.my CONVERGENCE
MCMC
ISSUE 19

# THE JOURNEY TO DTT

## IMPLEMENTING THE TRANSITION TO DIGITAL TERRESTRIAL TELEVISION (DTT)

- Implementation of Cherished Number Framework
- Coping With Technological Advancement
- 5G Malaysia Demonstration Projects
- HADiR Mission
- Connecting Pos Kuala Mu to the World
- The E-Commerce Delivery Awards 2019
- National Network Database (NNDB)
- Digital Rights: A Brief Introduction for a Long Road Ahead

The Malaysian Communications and Multimedia Commission

ISSN 1985-188X

# Digital Society Research Grant 2020: Call For Proposals

The Malaysian Communications and Multimedia Commission is calling for research proposals under the **Digital Society Research Grant**. The Grant will be open from 3 July 2020 throughout the year and will be subject to remaining availability of research funding and the required research.

It is envisaged that research funded by the Digital Society Research Grant will build the evidence base that is necessary to promote and improve understanding of the human and social factors which affects and contributes to the adoption and usage of digital technologies and services. This in turn will help to ensure that the great strides made in the communications infrastructure and services are able to contribute to the inclusion and participation of all segments of the population towards becoming a fully connected and informed society.

Proposals are invited for research activities that fall within the following focus areas:

**FOCUS AREA 1:**
**DIGITAL CITIZENSHIP AND CYBERWELLNESS**

- Competencies and Literacies
- Risks and Potential Harm
- User Rights and Protection
- Awareness and self-regulation
- Adoption
- Interventions
- Programme evaluation, assessment and impact
- Policy and Regulation Implications
- Validation and Improvement
- Communication strategies

**FOCUS AREA 2:**
**DIGITAL INCLUSION**

- Empowering productive use of services for "at risk and excluded groups"
- Access to health and assisted living services
- Adoption
- Interventions
- Programme evaluation, assessment and impact
- Policy and Regulation Implications
- Validation and Improvement
- Communication strategies

**For information on how to apply, please access the information here:**
**https://www.mcmc.gov.my/en/grants/digital-society-research-grant-2020-call-for-propo**

For enquiries, please contact the secretariat, Atiqah Nabilah Mohd Salleh at 03-86887854/ Dayang Aidah Awang Piut at 03-86888064/ Norizan Ab Rahman at 03-86888354 or send an email marked Research Grant Query to **research.enterprise@mcmc.gov.my**.

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# From the Chairman's Desk

2020 has brought into sharp focus the value of digitalisation. In every industry and in just about every country, governments and industries have realised how important it is to digitalise their process and services.

It is timely then that this issue has many articles related to digitalisation initiatives and efforts.

The cover story is about the completion of the change from analogue TV broadcasting to digital terrestrial TV technology.

Malaysia crossed this important milestone in late 2019 when the nation switched over fully to digital TV transmission. Region by region, analogue TV transmission were switched off and replaced by the superior myFreeview digital TV transmission. This marks another step in the nation's transformation into a digital nation. The DTT article in this issue charts the nation's transition to digital terrestrial TV (DTT) and provides details of the new services that replace the analogue transmission. The move to digital terrestrial TV will contribute in no small way to the future economic, social and educational needs of the country and its people.

There are four other feature articles on the theme of digitalisation. They showcase the various lines of actions and initiatives that MCMC is involved in as part of our mandate to foster the adoption of technological advancements and innovations that benefit the citizens and the nation.

Readers will find the 5D Demonstration Projects feature story interesting as it showcases many concept 5G services that were trialled under our 5G Malaysia Demonstration Projects (5GDP) initiative. There is also a report of the Digital Outlook Series technology talk event that was held to spread awareness of the potential of 5G.

The other two articles are on the Communication Infrastructure Management System and related systems that have been rolled out by MCMC's Geospatial and Digital Services Department and discussion piece on Digital Rights and their implications.

Lastly, it is very apt that our Personality interview segment in this issue features Dr Syed Hussein, the very first Chairman of MCMC (or CMC as it was known back then). The interview provides fascinating glimpses of the challenges that were overcome in the early days of getting MCMC off the ground. The seeds of the achievements of MCMC today were laid over two decades ago. I trust that the values and approaches that were inculcated into MCMC in those early days – discipline, a culture of objectivity and neutrality, integrity and credibility have been maintained until today. .my

Warmest regards,
Dr Fadhlullah Suhaimi Abdul Malek

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# FREEDOM OF SPEECH, BUT NOT FREEDOM TO LIE





During the COVID-19 pandemic, between January to June 2020, MCMC and PDRM initiated 266 investigation papers pertinent to coronavirus fake news. Additionally, the Quick Response Team – set up by Ministry of Communications and Multimedia to curb the spread of COVID-19 related fake news – also identified 352 bogus news items.

The surge in fake news propelled MCMC to roll out a three-month campaign, themed **Freedom Of Speech Is Not Freedom To Lie**, to combat the widespread of false information. The primary aim of the campaign was to affect a shift in the nation's moral compass and reduce the creation and distribution of fictitious information through education, unlike the past years when enforcement was effected to serve as a deterrent.

# THE JOURNEY TO DTT

## IMPLEMENTING THE TRANSITION TO DIGITAL TERRESTRIAL TELEVISION (DTT)

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Digital terrestrial television is a technology in which land-based (terrestrial) television stations broadcast television content by radio waves to televisions in consumers' residences in a digital format. The main characteristic of DTT broadcasting is that the technology uses much less spectrum as compared to analogue broadcasting. A single spectrum band can only air one analogue TV channel whereas up to 16 Standard Definition (SD) TV channels can be aired on the same spectrum band using DTT technology. In brief, DTT is more spectrum-efficient, freeing up spectrum capacity. This translates to a Digital Dividend of 700 MHz once analogue broadcasting is switched off. The frequency bands allocated for DTT are from 470 MHz to 742 MHz (Ultra High Frequency (UHF) bands IV and V).

DTT is a Government initiative, spearheaded by the Ministry of Communications and Multimedia Malaysia (KKMM) and monitored by the Malaysian Communications and Multimedia Commission (MCMC). This initiative aims to ensure a smooth transition from analogue to digital broadcasting on a terrestrial platform for the current Free-to-Air (FTA) Government-owned and private TV stations.

## WHAT IS ANALOGUE SWITCH OFF?

The Analogue Switch Off (ASO) is a process of switching off FTA analogue terrestrial television broadcasting service. In many countries around the world, their governments ensure ASO is carried out without disadvantaging the citizens.

## APPOINTMENT OF COMMON INTEGRATED INFRASTRUCTURE PROVIDER (CIIP)

The Government has decided that a CIIP shall be the responsible party to build the DTT infrastructure and network in Malaysia. The appointed CIIP shall facilitate common infrastructure sharing amongst FTA broadcasters resulting in lower access charges on the DTT platform. As a result, the FTA broadcasters are not required to invest in high capital for TV transmitters to provide coverage in targeted areas. Rather, the CIIP is responsible to make the DTT platform ready for lease by FTA broadcasters. Thus, FTA broadcasters can optimise their resources and focus on creation and production of more content and value added services. As many parts of the broadcast network are common, having a single CIIP means savings in Capex, access rates, manpower and related resources.

The tender Applicant Information Package No. 1 of 2012 issued in late April 2012 saw 8 companies submitting their bids to the MCMC at the close of the tender on 24 July 2012. Upon evaluation of the said tender bids, MCMC awarded Puncak Semangat Sdn Bhd in April 2014 as the CIIP to build, operate and manage the infrastructure for DTT service. Subsequently, Puncak Semangat transferred its rights, obligations and responsibilities to MYTV Broadcasting Sdn Bhd (MYTV) in October 2014.

## DIGITAL TERRESTRIAL TELEVISION TRANSITION IN MALAYSIA

Malaysia is among 3 countries in Southeast Asia that have successfully completed the transition from analogue TV broadcasting to DTT broadcasting. Brunei and Singapore also completed the same on 31 December 2017 and 1 January 2019, respectively.

MYTV has committed to build 60 DTT transmission stations to provide 98% population coverage nationwide as follows:

- Phase 1: 14 transmission stations (to reach 85% population coverage) and;
- Phase 2: 46 transmission stations (to reach 98% population coverage).

The journey began in April 2015 when MYTV rolled out the Signal Test Phase/DTT trial service in the Eastern region and Sabah whereby 4 transmission stations were built. Subsequently, the deployment was expanded to other regions in phases through building the remaining DTT transmission stations. Phase 1 was completed in late April 2016, reaching 85% population coverage nationwide. MYTV has successfully completed Phase 2 to reach 95.3% of the population by the end of March 2019 bringing the total to 44 DTT transmission stations nationwide.

MYTV launched its Direct to Home (DTH) service in November 2018 to complement DTT service coverage by ensuring the DTT coverage would be available at remote and in blind spot areas within the remaining transmission stations. The DTH solution has already been successfully implemented to complement DTT coverage across many countries such as United Kingdom, Chile, Finland, France and Italy. DTH service enables 98% population coverage nationwide as committed by MYTV.

**44 DTT Transmission Stations by Region and State**

| No | Region | Sites | States |
|---|---|---|---|
| 1 | Eastern | Bukit Bakar | Kelantan |
| 2 | | Telipot | Kelantan |
| 3 | | Bukit Besar | Terengganu |
| 4 | | Bukit Bauk | Terengganu |
| 5 | | Bukit Bintang | Terengganu |
| 6 | | Kemuning | Terengganu |
| 7 | | Bukit Pelindung | Pahang |
| 8 | | Kuala Rompin | Pahang |
| 9 | | Bukit Senggora | Pahang |
| 10 | | Bukit Sembilan | Pahang |
| 11 | | Bukit Fraser | Pahang |
| 12 | Central | Gunung Ulu Kali | Pahang |
| 13 | | Menara KL | Kuala Lumpur |
| 14 | | Bukit Sungai Besi | Kuala Lumpur |

| 44 DTT Transmission Stations by Region and State | | | |
|---|---|---|---|
| **No** | **Region** | **Sites** | **States** |
| 15 | Northern | Gunung Jerai | Kedah |
| 16 | | Gunung Raya | Perak |
| 17 | | Gunung Kledang | Perak |
| 18 | | Bukit Larut | Perak |
| 19 | | Pulau Pangkor | Perak |
| 20 | | Penang U4 | Pulau Pinang |
| 21 | | Seberang Jaya | Pulau Pinang |
| 22 | Southern | Gunung Pulai | Johor |
| 23 | | Gunung Ledang | Johor |
| 24 | | Pelangi | Johor |
| 25 | | Skudai | Johor |
| 26 | | Bukit Tinggi | Johor |
| 27 | | Bukit Tampin | Negeri Sembilan |
| 28 | Sarawak | Gunung Serapi | Sarawak |
| 29 | | Sarikei | Sarawak |
| 30 | | Bukit Singgalang | Sarawak |
| 31 | | Bukit Lambir | Sarawak |
| 32 | | Bukit Temuduk | Sarawak |
| 33 | | Bukit Ancharang | Sarawak |
| 34 | | Bukit Nyabau | Sarawak |
| 35 | | Bukit Mas | Sarawak |
| 36 | | Belaga | Sarawak |
| 37 | | Bukit Kapit | Sarawak |
| 38 | | Bukit Lima | Sarawak |
| 39 | | Saratok | Sarawak |
| 40 | Sabah | Bukit Karatong | Sabah |
| 41 | | Gunung Andrassy | Sabah |
| 42 | | Bukit Trig | Sabah |
| 43 | | Gunung Silam | Sabah |
| 44 | | Bukit Kelapa | Sabah |

Digital and analogue broadcasting run simultaneously during the transition period (simulcast). The simulcast period enables viewers who do not possess a compatible receiver to continue receiving the broadcasts in analogue mode. This allow time for consumers to purchase receivers and eventually receive broadcasts in digital.

The transition to DTT service was conducted in phases commencing from 21 July 2019 to 30 October 2019 covering 13 states in Peninsular Malaysia and East Malaysia (Malaysian Borneo) as follows:

| REGIONS | DATE |
|---|---|
| Langkawi, Kedah (pilot ASO) | 21 July 2019 |
| Central & Southern | 30 September 2019 |
| Northern & Eastern | 14 October 2019 |
| Sabah & Sarawak | 31 October 2019 |

As of today, Malaysians are able to enjoy 15 TV and 6 radio channels on myFreeview Digital TV platform. myFreeview Digital TV is the brand name for Malaysia's Digital Terrestrial TV, which offer popular TV and radio channels without any subscription fees.

The DTH solution has already been successfully implemented to complement DTT coverage across many countries such as United Kingdom, Chile, Finland, France and Italy. DTH service enables 98% population coverage nationwide as committed by MYTV.



## DIGITAL MULTIMEDIA RECEIVERS

Malaysian Technical Forum Sdn Bhd (MTSFB), a technical forum comprising manufacturers and retailers, deliberated on the standards and specifications of multimedia receivers. SIRIM QAS International Sdn Bhd (SIRIM) also instituted guidelines to ensure only standard receivers are marketed to the public.

Malaysia mandated the adoption of Digital Video Broadcasting - 2nd generation (DVB-T2) standard via the Commission Determination No.1 of 2011 which was registered in December 2011. DVB-T2 is the latest broadcasting standard which enables a wider coverage and the airing of more High Definition (HD) channels. The DVB standard is also the most widely used standard for broadcasting. The mandate on Digital Multimedia Receiver Specification (Integrated Digital TV (IDTV) and Set Top Box (STB)) was registered on 31 January 2013 (Doc No: SKMM MTSFB TC T004:2013).

## PROVISION OF FREE STBS TO THE ELIGIBLE HOUSEHOLDS

The Economic Council in 2013 agreed that the Government shall provide free STBs to the eligible Bantuan Rakyat 1Malaysia (BR1M) households. In supporting the Government's effort, MYTV is committed to provide and distribute 2 million free STBs to the eligible households nationwide to ensure none of them are left out from receiving the myFreeview Digital TV service and to expedite ASO. The provision and distribution of the 2 million STBs by MYTV was carried out on the premise of allocation to the first 2 million of B40 households from the lowest household income category.

MYTV commenced the distribution since 2016, based on the following distribution methodology:

- STB delivery via courier services by Pos Laju to the recipient's address registered with BR1M
- The STB is returned to the nearest Post Office and stored for 14 days for collection, in the event the said STB failed to reach the recipient during the delivery by Pos Laju
- STB not collected by the recipient after 14 days, considered as failed or Returned to Sender (RTS)

MYTV completed the distribution of 2 million STBs to the Bantuan Sara Hidup Rakyat (BSHR) households nationwide by end of March 2019. However, there is a high number of RTS STB due to the following:

- Incomplete/incorrect address;
- The recipient has relocated;
- The recipient has passed away;
- The recipient's name is not recognised

Following the completion of ASO's implementation on 31 October 2019, MCMC received several requests by Members of Parliament nationwide to provide and distribute additional STBs to B40 households including those who were not in the MYTV's list of 2 million recipients.

As such, MYTV has taken the initiative whereby the RTS STB units were successfully redistributed via 'Serahan Kelompok' method to some of the recipients who failed to receive it earlier and also to the recipients beyond the 2 million list. MYTV aims to continue its effort to distribute the balance RTS STB to those that are interested to receive the STBs, through various platforms.

Noting the additional demand, the Government through MCMC decided to allocate another 300,000 units of free STBs for distribution to cater to the demand from the

B40 households and Orang Kurang Upaya (OKU), who are not in the list of 2 million recipients allocated by MYTV. Consumers who are not eligible to receive free STBs are still able to enjoy myFreeview by purchasing digital multimedia receivers that are available in the market. The consumers have options in receiving myFreeview service, either by purchasing an STB or an IDTV (Integrated Digital Television) that comes with a built-in digital tuner which is able to receive myFreeview directly without STB. STBs and IDTVs can be purchased through various platforms such as online portals and retail electrical outlets. Consumers are always advised to purchase DTT receivers with the DTTV label certified by SIRIM.

The following STB brands are available for purchase in the market:

- MYTV
- Green Packet
- Botato
- MPay

To date, 21 IDTV brands from Samsung, Sony, Toshiba, Panasonic, Sharp, LG, Philips, Hisense, Daewoo, Skyworth, Haier, TCL, A&S, Singer, iSONIC, Hitec, Daema, Pensonic, COOCAA, AOC and AIWA are available for purchase in the market.

## EDUCATION AND AWARENESS (EA) CAMPAIGN

An EA campaign was launched to enhance the awareness of myFreeview Digital TV service. The EA campaign began in Quarter 3, 2016 on various multimedia platforms to create awareness to the viewers in Malaysia. The EA campaign has been conducted under several phases, as follows:

- Phase 1: July – October 2016
- Phase 2: November 2016 – February 2017
- Phase 3: March 2017 – August 2017
- Phase 4: August 2017 - January 2019
- Phase 5: August 2019 - December 2019

An alliance comprising the FTA broadcasters and MYTV has been established to formulate and strategise effective communication campaigns to educate and spread awareness in the community on the availability of myFreeview Digital TV service, which is free without any subscription fee.

Media Prima Berhad (MPB) has been appointed to lead the said EA campaign with a budget allocation of RM29.3 million by the MCMC. Following its appointment, MPB has selected the following three agencies:

| No. | Agency | Company | Responsiblity |
|---|---|---|---|
| 1 | Research | Zest Research and Consultancy Sdn Bhd | To conduct research on the public perception of DTT and the concepts of creative designs |
| 2 | Creative | Star Reacher Advertising Sdn Bhd (Leo Burnett) | To produce creative designs for EA Programme |
| 3 | Media | Symworld Sdn Bhd | To engage the advertising and media platforms |

EA Campaign was carried out on various platforms, as follows:

- Digital Marketing
- TV advertisements
- Radio advertisements
- Host mentions
- Newsprint advertisements
- Infographic and Documentary Videos
- Out of Home (OOH)
- Social media
- Cinema advertisement

## IMPLEMENTATION OF FREQUENCY RESTACKING

Another MYTV commitment to the Government is to conduct a frequency restacking exercise for myFreeview Digital TV broadcast upon completion of ASO. This is in line with the Government's plans to prepare the 700 MHz band for high speed broadband services or 5G. myFreeview Digital TV broadcast signals through two frequencies from each transmission station. This exercise involves changing a single or both frequencies in 23 out of 44 transmission stations nationwide, in stages (22 sites in Peninsular and 1 site in Sabah).

MYTV commenced a pilot restacking exercise at Gunung Raya on 6 January 2020. As of today, 18 transmission stations were completed. The remaining 4 stations that were scheduled in April 2020 had to be re-scheduled, following announcement made by the Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin on the Movement Control Order (MCO) due to Covid-19.

| No | Transmission Station | State | Date |
|---|---|---|---|
| 1 | Gunung Raya | Kedah | 6 January 2020 |
| 2 | Bukit Fraser | Pahang | 4 February 2020 |
| 3 | Gunung Ulu Kali | Pahang | 6 February 2020 |
| 4 | Bukit Sungai Besi | Kuala Lumpur | 11 February 2020 |
| 5 | Menara KL | Kuala Lumpur | 13 February 2020 |
| 6 | Bukit Tinggi | Johor | 18 February 2020 |
| 7 | Gunung Jerai | Kedah | 18 February 2020 |
| 8 | Gunung Ledang | Johor | 20 February 2020 |
| 9 | Seberang Jaya | Pulau Pinang | 20 February 2020 |
| 10 | Penang U4 | Pulau Pinang | 21 February 2020 |
| 11 | Bukit Tampin | Negeri Sembilan | 25 February 2020 |
| 12 | Bukit Larut | Perak | 25 February 2020 |
| 13 | Gunung Kledang | Perak | 27 February 2020 |
| 14 | Kuala Rompin | Pahang | 8 March 2020 |
| 15 | Pulau Pangkor | Perak | 8 March 2020 |
| 16 | Bukit Bintang | Terengganu | 11 March 2020 |
| 17 | Bukit Bakar | Kelantan | 13 March 2020 |
| 18 | Telipot | Kelantan | 15 March 2020 |
| 19 | Bukit Karatong | Sabah | Re-scheduled |
| 20 | Gunung Pulai | Johor | |
| 21 | Pelangi | Johor | |
| 22 | Skudai | Johor | |
| 23 | Bukit Bauk | Terengganu | |


In ensuring the viewers are well informed on this, parties such as MCMC, MYTV, KKMM, FTA broadcasters and Jabatan Penerangan Malaysia have participated in the establishment and promotion of a frequency restacking communication campaign. The communications are disseminated over various platforms, such as Public Service Announcement (PSA) TV and radio, press releases, social media, flyers, local announcements and digital infographics.

Viewers are encouraged to put their STB or IDTV on standby mode after the restacking exercise to allow for auto tuning, which automatically accepts all myFreeview Digital TV channels. .my

# IN CONVERSATION WITH: DR SYED, THE FIRST CHAIRMAN OF MCMC

For this issue's Personality, we go back in time to the very beginning of MCMC to interview Dr Syed Hussein Mohamed, the first Chairman of MCMC (or CMC as it was known then). We speak to him on what it was like in the early days, his thoughts and how he occupies his time these days.

## Please share about your corporate journey that led you to becoming the first chairman of MCMC

Throughout my professional career, I never actually left government service. After graduation, I served Jabatan Telekom Malaysia (JTM) for my contractual five years. I then left to join a statutory body where I served for five years, three of which was on postgraduate study leave. I then worked for various GLCs. My final career was the statutory body MCMC. You could say that, all along, I was serving the public interest.

As for my corporate roles, in 1977 I was the CEO of a joint venture between Pernas, a GLC, and the NEC Corporation of Japan. Pernas NEC was producing and supplying telecoms equipment to JTM. I left Pernas NEC to join Sime Darby in 1982. I was appointed to the Board of Syarikat Telekom Malaysia (STM) on the day it took over assets and operations of JTM on 1 January 1987 and became Executive Director later that year. I was on the Telekom Malaysia Board until appointed Chairman of MCMC end 1998.

The two-year assignment at CMC was comparatively short. I left due to health concerns. Nevertheless, it proved to be a useful transition from full-time employment to full-time retirement. When I resigned as Executive Director of Telekom Malaysia a few years after its successful privatisation and listing, I had planned to retire at age fifty-five. I was not expecting an extension with CMC.

## What were your thoughts when you were offered to become the first Chairman of MCMC?

I was asked a few months before the official commencement of CMC under the Communications and Multimedia Act 1998 if I would accept appointment as its first Chairman. I was hesitant initially, though I agreed that it was a rare honour and opportunity to round off my romance with the industry, firstly as an engineer in Jabatan Telekom, then as Director in Syarikat Telekom from Day 1, and now as Chairman of the regulatory Commission, Suruhanjaya Komunikasi & Multimedia Malaysia, again from Day 1. I eventually agreed to the appointment for two main reasons – an irresistible new challenge in a historical industry convergence and the fact that the then Minister the Commission was responsible to was (now Tan Sri) Leo Moggie.

I have known Minister Leo Moggie since Pernas NEC days some 20 years earlier when he was then Minister for Telecoms. He was also the Minister when I was in STM. I was happy to continue working with him as I liked to think that we had mutual trust. Furthermore he was a politician with a good knowledge of the industry.

## What would you say were the challenges that faced you when you became MCMC Chairman?

I realised that in joining CMC I was virtually going back from corporate to government bureaucracy where decision making was somewhat more complex. The regulation of the convergent industry was more technical and social than commercial or legal. It was also political in the sense that it had to be in line with national policies. The issue then was whether it was a smooth transition to self-regulation or 'a rapid transition to full competition'. As advised by the consultants appointed by the Ministry, the Commission was required to prioritise the competition aspect which meant liberalisation of the industry as early as possible.

At CMC, the top management and I had no real problems with technical regulation aspects such as network, spectrum and so on, but regulation of content and internet services was a new challenge since there were no laws on multimedia content except as provided under censorship rules. Thus the Content Forum was among the first to be formed by the Commission.

Another challenge was organisational. The Commission had to be up and running as quickly as possible. I was fortunate that two other commissioners were appointed at the outset and joined seven months later by two more to form a complement of five members of the Commission. The immediate priority was staffing. The Commission could not wait for human resource policies to be approved by the Ministry but with support from the commissioners we had to seek qualified and experienced personnel with as near market rates as possible – right man for the right job and right remuneration. There were other organisational challenges too, relating to IT system and other facilities. By the time I left we had become fully operational with a complement of staff, healthy financial position and the various committees and forums established.

## What was the organisation like in the early years, more than two decades ago?

I remember well how I started in a temporary office in PWTC with nothing. Even my employment package had not been finalised. Since there was no secretary or office assistant, I was operating alone with a borrowed PC, and in the initial weeks I opened the office in the morning and locked up in the evening. I was very grateful for the loan of an administrative officer to assist in the office staffing and management. Fortunately, I knew where to get help through the contacts I had made over the years.

The first office was a modest accommodation vacated by the previous tenant with sufficient space and furnishing for the CEO, a meeting room and general office. We managed to get a bigger office space on a different floor in the same PWTC building, and had it custom designed for a staff of 100 with full IT facilities and security system. The 1999 Annual Report of CMC's first operational year produced in 2000 gives an idea of the progress made then, showing the key milestones, including photos of the pioneers.

## What were some of the specific initiatives or programmes that were implemented during your time at MCMC? Can you recall any interesting projects or such?

Our initial focus was on licensing and regulation matters. The CMA Act 1998 was part of a set of cyber laws that include Computer Crimes Act 1997, Digital Signatures Act 1997 etc. Since it was a stated policy that the government had no intention of censoring the Internet, much

depended on industry discipline to ensure that they would observe social norms such as with respect to what was then described as VHS (violence, horror and sex). Then there are other computer crimes which would require an effective system of monitoring. It would be technically impossible to monitor every broadcast channel and Internet website. It was one of those work-in-progress.

In the meantime the Commission continued to encourage self-regulation. For example, Astro had its own self-censorship system where they would insert a delay in the programme so that the monitoring staff could interrupt any offensive content before it went 'on air'. The industry forums have a major role to play in setting standards and their implementation. The Commission can control through the licensing system.

With respect to technical standards, the Commission outsourced certain services to other agencies like SIRIM which had the necessary facilities. Spectrum planning was another important activity. In view of the limited spectrum resource and demands for higher bandwidth, spectrum management was crucial. In mobile telephones for example the technology was changing very fast and spectrum allocation had to be proactive.

An interesting project was the Y2K (Year 2000) contingency plan. This was related to the expected IT system breakdown due to the calendar change from 1999 to 2000 affecting computer settings worldwide. I remember well the New Year eve welcoming the new millennium. The concern was not so much the traffic gridlock in central KL but on the Y2K bug. Millions of dollars were being spent by computer users globally in anticipation of the Y2K crash. Fortunately, nothing serious happened. It turned out to be 'much ado about nothing', and IT consultants that provided the necessary safeguards were laughing their way to the bank.

Perhaps many do not know that the CMC logo that has survived more than two decades was a spiritual inspiration. The tetrahedron with four triangular faces which would enable it to be stable at all times is a classic symbol for harmony between the physical and non-physical or, in the case of the CMC, between hardware and software, the essence of convergence.

## What did you do after you left?

The year was 2000. Because of my age and state of health at the time, I was hoping to enjoy retirement for at least five years which was what I had prayed for. I had managed my finances and drawn up a 'bucket list' for a personal smooth transition. My plan consisted of the three R's: Retirement, Recreation, and Reflection.

Retirement: I wanted to be completely divorced from any economic, corporate or political activities including any consultancy work. I thought I had gone as far or as high as I could professionally and I deserved a happy retirement.

Recreation: This was travelling, golfing and reading/writing. I had travelled extensively for work but now it would be for pleasure and leisure. I would want to go to places I had not been before or for sentimental reasons. I was introduced to cruises and joined other senior citizens to play golf locally and regionally. The bookshops had always been my favourite haunts; I made a point of buying and reading at least one book a week. I did some writing too.

Reflection: As a person facing the prospect of imminent departure, I turned to religion and spirituality. I joined a Quranic/Arabic study group which helped me to reflect on my lifelong learning. I have put my thoughts on paper and manged to complete a book "Our Grief: Reflections on Humanity" and following it up with another "Virtual Reality: Reflections on Spirituality". The former deals with human dilemmas at the international and national levels while the latter is about convergence of science and spirituality.

By the grace of God, I have survived beyond 5 years, albeit with a few minor and major medical or surgical issues. Retirement has been the best thing that's happened to me, mainly because I have no unreasonable expectations. To the three Rs I would add 'Relationships'. Let me quote from "*Our Grief*":

> "Blessed is the man who can retire with little concern over his health, his livelihood, and his relationships. Of the three, I would say that the most important and fulfilling is relationships. With it he can still manage the other two. To a sick man the sight of caring relatives and friends could prove the best therapy. Similarly, the assistance from caring relatives and friends could prove more enduring than self-secured wealth. He is a very sick man indeed whose relationship is based purely on material wealth."

This philosophy has allowed me, thank God, to survive beyond 80 so as to continue serving Him.

## There has been a lot of progress in technology over the years. What are your thoughts on how technology has become so integrated into the life of humans?

I have seen technological changes between my JTM, STM and CMC days. I have lived through the changes from mechanical to automated, from analogue to digital, from fixed to mobile, from telephony/telegraphy/telex/fax to multimedia, from terrestrial to satellite, and from hardware to software. With respect to software it is at both systems and human levels. By the latter I mean mental and emotional.

I think the age of technological innovation is shifting from competition to cooperation, sharing of resources


rather than wasteful duplication. Two current happenings are affecting human lives in unprecedented ways. One is the Covid-19 pandemic which is bringing about a 'new normal' with social distancing etc., and the other is the 'Black Lives Matter' movement which is creating a new global awareness on the issue of racism. The global multimedia networking will no doubt be more crucial to the new realities. I see it as a positive and optimistic development. It is time that the world pay more attention to the plight of those who have suffered from discrimination and recognise the advantages of coexistence and sharing of resources. I like to think that the wind of change is blowing in the right direction.

I sincerely hope that AI will not replace IQ and more importantly EQ (emotional intelligence) or SQ (spiritual intelligence). It has become evident that IQ alone is not sufficient; many employers nowadays also seek people with high EQ who would be sensitive towards others. It will be tragic if humanity is overtaken by cold heartless 'intelligent' machines.

## Please share a bit about your life currently. What occupies your time these days? What books are you reading?

I have addressed this earlier in the context of my retirement 3Rs. CMC has inspired me to focus on another type of convergence, of the physical and metaphysical, of science and spirituality. I am persuaded by the idea that visible cannot be fully understood without the invisible and vice versa. Quantum theory is opening up a new scientific paradigm in connecting physics with metaphysics when scientists realise that the essence of reality is consciousness which spiritualists have long ago accepted as fact. My writings on Reflections I mentioned earlier are products of my retirement studies.

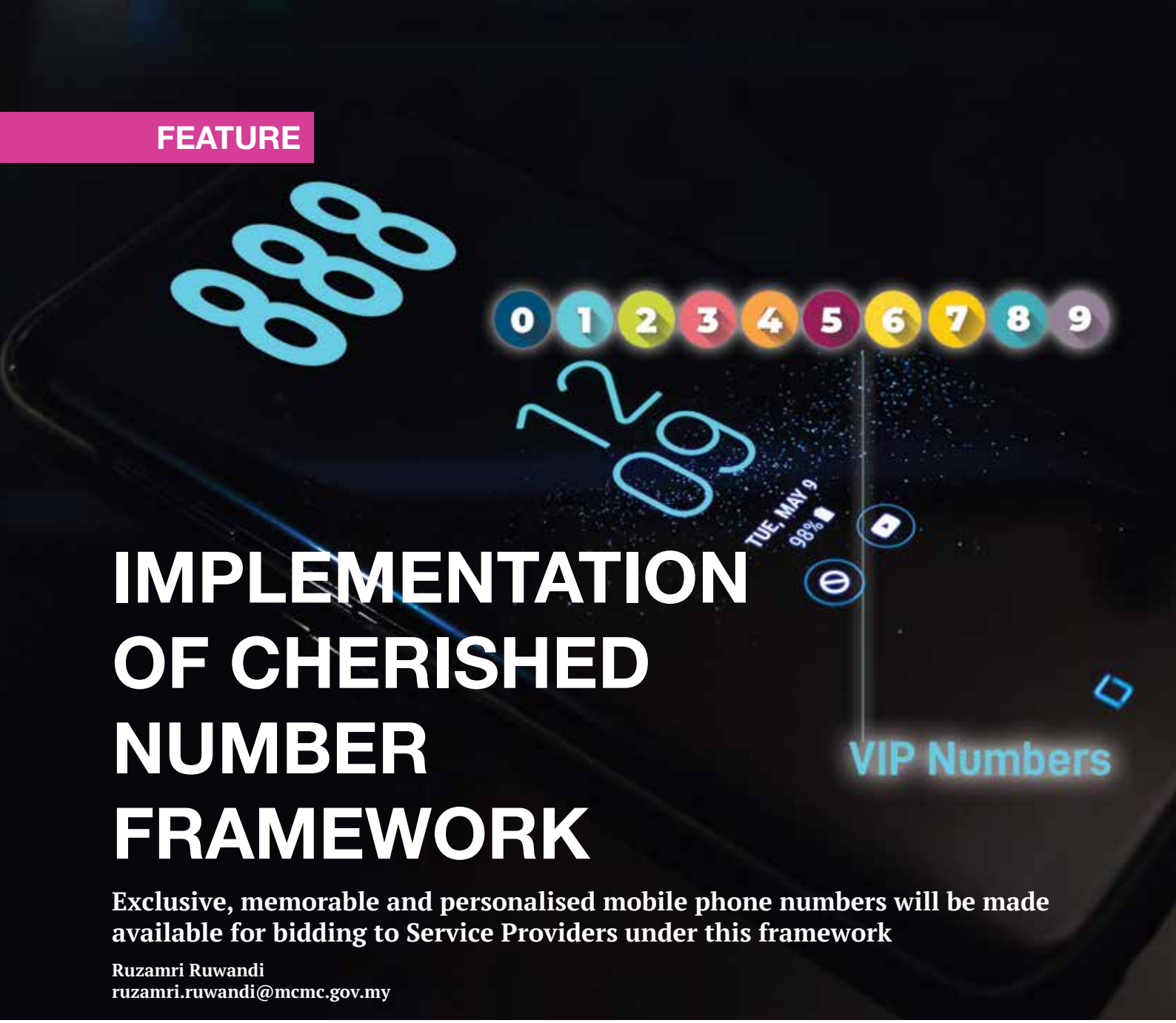
Thus, the books that interest me these days, apart from the Scriptures, are those written by scientists about their spiritual awakenings such as those who have experienced NDE (near-death experiences) like neurosurgeon Eben Alexander. Another author is Deepak Chopra, a medical practitioner who is renowned for his books and lectures on spirituality. I am convinced that reading the Quran, for example, as a spiritual text book provides a richer experience than rote reading. I also continue to observe and reflect on issues concerning our local politics. I cannot help relating them with spirituality.

## What would you say to the staff at MCMC today, if you had the chance to do so?

If I were still in CMC, I would continue with the policy of no smoking and no politicking. These are fundamental in discipline and maintaining a culture of objectivity and neutrality especially in a regulatory environment. It is essential to integrity and credibility in the face of the stakeholders. You have to have principles to provide the management compass as pointed out by Stephen Covey's *Principle-centred Leadership*.

Secondly, consider your employment in the Commission as an opportunity for learning and self-improvement. CMC employees must be proud and consider themselves fortunate for working in an important national institution, technically and socially. If you work merely for the salary, then nothing will be enough. In my career (including with CMC), I never had to negotiate my employment package. If I thought I had not been fairly rewarded, I would just move on. I was fortunate in being fairly marketable and if I resigned or changed jobs it was never due to unsatisfactory perks. In fact, knowing what GLC managers are earning these days, I would now consider I had been grossly underpaid!

I can proudly say that I was not a rolling stone that gathered no moss because I was not idle or moving downhill. I was climbing uphill all the time, knowing that if I slipped, this stone would come tumbling down. I am proud that I have been part of the Malaysian communications history from JTM, where my career began, to STM privatisation and then to CMC, where my career ended. As the saying goes, if you don't improve, you'll only get worse. There is no such thing as status quo. .my




# IMPLEMENTATION OF CHERISHED NUMBER FRAMEWORK

**Exclusive, memorable and personalised mobile phone numbers will be made available for bidding to Service Providers under this framework**

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Cherished Number is a telecommunications number which is more desirable to end-users than others of its type, due to the specific digits it contains. Cherished Numbers can also refer to individual telecommunications numbers or block of numbers which are special, easily recognisable or memorable, and may be considered lucky by end-users. To realise the value of Cherished Numbers, on 2 December 2019, MCMC published a Public Inquiry (PI) paper to seek views from the industry, interested parties and members of the public on the implementation of Cherished Number Framework in Malaysia. Subsequently, on 28 February 2020, MCMC has issued a PI Report that summarised the feedback received and MCMC's final views[1].

## THE NUMBERING AND ELECTRONIC ADDRESSING PLAN (NEAP)

Under Section 179 of the Communications and Multimedia Act 1998 (CMA 98) MCMC is vested with the control, planning, administration, management and assignment of the numbering and electronic addressing of network services.

Pursuant to section 180(1) of the Communications and Multimedia Act 1998 (CMA 98), the Commission has developed the Numbering and Electronic Addressing Plan (NEAP) for numbering and electronic addressing of network services and applications services. NEAP sets out, amongst other things, the categories, structures and use

[1] https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/PUBLIC-INQUIRY-REPORT-CHERISHED-NUMBER-FRAMEWORK_1.PDF

of numbers and electronic addresses for the reference of the relevant industry players who require numbers and electronic addresses for their activities.

Three (3) categories of numbers under the NEAP that are available for use in connection with network and applications services in Malaysia are categorised as follows:

Geographic Numbers

Geographic Numbers are numbers used for services which correspond to a geographic area where the digits in certain parts of the number string indicate a specific geographical location of the person or service being called. The use of Geographic Numbers is limited to fixed telephony and data services and must be used in connection with the provision of communications services in Malaysia.

Non-Geographic Numbers

Numbers used for services that do not correspond to discrete geographical areas. Non-Geographic Numbers are:

- Short Numbers (Short Codes, Special Service Number prefixes, and Access Codes);
- Special Service Numbers; and
- Mobile Numbers.

Other Numbers

Other Numbers category consists of the following types of numbers:

- Data Network Numbers;
- Telex Numbers;
- International Public Telecommunications Numbers;
- ATM Network Addresses;
- Signaling Point Codes; and
- Routing Numbers

A Network Service Provider Individual (NSP(I)) licensee requiring the use of a number may apply to the Commission for an assignment. Meanwhile, a person who does not hold any NSP(I) licence and intends to use the following number(s) shall appoint an NSP(I) licensee to apply for the relevant numbers and to operate the relevant service(s). The numbers are as follows:

Short Numbers:

- Common Intercarrier Short Code;
- Internationally Accessible Short Code; and
- Mobile Content and Text Messaging Short Code (messaging services).

Special Service Numbers

- Toll-Free Service Number;
- Freephone Service Number;
- Premium Service Number;
- Caller Party Pay Messaging Service Number;
- Call Forwarding Service Number;
- Dial-up Internet Access Service Number; and
- Multimedia Service Number.

## TYPE OF NUMBERS APPLICABLE FOR CHERISHED NUMBERS

In the Numbering Regulations 2016, Cherished Numbers are defined as a set of numbers from reserved numbers determined by MCMC as the Cherished Numbers. Reserved numbers mean any unassigned numbers reserved by the MCMC.

In the NEAP, Cherished Numbers means any Non-Geographic Number(s) and/or block(s) from **reserved numbers determined by the Commission as Cherished Numbers. The existing issued numbers cannot be categorised as Cherished Numbers,** merely because the numbers issued are in a form or structure that falls within the designation of a cherished numbers.

MCMC has decided to introduce Cherished Numbers categorisation for Mobile Numbers as it is widespread and can be maintained by end-users. Furthermore, the implementation of Mobile Number Portability (MNP) will add value to Mobile Numbers that are considered as Cherished Numbers. It also found out that most countries had implemented a Cherished Numbers categorisation for Mobile Numbers.

## PRINCIPLES OF CHERISHED NUMBERS

The principles of Cherished Numbers refer to the features which determine whether any given number should be given cherished status. Cherished Numbers is a number which is more desirable to end-users, due to the specific digits it contains. These features are divided into several categories, as follows:

Repeated digits

Three main factors that determine the value of a Cherished Number containing repeated digits are:

- Length of the run: The longer run of repeated digits would be more valuable to end-users than one with a short run. A number with a longer run will be more memorable and attractive to end-users. A number with the longest run of repeated digits is the most valuable feature of a Cherished Number.
- Position of the run number within the number: In most cases, the run is most valuable at the end of the number. The run number in the middle of a number makes it less valuable unless the number contains another cherished feature.
- The total number of different digits which appear in the number: The fewer different digits a number contains, the more valuable it will be.

Sequences

The most valuable in terms of Cherished Numbers is a run of consecutive digits. This can be ascending or descending. Other sequences which are deemed to be cherished include those which skip every other digit.

Groups

Group of numbers refers to Repeat Digits (e.g. 111 222), Repeat Patterns (e.g. 11 22 33) and Mirrors (e.g. 1221, 1234 4321).

Lucky numbers

Number eight (8) and nine (9) are found to be very desirable. If a Cherished Number contains the number '8', the value of the number will increase.

Details of Cherished Numbers principles are shown in Table 1.

The principles of Cherished Numbers refer to the features which determine whether any given number should be given cherished status.

## CHERISHED NUMBERS ASSIGNMENT MECHANISM

MCMC will assign the number blocks containing Cherished Numbers to service providers through a closed bidding session of First Price Sealed-Bid (FPSB). The FPSB is close bidding process where the eligible service providers will submit their sealed-bids with the bid price on a day specified by the MCMC.

| No. | Principles | Type of Pattern | Pattern Style | Example |
|---|---|---|---|---|
| 1 | Repeated digits | Repeated single digits | 01YZXXXAAAA | 01176381111 |
| | | Repeated double digits | 01YZXXXABAB | 01176381212 |
| | | Repeated triple digits | 01YZXABCABC | 01176149149 |
| | | Repeated quadruple digits | 01YABCDABCD | 01114091409 |
| 2 | Maximum digit occurrences | Multiple occurrences of the common digit | Not Applicable | 01176513111 |
| 3 | End pattern length | The pattern occurs at the end of a number | Not Applicable | 01176513111 |
| 4 | Digit non-occurrences | Number of digits which do not occur | Not Applicable | 01171017701<br>Digits which do not occur: 2,3,4,5,6,8,9 |
| 5 | Increasing sequences | Increment +1 | 01YZXABCXXX | 01176123149 |
| | | Increment +2 | 01YZXACEXXX | 01176135649 |
| | | Increment +01 | 01YZXNANBNC | 01176121314 |
| | | Increment +10 | 01YZXANBNCN | 01176112131 |
| | | Increment +11 | 01YZXAPBQCR | 01176112233 |
| | | Increment +20 | 01YZXANCNEN | 01176113151 |
| 6 | Decreasing sequences | Increment -1 | 01YZXCBAXXX | 01176321149 |
| | | Increment -2 | 01YZXECAXXX | 01176531149 |
| | | Increment -01 | 01YZXNCNBNA | 01176171615 |
| | | Increment -10 | 01YZXCNBNAN | 01176312111 |
| | | Increment -11 | 01YZXCRBQAP | 01176332211 |
| | | Increment -20 | 01YZXENCNAN | 01176513111 |
| 7 | Lucky digit occurrences | Occurrences of '8' | Not Applicable | 01181881281 |
| | | Occurrences of '9' | Not Applicable | 01191991291 |
| 8 | Overall pattern occurrences | The total number of digits which are:<br>i. repeated digits<br>ii. increasing sequences and<br>iii. decreasing sequences | Not Applicable | 01177017701 |

*Table 1: Cherished Numbers Principles*


*Figure 1: Brief First Price Sealed-Bid (FPSB) Process Flow for Cherished Numbers Assignment*

To be eligible to participate, service providers shall hold a valid NSP(I) licence providing Public Cellular Services, and shall not be in breach of any provisions under the CMA 98, subsidiary legislation issued under the CMA 98, or any other instruments, plans, guidelines or regulatory policies made or issued under the CMA 98.

MCMC will identify and issue an invitation to eligible service providers to participate in an FPSB session, at least forty-five (45) days before the bidding session. MCMC will list out blocks of Cherished Numbers available with a minimum reserved price for bidding that will be determined by MCMC. Each numbers block will contain a total of 10,000 mobile numbers.

Service providers are required to complete and submit the form with their bid price and a non-refundable application fee for each Cherished Numbers block. The completed application form must be submitted on the date and time specified by MCMC.

The service provider with the highest bid price will be selected as the winner and will be notified via a notice of approval. The winner will be required to pay an assignment fee(s) within 30 working days from the date of the notice of approval and submission of the details of the Cherished Numbers won in the Numbering Management System (NUMSYS).

In cases where two (2) or more service providers bid for a particular Cherished Numbers block with the same highest bidding price, MCMC reserves the right to increase the reserve price and re-conduct the bidding process for that particular Cherished Numbers block.

In the Numbering Regulations 2016, Cherished Numbers are defined as a set of numbers from reserved numbers determined by MCMC as the Cherished Numbers. Reserved numbers means any unassigned numbers reserved by the MCMC.

Finally, MCMC will then issue a letter of assignment with an official receipt for the one-off payment of the assignment fees and numbering certificate for the assignment of Cherished Numbers.

A brief process flow for the assignment of Cherished Numbers is shown in Figure 1 above.

## HOW THE END-USER MAY APPLY FOR THE CHERISHED NUMBERS

With the introduction of Cherished Number Frameworks, service providers are permitted to charge, sell, auction, trade or offer to end-users the right to use the Cherished Numbers in perpetuity. End-users will be able to choose the desired Cherished Numbers from service providers for a fee. Service providers shall ensure that the end-user uses the said number lawfully and that the numbers are always in continuous use and active (end-user subscribes to a network service provider in Malaysia for Public Cellular Services) to enjoy the perpetuity status.

The Cherished Numbers block(s) that have been assigned to service providers will be made known to the public on MCMC's website to allow for public viewing as reference and also to prevent fraud.

## WAY FORWARD

On 3 March 2020, MCMC has published the Numbering and Electronic Addressing Plan (NEAP) Amendment Notice No.2 to enable the implementation of the Cherished Numbers Framework[2]. MCMC will also issue a detailed guidebook as a reference for service providers pertaining to the assignment of and bidding process for Cherished Numbers. It is also expected that a pilot bidding session for Cherished Numbers will be conducted in 2020. .my

[2] https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/NEAP-Amendment-Notice-No-2-of-2020.pdf

FEATURE

# COPING WITH TECHNOLOGICAL ADVANCEMENT

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The world has witnessed abundant innovations and technological advancements since the beginning of the industrial revolutions in the 18th century. From the creation of the Spinning Jenny by James Hargreaves that modernised the textile industry in Britain in the 1700s to the creation of the transistor by Bell Laboratories in 1947 that became the fundamental building block of the Internet, innovations and technological advancement are essential denominators in improving our modern daily lives.

Today, technological advancement is revolutionising the world towards automated and intelligent applications driven by massive Internet of Things (IoT), mixed reality, Big Data Analysis and Artificial Intelligence, amongst others. And their full capabilities can only be unlocked through 5G networks. Following the successes of many 5G use-cases in various verticals, we can expect a myriad of sophisticated applications and services to be created and made available in the market in the near future. This feat would not be feasible with 5G's predecessor. For instance, 5G would allow medical diagnosis and procedures to be carried out on a patient remotely whilst in a multi-sensory environment, making use of robotics, augmented reality and tactile (touch) technology

There are many potential benefits from adopting emerging technologies in our country in terms of economic and social growth. For example, according to Malaysian Institute of Economic Research (MIER), 5G implementation in Malaysia would contribute up to RM12. 7 billion between 2021 and 2025 to the nation's economy, with more than 39,000 new jobs created[1].

[1] https://www.malaymail.com/news/tech-gadgets/2020/01/10/mcmc-explains-why-5g-is-important-for-malaysias-economy/1826541

In ensuring that Malaysia can fully reap the benefits, it is important that the stakeholders in every industry vertical are equipped with the knowledge to put these emerging technologies to work. To create greater public awareness of 5G, Malaysian Communications and Multimedia Commission (MCMC) together with Malaysian Technical Standards Forum Bhd. (MTSFB) organised a four-series technology talk event entitled The Digital Outlook Series - Shaping the Digital Landscape in 2019.

The series which was founded in April 2019 saw participation from both local and international experts. They presented their ideas and expertise in their field of work to 680 participants from various stakeholders across the Communications and Multimedia Industry (CMI), government officials from various Ministries, practitioners, academicians, and venture capitalist. The series concluded in November 2019 and the following sections explore some highlights and key takeaways from the series.

## TAKEAWAYS #1 5G CAPABILITIES

5G is the next-generation mobile communication system that is designed to deliver significant performance improvements over its 4G predecessor in delivering new use cases via three key features of 5G, as follows;

i. Enhanced Mobile Broadband (eMBB) - aims to support use cases that have high requirements of bandwidth such as 8K video streaming and immersive experiences, with its capability to provide up more than 10 Gbps of data rate, which is 100 times faster than 4G;

ii. Ultra-reliable and Low Latency Communications (URLLC) - aims to support use cases that require ultrahigh reliability and low latency such as autonomous vehicles, with its capability to achieve 99.999% system reliability with latency of less than 1ms; and

iii. Massive Machine Type Communications (mMTC) - aims to support use cases that require a massive number of connected devices including sensors with its capability to provision at least one million IoT connections per square kilometre which is 100 times higher than 4G.

5G is expected to play a key role in enabling new use cases in various vertical industries. Figure 1 illustrates various use cases 5G could offer in the new future.

## 5G USAGE SCENARIOS

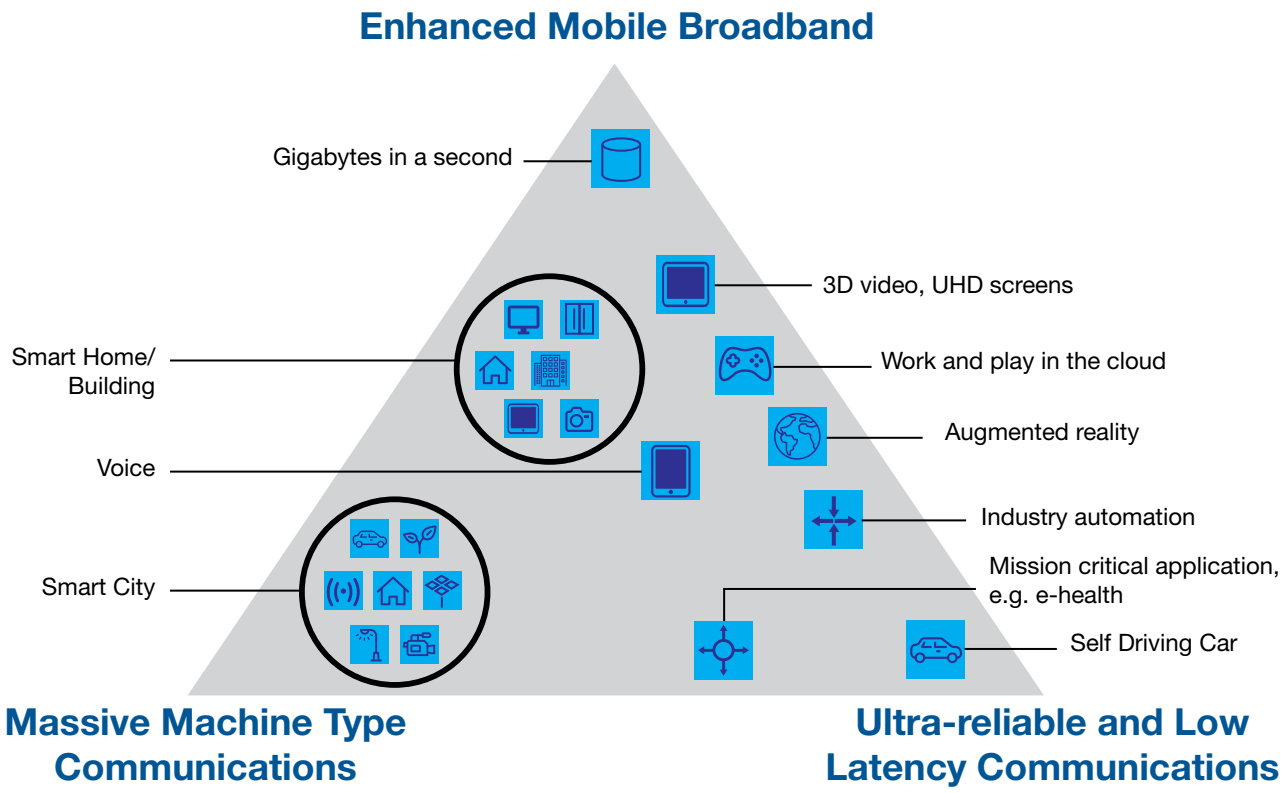



*Figure 1: 5G Usage Scenarios (Source: ITU)*

Simply put, 5G offers ultrafast data rates with instant response connecting anyone and anything at any time. To achieve this, 5G needs three types of spectrum frequency bands, each with unique characteristics as described below;

i. High band
Operating above 6 Ghz, this spectrum range is the key component to provide ultra-high speed mobile broadband and has extremely low latency. The main drawback of high band is it has low coverage area and poor building penetration.

ii. Mid band
Operating between 1 Ghz and 6 Ghz, this spectrum range provides faster speeds and lower latency than low band. It provides a balance between coverage and speed.

iii. Low-band
Operating below 1 Ghz, this spectrum ranges which is also known as a sub-1GHz spectrum offers great range and is capable of building penetration, providing a better, more reliable both indoor and outdoor coverage.

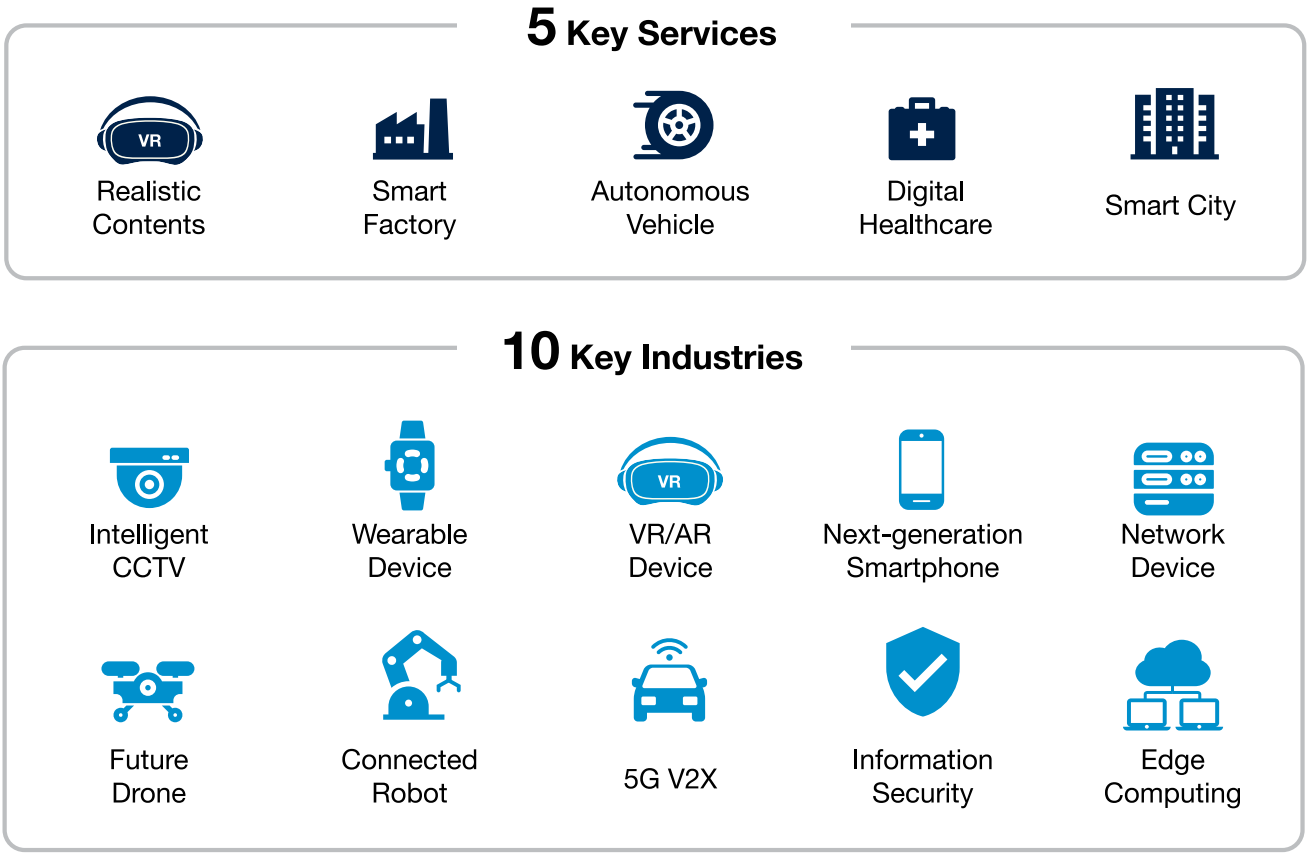
## #2 KOREA LEADING THE WAY FOR 5G COMMERCIALISATION

Korea started their 5G development journey way back in 2013 with the establishment of the 5G Forum, a joint forum of public and private sectors promoting 5G commercialisation and 5G convergence services in Korea.

The forum has since been able to accelerate the development of 5G in Korea through international cooperation on standardisation, research and development, and promotion of 5G. In February 2018, Korea successfully showcased a large-scale of pre-commercial 5G services at the PyeongChang Winter Olympic before becoming the first country in the world to commercialise 5G services nationwide on 3 April 2019.

Later, in April 2019, the government of Korea announced the establishment of the 5G Plus Strategy; a plan to nurture 10 core industries and 5 core services based on 5G networks with a goal of capturing 15 percent of the global 5G market and a production volume of 180 trillion KRW by 2026.

On 20 November 2019, in conjunction with Digital Outlook Series 3.0, MTSFB entered into a Memorandum of Collaboration (MoC) with the Korea 5G Forum to further enhance 5G development and awareness in both countries.




(MSIT, 5G Plus Strategy, April 2019)

*Figure 2: 5G Plus Strategy*

## #3 5G C-V2X ENABLING AUTONOMOUS VEHICLE

Autonomous Vehicle (AV) or the self-driving car is defined as a vehicle driven with little to no human intervention. It relies heavily on various types of sensors, intelligent software and connectivity to monitor, control, navigate and drive the vehicle. It could be the answer to the decreasing levels of road safety and problematic traffic congestion on city road links, as studies show that 93% of all car accidents are caused by human error and that people are spending more than four years of their life in cars due to traffic jams.

The Society of Automobile Engineers (SAE) has defined six levels of driving automation comprising of three levels of driver support features (level 0 – 2) and three levels of automated driving features (level 3 - 5) as depicted in Figure 3.

In 2017, 3GPP completed the standardisation of Cellular Vehicle to Everything (C-V2X) technology, which is designed to enable safer autonomous driving. C-V2X is made up of four communication technologies namely Vehicle to Vehicle (V2V), Vehicle to Infrastructure (V2I), Vehicle to Pedestrian (V2P) and Vehicle to Network (V2N).

In the era of 5G, AVs will become smarter, safer and efficient to travel with, as more advanced use-cases of C-V2X will be unlocked. Although it is not yet clear when AVs would be ubiquitously on the roads, the path for AVs looks promising as C-V2X technology is fully supported by 5G Automotive Association (5GAA)[2], a consortia that defines 5G V2X to support end-to-end solutions for intelligent transportation mobility systems.

## #4 IMMERSIVE EXPERIENCES

Immersive technology refers to technology that attempts to emulate a physical world through the means of a

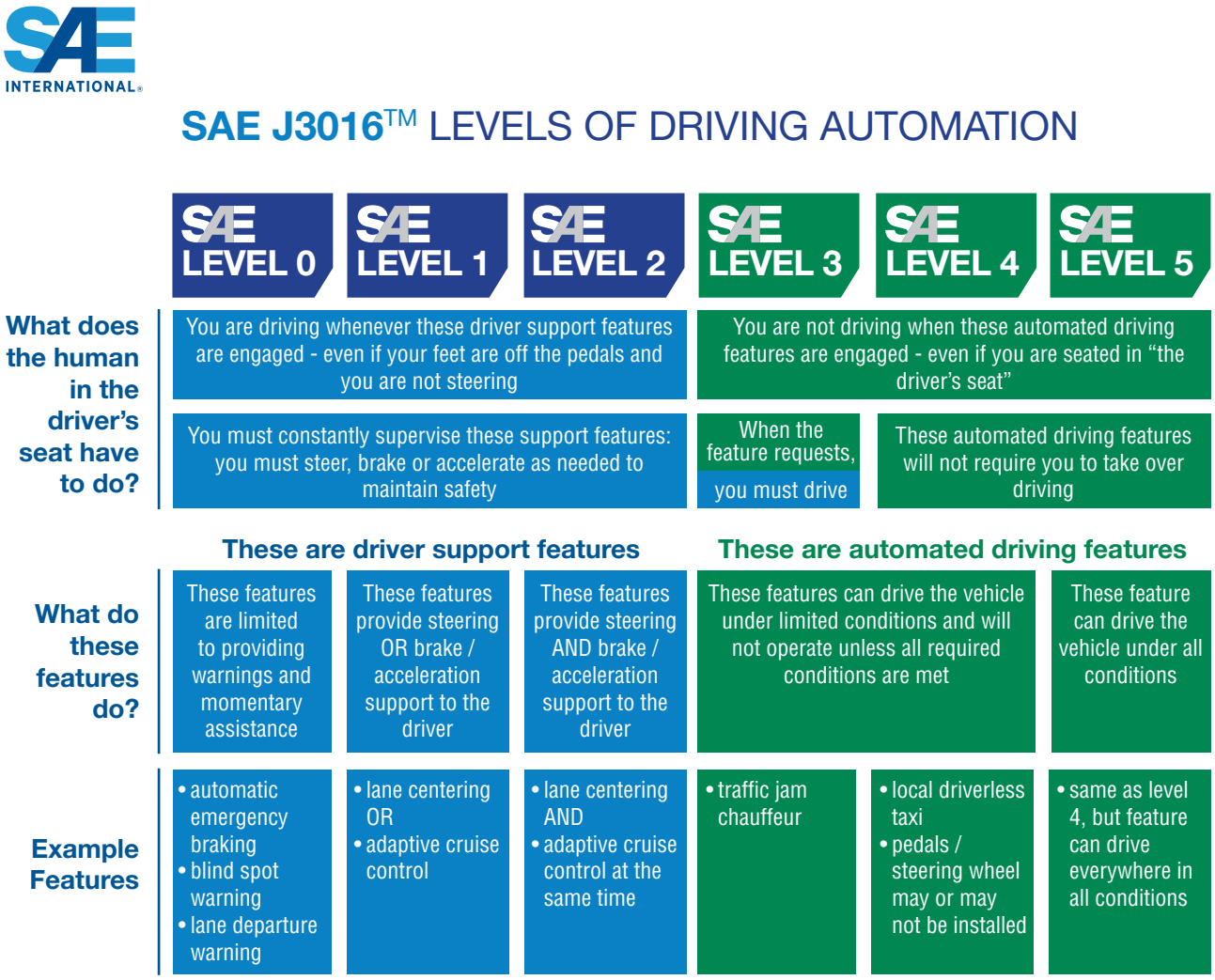



*Figure 3: Levels of Driving Automation*

[2] 5GAA is a global, cross-industry organisation with over 130 member companies from the automotive, technology, and telecommunications industries. Its goal is to develop end-to-end solutions for future mobility and transportation services. AUDI AG, BMW Group, Daimler AG, Ericsson, Huawei, Intel, Nokia, and Qualcomm Incorporated are the 8 founding members of 5GAA.


digital or simulated world by creating a surrounding sensory feeling, giving rise to a sense of immersion or feeling of being inside and a part of that world. Simply put, it creates perception of being physically present in a non-physical world through the human sensory system - visual, auditory, touch, smell and taste. VR and AR are the two main technologies that are widely used to create immersive experiences.

i. Virtual Reality (VR)
   VR is a technology that creates a computer generated simulated environment where users are immersed and able to interact with 3D worlds. A person using VR equipment is able to look around the artificial world, move around in it and interact with its virtual features through two of the five senses: sight and sound.

ii. Augmented Reality (AR)
   AR is a technology that enhance our physical world by adding computer generated layers of information onto a real world environment. The Pokemon Go game is an example of an AR application.

While these immersive technologies are normally associated with the gaming and entertainment industries, here are some ways VR and AR technologies can be applied in other verticals.

i. Education
   VR and AR can be used in classrooms to further increase student engagement and enhance learning, replacing modern teaching tools such as interactive whiteboard and education apps.

   In history lessons, VR helps students immerse into the 3D world of ancient sites from all around the world where they can explore ancient sites, buildings and artefacts in order to generate a greater understanding of them.

ii. Manufacturing
   VR and AR allow manufacturers to overlay real plants and production lines with real time digital information such as technical specifications, drawings, machine performance data and so on.

   In the event of a maintenance work, AR helps an engineer to interact with documentation of the machine or with parts virtually as well as providing a preview of how to fix parts step by step.

iii. Healthcare
   In healthcare, VR is used to reduce preoperative anxiety among patients by creating a virtual tour on all the steps they will experience before being anesthetised. When the time comes for their surgery, the patients are more prepared and less anxious.

Given the constant advancements in technology, it will be interesting to see what the future holds. It is important for us to keep an eye on technological advancements to see how they will soon affect our everyday life and our surroundings. MCMC and MTSFB are committed to organise the Digital Outlook Series on a regular basis as a platform for the industry stakeholders, government agencies and members of the public to keep abreast of technological advancements in the communications and multimedia industry. .my

# 5G MALAYSIA DEMONSTRATION PROJECTS

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Mobile connectivity allows business to be done on the move, enable access to information and services anywhere and opens up new opportunities and markets. The mobile sector itself is a major contributor to the Malaysian economy but more importantly, it is also an enabler of economic activities in other sectors. The nation is on the cusp of rolling out the latest 5G networks. Like all previous generational advances in mobile technologies, 5G arrives with much touted potential and economic prospects. To do its part in turning potential into reality, MCMC has stepped forward to increase awareness of 5G technology through the 5G Malaysia Demonstration Projects (5GDP) initiative.

The surge in popularity of ISDs is not unique to Malaysia. Similar YouGov consumer research has been undertaken in other South-East Asian countries where high levels of ISD usage was also found: 15% of Singapore consumers, 20% of Hong Kong consumers, 28% of Filipino consumers and 34% of Taiwanese consumers use a TV box which can be used to stream pirated television and video content.

## THE 5G PROMISE

With 5G, the promised improvements in speed, reliability and latency means that it has the potential to be an even greater transformative technology-enabling new markets to develop and reshaping others, as well as supporting research and development for economic and social benefit. GSMA estimates that 5G technologies are expected to contribute USD2.2 trillion to the global economy over the next 15 years, with key sectors such as manufacturing, utilities and professional/financial services benefiting the most from the new technology.

We are at the onset of the Fourth Industrial Revolution which melds advances in the digital, physical and

biological spheres, and brings with it breakthroughs in artificial intelligence, robotics, big data, virtual reality and software engineering. To Malaysia, 5G is an economic imperative that will reshape our ability to be a producing economy. Whilst it is impossible to predict exactly where 5G will make the biggest impact, there is widespread agreement that it has the power to rejuvenate six (6) industries that are integral to the country's economy, namely agriculture, manufacturing, oil and gas, telecommunications, transportation and tourism, that contribute to 58.3% of the country's GDP. 5G could also enhance everyday consumer experience through seamless connectivity and advances in AI and both virtual and augmented reality applications.

Within each sector, we expect to see a number of different use cases emerge as well as applications and services that will sit alongside them. 5G could also support significant efficiencies in public service delivery. For example, application in the health sector such as wearable sensors could help monitor people with health conditions, predicting if someone is likely to suffer a heart attack or in monitoring elderly people. This can significantly help to reduce the pressures of primary care and A&E.

In addition to that, 5G networks will require a step change in infrastructure investments. 5G is still a technology in development and markets need time to understand how to deploy infrastructure at commercial scale and invest in 5G applications and services profitably. We believe 5G will take the business case for mobile infrastructure investment significantly beyond the scope of today's consumer driven mobile broadband services, towards support for a diverse range of use cases across different sectors. The success of this technology will be underpinned by a vertical industry uptake of the technology as well as direct consumer services.

## 5G MALAYSIA DEMONSTRATION PROJECTS

The government and wider public sector have a vital role in driving early demand. In our effort to spur the development of the 5G ecosystem and catalyse industry participation, a Call for Collaboration (CFC) was issued on 28 June 2019, inviting interested holders of Network Facility Provider (NFP) and Network Service Providers (NSP) licenses to submit their proposals for 5G Malaysia Demonstration Projects (5GDP).

The 5GDP was envisaged to be a platform that facilitates, builds and nurtures development of early promising 5G Malaysia use cases in a live but controlled environment for a period of 6 months, at nationwide locations identified by industry through demand.

To kick start the initiative, we undertook various engagements with both industry and ministries to identify use cases. This journey included briefing sessions to create awareness of 5G and its potential, syndication sessions with government ministries to develop use cases relevant to Malaysia's needs and workshops for ministries to present to industry players their use cases. Ministries that contributed use cases were the Ministry of Agriculture and Agro-based Industry (MOA), Ministry of Health (MOH), Ministry of Housing and Local Government (KPKT), Ministry of Transport (MOT) and the Ministry of Water, Land and Natural Resources (KATS).

In parallel, engagement sessions were also done with industry players (Telcos, SMEs, startups) to provide guidance on the use cases, technical requirement and facilitate linkages between ministries, digital solution providers, startups, SMEs, and telcos.

On 15 July 2019, at the close of the CFC, a total of 100 use cases both from industry and government sector were identified under nine (9) verticals namely agriculture, education, entertainment, healthcare, manufacturing and processing, oil and gas, smart city, transportation and tourism. Ministries that contributed use cases were the Ministry of Agriculture and Food Industry (MOA), Ministry of Energy and Natural Resources (KETSA), Ministry of Health (MOH), Ministry of Housing and Local Government (KPKT) and the Ministry of Transport (MOT).

The proposals were evaluated in multiple engagement sessions between the 5G Testbed Working Group and applicants, covering both business and technical deliberations. Once a proposal was approved, the Radio Spectrum Assignment Department conducted a site recce for commissioning the 5G Site.

In facilitating development of use cases, MCMC waived the trial licence fee on approved proposals.

## PROJECTS

On October 2019, MCMC launched the 5G Malaysia Demonstration Project for a demonstration period ending 30 June 2020. It covers 9 key verticals with total industry investment amounting to RM131 million. Partnering companies in the 5GDP are Celcom Axiata Berhad, Digi Telecommunications Sdn Bhd, Edotco Malaysia Sdn Bhd, Maxis Broadband Sdn Bhd, Telekom Malaysia Berhad, U Mobile Sdn Bhd, Petroliam Nasional Berhad and YTL Communications Sdn Bhd.

Image 1 provides a snap shot of the use cases within each vertical of the 5GDP. Every use case is uniquely Malaysian and premised on solving issues and challenges currently faced in each vertical, leveraging on the key capabilities that 5G can deliver.

## 5GDP Use Cases in 9 Verticals

**Agriculture**
- Urban Precision Farming
- Smart Agriculture

**Digital Healthcare**
- Real time Medical Data Transfer
- Remote Consultation with Medcom
- DoctorOnCall
- Remote Diagnosis / Monitoring and Connected Ambulance

**Education**
- Collaborative VR (Virtual Maker Space)
- Augmented Reality Experiential Content
- eKelas - Enhanced Education
- 5G School

**Entertainment / Media**
- VR Gaming

**Manufacturing & Processing**
- Smart AI Facial Recognition Solution
- Thermal Recognition Solution
- Sub to Final Mounting – Clarion Manufacturing
- SMT Line – Clarion Manufacturing
- Inter AGV

**Oil & Gas**
- ANYmal
- Surveillance Drone
- Smart Wearables
- Remote Operation and Control

**Tourism**
- Virtual Tourism
- Smart Tourism App
- UNESCO 8K Virtual Reality
- Live HD Streaming 360° Panoramic View
- Interactive AR with Avatar

**Smart Transportation**
- Autonomous Vehicle

**Smart City**
- Fixed Wireless Access
- Intelligent City & Public Safety
- Digital Boundary Control
- Geo-fencing & Smart Perimeters
- Safety & Security Smart City Solution
- Smart Tracking for Water Vessels
- Smart CounterBalance of People (Crowd Control)
- Smart Street Lighting
- Augmented Reality (AR)
- Facial Recognition & Boundary Detection
- Smart Security
- Smart Traffic Lights
- Smart Parking
- Smart Safety & Security
- Smart Retail Analytics (ACE)
- Smart Water System (SWIMS)
- Smart Helmet
- Smart Vehicle System (CONVES)
- Geolation – Pesafe
- Early Warning Alert & Response (EWAR)
- Pepper, The Humanoid Robot
- Smart Airport

*Figure 1: 5GDP use cases*

**Agriculture**

Looking at the agriculture sector, an industry that is integral to Malaysia with GDP contribution of 7.3% in 2018, we believe there is a need to make agriculture more profitable and attractive to entrepreneurs. This will reduce our food imports, lift Malaysians out of unemployment and boost the country's revenue. Through the 5GDP, four use cases were proposed in the area of Precision Farming and Smart Farming by Maxis and TM, working with their greater ecosystem partners - MARDI, BoomGrow and BaoSheng Farm. For example, the use of precision agriculture enabled by the Maxis NB-IoT, allowed MARDI Langkawi to remotely monitor the condition of grapes. The system receives pre-emptive alerts on the possible detrition of environmental variables, enabling farmers to take pre-emptive action to maximise yield value attained from the planted crop.


*Image 1: Urban Precision Farming (TM)*

**Digital Healthcare**

The Digital Healthcare sector saw collaboration between Digi and the Sultanah Maliha Hospital. The hospital's first responder ambulance was equipped with 5G, enabling transfer of data on the move from the ambulance to the hospital for medical specialists to be on standby. Another use case was by U Mobile and their digital solution partner, MEDCOM, that demonstrated remote consultation between Sultanah Maliha Hospital, Langkawi and Sultanah Bahiyah Hospital, Alor Setar. This involved the transmission of real-time video, voice and clinical data through a high speed, low latency communications network. Trauma patients will benefit from specialist care across long distances. Surgeons in a rural hospital will be able to perform life-saving surgery on a patient with the aid of an expert located far away in another hospital in the capital city without having the patient transferred. U Mobile had also partnered with DoctorOnCall to demonstrate the unlimited potential of 5G in healthcare through remote GP consultation via a DOCpod, a mobile diagnosis pod powered by 5G connectivity. It enables a patient to have a virtual face-to-face medical consultation with a qualified medical doctor in real time and in complete privacy.


*Image 2: Remote Consultation (U Mobile)*


*Image 3: Real Time Medical Data Transfer (Digi)*

**Education**

In the Education vertical, Digi set up a 5G powered Virtual Maker Space (Collaborative VR) in Cyberjaya that connected users from multiple locations to learn, collaborate and create together in a safe environment. There was also an underwater augmented reality (AR) experience powered by Maxis 5G featured at Aquaria, Malaysia's largest aquarium. The Maxis 5G Aquaria Experience is a one-of-a-kind experience where visitors are brought closer to the ocean floor though AR, allowing them to witness the current ocean conditions up close. Through this engaging experience, Maxis gave everyone a glimpse of how 5G technology can be fun, immersive and educational. In addition to the above, Maxis via its eKelas flagship digital learning program for the community conducted Virtual Reality (VR) Biology classes for a focused group of students at Pusat Internet Kg Padang Wahid. The curated playlist allowed students to virtually immerse into living cells, DNA, human anatomy and organs, all remotely guided by a teacher based in Kuala Lumpur. The curriculum is brought to life by letting students virtually explore, for example, the DNA strand or hold the human heart in their hands. Students were equipped with a VR headset complete with a unique student-friendly interface, gesture controls, embedded educational resources and simple-to-use teacher controls. This VR experience is designed to raise engagement and increase knowledge retention in Biology.


*Image 4: Collaborative VR (Virtual Maker Space) (Digi)*


*Image 5: Augmented Reality Experiential Content (Maxis)*


*Image 6: eKelas (Maxis)*


*Image 7: VR Gaming (U Mobile)*

**Entertainment**

In the Entertainment vertical, we had U Mobile demonstrate the unlimited potential of 5G in VR Gaming. U Mobile along with HTC Vive showcased a first person arcade VR shooter game called Front Defence Heroes. Front Defence Heroes is a highly polished arcade-style room VR shooter game set in the final days of WWII. In order to showcase the power of 5G and its low latency, a multiplayer setup is required and the server is hosted in Taipei, Taiwan. Gamers are able to immerse and experience the exhilaration of VR gaming with zero lag time.

**Smart City**

The Smart City vertical witnessed multiple collaborations. In Langkawi, Telekom Malaysia set up a 5G Command Center (5GCC) located in the compound of Pejabat Daerah dan Tanah Langkawi, Kuah, Langkawi. The 5GCC is furnished with advanced integrated security features to serve as a security monitoring centre through closed-circuit television (CCTV) cameras installed at hotspots along Jalan Pantai Cenang, Pantai Cenang and Jalan Persiaran Putera, Kuah. Use cases like Smart Traffic Light Solutions, Geolocation People Safety, Smart Parking Solutions, Smart Retail Analytics (ACE), Smart Safety Helmet, Smart Vehicle Management System (CONVES), Smart Water Management System (SWIMS) are integrated to the 5GCC, which allowed for real-time surveillance for large scale monitoring by local authorities to cater for various needs backed up by analytics, Artificial Intelligence (AI), Internet of Things (IoT) and data-driven insights.


*Image 8: Digital Boundary Control (Celcom)*


*Image 9: Smart Safety and Security Smart City Solution (Celcom)*


*Image 10: Smart Airport (edotco)*


*Image 11: 5G Command Centre (TM)*

**Tourism**

The Tourism vertical saw 11 use cases. At the Langkawi International Airport, through the use of VR, Digi enabled visitors to experience a 360-degree view one of the island's attractions via live streaming. Users could see a teaser of the attraction of choice prior to signing up for the actual trip. This solution could also potentially serve to enable people with disabilities (OKU) to experience attractions that are difficult to reach the world over. Another use case by Edotco focused on the concept of Smart Airport, whereby it showcased a fully connected, mission-critical communications network in an airport that support the requirements of the operator, airlines, passengers, retailers and other service providers. It also enables prompt proactivity and reactivity to real-time situations.


*Image 12: Interactive AR with Avatar (Digi)*


*Image 13: Virtual Tourism (Digi)*

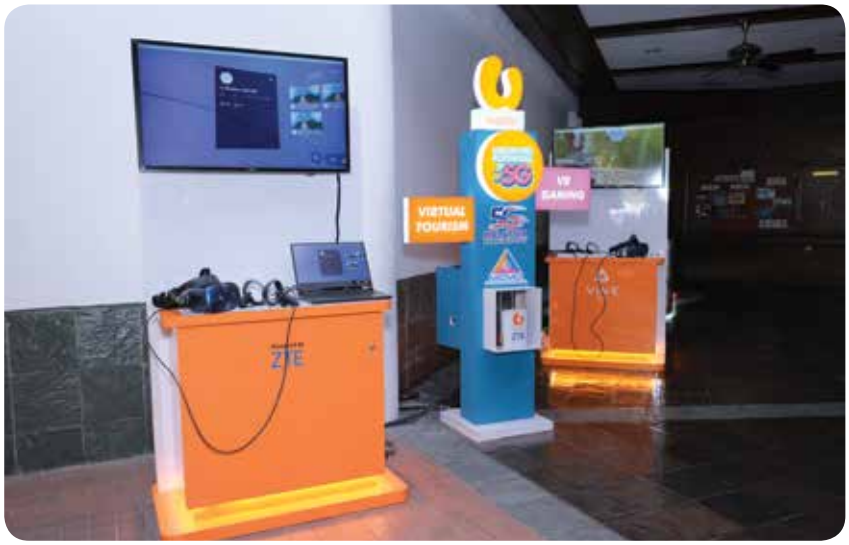


*Image 14: Virtual Tourism (U Mobile)*

*Image 15: ANYmal (Petronas)*

**Manufacturing**

In the Manufacturing sector, the use of autonomous guided vehicles (AGVs) to move production components from one line to another line autonomously was explored using 5G. Augmented with surveillance cameras placed in strategic areas in the production line, supervisors can remotely monitor, negating the need to be on site at the production line; freeing up their time to do other things of higher value, such as analytics and planning. These make the manufacturing facilities more efficient and productive. We also had a use case that explored the concept of AI-based Computer Vision Inspection to enable cameras to be deployed across the assembly line to accurately inspect, detect, mark, and classify PCB (printed circuit board) defects. With the low latency, high capacity links of 5G, the various video streams will be transmitted real-time to a private cloud where machine learning algorithms will be applied to find anomalies and flag the issues proactively. Compared to traditional techniques that use human operators for inspection, this system can remove arbitrary judgmental errors and analyse complex images without fatigue, improving the accuracy of inspection, and conduct automatic classification of defects. As this is an AI-based system, we expect that the machine learning algorithm will improve with continuous use to a point where the system will match the performance of senior technicians. This will free up the job duties of technicians to help drive continuous improvement and innovations for the factory of the future.

**Oil and Gas**

In the O&G sector, 5G will be a major technology breakthrough for growing oil and gas industry digitalisation and automation in the operation and maintenance aspects. Petroliam Nasional Berhad (PETRONAS) is demonstrating 5G use cases at their training institute, INSTEP located in Kuala Terengganu, Terengganu with the aim of improving operations and production, improving worker safety and security, and remote monitoring and diagnostic. With the development of the Smart Plant system and AnyMal use case, the plant is able to use the real-time and historical data for predictive analysis to improve operational efficiency and high productivity. This can be achieved through big data collection and analytics to detect anomalies and predict unforeseen machine upset. Massive IoT applications are used for Remote Platform Monitoring and Control that provide real-time monitoring and mobile inspection of systems, devices and processes, especially in remote and dangerous areas. It can lessen the risk taken by identifying potential issues before they become actual problems or safety hazards. Further use cases like facial recognition, on-body sensor devices and CCTV video streaming will improve worker safety and security.

*Image 16: ANYmal (Petronas)*

Some of the use cases have already completed their demonstration period while some are still work in progress. As the demand to extend the demonstration period was encouraging, the Commission had decided to further extend the 5GDP period till 31 December 2020. The Commission hopes more industries will take this opportunity to join and submit their proposals to be part of the 5GDP. The 5GDP would be helpful towards the government's preparation to implement the 5G technology commercially in Malaysia. .my


HADiR
HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

# HADiR MISSION

## MCMC HUMANITARIAN ASSISTANCE AND DISASTER RELIEF INITIATIVE

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Humanitarian assistance and disaster relief is an inter-disciplinary field dealing with the organisational processes that help prepare for and carry out all emergency functions necessary in terms of preventative, preparedness, responsiveness, and recovery from disasters and emergencies originating from all types of hazards, whether natural, technological, or human-made. Despite being an important function of local and national governance in developed countries, it is often found wanting in resource-poor, developing countries where catastrophic disasters tend to occur repeatedly, with grave adverse consequences. Under such circumstances, the role of "community livelihood relief" – which aims to support a community's economic development and not just provide static, instantaneous relief aid – is a newly emerging disaster response function which could be further explored and improved within the context of developing nations.

The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) has outlined four (4) major principles for the purpose of undertaking a humanitarian and disaster relief mission namely:

i. Humanity – Human suffering must be addressed first wherever it is found to protect life and ensure respect for human beings and their dignity;
2. Neutrality – Humanitarian action must be carried out on the basis of need alone, giving priority to most urgent cases, making no adverse distinction on basis of nationality, race, gender, religious belief, class or political opinion;
3. Impartiality – humanitarian actors must not take sides in a conflict, participate in hostilities or engage in controversies of political, racial, religious or ideological nature; and
4. Independence – humanitarian action must be autonomous from political, economic or military objectives.

These principles have practical operational relevance, henceforth adherence is critical in order to distinguish humanitarian action from the activities and objectives of political, military or other motivations. Promoting humanitarian principles and, importantly, ensuring that humanitarian organisations act in accordance with them are imperative toward ensuring that humanitarian personnel have safe and sustained access to the affected populace. Sustained access is, in turn, crucial for strengthening the implementation of the humanitarian principles. For example, it allows humanitarian actors to directly undertake and monitor the distribution of assistance to community members, thus ensuring that aid is distributed impartially and reaches those in dire need.

## MCMC RESPONSE IN THE WAKE OF DISASTER

Pursuant to section 267 of the Communications and Multimedia Act 1998 (CMA98) which states "The Commission may direct a licensee or class of licensees to develop, in consultation with the authorities specified by the Commission, a disaster plan for the survivability and recovery of any network facilities, network service, application service or content applications service in case of a disaster, crisis or civil emergency", the Malaysian Communications and Multimedia Commission (MCMC) has the responsibility to ensure the preparedness, readiness, and availability of communications and multimedia services before, during and after a disaster.

In fulfilling its roles and responsibilities, MCMC has developed a Disaster Management Plan (DMP) that includes a disaster governance structure, operational processes and procedures for disaster risk reduction, industry preparedness checklist, emergency mitigation, actionable response plans, post-disaster recovery, etc. It is designed to minimise the impact of disasters through prompt intervention by service providers. It ensures all-round preparedness and readiness to mitigate any disruptive impact arising from disasters and emergencies.

Consequently, MCMC's ensuing approach in responding to disasters is driven by its core values namely '**Proactiveness, Participatory, and Enablement (PPE)**' which does not necessarily reflect top-down oversight or orientation. Rather, as a disaster situation always generates varying degrees of societal interference, the disaster response mechanisms are driven by on ground incidences or effects.

## MCMC RESPONSE IN THE WAKE OF DISASTER

Post-disaster recovery operations often involve challenging coordination issues. A well-coordinated humanitarian action maximises the impact and efficacy of response activities amongst competent authorities, agencies and non-governmental organisations (NGO). Cognisant of such challenges and expectations, MCMC has opted to support and complement existing governments' initiatives in responding to disasters and emergencies by targeting affected communities within the Commission's circle of influence, for example the population around MCMC Internet Centres (PI) in low-lying areas nationwide.

MCMC has established its humanitarian and post-disaster relief (or HADiR) mission via syndication with central authorities such as Agensi Pengurusan Bencana Negara (NADMA), State Disaster Management Committee (JPBN), State Development Office (PPN), District Local Councils, State Assemblyman (ADUN) Office with support from local NGOs to fulfil the delivery mission to the target recipients.

In order to materialise the humanitarian mission on the ground, it's imperative for MCMC to mobilise its sectoral licensees from across the telecommunications, broadcasting, postal and courier industries to forge ahead with implementing relief activities and recovery packages reflective of the industries' expression of gratitude and empathy for the user communities' suffering from hardship and duress and as reciprocation of the latter's unrelenting support, adoption and trust of the services rendered over the years.

## MISSION HADiR 2019: REVISITING MONSUN TIMUR LAUT (MTL) 2019/2020

The Northeast Monsoon or Monsoon Timur Laut (MTL) was officially declared by the Department of Meteorology Malaysia (MET Malaysia) as commencing on October 24, 2019 till around March 2020. During the early phases of the MTL, heavy rainfall episodes were expected in Kelantan, Terengganu, Pahang and Johor. Whereas in January and February 2020, heavy rainfall episodes were expected to be more concentrated in Sarawak and Sabah. Continuous heavy rainfall for several days can cause floods in low-lying areas. If heavy rainfall coincides with high tide, the risk of flooding may be worse.

Cognisant of the risks and exposures brought about by the inevitable flooding across several areas in Malaysia particularly along the eastern coastal regions, MCMC had mobilised efforts and garnered support from its licensee-base to mitigate the flood impact via a disaster risk reduction plan, which also includes the distribution of basic supplies, food and other donations to the disaster-prone localities and victims.

As the Secretariat for the MCMC-Industry Disaster Management Committee (MCMC-DMC), the State and Postal Coordination Division (SCPD) in particular had


*6 Dec 2019: HADiR inaugural mission 'Flag-Off' with Industry players at Sg Buloh, Selangor*

undertaken a series of humanitarian and relief missions in collaboration with NADMA, Ministry of Defence (MINDEF), Civil Defence (APM), State Governments and Local Authorities, with strong commitment from the telecommunications, postal and courier industry players.

The inaugural HADiR mission was aimed at supporting victims worst hit by flood across the districts of Pasir Mas and Kota Bharu in Kelantan. The humanitarian convoy comprised both volunteers and assets including seven (7) trucks, which departed on 6 December 2019 from the Depoh Simpanan Pertahanan (DSP) in Sungai Buloh, Selangor carrying 52 tonnes of goods (including power banks, drinking water, blankets, personal hygiene care kits, staple food and other basic daily supplies) donated by postal and courier operators (City-Link Express, GD Express, J&T Express, Line Clear Express & Logistics, Pos Malaysia and Skynet) and participating telecommunications operators (Digi, U mobile).

Subsequently on 8 December 2019, the HADiR mission assembled volunteers led by the MCMC-Kelantan State Office, mainly composed of staff from telecommunications industry players in the east coast, to carry out post-disaster cleaning works at flood-affected Pusat Internet (PI) Kajang Sebidang within the Tumpat district of Kelantan. The community around the PI also benefited from joint MCMC-Industries' donations in the form of daily supplies and telecommunications accessories. This initiative complemented NADMA's flood relief efforts for communities living beyond the Temporary Relocation Centres (PPS) radius. Apart from community assistance, the Chairman of MCMC also handed out basic contributions to the disaster-stricken staff of POS Malaysia Kelantan.

On 20 December, the HADiR squad was deployed again to Kota Tinggi district in Johor. 150 industry volunteers in cooperation with the Old Johor State Assembly (ADUN) Office worked together to clean up several flood-affected houses in Kota Tinggi. This initiative came out of consultations with NADMA on expediting a post-disaster relief mission within Kota Tinggi where nearly 3,000 people had suffered monsoon flooding.

Major activities undertaken throughout the mission consisted of:

a. Cleaning assistance for the flood-affected homes and residential areas;
b. Delivering essential kitchen supplies (rice, sugar, flour, tea, coffee, cooking oil) to 197 families affected by floods as most of their kitchens had been destroyed or badly damaged; and
c. Delivering vouchers for 50 students to smoothly facilitate the start of the new schooling session.

To ensure a smooth mission, NADMA recommended that MCMC works with its Rakan NADMA partner, Pertubuhan IHSAN Johor, a reputable local NGO with proven experience in managing humanitarian and disaster relief needs at the Johor State level.

On 26 December 2019, following the overwhelming success of Kota Tinggi mission, MCMC further partnered NADMA, Kelantan State Development Office (PPNK) and the telecommunications, broadcasting, post and

courier industry players to clean up four (4) flood-affected schools: Tanjong Toko National School, Bakong National School, Religious Secondary School (Arabic) Setup Jail and Religious Secondary School (Arab) Alfalah Siram in the Pasir Mas district of Kelantan. A combined force of 350 volunteers representing MCMC and the telecommunications, post and courier industries (TM, Celcom, Digi, Maxis, U Mobile, Time , Pos Malaysia, GD Express, Line Clear Express & Logistics, City-Link Express, SkyNet Malaysia, J&T Express (Malaysia)) along with local volunteers participated in this exercise.

To smoothen the implementation of the program, the PPNK recommended the inclusion of the Pasir Mas District Office (PTJPM), the party responsible for managing disaster relief in the area. PTJPM maintains a complete database of flood victims who were relocated into temporary relief centres as well as the number of students involved for the targeted schools, and is vastly experienced in managing humanitarian and disaster relief needs at the district level.

At the same occasion, MCMC handed over pre-school assistance packs to 1,326 students from the 4 flood-affected schools to help them in their preparations for the new school session. MCMC Chairman En. Al-Ishsal Ishak said "Pasir Mas is among the worst flood-affected districts in Kelantan earlier this month involving a total of 9,373 victims. We hope this contribution will ease their burden in making preparations for the upcoming 2020 school session". At the same event, En. Al-Ishsal also presented contributions in the form of basic necessities to 950 flood victims in the district.

## MOVING FORWARD: LESSONS LEARNT AND FUTURE TRENDS

In post-disaster conditions, communications are often poor and information is a scarce resource. A more widespread and intelligent information system could be enabled via community-led surveys and independent situational monitoring by local communities with guidance and support from trained professionals. New forms of community informatics (such as using the PI, for instance) are increasingly important to ascertain critical relief needs during the recovery effort. In return, the humanitarian and relief agencies must encourage and be receptive to feedback from disaster-prone communities and revert with the appropriate response. This is particularly important to keep everyone abreast on the humanitarian relief coming their way.

Another observation is the absence of a profile matching system that picks up to the actual requirements at the disaster site. This is manifested in the oversupply of post-disaster donations or contributions from various sources. It is envisaged that future distribution of supplies will be strategically planned using a three-pronged integrative model comprising the pledger (or donor), requester (or end-beneficiary) with efficient fulfilment linkage to complete the cycle. Such a system could significantly


*8 Dec 2019: HADiR mission at Pusat Internet Kajang Sebidang in Tumpat, Kelantan*

help to overcome the abundance of wastages in terms of donations originating from authorities, agencies, and NGOs which otherwise could be optimised for future urgencies.

In summary, the MCMC HADiR mission has clearly demonstrated the necessity to collaborate en bloc with reputable authorities and agencies to avoid conflicting roles and disjointed outcomes. The level of cross-facilitation and engagement with all humanitarian and disaster relief actors constitute key success factors in advocating and delivering disaster relief mission to the community. .my


*20 Dec 2019: HADiR mission in Kota Tinggi, Johor*

*26 Dec 2019: HADiR mission in Pasir Mas, Kelantan*

# CONNECTING POS KUALA MU TO THE WORLD

Perak State Office

In 2013, mobile connectivity arived at Pos Kuala Mu. After seven years, we take a look back at the impact this project made on an isolated community. Pos Kuala Mu is an Orang Asli settlement located about 70km from the Sungai Siput town. The area consists of four villages namely, Kampung Besrah, Kampung Gepeh Hulu, Kampung Gepeh Hilir and Kampung Kuala Mu. The total population is around 300 people from the Suku Temiar tribe. The primary source of income is from agriculture activities and selling of forest goods.

Like the majority of Orang Asli settlements, getting to Kuala Mu at one time was inconvenient as the settlement was only accessible via off-road tracks. A one-way trip from Sungai Siput town to Kuala Mu could take up to eight hours! However, the time taken now is much shorter as the access road to Pos Kuala Mu was upgraded in 2017. Now, the access road is all-the-way tarmac from Sungai Siput to Pos Kuala Mu.

## BRINGING COMMUNICATION ACCESSIBILITY TO KUALA MU

Life was and still is tough there. The communities depend on small scale agriculture activities and rainforest produce. The children did not have proper school attire. Access to medical care was also challenging for the people of Kuala Mu as the nearest hospital is Hospital Sungai Siput, which is still a 3 hour journey today.

Just as much as Pos Kuala Mu's remote location made it physically almost inaccessible to the rest of the world, communication at Pos Kuala Mu was disconnected from the outside world too. This gap in access to communications naturally affected the self development initiatives of these communities.

In 2013, the MCMC embarked on a project to provide communications connectivity to the Orang Asli at Pos Kuala Mu, Sungai Siput, Perak under the Universal Service Provision (USP) Time 3 Phase 3 (T3P3) project.

## CHALLENGES IN TELECOMMUNICATIONS TOWER CONSTRUCTION

As shared by Mohd Faizal bin Azizan, the former Head of MCMC Perak (2013-2015), , building a tower at Pos Kuala Mu was not an easy task! The challenge was exacerbated by the location of the area, the state of the access road and geographical terrain. The undertaking was further tested during the rainy season, when the access road would become muddy.

The project had its dangers too. There was an incident where the MCMC team almost got into an accident. On the way back from a site visit to Kuala Mu, MCMC's four-wheel-drive vehicle slid down a hilly road during rainy weather and nearly fell into a ravine. Fortunately, MCMC staff had been given training in driving 4WD vehicles and an accident was averted.

The tower construction was also delayed for two weeks after a timber bridge across one of the rivers to Kuala Mu was swept away by heavy-flowing water. It should be noted that the construction of the tower at Pos Kuala Mu was done before the upgrading of the access road.

After struggling for nearly a year, the construction of the tower at Pos Kuala Mu was completed. The site initially provided 2G services from 2014 to 2016 and later was upgraded to 3G services. Due to the geographical terrain of the location, satellite connection was chosen as the backhaul link to the outside world. The rollout of 3G services have enabled the residents of Pos Kuala Mu to utilise more sophisticated applications, which has helped to narrow the digital divide.

## ECO-TOURISM AT KUALA MU

Since the introduction of mobile cellular services at Pos Kuala Mu, the communities have expanded their source of income through Eco-Tourism. Communications has been an essential tool for the eco-tourism operators to make contact, receive reservations and update their respective websites or Facebook pages for their potential visitors. The mobile cellular coverage also acts as an attraction for urban visitors to consider Pos Kuala Mu for their weekend getaway.

Among the attractions for travellers are the Kuala Bersah Chalets. This chalet started operations in 2017 and has attracted large crowds during weekends and public holidays. The chalets may not have luxury features and facilities but they have their uniqueness as they are built entirely from forest-sources materials such as bamboo and 'bertam', which are both closely linked with the Suku Temiar tribe.

To date, almost 2000 travellers have experienced the fascinating stay and environment in Kuala Bersah Chalet. These numbers will keep rising as nature loving travellers come from all over to enjoy the pristine surrounding of Kuala Mu. Visitors who wish to stay in the chalet will book

at least three months in advance by contacting the operators via mobile phone. Interestingly, the communities have also set up a Facebook Page named "Komuniti Pos Kuala Mu Sungai Siput" (https://www.facebook.com/Kualamu/) to promote the beauty of Kuala Mu and its uniqueness.

The road upgrade and availability of mobile cellular coverage at Pos Kuala Mu have helped the communities to increase their income and grow the socio-economy. The USP project has been a catalyst for the Orang Asli at Pos Kuala Mu as it has helped to narrow the digital divide by promoting the hidden gem of Kuala Mu to outsiders. .my

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FEATURE

# DIGITAL RIGHTS

## A BRIEF INTRODUCTION FOR A LONG ROAD AHEAD

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Personal data and Privacy are the subject of heated debates in international fora, along with concepts such as Data Governance[1] or Ethics in AI[2]. These conversations typically explore the policies and legal ramifications of data management as well as cross-border data transfers and related free trade agreements. Data is not the new oil; data is now, quite literally, everything.

In the current competition to amass as much data as possible, corporations are winning by and large. They are hosting in their infrastructures an ever-increasing amount of users and delegating traditional estate to act as mere placeholders of the physical envelope of their digital users.

Human Rights has historically been an uphill battle for many societies. Democratic ones have recognised that the well-being of their citizens was a better and more productive outcome than their authoritarian alternatives. In past centuries, many frameworks have been established, the most commonly known of them being the Universal Declaration of Human Rights[3] (UDHR).

When data entered the stage, mostly no one was prepared. Very few individuals were gradually capable of understanding the deep, life-changing implications that societies would face. The world didn't prepare and the data storm has caught users devoid of the necessary awareness and protections to avert the inherent harms that digital

[1] Data Governance - https://en.wikipedia.org/wiki/Data_governance
[2] Ethics of artificial intelligence - en.wikipedia.org/wiki/Ethics_of_artificial_intelligence
[3] Universal Declaration of Human Rights (UDHR) - https://www.un.org/en/universal-declaration-human-rights/

life was bringing with it. We were, and still are, lacking adequate Digital Rights frameworks to protect that data.

Data-centric Digital Rights are the core advocacy of The IO Foundation (TIOF), on which it has been working on for the past 2 years. In this article we will analyse the nature of Digital Rights, some of the challenges faced in recent years and, more importantly, the necessary steps that governments need to take in the upcoming years towards embracing a conducive regulation and implementation of Digital Rights to protect their citizens.

To better understand the place that Digital Rights play in our lives, we shall analyse them through a more relatable concept of our daily lives: Architecture. And thus, just like in 'The Hitchhiker's Guide to the Galaxy', *it begins with a house*.

## BUILDINGS & DEVELOPMENT

Let's consider a building. Its design, planning and construction involves, among many other factors, a confluence of urban and safety regulations, the observance of dozens of technical requirements and the collaboration of a considerable number of people. An architect will undertake the task to design a product that complies with all the above, authorities will supervise compliance, builders will implement the project and the public will enjoy using the resulting space.

Through all this sophisticated process, the most important aspect is that the final users will forever remain oblivious of all its complexity. This is a desired outcome: imagine every person having to undertake the necessary training to evaluate if the building they are entering is safe to use, from its structural design all the way to the correct implementation of the fire safety measures, the use of non-toxic materials or the proper maintenance of the air recycling system. Every person, for every new building they walk into.

Instead, societies function and develop under the more rational premise that checks and balances, set and enforced by governments and their agencies, are in place to ensure that final products and services are delivered in a manner that is safe for everyone. Users do not require expert knowledge beyond understanding how to use a product and a license is required only when a misuse could turn into harming other parties (for instance, to drive a car).

Such safeguards are commonplace and may also be found in digital equipment documentation, such as the Communications Equipment Certification[4] issued by MCMC. In the case of smartphones, the stipulated terms ensure that the hardware complies with the necessary safety regulations, providing citizens with the assurance that their devices do not exceed ionising radiation levels that could be harmful or that their batteries will not explode.

Interestingly enough, this same principle is yet to be applied to Data Protection Laws and to its parent concept, Digital Rights.

## WHAT ARE DIGITAL RIGHTS?

Though the term Digital Rights has been a relevant concept in recent years (often confused with DRM[5], which resides solely in the domain of intellectual property), it is widely unknown by the general public. In the traditional sense of the term, Digital Rights are considered by many as the application of Human Rights in digital spaces (typically the Internet).

While this terminology usage derives from a charged historical context, it does not necessarily represent reality in an accurate way. Indeed, should we apply the same consideration for other communication channels, we would quickly and unequivocally coin the terms *Paper Rights* and *Wave Rights*.

The reality is however very different: the violation of Human Rights remains the same in nature regardless of the channel of transmission. Bullying someone face to face, in a newspaper article, on the radio or on social media results in the same type of damage for the victim.

When considering Digital Rights, we need to analyse the very nature of digital spaces and what composes them: their infrastructure and the data they process. The attempt to protect these two elements and avoid potential derived harms results in a set of regulations that we call Digital Rights.

## DATA PROTECTION LAWS (DPLs)

Governments worldwide have traditionally approached the need to protect their citizens' data through some form of Data Protection Law.

In Europe, the General Data Protection Regulation[6] (GDPR) was adopted in April 2016. Its impact in the industry and the mindset change it sparked was so remarkable that, despite giving two years to all organisations to prepare and adapt their systems and procedures, many were

[4] MCMC certificate - https://www.mcmc.gov.my/en/communications-equipment/certification-of-communications-equipment
[5] Digital Rights Management (DRM) - https://en.wikipedia.org/wiki/Digital_rights_management
[6] General Data Protection Regulation (GDPR) - https://gdpr.eu/

unprepared by the time of enforcement began in May 2018. GDPR would eventually set the pace for all Data Protection Laws to come due to its comprehensive set of protections towards users and the defense of concepts such as Privacy By Design[7]. Personal data and privacy is now a conversation that has slowly migrated from expert circles to more public crowds.

In Malaysia, the Personal Data Protection Act[8] (PDPA) was enacted in 2010 and is currently undergoing a revision. Approximately 116 jurisdictions worldwide have passed some type of DPL, with varied degrees of protection.

Despite these regulations, all DPLs fail in the most basic aspect: to actually provide a transparent protection framework to citizens to protect their data. For the many policies that have been enacted, their implementation counterpart is missing, leaving a list of legal provisions with no clear, standard technical specifications on how to implement them.

This situation leads to 2 critical problems:

- First, the inability to implement digital infrastructures and services that can be certified in a standard manner and thus provide transparent compliance to the law.
- Second, the unavoidable consequence that users must bear the weight of ensuring that their Rights are being observed at all given times, even if this requires an uncommon level of awareness, knowledge and resources.

Let's imagine for a moment a world where architects would only be told what a building should look like, leaving all technical implementations to the free will of the builders. Moreover, let's imagine that the builders do not necessarily know about the legal regulations the architects must comply with nor the harm they can cause if the building collapses. One step further in this parallel reality require users to accumulate the knowledge of the architects, the skills of the builders and top it off with the legal expertise to know how to proceed if the building was to collapse and the medical knowledge to patch their own injuries. And this before entering every single building in the world.

Science fiction? Not quite: this is precisely the world we live in when it comes to technology.

Legislators and technologists have a long history of not getting along. Project managers (the architects) are concerned about compliance and programmers (the builders) are unaware of the harm they can cause with their implementation decisions. Finally, the expectation is that users will understand the regulations set by Data Protection Laws worldwide (as their data may transit across different jurisdictions) and that they will take all necessary steps to act in their own defense should any misuse of their personal data happen.

These assumptions are very dangerous and are at the core of the lack of awareness in Digital Rights of all involved parties, resulting in diverse regulations, non-standard implementations and a click-happy reality where users accept Terms of Use (ToU) on the digital platforms they use that they don't read nor understand, in turn exposing them to dangers they don't realise.

## THE DATASET IN THE ROOM

At the core of all this confusion lies one very simple problem: for historical reasons too long to explain, we have collectively developed the impression that data is a vague concept, some ethereal entity that floats around us, that we can grab when necessary, process and obtain some magical result that somehow makes our lives easier. Nothing could be further from the truth.

Data is intrinsically connected to us. All (source) entities generate data (people, companies, the weather, everything) and we cannot disconnect that data from its source lest it lose all its value.

Consider the number 5. By itself this value is meaningless until we determine that it represents the number of years someone has been working for a company or the number of credit cards in their wallet. It is only by fully contextualising the figure that we obtain any resemblance of value. As a result, all data is intimately linked to its source and once consolidated it creates a model, a representational entity, in a digital space.

Once we observe and accept this intimate correlation between the source entity (a user) and its representational entity (the model resulting from all the data extracted from the user), it's easy to understand that protecting citizens in their interactions within digital spaces must come as a result of safeguarding their data and the infrastructure that manipulates it with a new set of rules: Digital Rights.

In short, Digital Rights are the set of principles and regulations that protect Representational Entities from being misused in digital spaces, in turn protecting their Source Entities from harm.

[7] Privacy by Design - https://en.wikipedia.org/wiki/Privacy_by_design
[8] Personal Data Protection Act (PDPA) - https://www.malaysia.gov.my/portal/content/654

## DIGITAL RIGHTS PRINCIPLES

Digital spaces do not function under the same rules as the analogue world. In order to establish a conducive framework for Digital Rights, different concepts are to be considered. Core to TIOF's advocacy of Digital Rights, the following definitions form a pivotal set of Principles for their implementation.

**I am my data**

The traditional understanding of data as separate entities from their users is anchored in past perceptions and the use of legacy technologies. The reality is much different: The data representing users (and which they should have control of consent) is intimately and inextricably linked to them; it models them, creating an accurate representation that loses all value should that contextualisation ever be severed.

The direct consequence is that a user's data *IS* the user itself.

This proposition has severe consequences, as the same duties of care that apply from constitutional laws to citizens should equally apply to the data representing them. In this sense, the necessary infrastructures that governments put in place to protect their citizens (hospitals, highways, the judiciary, and so on) should also be extended to the management and protection of their data with a national cloud system based on open standards and governed by a framework on Digital Rights.

**End Remedy**

The UN Guiding Principles on Business and Human Rights[9] (BHR) are the modern transposition of the Universal Declaration of Human Rights (UDHR) into the corporate scene. They are an attempt to nurture a corporate sector that observes and respects Human Rights by incorporating their principles across all of their operations. The UNGPs are structured around three Pillars, namely:

- Pillar I: The State duty to protect
- Pillar II: The Corporate responsibility to respect
- Pillar III: Access to remedy

From a proactive perspective on the use of technology (and therefore data protection), the objective should always be to avoid the occurrence of grievances, in turn minimising the need for any remedy from the use of any technological products and services.

*End Remedy* represents the embodiment of the proactive planification, design and implementation of all necessary mechanisms, both in policy and technology, to avoid grievances to ever happen during the use of a product or a service, in turn minimising the need for legal action. In the context of Digital Rights, it implies the design of policies that protect users and the implementation of such provisions in a transparent, trustworthy and safe manner where legal remedies, while defined, are only employed as a last resort safety net.

Instilling this approach to the relevant stakeholders, namely in this case programmers is a critical step to ensure that *End Remedy* becomes second nature when designing digital products and services.

**Rights by Design**

Initiatives such as the SDGs[10], UNGPs[9] or Privacy by Design[7] are set in place to define a clear international framework on Human Rights and the defense of their Privacy; together with constitutional law, they collectively form the Rights that citizens worldwide could and should benefit from.

Digital Rights frameworks should foster not only policies that protect users' data, they should be accompanied by the necessary technical specifications (based on open standards) to implement them.

*Rights by Design* is the approach of policies and technology being designed around the Rights of citizens and their data to observe them in their planification, architecture and implementation, transparently for all stakeholders. It ensures that users are not required to be experts in digital technologies. Instead the infrastructure will ensure that their Rights are being observed transparently, creating no cause for remedy.

## THE FORGOTTEN ACTOR: PROGRAMMERS

When considering the measures and transformations that governments, as well as societies at large, will have to undertake in the years to come in the Digital Rights conversation, we should never forget to involve all the necessary stakeholders.

Commonly and repeatedly forgotten actors, programmers are the builders that implement all the infrastructures, products and services we are so much concerned about. Yet, they are often not invited to relevant working groups nor are they introduced to concepts such as Human Rights and Digital Rights during their formative years. While architects are aware of the harms they can produce in the event of an accident caused by their projects, programmers can hardly evaluate the digital harm they can induce as a result of improper designs

[9] Guiding Principles on Business and Human Rights (BHR) - https://www.business-humanrights.org/en/un-guiding-principles
[10] Sustainable Development Goals (SDGs) - https://sustainabledevelopment.un.org/sdgs

and implementation. Furthermore, it is important to understand that *digital harm* is a topic that, to date, has no international consensus or standard to draw from, thus complicating tenfold the situation.

At The IO Foundation, *we identify programmers as the next generation of Human Rights Defenders, in digital spaces*.

This is a new frontier to be explored and it is going to be extremely critical to properly and proactively train all involved parties (from policy makers to programmers) and ensure they communicate with each other effectively. TIOF's approach via its TechUp project is divided in two parallel actions.

First, to bring the conversation of Digital Rights to the local programmer community (Malaysia: Klang Valley) by partnering with local tech groups and running capacity building sessions that are flavored with Human and Digital Rights. Second, to increasingly introduce the necessary technical concepts to policy makers through targeted events and other activities. The final objective is to bridge the existing gap between both parties so that they can build together frameworks that are observant of Digital *Rights by Design* by acknowledging that *I am my data* and that target to *End Remedy*.

## UPLOADING OUR FUTURE

As we transition towards an increasingly digital life and we switch our houses for storage space and our paper-based passports for digital IDs, we require unambiguous answers to really pressing questions.

Who manages these new digital territories, governments or tech corporations?

What are these new owners bound by? Do they respond to democratic institutions or to opaque shareholder meetings?

Who is in control of the data, the users that originate them or the companies behind the always fancy IoT devices that capture them?

If a user was to be cloned, would it feel right to traffic those clones to jurisdictions all over the world without them even knowing? Would their governments agree to that? If intuition (and the law) tell us that such a scenario is wrong and illegal, why are we acting so indifferent when it comes to our data?

If users are transitioning their lives from the analog world into the digital world, shouldn't the Terms of Use that they accept as their new Constitutional Law be applicable to their data?

If citizens are to preserve their Rights and the freedoms attached to them, the conversation about how we can protect them transparently, effectively and by design cannot be postponed. The decisions made in the upcoming years will shape the future of societies everywhere and will be decisive to ensure that Big Brother remains a feared-yet-not-implemented literary exercise.

These were topics addressed during 2019 Digital Rights Awareness Week[11] (DRAW), and will be further explored during the upcoming Conference organised by MCMC and TIOF. This will be a place where policy makers and technologists will come together to explore how governments worldwide should incorporate Digital Rights in their agendas. .my

[11] 2019 Digital Rights Awareness Week (DRAW) - https://tiof.click/2019drawbooklet

# THE E-COMMERCE DELIVERY AWARDS 2019

## A PRESTIGE ANNUAL EVENT FOR POSTAL AND COURIER INDUSTRY

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The 2019 edition of the E-Commerce Delivery Awards, an annual event organised by the Malaysian Communications and Multimedia Commission to celebrate high achievers in Malaysia's postal and courier industry was held at the MCMC Auditorium on 14 November 2019. The E-Commerce Delivery Awards or EDA, which was first held in 2017 was created as an instrument to strengthen the efforts of raising the industry's standards congruent with the rise of Malaysia's e-commerce. The inaugural event saw an overwhelming response from the industry players in terms of participation and nominations for the awards, and the same enthusiasm was shown for EDA 2019.

The EDA 2019 bestowed thirteen awards to the industry's outstanding individuals and companies in seven different categories, namely, the Delivery Excellence Awards, Customer Service Excellence Awards, Best Improvement Awards, Innovation Excellence Awards, Corporate Social Responsibility Awards, Industry Role Model Awards, and Road Safety Excellence Awards.

### BEST IMPROVEMENT AWARDS WINNERS PROVE THAT HARD WORK PAYS OFF

Best Improvement Awards were introduced in 2019 to recognise industry players who have achieved the highest improvement in comparison to their performances in the previous year. This would inspire industry players to amplify their efforts in line with the government vision for Malaysia to build a resilient, inclusive and efficient e-commerce infrastructure and system as a strategic platform for socio-economic development.

The first winner for this category was Pos Malaysia Berhad with the highest percentage of performance improvement, at 26%. In 2018, Pos Malaysia had taken strategic steps to

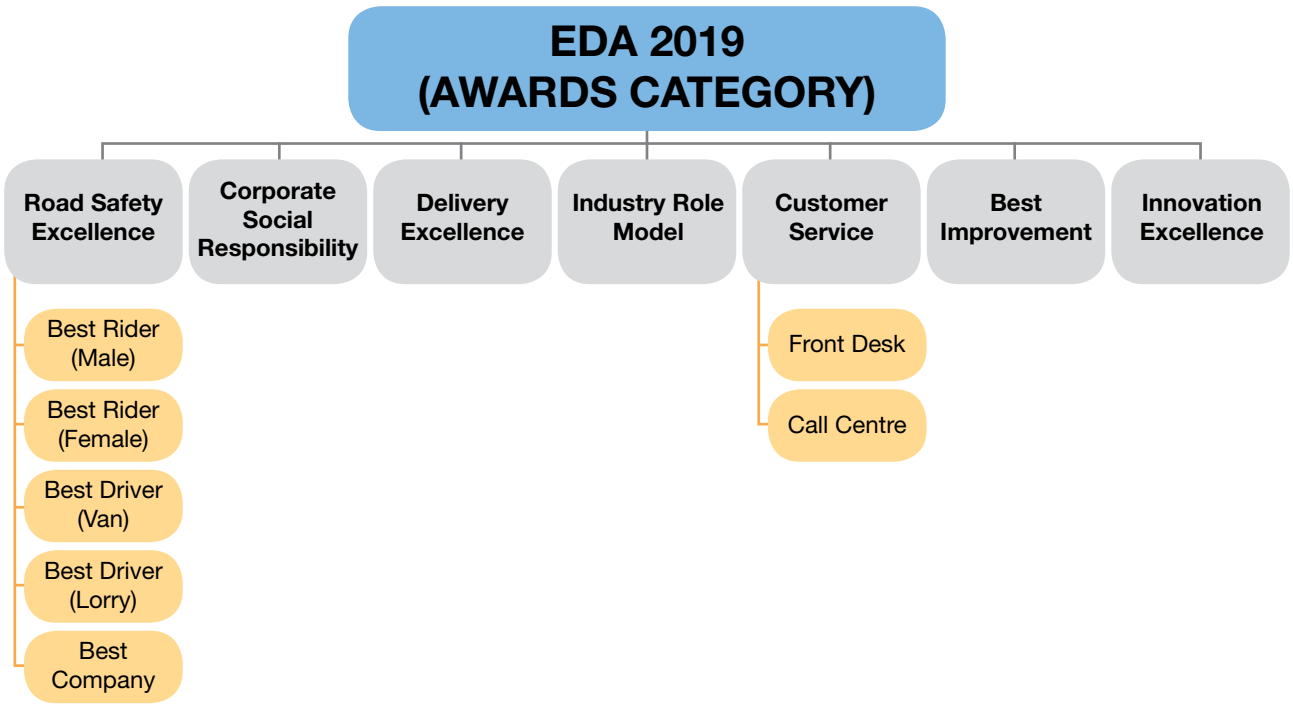


*Exhibit 1 – E-Commerce Delivery Awards 2019 Category*

improve operational efficiency and service quality. Among the initiatives implemented were upgrading processing capacity of the Integrated Parcel Center by 150%, that allowed 320,000 parcels to be processed in one day; and introducing the use of ezibox parcel lockers in 111 strategic locations such as gas stations, LRT stations and universities.

## INDUSTRY ROLE MODEL AS SOUL FOR THE UNSUNG HERO

The 2018 winner for Industry Role Model category was Mr. Md Rejab Bin Chin, a 49-year-old Operations Operator in Nationwide Express Courier Services Bhd., who is a wheelchair bound person with special needs


and had shown exceptional work ethics and spirit in performing his daily tasks. At EDA 2019, we have Mr. Mohammad Syeiqkul Mazalan from Pos Malaysia Berhad and Mr. Syed Hassan Syed Gafur from City-Link Express.

Mohammad Syeiqkul Mazelan from Poslaju Kuala Kangsar helped the police to capture an escaped detainee at the Kuala Kangsar court house while doing his delivery. His courageous and swift actions led to the arrest of the detainee. He received an appreciation letter from PDRM that was presented to him by the Kuala Kangsar District Police Chief.

Mr. Syed Hassan Syed Gafur is the oldest courier driver in City-Link Express. At the age of 75, he has proven that age has no limitations and boundaries, with his ability to work with younger co-workers and use the latest technology to improve efficiency. He manages to deliver minimum of 50 items and 25 pickups every day. He was awarded the best employee in 2018, and he always keeps his promises and serves with integrity during deliveries .

## CITY-LINK EXPRESS WIN THE BEST DELIVERY PERFORMANCE AWARD THREE YEARS IN A ROW

'Consistency is the key to achieving and maintaining momentum'
Darren Hardy

Founded in 1979 by Dato David Tan, City-Link Express is well-known as Malaysia's leading express last-mile delivery company. City Link is one of the largest and most

established courier company with 40 years of operations; having sustained its leading position in the logistics industry within the region. It has expanded its horizons, focusing on Asia Pacific countries that include Singapore, Thailand, Indonesia, Vietnam, Hong Kong, China and is planning to further develop its business throughout the region.

City-Link currently has more than 3,000 employees with 85 branches, 185 drop-in centres and 51 express centres throughout Malaysia. With more than 1,400 trucks and motorcycles, the aim is to progressively increase the numbers as the business grows.

In line with City-Link's vision to be the preferred last-mile delivery company in this region, the company has been investing in leading edge ICT technologies. Its latest mobile application *Fenetta*, which provides customers with real time delivery status, has heightened customer satisfaction levels. In addition to that, *Fenetta* helps green initiatives by reducing paper dependencies; with an added benefit of helping with cost rationalisation. Data analytics will be applied to develop route optimisation and improve delivery performance.

City-Link's vision is to become customers' preferred choice of logistics provider in Asia Pacific by 2020. It is making all possible enhancements to reach its goals and objectives. While continuously supporting businesses by providing express and logistics solutions that meet and exceed expectations through the organisation's pool of talents, the intention is also to expand its presence further throughout Asia Pacific by developing better services and other growth opportunities.

## IMPORTANT MESSAGE FROM SEC-GENERAL - EVOLUTION OF POSTAL AND COURIER INDUSTRY IN THE ERA OF GLOBAL E-COMMERCE

The prestigious event saw more than 100 attendees consisting of 13 industry leaders, management and operations staff, ministry officials and stakeholders, all dressed with suits and dresses in elegant black, fancy silver and fabulous red. The guest of honour, YBhg. Dato' Suriani Dato' Ahmad, Secretary General of Ministry of Communications and Multimedia Malaysia delivered an important message that night that Malaysia's e-commerce market is projected to hit USD11 Billion in 2025, an estimated increase of 24% annually. This would be a key economic growth for the country.

She added that to adapt and compete effectively in today's globalised economy, postal and courier industry players must adopt differentiated growth strategies. They must build strong business capabilities and extensive regional and international networks in order to seize growth opportunities. This is especially so, given the digitalisation of the global economy with increasing pervasiveness of e-commerce which allow even small companies to access international markets.

As the Malaysian e-commerce industry continues its meteoric growth trajectory, the postal and courier players will play increasingly important roles. It is hoped the EDA Awards will spur these players to enhance their organisations' performances. .my

# WINNERS OF E-COMMERCE DELIVERY AWARDS 2019

## DELIVERY EXCELLENCE AWARDS

| WINNER | CITY LINK EXPRESS (M) SDN BHD |
|---|---|
| FINALIST | J&T EXPRESS (M) SDN BHD |
| | DHL EXPRESS (M) SDN BHD |

## CUSTOMER SERVICE EXCELLENCE AWARDS (FRONT DESK)

| WINNER | DHL EXPRESS (M) SDN. BHD |
|---|---|
| FINALIST | NATIONWIDE EXPRESS COURIER SERVICES BHD |
| | CITY LINK EXPRESS (M) SDN BHD |

## CUSTOMER SERVICE EXCELLENCE AWARDS (CALL CENTRE)

| WINNER | UNITED PARCEL SERVICE |
|---|---|
| FINALIST | ABX EXPRESS (M) SDN BHD |
| | J&T EXPRESS (M) SDN BHD |

## IMPROVEMENT AWARDS

| WINNER | POS MALAYSIA (M) BERHAD |
|---|---|
| FINALIST | ABX EXPRESS (M) SDN BHD |
| | NATIONWIDE EXPRESS COURIER SERVICES BHD |

## INDUSTRY ROLE MODEL AWARDS

| WINNER | MOHAMMAD SYEIQKUL MAZALAN | POS MALAYSIA BERHAD |
|---|---|---|
| FINALIST | SYED HASSAN SYED GAFUR | CITY LINK EXPRESS (M) SDN BHD |
| | MOHD YATIM MOHD IBRAHIM | POS MALAYSIA BERHAD |

## INNOVATION EXCELLENCE AWARDS

| WINNER | ZOOM : THE LAST MILE FULFILLMENT TECHNOLOGY | CONTACT US SDN. BHD |
|---|---|---|
| FINALIST | MANAGEMENT OF DELIVERY EXCEPTIONS | DHL ECOMMERCE (M) SDN BHD |
| | GDEX ACADEMY | GD EXPRESS (M) SDB BHD |

## CORPORATE SOCIAL RESPONSIBILITIES AWARDS

| WINNER | PELIHARA EKO – SISTEM SUNGAI LANGAT | CITY LINK EXPRESS (M) SDN BHD |
|---|---|---|
| FINALIST | EKSPLORASI ALAM 2019 | POS MALAYSIA BERHAD |
| | ENVIRONMENTAL EDUCATION & MANGROVE PLANTING PROGRAMME | GD EXPRESS (M) SDN BHD |

## ROAD SAFETY EXCELLENCE AWARDS – BEST COMPANY

| BEST COMPANY | NATIONWIDE EXPRESS COURIER SERVICES BHD |
|---|---|
| FINALIST | CITY-LINK EXPRESS (M) SDN BHD |
| | POS MALAYSIA BHD |

## ROAD SAFETY EXCELLENCE AWARDS – BEST RIDER (MALE)

| BEST RIDER (MALE) | MOHAMMAD EFFENDI BIN YATIM MUSTAFA | POS MALAYSIA BERHAD |
|---|---|---|
| FINALIST | MOHD SHUHADA BIN YASIN | GD EXPRESS (M) SDN BHD |
| | NOR AZMAN BIN MOHTAR | M EXPRESS (M) SDN BHD |

## ROAD SAFETY EXCELLENCE AWARDS – BEST RIDER (FEMALE)

| BEST RIDER (FEMALE) | NOR EZZATUL BT SEPUN & SAPUAN | NATIONWIDE EXPRESS COURIER SERVICE BHD |
|---|---|---|
| **FINALIST** | NOR AFIZAH BY YAJIS | SKYNET WORLDWIDE EXPRESS (M) SDN BHD |
| | NUR SYAHIRAH SHAMSUDIN | KARHOO EXPRESS (M) SDN BHD |

## ROAD SAFETY EXCELLENCE AWARDS – BEST DRIVER (VAN)

| BEST DRIVER (VAN) | MUHAMMAD SHAHID MUHAIZAD BIN JALALUDDIN | POS MALAYSIA BERHAD |
|---|---|---|
| **FINALIST** | KAMARUDDIN MAT IDRIS | NATIONWIDE EXPRESS COURIER SERVICES BHD |
| | KHAIRUL ANUAR ABDUL WAHAB | LINE CLEAR EXPRESS (M) SDN BHD |

## ROAD SAFETY EXCELLENCE AWARDS – BEST DRIVER (LORRY)

| BEST DRIVER (LORRY) | MOHAMAD SHAFIQ ABDULLAH | CITY LINK EXPRESS (M) SDN BHD |
|---|---|---|
| **FINALIST** | AZRISHA ABD. RASHAD | NATIONWIDE EXPRESS COURIER SERVICES BHD |
| | ABDUL NASIR SAPRI | KARHOO EXPRESS (M) SDN BHD |

The prestigious event saw more than 100 attendees consisting of 13 industry leaders, management and operations staff, ministry officials and stakeholders, all dressed with suits and dresses in elegant black, fancy silver and fabulous red. The guest of honour was YBhg. Dato' Suriani Dato' Ahmad, Secretary General of Ministry of Communications and Multimedia Malaysia

FEATURE

# NATIONAL NETWORK DATABASE (NNDB)

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MCMC's Geospatial and Digital Services Department (GDSD) has taken the initiative to develop the platforms that would be a one-stop-center databank for MCMC's internal use, Government Agencies, Local Authorities, Service Providers (Licensees), Postal and Courier companies and relevant agencies. The platforms that have been developed are the **Communication Infrastructure Management System (CIMS), Communication Infrastructure Permit Management System (CIPM), MyCOMMS Web and Mobile, and eConsult System**. Information stored in this web application can be accessed by MCMC and the public depending on their access rights.

## COMMUNICATION INFRASTRUCTURE MANAGEMENT SYSTEM

CIMS is the integrated system to provide a mapping solution for MCMC users to view, update and monitor their respective datasets whilst facilitating the telecommunications data submission by external users, operators and service providers via online application. It is also to plan, analyse, and coordinate the implementation of various projects. CIMS is also used to consolidate and manage various datasets, documents, and process flows available within the Commission and industry. In addition, it will ensure the integrity and validity of the database including an audit trail, data validation, security and reliability, as well as stability of the information. Furthermore, the system enables reliable reporting for the strategic management of information for regulatory, compliance and planning for the communications infrastructure of the country.

The latest developments in CIMS, carried out to accommodate new requirement from various internal department, are as follows:-

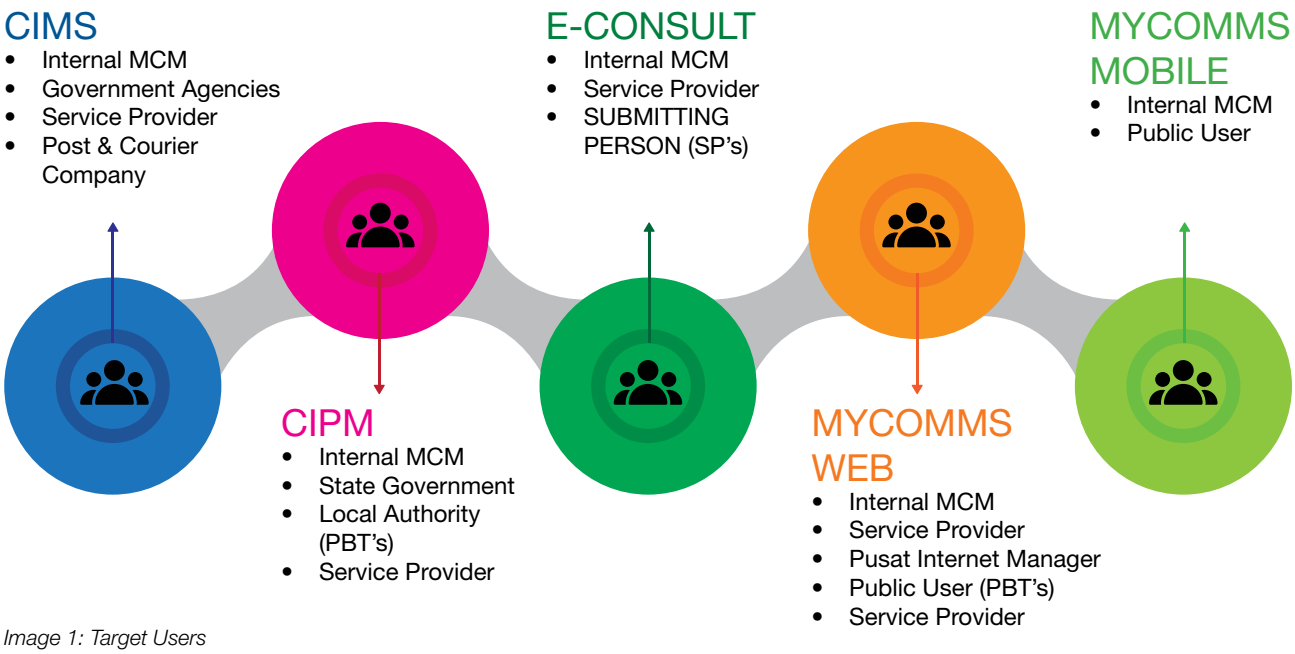


*Image 1: Target Users*

i. Development and deployment of BBGP Enhancements in CIMS.
ii. Development and deployment of Data Declaration Module for NNDB.
iii. Development of CIMS Executive View for NFCP project progress monitoring.
iv. Development of NFCP Site Planning component for site planning on the coverage area to improve and track commercial deployment as in improving the NFCP target for 2020.

## COMMUNICATION INFRASTRUCTURE PERMIT MANAGEMENT SYSTEM

CIPM provides an online platform to replace manual renewal applications with digitalised document submission via the system. CIPM has been implemented by DBKL, Majlis Daerah Hulu Selangor, Perlis, Kedah, Pulau Pinang, Melaka, Negeri Sembilan, Pahang, and Terengganu while the other states are waiting for approval by their respective State Governments for them to implement the system. By combining information of


*Image 2: The CIMS Platforms*


*Image 3: CIMS System*

telecommunication structures from the main sources (MCMC, Telcos, Local Councils) MCMC is able to conduct monitoring and enforcement towards legalisation of structures nationwide.

## MYCOMMS WEB AND MOBILE

MyCOMMS Web is an information mapping services developed to provide overall communication infrastructure and services information to the public. The MyCOMMS database comprises several datasets of network elements which captures coverage, location, routes, capacity and other related information of communications infrastructure and services.

MyCOMMS Mobile is an application mainly for the Android and iOS platforms that is capable of displaying communication services and infrastructure by location-base and embedded with Augmented Reality (AR) technology. MyCOMMS Mobile application will focus on current features with several enhancements as follows:

- User group access – allowing different content access for different groups
- Security enhancement
- Loading speed enhancement – i.e. for map, points etc
- Seamless user interface – which will enhance MCMC's image

MyCOMMS Web also will provide the nearest Point of Interest (POI) within the user's radius and also provide Augmented Reality (AR) for the selected POI. The user can select which POI appear on the map or in AR view. It is also able to list down, starting with the nearest POI, is easy to navigate and can provide rating.


*Image 4: MyCOMMS Web*


*Image 5: MyCOMMS Mobile*

## ECONSULT SYSTEM

As one of the One Stop Centre (OSC) technical agencies in the Planning Permission (Kebenaran Merancang) committee, MCMC initiated the eConsult system to cater for the OSC technical recommendation procedure between MCMC and Principle Submitting Person (PSP).

It provides for online proposal and quotation submission by telcos within the same platform. eConsult is an online platform for end-to-end process encompassing project registration, proposal/quotation submission, pre-consultation, technical recommendation, site inspection & CCC upload. .my

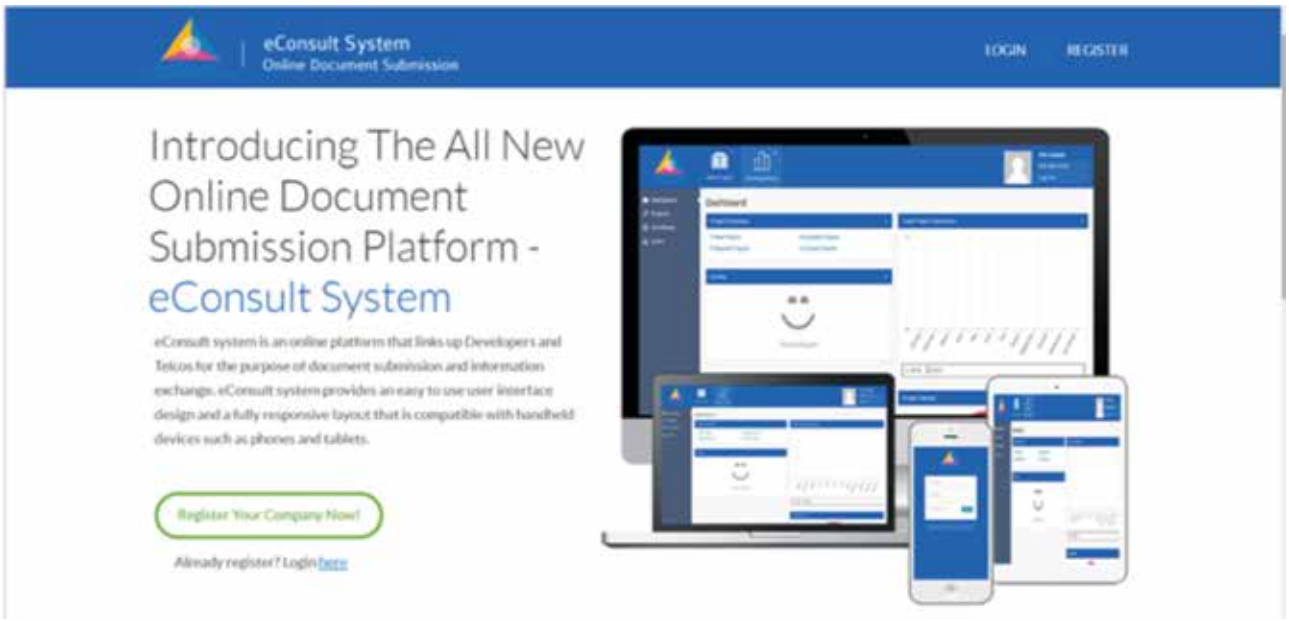


*Image 6: eConsult System*

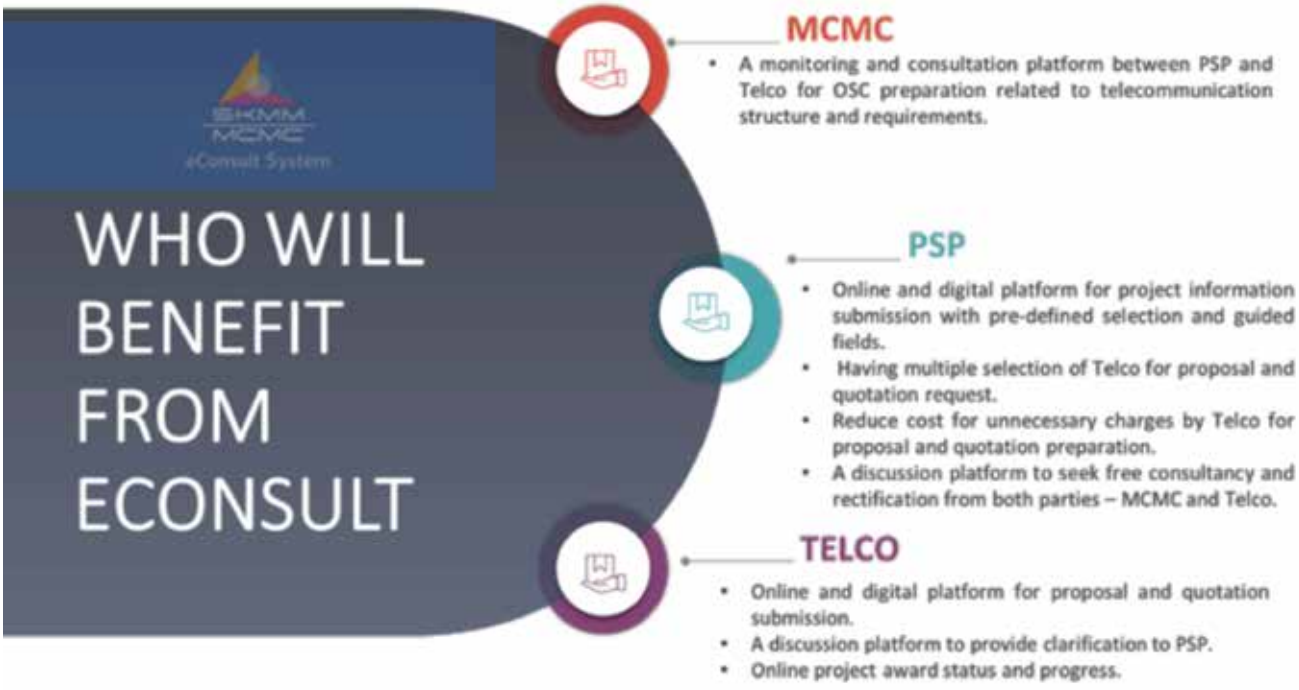


*Image 7: Benefits of e-consult System*

# MULTI-PRONGED INVESTIGATION OF VIRAL OBSCENE CONTENT CASE

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## INTRODUCTION

Last year, the Malaysian Communications and Multimedia Commission (MCMC) received a report relating to the distribution of obscene content in the social media. Various reports about the viral content were also lodged with the police. Based on those reports MCMC carried out a series of investigations under two sections of the Communications and Multimedia Act 1998 (CMA 1998).

## OFFENDING SECTIONS

The sections under which the case was investigated are as follows:

(i) **section 233(1)(a) of the CMA 1998** for spreading of obscene contents; and

(ii) **section 127(3) of the CMA 1998** for non-compliance with the Guidelines on Registration of End-Users of Prepaid Public Cellular Services.

## INVESTIGATION

(i) **Section 233(1)(a) of the CMA 1998**

MCMC carried out an investigation to trace the registered users of the phone numbers responsible for the distribution of the obscene content. The results of the investigation showed that the phone numbers involved in the content distribution were registered under a single telecommunication operator which was U Mobile Sdn. Bhd. MCMC analysed information on the phone numbers to determine the location of registration as well as the whereabouts of the users. MCMC also checked all the phone calls and text messaging records of the said numbers. The phone numbers were registered under foreign names. Using the information provided by the Immigration Department of Malaysia and with the assistance of their employers, MCMC managed to locate the registered users of the said numbers.

The registered users were called for an interview at MCMC. Upon being questioned, it was discovered that the registered users never purchased the sim cards from GAB Management (M) Sdn. Bhd, the authorised dealer of U Mobile Sdn. Bhd. which registered the said numbers. The registered users believed that their passports were wrongfully used by someone else to apply for the registration of the numbers. In addition to this, a few individuals who were believed to have information on this case were also called for an interview session. These include personnel from U Mobile Sdn. Bhd., GAB Management (M) Sdn. Bhd. and those who received the obscene content. To ensure the thoroughness of the investigation, the task force also searched a few premises to find evidence relating to the case. However, the evidence obtained could not be related to the involvement of specific persons including the registered users with regard to the dissemination of the obscene content.

(ii) **Section 127(3) of the CMA 1998**

MCMC also pursued an investigation under section 127(3) of the CMA 1998 for the failure of the service provider to comply with the Guidelines on Registration of End-Users of Prepaid Public Cellular Services. The Guidelines specify that a service provider licensed by the MCMC must register its prepaid sim cards end-user and take steps to ensure that the information provided by the end-user is verified against the information contained in the original identification documents. Under these Guidelines, it is also prohibited for a service provider to register a customer with more than five sim cards. The results of the investigation showed the following:

(a) GAB Management (M) Sdn. Bhd. as an authorised dealer of U Mobile Sdn. Bhd. used customer information to register more than five sim cards per customer. This involved 39 individuals and 234 phone numbers. This amounted to a non-compliance with Paragraph 4 of the Guidelines, which leads to a breach of Application Service Provider (Class) [ASP (C)] License conditions and is an offence punishable under section 242 of the CMA 1998, read together with section 127 of the same Act. 39 compounds were issued to U Mobile Sdn. Bhd. for the commission of these offences at RM50,000.00 per offence; and

(b) GAB Management (M) Sdn. Bhd. failed to verify customer information before registration. This amounted to a non-compliance with Paragraph 3 of the Guidelines, which also leads to a breach of ASP (C) License condition and is an offence punishable under section 242 of the CMA 1998, read together with section 127 of the same Act. Four compounds were issued to U Mobile Sdn. Bhd. for the commission of these offences with the amount of RM50,000.00 each.

## FURTHER FINDING AND ACTION

During the course of gathering information, evidence also led to the facts that GAB Management (M) Sdn. Bhd. had access to RED applications; an application for U Mobile sim card registration and had made unauthorised modifications of the contents of the RED application by registering four sim card numbers without verifying end-user information as required by U Mobile Sdn. Bhd. On the advice and instruction of the Deputy Public Prosecutor, GAB Management (M) Sdn. Bhd. was charged under section 5 (1) of the Computer Crimes Act 1997 at the Seremban Session Court. The accused pleaded guilty to four counts of charges and was sentenced to a fine of RM10,000 for each charge or 12 months imprisonment in default of payment. .my

# NOTES FROM ALL OVER

## IMPACT OF LOCKDOWN ON FIXED AND MOBILE NETWORKS

**July 2020**

The Ericsson Mobility Report June 2020 contains interesting data on the impact the lockdown had on fixed and mobile networks globally. It found that mobile and fixed networks are increasingly playing an even bigger part of critical national infrastructure.

It observed that traffic increased by 20 to 100 percent as a consequence of Covid-19 lockdowns. The largest share of the increase was absorbed by the fixed residential network. Mobile network generally saw smaller changes of about 10 to 20 percent in traffic levels.

There was up to 90 percent increase in Voice over Wi-Fi calls for some service providers. Streaming services also saw higher usage, even to the point of causing some traffic congestion. People also made more and longer calls, resulting in an increase of 20 to 70 percent in voice. Despite the increase in traffic, service providers were generally able to cope.

Ericsson's research also revealed that consumers felt ICT helped them to go through the lockdown. ICT helped them in areas such as children's education, staying in touch with family and friends, their jobs, keeping children entertained, shopping, mental health and wellbeing, and keeping fit.

## 3 COMPANIES IN RACE TO DEPLOY NETWORK OF BROADBAND SATELLITES

**August 2020**

Amazon has recently been given provisional approval by US regulator FCC to deploy a constellation of 3,236 broadband satellites. The project is called Kuiper.

Elon Musk's company SpaceX is the current leader. Its Starlink system already has 538 satellites in orbit. The other major player is OneWeb, which has 74 ultrafast broadband satellites to date. OneWeb ran into financial difficulties but is looking forward to brighter times after getting a USD1 billion investment from the UK government and Bharti Global Ltd of India.

## FCC, US HEALTH DEPARTMENT AND US AGRICULTURE TEAM UP FOR RURAL TELEHEALTH INITIATIVE

**September 2020**

US Communications Regulator FCC has signed a Memorandum of Understanding to work together on a Rural Telehealth Initiative. This collaboration will share information to address health disparities, resolve service provider challenges, and promote broadband services and technology to rural areas in America. The initiative was given added impetus as the ongoing coronavirus pandemic has highlighted the critical importance of telehealth in delivering healthcare to rural areas in America.

The FCC had earlier approved 25 funding applications for the COVID-19 Telehealth Program. The USD10.73 million programme will enable health care providers in both urban and rural areas to provide telehealth services during the coronavirus pandemic.

## ERICSSON EXPECTS 190 MILLION 5G SUBSCRIPTIONS BY THE END OF 2020

**June 2020**

The June 2020 Ericsson Mobility Report predicts that there will be close to 200 million 5G subscriptions globally by the end of 2020.

It acknowledged that the spread of COVID-19 during the first part of 2020 impacted all parts of society globally, including the telecommunications sector. Nevertheless it has observed that despite the uncertainty caused by the pandemic, service providers have continued to switch on 5G.

More than 75 operators have announced commercial 5G service launches. This has encouraged Ericsson to increase their estimate for the number of 5G subscriptions to about 190 million by the end of 2020.

The growth is mainly due to a faster uptake in China than previously expected. This has offset slight downward adjustments it made in other regions due to the effects of the pandemic. Several spectrum auctions in Europe have been delayed, which Ericsson says will see a slower uptake of 5G subscriptions in the near term there.

For a longer period, Ericsson forecasts that by the end of 2025, there will be 2.8 billion 5G subscriptions globally. This will represent around 30 percent of all mobile subscriptions at that time.

## EU STATES AGREE INTEROPERABILITY SOLUTION FOR CONTACT TRACING APPS

**May 2020**

European Union states have agreed on a set of technical specifications for safe exchange of information between national contact tracing apps based on a decentralised architecture. The technical solution will enable national contact tracing apps to work seamlessly when users travel to another participating EU country.

The proximity information shared between apps will be exchanged in an encrypted way that prevents the identification of an individual person. In line with the strict EU guidelines on data protection for apps; no geolocation data will be used. A gateway service will be set up by the Commission to efficiently receive and pass on relevant information from national contact tracing apps and servers.

## INDIA TELECOMS REGULATOR EXPLORING UNBUNDLING ELEMENTS OF TELECOMS NETWORKS

**August 2020**

The Telecom Regulatory Authority of India (TRAI) is seeking comments for its consultation paper on unbundling of different elements of telecom network such as infrastructure, network, services and application layers. TRAI is proposing to achieve this through differential licensing.

The consultation paper proposes that an independent network service provider will establish the network and sell the services on a wholesale basis to the service delivery operator. The regulator cited optimum utilisation of the network infrastructure and spectrum as major benefits of unbundling. It believes that the resulting reduced capex by the telcos will facilitate technology adoption and speed up the rollout of technologies like 5G and AI.

## EU IMPLEMENTS REGULATIONS FOR SMALL-AREA WIRELESS ACCESS POINTS

**June 2020**

In order to drive rollout of 5G networks that it believes are crucial for new services in health and care, energy, transport, education and many other areas, the EU Commission has finalised regulations on small-area wireless access points. It adds that the smooth implementation of 5G has become even more crucial in the context of the covid pandemic.

Its aim is to reduce restrictive administrative barriers, which will, it says, in turn create significant demand from our industry and will amplify European innovations and competitiveness.

The new rules were determined after several public consultations that collected stakeholders' and citizens' feedback. The Regulation specifies the physical and technical characteristics of small cells for 5G networks. It aims to help simplify and accelerate 5G network installations, which should be facilitated through a permit-exempt deployment regime, while ensuring that national authorities keep oversight.

At the same time small-area wireless access points should assure the protection of people's health and safety, by adhering to strict EU exposure limits, which, for the general public, are 50 times lower than what international scientific evidence would suggest as having any potential effect on health.

Their visual and aesthetic impact must be minimal by either being invisible or mounted in a non-obstructive way onto their supporting structure.

## EU MEPS CALL FOR COMMON PHONE CHARGERS

**January 2020**

Members of the European Parliament (MEPs) have called on the Commission to come up with rules on common chargers which will reduce electronic waste and empower consumers to make sustainable choices.

The call for the mandatory introduction of common chargers for all mobile devices should not, the call adds, hamper innovation. It also asks for the framework for a common charger to be scrutinised regularly in order to take into account technical progress.

The Parliament also wants the Commission to take measures to best ensure the interoperability of different wireless chargers with different mobile devices as well as consider legislative initiatives to increase the volume of cables and chargers collected and recycled in EU member states. They also want measures taken to ensure that consumers are no longer obliged to buy new chargers with each new device.

FOOD

## FOOD AT YOUR FINGERTIPS

Food delivery services have been saviours for many during the movement control orders. Everyone has probably used the two leading platforms Foodpanda and Grab Food. But as many discovered, there are plenty of other options for consumers to try out. Here are some.

**Delivereat** offers many choices of local and more street food listings too. The service has also partnered with many fast food chains and eateries across the country.

**Dahmakan** is different. The service, which focusses on healthy food options offers balanced meals that are all prepared by its in-house chefs.

**RunningMan.my** claims to be the most affordable food delivery service in Malaysia and have no minimum order requirements. There are plenty of options to order from, with a focus on local eateries. RunningMan.my delivery service is available in most parts of the Klang Valley.

**Hometaste** describe themselves as the leading home-cooked meals platform in Malaysia. The platform connects seasoned home cooks with customers. As the name implies, consumers have a wide variety of home styled meals to order from.

**The Naked Lunchbox** is yet another platform that only markets their own meals. Their proposition is to make available meals that are cooked with healthy ingredients and without artificial preservatives, food additives, or added sugar or artificial sweeteners.

**Epic Food Hall** is a halal certified food delivery specialist. They offer a decent range of meals prom their in-house restaurant brands, which offer local favourites, burgers, Mexican, halal Chinese and pizza options.

**Sama Sama Lokal** is a service launched by Maybank during the MCO to help out local hawkers and restaurants. Through the "Sama-Sama Lokal" initiative, small businesses are listed on the bank's site to gain visibility, and Maybank will cover the external delivery fee for hawkers who do not offer delivery services.

HEALTH

## COVID-19 AND YOUR MENTAL HEALTH

Food delivery services have been saviours for many during the physical impact of Covid-19 on people's lives is undeniable. However, the impact of the pandemic does not stop there. All over the world, health professionals are recognising that the pandemic and the actions taken to curb the spread of the virus are also impacting the mental health of many people. The fear and anxiety about this new disease can be overwhelming. Public health actions, such as social distancing, can make people feel isolated and lonely and can increase stress and anxiety. Here are some steps you can take to maintain your mental health.

- Take care of your body. Eat healthy well-balanced meals, exercise regularly, and get plenty of sleep. Avoid alcohol, tobacco, and other drugs.
- Stay connected with others. Share your concerns and how you are feeling with a friend or family member. Maintain healthy relationships and build strong support systems with your friends and loved ones.
- Take breaks. Find time to unwind. Try to do activities you usually enjoy.
- Stay informed by ensuring that you are up to date on the latest information. This will avoid the stress that can come from feeling that you are missing important information. Turn to reliable sources of information like government authorities and credible media platforms.
- At the same time, avoid too much exposure to news, as it can be depressing to see negative news and images repeatedly. And stay clear of rumours and unfounded theories.
- Get plenty of sleep.

TRAVEL

## TAKE A HIKE

Covid-19 arrived without warning and spoiled everyone's travel plans. With entry restrictions applicable in many countries, overseas travel is out of the question. Popular cuti-cuti Malaysia destinations are receiving throngs of visitors. Stay away from the crowd by making an epic road trip, bask in some small town flavours and meet very friendly fellow Malaysians. There are plenty of routes that you can plan that will keep you mostly off the tolled highways. The trick is to take a slow drive, stop when you feel like it and keep the plan flexible. Along the way, search for best places to eat and you will never go hungry.

**The East-West route.** Head to Kuantan where you can stop at Cherating or Kemaman. Next stop Dungun or Marang. Swing over to Kelantan and experience their unique culture. DO some shopping at Rantau Panjang and then take the exhilarating drive through the East-West Highway from Jeli to Gerik. Optional, head to Penang for the perfect end of the road trip.

**The Coastal Route north.** This coastal route has become popular in recent years. First stop is Kuala Selangor, followed by Tanjung Karang or Sekinchan. Head then to Teluk Intan, followed by Lumut, pantai Remis and end your trip at the lovely town of Taiping.

**The south Coastal Route.** Start at Morib and head south all the way to Johor Baru. There are plenty of little visited small towns on this route. Another shorter option could be to take the highway to Muar and start from there.

**East Coast coastal route.** From Seremban, check out Kuala Pilah and Bahau before finding your way to Kuala Rompin and finally Mersing.

Or better still, plan your own perfect road trip that will take you down memory lane.

PRODUCTIVITY

## WFH TIPS

2020 has introduced a new work experience to a lot of people: Work From Home (WFH). The switch was sudden and without preparation. Going forward, it appears that this will become a norm, either full time or for periods of time. Here are some tips to make sure that you are productive, without damaging your mental and physical health.

**Create and stick to a schedule**
In the informal setting of a home and its many distractions, creating a work routine becomes all important. Plan a schedule, set your priorities and stick to the schedule. It helps to get you into the work mind of state. The schedule should include breaks and time away from the screen.

**Self-discipline**
List down things that can distract you – web surfing, online shopping, TV, gaming, reading and so on – and set aside specific times for those things after your work hours. You can use these distractions as motivation for you to complete your work as rewards for tasks that you complete.

**Physical**
It helps to dress for work. While the mental image of working in your sleep clothes sound cool, you will find yourself more productive if you put on proper attire. Get a good chair and table. Place it in a spot that becomes your 'office'. Also, make sure that you get plenty of exercise and some time outside in the open.

**Mental health**
WFH does not mean total isolation. Stay connected with your colleagues regularly. Online meetings are a good way for everyone to touch base and maintain comradeship. Also, switch away from work more after work time. Speak regularly to your friends and family and spend time with your loved ones.

**Online tools**
Use ICT tools to become productive. Research and find online apps and software that can help you get work done. Essential ones would include a project management tool, online meeting app, messaging app and cloud storage.


## NUMBER OF POST OFFICES


2019 : 896
2018 : 914
2017 : 921
2016 : 927
2015 : 930

## NUMBER OF COURIER LICENCES

2019 : 116
2018 : 119
2017 : 128
2016 : 112
2015 : 88

# Postal and Courier

## POSTAL TRAFFIC DOMESTIC LETTERS

MILLION


2019 : 596.5
2018 : 672.3
2017 : 738.1
2016 : 808.2
2015 : 851.3

## POSTAL TRAFFIC DOMESTIC PARCELS

MILLION


2019 : 0.9
2018 : 0.9
2017 : 1.0
2016 : 0.9
2015 : 0.8

## COURIER TRAFFIC DOMESTIC DOCUMENTS

MILLION

2019 : 90.8
2018 : 86.8
2017 : 52.8
2016 : 47.2
2015 : 33.2

## COURIER TRAFFIC DOMESTIC PARCELS

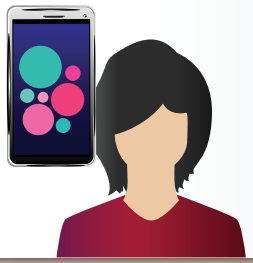
MILLION

2019 : 115.0
2018 : 79.3
2017 : 35.2
2016 : 23.7
2015 : 18.6

*no of post office include mini post office & post office
**In 2019, statistics on courier services were collected from 85 courier companies. Figure 2018 was revised due to additional courier companies from 14 to 81. Prior to 2018, data was collected from top 10 courier companies in terms of traffic and revenue

# Communications and Multimedia

## PENETRATION RATES: MOBILE-CELLULAR PER 100 INHABITANTS



Q1 2020 : 133.6%
2019 : 135.4%
2018 : 130.2%
2017 : 131.2%
2016 : 139.9%
2015 : 143.8%

## PENETRATION RATES: FIXED TELEPHONE PER 100 *INHABITANTS

Q1 2020 : 19.8%
2019 : 19.7%
2018 : 19.8%
2017 : 20.4%
2016 : 15.6%
2015 : 15.7%

## PENETRATION RATES: PAY TV PER 100 HOUSEHOLDS

BILLION

Q1 2020 : 87.5%
2019 : 86.4%
2018 : 87.6%
2017 : 83.6%
2016 : 78.6%
2015 : 73.7%

## PENETRATION RATES: BROADBAND PER 100 *INHABITANTS

* Commencing Q4 2015, broadband penetration rate is calculated based on fixed-broadband subscriptions with speed equal or more than 1 Mbit/s"

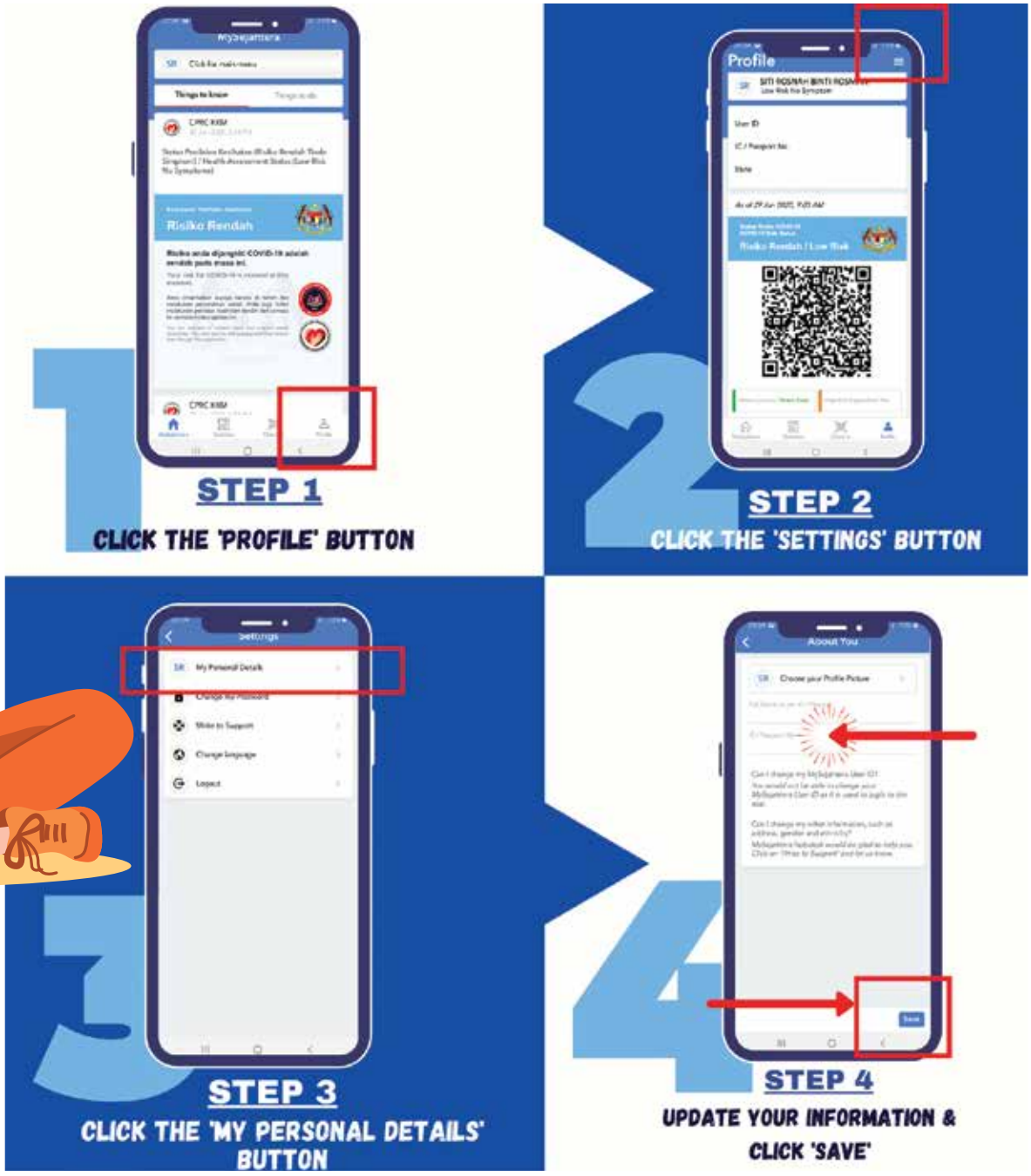
Q1 2020 : 127.4%
2019 : 131.7%
2018 : 121.1%
2017 : 117.3%
2016 : 99.9%
2015 : 99.6%

*Broadband penetration rate is calculated based on fixed-broadband subscriptions with speed equal or more that 1 mbit/s
**Data for Pay TV is different because TM has revised IPTV Non-household subscriptions beginning Q4 2015, hence figures have changed

# Use MySejahtera to check in into premises

# #kitajagakita

Follow the steps to update your name and IC number information in the MySejahtera app




MySejahtera is an application developed by the Government of Malaysia to assist in monitoring COVID-19 outbreak in the country by empowering users to assess their health risk against COVID-19. This application also provides the Ministry of Health (MOH) with the necessary information to plan for early and effective countermeasures.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