation of technology. This session was attended by 20 selected planners from PETRONAS that sees new and familiar faces to MIGHT's trainings.

Scenario Planning Training: Nuklear Malaysia
Dewan Tun Dr. Ismail
18th October 2022

MIGHT moderated another series of Scenario Planning Training. This time around is for a group of participants from Nuklear Malaysia and MOSTI at Dewan Tun Dr Ismail, Agensi Nuklear Malaysia.

This process-based training aims to provide hands-on experience in exploring future scenarios and developing responses systematically. Findings and scenarios developed from this training will be further refined as a reference to develop a document on Nuclear Technology for 2050.

The 2 days session was officiated by Dr Abdul Rahim bin Harun the Director General of Malaysia Nuclear Agency, and conducted by Azmil Mohd Amin and Mohd Nurul Azammi Mohd Nudri.

INTAN Executive Lecture Series (Leadership) Tahun 2022
Dewan Sri Baiduri INTAN, Bukit Kiara
3rd November 2022

MIGHT moderated for a panel on 'Kepimpinan Digital Pemangkin Kelestarian' organised by INTAN that was participated by 300 officers from the public service in attendance and 1600 participants virtually. The panel comprised of Dato' Jana Santhiran Muniayan, (Secretary General of Ministry of Youth and Sports), Madam Hazami Habib (CEO of the Academy of Sciences Malaysia), Dr Peter Lee, (Director of Talent Development in Awantec Systems Sdn Bhd) and Ts Mr Afdzal Nazri, (CEO and System Architect of Advanced Binary Networks Sdn Bhd).

The objective of the event was to raise the importance of digital leadership skills to utilise and leverage the hardware and solutions that are readily available, taking initiatives in bridging the gaps of industry and government, senior and younger generation, skills gap as well as the physical and digital gap.
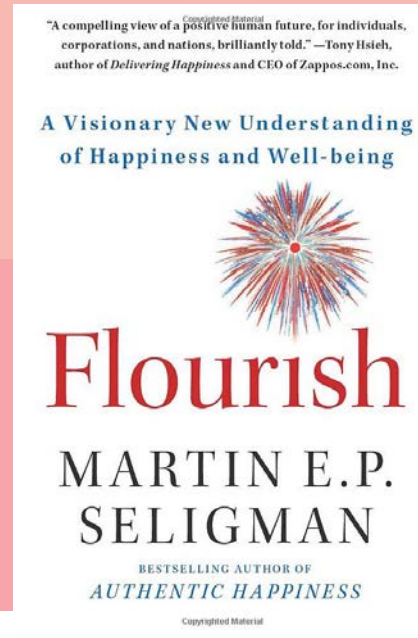
Book Review

Flourish: A Visionary New Understanding of Happiness and Well-being

By **Martin E. P. Seligman**

ISBN-13 **978-1439190760**
Edition   **Reprint**
Publication Date **February 7, 2012**

From the bestselling author of Learned Optimism and Authentic Happiness comes "a relentlessly optimistic guidebook on finding and securing individual happiness" (Kirkus Reviews).

With this unprecedented promise, internationally esteemed psychologist Martin Seligman begins Flourish, his first book in ten years - and the first to present his dynamic new concept of what well-being really is. Traditionally, the goal of psychology has been to relieve human suffering, but the goal of the Positive Psychology movement, which Dr. Seligman has led for fifteen years, different - it is actually about raising the bar for the human condition.

Flourish builds on Dr. Seligman's game-changing work on optimism, motivation, and character to show how to get the most out of life, unveiling an electrifying new theory of what makes a good life - for individuals, for communities, and for nations. In a fascinating evolution of thought and practice, Flourish refines what Positive Psychology is all about.

While certainly a part of well-being, happiness alone doesn't give life meaning. Seligman now asks, What is it that enables you to cultivate your talents, to build deep, lasting relationships with others, to feel pleasure, and to contribute meaningfully to the world? In a word, what is it that allows you to flourish? "Well-being" takes the stage front and centre, and Happiness (or Positive Emotion) becomes one of the five pillars of Positive Psychology, along with Engagement, Relationships, Meaning and Accomplishment - or PERMA, the permanent building blocks for a life of profound fulfillment.

Thought-provoking in its implications for education, economics, therapy, medicine, and public policy—the very fabric of society - Flourish tells inspiring stories of Positive Psychology in action, including how the entire U.S. Army is now trained in emotional resilience; how innovative schools can educate for fulfillment in life and not just for workplace success; and how corporations can improve performance at the same time as they raise employee well-being.

With interactive exercises to help readers explore their own attitudes and aims, Flourish is a watershed in the understanding of happiness as well as a tool for getting the most out of life. On the cutting edge of a science that has changed millions of lives, Dr. Seligman now creates the ultimate extension and capstone of his bestselling classics, Authentic Happiness and Learned Optimism.

Source: Amazon.com

Map the future

As a stakeholder and strategic policymaker, you can contribute by voicing out your opinion to help us map out the desired collective future for Malaysia.

This is an invitation by myForesight® to every member of the public. If you think we could have done better, or perhaps you would like us to cover a specific topic in the study of Foresight or better yet, you would like to contribute an article, we would love to hear from you.

Send your feedback and get in touch with us at foresight@might.org.my

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We look forward to hearing from you.

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