2019 INDUSTRY PERFORMANCE REPORT

EMPOWERING A DIGITAL NATION

Suruhanjaya Komunikasi dan Multimedia Malaysia
Malaysian Communications and Multimedia Commission

STATUTORY REQUIREMENTS

In accordance with Part V, Chapter 15, Sections 123 – 125 of the Communications and Multimedia Act 1998, and Part II, Section 6 of Postal Services Act 2012, Malaysian Communications and Multimedia Commission hereby publishes and has transmitted to the Minister of Communications and Multimedia a copy of this Industry Performance Report (IPR) for the year ended 31 December 2019.

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Note: Numbers and percentages may not add up due to rounding practices. Information and figures given are accurate as per current date and time report was produced.

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MCMC would like to thank all licensees who responded to IPR 2019 questionnaire, in which part of their feedback were collated and included in this publication.

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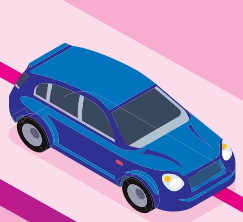
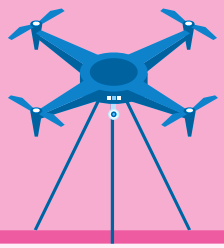
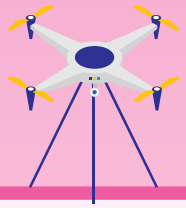






CHAIRMAN'S STATEMENT

DR. FADHLULLAH SUHAIMI ABDUL MALEK

Chairman
Malaysian Communications and Multimedia Commission

The year 2019 was an inflection point for the communications and multimedia (C&M) industry, characterised by digital disruptions, digital transformation and industry challenges. Services delivered by the C&M industry are increasingly central to the social and economic lives of all Malaysians as we immerse ourselves in the digital culture.

Under these challenging environments, I would like to praise the commendable effort made by service providers to embrace sustainable practices, including implementing digitalisation initiatives across the businesses in order to capitalise on new growth opportunities and improve digital experience for consumers. Amid volatile economic conditions, the C&M segment of the Malaysian capital market remained resilient. In 2019, the C&M industry represents 8.4% or RM144.01 billion of Bursa Malaysia total market capitalisation of RM1,711.84 billion as at end 2019 (2018: 8.1% or RM137.73 billion). In this dynamic environment, the MCMC continued to deliver on the priorities and strategies for high quality and affordable digital experience towards our journey to become a high-income nation.

2019 marks a milestone in Malaysia broadcasting history. After 56 years, Malaysia switched over its analogue TV transmission to digital TV transmission, joining 60 other countries worldwide. The transition was implemented in four phases comprising regions in Peninsular Malaysia which completed its switchover in October 2019 while Sabah and Sarawak in November 2019. Viewers can now enjoy digital TV broadcast "myFreeview" which offers better and clearer audio and picture quality. DTT has a 95% population coverage with 44 transmitter sites nationwide.

Broadband Internet access is the crux of today's digital age connectivity. Internet connectivity dictates individual lifestyle and for businesses, connectivity is competitiveness. As Malaysia is propelling towards digital economy, a high speed broadband connectivity is crucial as it determines a country's digital economy. Various initiatives undertaken by MCMC and the government including the service providers, resulting in Malaysia achieving broadband penetration rate at 131.7% per 100 inhabitants, from 99.7% in 2015, which is equivalent to 7.2% of average annual growth. As at 31 December 2019, 3G and 4G LTE network expanded to 95.5% and 82.2% respectively, of coverage in populated areas.

As the first wave of the fifth-generation mobile technology-5G implementation is taking place in some countries, Malaysia is also gearing up for its 5G deployment. The deployment of 5G would redefine connectivity in Malaysia and bring positive impact to the economy. Based on the study conducted by Malaysian Institute of Economic Research (MIER) on the Economic Impact Analysis on the Implementation of 5G Services in Malaysia, 5G-related economic activities are estimated to contribute an additional RM12.7 billion to the GDP and almost 39,000 new jobs will be created between 2021 and 2025.

The journey is continuous as the industry remains vulnerable to quickening shifts in technology cycles, competition and, customer needs and behavior. We must move swiftly ahead of these challenges. Through our commitment and joint collaboration, each of us can do our part to help the industry weather the storm.

It is my honour to present the Industry Performance Report 2019.

EXECUTIVE SUMMARY

ECONOMIC PERFORMANCE OF THE C&M INDUSTRY

The C&M industry represents 8.4% or RM144.01 billion of Bursa Malaysia total market capitalisation of RM1,711.84 billion as at end 2019 (2018: 8.1% or RM137.73 billion). The C&M industry market capitalisation has increased by 4.6%, spurred by telecommunications sector. This is due to telecommunication companies' share prices gaining momentum, driven by corporate announcements such as 5G initiatives, new product launch, collaborations and financial results.

In terms of financial performance, the domestic C&M industry aggregate revenue was at RM43.37 billion in 2019, declined 3.7% (2018: RM45.02 billion). The decline was due to intense competition coupled with OTT services eroding traditional revenues. By sector, telecommunications sector recorded RM34.8 billion revenue in 2019, declined by 2.8% (2018: RM35.8 billion). This is followed by broadcasting sector RM5.88 billion in 2019, decreased by 8.6% (2018: RM6.43 billion). Postal and courier sector revenue was at RM2.69 billion in 2019, declined by 3.6% (2018: RM2.79 billion).

On profitability, telecommunications sector Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) margin averaged 42% (2018: 37%) and Earnings Before Interest and Tax (EBIT) margin averaged 24% (2018: 21%). Margins have improved during this period due to cost optimisation initiatives resulting in reduction of operating costs.

Telecommunications sector capital expenditure (capex) has been on the decline for three consecutive years. In 2019, capex reached RM4.61 billion (2018: RM5.21 billion). This resulted in a capex to revenue ratio (capital intensity) of 13% (global average: 17%). Capex decline was due to service providers rationalising and reprioritising spending, squeezing and optimising the existing network assets as well as to preserve capital for 5G roll out.

Market Capitalisation

RM144.01 billion ↑ 4.6%
(2018: RM137.73 billion)

Revenue

RM43.37 billion ↓ 3.7%
(2018: RM45.02 billion)

Capital Expenditure

RM4.61 billion ↓ 11.5%
(2018: RM5.21 billion)

STATE OF CONNECTIVITY IN MALAYSIA

Broadband subscriptions grew by 10% to 43.38 million (2018: 39.45 million), with penetration rate per 100 inhabitants at 131.7% in 2019. Fixed broadband subscriptions increased by 10.9% to 2.95 million in 2019 (2018: 2.66 million). Meanwhile, mobile broadband subscriptions increased by 9.9% to 40.43 million in 2019 (2018: 36.79 million). Expanded coverage, greater affordability, better quality of service, increased data and smartphone usage are amongst the drivers of growth in broadband subscriptions.

The declining trend in Direct Exchange Line (DEL) subscriptions continued in 2019, down by 13.7% to 2.2 million in 2019 (2018: 2.55 million), with penetration rate per 100 inhabitants at 6.7%.

In contrast, mobile cellular subscriptions increased 5.2%, reached 44.6 million in 2019 (2018: 42.41 million), with penetration rate per 100 inhabitants of 135.4%. Advancement of mobile network technology, increasing affordability of mobile devices and services, expanding and availability of mobile networks as well as multiple subscriptions or device ownership are amongst factors fuelling the growth in mobile cellular subscriptions.

The postpaid market continues to perform well with subscriptions growing by 15.3% to 13.34 million (2018: 11.57 million). At the same time, the prepaid market also saw an increase of 1.4% to 31.26 million subscriptions in 2019 (2018: 30.84 million).

For mobile cellular subscriptions market share, Maxis commands the highest share of 28%, followed by Digi (24%) and Celcom (18%). The remainder is from U Mobile and Others/MVNOs, with 17% and 13% share respectively.

Broadband Subscriptions

43.38 million ↑ 10%
(2018: 39.45 million)

DEL Subscriptions

2.2 million ↓ 13.7%
(2018: 2.55 million)

Mobile Cellular Subscriptions

44.6 million ↑ 5.2%
(2018: 42.41 million)

CONTENT SERVICES

The broadcasting landscape has evolved significantly over the years, entering a new era of digital broadcasting. The digital transformation poses challenge as well as wide opportunities that can enhance the audience reach and the very essence of quality content.

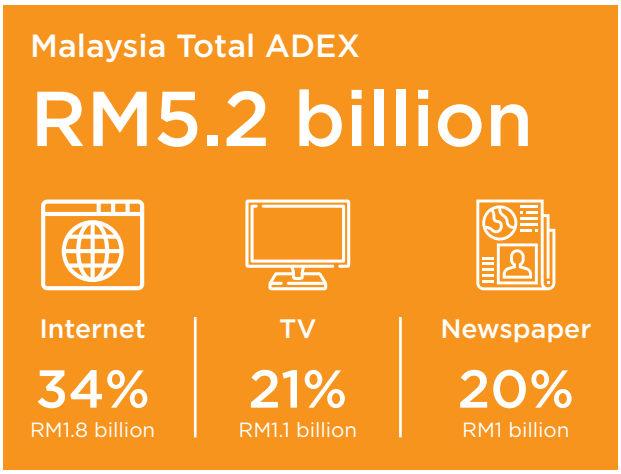
The broadcasting industry is experiencing paradigm shifts from revenue generation based on traditional models to content distribution over digital platforms. Broadcasters are leveraging on online platforms and competing with various players in the digital world. Broadcasters are exploring new business models such as offering subscription video on demand (SVOD) and advertisement-supported video on demand (AVOD).

The year 2019 marks an important milestone for Malaysian broadcasting industry, whereby it joined 60 other countries worldwide in switching over to digital TV transmission from analogue transmission. The analogue switchover was part of Malaysia's digital transformation agenda to steer the nation towards digitalisation as well as to increase spectrum efficiencies.

Meanwhile radio broadcasting is also expected to continuously face fierce competition from digital platform. Therefore, in ensuring sustainability, radio broadcasters are venturing into partnership for a stronger brand presence and to deliver greater value to listeners.

In 2019, radio reached 20.6 million listeners, reaching 97% of Peninsular Malaysia population, and central region has the most concentrated listeners at 7.7 million. It is worth mentioning that the listenership in Malaysia is higher compared to selected countries such as Austria (95%) and Finland (92%).

Magna Global forecast in 2019, shows that Malaysia recorded a total ADEX of USD1.27 billion (RM5.2 billion), a marginal decline in comparison to 2018 at USD1.28 billion (RM5.3 billion). In 2019, Internet remains the largest pie with 34% market share or a total value of USD439 million (RM1.8 billion), followed by TV (21%) and newspaper (20%) at USD266 million (RM1.1 billion) and USD252 million (RM1 billion) respectively.



DIGITAL SERVICES

The e-commerce market has been positioned as an integral part of the Malaysian and global economies. A number of segments have benefitted from the expanding e-commerce market which will continue to create more opportunities. In 2019, the Malaysian e-commerce market generated a revenue of USD3.68 billion (RM15.2 billion), with a prediction for annual market growth to reach 11.8% by 2023.

E-wallets are a growing trend in Malaysia. The proliferation of e-wallets has intensified due to the surge of mobile payments, smartphone penetration and shift in consumer behavior. Many industry experts regard Malaysia as a prime market for the growth of e-wallets, due to its high potential and favourable demographics to boost e-wallet adoption in the country.

CONSUMER PROTECTION AND QUALITY OF SERVICE

Consumer protection is designed to promote and protect consumer interest. This ensures consumer confidence and satisfaction in the usage of services and promotes widespread access to connected services. In upholding this fundamental principles under the CMA, major service providers signed a CEO Pledge that focuses on consumer centricity and complaint handling management.

In 2019, a total of 58,139 complaints were received by MCMC compared with 48,333 complaints in 2018, representing 20% increase. By sector, complaints on telecommunications constituted 75% of total, followed by complaints on new media (18%) and postal and courier as well as broadcasting, both at 3%.

More than 54% of telecommunications complaints were on network issues. Most of the issues reported are related to the quality of network service including poor or service availability of HSBB and 4G LTE, service disruption/downtime, Internet connection/speed and intermittent call connection due to network congestion.

For new media complaints received, 41% of these were related to false or fake content, followed by offensive remarks (29%), obscene or indecent content (13%), defamation (12%) and lastly sextortion/love scam (5%).

POSTAL AND COURIER SERVICES

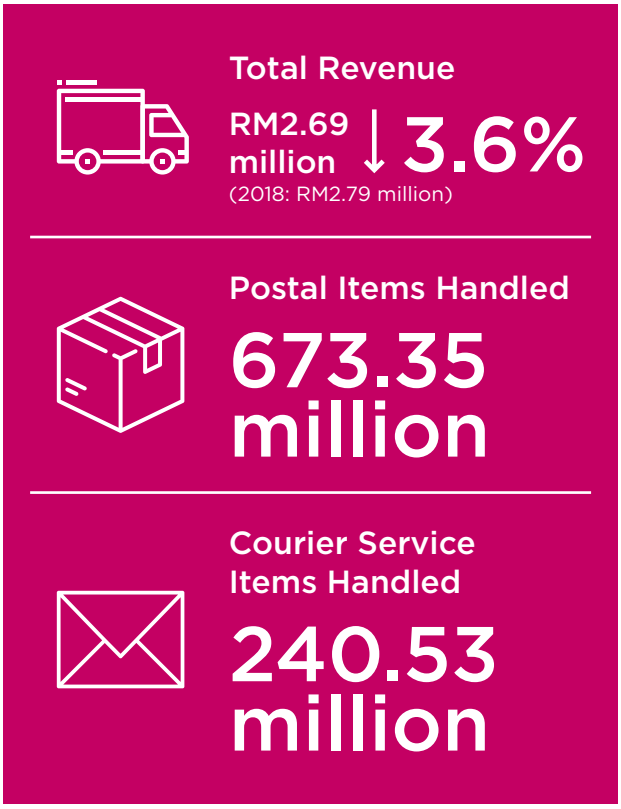
In 2019, postal and courier sector represented by Pos Malaysia Bhd, GD Express Carrier Bhd and Nationwide Express Holdings Bhd, recorded total revenue of RM2.69 billion, a decline of 3.6% compared with RM2.79 billion in 2018.

Pos Malaysia handled an impressive amount of 673.35 million postal items as at end 2019. This consists of letter post, registered mail, ordinary parcel, express item, post free and advertising item.

In terms of national courier traffic, the courier service providers handled a total of 240.53 million courier items, an increase of 13.8% from 211.3 million for the same period in 2018.

By types of courier items, in 2019, total volume of document delivered for domestic services rose by 4.7% to 90.82 million from 86.78 million in 2018. In contrast, international services declined to 2.16 million from 2.65 million. Meanwhile, the number of parcels has increased by 36.2% to 123.1 million (2018: 90.38 million), whereby domestic parcels comprise 93% and international 7%.

There are 116 courier services licensees as at end 2019. By licence type, there are 41 Class A, 47 Class B and 28 Class C.

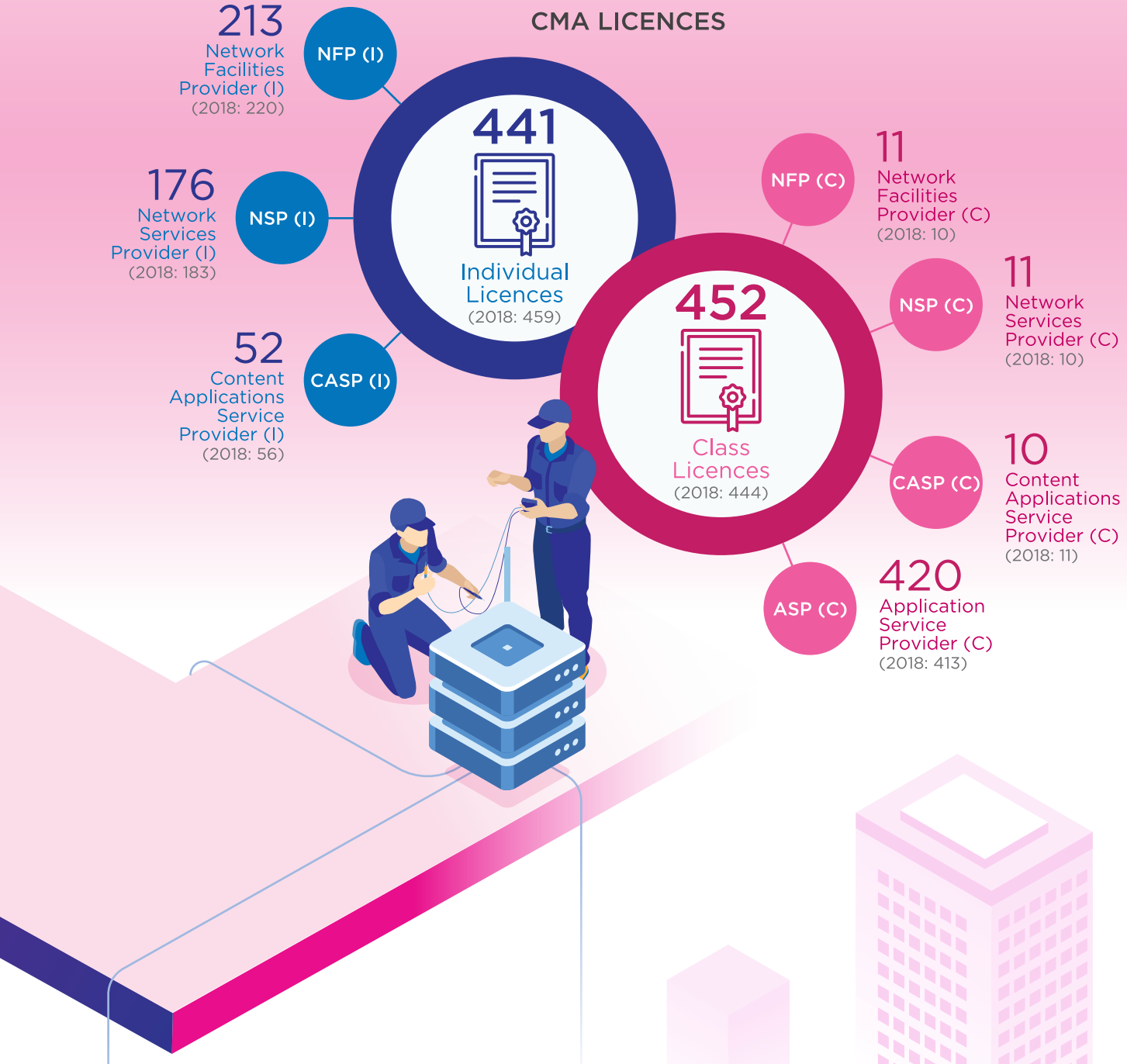


CHAPTER 1: LICENSING

The converged licensing framework under the Communications and Multimedia Act 1998 (CMA) encompasses a technology-neutral and service neutral licensing regime to better regulate the industry. This framework provides greater transparency for growth and development for the benefit of both businesses and consumers.

This chapter reports on the number and growth of licensees, including new licensees and renewed licensees under Individual and Class licences as well as the shareholding composition by types of Individual licences. It also reports on the monitoring of licensees for roll out compliance within 12 months from the date of issuance.

KEY HIGHLIGHTS 2019



OVERVIEW

THE CONVERGED LICENSING FRAMEWORK UNDER CMA ENABLES INDUSTRY DEVELOPMENT DRIVEN BY SOCIO-ECONOMIC IMPACT AND PUBLIC INTEREST IMPERATIVES, AS OPPOSED TO TECHNOLOGICAL PREFERENCES

The competition that emerges between technologies due to technology-neutral approach has been facilitating innovation in services offered, price reduction, improvements in quality and creating resilience in communications infrastructure as a whole. These have spurred the growth of licensees and new entrants into the C&M industry, which in turn provides a wide array of choices for consumers.

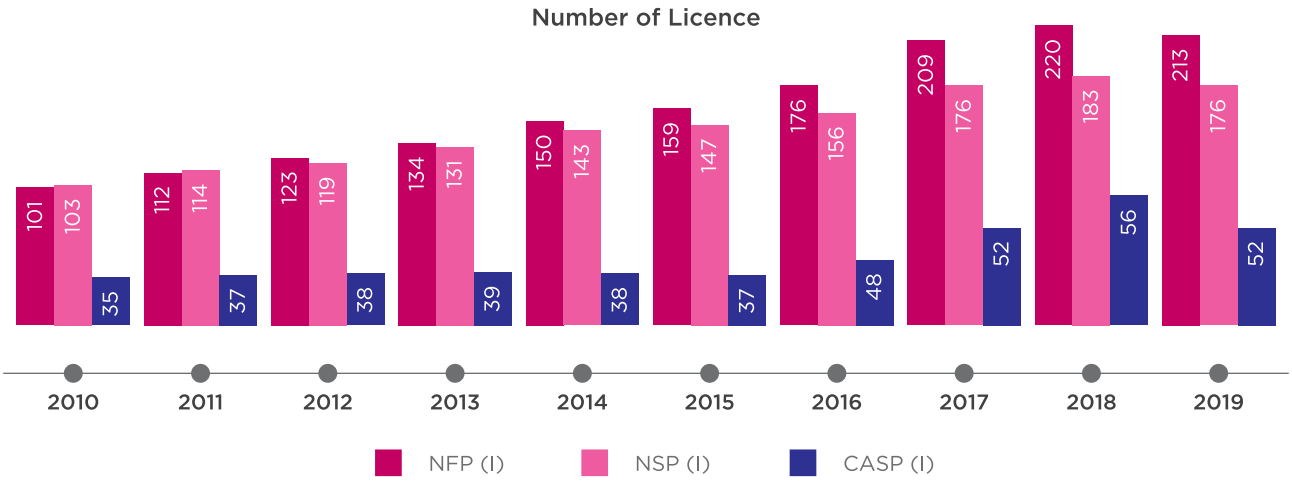
LICENSING PROFILE OVER THE YEARS

In 2019, the Individual licences comprise 213 NFP (I), 176 NSP (I) and 52 CASP (I). In total, there was a 4% decrease in the number of licences compared to year 2018 due to the surrender of 13 Individual licences (3 NFP (I), 6 NSP (I) and 4 CASP (I) licences surrendered).

Overall, 62 Individual licences were approved and renewed by Minister of the Ministry of Communications and Multimedia Malaysia (KKMM). A total of nine new NFP (I) and 11 new NSP (I) licences were issued, whilst, 20 NFP (I), 20 NSP (I) and 2 CASP (I) licences were renewed.

441
Individual Licenses
(2018: 459)

CMA LICENCES (INDIVIDUAL) 2010 – 2019



Source: MCMC

Figure 1.1 CMA Licences (Individual) 2010 – 2019

Details of the infrastructure and services offered by new and renewed licenced service providers in 2019 are shown in Figure 1.2.

NEW AND RENEWED LICENCES

Infrastructure and Services	Company	New (N)/ Renewed (R)	NFP (I)	NSP (I)	CASP (I)
Deployment of communications infrastructure to support cellular & broadband services as well as provision of bandwidth services	KS IT Solutions Sdn Bhd	N	/	/	
	VADS Lyfe Sdn Bhd	N	/	/	
	Smartsel Sdn Bhd	N	/	/	
	Syarikat SESCO Bhd	N	/	/	
	Justclick Vision (M) Sdn Bhd	N	/	/	
	I-R&D Sdn Bhd	R	/	/	
	Malaysia Airports (Sepang) Sdn Bhd	R	/	/	
	Eminent Display Sdn Bhd	R	/	/	
	Macro Lynx Sdn Bhd	R	/	/	
	MyKris Asia Sdn Bhd	R	/	/	
	Naza Communications Sdn Bhd	R	/	/	
	Sunway Digital Wave Sdn Bhd	R	/	/	
	Numix Engineering Sdn Bhd	R	/	/	
	Maxis Broadband Sdn Bhd	R	/	/	
	Maxis Mobile Services Sdn Bhd	R	/	/	
	Maxis Mobile Sdn Bhd	R	/	/	
Deployment of communications infrastructure to support cellular & broadband services	Mulia Property Development Sdn Bhd	N	/		
	Kenanga Marketing Sdn Bhd	N	/		
	KUB Telekomunikasi Sdn Bhd	N	/		
	OSI Technology Sdn Bhd	N	/		
	Airzed Broadband Sdn Bhd	R	/		
	Allo Technology Sdn Bhd	R	/		
	GTP Network Sdn Bhd	R	/		
	Stealth Broadband Sdn Bhd	R	/		
Deployment of communications infrastructure to support broadband services as well as provision of bandwidth	Asiaspace Broadband Sdn Bhd	R	/	/	
	Ridaa Associates Sdn Bhd	R	/	/	
	Maxis International Sdn Bhd	R	/	/	
Deployment of communications infrastructure to support broadband services as well as provision of bandwidth & switching services	Segi Maju Consortium Sdn Bhd	R	/	/	
Deployment of communications infrastructure to support broadband services, satellite services, as well as provision of bandwidth & access applications services	Reach Ten Communication Sdn Bhd	R	/	/	

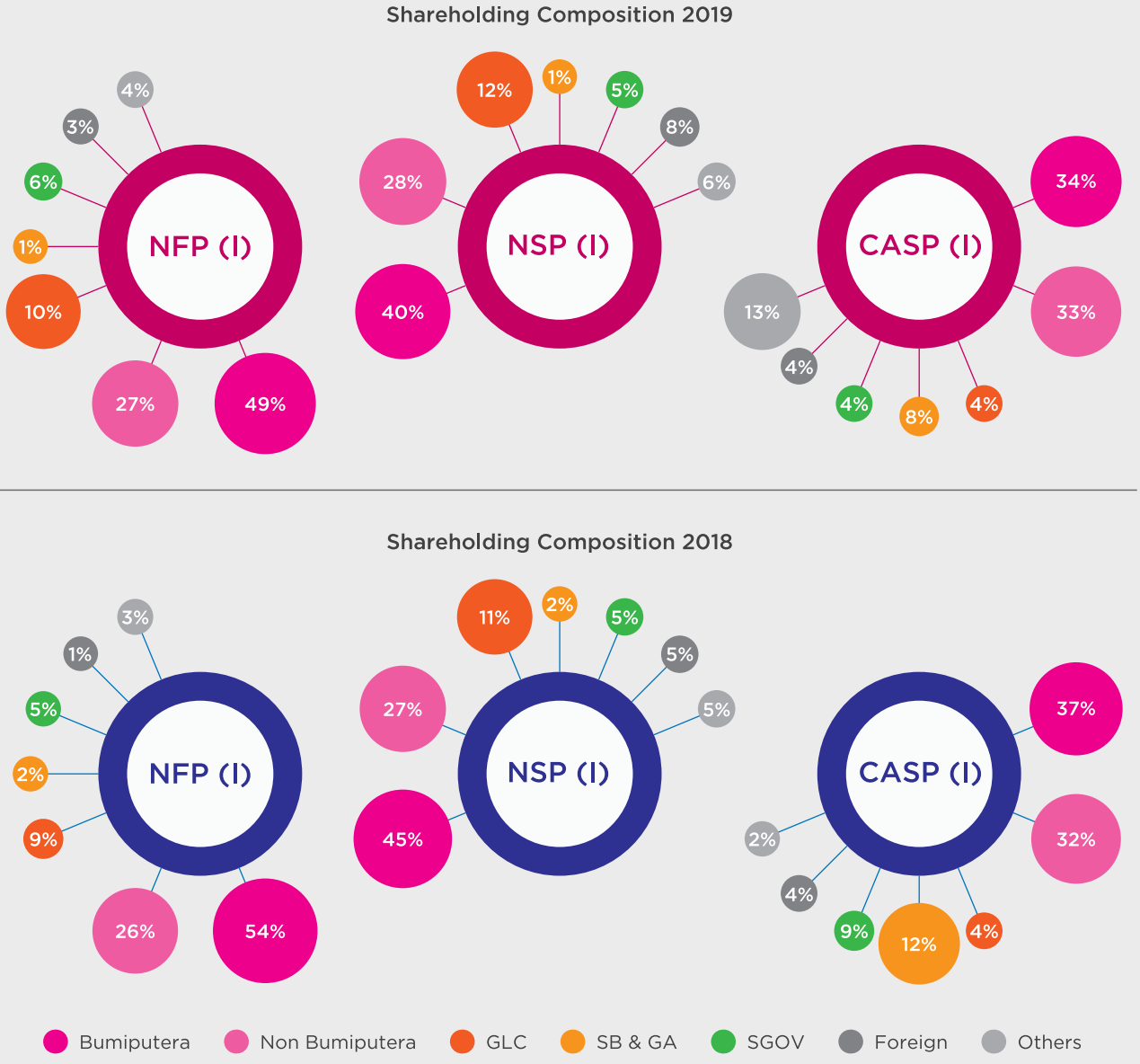
NEW AND RENEWED LICENCES					
Infrastructure and Services	**Company**	**New (N)/ Renewed (R)**	**NFP (I)**	**NSP (I)**	**CASP (I)**
Provision of bandwidth services	Ohana Communications Sdn Bhd	N		/	
	OCK Setia Engineering Sdn Bhd	N		/	
	Borneo Restu Sdn Bhd	N		/	
	IX Telecom Sdn Bhd	N		/	
	Excel Commerce Solutions Sdn Bhd	N		/	
	Tele-Flow Corporation Sdn Bhd	R		/	
	BT Systems (Malaysia) Sdn Bhd	R		/	
	Common Tower Technologies Sdn Bhd	R		/	
Provision of bandwidth and switching services	X86 Network Sdn Bhd	N		/	
Provision of cellular mobile services	Tune Talk Sdn Bhd	R		/	
Provision of terrestrial radio broadcasting	One FM Radio Sdn Bhd	R			/
	Perfect Excellence Waves Sdn Bhd	R			/
TOTAL			**29**	**31**	**2**

Source: MCMC

Figure 1.2 New and Renewed Licences

An analysis of Individual licensees' shareholding shows that 45% of total Individual licences in 2019 are Bumiputera-owned companies (2018: 48.4%). The shareholding composition by types of licence is shown below:

INDIVIDUAL LICENCE – SHAREHOLDING COMPOSITION BY TYPES OF LICENCES 2018 AND 2019



Note:
Bumiputera-owned – Company that has 51% or more Bumiputera shares
Non Bumiputera-owned – Company that has 51% or more non-Bumiputera shares
GLC – Government-linked company that has a primary commercial objective and in which the Malaysian Government has a direct controlling stake. Controlling stake refers to the Government's ability (not just percentage ownership) to appoint Board of Director members, senior management, make major decisions (e.g. contract awards, strategy, restructuring and financing, acquisitions and divestments etc.) for GLCs either directly or through GLICs (Source: www.khazanah.com.my)
SB & GA – Ownership held directly or indirectly (51% or biggest equity stake) by a Statutory Body or Government Agency
SGOV – Ownership held directly or indirectly (51% or biggest equity stake) by a State Government
Foreign-owned – Company that has 51% or more shares held by foreign entities or individuals
Others – Mixed shareholding, with no particular type of shareholder having a controlling interest in the company

Source: MCMC
Figure 1.3 Individual Licence – Shareholding Composition by Types of Licences 2018 and 2019

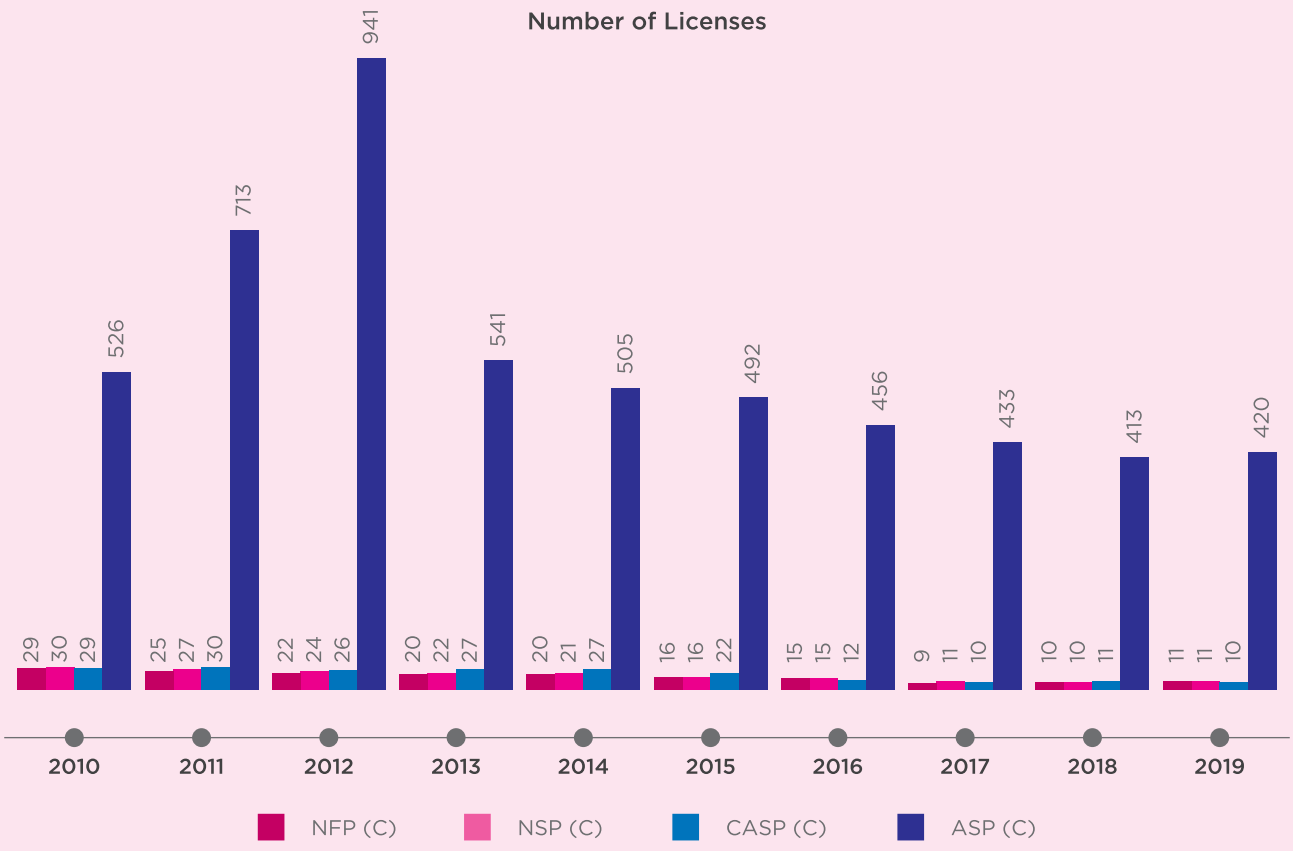
A TOTAL OF 452 CLASS LICENCES WERE REGISTERED BY MCMC FOR 2019

Class licence is a relatively light-handed form of regulation which is designed to promote industry growth and development by providing easier market access.

A total of 452 Class licences were registered by MCMC in 2019, comprising 11 NFP (C), 11 NSP (C), 10 CASP (C) and 420 ASP (C). Overall, there was an increase of eight licences compared to 444 in 2018.

452
Class Licences
(2018: 444)

CMA LICENCES (CLASS) 2010 – 2019



Source: MCMC
Figure 1.4 CMA Licences (Class) 2010 – 2019

ROLL OUT STATUS IN 2019

Licences granted are monitored for compliance with roll out conditions, that is, special licence condition Part B 1.2. Under this special licence condition, the compliance requirements include:

a) The licensee to commence the provision of facilities or services within 12 months from the date of licence issued;
b) However, the Minister may grant an extension of time to the licensee upon appeal and genuine progress being made towards the provision of facilities or services.

As at end 2018, a total of 23 new network service and network facilities providers were issued with Individual licences (Figure 1.5). This is a significant reduction compared to 44 individual licences issued in 2017.

NEW LICENSEES/SERVICE PROVIDERS				
	Company	**NFP (I)**	**NSP (I)**	**CASP (I)**
1	Euro Masjaya Resources Sdn Bhd	/	/	
2	TP Works Engineering Sdn Bhd	/	/	
3	ITMax System Sdn Bhd		/	
4	Kibaran Pelangi Sdn Bhd	/	/	
5	Shorefield Communications Sdn Bhd	/	/	
6	Meba Holdings Sdn Bhd	/		
7	Mutiara Smart Sdn Bhd	/	/	
8	Online Dynamics (M) Sdn Bhd			/
9	NST Data Consultant Sdn Bhd	/		
10	Ephrata Services Sdn Bhd			/
11	Network Facilities Sdn Bhd	/		
12	ABT Networks Sdn Bhd	/	/	
13	Orient Telecoms Sdn Bhd	/	/	
14	Globalcomm Solutions Sdn Bhd	/		
15	High End Net Sdn Bhd	/	/	
16	Kryton Global Networks (M) Sdn Bhd		/	
17	Jenexus Holding Sdn Bhd	/	/	
18	Sabah Net Sdn Bhd (fka KKIPC Sdn Bhd)	/		
19	Upright Construction Sdn Bhd	/		
20	Redpyne Sdn Bhd		/	
21	Longvision Broadcasting Sdn Bhd			/
22	Selangor Industrial Corporation Sdn Bhd	/		
23	Valsa (Sarawak) Sdn Bhd	/	/	
	TOTAL	**17**	**13**	**3**

Source: MCMC
Figure 1.5 New Licensees/Service Providers

Out of 23 new service providers, 11 have complied with special licence condition to roll out their facilities and services within 12 months from the date of licence issued. The service providers are as follows:

FACILITIES/SERVICES DEPLOYED WITHIN 12 MONTHS OF LICENCE ISSUED

	Company	Type of Licence	Facilities/Services Deployed
1	ITMax System Sdn Bhd	NSP (I)	Bandwidth Services
2	Meba Holdings Sdn Bhd	NFP (I)	Towers/Poles
3	Mutiara Smart Sdn Bhd	NFP (I) & NSP (I)	Towers/Poles & Broadband Services
4	Network Facilities Sdn Bhd	NFP (I)	Towers/Poles
5	ABT Networks Sdn Bhd	NFP (I) & NSP (I)	Dark Fibre (Last Mile) & Bandwidth Services
6	Orient Telecoms Sdn Bhd	NFP (I) & NSP (I)	Dark Fibre (Last Mile) & Broadband Services
7	Globalcomm Solutions Sdn Bhd	NFP (I)	Dark Fibre (Last Mile)
8	Jenexus Holding Sdn Bhd	NFP (I) & NSP (I)	Towers/Poles, Radiocommunication Transmitter Link & Bandwidth Services
9	Sabah Net Sdn Bhd	NFP (I)	Towers/Poles & Radiocommunication Transmitter Link
10	Selangor Industrial Sdn Bhd	NFP (I)	Dark Fibre
11	Valsa (Sarawak) Sdn Bhd	NFP (I)	Towers/Poles

Source: MCMC

Figure 1.6 Facilities/Services Deployed within 12 Months of Licence Issued

As indicated by some network service and network facilities providers, in light of challenging economic environment, they have delayed roll out in 2018 as they have revised their commercial arrangements and business plans accordingly. As a result, nine service providers have applied for extension of time in 2019.

Five out of nine of the service providers are holders of CASP (I) licences for broadcasting services through Digital Terrestrial Television (DTT) platform. All of them have applied for second extension of time.

SERVICE PROVIDERS WHO HAVE REQUESTED FOR EXTENSION OF TIME

	Company	Type of Licence
1	Shorefield Communications Sdn Bhd	NFP (I) & NSP (I)
2	JRA Riyyalcomm Sdn Bhd	NFP (I)
3	MSA Resources Sdn Bhd	NSP (I)
4	Ansat Broadcasting Sdn Bhd	NFP (I) & NSP (I)
5	Sky Elite Broadcasting Sdn Bhd	CASP (I)
6	Enjoy TV Holding Sdn Bhd	CASP (I)
7	DNF Group Sdn Bhd	CASP (I)
8	Neo Universe Sdn Bhd	CASP (I)
9	SNR Multi Tech Sdn Bhd	CASP (I)

Source: MCMC

Figure 1.7 Service Providers Who Have Requested for Extension of Time

GUIDELINES ON MERGERS AND ACQUISITIONS AND GUIDELINES ON AUTHORISATION OF CONDUCT

In May 2019, MCMC had issued two guidelines i.e. Guidelines on Mergers and Acquisitions (M&A Guidelines) and Guidelines on Authorisation of Conduct (AoC Guidelines). Both guidelines are aimed to increase transparency and provide clarity to the industry on the approach taken by MCMC when assessing mergers and acquisitions of telecommunications companies as well as authorisation of conduct.

The M&A Guidelines set out procedures for notification of mergers, scope of mergers, assessment that will be carried and decisions of the Commission. Indicative timelines for each stage is also provided. Similarly, the AoC Guidelines set out the procedures that will be followed by MCMC, the analytical framework and indicative timelines.

While MCMC understands that mergers and acquisitions could lead to greater efficiency, there has to be a balance in maintaining the competitive dynamics in the market to ensure long-term benefits of end users are protected. As such, when assessing M&A, the assessment criteria is substantial lessening of competition. On the other hand, when assessing an AoC, the assessment criteria is national interest. The national interest objectives outlined in subsection 3(2) of the CMA will be used as a basis to decide whether a conduct should be authorised.

CHAPTER 2 : ECONOMIC PERFORMANCE OF C&M INDUSTRY

This chapter reports on the economic performance of the C&M industry, mainly on the market capitalisation including Bursa Malaysia market capitalisation by sector; telecommunications, broadcasting, postal and courier. This chapter also analyses the financial performance including industry revenue by sector, capital expenditure and ARPU. In addition, it also provides an overview and performance of the ACE Market.


100110010
%

KEY HIGHLIGHTS 2019

Market Capitalisation

RM144.01 billion ↑ **4.6%**
(2018: RM137.73 billion)

8.4%
of Bursa Malaysia market capitalisation of RM1,711.84 billion
(2018: 8.1%)

Telecommunications Sector
RM134.01 billion ↑ **5.4%**
(2018: RM127.19 billion)

Broadcasting Sector
RM7.29 billion ↓ **5%**
(2018: RM7.67 billion)

Postal and Courier Sector
RM2.71 billion ↓ **5.6%**
(2018: RM2.87 billion)

Revenue

RM43.37 billion ↓ **3.7%**
(2018: RM45.02 billion)

Telecommunications Sector
RM34.8 billion ↓ **2.8%**
(2018: RM35.8 billion)

Broadcasting Sector
RM5.88 billion ↓ **8.6%**
(2018: RM6.43 billion)

Postal and Courier Sector
RM2.69 billion ↓ **3.6%**
(2018: RM2.79 billion)

Capital Expenditure

RM4.61 billion ↓ **11.5%**
(2018: RM5.21 billion)

13%
capex to revenue ratio, below the global average of 17%
(2018: Malaysia 15%, Global 17%)

65% **from mobile service providers**
RM2.98 billion ↑ **6.8%**
(2018: RM2.79 billion)
13% **capex to revenue ratio**
(2018: 12%)

35% **from fixed service providers**
RM1.63 billion ↓ **32.6%**
(2018: RM2.42 billion)
13% **capex to revenue ratio**
(2018: 19%)

OVERVIEW

DOMESTIC GROWTH SOFTENED IN 2019, WITH MIXED PERFORMANCES ACROSS COMMUNICATIONS AND MULTIMEDIA (C&M) INDUSTRY

The C&M industry market capitalisation remained resilient despite the external headwinds and global economic uncertainties and continued to play a vital role in contributing to the domestic economy. Sector-wide cost rationalisation continues to be at the forefront of the C&M industry players' initiatives against the persistent and increasing stiff competitiveness in the market.

C&M INDUSTRY MARKET PERFORMANCE

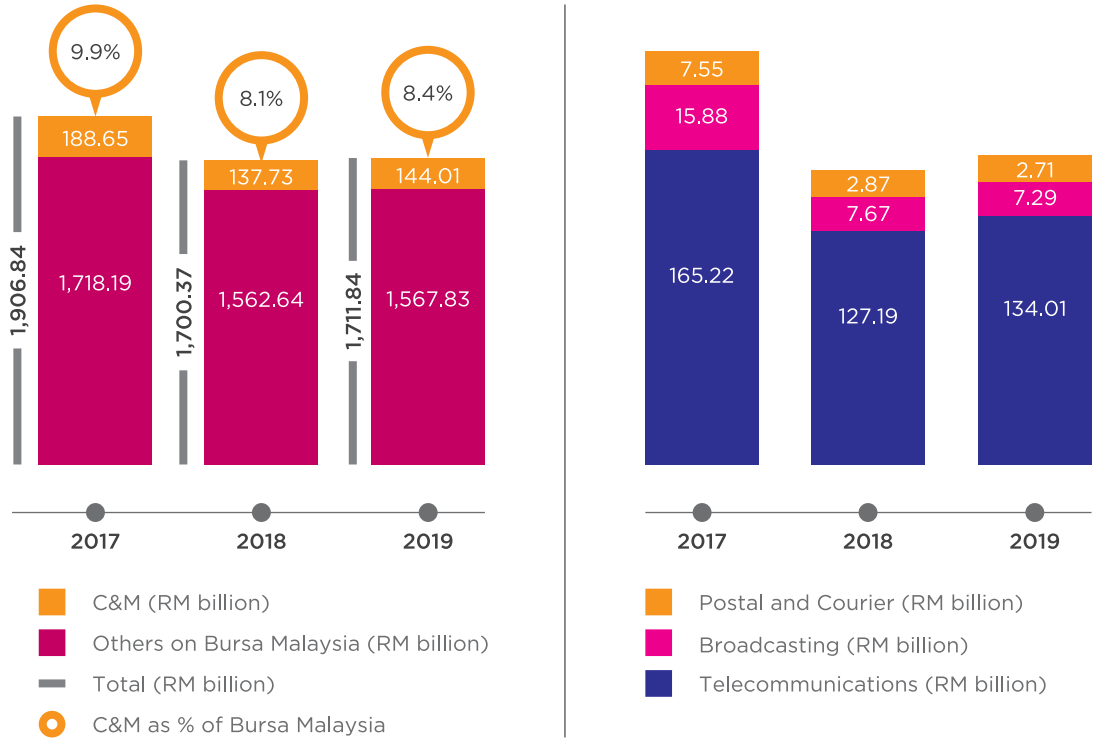
The C&M industry represents 8.4% or RM144.01 billion of Bursa Malaysia total market capitalisation of RM1,711.84 billion as at end 2019 (2018: 8.1% or RM137.73 billion). The C&M industry market capitalisation has increased by 4.6%, spurred by telecommunications sector. This is due to telecommunication companies' share prices gaining momentum, driven by corporate announcements such as 5G initiatives, new product launch, collaborations and financial results.

C&M Industry Market Capitalisation

RM144.01 billion ↑ 4.6%

(2018: RM137.73 billion)

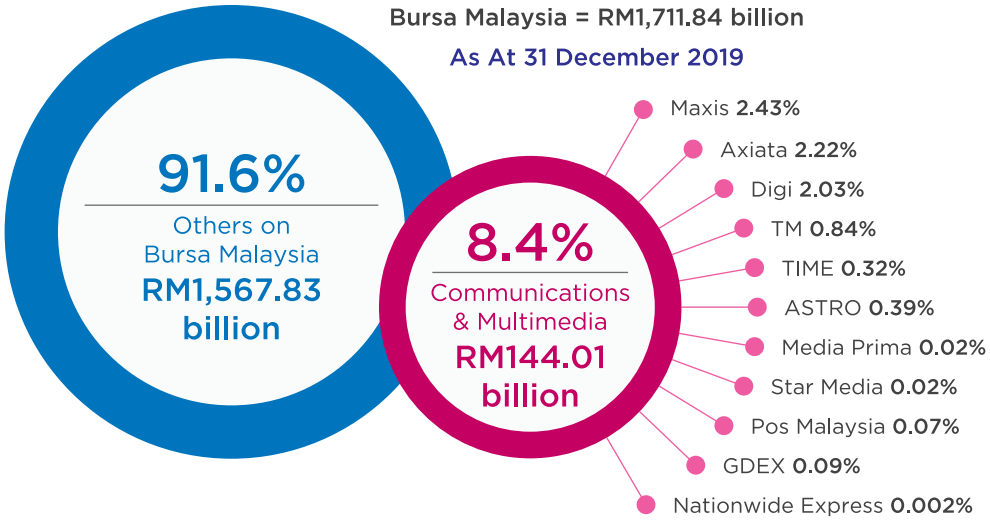
C&M INDUSTRY MARKET CAPITALISATION BY SECTOR 2017 – 2019



Source: Bloomberg, MCMC

Figure 2.1 C&M Industry Market Capitalisation by Sector 2017 – 2019

C&M COMPANIES' CONTRIBUTION TO BURSA MALAYSIA 2019



Source: Bloomberg, MCMC

Figure 2.2 C&M Companies Contribution to Bursa Malaysia 2019

C&M COMPANIES MARKET CAPITALISATION 2017 – 2019

Company	Market Capitalisation (RM billion)			Change (%)	
	2019	2018	2017	2019-2018	2018-2017
Maxis	41.61	41.82	46.94	-0.5%	-10.9%
Axiata	37.94	35.65	49.67	6.4%	-28.2%
Digi	34.68	34.99	39.65	-0.9%	-11.8%
TM	14.38	10.00	23.67	43.8%	-57.8%
TIME	5.40	4.73	5.29	14.2%	-10.6%
Telecommunications	134.01	127.19	165.22	5.4%	-23.0%
ASTRO	6.62	6.78	13.82	-2.4%	-50.9%
Media Prima	0.31	0.38	0.84	-18.4%	-54.8%
Star Media	0.36	0.51	1.22	-29.4%	-58.2%
Broadcasting	7.29	7.67	15.88	-5.0%	-51.7%
Pos Malaysia	1.16	1.35	4.11	-14.1%	-67.2%
GDEX	1.52	1.48	3.37	2.7%	-56.1%
Nationwide Express	0.03	0.04	0.07	-25.0%	-42.9%
Postal and Courier	2.71	2.87	7.55	-5.6%	-62.0%
TOTAL C&M	**144.01**	**137.73**	**188.65**	**4.6%**	**-27.0%**

Note: Axiata Group Bhd (Axiata), Maxis Bhd (Maxis), Digi.Com Bhd (Digi), Telekom Malaysia Bhd (TM), TIME dotCom Bhd (TIME), Astro Malaysia Holdings Bhd (ASTRO), Media Prima Bhd (Media Prima), Star Media Group Bhd (Star Media), Pos Malaysia Bhd (Pos Malaysia), GD Express Carrier Bhd (GDEX) and Nationwide Express Holdings Bhd (Nationwide Express)

Source: Bloomberg, MCMC

Figure 2.3 C&M Companies Market Capitalisation 2017 – 2019

The market capitalisation for the telecommunications sector has improved by 5.4% to RM134.01 billion in 2019 (2018: RM127.19 billion):

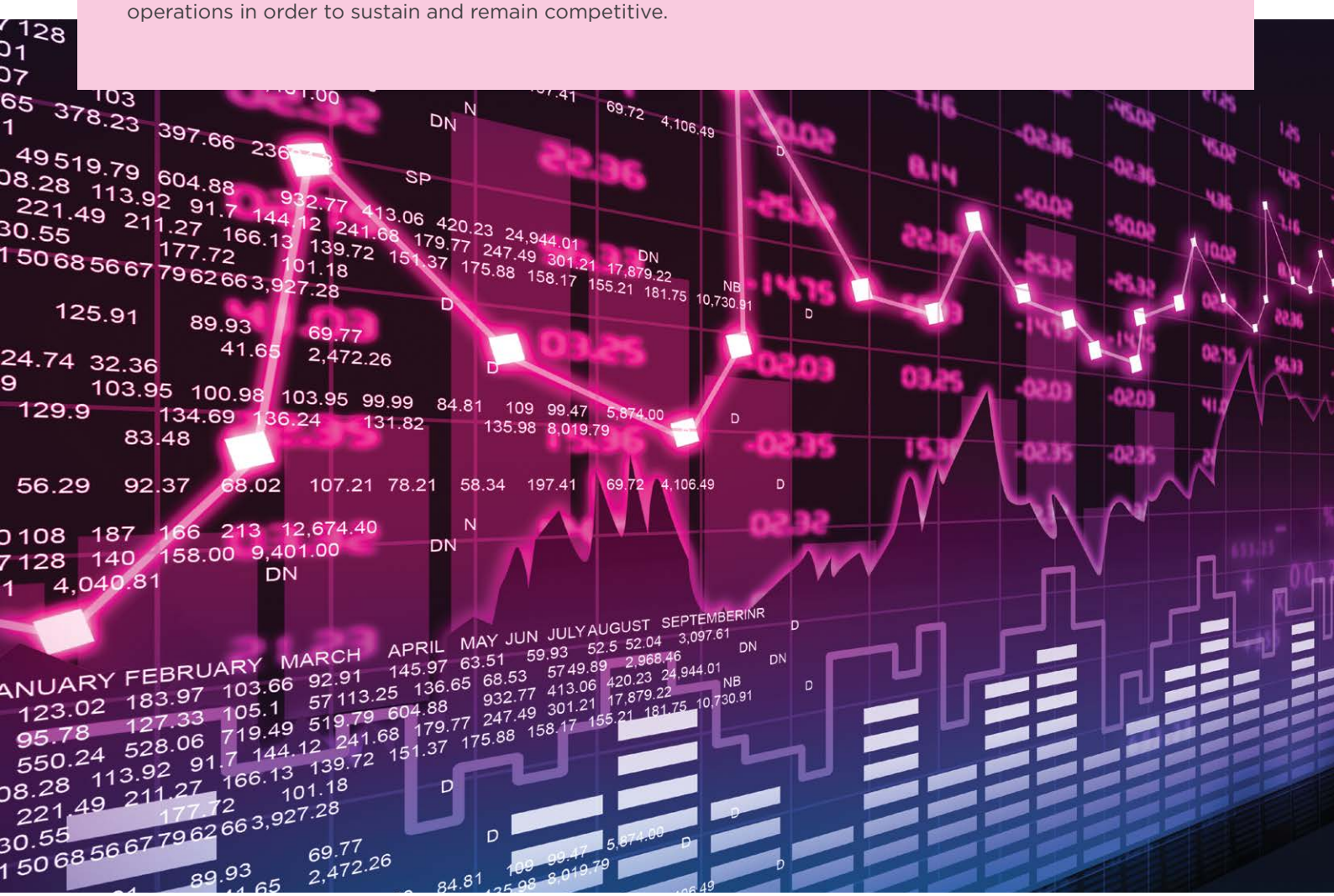
The top performer was TM, registering the sharpest growth compared to its peers, with market capitalisation improving by 43.8% to RM14.38 billion in 2019 (2018: RM10 billion). TM performance was driven by improved profitability as a result of ongoing cost optimisation initiatives

TIME market capitalisation gained 14.2% to RM5.4 billion in 2019 (2018: RM4.73 billion), due to its sustained growth momentum, subsequently achieving a robust financial profile

Axiata market capitalisation grew 6.4% to RM37.94 billion in 2019 (2018: RM35.65 billion), spurred by investors sentiment due to the group's efforts to maintain profitability. Additionally, their regional exposures with a focus on emerging countries contributes to long-term growth potential

In contrast, the broadcasting sector posted a decline in market capitalisation by 5% to RM7.29 billion in 2019 (2018: RM7.67 billion). The decline is mainly due to the competitive market in the digital era. The rise in digital and streaming media resulted in the rapid shift of consumer preference for OTT platform.

Similarly, postal and courier sector market capitalisation also posted a decline of 5.6% to RM2.71 billion in 2019 (2018: RM2.87 billion). Service providers are facing challenges in a very competitive market despite the rapidly growing e-commerce parcel market. They are embracing digital solutions to their business and operations in order to sustain and remain competitive.



MAXIS AND AXIATA REMAIN ON TOP 10 MARKET CAPITALISATION

As shown in Figure 2.4, while the financial and utilities sectors continue to lead the market capitalisation ranking, the telecommunications sector is led by Maxis and Axiata. In 2019, Maxis maintained its position at 7th place as in 2018, while Axiata has moved two notch up to 8th place.

TOP 10 MARKET CAPITALISATION 2018 – 2019

2019	Ranking	2018
MAYBANK RM97.13 billion	1	MAYBANK RM104.83 billion
PUBLIC BANK RM75.47 billion	2	PUBLIC BANK RM96.12 billion
TNB RM75.41 billion	3	TNB RM77.34 billion
PETRONAS CHEMICALS RM58.80 billion	4	PETRONAS CHEMICALS RM74.32 billion
CIMB RM51.10 billion	5	CIMB RM54.61 billion
IHH HEALTHCARE RM47.99 billion	6	IHH HEALTHCARE RM47.27 billion
MAXIS RM41.61 billion	7	MAXIS RM41.82 billion
AXIATA RM37.94 billion	8	HONG LEONG BANK RM41.73 billion
SIME DARBY PLANTATION RM37.52 billion	9	PETRONAS GAS RM37.99 billion
HONG LEONG BANK RM37.50 billion	10	AXIATA RM35.65 billion

**As at 31 December*

Note:

1. *Top 10 largest stocks were from the largest 30 companies on FTSE Bursa Malaysia KLCI Index by market capitalisation*
2. *Malayan Banking Bhd (Maybank), Public Bank Bhd (Public Bank), Tenaga Nasional Bhd (TNB), Petronas Chemicals Group Bhd (Petronas Chemicals), CIMB Group Holdings Bhd (CIMB), IHH Healthcare Bhd (IHH Healthcare), Maxis Bhd (Maxis), Axiata Group Bhd (Axiata), Sime Darby Plantation Bhd (Sime Darby Plantation), Hong Leong Bank Bhd (Hong Leong Bank)*

Source: Bloomberg, MCMC

Figure 2.4 Top 10 Market Capitalisation 2018 – 2019

C&M INDUSTRY FINANCIAL PERFORMANCE

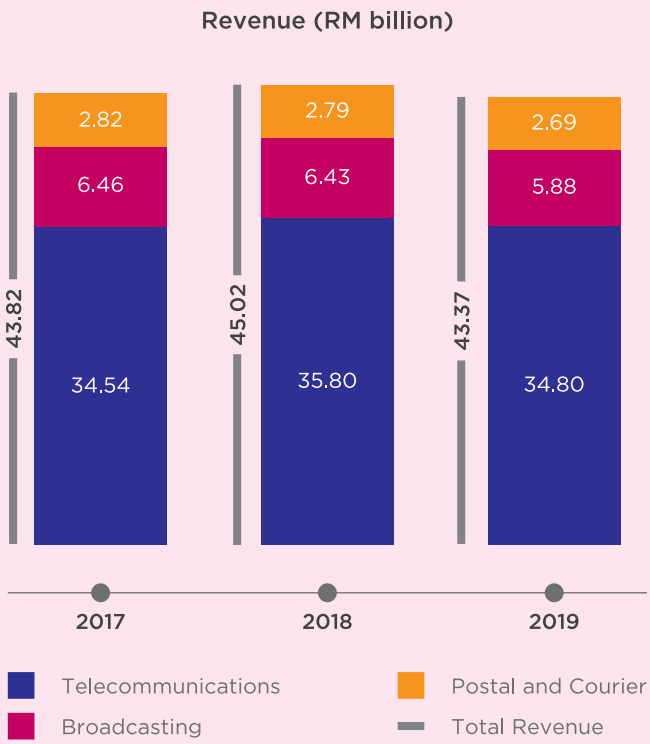
C&M Industry Revenue

RM43.37 billion ↓3.7%

(2018: RM45.02 billion)

The domestic C&M industry aggregate revenue was at RM43.37 billion in 2019. This is a decline of 3.7% from RM45.02 billion in 2018.

DOMESTIC C&M INDUSTRY REVENUE 2017 – 2019



Note: Revenue from major public listed companies only

Source: Industry, MCMC

Figure 2.5 Domestic C&M Industry Revenue 2017 – 2019

By sector, telecommunications sector recorded RM34.8 billion revenue in 2019. This is a decline of 2.8% (2018: RM35.8 billion), due to intense competition coupled with OTT services eroding traditional revenues.

On the broadcasting front, the sector revenue decreased by 8.6% to RM5.88 billion in 2019 (2018: RM6.43 billion). The decline was due to lower contribution from advertising revenue and Pay TV subscription revenue, mainly caused by consumers shifting to digital media and OTT services.

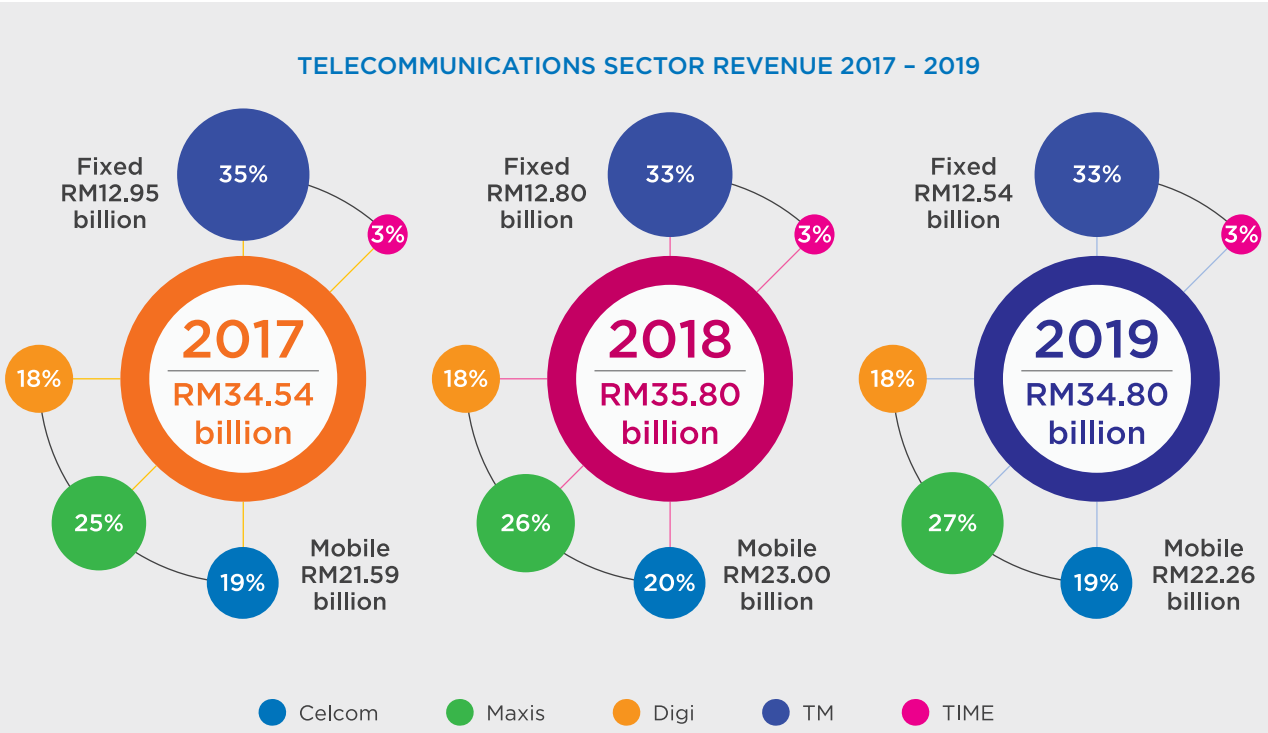
Meanwhile, postal and courier sector revenue was at RM2.69 billion in 2019, declined by 3.6% compared with RM2.79 billion in 2018. The sector revenue was lower as mail business continues to decline and intense competition in the courier segment.

TELECOMMUNICATIONS SECTOR

In 2019, telecommunications sector revenue recorded RM34.8 billion, with mobile service providers contributed a huge chunk equivalent to 64% of the total telecommunications revenue. The remaining 36% was generated by fixed service providers.

Mobile service providers (Celcom, Maxis and Digi) collectively recorded a decline of 3.2% in revenue to RM22.26 billion in 2019 (2018: RM23 billion). This is due to the decrease in legacy voice and SMS revenue. Traditional services revenue (voice and SMS) declined more than 60% for the past 10 years from RM16 billion in 2008 to RM5 billion in 2019[1].

As for fixed service providers (TM and TIME), their revenue declined 2% to RM12.54 billion in 2019 (2018: RM12.8 billion). This was due to lower revenue contribution from TM, on the back of declining voice services revenue and subscriber base.



Source: Industry, MCMC

Figure 2.6 Telecommunications Sector Revenue 2017 – 2019

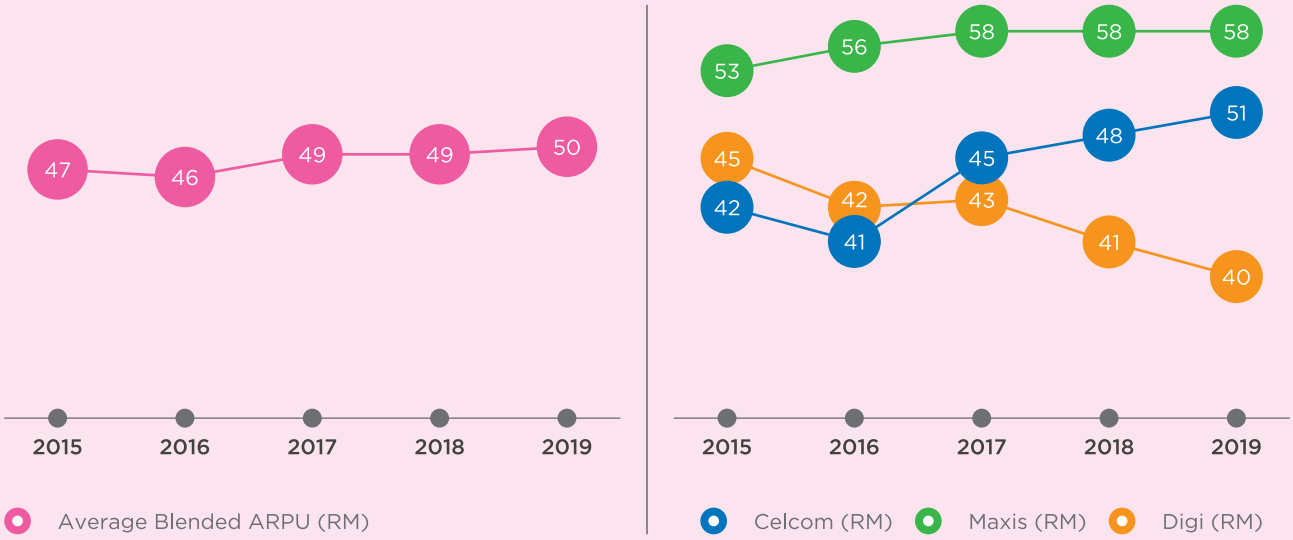
1 Data extracted from Analysys Mason DataHub on 30 June 2020.

AVERAGE REVENUE PER USER (ARPU)

Blended ARPU for three mobile service providers averaged RM50 per month in 2019, which is a slight increase compared with 2018.

ARPU is resilient despite ongoing price competition between service providers. Service providers strive to grow ARPU and service revenue through price innovation that stimulates data usage and monetises data demand, pushing prepaid-to-postpaid migration or upgrading to premium plan and adding innovative services on top of connectivity (such as OTT, games, e-wallet etc).

AVERAGE BLENDED MOBILE ARPU 2015 – 2019

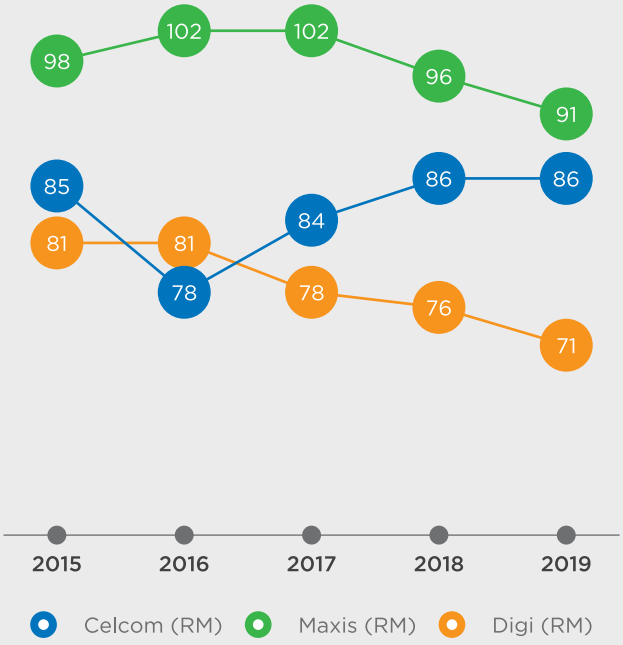


Source: Industry, MCMC
Figure 2.7 Average Blended Mobile ARPU 2015 – 2019

Looking specifically at the ARPU for the three main service providers for 2019, Maxis continue to lead with blended monthly ARPU of RM58, followed by Celcom at RM51. Higher ARPU for Maxis and Celcom was contributed by their focus on premium subscribers. As for Digi, its blended ARPU level was the lowest at RM40 per month in the market, largely due to its strong prepaid base and focus strategy on affordable packages.

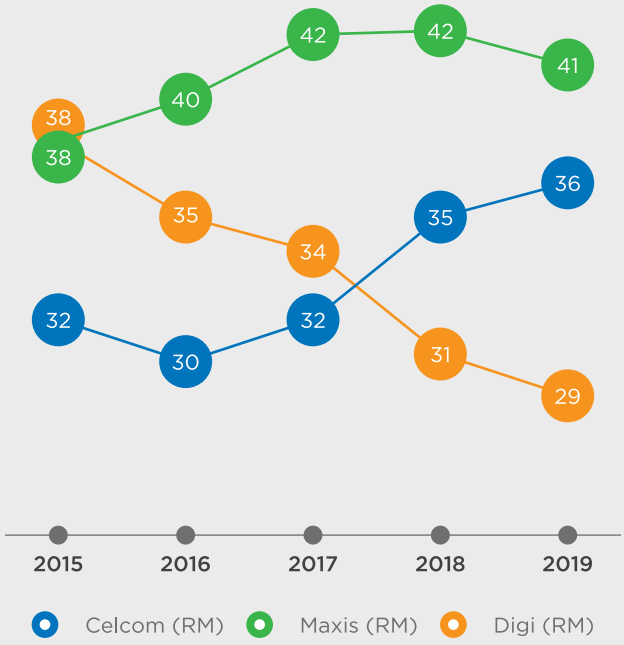
Based on the above findings, mobile service providers clearly strategised their ARPU differently such as utilising services that are of higher value and maintaining a strong level of customer focus.

POSTPAID ARPU 2015 – 2019



Source: Industry, MCMC
Figure 2.8 Postpaid ARPU 2015 – 2019

PREPAID ARPU 2015 – 2019

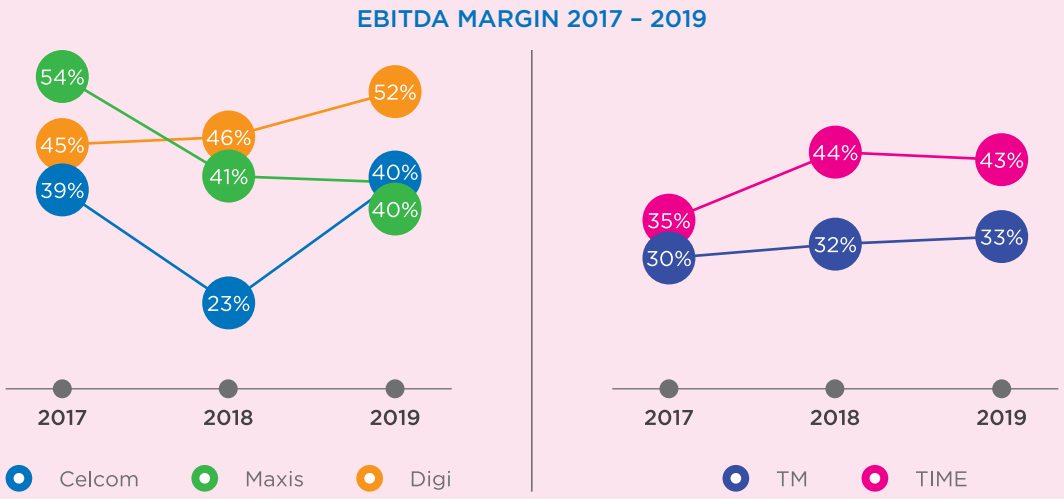


Source: Industry, MCMC
Figure 2.9 Prepaid ARPU 2015 – 2019

PROFITABILITY: EBIT AND EBITDA MARGINS

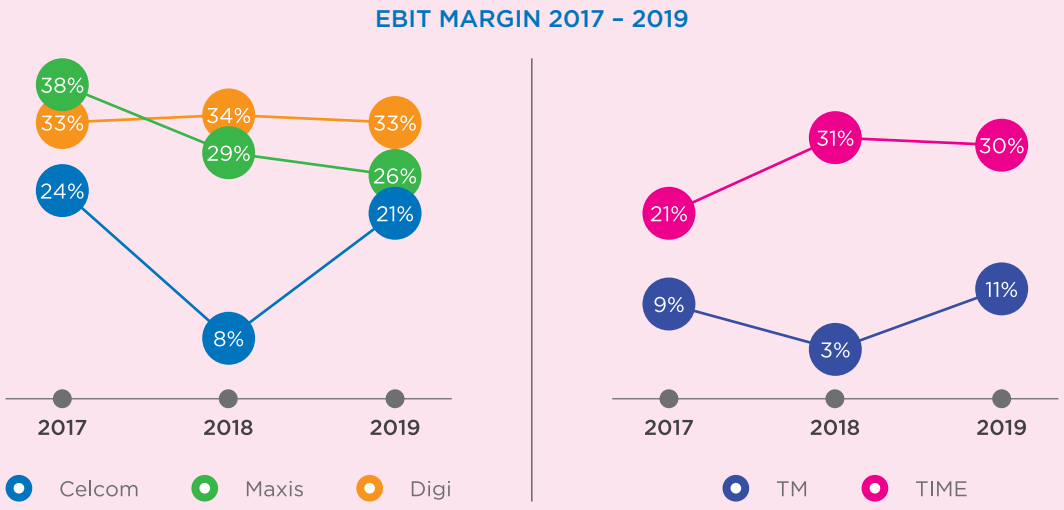
In 2019, the telecommunications sector EBITDA[2] margin averaged 42% (2018: 37%) and EBIT[3] margin averaged 24% (2018: 21%). Margins have improved during this period due to cost optimisation initiatives resulting in reduction of operating costs.

Among the mobile service providers, Digi recorded EBITDA margin as high as 52% followed by Celcom and Maxis 41% and 40% respectively. As for fixed service providers, TIME has the highest EBITDA margin at 43% as compared with TM, which was at 33% in 2019. TIME has been charting revenue growth over the past three years and managed to retain lean operating cost structure, thus its EBITDA margin remained steady.



Source: Industry, MCMC
Figure 2.10 EBITDA Margin 2017 – 2019

In terms of EBIT, TM EBIT margin stood at 11% in 2019 (2018: 3%). In 2018, TM reported lower EBIT Margin due to impairment loss on network assets of almost RM1 billion. Such positive result in 2019 was driven by TM's ongoing cost optimisation and management initiatives implemented. The initiatives include focusing on simplification and digitalisation of TM's businesses and internal processes to lower cost of network infrastructure.



Source: Industry, MCMC
Figure 2.11 EBIT Margin 2017 – 2019

2 EBITDA refers to Earnings Before Interest, Tax, Depreciation and Amortisation.
3 EBIT refers to Earnings Before Interest and Tax, also known as operating profit.

CAPITAL EXPENDITURE (CAPEX)

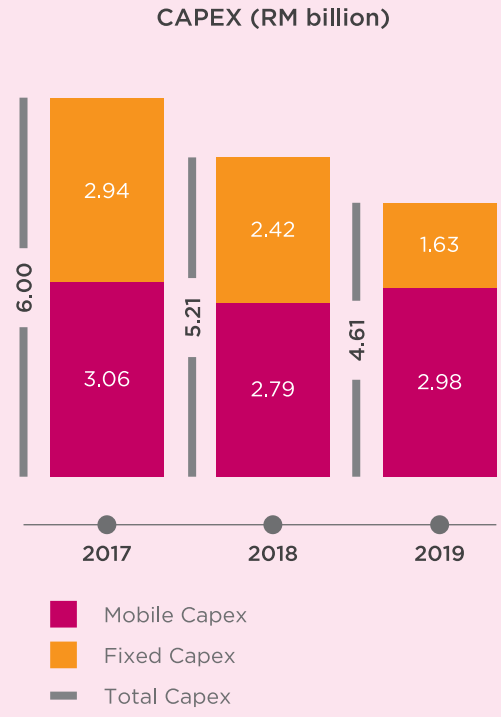
In 2019, total telecommunications capex was RM4.61 billion. About 70%-80% of the capex was spent on network to improve capacity to support rising data demands. Meanwhile, capex has declined 11.5% in 2019, due to service providers:

Rationalising and reprioritising spending

Squeezing and optimising the existing network assets

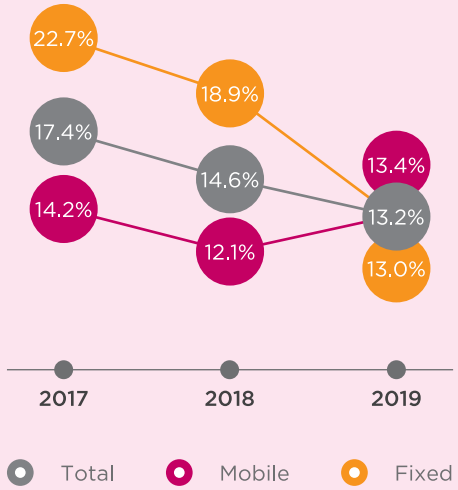
Preserving capital for full-scale 5G roll out

CAPEX 2017 – 2019



Source: Industry, MCMC
Figure 2.12 Capex 2017 – 2019

CAPEX TO REVENUE RATIO (CAPITAL INTENSITY)



Source: Industry, MCMC
Figure 2.13 Capex to Revenue Ratio (Capital Intensity)

From the total capex, 65% (RM2.98 billion) was from mobile service providers (Celcom, Maxis and Digi). The remaining 35% (RM1.63 billion) was from fixed service providers (TM and TIME). Capex was mainly for upgrading mobile network and fibre to improve network quality and capacity to provide a better customer experience.

In terms of capex to revenue ratio (capital intensity), telecommunications sector spending was 13.2% of revenue for 2019 (2018: 15%), which was below the global average of 17%[4].

As shown in Figure 2.14, Philippines telecommunications companies have invested in network infrastructure at a level significantly higher than the global average in terms of capex to revenue ratio - spent 36% of their revenue on capex in 2019, which is the highest among the 11 countries.

Indonesia and Australia were the second highest countries with capex to revenue ratio at 29%. These countries ratio were high as they strengthened their 4G LTE networks in response to fast-growing data consumption and the rising importance of network quality, as well as to pave way for 5G.

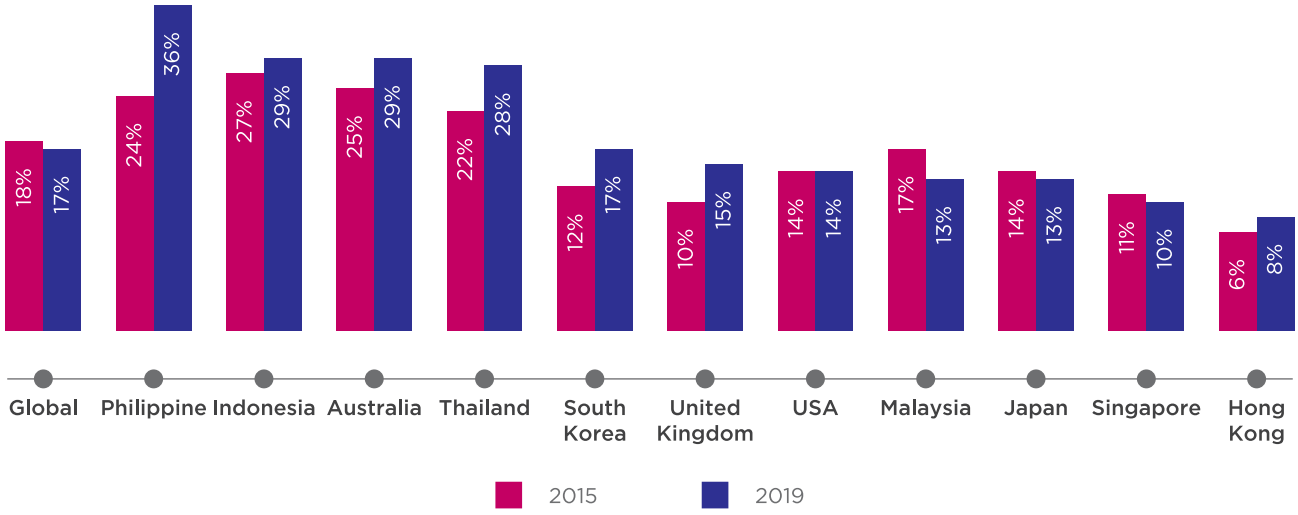
Telecommunications Capex

RM4.61 billion ↓ 11.5%

(2018: RM5.21 billion)

Other countries such as Thailand allocated 28% of their revenue respectively into capex over the same period, while South Korea's was at 17%. United Kingdom, USA, Malaysia, Japan, Hong Kong and Singapore were even lower, with a capex level of less than 15%, below the global average.

CAPEX TO REVENUE RATIO (CAPITAL INTENSITY) 2015 VIS-À-VIS 2019



Source: OMDIA, Industry, MCMC

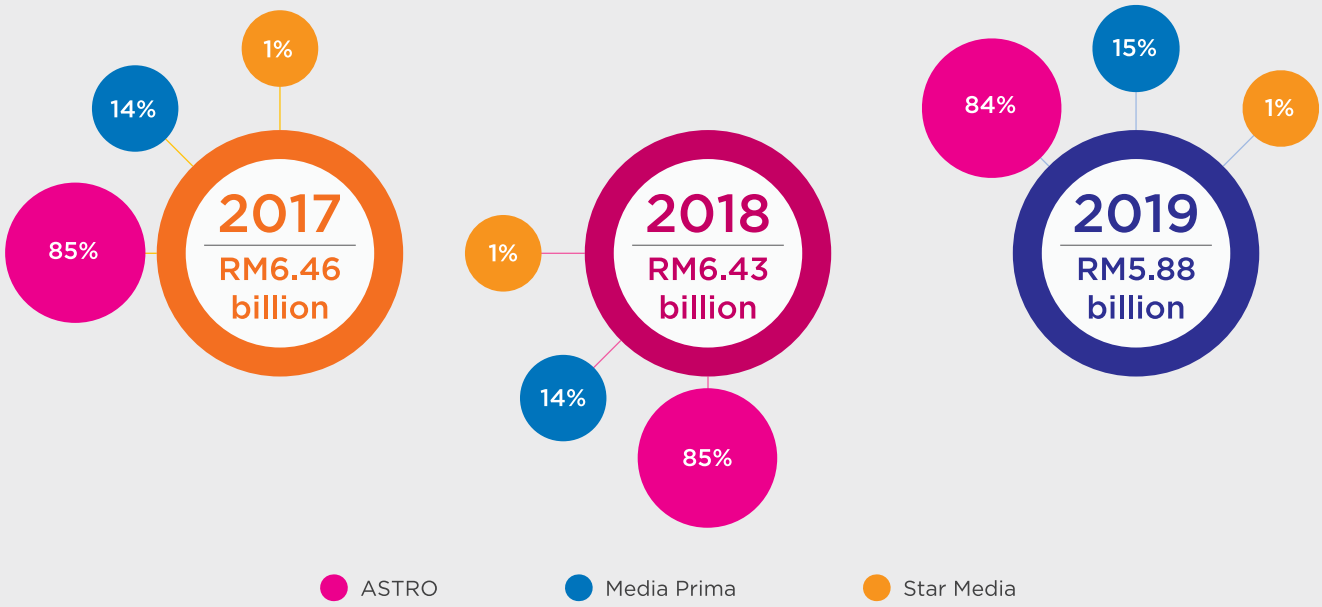
Figure 2.14 Capex to Revenue Ratio (Capital Intensity) 2015 vis-à-vis 2019

4 OMDIA, Communications Provider Revenue & Capex Tracker: 4Q19, April 2020.

BROADCASTING SECTOR

The broadcasting sector in 2019 has recorded RM5.88 billion in revenue, a decline of 8.6% compared with RM6.43 billion in 2018. Revenue continues to decline amid weaker traditional (TV and radio) advertising and Pay TV subscription revenue. In 2019, TV and radio advertising revenue declined by 8%, while Pay TV subscription revenue declined by 9%.

BROADCASTING SECTOR REVENUE 2017 – 2019



Note 1. Media Prima excludes print revenue
2. ASTRO revenue adjusted by calendar year
3. Only radio broadcasting revenue is included for Star Media

Source: Industry, MCMC
Figure 2.15 Broadcasting Sector Revenue 2017 – 2019

The broadcasting sector remains challenging due to the following:

Competition from both legal and illegal platforms (legal competition from OTT players; illegal competition from pirated contents)

Changing habits and preferences of consumers towards digital media consumption as compared to traditional media such as TV, print and radio

Broadcasters' reliance on an advertising-based business model is being challenged by changes in content distribution and consumer consumption. Advertisers are spending less on traditional media following the changing trend and allocating their budget to digital mediums, thus affecting traditional advertising revenue

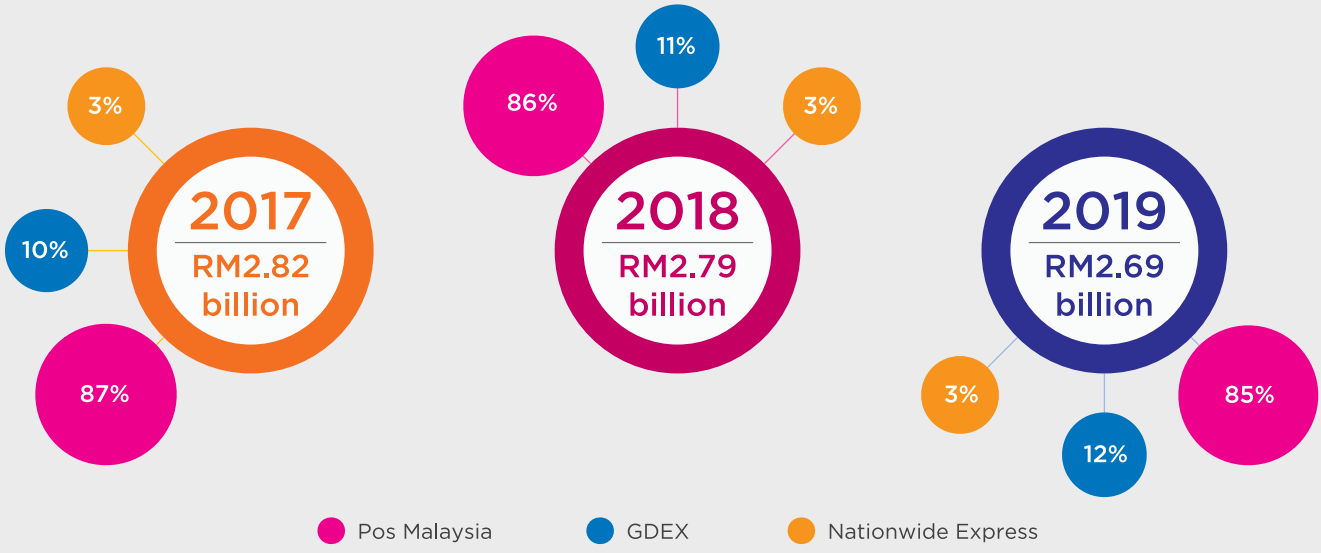
Broadcasters have diversified their businesses by moving into events and digital initiatives (such as home/online shopping and digital advertising). These efforts begin to gain traction but revenue is insufficient to cushion the huge decline in their traditional business. In addition, digital initiatives require longer maturity period and incur start-up costs and higher operating costs.

POSTAL AND COURIER SECTOR

Postal and courier sector recorded revenue of RM2.69 billion in 2019, declined by 3.6% compared with RM2.79 billion in 2018. The sector revenue was lower, mainly impacted by:

- Decline in traditional mail volume due to electronic substitution
- Price competition in courier business following the emergence of start-ups/new players

POSTAL AND COURIER SECTOR REVENUE 2017 – 2019



Note: Revenue adjusted by calendar year

Source: Industry, MCMC
Figure 2.16 Postal and Courier Sector Revenue 2017 – 2019

ACE MARKET OVERVIEW AND PERFORMANCE

The ACE Market which stands for "Access, Certainty, Efficiency" is an alternative market for small and medium sized companies that are at growth stage and have business prospects. It replaced the formerly known MESDAQ (Malaysian Exchange of Securities Dealing and Automated Quotation) market in 2009[5]. The ACE Market is very much like the Growth Enterprise Market (GEM) in Hong Kong, Catalist in Singapore and Market for Alternative Investment (MAI) in Thailand. It is viewed as the ideal market for promising and fast growing companies who are looking to raise capital through public listing exercise.

In 2019, there were 129 companies listed on ACE Market. From the total, 11 companies or 8.5% are licensees under the CMA.

LICENSEES ON ACE MARKET 2019

Company (ACE Listed)	Listing Date	Licensee (The company or subsidiary of ACE listed company)	Type of Licences*
Binasat Communications Bhd	2018	Satellite NOC Sdn Bhd	NFP (I) & NSP (I)
PUC Bhd	2015	Presto Mall Sdn Bhd	ASP (C)
ManagePay Systems Bhd	2011	MPay Mobile Sdn Bhd	ASP (C)
XOX Bhd	2011	XOX Com Sdn Bhd	NSP (I) & ASP (C)
Diversified Gateway Solution Bhd	2007	Diversified Gateway Bhd	ASP (C)
Privasia Technology Bhd	2006	Privanet Sdn Bhd Privasat Sdn Bhd	NFP (I) & NSP (I)
MNC Wireless Bhd	2005	MNC Wireless Bhd Moblife.TV Sdn Bhd	ASP (C)
mTouche Technology Bhd	2005	mTouche International Sdn Bhd	ASP (C)
N2N Connect Bhd	2005	N2N Global Solutions Sdn Bhd NGN Connection Sdn Bhd	ASP (C)
REDtone International Bhd	2004	Redtone Engineering and Network Services Sdn Bhd Redtone Telecommunications Sdn Bhd Redtone Data Centre Sdn Bhd Redtone Mytel Sdn Bhd Sea Telco Engineering Services Sdn Bhd	NFP (I) & NSP (I) & ASP (C)
M3 Technologies (Asia) Bhd	2003	M3 Technologies (Asia) Bhd	ASP (C)

**ASP – Applications Service Provider; NSP – Network Service Provider; NFP – Network Facilities Provider; I – Individual; C - Class*

Source: Bursa Malaysia ACE Market, Industry, MCMC
Figure 2.17 Licensees on ACE Market 2019

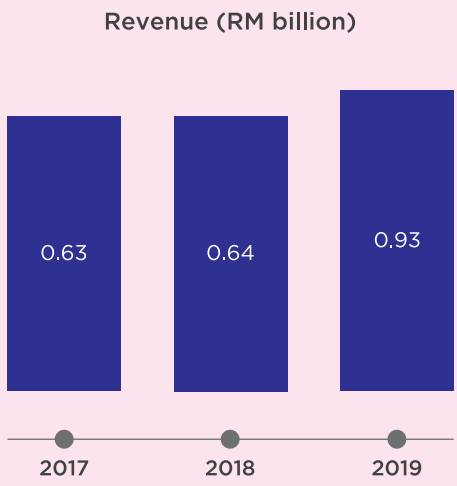
5 Bursa Malaysia, Annual Report 2018.

In 2019, market capitalisation for the 11 CMA licensees listed on ACE Market was RM1.33 billion (a growth of 14.7%) with revenue of RM0.93 billion (a growth of 45.3%). Note that, the value for market capitalisation and revenue were higher, partly due to the increased CMA licensees in ACE market to 11 companies (2018: 9).

LICENSEES ON ACE MARKET MARKET CAPITALISATION 2017 – 2019

Source: Bloomberg, MCMC
Figure 2.18 Licensees on ACE Market: Market Capitalisation 2017 – 2019

LICENSEES ON ACE MARKET REVENUE 2017 – 2019



Source: Industry, MCMC
Figure 2.19 Licensees on ACE Market: Revenue 2017 – 2019

CHAPTER 3 : SERVICES AND CONNECTIVITY

This chapter looks into connectivity services in Malaysia, namely broadband, fixed and cellular services including MVNO services. With a focus on the development of these services, it details the number of subscription market share by service providers and penetration rate. This chapter also highlights the Government initiatives on high speed broadband for digital connectivity, particularly 5G and National Fiberisation and Connectivity Plan (NFCP).

KEY HIGHLIGHTS 2019

Broadband Subscriptions

43.38 million ↑ **10%**
(2018: 39.45 million)

131.7% penetration rate per 100 inhabitants
(2018: 121.1%)

Fixed Broadband

2.95 million ↑ **10.9%**
(2018: 2.66 million)

8.9% penetration rate per 100 inhabitants
(2018: 8.2%)

Mobile Broadband

40.43 million ↑ **9.9%**
(2018: 36.79 million)

122.8% penetration rate per 100 inhabitants
(2018: 113%)

Coverage in Populated Areas

3G
95.5% Coverage in Populated Areas
(2018: 94.7%)

4G LTE
82.2% Coverage in Populated Areas
(2018: 79.7%)

DEL Subscriptions

2.2 million ↓ **13.7%**
(2018: 2.55 million)

6.7% penetration rate per 100 inhabitants
(2018: 7.8%)

Mobile Cellular Subscriptions

44.6 million ↑ **5.2%**
(2018: 42.41 million)

135.4% penetration rate per 100 inhabitants
(2018: 130.2%)

Postpaid

13.34 million ↑ **15.3%**
(2018: 11.57 million)

Prepaid

31.26 million ↑ **1.4%**
(2018: 30.84 million)

BROADBAND IN MALAYSIA

MOBILE BROADBAND IS THE PREFERRED CHOICE FOR INTERNET ACCESS

In 2019, broadband subscriptions grew by 10% to 43.38 million. Broadband penetration rate per 100 inhabitants increased from 121.1% in 2018 to 131.7%.

Fixed broadband subscriptions increased by 10.9% to 2.95 million in 2019. Meanwhile, mobile broadband subscriptions increased by 9.9% to 40.43 million in 2019.

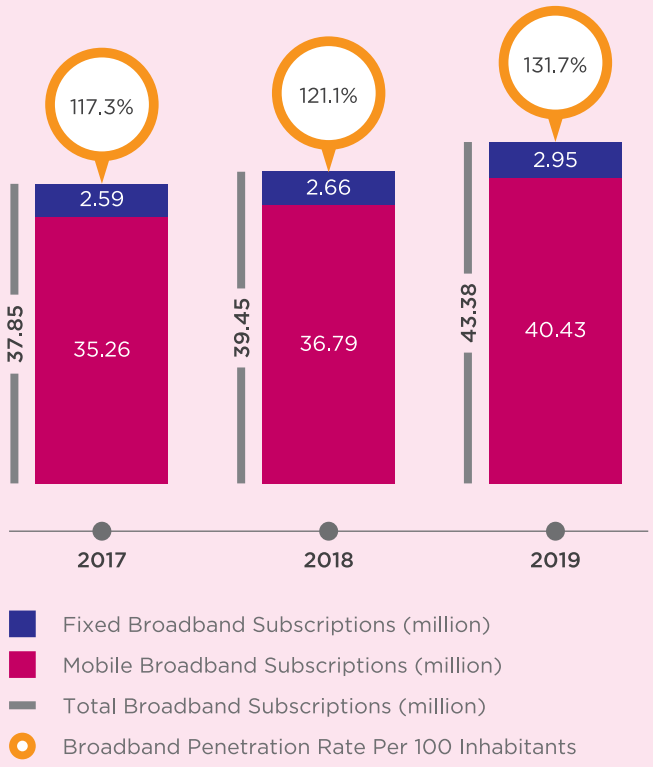
Expanded coverage, greater affordability, better quality of service, increased data and smartphone usage are among the drivers of growth in broadband subscriptions.

Broadband Subscriptions

43.38 million ↑ **10%**

(2018: 39.45 million)

BROADBAND SUBSCRIPTIONS AND PENETRATION RATE 2017 – 2019



Source: MCMC

Figure 3.1 Broadband Subscriptions and Penetration Rate 2017 – 2019

FIXED BROADBAND

Fixed broadband subscriptions were at 2.95 million, with penetration rate per 100 inhabitants at 8.9% in 2019.

Fibre broadband subscriptions increased by 17.2% to 2.04 million.

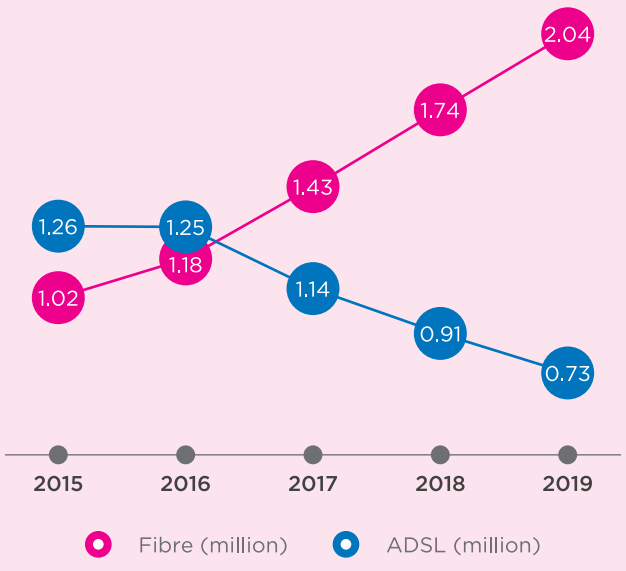
In contrast, Asymmetric Digital Subscriber Line (ADSL) connection take up declined by 19.8% to 0.73 million.

The take up of fibre broadband has accelerated due to:

Reduction of broadband prices
due to efforts taken by service providers and Government

Subscribers migrating to broadband plans with higher speed
In 2019, there are more than 1.5 million fixed broadband subscriptions with speeds of more than 100Mbit/s

ADSL AND FIBRE SUBSCRIPTIONS 2015 – 2019



Source: MCMC

Figure 3.2 ADSL and Fibre Subscriptions 2015 – 2019

MOBILE BROADBAND

In 2019, mobile broadband subscriptions increased by 9.9% to 40.43 million, with penetration rate per 100 inhabitants at 122.8%.

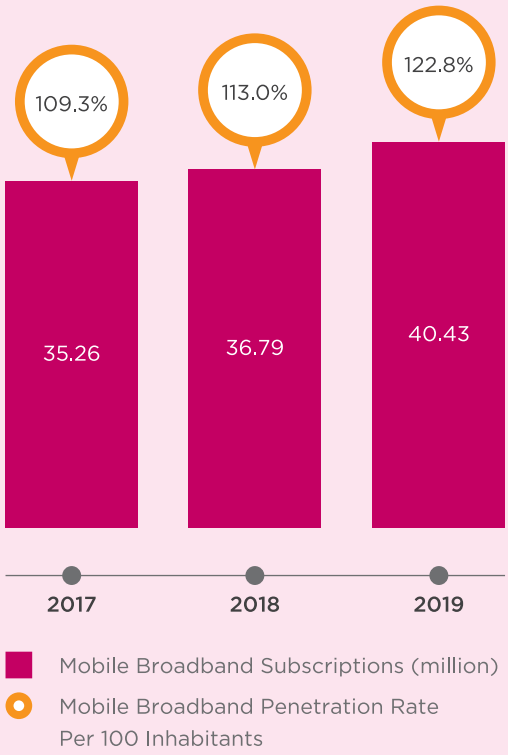
The increase in mobile broadband subscriptions and penetration rate is driven by:

- Greater device and data packages affordability.
- Continued network expansions and improvements by service providers.
- Rising consumption of data-intensive usage such as streaming of video and music on mobile devices.

95.5%
3G Coverage in Populated Areas
(2018: 94.7%)

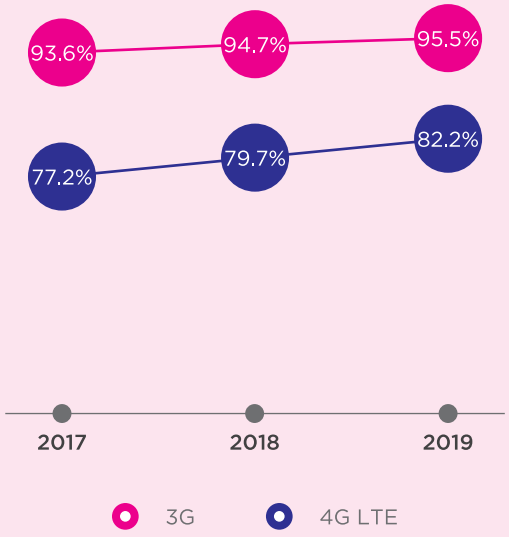
82.2%
4G LTE Coverage in Populated Areas
(2018: 79.7%)

MOBILE BROADBAND SUBSCRIPTIONS AND PENETRATION RATE 2017 – 2019



Source: MCMC
Figure 3.3 Mobile Broadband Subscriptions and Penetration Rate 2017 – 2019

3G AND 4G LTE COVERAGE IN POPULATED AREAS 2017 – 2019



Source: MCMC
Figure 3.4 3G and 4G LTE Coverage in Populated Areas 2017 – 2019

MALAYSIA OFFERS HIGHER BROADBAND SPEEDS IN 2019

The impact of the implementation of the Mandatory Standard on Access Pricing (MSAP) in June 2018 continues to have positive effects on fixed broadband services in 2019.

In April 2019, Digi entered the fixed market and began offering high speed fixed broadband packages for speeds ranging from 50Mbps to 1Gbps. The existing service providers, namely Maxis, TM and Celcom introduced new high speed fixed broadband packages with speeds ranging from 300Mbps to 1Gbps.

The demand for fixed broadband continues to grow. Between January 2019 and October 2019, the number of subscribers for high speed fixed broadband services increased by 13%, of which 76% of subscriptions are on 100Mbps and above.

In October 2019, Global Speedtest Index revealed Malaysia's average download speed increased by 27% to 78.82Mbps, as compared to 2018.

In view of the discrepancy in the prices of high speed broadband and Streamyx services, in June 2019, the Minister of Communication and Multimedia Malaysia had urged TM to come out with a solution for Streamyx subscribers who were paying higher prices for lower speeds as compared to Unifi subscribers.

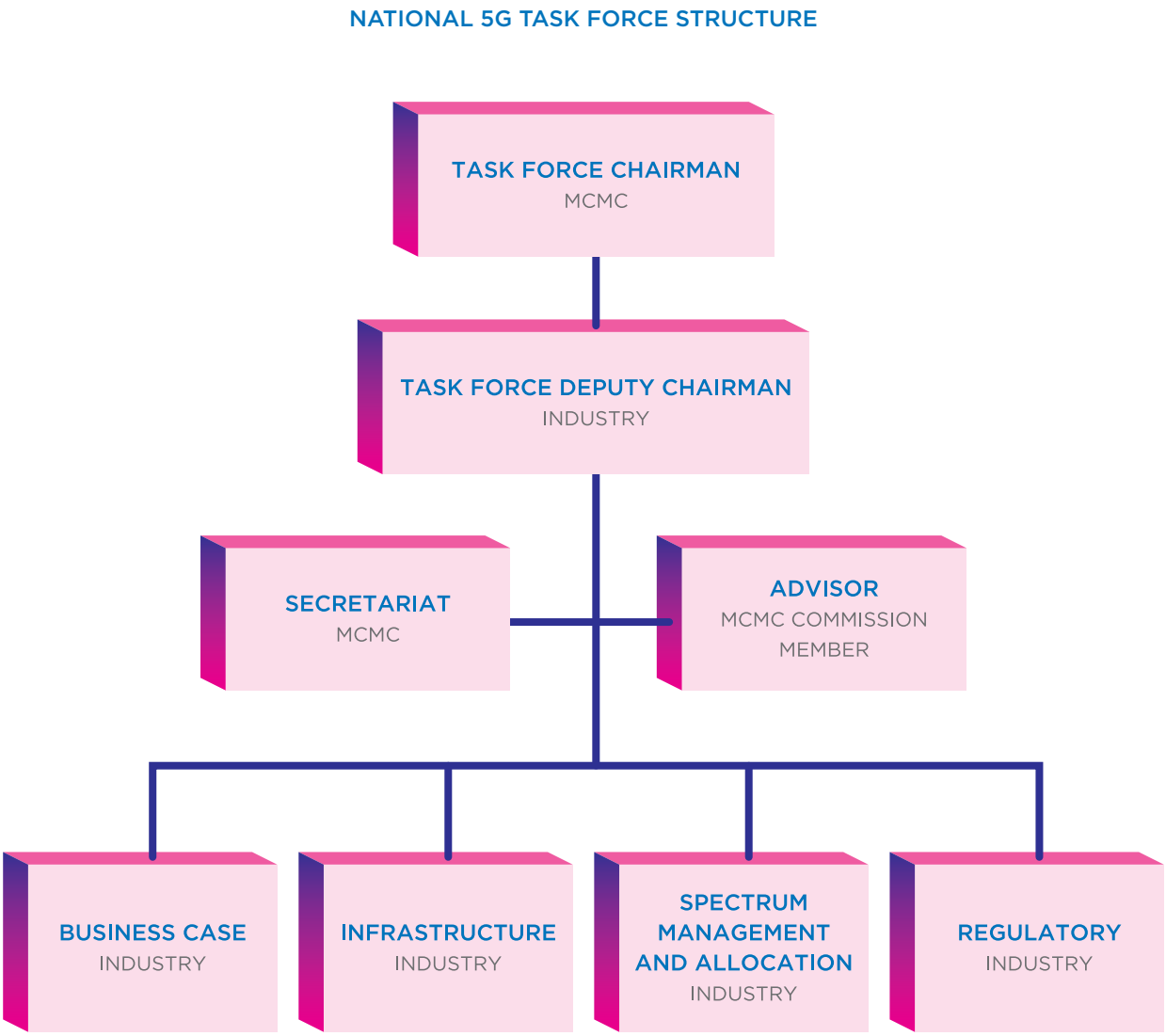
In July 2019, TM announced that the entry level for Streamxy package is now up to 8Mbps at the price of RM89 per month for residential subscribers. Effective September 2019, existing Streamyx residential subscribers are paying at RM69 per month. As a result, more than 600,000 subscribers are enjoying a price reduction from 37% to 57%.

In August 2019, TM launched their Unifi Air, a wireless broadband alternative for their Streamyx subscribers. Unifi Air ipriced at RM79 per month and delivering speeds of up to 20Mbps. From September 2019, Streamyx business subscribers also benefit from a price reduction of 7% to 13% for speed ranging from 2Mbps to 8Mbps.

THE NATIONAL 5G TASK FORCE

The National 5G Task Force (Task Force) was set up by the Malaysian Communications and Multimedia Commission (MCMC) in November 2018 to study and recommend a holistic strategy for 5G deployment in Malaysia. The Task Force comprises members from the private sector, Ministries, agencies, academia and NGOs representing the demand and supply side of the ecosystem.

The Task Force is divided into 4 working groups to look into specific areas, namely, Business Case, Infrastructure, Spectrum Management and Allocation, and Regulatory. The working group leaders and the Deputy Chairman of the Task Force were elected by the Task Force members to facilitate discussions and ensure fulfilment of their Terms of Reference. The structure and focus areas of the Task Force are as follows:



Source: MCMC
Figure 3.5 National 5G Task Force Structure

NATIONAL 5G TASK FORCE WORKING GROUP FOCUS AREAS	
Working Group	**Sub-Focus**
Business Case	• Economic areas and benefit to the nation i.e. GDP growth, creation of new jobs, etc; • User trends, requirements and demand study - industry and general public; • Financial considerations in adoption of 5G; and • Proposals to encourage 5G adoption.
Infrastructure	• Infrastructure requirements and coverage for optimum 5G deployment for different services – eg. retail, wholesale, consumer, industry, etc.; • Gap analysis on current networks to deliver 5G nationwide, including expected cost, challenges, etc.; • Infrastructure planning, approval and addressing right-of-way (ROW) issues; and • Proposed strategy to deliver 5G coverage to rural areas.
Spectrum Management and Allocation	• Current progress for spectrum allocation at ITU, APT and Malaysia; • Required bandwidth to support national targets; • Identified bands for Malaysia; and • Timeline for spectrum allocation.
Regulatory	• Accommodating future business models for network providers and relevant stakeholders; • Technical standards to be adopted; • Optimum number of mobile operators; • Constraints in the current regulatory framework related to communications, i.e. competition, access, consumer protection, security, licensing, and state governments and local council policies etc.; and • Proposed improvements to current regulatory framework.

Source: MCMC

Figure 3.6 National 5G Task Force Working Group Focus Areas

During the year, the Task Force held a total of eight monthly meetings, in addition to the weekly meetings held by each of the Working Groups to discuss and align their recommendations.

In June 2019, the Task Force held a workshop with all the Ministries as part of the 5G initiatives to identify the regulatory impediments and to propose the way forward to enable 5G deployment nationwide. The response from the ministries and agencies has been overwhelming as they were interested to learn what 5G technology is and how it can help to modernise delivery of services to the public. 170 participants from all Ministries, selected agencies and organisations participated in discussions during the workshop, which was divided along seven use cases, namely digital healthcare, smart transport, smart city, smart agriculture, education, manufacturing and retail & services.

The main takeaways from the workshop was the need for all ministries and agencies to either develop new or review existing regulations and guidelines which may be needed in order to adapt to the innovations brought by 5G technology and applications. In some instances, existing frameworks were too restrictive, and these would need to be revised or removed. Additional emphasis was also placed on the need to ensure security and privacy of data and personal information.

In August 2019, the Task Force held a Public Consultation to seek opinion from industry players, interested parties and members of the public on its preliminary recommendations for 5G deployment prior to finalising its proposals to the Government.

In its Final Report, the Task Force explained on the need for additional Spectrum and proposed solutions for Malaysia. The Final Report also touched on the implications for physical infrastructure which will arise from additional sites, new antenna technologies and additional fibre. The Task Force was of the opinion that to mitigate these challenges, to achieve rapid and cost effective 5G deployment in Malaysia, policy and regulatory interventions will be required.

The Task Force submitted its Final Report to the MCMC on 18 December 2019, and it was expected to be handed over to the YB Minister of Communications and Multimedia Malaysia at an event scheduled in January 2020.

During the year, MCMC also engaged the Malaysian Institute of Economic Research (MIER) to undertake a study on the Economic Impact Analysis on the Implementation of 5G Services in Malaysia. The study, which was completed in November 2019, and included in the Final Report[6], highlighted some key findings as follows:

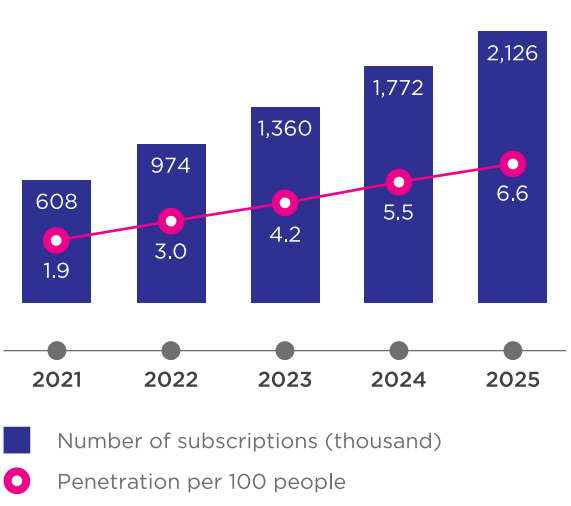
1. New Technologies Transform the Economy

- One of the characteristics of high-income economies is the high rate at which they assimilate new technologies. Investment in communications technology and infrastructure promotes economic growth and national competitiveness. Malaysia must invest significantly in the latest generation telecommunications and other technologies in order to achieve high income status.

2. Contribution to the Economy (2021 – 2025)

- Malaysia is estimated to have 2.1 million mobile 5G subscriptions by 2025, with an estimated penetration of 6.6 mobile 5G subscriptions per 100 people. 5G-related economic activities are estimated to contribute an additional RM12.7 billion to the GDP between 2021 and 2025.

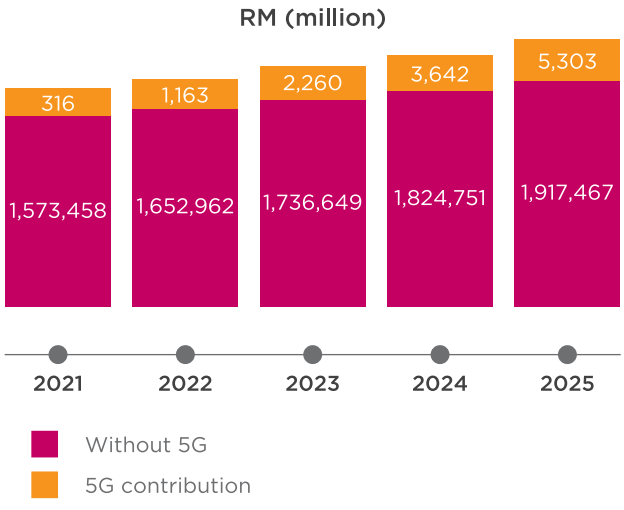
5G SUBSCRIPTION AND PENETRATION 2021 – 2025



Source: MIER[7]

Figure 3.7 5G Subscription and Penetration 2021 – 2025

CONTRIBUTION TO GDP 2021 – 2025



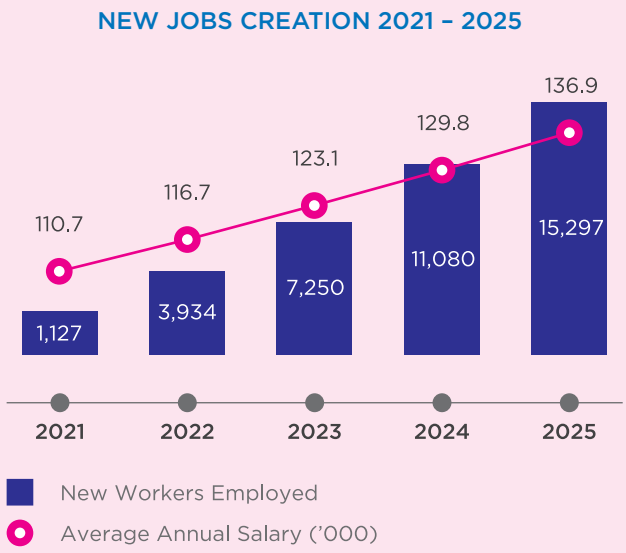
Source: MIER[8]

Figure 3.8 Contribution to GDP 2021 – 2025

6 MIER, An Economic Impact Analysis on the Implementation of 5G Services in Malaysia, 2019.
7 Ibid.
8 Ibid.

3. New Jobs Creation

- Between 2021 and 2025, almost 39,000 new jobs will be created in the economy, with almost 40% of the jobs being available in 2025.
- New jobs will more likely reduce the dependence on low-skilled foreign labour; any job losses to Malaysians should be frictional.



Source: MIER[9]

Figure 3.9 New Jobs Creation 2021 – 2025

4. Socioeconomic Benefits of 5G

- 5G deployment can bring some positive impact to quality of life. For example, improved quality of life can be provided by better healthcare, education, transportation, consumer experience, environment and smarter cities, all of which will enable Malaysians to be more productive for a longer period of time as life expectancy increases.

  The Final Report (National 5G Task Force Report) is available at the following link on the MCMC website: https://www.mcmc.gov.my/en/media/announcements/national-5g-task-force-report

9 Ibid.

5G: ALLOCATING SPECTRUM FOR THE NEXT GENERATION OF MOBILE TECHNOLOGY

The emergence of the next-generation mobile technology such as 5G enables Gigabit speeds and offers low latency with high reliability for multiple types of use cases. 5G connectivity plays an important role in the National Fiberisation and Connectivity Plan (NFCP) key targets, particularly in achieving average speeds of 30Mbps in 98% of populated areas by 2023.

In preparation for the commercial deployment of 5G, it is recognised that timely release of the appropriate spectrum for 5G needs to be prioritised. On 31 December 2019, MCMC released the Final Report on the Allocation of Spectrum Bands for the Next Generation of Mobile Broadband Service in Malaysia[10]. The final position taken in the Final Report reflects both MCMC's deliberation of the responses received from the Public Inquiry held in July to September 2019, and assessment of current developments globally in relation to 5G deployment. This is to ensure that the right foundation is established as early as possible so that Malaysia is able to leverage on both technological advancements and economic benefits that 5G can deliver.

In light of the rapid development of the global 5G ecosystem, the pioneer spectrum bands identified for initial deployment of 5G in Malaysia are:

700MHz

3.5GHz (ranging from 3.4GHz to 3.6GHz)

26GHz (ranging from 24.9GHz to 26.5GHz)

28GHz (ranging from 26.5GHz to 28.1GHz)

An innovative and forward-looking approach on the allocation of these spectrum bands is adopted towards setting a critical foundation for the 5G transition.

With the objective of achieving the goals of NFCP in the most cost-efficient manner as well as encouraging collaboration among service providers, the 700MHz and 3.5GHz bands are being considered for assignment through a tender process (beauty contest) to a consortium formed by multiple licensees, instead of individual licensees. This approach is intended to lower the capex by minimising costs and prevent the duplication of infrastructure while leveraging on and optimising current resources owned and operated by the relevant licensees.

In addition, the 26GHz band will be assigned through a tender process (beauty contest) to licensees on a nationwide basis. As for the 28GHz band, it will be assigned on a first-come-first-served basis and open to any party including non-licensees for the purpose of deploying localised and/or private networks for industrial and enterprise services and applications for, but not limited to, healthcare, ports, transportation, manufacturing, agriculture, public safety and smart city projects.

The assignment for the identified spectrum bands will be made by way of Apparatus Assignment (AA) as it is anticipated that the appropriate spectrum fee through AA is more economical and will encourage network deployment by service providers. Cost savings can be passed on to businesses and consumers to ensure better value of affordable services.

Once the assignment processes are completed, commercial deployment of 5G in Malaysia is ready to deploy.

10 MCMC, Final Report on the Allocation of Spectrum Bands for the Next Generation of Mobile Broadband Service in Malaysia, 31 December 2019.

NATIONAL FIBERISATION AND CONNECTIVITY PLAN (NFCP)

The National Fiberisation and Connectivity Plan (NFCP) is the Government's strategic effort to put in place a robust, pervasive, high quality and affordable digital connectivity for the well-being of the people and progress of the country. NFCP is also aimed to spur the nation's economic competitiveness as well as to prepare the country to embrace Industrial Revolution 4.0 through improved connectivity.

NFCP was officially launched by the then YAB Deputy Prime Minister, Dato' Seri Dr. Wan Azizah Dr. Wan Ismail at the Putrajaya International Convention Center on 19 September 2019. The seven key targets under NFCP are as follows:

NFCP KEY TARGETS	
	Entry-level fixed broadband package at 1% of GNI by 2020
	Gigabits availability in selected industrial areas by 2020 and to all State Capitals by 2023
	100% availability for premises in State Capitals and selected high impact areas, such as public transportation hubs and ports, with a minimum speed of 500Mbps by 2021
	20% availability for premises in sub-urban and rural areas with up to 500Mbps by 2022
	Fibre network passes 70% of schools, hospitals, libraries, police stations and post offices by 2022
	Average speed of 30Mbps in 98% of populated areas by 2023
	Improve mobile coverage along Pan Borneo highway upon completion

Source: MCMC
Figure 3.10 NFCP Key Targets

Based on the above targets, an estimated 4.14 million premises will have access to, or will be upgraded to high speed broadband provided through fibre networks. In addition to this, more than 6,000 base stations need to be deployed or upgraded to achieve broadband coverage in 98% of populated areas with average speeds of 30Mbps by 2023. Fibre networks will also be deployed to at least 25 industrial parks to enable Gigabits speeds.

Updated information on NFCP is also available via www.nfcp.my.

COLLABORATION WITH STATE GOVERNMENTS AND AGENCIES

In order to ensure that the NFCP can be implemented smoothly, MCMC and the industry undertook engagements with all State Governments. As a result of the engagements with Menteri Besar, Chief Ministers and the Minister of Federal Territories, most states have agreed to establish a special taskforce to oversee the coordination, planning and implementation of communications infrastructure, as well as to address communications infrastructure roll out challenges under NFCP.

DEVELOPMENT OF BROADBAND INFRASTRUCTURE FOR DIGITAL CONNECTIVITY

In 2019, the Sub-urban Broadband (SUBB) initiative was completed:

489,004 ports
installed for access of fixed broadband services

Speeds of up to
20Mbps
in suburban areas

Surpassed original target of
420,000 ports
since implementation began in 2015

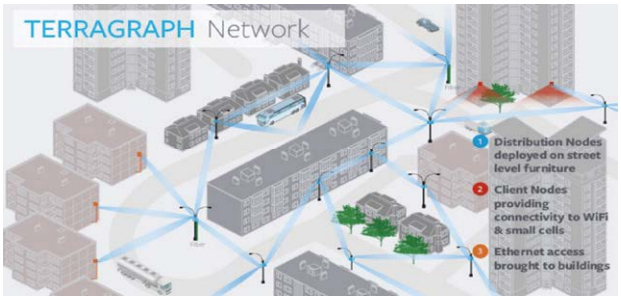
As for the High Speed Broadband (HSBB), 3,018,182 ports have been installed in State Capitals, major cities and high-impact economic areas, capable of providing high speed broadband service up to 100Mbps.

For mobile broadband service expansion, the implementation of Government initiatives funded by the Universal Service Provision Fund (USP Fund) and service providers' commercial roll out have contributed to the expansion of 4G coverage in populated areas from 79.7% in 2018 to 82.2% in 2019.

Several new technologies and models were being tested in 2019 in order to identify alternatives and cost effective solutions to provide high speed broadband services, including:

1. Terragraph market pilot project in Georgetown, Penang

- This pilot project is Malaysia's first wireless "fibre-like" broadband service in collaboration amongst YTL Communications, Penang State Government and Facebook.
- The collaborative effort is in line with the aims of the NFCP to improve broadband quality and coverage, reduce broadband price and enable Internet access for all. The public Wi-Fi and Fixed Wireless Access (FWA) were provided during the trial period.
- This technology utilises existing street furniture to enable the rapid deployment of fibre level connectivity without the need to build more towers or to open up roads to lay fibre which is both costly and environmentally impactful. Terragraph is also extremely green – a single Terragraph node consumes the same amount of electricity as an LED street lamp[11].
- Terragraph is a wireless technology developed by Facebook in 2016. Malaysia is the second country in the world to kickoff large scale Terragraph trials after Hungary.



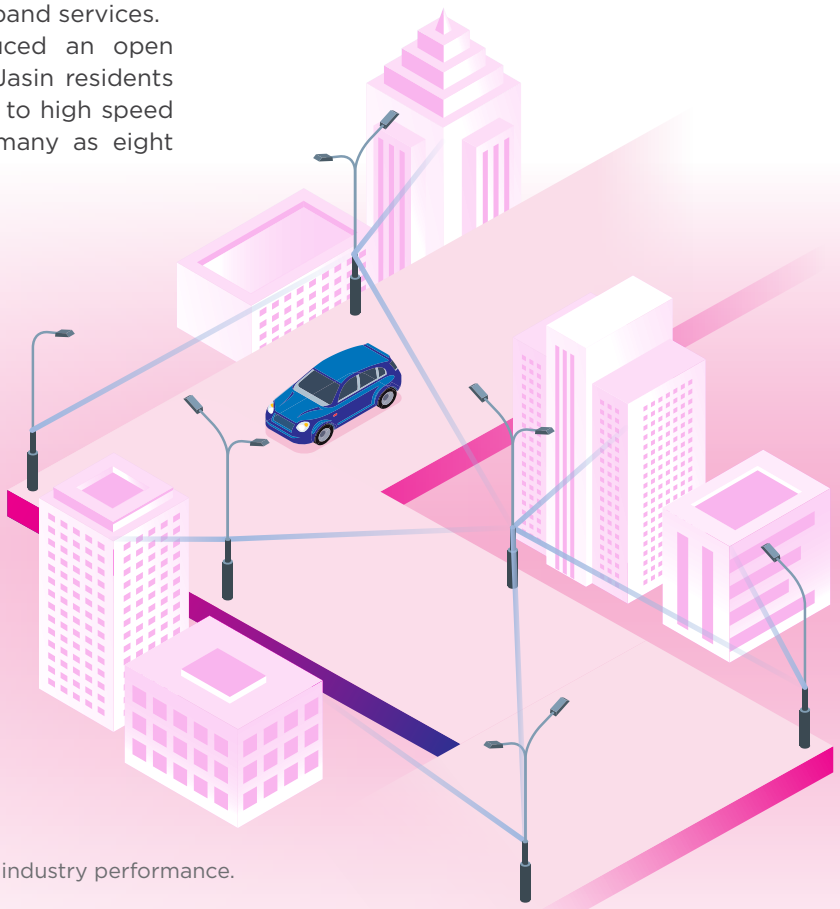
Source: Facebook Engineering[12]
Figure 3.11 Terragraph Network

11 YTL Corporation Bhd, Sustainability Report 2019, October 2019.
12 Facebook Engineering, Introducing Facebook's new terrestrial connectivity systems — Terragraph and Project ARIES, 13 April 2016.

- Georgetown, Penang was selected for the Terragraph trial due to its legacy infrastructures and a prestigious UNESCO status, which makes it difficult to deploy fibre.
- YTL Communications and Facebook Connectivity teams have deployed Terragraph on 163 lamp poles in Georgetown to build a Gigabit wireless mesh network, delivered high quality FWA services to 120 businesses and government offices; and provided free public Wi-Fi services across 50 popular landmarks and tourist hotspots in Georgetown[13].
- The Terragraph network has been commercialised since 1 January 2020. To date, 83% or 99 of 120 trial businesses/users opted to subscribe to the commercial packages[14].
- The Terragraph powered free public Wi-Fi service has provided connectivity to 47,000 unique users to date with amazing peak speeds of up to 200Mbps[15].
- Following the success of its pilot project, YTL Communications is eyeing the deployment of its 5G-ready Terragraph network in more cities in Malaysia[16].

2. NFCP Pilot Project with Tenaga Nasional Bhd (TNB)[17]

- The pilot project for NFCP in collaboration between the Government and TNB (through its subsidiary ALLO Technology Sdn Bhd) to enable high speed broadband up to 1Gbps in Jasin, Melaka.
- The project evaluated the feasibility of leveraging on TNB's electrical infrastructure such as poles and power distribution stations. It is also important to assess NFCP technical, safety and commercial viabilities to deliver wider, faster and cheaper broadband services.
- The pilot project also introduced an open access concept which enables Jasin residents in supported areas to subscribe to high speed broadband packages from as many as eight retail service providers.
- Thus, the open access concept can create healthy competition among broadband service providers and provide more options for customers to choose their preferred packages and services.
- To date, 1,131 homes were connected with high speed broadband in Jasin, Melaka. More than 160 consumers have subscribed to broadband packages offered by ALLO, ASTRO and Digi[18].



13 MCMC questionnaire to licensees on industry performance.
14 Ibid.
15 Ibid.
16 The Edge Markets, YTL Communications to expand Terragraph network, 20 September 2019.
17 MCMC, State Government Support And Cooperation Is Critical For The Expansion Of Broadband To The Rakyat, 10 January 2019.
18 MCMC questionnaire to licensees on industry performance.

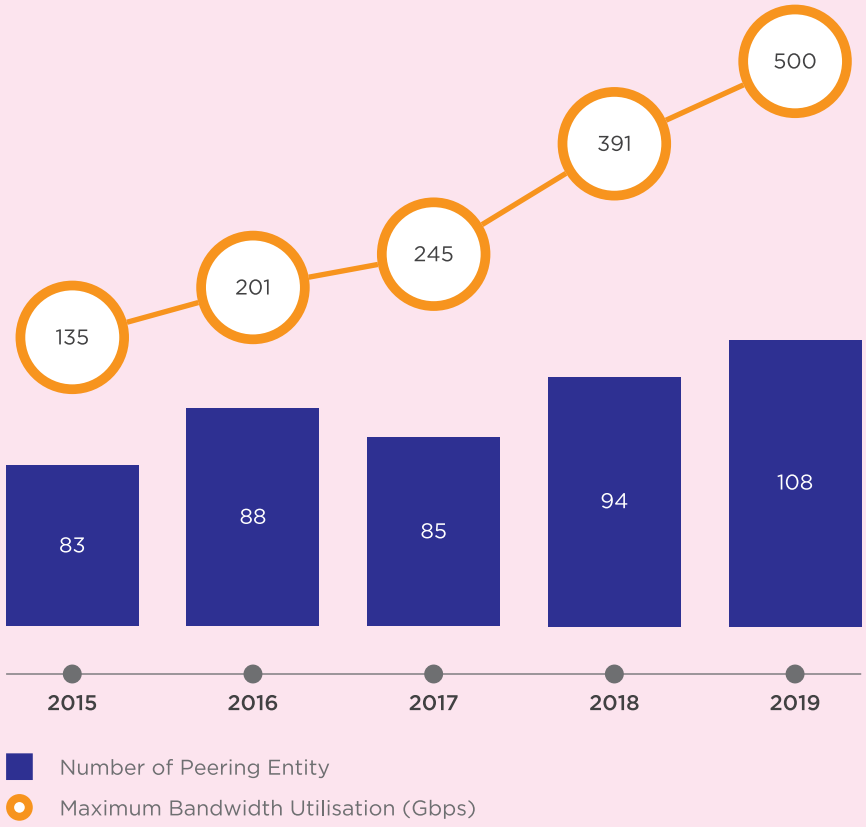
MALAYSIA INTERNET EXCHANGE (MYIX)

MyIX aims to keep domestic Internet traffic and to promote the exchange of global Internet traffic in the country. It is a non-profit and neutral Internet Exchange platform started in 2006, whereby Internet Service Providers (ISPs) and content providers connect and peer to exchange domestic Internet traffic.

Over the years, MyIX bandwidth utilisation and peering entities have increased. As at December 2019, the number of peering entities is 108 peers, compared with 94 entities as at December 2018.

In terms of exchanged domestic Internet traffic, the highest maximum bandwidth utilisation was at 500Gbps by end of 2019, a 27.9% traffic growth from 2018.

MYIX MAXIMUM BANDWIDTH UTILISATION AND PEERING TREND 2015 – 2019



Source: MyIX, MCMC

Figure 3.12 MyIX Maximum Bandwidth Utilisation and Peering Trend 2015 – 2019

Throughout 2019, MyIX has several new members including provider of telecommunications services and international companies as follows:

- Netflix
- Yahoo!
- China Mobile International (M) Sdn Bhd
- Jastel Network Co. Ltd
- NewMedia Express Pte Ltd
- Orient Telecoms Sdn Bhd
- SMARTSEL Sdn Bhd

FIXED AND MOBILE CELLULAR SERVICES

The declining trend in Direct Exchange Line (DEL) subscriptions continued in 2019, down by 13.7% to 2.2 million in 2019. DEL penetration rate per 100 inhabitants was at 6.7%. The decline of DEL subscriptions were due to:

- Mobile access becoming more predominant as consumers prefer other communications platforms such as social media and OTT messaging applications.
- Businesses switching to mobile and VoIP-based voice services.

DEL Subscriptions

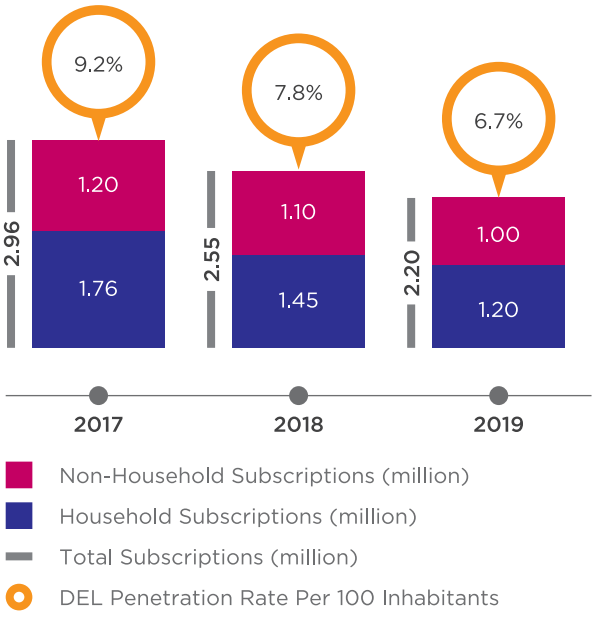
2.2 million ↓ **13.7%**

(2018: 2.55 million)

6.7% **penetration rate per 100 inhabitants**

(2018: 7.8%)

DEL SUBSCRIPTIONS AND PENETRATION RATE 2017 – 2019



Source: MCMC

Figure 3.13 DEL Subscriptions and Penetration Rate 2017 – 2019

Mobile cellular market in 2019 has a penetration rate per 100 inhabitants of 135.4%. The number of mobile cellular subscriptions reached 44.6 million, an increase of 5.2%. The growth is driven by:

- Advancement of mobile network technology.
- Increasing affordability of mobile devices and services.
- Expansion and availability of mobile networks.
- Multiple subscriptions or device ownership.

The postpaid market continues to perform well with subscriptions growing by 15.3% to 13.34 million. At the same time, the prepaid market also saw an increase of 1.4% to 31.26 million subscriptions in 2019.

Mobile Cellular Subscriptions

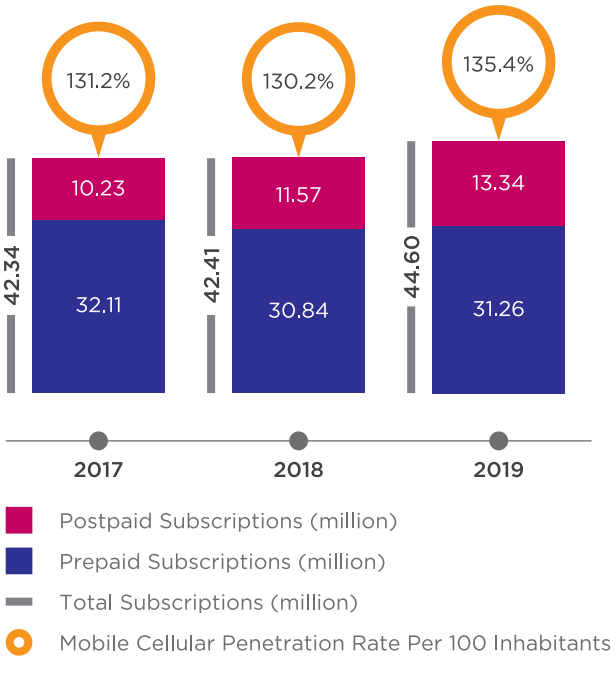
44.6 million ↑ **5.2%**

(2018: 42.41 million)

135.4% **penetration rate per 100 inhabitants**

(2018: 130.2%)

MOBILE CELLULAR SUBSCRIPTIONS AND PENETRATION RATE 2017 – 2019

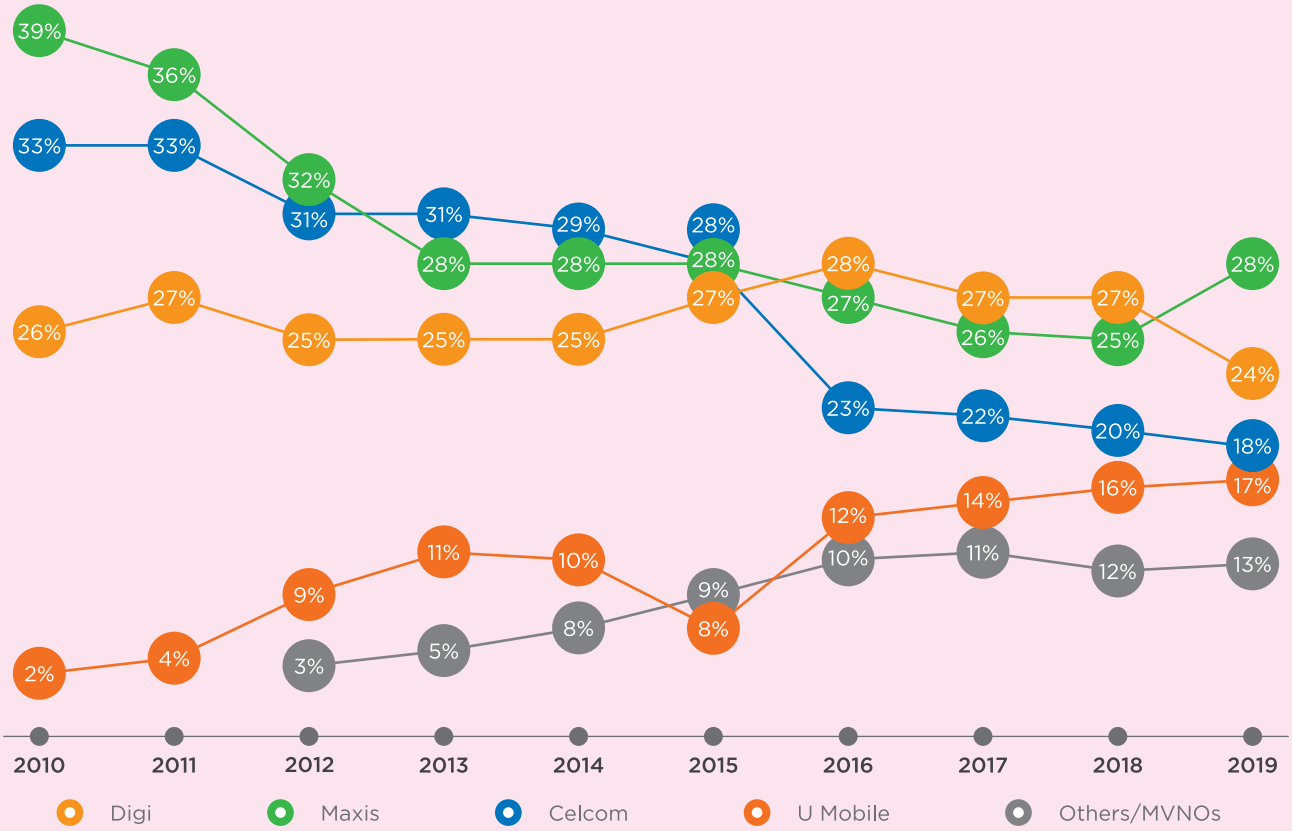


Source: MCMC

Figure 3.14 Mobile Cellular Subscriptions and Penetration Rate 2017 – 2019

For subscriptions market share, Maxis commands the highest share of 28%, followed by Digi (24%) and Celcom (18%). The remainder is from U Mobile and MVNOs, with 17% and 13% share respectively.

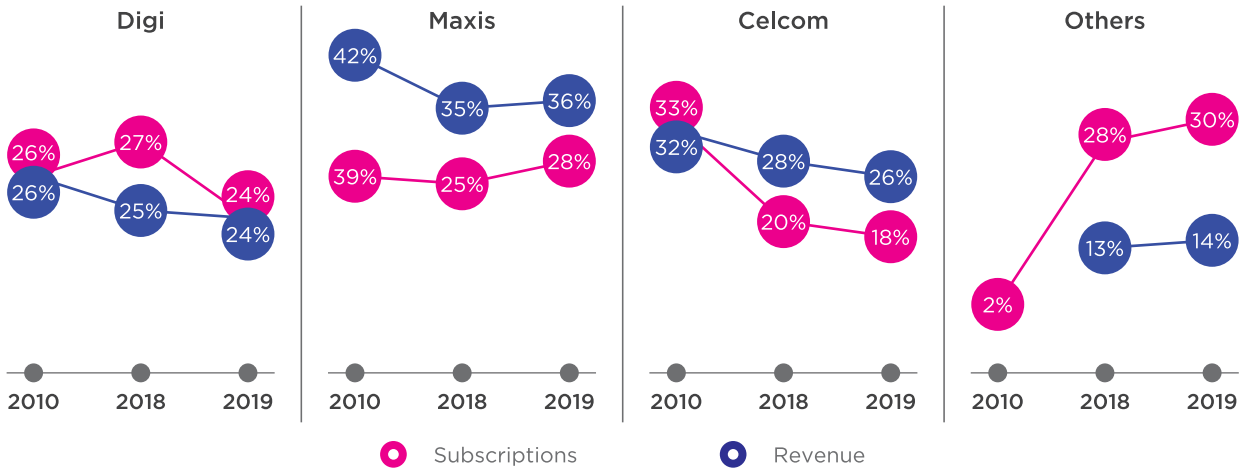
MOBILE CELLULAR SUBSCRIPTIONS MARKET SHARE BY SERVICE PROVIDERS 2010 – 2019



Source: MCMC

Figure 3.15 Mobile Cellular Subscriptions Market Share by Service Providers 2010 – 2019

MOBILE MARKET SHARE BY SUBSCRIPTIONS AND REVENUE



Note: Others include U Mobile, Webe and MVNOs

Source: Industry, MCMC

Figure 3.16 Mobile Market Share by Subscriptions and Revenue

Maxis remains the revenue leader in 2019, with revenue market share at 36% in 2019. This reflects Maxis' strategy in capturing high value market segment. Celcom and Digi revenue market share declined marginally to 26% and 24% respectively in 2019. This is due to other players are gaining ground on the back of aggressive marketing, continuously making improvement in their product offerings and pricing.

MVNO SERVICES

LICENSEES OPERATING MVNO SERVICES REDUCED BY HALF

MVNO is a wireless communication service operator that provides telecommunications services through the infrastructure and network of existing Mobile Network Operators (MNO). One of the main benefits of MVNOs is that they provide competition, which can result in lower prices for consumers.

Mobile Virtual Network Operator (MVNO) subscriptions was at 5.85 million in 2019, a growth of 14.5% compared with 5.11 million subscriptions in 2018. Notably, MVNOs recorded market share of 13% out of total mobile subscriptions of 44.6 million in 2019.

In 2019, only eight licensees are providing Mobile Virtual Network (MVN) services compared with 19 licensees in 2018. List of active MVNOs in 2019 are as follows:

LIST OF MVNOs 2019

Mobile Network Operator (MNO)	Thick MVNO[19]	Thin MVNO[20]
Celcom Axiata	• Altel Communications Sdn Bhd (Altel) • Red ONE Network Sdn Bhd (redONE) • Tune Talk Sdn Bhd (Tune Talk) • XOX Com Sdn Bhd (XOX)	• Merchantrade Asia Sdn Bhd (Merchantrade Asia)
U Mobile	• Telekomunikasi Indonesia (Malaysia) Sdn Bhd (Telin)	-
Digi	-	• Pavo Communications Sdn Bhd (SpeakOut Wireless and Mcalls)
Maxis	-	• REDtone Engineering and Network Services Sdn Bhd (ANSAR Mobile)

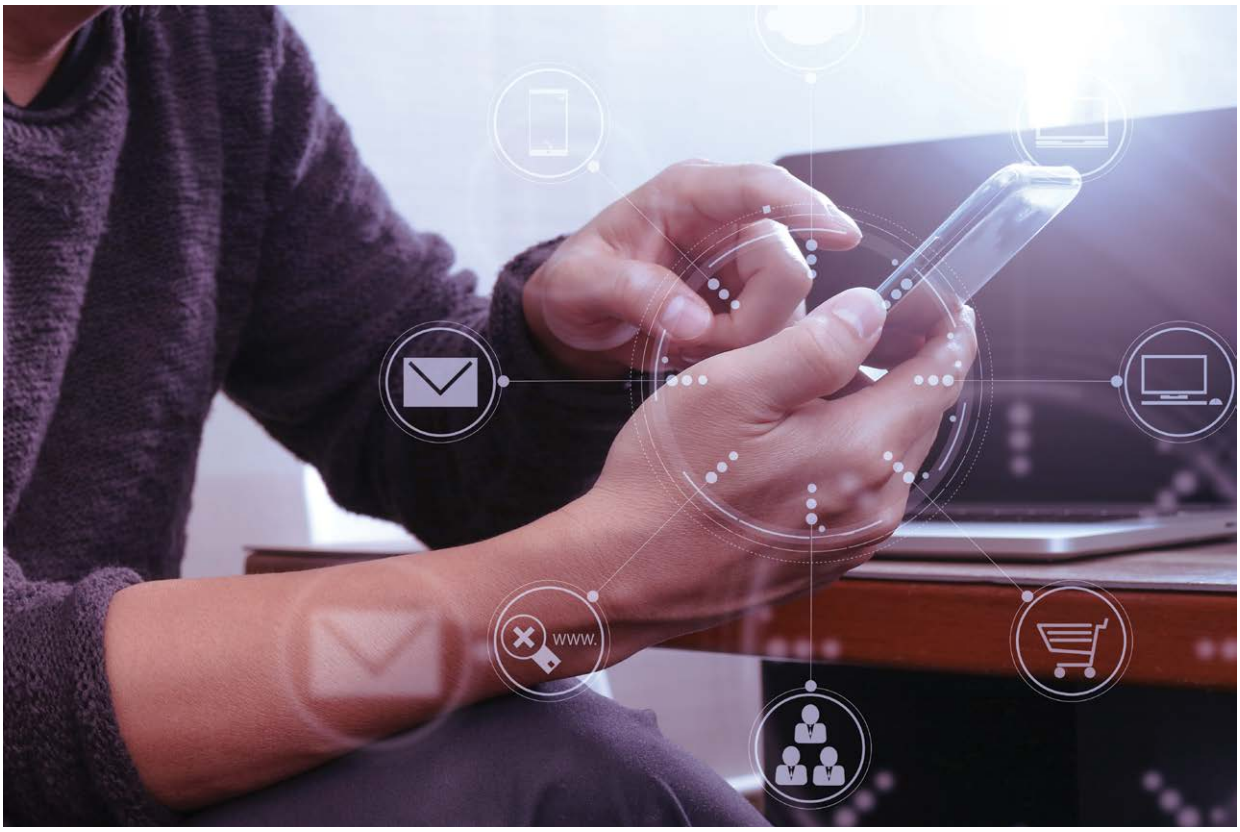
Source: MCMC
Figure 3.17 List of MVNOs 2019

Following the winding down of Talk Focus Sdn Bhd and Enabling Asia Tech Sdn Bhd in 2018, another two MVNOs have decided to terminate their MVN services through the issuance of Stage 2 Termination notice in 2019:

- PLDT Malaysia Sdn Bhd (brand name Smart World/Smart Pinoy)
- Ceres Telecom Sdn Bhd (with brand name Friendi/Mukminfon/Myprepaid/GetFi/SmartPAS)

Both companies have indicated that the decision to stop providing MVN services was mainly due to commercial and financial reasons.

19 Thick MVNO is defined as a service provider who owns ASP (C) and NSP (I) licences.
20 Thin MVNO is defined as a service provider who owns ASP (C) licence only.



OVERCOMING CHALLENGES AND NEW OPPORTUNITIES FOR MVNOS

The MVNO market has seen a number of failures, as companies struggle with issues of scale, increased competition and maintaining profitable longevity, especially in saturated markets. One of the competitive challenges stem from the Mobile Network Operators (MNO) as the MNO launch sub-brands to directly compete with MVNO offerings.

The MVNO market has evolved and it is not just the low-cost and prepaid offerings whereby a SIM card is available almost anywhere. In the current digital evolution with new technologies including AI, Big Data, Connected Cars and IoT, there are increasing opportunities for MVNOs to develop and appeal to new user segments.

In addition, soon-to-launch 5G is about to transform the business models of mobile operators and MVNOs. According to experts, this will see capabilities such as network slicing allowing MVNOs to run 'mini networks' for customers in specific sectors. Unlike its predecessors 3G and 4G, the 5G technology is not just about faster speeds. Based on virtualised infrastructure, 5G offers the ability to 'slice' the network and assign each part, offering a specific level of bandwidth, latency and reliability to benefit various use cases.

Hence, MVNOs can pursue new verticals, expand connectivity to emerging markets to connect the unconnected and offer key services to specific users.

CHAPTER 4 : CONTENT SERVICES

This chapter presents analysis and information on the growth of media consumption by making comparisons globally and in selected countries. This chapter also presents the challenging broadcasting landscape in Malaysia namely the paradigm shift of TV viewing to OTT online streaming and digital advertising. Most importantly, this chapter highlights the journey and completion of Analogue Switch Off in Malaysia.

KEY HIGHLIGHTS 2019

Internet:
Daily average of 2 hours 50 minutes
(2018: 2 hours 41 minutes)

TV:
Daily average of 2 hours 47 minutes
(2018: 2 hours 48 minutes)

Radio:
Daily average of 55 minutes
(2018: 55 minutes)

Pilot Analogue Switch Off (ASO) project in Langkawi Island
Commenced in 21 July 2019

DTT platform
14 TV channels and 6 radio stations

Free set top boxes (STBs) to eligible B40 households
Distribution of two million

Pay TV Subscriptions
7.12 million ↑ 0.6%
(2018: 7.08 million)

Sirius TV
a new satellite Pay TV provider in Malaysia

Radio
reached 97% of Peninsular Malaysia population

MEDIA LANDSCAPE OVERVIEW

INTERNET CONSUMPTION CONTINUES TO GROW

The global Internet consumption has increased steadily over the years, reporting a daily average of 2 hours 50 minutes in 2019, up from 2 hours 3 minutes in 2015 (Figure 4.1). The growth is mainly driven by higher Internet adoption and growing prevalence of mobile platform (Figure 4.2).

Consumption for traditional TV recorded a marginal decline of 3 minutes during the five-year period of TV viewing to 2 hours 47 minutes a day in 2019. In contrast, radio remains consistent with listenership up to an hour per day.

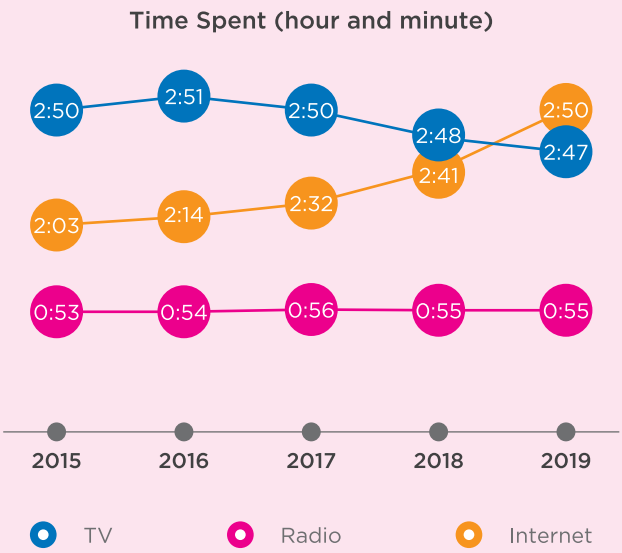
Global Media Consumption in 2019

Internet:
Daily average of 2 hours 50 minutes
(2018: 2 hours 41 minutes)

TV:
Daily average of 2 hours 47 minutes
(2018: 2 hours 48 minutes)

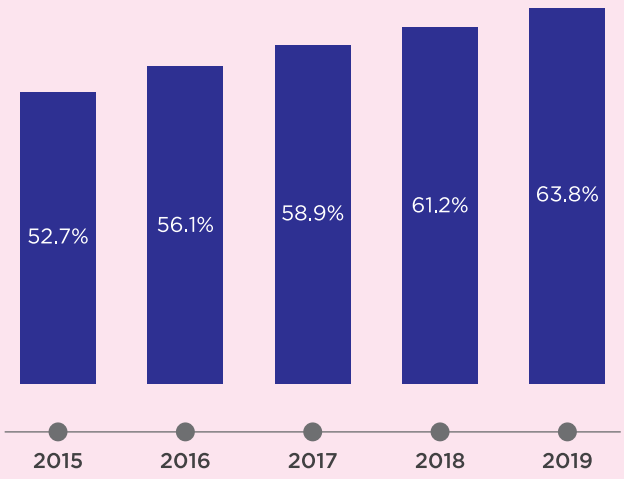
Radio:
Daily average of 55 minutes
(2018: 55 minutes)

MEDIA CONSUMPTION 2015 – 2019: GLOBAL



Source: Zenith, Media Consumption Forecast 2019
Figure 4.1 Media Consumption 2015 – 2019: Global

MOBILE PHONE INTERNET USER PENETRATION WORLDWIDE 2015 – 2019



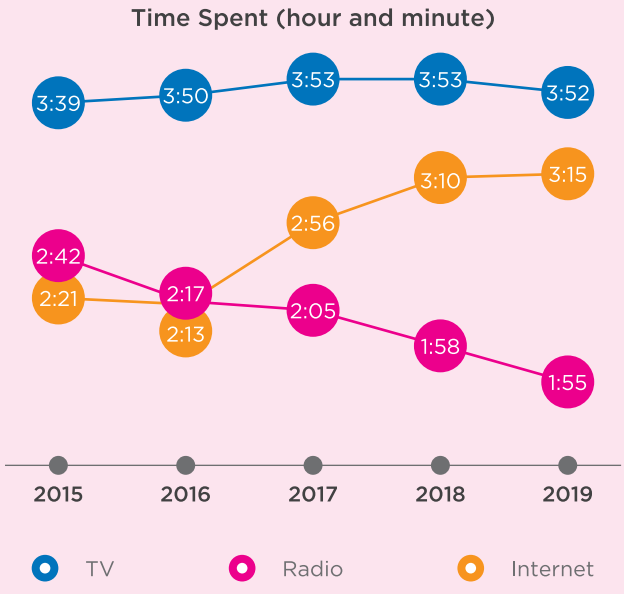
Note: Estimates for 2016 onwards

Source: Statista
Figure 4.2 Mobile Phone Internet User Penetration Worldwide 2015 – 2019

Specifically, media consumption for Malaysia and selected nations show an overall increase in Internet consumption. In Hong Kong, Thailand and UK for example, the Internet consumption is relatively higher than TV, while Malaysia and US favour TV over Internet.

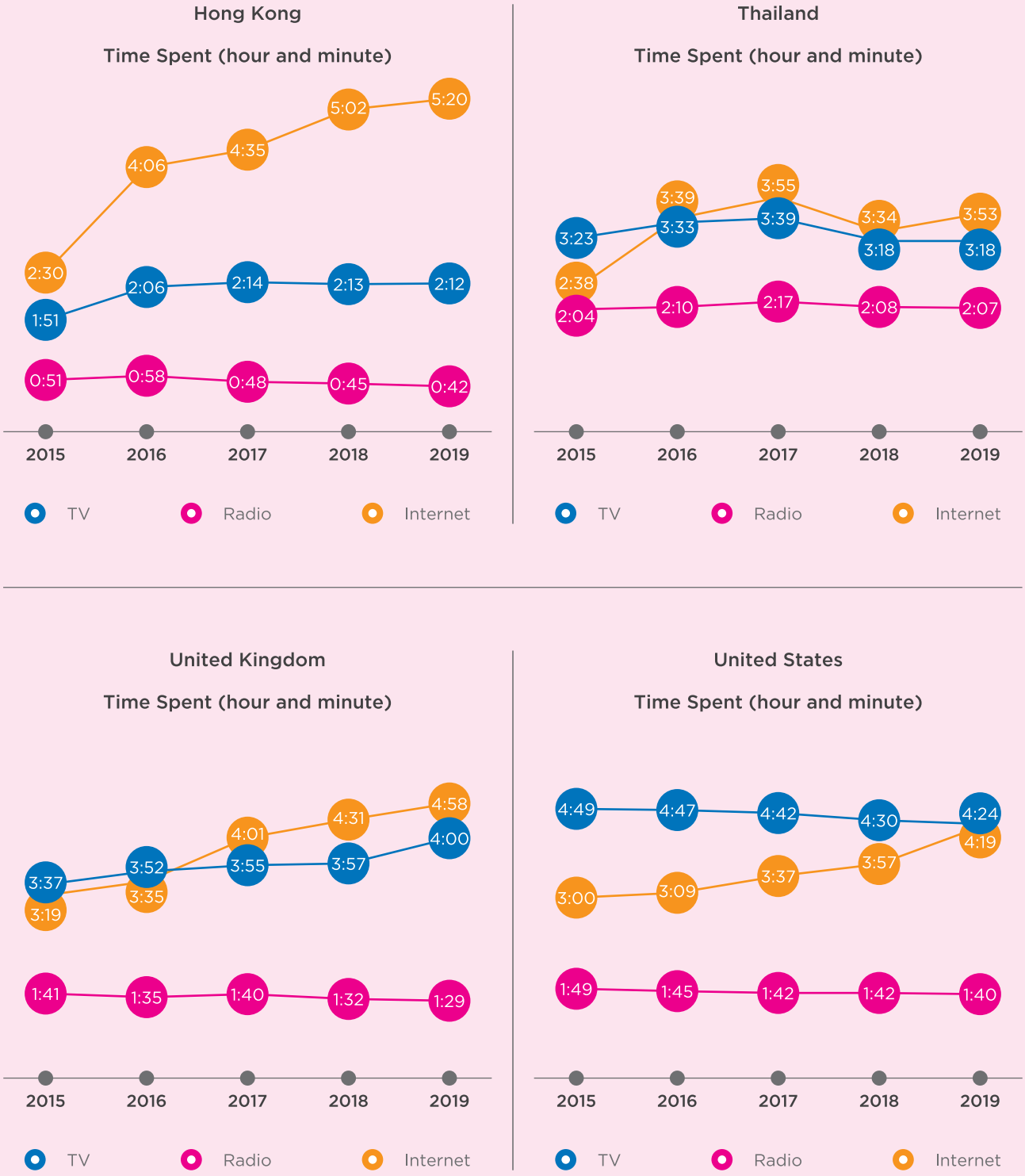
The Internet time spent consist of all online activities such as watching TV and video content. Viewers today consume video content over multiple platforms such as watching on TV screen and other devices like smartphone and laptop.

MEDIA CONSUMPTION 2015 – 2019: MALAYSIA



Source: Zenith, Media Consumption Forecast 2019
Figure 4.3 Media Consumption 2015 – 2019: Malaysia

MEDIA CONSUMPTION 2015 – 2019: SELECTED NATIONS



Source: Zenith, Media Consumption Forecast 2019
Figure 4.4 Media Consumption 2015 – 2019: Selected Nations

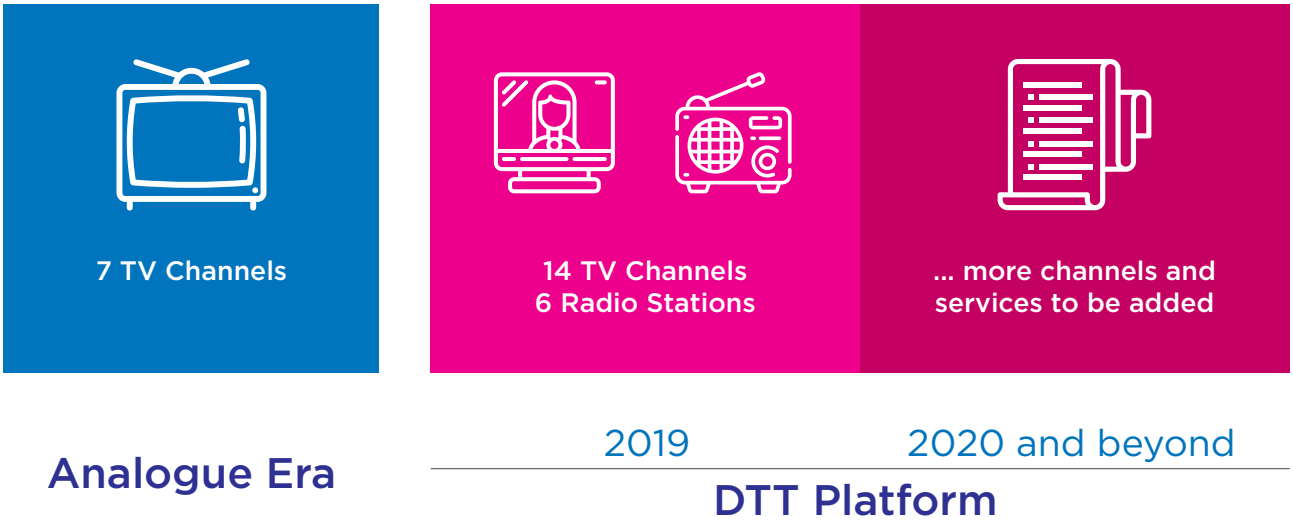
A NEW PHASE OF BROADCAST INDUSTRY

DEVELOPMENT OF FTA TV IN MALAYSIA

The history of TV broadcast in Malaysia can be traced back to 1963 when Radio Televisyen Malaysia (RTM) commenced its first TV station in black and white. Since then, the broadcast industry progressed with colour transmission and the emergence of private TV stations in the analogue era. After 56 years in service, 2019 marks a milestone for Malaysia's broadcasting history when Malaysia switched over to digital TV transmission, joining 60 other countries worldwide.

The digital switchover or analogue switch off (ASO) is one of the primary initiatives under Malaysia digital transformation agenda to drive the nation towards digitalisation and to gain digital dividends from the use of the 700MHz spectrum. As it is common throughout the world, this spectrum is being used for free-to-air (FTA) TV broadcasts. The 700MHz band is seen as a critical chunk of spectrum identified for 5G use that will allow a country to accelerate its adoption towards a Digital Economy.

MORE CHANNELS ON DIGITAL TERRESTRIAL TV (DTT) PLATFORM VIS-À-VIS ANALOGUE



Source: MCMC

Figure 4.5 More Channels on Digital Terrestrial TV Platform vis-à-vis Analogue

PILOT ASO IN PULAU LANGKAWI

An aggressive ASO campaign was executed in two waves during the pilot ASO project in Pulau Langkawi. Wave 1 was conducted from 9 May to 10 July 2019 intensively as call-to-action to switch over to the Digital TV services. Subsequently, Wave 2 was executed from 11 July until 20 July 2019 as ultimate deadline announcement for the transition from analogue to digital TV platform by 21 July 2019.

A static screen on analogue channels TV1, TV2 and TV3 in Pulau Langkawi was broadcasted from analogue TV transmitters in Gunung Raya. The static screen was aired for a week, from 21 to 28 July 2019 to urge those who have yet to switch over to digital TV platform by taking simple action immediately.

Following the success of the ASO pilot project in Pulau Langkawi, the transition was later extended to other regions in several phases.

Pilot Analogue Switch Off (ASO) Project in Langkawi Island **Commenced in 21 July 2019**

PHASES OF ASO IMPLEMENTATION NATIONWIDE

Transition of Analogue TV to Digital TV have been successfully implemented in four Phases, whereby total of 105 analogue TV transmitters have been switched off in the following regions nationwide:

PHASE 1	The launch of the pilot ASO project in Pulau Langkawi on 21 July 2019, involves the switching off one analogue TV transmitter site.
PHASE 2	The ASO implementation in Central and Southern Region on 30 September 2019 involves the switching off 13 analogue TV transmitter sites.
PHASE 3	The implementation of ASO in Northern and East Coast region on 14 October 2019, involves the switching off 49 analogue TV transmitter sites and, at the same time, marks the end of analogue TV broadcasts in Peninsular Malaysia.
PHASE 4	The ASO implementation in Sabah and Sarawak on 31 October 2019, involves the switching off 42 analogue TV transmitter sites and marks the end of analogue TV broadcasts in Malaysia.

During the transition period, RTM and Media Prima had broadcasted a transition message for one week urging viewers to migrate to myFreeview digital TV broadcasts, for each of the following phases as shown in Figure 4.6:

ASO TRANSITION MESSAGE

PHASE 1

PHASE 2

PHASE 3

PHASE 4

Source: myFreeview

Figure 4.6 ASO Transition Messages

After one week, the analogue TV transmitter switches off permanently. Viewers who watches analogue TV broadcast and yet to migrate to myFreeview digital TV broadcast will only receive a black screen with white dots as shown in Figure 4.7:

TV SCREEN AFTER ASO ON ANALOGUE TV BROADCAST

Source: MCMC

Figure 4.7 TV Screen after ASO on Analogue TV Broadcast

MAJOR TV OFFERINGS

Figure 4.8 shows the major TV offerings in Malaysia. Note that the FTA TV stations on DTT platform generates revenue from advertising and sponsorship, whilst Pay TV generates revenue mainly from subscription fees.

MAJOR TV OFFERINGS IN MALAYSIA 2019

Service Provider		Platform		Core Business Model	Service			Number of Channel(s)
		Core Network	OTT Service		Content	Broadband	Voice	
Terrestrial FTA TV	Media Prima	DTT	Yes	Advertising and Sponsorship	/	x	x	6
	TV AlHijrah	DTT	Yes		/	x	x	1
	Bernama News Channel	DTT	Yes		/	x	x	1
Satellite TV	ASTRO	DTH and Satellite	Yes	Pay TV subscription and free satellite TV service	/	x	x	211 including 75 ASTRO branded channels
IPTV	ASTRO Maxis IPTV	Fibre	Yes		/	/	/	
	ASTRO TIME IPTV	Fibre	Yes		/	/	/	
	TM	Fibre	Yes	Telecommunications and related services	/	/	/	79 channels
		ADSL	Yes		/	/	/	

Note 1. DTT or DTTB – Digital Terrestrial TV Broadcasting; DTH – Direct to Home

2. TV AlHijrah and Bernama News Channel are government-owned

Source: MCMC

Figure 4.8 Major TV Offerings in Malaysia 2019

myFreeview DIGITAL BROADCAST

"myFreeview" is the brand name given for Malaysia free digital terrestrial TV (DTT) services, offering TV and radio channels for free with no subscription fees.

The myFreeview digital TV broadcast promises better and clearer audio and picture quality in standard definition (SD) and high definition (HD). Additionally, viewers can enjoy the electronic programme guide (EPG), subtitles in multiple languages as well as interactive TV feature in the near future.

To date, there are a total of 14 TV channels and six radio stations on this platform.

DTT platform
14 TV channels and 6 radio stations

TV AND RADIO CHANNELS ON MYFREEVIEW PLATFORM

Service Provider	TV Channel	Radio Channel
RTM	• TV1 (HD) • TV2 (HD) • TV OKEY (HD) • RTM Sports (HD) • Saluran Berita RTM (HD)	• Nasional FM • Minnal FM • Traxx FM • Ai FM • Asyik FM • Klasik Nasional
Media Prima	• TV3 (HD) • NTV7 • TV8 • TV9 • CJ Wow Shop (Malay) • CJ Wow Shop (Chinese)	-
Alhijrah Media Corporation	TV AlHijrah (HD)	-
Bernama	BNC	-
ASTRO	Go Shop (HD)	-

Source: MCMC
Figure 4.9 TV and Radio Channels on myFreeview Platform

The DTT technology is more spectrum efficient compared to analogue TV transmission. For example, one frequency band can only transmit one analogue TV channel while the same frequency band can transmit up to 13 SD channels using DTT technology. As digital TV allows more channels to be broadcast, therefore, viewers have the opportunity to watch variety of content via a wider range of channels.

NATIONAL BROADCASTING DIGITALISATION PROJECT

DIGITAL TERRESTRIAL TELEVISION (DTT) BROADCASTING INFRASTRUCTURE DEPLOYMENT

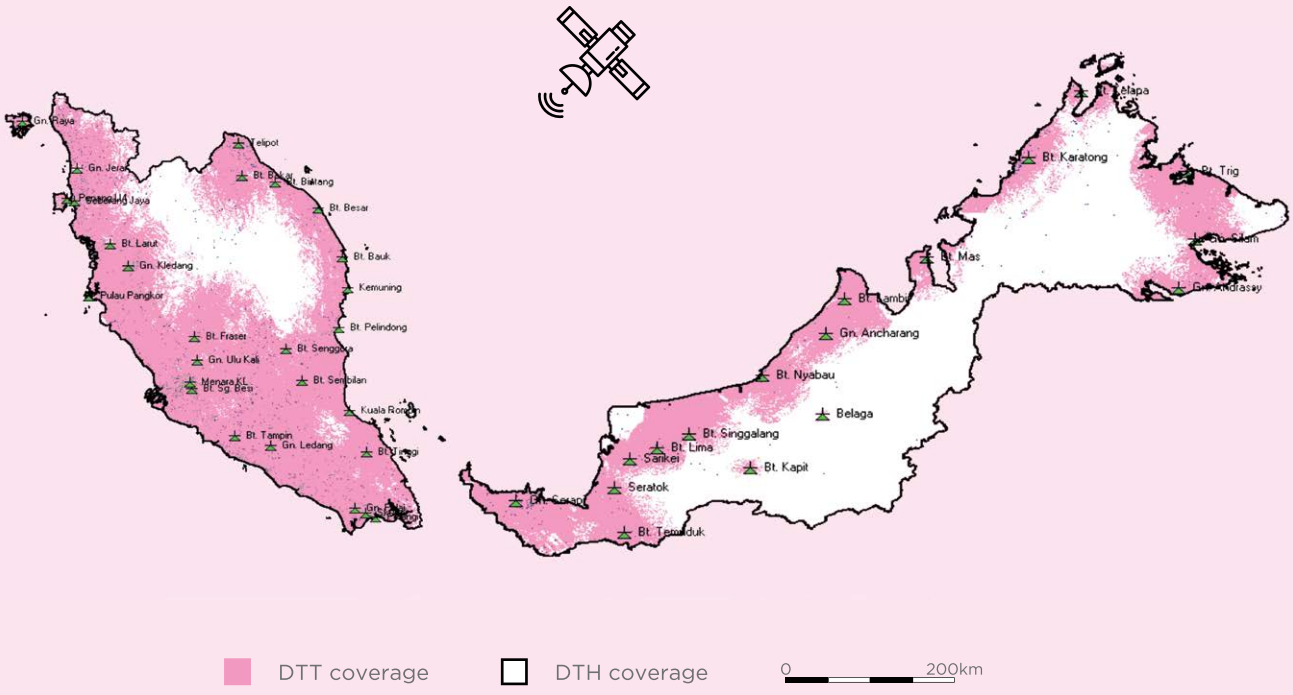
Under the National Digitalisation Broadcasting Project, MYTV Broadcasting Sdn Bhd (MYTV) has completed the implementation of DTT infrastructure and facilities, which includes digital multimedia broadcast hub (DMBH), and digital TV transmitters supported by Direct to Home (DTH) network, nationwide.

MYTV was appointed by the Commission through tender as the Common Integrated Infrastructure Provider (CIIP) in April 2014 to build, operate and manage DTT service infrastructure in Malaysia for a period of 30 years.

In 2019, MYTV has deployed and completed all 44 digital TV transmitter sites nationwide covering 95.3% of the population.

In order to reach blind spots and remote areas in the country, MYTV has launched DTH service via satellite distribution[21] on 15 November 2018 to complement DTT coverage. Thus, providing up to 100% coverage nationwide.

DIGITAL TV TRANSMITTER SITES DEPLOYED



Source: MCMC

Figure 4.10 Digital TV Transmitter Sites Deployed

21 For reference, many countries around the world namely United Kingdom, Chile, Finland, France and Italy have successfully implemented DTH solution to complement DTT coverage.

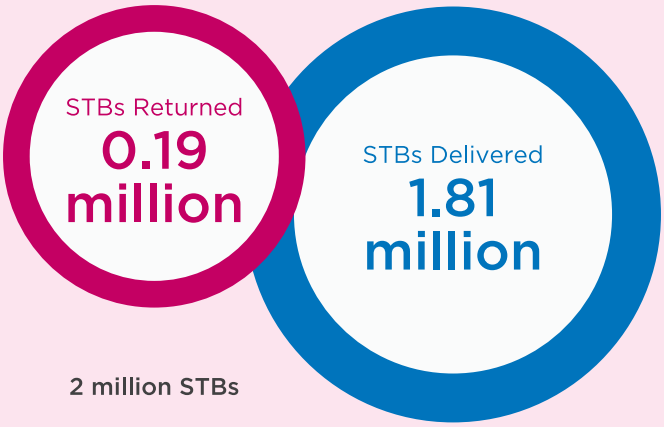
SET TOP BOX DISTRIBUTION TO B40 HOUSEHOLDS

In order to facilitate digital switchover and to ensure continuous Free-to-Air (FTA) TV viewing, MYTV have committed in their Detailed Business Plan to distribute two million free Set Top Boxes (STBs) to eligible B40 households[22].

By 11 December 2019, MYTV has successfully delivered 1.81 million STBs while 0.19 million STBs were returned due to factors such as incomplete address, deceased recipient and refusal of the STBs by the eligible recipients.

Free set top boxes (STBs) to eligible B40 households **Distribution of two million**

STB DISTRIBUTION TO B40 HOUSEHOLDS



Source: MYTV
Figure 4.11 STB Distribution to B40 Households

MYTV has distributed two types of STBs to the B40 households comprising of DTT and DTH STBs in accordance to the areas where the B40 households reside.

Consumers that are not entitled to receive free STBs from MYTV are still able to enjoy myFreeview digital TV broadcast, by purchasing a variety of STBs in the market that are available in many electrical shops including on-line markets such as www.myfreeview.tv, Shopee and Lazada.

Consumers are advised to purchase STBs duly certified by SIRIM which carries the MCMC label.

TYPES OF STBs TO B40 HOUSEHOLDS

Source: myFreeview, MYTV
Figure 4.12 Types of STBs to B40 Households

22 Malaysians are categorised into three different income groups: Top 20% (T20) with monthly income above RM9,619; Middle 40% (M40) with monthly income range from RM4,360 – RM9,619 and Bottom 40% (B40) with monthly income below than RM4,360.

Alternatively, consumers may purchase Integrated Digital TVs that are available in hypermarkets and on-line stores in order to watch myFreeview digital TV service:

- Integrated Digital TV (iDTV) sets with the DTTV label certified by SIRIM comes with a built-in digital tuner. Hence, these do not require a separate STB to receive myFreeview services[23].

Between 2016 and 2019, about 260,000 DTT STBs and three million iDTV sets were available for commercial purpose.

DIGITAL MULTIMEDIA RECEIVERS: INTEGRATED DIGITAL TV (IDTV)

Source: myFreeview

Figure 4.13 Digital Multimedia Receivers: Integrated Digital TV (IDTV)

EDUCATION AND AWARENESS CAMPAIGN LEADING TO ASO

Since 2015, the FTA TV broadcasters have collaborated with MCMC and MYTV to promote and establish the myFreeview brand and services. A comprehensive education and awareness campaign has been implemented intensively on multiple media platforms comprising TV, radio, newsprints, talk shows, host mention, out-of-home advertisement, press release, flyers distribution, digital marketing, on ground and social media engagement as well as public service announcement on TV and radio stations.

The education and awareness campaign was executed in five phases as shown in Figure 4.14.

EDUCATION AND AWARENESS CAMPAIGN

PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Switching over to Digital TV (Jul – Oct 2016)	Building Understanding via Education (Nov 2016 – Feb 2017)	Launch and Awareness Campaign (Mar – Jul 2017)	Motivate Conversion (Aug 2017 - Jan 2019)	ASO and Post ASO (2019)

Source: MCMC

Figure 4.14 EA Campaign

Phases 1, 2 and 3 of the education and awareness campaign has been implemented since 2016 to create awareness and establish the brand name of myFreeview among the public. Phase 4 and 5 were implemented from 2017 to 2019 to motivate the public to migrate to Digital TV platform before the transition deadline of analogue to digital TV platform.

In order to handle a variety of inquiries including technical support, free STB eligibility check, ASO implementation and other matters related to myFreeview, consumers can seek clarification from MYTV Customer Service Centres.

23 To date, 1,144 models from 20 iDTV brands for purchase are Sony, Toshiba, Panasonic, Samsung, Sharp, Singer, LG, Philips, Hisense, Daewoo, Skyworth, Haier, TCL, A&S, iSONIC, Daema, HITEC, Pensonic, AOC and COOCA.

POST ASO

Following the completion of nationwide ASO on 31 October 2019, MCMC extended the post ASO campaign on TV, radio, newsprints, social media and cinema until 31 December 2019 to ensure the public purchase certified STB and call myFreeview toll-free careline for assistance if necessary.

The success of ASO implementation is ascribed to numerous key stakeholders' efforts on intensive and extensive awareness campaign to ensure smooth transition from analogue to digital TV.

SERVICE PROVIDERS IN MALAYSIA

FTA TV

MEDIA PRIMA

Media Prima is an integrated media group comprising TV stations, print, radio stations, content creation, out-of-home advertising and digital media. Its strategies include investing in more digital content and growing commerce revenue through integrated media, whilst preserving their traditional media businesses.

MEDIA PRIMA FOCUS AREAS 2019

Traditional Segment

- Continued producing top quality programmes and distributes it across platform
  a. Maintained its "major broadcast position" with all major 4 TV stations captured the top 4 TV market share of 34.5%[1]
  b. Cumulative total of content library: 30,000 hours

Digital Segment

- Growing digital revenue streams through strategic business initiatives
  a. Media Prima in top 3 position after Google and Facebook for mobile content[2]

  b. Commendable Digital Reach Across Multiple Platforms[3]
  - 14.3 million of downloads
  - 53.8 million monthly average page views

Commerce

- Airing more home shopping hours on the TV networks for better monetisations

Others

- Strives to grow eSports, and to bridge gaming communities, from casual gamers to corporate brands

Note 1: Source from Media Prima; Nielsen Audience Measurement (January – December 2019)
Note 2: Source from Media Prima, Comscore MMX September 2019
Note 3: As at 31 December 2019

Source: MCMC, Media Prima
Figure 4.15 Media Prima Focus Areas 2019

In 2019, Media Prima has partnered with Grabyo, a cloud-based video platform built for live, OTT, mobile and social, to enhance its social video strategy and strengthen its position in digital content market. The video platform is expected to enable Media Prima to expand and innovate its live and 'real-time' social video strategy.

In addition, the year saw Media Prima airing more home shopping hours on TV9 and ntv7. This effort has been fruitful when Media Prima posted higher revenue for this segment with revenue of RM232 million in 2019, up 9% from RM213 million in 2018.

CONTENT ON DIGITAL PLATFORM

In August 2018, Media Prima announced that its *tonton* service was offered at no cost, ceasing the subscription video-on-demand (SVOD) model and collaborated with video sharing websites namely YouTube and Dailymotion. As a result, in 2019, Media Prima indicated that its TV Networks YouTube channels attracted a monthly average of 110 million views on YouTube, whilst "TV3 Malaysia" has become one of the most viewed Malaysian YouTube channels. Their current focus is the partnership with YouTube as well as strategic content sale to other OTT players.

BERNAMA NEWS CHANNEL

Bernama News Channel or BNC is a news TV network. It is owned by BERNAMA, a government news agency. Prior to implementation of DTT platform, BNC was aired via ASTRO and TM IPTV platforms.

On 15 October 2019, BNC revamped its content and introduced several new programmes such as follows:

5 Utama	Top 5 news (General, International, Business, Sports, Entertainment and ICT)
Khabar Pagi BERNAMA	Follow up on yesterday's major stories and potential big news for today
Koresponden BERNAMA	Stories from BERNAMA reporters nationwide and correspondents in Jakarta, Singapore and Bangkok
BERNAMA Global	Major International news

Additionally, BERNAMA took the lead to become the pioneer in 'The Longest Non-stop Live National Telecast in various languages' and was on live broadcast for 24 hours during the celebration of Malaysia Day on 16 September 2019. Meanwhile, the news TV network indicated that 'Buletin BERNAMA' captured the largest advertising revenue with an average of 6,200 viewers per minute.

TV ALHIJRAH

AlHijrah Media Corporation provides an Islamic TV station, AlHijrah, targeting both Muslim and non-Muslim viewers. A religious programme namely 'Langsung Dari Masjidil Haram,' featuring live prayers from Mekkah, was the most watched TV programme on the channel. Meantime, 'Jom Dengar Cerita,' a kid talk show, was also popular on this channel.

In 2019, research by Nielsen indicated that the station garnered a total of 1.4 million viewers. Moving forward in 2020, TV Alhijrah plans to disseminate their content through social media platforms, website and others.

PAY TV

In Malaysia, the overall Pay TV subscriptions show an upward trend although the growth is slower compared with previous years (Figure 4.16).

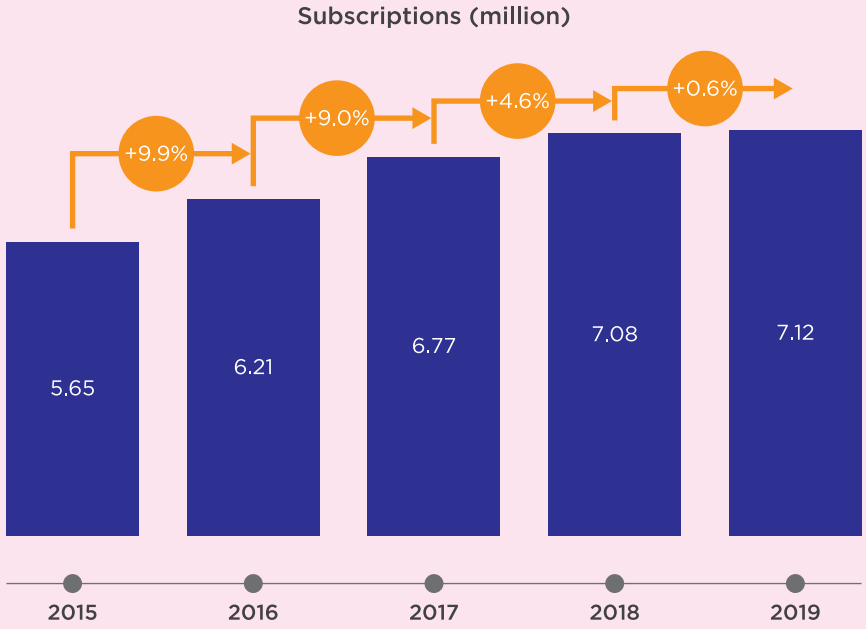
As at end 2019, Pay TV subscriptions increased by 0.6% to 7.12 million from 7.08 million in 2018. In terms of household penetration, the subscription has reached 86.3% or 7.10 million household.

Pay TV Subscriptions

7.12 million ↑ 0.6%

(2018: 7.08 million)

PAY TV SUBSCRIPTION 2015 – 2019



Source: MCMC

Figure 4.16 Pay TV Subscription 2015 – 2019

ASTRO

ASTRO is a household name in the Pay TV market along with other FTA TV service providers. ASTRO has 5.7 million subscriptions as at January 2020, down 0.2% from 5.71 million in the previous year. Although the number of subscriptions were marginally lower compared with previous year, its ARPU remained consistent at RM100 (FYE January 2019: RM99.9).

As at January 2020, ASTRO reported a total of 211 channels, while 29 channels can be viewed via NJOI, a non-subscription freemium service.

ASTRO focuses to strengthen its core Pay TV and NJOI business, with key priorities being customers, content and customer experience. ASTRO demonstrates its ability by making itself relevance via differentiated content offerings namely vernacular Intellectual Properties, Asian originals and live sports (Figure 4.17).

ASTRO CONTENT OFFERINGS

Local Vernacular

- Box office: Boboiboy Movie 2, Sangkar
- Key signature intellectual properties: Maharaja Lawak Mega 2019, Big Stage, Evening Edition

International

- Strategic partnership with HBO to launch HBO GO app exclusively in Malaysia, adding over 4,000 hours of HBO content to its library

Regional

- Strategic partnership with iQIYI - China's No. 1 streaming platform bringing up to 28 hours of fresh Chinese content weekly

Sports

- Live coverage of major local and international sporting events
- eGG Network (eSports channel), hosted first full scale international eSports tournament overseas

Source: ASTRO, MCMC
Figure 4.17 ASTRO Content Offerings

In 2019, ASTRO exported its content to address the regional Malay speaking communities. ASTRO singalong kids programme, "Omar & Hana" was licenced to Indonesia leading telecommunications operator, Telkomsel, and is now available on its video streaming app called MAXstream. ASTRO indicated that they will continue its efforts to export content particularly on kids' programmes, Islamic, eSports and horror genre.

CUSTOMER EXPERIENCE IS KEY DIFFERENTIATOR

ASTRO recognises that customer experience is a key differentiator, thus a priority that will help customers navigate the changing landscape more effectively. Their latest technology platform upgrade aims to address this by providing content mobility and portability, unified recommendations and consistent look and feel across set top boxes (STBs) and smaller screens.

ASTRO KEY DEVELOPMENT 2019

Content

- Refreshed content by introducing new TV shows
- New pop-up TV channel 'K-Mania'

Commerce

- The home shopping programme, GO Shop, has been extended to FTA TV, reaching wider audiences

Subscription Bundle

- New broadband bundles with higher speeds of up to 100mbps introduced across both DTH and IPTV bundles

Technology Enhancement

- Launched Ultra Box, allowing customers to enjoy the best entertainment:
  - 4K UHD
  - Cloud Recording
  - Play from Start
  - Fresh interface for seamless viewing on all screens
  - Improved content recommendation
- The Ultra Box and connected PVRs allow customers to stream over 50,000 videos on demand
- New experience on Astro GO. Features include:
  - Personalised recommendations
  - Enhanced searched capabilities
  - Content centric categorisation for better content discovery

Note: PVR – Personal Video Recording

Source: ASTRO, MCMC
Figure 4.18 ASTRO Key Development 2019

TM UNIFI TV

TM Unifi TV is an IPTV service by TM, offering 79 channels with 20 free channels and 51 paid channels.

In 2019, TM started offering broadband bundles with higher speed of 300Mbps with 100 Blockbuster movies on demand for free and a Unifi TV Box. The Group also offers on demand service with catch up programme from its live channel, comprising more than 4,000 hours of content.

NEW SERVICE PROVIDERS

In 2019, the following two new CASP (I) licensees joined the broadcasting fray.

NEW SERVICE PROVIDERS

Sirius TV

Sirius TV is a new satellite Pay TV provider in Malaysia and is operated by Smart Digital International Sdn Bhd. Sirius TV was launched recently in November 2019, after the exclusive right given to ASTRO for broadcasting content through satellite services ended in 2017.

Sirius TV is offering 12 months of free subscription. However, customers are required to pay a one off RM299 fee which include an outdoor unit and a STB for installation. Sirius TV plans to offer a total of 30 channels.

Sirius TV is also planning with local broadcasters such as Media Prima and TV AlHijrah to create a new premium channel based on their old archived content.

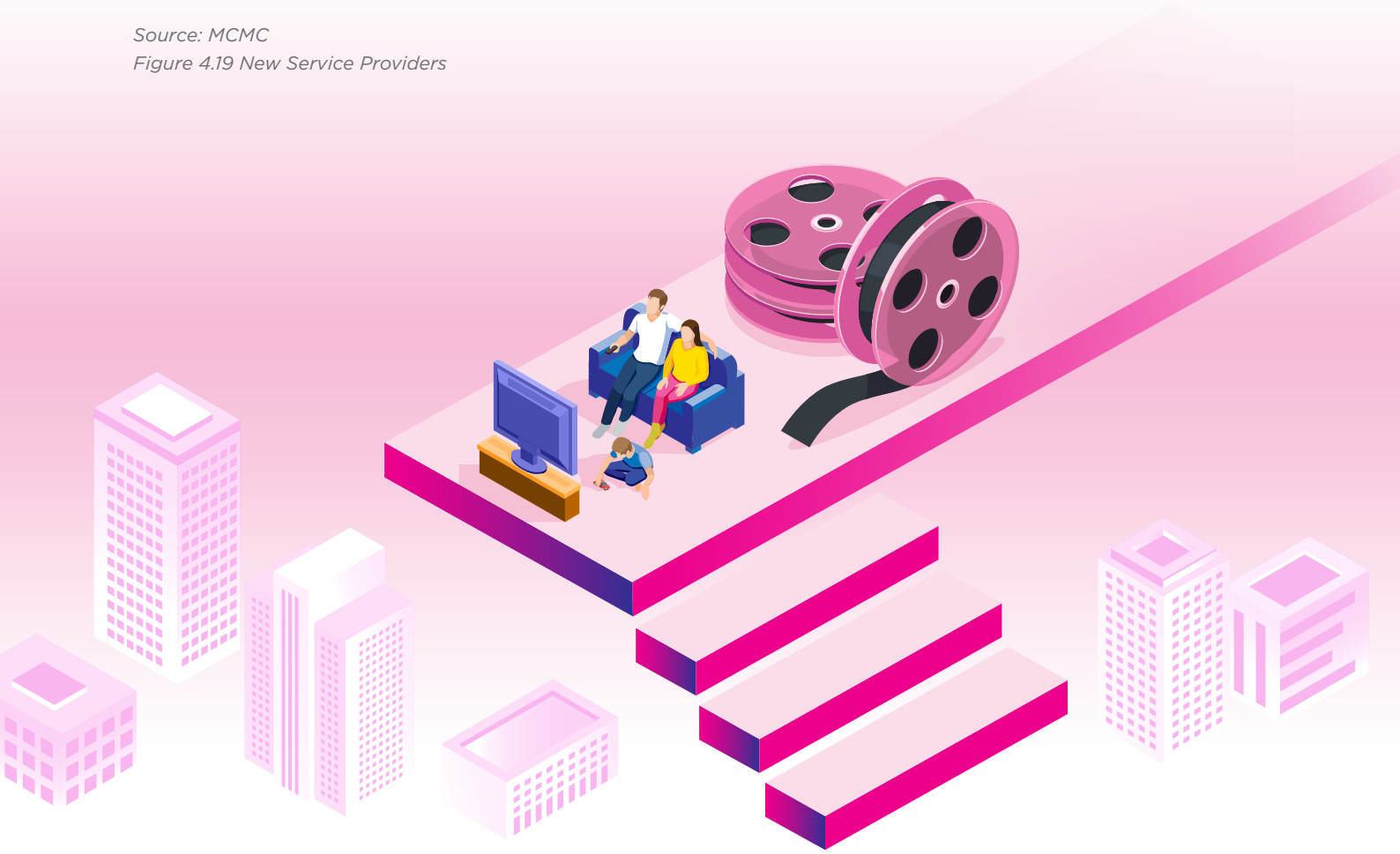
Enjoy TV

Enjoy TV Holdings Sdn Bhd (Enjoy TV) started as a production company, and later leverage on cross-platform strategies by combining traditional media and new media platform. Since 2018, the company has undergone a transformation programme by integrating e-commerce with home shopping programme and testing on digital terrestrial transmission.

In 2019, Enjoy TV established "Enjoy TV Asia Channel" and completed their production for Enjoy Shopping Channel.

Enjoy TV is anticipated to join the myFreeview platform in the near future, allowing wider viewers to enjoy their content.

Source: MCMC
Figure 4.19 New Service Providers

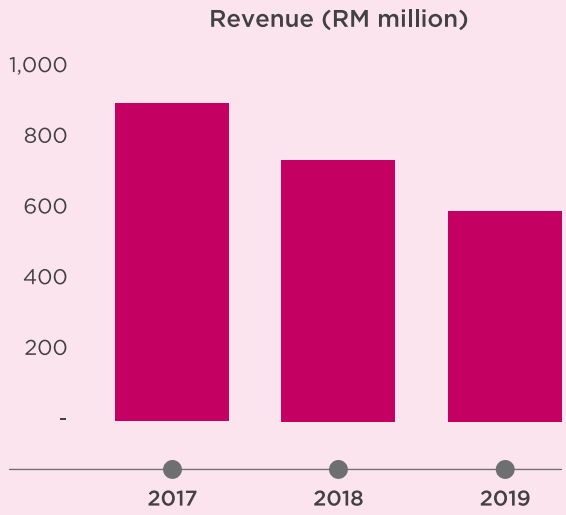


THE CHANGING BROADCAST LANDSCAPE

The broadcast landscape is changing. Other than the traditional TV broadcasters, there are also new players namely streaming service/OTT video providers and technology giants shaping the broadcasting industry.

The influx of OTT video services is impacting FTA and Pay TV in various ways, including advertising revenues, Pay TV subscriptions and technology investment. It has caused a decline in traditional TV viewing whilst Pay TV providers experienced a high churn rate, resulting a declining revenue for the traditional TV service providers (Figure 4.20 and Figure 4.21).

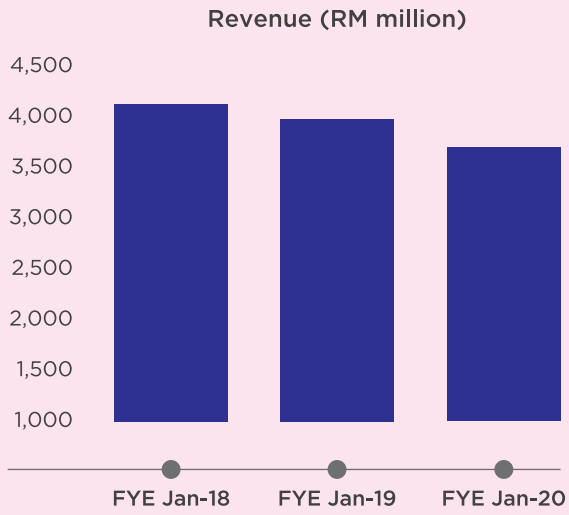
TV ADVERTISING REVENUE 2017 – 2019



Note: Media Prima FYE December; ASTRO FYE January. ASTRO advertising revenue is net of commissions and discounts.

Source: Media Prima and ASTRO
Figure 4.20 TV Advertising Revenue 2017 – 2019

PAY TV SUBSCRIPTIONS REVENUE FYE JANUARY 2018 – FYE JANUARY 2020

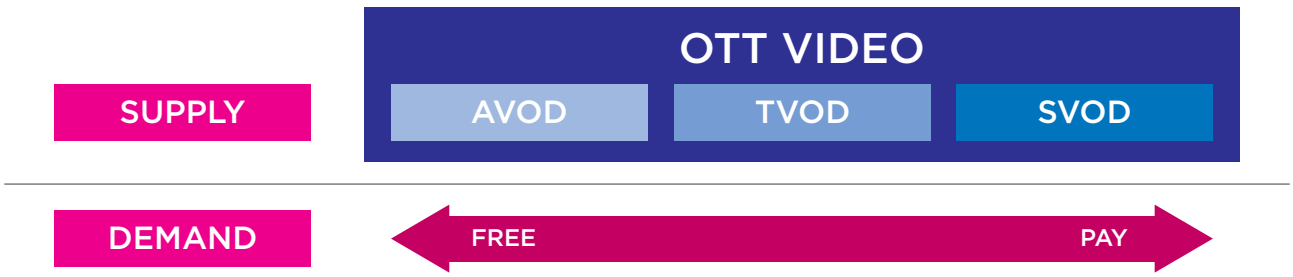


Note: Disclosed as Subscription revenue and Other in ASTRO financial statements, includes streams such TV subscription, licensing income, NJOI revenue etc.

Source: ASTRO
Figure 4.21 Pay TV Subscriptions Revenue FYE January 2018 – FYE January 2020

At the International Broadcasting Conference (IBC) held in September 2019, broadcasters and media companies explored new business models, including a combination of subscription video on demand (SVOD), advertisement-supported video on demand (AVOD) and consumer-facing systems[24].

OTT VIDEO BUSINESS MODELS

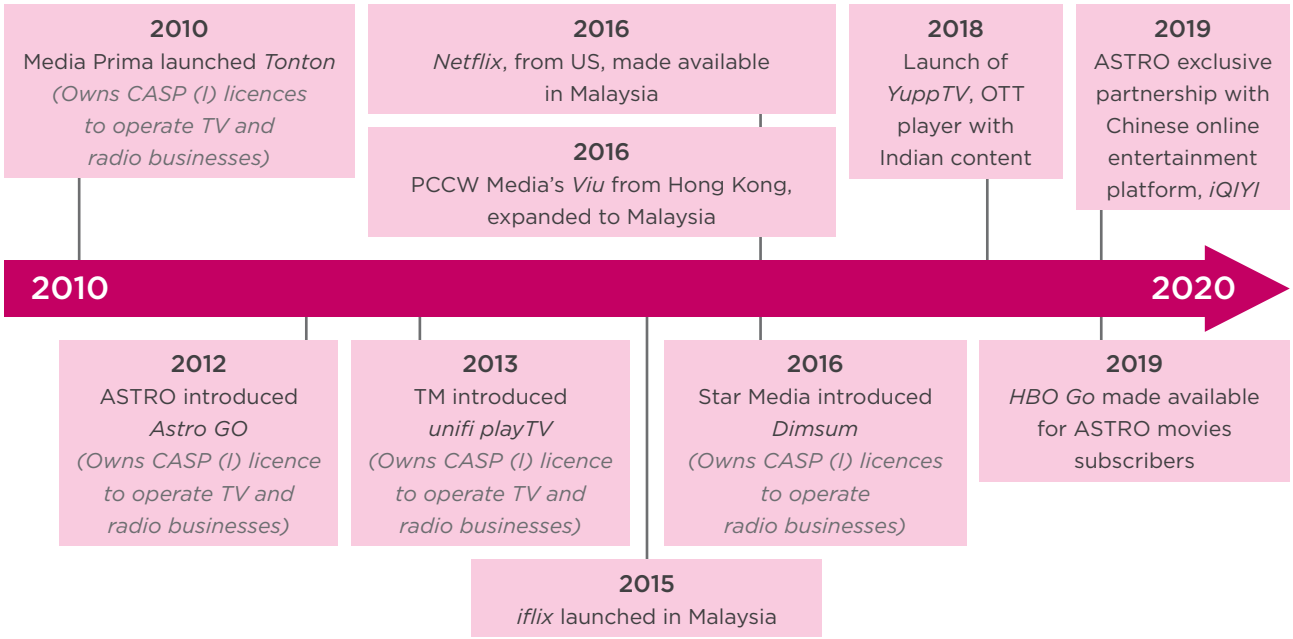


Note: TVOD stands for transactional video on demand, charged based on one-time payment per view. This is opposed to SVOD with recurring monthly or annual subscription.

Source: Various researches, MCMC
Figure 4.22 OTT Video Business Models

Figure 4.23 shows the OTT services in Malaysia. Note that the local broadcasters with CASP (I) licensees are also providing OTT video services together with other OTT video providers. The broadcasters anticipated that there will be an increasing competition between the traditional service providers and OTT video providers acquiring the same content as they are all essentially targeting the same viewers.

10 YEARS OF OTT SERVICES IN MALAYSIA



Note: Astro GO was formally known as Astro on the Go; unifi playTV was previously known as HyppTV Everywhere; NJOI Now (under ASTRO) has stopped its service in 2019.

Source: MCMC, News Articles
Figure 4.23 10 Years of OTT Services in Malaysia

In 2019, Media Prima has partnered with iflix, indicating that the partnership shall open greater content monetisation opportunities through iflix ad-supported tier called "iflix FREE". The year also saw ASTRO collaborating with other OTT players. In May 2019, HBO Asia's Internet-based service HBO GO unveiled in Malaysia exclusively on ASTRO, whilst in November 2019, ASTRO partnered with iQIYI, a Chinese video streaming platform.

24 IBC, IABM: Three IBC 2019 Takeaways, 2019.

RADIO BROADCASTING

Radio remains the most widely consumed medium. Its unique ability to reach out the widest audience means it can serve diverse communities, offering a wide variety of programmes, viewpoints and content. Today, in addition to traditional radio, there is also satellite radio, digital radio broadcasts and radio-style stations available through the Internet. Modern radio broadcasts include news, talk shows, sports, religious programming and wide varieties of musical styles.

In addition, radio is the most trusted medium in comparison to TV and social media. In a survey conducted by the European Broadcasting Union (EBU) across 33 European countries, 20 out of 33 countries trust radio the most compared to TV that only gained trust from 13 out of 33 countries.

According to the United Nation, there are around 44,000 radio stations worldwide and at least 75% of households in developing countries have access to radio. For year 2019, there are 28 private owned radio stations in Malaysia.

RADIO LISTENERSHIP IN MALAYSIA

Traditional radio continues to reach 20.6 million listeners or 97% of the Peninsular Malaysia population aged 10 years and above (18.3 million listeners or 89% from urban areas; 2.3 million listeners or 11% from rural areas). Radio listenership in Malaysia (97%) is higher compared to Austria (95%), Brisbane (94.5%) and Finland (92%).

Radio **reached 97% of Peninsular Malaysia population**

The radio listenership by region in Peninsular Malaysia is as follows:

The Central region has the most concentrated radio listeners with **7.7 million listeners**	**Northern region** has the second highest radio **listeners with 5.5 million** of which 38% are from Perak	**Selangor** has **5.2 million listeners**	**Southern and East Coast** regions recorded **3.8 and 3.6 million listeners** respectively	**Kuala Lumpur** has **1.5 million listeners**

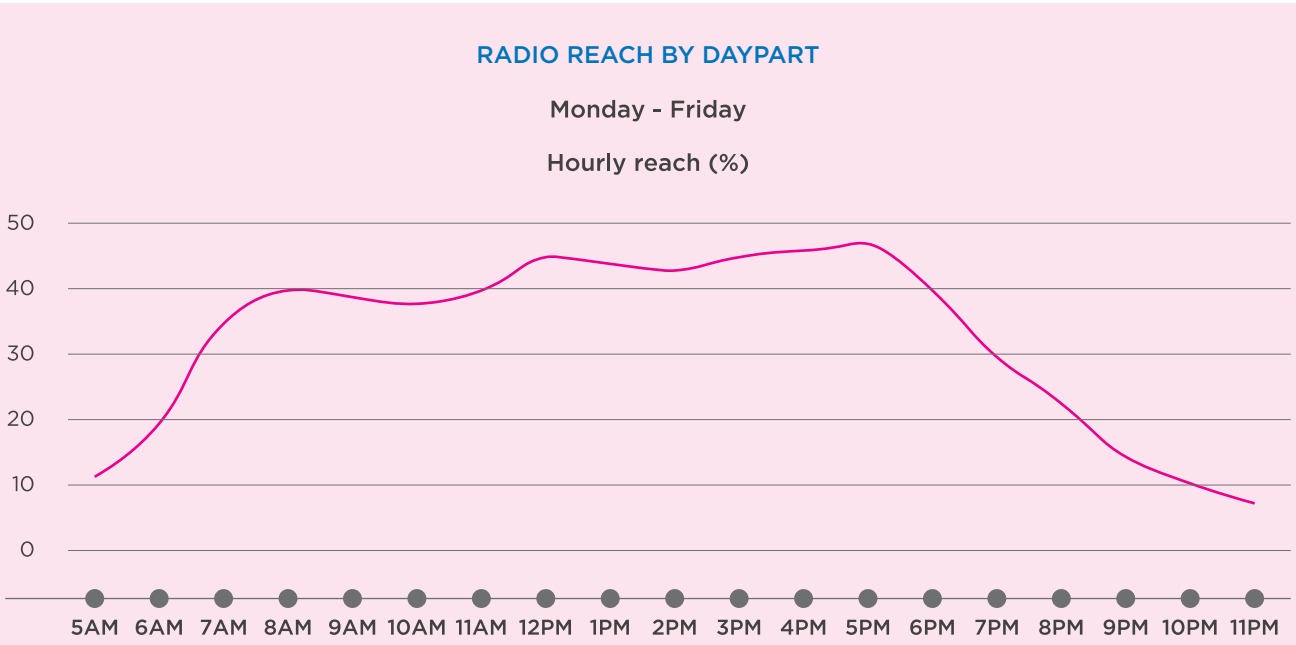
Source: GfK

Figure 4.24 Radio Listenership by State

RADIO LISTENING DOMINATES AUDIO IN-CARS

When people are in their cars, radio is the overwhelmingly dominant audio companion, particularly during peak traffic hours as they commute from home to office and vice versa. According to GfK research[25], the weekday breakfast show (Monday to Friday, 6am to 10am) is the most popular slot attracting listeners with total number of listeners reaching 14.6 million every week, while the drive time shows (Monday to Friday, 4pm to 8pm) comes a close second, reaching 14.5 million listeners in a week.

Another research by Nielsen, in their report Audio Today 2019 also found that the listening pattern among radio listeners fluctuated by time. For adults above 18 years old, total number of listeners increase significantly from 6am to 9am and drop after 6pm giving indication that most of them listen to radio during their commute from home to office and vice versa.



Source: Nielsen, Audio Today, June 2019
Figure 4.25 Radio Reach by Daypart

25 Gfk is a research firm that provide relevant market and consumer information.

RADIO BROADCASTING IN DIGITAL AGE

For established radio broadcasters, the explosion of choice from digital platforms brings new challenges through increased competition for listeners and revenues. Broadcasters also face increased costs from having to invest in new platforms and must deal with increased competition from wider range of media. Thus, broadcasters business models need to evolve, and create new models that are unique such as having personal touch for a specific target audience.

On 24 June 2019, Astro Radio launched 'SYOK', a multilingual lifestyle and entertainment platform that offers Malaysians live radio, original videos, exclusive podcasts, articles and contests. On SYOK, Malaysians can browse up to 25 Astro Radio channels from any location, and enjoy podcasts of all live radio content (radio on demand). SYOK is available online and on the mobile app to cater to changing media consumption patterns.

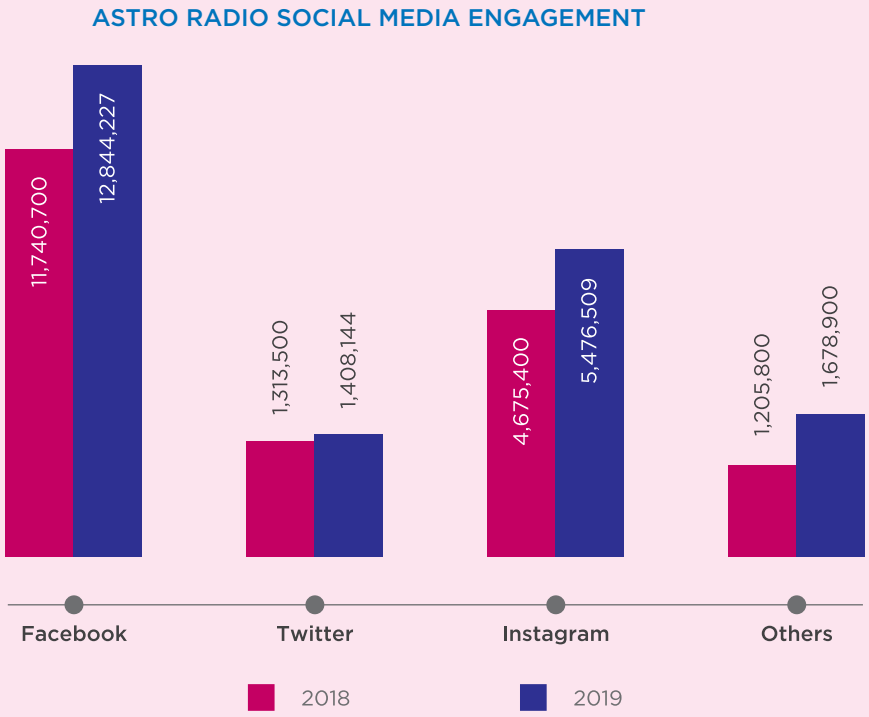
Supported by high national Internet penetration rate, there were approximately 28.7 million Internet users or 87% from overall population, SYOK is able to reach wider audience via digital streams over the Internet.

Astro Radio is engaging listeners through various digital platforms as follows:

Apple App Store and Google Play.
Until October 2019, total downloaded apps for Astro Radio reached 448,691 total download (iOS: 26%; Google Play: 74%)

Social media platform such as Facebook, Twitter, Instagram and other means.

Figure 4.26 below shows the total number of ASTRO Radio followers by social media platform.



Source: ASTRO
Figure 4.26 ASTRO Radio Social Media Engagement

Media Prima also increased their engagement on listeners through Internet especially via social media such as Facebook and Instagram. On October 2019, Media Prima through their broadcast brands namely Fly FM, Hot FM, One FM and Kool FM managed to capture over 302 million video views and over 24 million engagements from content that were posted on social media platforms. In addition, Media Prima also succeeded in capturing 3.5 million and 1.8 million followers on their Facebook and Instagram platform.

TOTAL NUMBER OF MEDIA PRIMA RADIO LISTENERS' SOCIAL MEDIA FOLLOWERS

Social Media Platform	Year 2018				Year 2019			
	FLY FM	HOT FM	One FM	Kool FM	FLY FM	HOT FM	One FM	Kool FM
Facebook	813,354	3,432,312	912,117	214,460	804,932	3,510,500	927,416	207,872
Twitter	376,069	1,755,916	8,760	10,474	NA	1,800,000	8,767	11,824
Instagram	53,000	1,552,381	123,115	216,098	58,766	1,750,085	152,961	238,797
Others	46,668	232,431	109,172	72,500	51,139	726,000	108,898	77,300

Source: Media Prima Radio

Figure 4.27 Total Number of Media Prima Radio Listeners' Social Media Followers

Bernama radio, the first all-news radio station in Malaysia since 2007 has re-strategised their company's direction by focusing on business news especially on the development of small medium industry in Malaysia beginning 1 October 2019. The news broadcast is conducted in Bahasa Malaysia.

Bernama radio is also jumping on the digital bandwagon. In December 2019, Bernama Radio introduced Spotify Bernama Radio. Further, Bernama Radio is also engaging listeners via social media platform such as Facebook and Instagram for wider audience due to its limitation of coverage area within Klang Valley, Johor, Kota Kinabalu and Kuching only. As at October 2019, listeners reach for Bernama Radio stood at 5.5 million. Bernama Radio is expected to capitalise on MyFreeview by placing the Bernama Radio broadcast within the MyFreeview channel which will be undertaken in 2020 to offset the lack of coverage.

Manis FM, a radio station based in Terengganu, has increased the range and clarity of its broadcasts in some targeted areas due to high demand. It has set up transmitters in Bukit Bauk, Dungun, Terengganu and Bukit Bakar, Machang, Kelantan to improve transmission signals within Terengganu Tengah and Kelantan Selatan area. Manis FM has also been recognised as strategic media partner for the State Government of Terengganu and plays a key role as the main broadcaster in delivering the information and programme of Terengganu to the general public, via its commercial radio format.

Manis FM is also exploring the potentials of DTT platform and provide digital marketing solutions via content, videos, social marketing, programmatic advertising, display as well as personalised packages for their targeted audience.

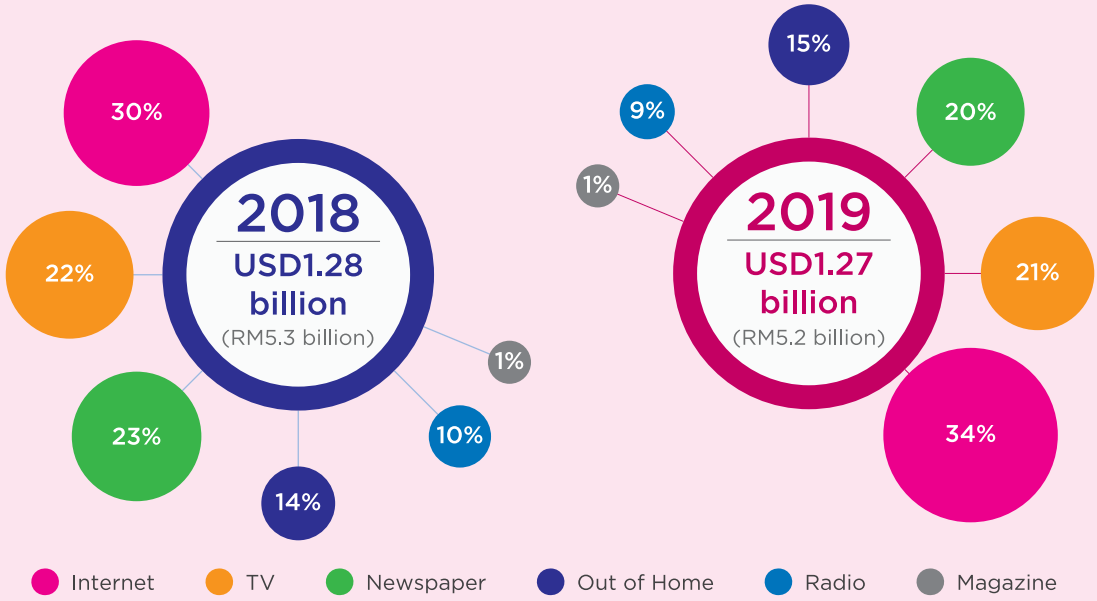
In Sarawak, CatsFM continued to strengthen their presence in the local market by emphasising on the production of local content and conducting more outdoor activities to improve on the listener's engagement with participation from third parties such as Sarawak State Government and private entities. CatsFM also continues to increase listenership by having intensive interactions with the public by embarking on digital journey through organising their first Digital Award via FB live streaming, highlighting local musicians from Carta CATS Xposed which open up more opportunities for monetisation.

Moving forward, traditional radio will continue to face fierce competition from digital platform. In 2020, radio broadcasting market will be more robust with greater emphasise on the digital platforms. Radio now is accessible through numerous platforms namely Facebook, Instagram and Website. In ensuring sustainability, radio broadcasters will continue to venture into a new partnership in providing better services through dedicated mobile apps with the objective to build stronger brand presence and to deliver greater value to listeners.

ADVERTISING EXPENDITURE (ADEX)

Magna Global forecast in 2019, shows that Malaysia recorded a total ADEX of USD1.27 billion (RM5.2 billion), a marginal decline in comparison to 2018 at USD1.28 billion (RM5.3 billion). In 2019, Internet remains the largest pie with 34% market share or a total value of USD439 million (RM1.8 billion), followed by TV (21%) and newspaper (20%) at USD266 million (RM1.1 billion) and USD252 million (RM1 billion) respectively.

MALAYSIA ADEX MARKET SHARE



Note: Exchange rate as at 31 December 2019 is RM4.0925 = USD1; as at 31 December 2018 is RM4.1385 = USD1

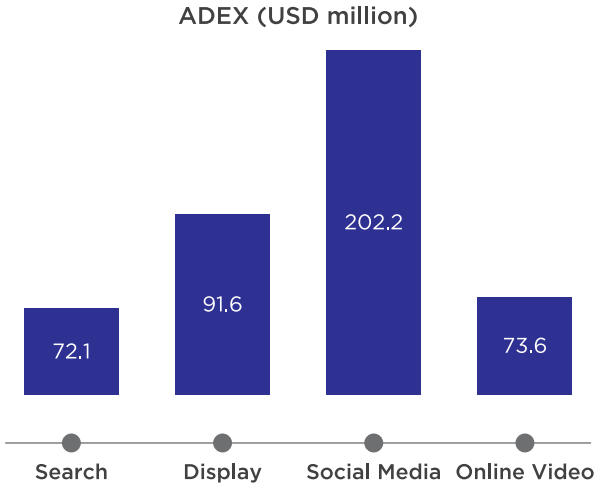
Source: Magna Global
Figure 4.28 Malaysia ADEX Market Share

INTERNET ADVERTISING

Internet advertising is gaining popularity among advertisers due to various factors such as wider audience targeting, capable of extending global reach and multi-platform campaign. As well as being cost effective, Internet advertising can serve to build brand awareness.

By category, social media platform contributed to the highest ADEX. Advertisers prefer to reach users through social media platform due to its extensive reach. In addition, the main contributing factor was Malaysia being one of the countries with a significant number of social media users, whereby 75% of Internet users (or 24 million users) in Malaysia use social media services and spend an average of three hours a day on social media sites.[26]

INTERNET ADVERTISING BY CATEGORY 2019



Source: Magna Global
Figure 4.29 Internet Advertising by Category 2019

26 ASTRO Awani, Malaysia negara ke-9 paling aktif media sosial, ke-5 paling ramai guna e-dagang, January 2018.

CHAPTER 5 : DIGITAL SERVICES

This chapter examines the growth of e-commerce and its contribution to the Malaysian economy. It shows the top e-commerce players and top categories of products in the e-commerce market. It also analyses the spillover effects of e-commerce in many industries, impact on courier industry and the rise of mega distribution centres. This chapter also presents the development of digital payments in Malaysia, RFID for toll and network security initiatives.

KEY HIGHLIGHTS 2019

Malaysian e-commerce market for 2019 generated a revenue of
USD3.68 billion (RM15.2 billion)

Shopee and **Lazada**
dominate the overall e-commerce landscape in Malaysia

Top e-commerce products

Electronics and Media
2019: **RM3.56 billion** ↑32%
(2018: RM2.70 billion)

Fashion and Beauty
2019: **RM4.04 billion** ↑39%
(2018: RM2.91 billion)

Food and Personal Care
2019: **RM1.33 billion** ↑26%
(2018: RM1.06 billion)

Mega distribution centers to cater e-commerce growth are boosting the property industry

E-money transactions amounted to **2,094 million in volume and RM18.2 billion in value**

90% of Malaysians expect their purchase to be delivered within a week, while 46% within three days

OVERVIEW

MALAYSIA IS AN ATTRACTIVE MARKET FOR DIGITAL SERVICES DUE TO ITS DYNAMIC ECONOMY AND DEVELOPED INFRASTRUCTURE FOR DIGITAL TECHNOLOGIES

In 2019, the Internet penetration rate was 28.7 million Internet users or 87% from overall population. Such high internet penetration boosted the digital economy in Malaysia, fueling growth in e-commerce and digital payments.

HOW E-COMMERCE SHAPES THE MALAYSIAN ECONOMY

E-commerce has allowed consumers to go on shopping sprees from the comfort of their homes or in-between working hours, typically at a fraction of the cost and with a wider array of choices. The e-commerce market has been positioned as an integral part of the Malaysian and global economies. A number of segments have benefitted from the expanding e-commerce market which will continue to create more opportunities.

Data from German online statistics portal Statista shows the Malaysian e-commerce market for 2019 generated a revenue of USD3.68 billion (RM15.2 billion), with a prediction for annual market growth to reach 11.8% by 2023.

Malaysian e-commerce market for 2019 generated a revenue of **USD3.68 billion (RM15.2 billion)**

TOP E-COMMERCE PLAYERS IN MALAYSIA

The e-commerce market in Malaysia is mostly dominated by regional companies' e-commerce websites. Consistent with a trend in various other countries across Southeast Asia, Shopee and Lazada dominated the overall ecommerce landscape in Malaysia.

Based on Report on South East Asia's Map of E-Commerce 2019[27], Shopee is the most visited platform. According to Shopee, it successfully doubled the number of application downloads within a year through various marketing initiatives such as creative branding, brand tie-ups and the word-of-mouth by Malaysians.

MALAYSIA: TOP 10 MOST VISITED WEBSITES IN 2019

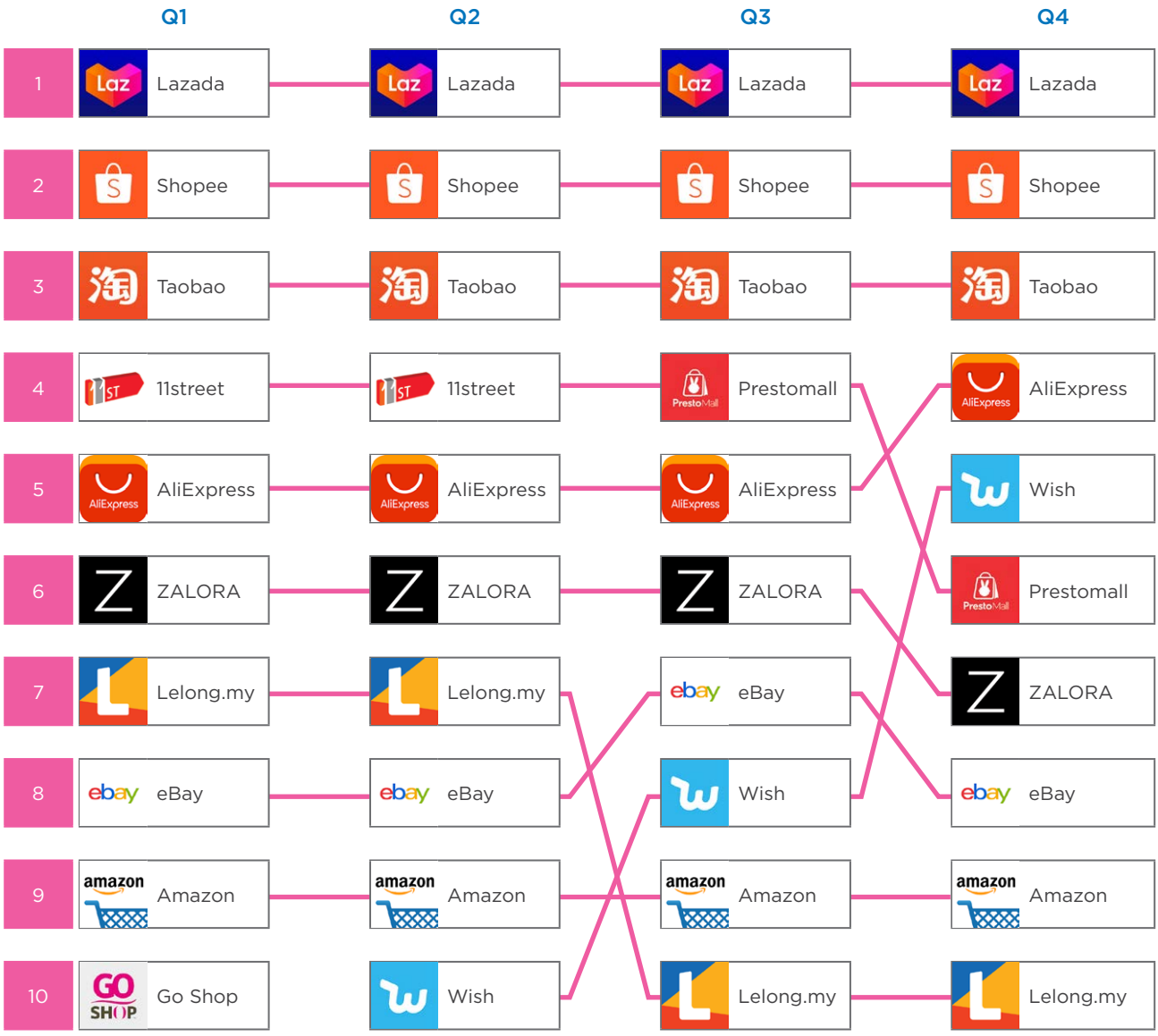
	Merchant	Monthly Traffic
1	Shopee	24,747,577
2	Lazada	18,559,213
3	Lelong	2,597,204
4	Zalora	1,512,136
5	GoShop	784,253
6	eBay	676,447
7	PG Mall	548,504
8	Hermo	540,808
9	ezbuy	504,534
10	fashionvalet	441,173

Source: iPrice
Figure 5.1 Malaysia: Top 10 Most Visited Websites in 2019

27 This report is the result of a partnership between IPrice Group (Market Insights and Analysis), App Annie (Ranking of E-commerce and Mobile Apps) and Similar Web (Traffic Data on E-Commerce Websites).

For top 10 most used mobile apps for e-commerce in Malaysia for 2019, Lazada led with the highest monthly active users, signifying a high emphasis on their mobile app, while Shopee ranked 2nd place. China-based platforms continue to play a significant role as Taobao and AliExpress are the 3rd and 4th most used shopping apps in Malaysia.

MALAYSIA: TOP 10 MOST USED MOBILE APPS IN 2019



Note: Based on Monthly Active Users

Source: iPrice

Figure 5.2 Malaysia: Top 10 Most Used Mobile Apps in 2019

TOP E-COMMERCE PRODUCT CATEGORIES

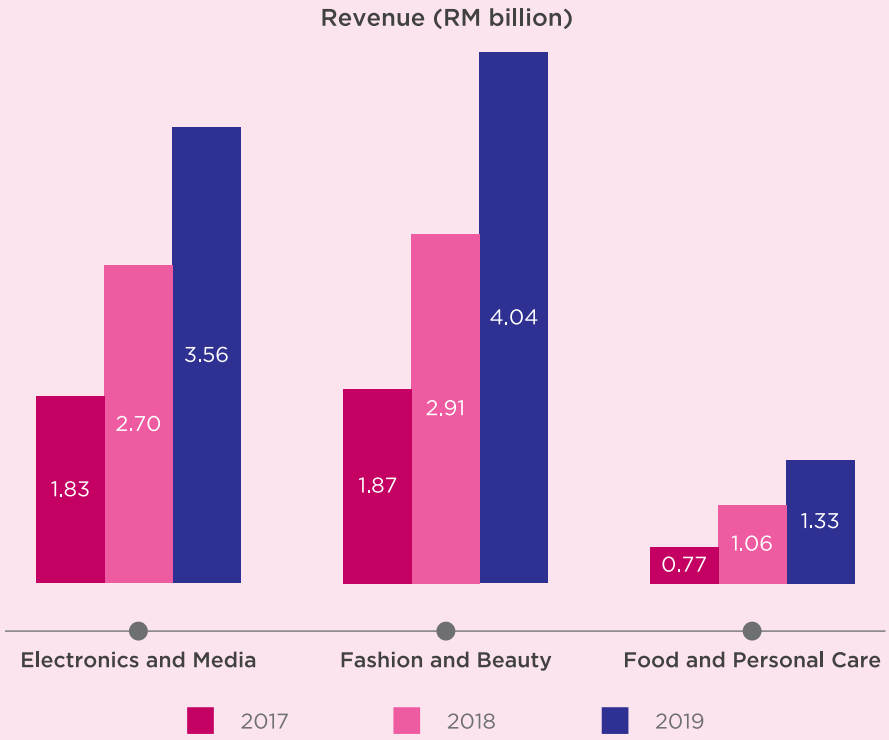
Top three most popular categories in the Malaysian e-commerce marketplace are;

Electronics and Media

Fashion and Beauty

Food and Personal Care

TOP E-COMMERCE PRODUCT REVENUE



Source: Statista

Figure 5.3 Top E-commerce Product Revenue

According to iPrice[28], the most popular consumer electronics items for Malaysian e-commerce consumers range from USB drives, power banks to home appliances like food blenders.

Statista estimates that consumer electronics will hold the lion's share of Malaysian electronics and media e-commerce revenue in 2020. The market was growing rapidly, from USD558.1 million in revenue in 2017, to USD860.1 million in 2019, and is predicted to reach USD1.1 billion by 2024. In 2020, market revenue is expected to hit USD923.6 million, with average revenue per user at USD96.39.

28 iPrice Group Sdn Bhd is a privately owned online shopping aggregator based in Kuala Lumpur, Malaysia. The company is an online aggregator that simplifies a consumers shopping experience by allowing them to browse for products and compare prices from various online stores.

CHANGING LANDSCAPE FOR TRADITIONAL RETAILERS

Traditional players are increasingly jumping on the e-commerce bandwagon in an effort to mitigate the declines in brick-and-mortar revenue.

The traditional brick and mortar retailers have been severely affected by the growing influence of on-line shopping. This has also effected the physical mall with oversupply of retail space and stagnating to declining occupancy rates.

Some retailers have embraced these changes by moving to digital platform and reaping more benefits from e-commerce as opposed to traditional retail. For example, Amazon.com Inc have fewer bookshops but growing number of regional warehouses to meet the demand of e-commerce purchase and speed of delivering. Similarly, in Malaysia, famous bookstores, namely Times and MPH have been closing down their branches in shopping malls and moving to digital space.

F&B is another sector that is growing rapidly in e-commerce space. The influx of e-hailing platforms for food delivery such as Foodpanda and GrabFood provide opportunities for small players and newcomers as investing in a physical location, the amount associated with its construction, and subsequent maintenance is a costly affair. They can open one or two shops, or even operate from home kitchen and rely on third-party delivery services to reach a secondary (if not primary) market. However, physical restaurants are least affected by e-commerce as the concept of going out to enjoy meals and drinks with family and friends or business meetings still prevails.

The spillover effects of e-commerce has flourished the packaging industry as the transfer of goods purchased online would mean that the products need to be packaged before being delivered to the customers' doorsteps. Shares in plastic packaging manufacturers, Scientex Bhd and Thong Guan Industries Bhd, and paper packager Master-Pack Group Bhd have spurred, supported by strong corporate earnings and lower raw material costs.

E-COMMERCE – A GAME CHANGER FOR COURIER INDUSTRY

The continued rapid growth in e-commerce markets will demand an equally rapid and innovative response from transport and logistics businesses.

Consumers expect to receive products ordered online at the soonest possible that online sellers are offering fast delivery with warranties or providing option for premium delivery services that consumers are willing to pay.

To keep up with increasing demand from e-commerce channels and meet the expectations of consumers, courier companies need to invest in their warehouses and distribution centers and increase the development and implementation of advanced supply chain and logistics processes.

Meanwhile, Malaysia's National Transport Policy 2019 to 2030 has also highlighted the need for the transport sector to accommodate the growing e-commerce market. This is in view of the anticipated rise in commercial traffic fulfilling e-commerce orders and providing last-mile deliveries, as well as the higher demand for infrastructure to facilitate the movement of goods from production centres to consumers.

Infrastructure will also be needed to accommodate for last-mile deliveries from distribution centres to consumers, the long-term national blueprint highlighted.

The Pos Malaysia Digital Transformation Plan is a case in point. Pos Malaysia will integrate digital technology into some areas of its services to serve the growing e-commerce market. In April 2019, Pos Malaysia launched the second Integrated Parcel Centre (IPC) in KLIA, increasing 78% of its capacity to 530,000 per day from 300,000, and a RM100 million spend on its core system to enhance the overall Customer Experience digital platforms. The 9/9 online sale in 2019 was the testament of the Digital Transformation Plan which saw Pos Malaysia hitting 800,000 parcels, a new record for the service provider.

FAST GROWING E-COMMERCE DRIVING DEMAND FOR INDUSTRIAL PROPERTIES

Fueled by rapid expansion of e-commerce in Malaysia in recent years, demand for industrial properties, in particular mega distribution, inner-city distribution and purpose-built centres, is holding strong despite a dim outlook for Malaysia's economy.

Such centers are necessary to cater to customer's delivery expectation. According to a market analysis "Insights and trends of e-commerce in Malaysia", 90% of Malaysians expect their purchase to be delivered within a week, while 46% within three days[29]. Next-day deliveries are now commonly available. Both globally and locally, this is increasing the demand for last-mile distribution centres located centrally in the city and suburbs, which were not the typical locations within industrial zones and air or sea ports.

The biggest distribution center is the Mapletree Logistics Hub in Shah Alam, 2.29 million square feet. Global brands including IKEA, Nestlé, Tesco, Zalora and Lazada have all recently invested in Malaysian distribution hubs in an effort to expand their e-commerce footprint in the country.

The Area Logistics @ Ampang project is Malaysia's first three-level inner-city logistics (1.5 million square feet) and last-mile delivery platform that caters for the needs of businesses to fulfil same-day or next-day deliveries for their customers in Kuala Lumpur and the north of KL area.

90% of Malaysians expect their purchase to be delivered within a week, while 46% within three days

29 ASEAN UP, Insights and trends of e-commerce in Malaysia, 6 November 2019. (https://aseanup.com/insights-trends-e-commerce-malaysia/)

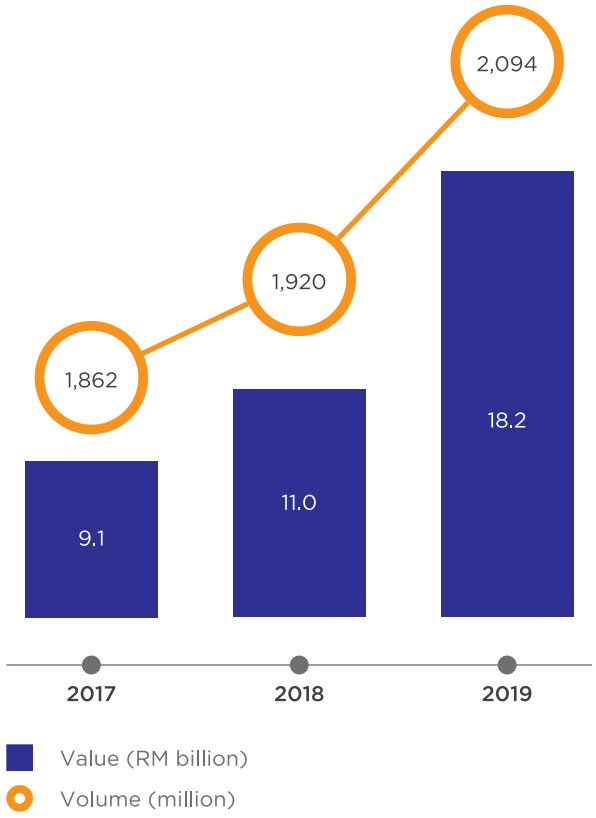
THE DEVELOPMENTS OF E-WALLET

An e-wallet can be defined as an electronic or online device that allows transactions to be made via a computer or smartphone. Most e-wallets, like credit or debit cards, are linked to the individual's bank account in order to make payments. They're also usually protected with passwords or identification. These days, one can pay for just about anything with e-wallets, including groceries, clothes, flight tickets, gadgets and others.

In Malaysia, e-wallets are a growing trend. Despite cyber-security concerns, more and more people are starting to use digital wallets to pay for bills, food, tolls, petrol, groceries and retail expenses. According to Bank Negara Malaysia, e-money transactions amounted to 2,094 million in volume and RM18.2 billion in 2019 (2018: RM11 billion).

Many industry experts regard Malaysia as a prime market for the growth of e-wallets, due to its high potential and favourable demographics to boost e-wallet adoption in the country. PricewaterhouseCoopers Malaysia projected e-wallet market to grow to USD20 billion (RM83.8 billion) by 2024.

E-MONEY TRANSACTIONS IN MALAYSIA



Source: Bank Negara Malaysia, Statista

Figure 5.4 E-money Transactions in Malaysia

E-money transactions amounted to **2,094 million in volume and RM18.2 billion in value**

According to a recent research conducted by App Annie Intelligence, a trusted mobile data and analytics platform, together with iPrice Group, Grab, Touch n' Go eWallet, and Boost are Malaysia's most actively used mobile e-wallets in the past 2 years. By merchant base, Boost has the highest number at 125,000, followed by Touch n' Go and Grab at 110,000 and 40,000 respectively.

In support of the country's vision to be a cashless nation, during the tabling of Budget 2020, the government announced a RM30 incentive "e-Tunai Rakyat" for e-wallet users to boost adoption rates. A budget of RM450 million has been allocated by the finance ministry to be given to 15 million eligible Malaysians[30]. GrabPay, Touch 'n Go e-wallet and Boost are the three participating e-wallet platforms for the e-Tunai Rakyat incentives which will run for two months from 15 Jan 2020 to 14 March 2020.

RFID is an electronic payment system that uses a sticker to pass through toll. The RFID sticker, also called as RFID tag, is unique to each vehicle as it is embedded with a radio frequency chip and is affixed to either the windscreen or the headlamp of the vehicle. The RFID tag is linked to the Touch 'n Go eWallet from which the fare will be deducted[31].

RFID payment option promises a seamless experience with more options for toll payment, anchored on the concept of open payments, and will give highway customers the choice to link their TNG RFID tags to any of their bank accounts, credit or debit cards, or the TNG e-wallet.

RFID FOR TOLL PAYMENT

Source: Touch 'n Go
Figure 5.5 RFID for Toll Payment

30 Malaysians 18 years of age and above and who earn less than RM100,000 annually.
31 Source: https://rfid.touchngo.com.my/

NETWORK SECURITY IN MALAYSIA

Online transactions for e-commerce and e-wallets are more popular and secure than ever before, thanks to the advancements in digital payments technology, demographic shifts, and the evolving cyber-security landscape. However, constant preventive measures must be up-to-date to ensure the network and systems remain safe from any intrusions.

In 2019, the Government, industry and stakeholders implemented various initiatives to improve the level of network security in Malaysia. For example, The National Cyber Security Agency (NACSA) is developing a Cybersecurity Awareness Master Plan which outlines the role and responsibilities of various stakeholders in the implementation of cybersecurity awareness programmes in the country. The objective of the plan is to promote cyber-awareness and security, nurturing and raising awareness of Internet and social media users, especially amongst children, teenagers and parents. The Master Plan is expected to be released in October 2020.

Another agency, CyberSecurity Malaysia announced the development of Coordinated Malware Eradication and Remediation Platform (CMERP)[32], malware detection and alert system that was developed through a public-private collaboration which automatically detects and warn of cyber threats as well as to mitigate them.

Kaspersky, a multinational cybersecurity and anti-virus provider, detected 11.5 million threats on their clients' computers in Malaysia in 4Q 2019 (between October and December 2019). Overall, 31.9% of the clients were almost infected by local threats.

However, local threats for the period recorded a drop in number of cases from 16.94 million in 4Q 2018 to 11.54 million in 4Q 2019. Local threats include malware spread via removable USB drives, CDs and DVDs, as well as other offline methods. Malaysians were also affected by web threat with a total of 5.66 million from 9.84 million cases in the corresponding period a year ago.

To prevent similar incidents from recurring, some precautions should be taken immediately. Among the measures that can be taken are as follows:

Regular update of computer security system	Thorough check of website link before visiting a web site such as misspelling or other irregularities, even if it is a familiar site	Be cautious of URLs that begin with the 'https' as they may not be always secured
Be cautious of emails from unknown senders until the authenticity of their origins can be verified	Do not open emails, attachments or links from unrecognised sources	Practice the usage of unique password, change the password regularly and keeping them safe from anyone's access

32 Free Malaysia Today, National cyber-security agency unrolls new malware detection system, 23 September 2019. (https://www.freemalaysiatoday.com/category/nation/2019/09/23/national-cyber-security-agency-unrolls-new-malware-detection-system/)

MCMC'S ROLE IN NETWORK SECURITY

MCMC is also responsible in ensuring information security and network reliability and integrity in Malaysia, as stipulated in Section 3(2)(j) of the Communications and Multimedia Act 1998 (CMA).

In 2019, MCMC has taken some proactive steps including series of data security assessments on major licensees to ensure their readiness and resiliency in the fast-evolving network security landscape with the following objectives:

- Identify and assess the current implementation of customer data security within the identified licensee; and
- Identify gaps for improvements, especially in the areas of customer data security.

This assessment involved seven major service providers including communication service providers Celcom, Digi, Maxis and U Mobile. This assessment also included TM, TIME and Pay TV service provider ASTRO, involving 10 categories of control as shown in graph below:

Source: MCMC
Figure 5.6 Categories of Assessment Control

From the assessment, all service providers have established the guidelines and fully disseminated and implemented those rules and controls company-wide, with their status monitored and reviewed on a timely basis. The licensees also defined the list of mitigation actions and clear assignment of roles to ensure effective and orderly response to incidents, including those pertaining to customer data.

In addition, MCMC also conducted assessment on small and medium-sized licensees to gauge the level of information and network security implementations. This assessment focuses on four key areas of controls namely; Organisation, Infrastructure, People and Environment. The assessment indicates that more than 80% of the assessed licensees have implemented the necessary controls in the four key areas. Licensees that have yet to implement necessary control in those four areas are due to the absence or lack of internal capacity and expertise. In addition, towards enhancing knowledge and disseminate of information, MCMC also organises training and networking sessions on network security involving security professionals and stakeholders within the Communications and Multimedia (C&M) industry.

Moving forward, in view of the identified gaps and the changing network security landscape, MCMC in collaboration with other government agencies and the C&M industry will embark on initiatives to further strengthen the C&M industry readiness, resiliency, capacity and expertise. The collaboration will also look into the enhancements of regulatory tools, standards, guidelines and codes as part of fulfilling the objectives outlined in the National Policy Objectives of the CMA.

DIGITAL CERTIFICATES DEVELOPMENT

The Public Key Infrastructure (PKI) is used to digitally sign documents transactions to prove the source or identity of sender as well as the integrity of those materials. PKI not only involves the development of infrastructure for distributing and managing public key and digital certificates, but also provides a framework for ensuring safe Internet communications which involve software, regulations, policies and standards.

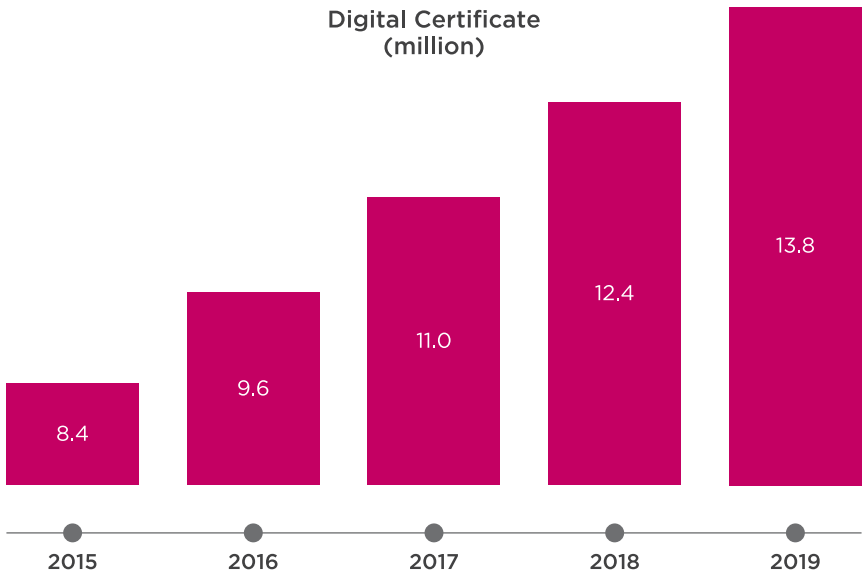
The Digital Signature Act 1997 (DSA 1997) which came into force on 1 October 1998, with the purpose of regulating the use of digital signature in Malaysia using the PKI, ensures the security of legal issues related to electronic transactions and verifies the use of digital signatures through certificates issued by licensed Certification Authority (CA). MCMC is responsible to administer, enforce, carry out and give effect to the provisions under DSA 1997 for the purpose of monitoring and overseeing the activities of Certification Authorities.

Currently, there are four licensed Certification Authorities, namely; Pos Digicert Sdn Bhd (Pos Digicert), MSC Trustgate Sdn Bhd (MSC Trustgate), Telekom Applied Business Sdn Bhd (TAB) and Raffcomm Technologies Sdn Bhd.

GROWTH OF CERTIFICATION AUTHORITIES AND DIGITAL CERTIFICATES

In the context of DSA 1997, a digital certificate is a computer-based record which identifies the certification authority issuing it and names or identifies its subscriber. It contains the subscriber's public key and is digitally signed by the certification authority issuing it. The demand for digital certificates is expected to increase in tandem with digital transformation and growth of digital economy.

DIGITAL CERTIFICATE ISSUANCE 2015 – 2019



Source: MCMC
Figure 5.7 Digital Certificate Issuance 2015 – 2019

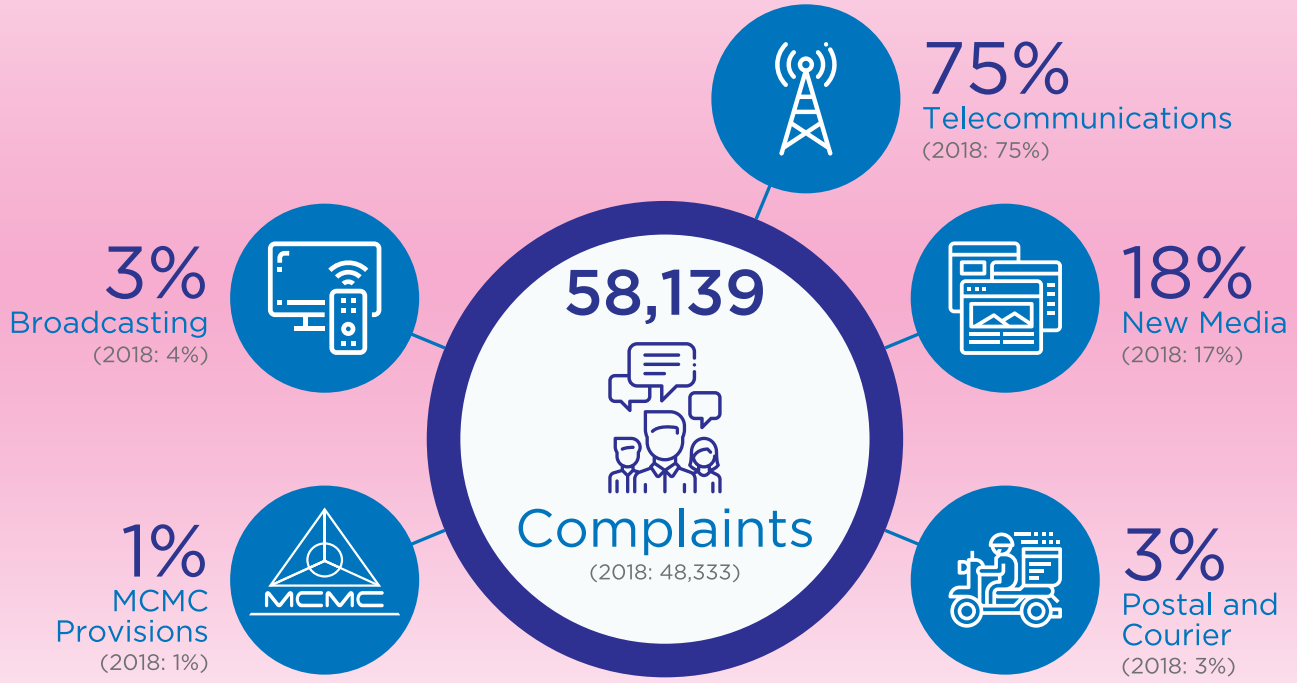
As at end 2019, the number of digital certificates issued in Malaysia was 13.8 million, in which, 97% of the certificates were issued by Pos Digicert, while the remainder by MSC Trustgate and TAB. To date, around four million people have utilised the Pos Digicert service via Inland Revenue Board e-filling services.

The major contributor to the usage of digital certificates in Malaysia is the public sector which took up 96.4% of total certificates issued. Most of the Government online application services are supported by digital certificates to secure online transmission of data via Internet. The remaining 3.3% is issued to corporate sectors such as banking, healthcare and other industries, whilst 0.3% to individuals.

CHAPTER 6 : QUALITY ASSURANCE AND CONSUMER PROTECTION

This chapter is on quality assurance and consumer protection in relation to services provided under the C&M industry. It reports on the number of consumer complaints received by MCMC, detailing out the complaints handling processes and the number of resolved cases. Complaints not under MCMC purview such as online fraud/scam are also included to highlight the collaboration between MCMC and stakeholders to curb such activities. Industry Self-Regulating Forums under MCMC are also listed in this chapter, detailing their roles and activities in the C&M industry. This chapter also reports on the quality of services provided by the licensees in accordance with the Mandatory Standards for Quality of Service under the Communications and Multimedia Act 1998.

KEY HIGHLIGHTS 2019



Top 5 Complaints Received

Telecommunications

- 54% Network
- 20% Billing and Charging
- 11% SMS Service
- 9% Service Delivery
- 6% Mobile Network Portability (MNP)

New Media

- 41% False/Fake
- 29% Offensive
- 13% Obscene/Indecent
- 12% Defamation
- 5% Sextortion/Love Scam

Compound

RM2.7 million

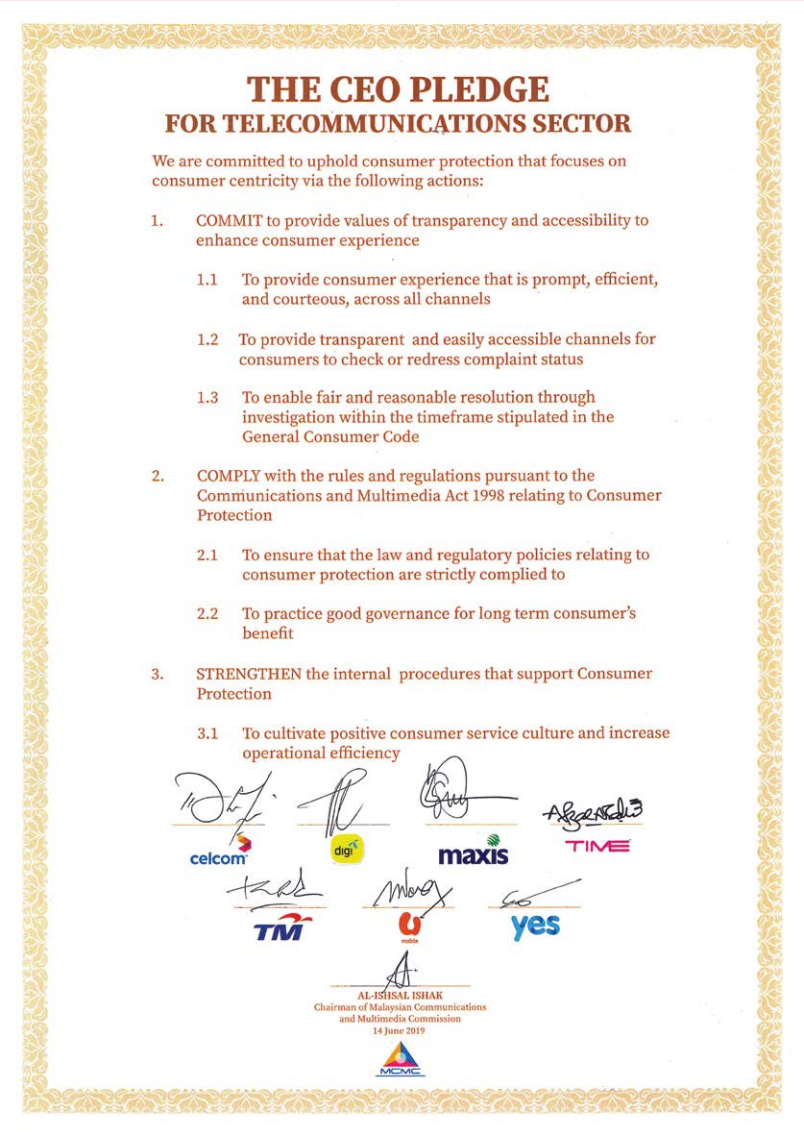
Compound issued for not complying with the Prepaid Guidelines

CONSUMER PROTECTION AND EMPOWERMENT

CONSUMER COMPLAINTS

Consumer protection is one of the fundamental principles under the CMA. On 14 June 2019, MCMC witnessed a CEO Pledge signing ceremony whereby major players committed to uphold a CEO pledge that focuses on consumer centricity and complaint handling management.

THE CEO PLEDGE 2019



THE CEO PLEDGE
FOR TELECOMMUNICATIONS SECTOR

We are committed to uphold consumer protection that focuses on consumer centricity via the following actions:

1. COMMIT to provide values of transparency and accessibility to enhance consumer experience
   - 1.1 To provide consumer experience that is prompt, efficient, and courteous, across all channels
   - 1.2 To provide transparent and easily accessible channels for consumers to check or redress complaint status
   - 1.3 To enable fair and reasonable resolution through investigation within the timeframe stipulated in the General Consumer Code
2. COMPLY with the rules and regulations pursuant to the Communications and Multimedia Act 1998 relating to Consumer Protection
   - 2.1 To ensure that the law and regulatory policies relating to consumer protection are strictly complied to
   - 2.2 To practice good governance for long term consumer's benefit
3. STRENGTHEN the internal procedures that support Consumer Protection
   - 3.1 To cultivate positive consumer service culture and increase operational efficiency

celcom digi maxis TIME TM yes

AL-ISHSAL ISHAK
Chairman of Malaysian Communications and Multimedia Commission
14 June 2019

MCMC

Source: MCMC
Figure 6.1 The CEO Pledge 2019

COMPLAINT STATISTICS

As at end 2019, MCMC received 58,139 complaints for the overall services under the C&M industry. The statistics recorded significant increase of 20% as compared to 48,333 complaints reported in the preceding year.

By industry, telecommunications services contributed 75% cases from the overall complaints reported to MCMC. The cases comprise various dissatisfaction on the level of services provided by telecommunications service providers. The second highest is new media complaints which accounted 18% grievances on social networking platform and public outcry on 3R (race, royalty and religion).

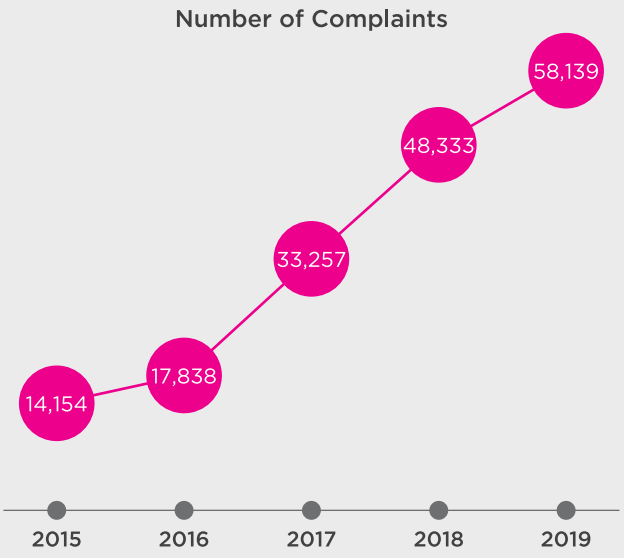
Total Complaints Received

58,139 ↑ 20%

(2018: 48,333)

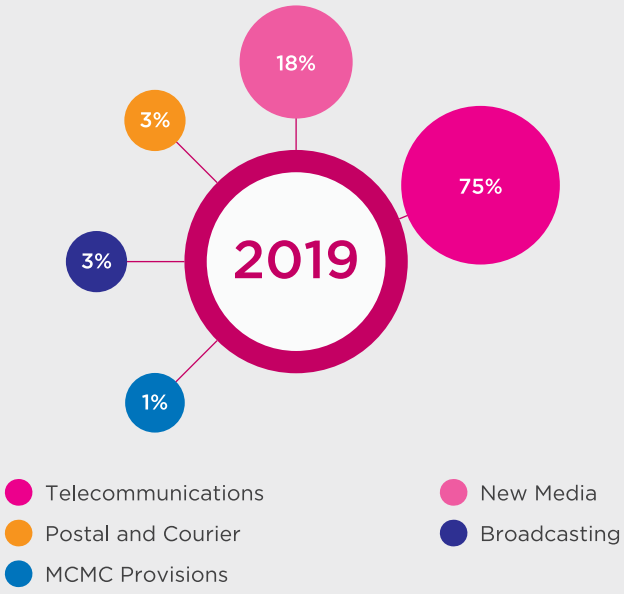
In line with technology advancement, the trend of complaints on postal/courier and broadcasting services are also on upward trend, representing 3% cases from the overall complaints reported in 2019.

TREND OF CONSUMER COMPLAINTS RECEIVED BY MCMC 2015 – 2019



Source: MCMC
Figure 6.2 Trend of Consumer Complaints Received by MCMC 2015 – 2019

COMPLAINTS BY INDUSTRY 2019

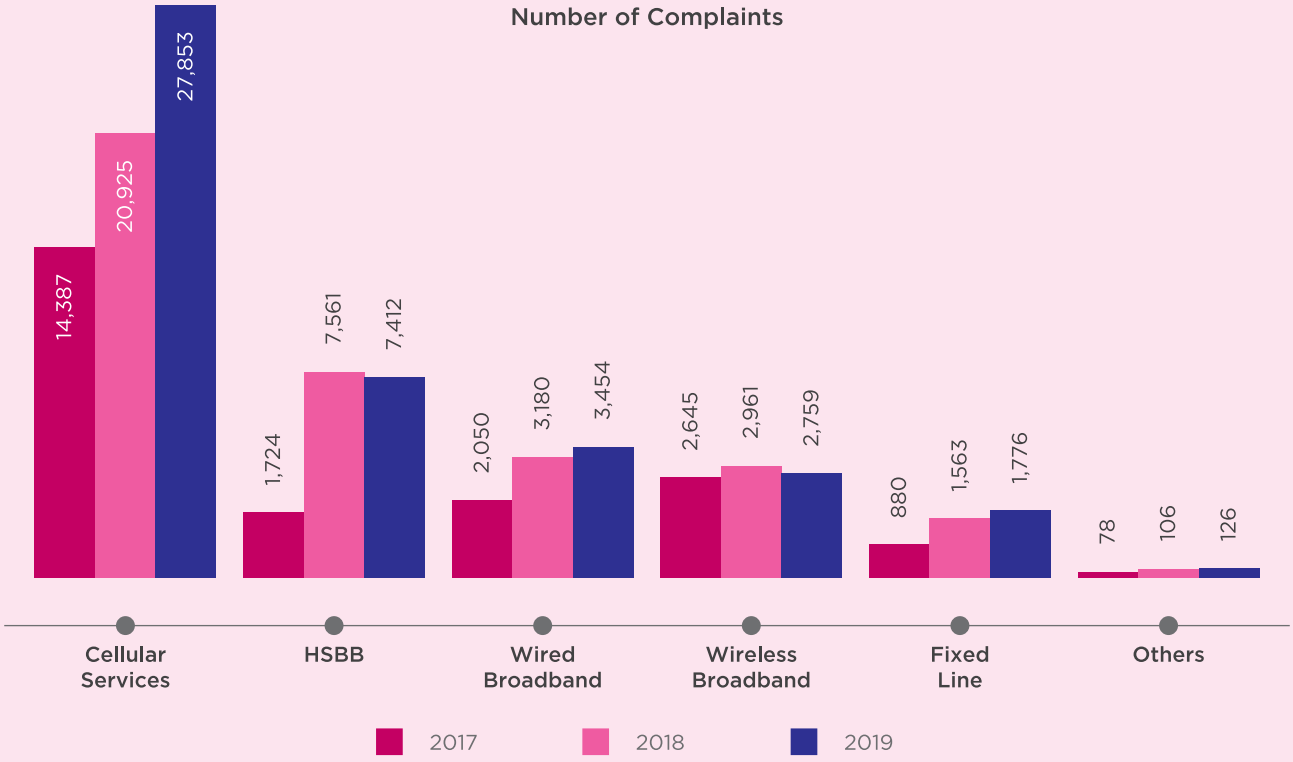


Source: MCMC
Figure 6.3 Complaints by Industry 2019

COMPLAINTS ON TELECOMMUNICATIONS SECTOR

Overall, complaints on cellular services surge significantly, with 33% increase from the previous year, followed by 9% increase in wired broadband and 14% in fixed line service. Nonetheless, complaints on wireless broadband and high speed broadband (HSBB) showed a decline by 7% and 2% in 2019 from 2018 respectively.

TYPES OF COMPLAINTS ON TELECOMMUNICATIONS SECTOR 2017 – 2019



Source: MCMC

Figure 6.4 Types of Complaints on Telecommunications Sector 2017 – 2019

The top five categories of complaints are:-

Network Issues

From the overall complaints reported to MCMC for telecommunications service, network issues posted the highest complaints, which represent 19,832 (54%) complaints received in 2019. Most of the issues reported are related to the quality of network service i.e. poor or service availability of HSBB and 4G LTE, service disruption/downtime, Internet connection/speed and intermittent call connection due to network congestion.

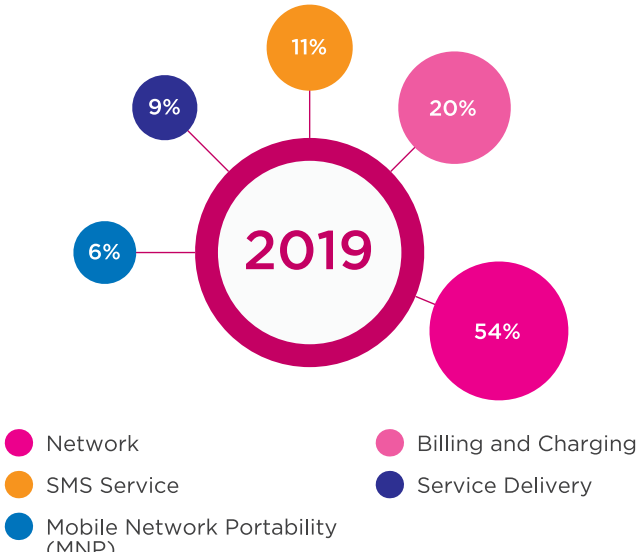
Consumer expectation is relatively high on quality of service (QoS) in which 40% of the network complaints were on QoS issues. Furthermore, consumers are more concerned on data services rather than voice services; 61% of the complaints received were on data services compared to only 19% complaints relating to voice services.

Billing and Charging

The second highest statistics were on billing and charging which recorded 7,500 (20%) complaints from overall complaints on telecommunications sector. MCMC observes that disputes on billing issues are mostly on hidden charges and unclear terms and condition at the point of sales.

Another emerging issue is direct billing system. In 2019, a total number of 2,508 complaints reported to MCMC on unreasonable charges imposed on consumer, which were triggered by the third party application i.e. Google Play store and Apps store whereby the purchases were made via direct billing system.

TOP 5 COMPLAINTS RECEIVED ON TELECOMMUNICATIONS SECTOR 2019



Source: MCMC

Figure 6.5 Top 5 Complaints Received on Telecommunications Sector 2019

Short Messaging Service (SMS) Service

For SMS related complaints, consumers disputed on unknown charges imposed in their bills. It is noted that, 63% of these invalid charges were related to unsolicited SMS from short codes generated by external content providers (ECP). In addition, there are also complaints on SMS gambling, SMS scam and SMS spam from peer to peer.

Service Delivery

It is observed that complaint on service delivery contributes to 3,476 (9%) from the overall complaint received in telecommunications sector in 2019. Consumers are mostly dissatisfied with poor customer service, misrepresentation of service by dealers and agents, debt collection agencies, late restoration and activation of services.

In most cases, frustrated complainants will seek redress direct from MCMC and the Minister via other platform i.e. social media and WhatsApp platform as they are not satisfied with how the service providers handle the complaints or resolution provided.

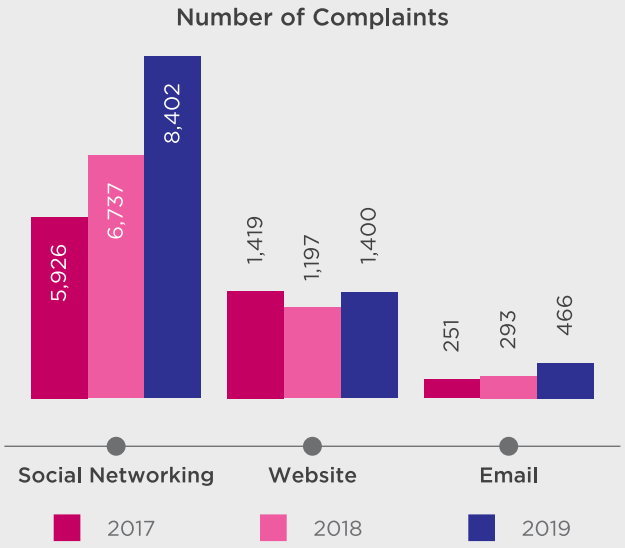
Mobile Number Portability (MNP)

MNP provides flexibility for consumer to retain their existing mobile number and port to other service provider. In 2019, MNP related issues recorded 2,239 (6%) complaints particularly on porting delay or rejected and unauthorised porting.

COMPLAINTS ON NEW MEDIA

For complaints on new media, MCMC recorded 10,268 complaints from the public. The total number of complaint received in 2019 has increased by 25% as compared to 2018 (8,227). Overall, 82% or 8,402 complaints were related to social networking, followed by 14% complaints (1,400) on website/blog/forum and the remainder on email. Most of the cases reported were related to false or fake content (41%), offensive remarks (29%), obscene or indecent content (13%), defamation (12%) as well as sextortion/love scam (5%)

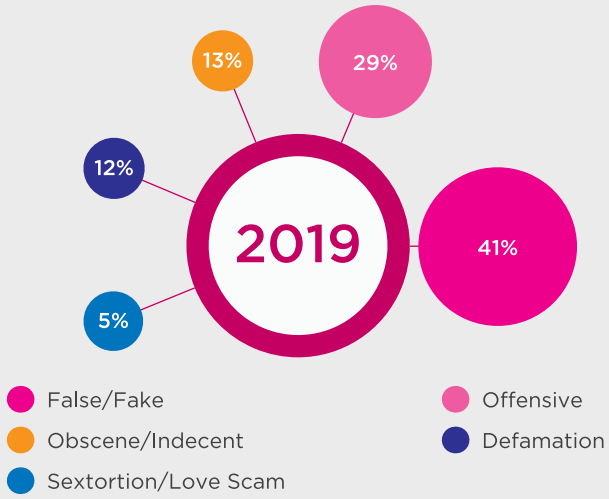
TYPES OF COMPLAINTS ON NEW MEDIA 2017 – 2019



Source: MCMC

Figure 6.6 Types of Complaints on New Media 2017 – 2019

TOP 5 COMPLAINTS RECEIVED ON NEW MEDIA 2019



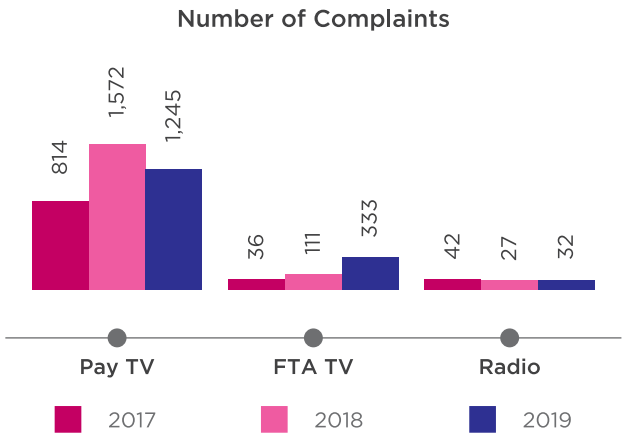
Source: MCMC

Figure 6.7 Top 5 Complaints Received on New Media 2019

COMPLAINTS ON BROADCASTING

Complaints related to Pay TV recorded the highest complaints in 2019 with 77% (1,245) on broadcasting services. Complaints on FTA TV increased by 200% (333), whilst complaints on radio content recorded a total of 32 cases in 2019.

TYPES OF COMPLAINTS ON BROADCASTING 2017 – 2019



Note: Pay TV includes complaints on IPTV

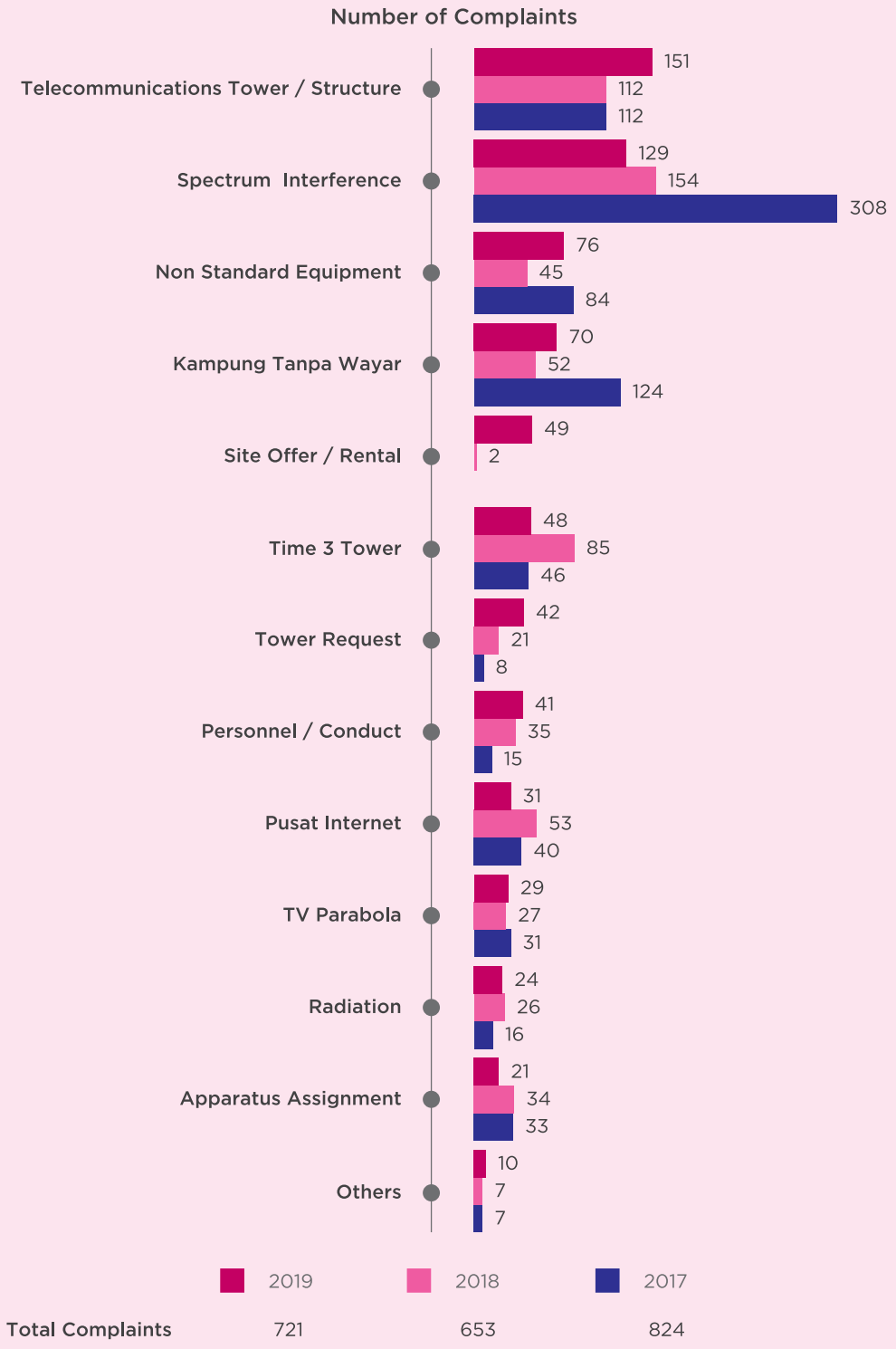
Source: MCMC

Figure 6.8 Types of Complaint on Broadcasting 2017 – 2019

COMPLAINTS UNDER MCMC PROVISIONS

The top three complaint categories under MCMC service provisions were on telecommunications tower/ structure, spectrum interference, and non-standard equipment.

COMPLAINTS UNDER MCMC PROVISIONS 2017 – 2019



Note: MCMC service provisions refer to the service provided by MCMC and any issue/complaint from the public will be investigated by MCMC, unlike the other complaint categories that are escalated to service providers for further action.

Source: MCMC

Figure 6.9 Complaints Under MCMC Provisions 2017 – 2019

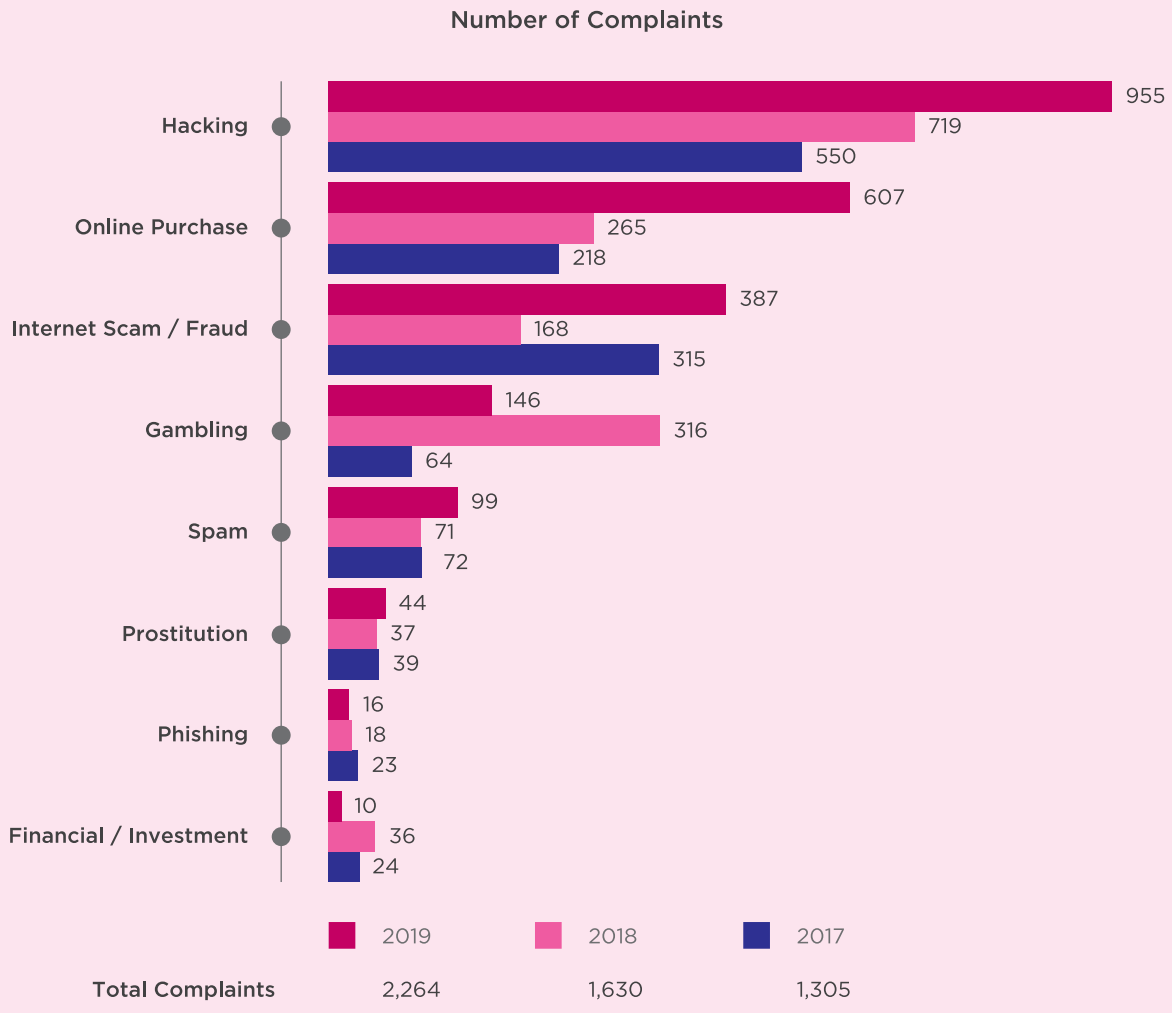
COMPLAINTS NOT UNDER MCMC JURISDICTION

In line with the technological advancement in the cyber space, MCMC received various complaints such as hacking, online purchase, Internet fraud/scam, phishing, spam, financial investment, gambling and prostitution.

Even though these issues are not regulated directly under the CMA, MCMC provides technical assistance with strong collaboration with relevant law enforcement agencies towards eradicating such illegal activities.

In 2019, the top three complaints reported to MCMC were on hacking of social media accounts that posted the highest number of complaints with 955 complaints, followed by online purchase with 607 complaints and Internet scam or fraud with 387 complaints.

COMPLAINTS NOT UNDER MCMC JURISDICTION 2017 – 2019



Source: MCMC

Figure 6.10 Complaints Not Under MCMC Jurisdiction 2017 – 2019

COMPLAINT RESOLUTION

In terms of complaints lodged in 2019, 98% of the cases were closed and resolved at February 2020, whilst 2% of the cases were escalated for further investigation.

The time frame taken to resolve a complaint is between 15 to 30 days. For 'Complaints Resolved' category, the complaint has been resolved but still pending approval from complainant. The complainant is given 30 business days to provide feedback. Failure to do so, the complaint will be categorised as 'Closed'. 'Complaints under Investigation' refers to the aforesaid complaints that are still under review and investigation by MCMC and service providers.

COMPLAINT RESOLUTION 2019

Source: MCMC
Figure 6.11 Complaint Resolution 2019

MITIGATION OF SCAM / SPOOF CALLS

Over the past few years, consumers have been hit with number of new scams through our telecommunications services for fraudulent purposes. Fraudsters always look for new ways to invade our privacy and personal financial information and one of the uprising scams is called Caller ID Spoofing.

MCMC is seriously concerned on reports that Caller ID information is being manipulated for fraudulent or deceptive purposes and the impact of those practices on public trust and confidence in the telecommunications industry. It is also alarming on how this practice may affect consumers as well as public safety and law enforcement communities.

Since 2017, MCMC has been working together with service providers and Commercial Crime Investigation Department (CCID) of PDRM to take action in addressing scam call issues. An Industry Reference (IR) was developed and issued in 2018 to manage and mitigate these issues. The IR on Call Spoofing contains best practices and technical guidelines for respective service providers to undertake preventive and precautionary measures to mitigate scam call issues. In combating fraud via telecommunications channel, a virtual taskforce comprising of MCMC, service providers and CCID was formed to monitor and response immediately within 24 hours.

Based on numerous discussions during the taskforce meetings, it was reported that there is an increase in the number of complaints on this issue and the finding from the investigation shows that the offenders/ fraudsters have changed their modus operandi (MO) using others channels in the network. MCMC together with the service providers have initiated to review the current IR towards mitigating these issues.

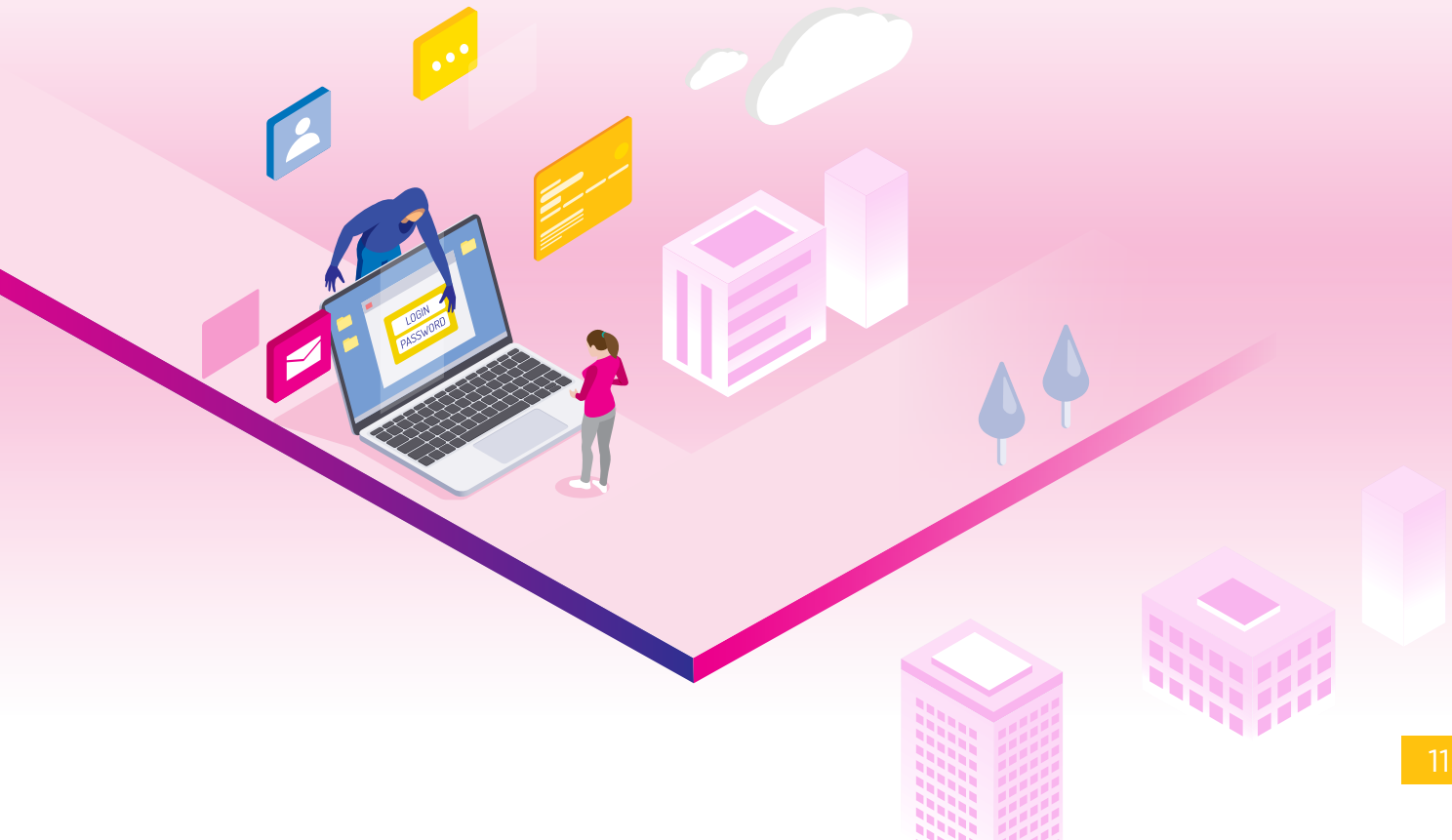
SCAM AWARENESS CAMPAIGN

Apart from monitoring on scam/spoof call issues, there are several initiatives in educating and providing awareness to the public about MO of scammers. KKMM has initiated a working group for *Kempen Kesedaran Jenayah Siber*. The working group consists of MCMC, PDRM, Bank Negara Malaysia and all agencies under KKMM (Bernama, RTM, Jabatan Penerangan Malaysia (JaPen), FINAS). The ongoing campaigns are as below:

SCAM AWARENESS CAMPAIGN 2019		
Promotion	**Details**	**Duration**
TV Crawlers	8 scripts – English and BM All TV stations	1 October – 31 December 2019
Radio Public Service Announcements	8 scripts – English and BM All radio stations	
TV and radio interviews	Interviews with RTM Negeri nationwide by Regional Office Heads	October 2018 – December 2019
Klik Dengan Bijak information videos	Video on financial scam – from MCMC, Finas and JaPen	October 2018 – December 2019
Klik Dengan Bijak infographic social media postings	Infographics from KKMM/JaPen	October 2018 – December 2019
Klik Dengan Bijak Educational Module	Used in Internet safety programmes and talks nationwide	October 2018 – December 2019

Source: MCMC

Figure 6.12 Scam Awareness Campaign 2019

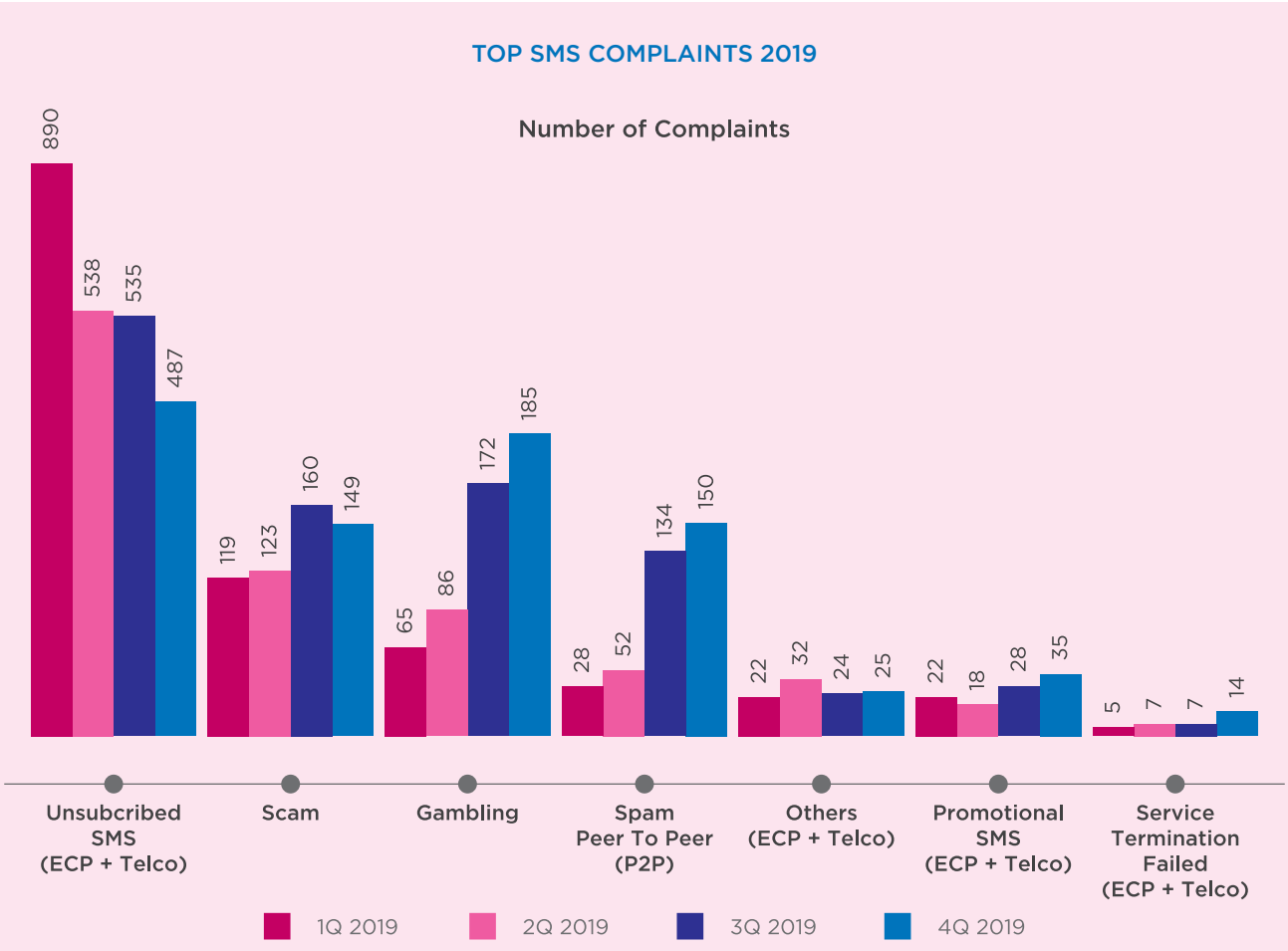


MOBILE CONTENT SERVICES (MCS)

The Mandatory Standards for the Provision of MCS, Determination No. 4 of 2009 (MSMCS) is used to provide adequate consumer safeguard and guidelines for the mobile content industry.

In recent years, the evolution of mobile communication technology and Internet protocol (IP) based services has allowed mobile contents to be available on any mobile and fixed devices that supports IP-based content platforms.

The convergence of MCS with IP-based content services has created a gap in the regulatory framework of MSMCS. The fluidity of the mobile content industry has also caused MCS to be one of the top SMS related complaints that MCMC receives on a monthly basis, represented by "Unsubscribed External Content Provider (ECP) + Telcos" category illustrated in figure below:



Source: MCMC

Figure 6.13 Top SMS Complaints 2019

Through consistent administrative actions i.e. warning letters, penalties and suspension of MCS short codes and keywords, MCMC has managed to reduce the overall MCS quarterly complaints. MCMC is continuously working together with the mobile content industry players and aggregators in addressing MCS issues faced by the mass subscribers.

MCMC has consulted and engaged with various stakeholders since 2015 with the aim to review the MSMCS that is targeted for completion by 2020. The review is expected to provide an update to the MSMCS and the necessary tools to ensure continued safeguard of consumers.

TERMINATION OF MOBILE NUMBER DUE TO ILLEGAL ADVERTISEMENT

The issue of illegal advertisement has raised alarming concern for the local authorities in Malaysia. The issue is seen increasingly active whereby the illegal ads were posted everywhere particularly at public places. Such activities are affecting the image of the cities in Malaysia particularly the city of Kuala Lumpur.

The local authorities in Malaysia intensified its monitoring and enforcement activities to curb the issues efficiently and ensure due punishment under the relevant regulations. Apart from that, the local authorities have also initiated a collaboration with MCMC to terminate all numbers displayed or posted in the illegal advertisement.

The initiative which started since the year 2012, requires an official application from the local authorities to MCMC to enable the termination process of the affected mobile numbers. A working group was established consisting Ministry of Urban Wellbeing, Housing and Local Government (KPKT) and MCMC to develop a standard operating procedures to coordinate and standardise affected mobile number termination process.

The table below indicates a total number of mobile numbers terminated for 2019.

NUMBER OF MOBILE NUMBER TERMINATED 2019

Local Authority	Total Submission	Termination	Incomplete Submission or Application	Inactive
Dewan Bandaraya Kuala Lumpur	811	575		236
Majlis Perbandaran Klang	142	142		
Majlis Perbandaran Kubang Pasu	62	60	2	
Majlis Perbandaran Sungai Petani	50	50		
Bahagian Siasatan Jenayah Komersial (IPD Johor Bahru Selatan)	36	0	36	
Majlis Perbandaran Muar	18	7	11	
Majlis Perbandaran Subang Jaya	6	6		
Majlis Perbandaran Seberang Perai	3	3		
Majlis Daerah Sarikei	2	0	2	
Bahagian Siasatan Jenayah Komersial (IPD Pontian)	2	0	2	
Ibu Pejabat Polis Daerah Ipoh	1	1		
Majlis Perbandaran Kluang	1	1		
TOTAL	**1,134**	**845**	**53**	**236**

Source: MCMC

Figure 6.14 Number of Mobile Number Terminated 2019

INDUSTRY SELF-REGULATING FORUMS

Protecting the interest of consumers of C&M services is a primary task of MCMC. Therefore, it is important that consumers, consumer associations and other interest groups are made aware of the regulatory measures that effectively safeguard consumer rights and privileges.

COMMUNICATIONS AND MULTIMEDIA CONSUMER FORUM OF MALAYSIA

The year 2019 was an important year for Communications and Multimedia Consumer Forum of Malaysia (CFM) as the General Consumer Code of Practice (GCC), which was first registered in 2003, was reviewed and approved by MCMC for Public Consultation. It is expected that the revised Code will be registered by 2Q 2020.

CFM started to manage GCC-related complaints from end to end since March 2019 for all service providers except for TM, Maxis, Digi and Celcom, which falls under the purview of MCMC. As at end 2019, a total of 1,240 complaints was handled by CFM.

CFM also contributed towards industry development by organising a briefing for its Demand Side and Associate Members on the Public Inquiry Paper for Mandatory Standard Quality of Services – Customer Service.

In addition, CFM also organised awareness programmes through different approaches throughout the year such as CFM Animatch, CFM Explorace with Pahang FM and TripleM Explorace in collaboration with MTSFB and CFM Demand Side Member and Multimedia University.

CFM conducted Dialogues Forums with members of the public on topics such as The Changing Landscape of Broadband; Consumer Protection in the Spam, Scam and Fraud with CFM Demand Members and Universiti Kebangsaan Malaysia. In December 2019, CFM organised a Masterclass "Communications and Multimedia Advertising Guidelines: Are we doing it right?", covering topics on promoting self-regulation and awareness on advertisement guidelines aligned with consumer protection requirements.

Year 2019 also saw the introduction of eight new members to CFM from both the supply and demand sides. CFM also gained 460 media coverage throughout the year and conducted 14 pocket talks to help increase public awareness on their rights.

COMMUNICATIONS AND MULTIMEDIA CONTENT FORUM OF MALAYSIA

In accordance to CMA, Communications and Multimedia Content Forum of Malaysia (CMCF) is a designated industry body to facilitate and enhance industry self-regulation pursuant to the Malaysian Communications and Multimedia Content Code (Content Code). As an independent body, CMCF represents all relevant parties to govern content and address issues pertaining to content which are disseminated by way of the electronic networked medium.

CMCF strives to create a balance in the monitoring and regulation of the C&M industry framework in Malaysia based on the concept of self-regulation.

As at end 2019, CMCF has a membership of 46 organisations which consists of 42 Ordinary Members from various categories;-

- Advertisers
- Broadcasters
- Audiotext Service Providers
- Content Creators/Distributors
- Civic Groups
- Internet Access Service Providers

The membership also includes four Associate Members. The members have contributed their time and expertise in their respective fields, which led to the increase of CMCF capabilities in addressing any arising issues as well as to develop new policies for the development of electronic media content industry in Malaysia.

BREAKDOWN OF COMPLAINTS BY CATEGORY 2019	
Category	**Number of Complaints**
Internet Content	188
Mobile Content / Service	138
Broadcasting Content	6
Advertising Content	2
Others	6
TOTAL	**340**

Source: CMCF
Figure 6.15 Breakdown of Complaints by Category 2019

As at end 2019, CMCF received a total of 340 complaints via CMCF complaints portal, e-mails or letters from complainants in regards to various content issues. This shows a decline of 20% compared with 427 complaints received in 2018. The significant drop can be attributed to the activities carried out by the CMCF in effectively engaging with the public and it shows that they are more aware about the importance of self-regulation in practice.

By category, complaints on Internet Content was the highest with 188 cases, constituting 55.3% of total complaints received (Figure 6.15).

In 2019, CMCF has successfully reviewed the Content Code and submitted it to MCMC for approval. Registration of the second edition on Content Code is targeted to be completed by 2020.

CMCF published its bulletin entitled "Reaching Out", which can be downloaded from *www.stickswithyou.com*. This is an in-house periodical produced in digital format for easy downloading and reading through digital devices. The bulletin covers current issues on electronic networked medium. A total of three bulletins were produced in March, July and December 2019.

CMCF organised number of workshops relating to self-regulation to the public, industry and government agencies in various states in Malaysia throughout 2019. The main purpose of these workshops was to promote the concept of self-regulation, whilst providing information and awareness to the participants of the workshops. In addition, CMCF also organised "Tea Talk" dialogue sessions that enabled two-way communications between the participants and CMCF. Industry players were invited to discuss any content related matters and challenges they face in creating and disseminating content, not necessarily related to compliance of the Content Code. As at end 2019, a total of 11 workshops and "Tea Talk" sessions were held.

MALAYSIAN TECHNICAL STANDARDS FORUM BHD

The Malaysian Technical Standards Forum Bhd (MTSFB) was incorporated on 8 June 2004 and subsequently designated and registered by MCMC as the Technical Standards Forum pursuant to sections 94 and 184 of the CMA on 27 November 2004.

The primary role of MTSFB is to develop technical codes for the adoption by the C&M industry. In line with the CMA, MTSFB is tasked to develop technical codes which shall include, but is not limited to, the requirements for network interoperability and the promotion of safety of network facilities.

To date, MTSFB has developed 45 technical codes in total which have been registered by MCMC. Out of which 22 technical codes developed for the purpose of certifying communications equipment under the Communications and Multimedia (Technical Standards) Regulations 2000. For 2019, seven technical codes have been registered as listed in Table below.

LIST OF TECHNICAL CODES REGISTERED IN 2019

No.	Technical Codes
1	MCMC MTSFB TC T003:2019 - Private Automatic Branch Exchange (PABX) System for Connection to Public Switched Telephone Network (PSTN) and Internet Protocol (IP) Network (Second Revision)
2	MCMC MTSFB TC T011:2019 - Digital Terrestrial Television (DTT) Broadcast Service Receiver – Common Test Suite (First Revision)
3	MCMC MTSFB TC G019:2019 - Scheduled Waste Management for Base Station (Inclusive of E-waste)
4	MCMC MTSFB TC T013:2019 - Internet Protocol Version 6 (IPv6) – Equipment Compliance (First Revision)
5	MCMC MTSFB TC G009:2019 - Information and Network Security – Requirements (First revision)
6	MCMC MTSFB TC G020:2019 - Information and Network Security – Cyber Insurance Acquisition
7	MCMC MTSFB TC G021:2019 - Information and Network Security – Monitoring and Measurement of Security Control Objectives

Source: MTSFB
Figure 6.16 List of Technical Codes Registered in 2019

In light of the new initiatives of 5G implementation to support the future needs of Malaysia's Digital Economy, Industrial Revolution 4.0 (IR 4.0) and IoT, MTSFB has also been actively participating in the National 5G Task Force. As for the recently launched National Fiberisation and Connectivity Plan (NFCP), MTSFB is also tasked to assess on the needs of reviewing the current related documents or developing new technical codes to support the initiatives.

MCMC MONITORING ACTIVITIES

PREPAID AUDIT ACTIVITY

MCMC has conducted a ground survey exercise in 2018 to assess the readiness of Optical Character Reader (OCR) implementation by service providers. In 2019, MCMC conducted prepaid audit activity to audit the compliance level of prepaid registration procedures by service providers and its representatives (dealers) to the Guidelines on Registration of End-Users of Prepaid Public Cellular Services (Prepaid Guidelines). Any violation of the Prepaid Guidelines is an offence under the service provider's Licence Condition and an enforcement action can be taken under Section 242 of the CMA.

MCMC INTERNAL AUDIT – MYSTERY SHOPPER

MCMC monitors the prepaid registration process by conducting regular dealer audit and surprise checks (mystery shopper). From 26 June 2019 until 3 October 2019, MCMC conducted Prepaid Registration Audit Exercise in Central Region-Klang Valley areas and Eastern Region-Kelantan, Terengganu and Pahang areas.

A total of 573 registered dealers were randomly selected and audited. Out of 573 dealers, 101 dealers were found to be in breach of the Guidelines. Some of the dealers allowed registration using photocopy or pictures of identification documents and also sell pre-activated SIM cards. Further enforcement actions have been taken against the relevant service providers.

Table below is the summary for the Prepaid Audit in Central and Eastern regions.

SUMMARY OF PREPAID AUDIT IN CENTRAL AND EASTERN REGIONS

	Number of Dealers Audited	Compliance	Non-Compliance
Central Region	55	48	7
Eastern Region	518	424	94
TOTAL	**573**	**472**	**101**

Source: MCMC

Figure 6.17 Summary of Prepaid Audit in Central and Eastern Regions

AUDIT EXERCISE WITH INDUSTRY

A special taskforce was formed by MCMC and telecommunications service providers to monitor the prepaid registration activities and improvise the existing prepaid registration process. As per the Prepaid Guidelines, service providers are also directed to perform audit for its dealers, prepaid service end-users system and any other related system and records or database that are relevant. This is to ensure that the information recorded during the prepaid registration process are accurate.

From 4 to 8 November 2019, MCMC together with service providers conducted a Mass Prepaid Registration Audit Exercise at Sabah Region to assess:

- The compliance level of prepaid registration procedures based on the new Prepaid Guidelines, especially on the implementation of OCR
- To identify gaps and improvement plans for Prepaid Guidelines in mitigating fraud and false registration by dealers and agents

The audit was conducted using two methods:

- Fact finding based on the subscriber's database for prepaid services verified with National Registry Department (NRD)
- Dealer/agents audit

This audit serves as a platform for MCMC and service providers to strengthen cooperation, information sharing and discussion on prepaid registration with particular focus on improving the current registration of prepaid SIM card processes, development approaches, good policy practices as well addressing the challenges and opportunities.

Figure 6.18 is the summary for the Prepaid Audit in Sabah region.

SUMMARY OF PREPAID AUDIT IN SABAH REGION

	Number of Dealers Audited
Kota Kinabalu	18
Sandakan	7
Tawau and Semporna	5
TOTAL	**30**

Source: MCMC

Figure 6.18 Summary of Prepaid Audit in Sabah Region

Amongst the findings based on the audit performed:

- Manual Registration is still allowed by some service providers.
- Dealers are not allowed to access the subscriber's information after the registration of SIM Card has been performed.
- Dealers are only able to view information on the status of registration; name; mobile number and registration date for limited numbers and can only be viewed by the devices that performed the registration only.
- Dealers did not frequently change their login id and password for the application provided by the service providers for registration.
- Capturing of information using Card Reader is more accurate compared to OCR.

The findings are shared with the service providers for their further improvement action.

RM2.7 million
Compound issued for not complying with the Prepaid Guidelines

MCMC continuously undertake monitoring and enforcement activities to ensure service providers' and their representatives comply with the Prepaid Guidelines. Apart from the audit conducted to check on the prepaid registration process, MCMC also performed the data verification exercise with NRD to verify the integrity of prepaid subscriber's database and to rectify unmatched data from service providers' database.

Total compound issued to service providers in 2019 for not complying with the Prepaid Guidelines were RM2.7 million.

MONITORING OF CASP (I) LICENSEES FOR CONTENT COMPLIANCE

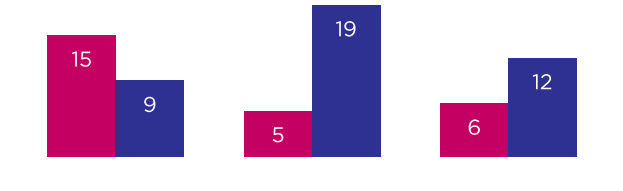
In accordance with the CMA, CASP (I) licensee is required to comply with the licence conditions, Content Code and CMA.

MCMC continues to focus on social regulation by strengthening the monitoring of private radio and TV broadcasting content to ensure the development of content that reflects culture, identity and norms of society.

In 2019, a total of 40 complaints which were related to radio and TV broadcast content were received and investigated by MCMC. As shown in the Figure 6.19, there were 19 complaints on Pay TV, 12 complaints on radio followed by nine complaints on Terrestrial Free to Air (FTA) TV.

Overall, there is an increase of 54% in complaints received on broadcast content; 40 complaints in 2019 compared to 26 complaints in 2018.

COMPLAINTS ON BROADCAST CONTENT BY PLATFORM



	2018	2019
Total Complaints	26	40

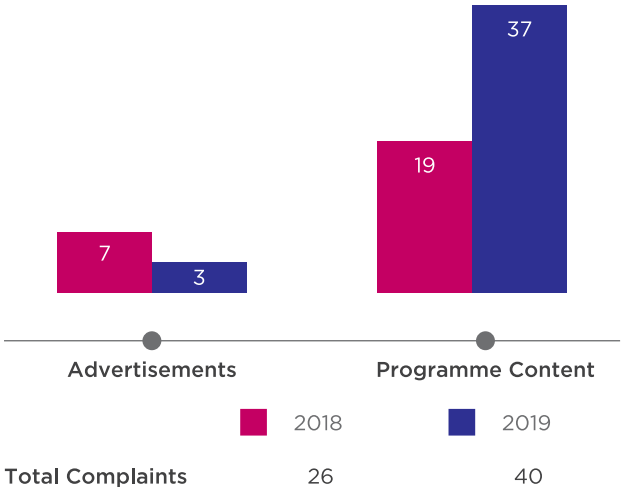
Note: Subscription TV – ASTRO, unifi TV; Terrestrial FTA TV – TV3, TV9, ntv7, 8TV and TV AlHijrah

Source: MCMC
Figure 6.19 Complaints on Broadcast Content by Platform

Out of 40 complaints received in 2019, 92.5% were on programme content such as news, movie, drama and song lyrics in which the content were found to be offensive, false, menacing, indecent and obscene. Most of the content were related to sensitive content, inappropriate visual/scene and bad language. The remaining 7.5% were complaints on advertisements.

The co-regulation efforts between MCMC and Ministry of Health (MOH) have shown an improvement of compliance by the CASP (I) licensees relating to commercial advertisements/ promotion on health, food and cosmetics products. This has resulted in significant reduction of complaints from seven complaints in 2018 to only three complaints in 2019.

COMPLAINTS ON BROADCAST CONTENT BY CATEGORY



	2018	2019
Total Complaints	26	40

Note: Subscription TV – ASTRO, unifi TV; Terrestrial FTA TV – TV3, TV9, ntv7, 8TV and TV AlHijrah

Source: MCMC
Figure 6.20 Complaints on Broadcast Content by Category

In this regard, MCMC has taken proactive action to monitor the live programmes such as compliance briefing to the broadcasters prior to the live programmes schedule as well as attend both rehearsal and live events to ensure the TV station's compliance with the Content Code, CMA and other relevant regulations.

LIVE/REHEARSAL PROGRAMMES ATTENDED

No.	Programme	Station
1	Anugerah Juara Lagu 33	TV3
2	Anugerah Bintang Popular Berita Harian 2019 ke-32	TV3
3	Anugerah Skrin 2019	TV3
4	Karpet Merah Anugerah Skrin 2019	TV3

Source: MCMC
Figure 6.21 Live/Rehearsal Programmes Attended

SPECTRUM MONITORING

Spectrum monitoring for both terrestrial and satellite in 410-430MHz band and C-band respectively were executed based on Spectrum Monitoring Plan 2019. 17 frequencies were identified operating without Apparatus Assignment (AA) and 15 of them were used by Mal-Tel Communication Sdn Bhd as shown in table below:

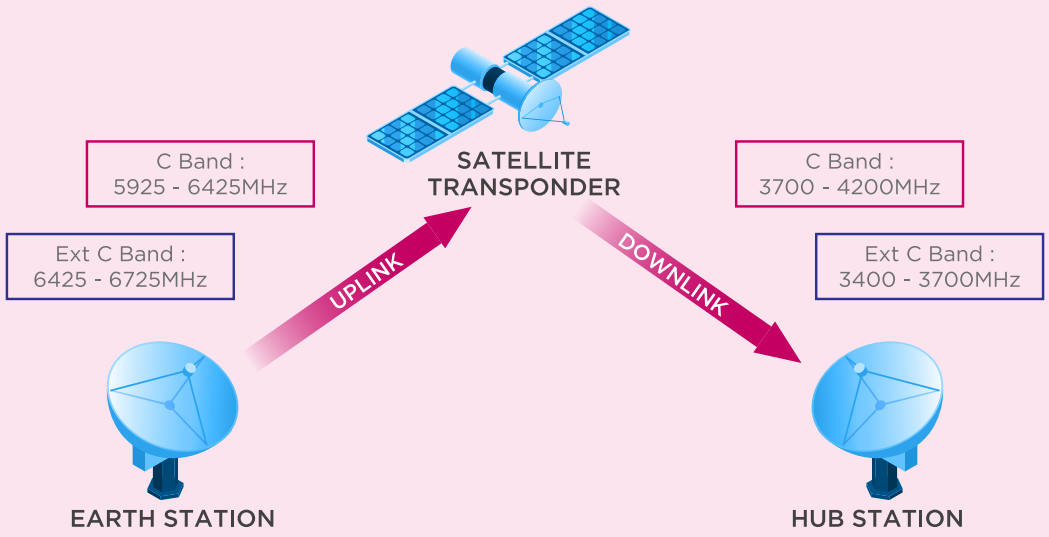
FREQUENCIES OPERATING WITHOUT AA IN 2019				
No.	Frequency (MHz)	Bandwidth (kHz)	Location	Station Owner
1	422.65	12.5	Apartment Ria	Mal-Tel
2	422.6875	12.5	Apartment Ria	Mal-Tel
3	422.9	12.5	Apartment Ria	Mal-Tel
4	422.9375	12.5	Apartment Ria	Mal-Tel
5	423.4375	12.5	Apartment Ria	Mal-Tel
6	423.4625	12.5	Celcom Jenderam	Mal-Tel
7	423.7	12.5	TM Bukit Lanjan	Unknown
8	423.725	12.5	Apartment Ria	Mal-Tel
9	423.8625	12.5	Apartment Ria	Mal-Tel
10	423.95	12.5	TM Bukit Lanjan	Unknown
11	424.1375	12.5	Apartment Ria	Mal-Tel
12	424.1625	12.5	Apartment Ria	Mal-Tel
13	424.3875	12.5	Apartment Ria	Mal-Tel
14	424.425	12.5	Apartment Ria	Mal-Tel
15	424.4375	12.5	Apartment Ria	Mal-Tel
16	424.6875	12.5	Apartment Ria	Mal-Tel
17	424.9375	12.5	Apartment Ria	Mal-Tel

Source: MCMC

Figure 6.22 Frequencies Operating without AA in 2019

MCMC started spectrum monitoring on satellite band in 2019 using a new satellite monitoring system which comes with eight metres parabolic dish installed at MCMC Former Headquarters. Monitoring is focused on C-band uplink transmissions via orbital slot 91.5°E under MEASAT satellites. The utilisation of frequency and bandwidth by ground station operators were audited based on its AA. C-band ground stations use frequency range from 3400 to 4200MHz for downlink and 5925 to 6725MHz for uplink transmission as shown in figure below.

OVERVIEW OF TYPICAL C-BAND SATELLITE COMMUNICATION ARCHITECTURE



Source: MCMC

Figure 6.23 Overview of Typical C-Band Satellite Communication Architecture

Table below shows total of 78 non-compliance earth stations due to transmission without AA, operating at different frequency or bigger bandwidth based on service providers' AA. All non-compliance cases were issued with Administrative Notice, whilst two FIR were issued for non-compliance cases in Pahang.

NUMBER OF NON-COMPLIANCE C-BAND EARTH STATIONS COMMUNICATING WITH MEASAT SATELLITES 2019

No.	Licensee	AA Records*	Non-compliance	Reason for Non-Compliance
1	Celcom Axiata Bhd	67	65	Transmission of frequencies without AA
2	Maxis Broadband Sdn Bhd	201	4	Different frequency and bigger bandwidth
3	Measat Broadcast Network Systems Sdn Bhd	14	2	Different frequency
4	Measat Satellite Systems Sdn Bhd	62	0	-
5	Rignet Sdn Bhd	4	1	Bigger bandwidth
6	Satellite Noc Sdn Bhd	1	0	-
7	Scopetel Sdn Bhd	2	2	Bigger bandwidth
8	Sistem Televisyen Malaysia Bhd	2	0	-
9	Telekom Malaysia Bhd	14	1	Bigger bandwidth
10	Tenaga Nasional Bhd	1	1	Different frequency

**Note: Number of frequencies that were not renewed in 2019 and being monitored for any non-compliances*

Source: MCMC

Figure 6.24 Number of Non-Compliance C-Band Earth Stations Communicating with MEASAT Satellites 2019

COMPLIANCE AND MONITORING OF ACCESS INSTRUMENTS

In 2019, MCMC was involved in the implementation, compliance and monitoring of the following access instruments:

Commission Determination on Access List, Determination No. 2 of 2015 (Access List)	Commission Determination on the Mandatory Standard on Access, Determination No. 3 of 2016 (MSA)	Commission Determination on the Mandatory Standard on Access Pricing, Determination No. 1 of 2017 (MSAP)

A key activity that was conducted as part of implementation was to educate the industry on the access framework and the roles and responsibilities of licensees. Hence, in 2019, MCMC conducted eight awareness sessions for 43 new Individual licensees.

In 2019, MCMC assessed more than 51 Access Agreements for registration pursuant to Section 150 of the CMA. In addition, MCMC assessed more than 21 Reference Access Offers (RAO) that were published by Access Providers on their websites. MCMC reviewed and assessed both the Access Agreements and the RAOs to ensure that they comply with the CMA and access instruments aforementioned.

Furthermore, MCMC also engaged with a total of 19 licensees on the submission of Reporting Obligations in April and October 2019 for the Transmission Service, Network Co-location Service, Duct and Manhole Access, HSBB Network Services, Mobile Virtual Network Operator Access and Digital Terrestrial Broadcasting Multiplexing Services. MCMC received and assessed more than 76 reports to ensure the Access Providers' compliance to the access instruments.

Another important role of the MCMC in 2019 is the resolution of complaints and disputes between licensees related to access. Eight complaints were received on the supply of facilities and services in the Access List and/or pertaining to compliance with the MSA and MSAP, of which, six of eight complaints have been resolved.

MCMC has facilitated the negotiations between the parties to ensure effective competition and for the long-term interests of the industry and consumers.

QUALITY OF SERVICE

MANDATORY STANDARDS ON QUALITY OF SERVICE

Mandatory Standards for Quality of Service (MSQoS) have been established to protect consumers in Malaysia in terms of quality of service and enforced to all relevant service providers.

MSQoS under the CMA is to monitor and regulate the performance of services offered to consumers. The purpose of the MSQoS is to:

- Enhance and protect user rights;
- Provide users with clear and specific criteria to measure the quality of services accepted or adopted; and
- Enhance international competitiveness by strengthening the local industry.

A total of eight Commission Determinations on the MSQoS were registered between 2002 and 2016;

REGISTERED DETERMINATIONS ON MSQOS	
No.	**Mandatory Standard**
1	Public Switched Telephone Network Service (PSTN) Determination 1 of 2002
2	Dial Up Internet Access Service (DIAS) Determination 3 of 2002
3	Content Applications Services (CAS) Determination 4 of 2002
4	Public Payphone Service (PPS) Determination 3 of 2003
5	Digital Leased Line Service (DLL) Determination 4 of 2003
6	Public Cellular Service (PCS) Determination 1 of 2015
7	Wireless Broadband Access Service (WBAS) Determination 1 of 2016
8	Wired Broadband Access Service (BAS) Determination 2 of 2016

Source: MCMC
Figure 6.25 Registered Determinations on MSQoS

Each licensee is obliged to submit reports to MCMC no later than 30 days from the end of every quarterly reporting period or 6 weeks from end of June or December if the reporting is on half yearly basis.

The non-compliance with the MSQoS is categorised into three categories:

Non-compliance with the Minimum Standard Imposed	Late Submission	Failure to Submit

Any breaches to the MSQoS shall be liable to a fine not exceeding RM200,000 under section 109 of CMA or RM100,000 or imprisonment for a term not exceeding two years or both under Section 242 of CMA.

COMPLIANCE ON CUSTOMER SERVICE QUALITY OF SERVICE

Based on the reporting and analysis, the common denominator for the non-compliances are the following standards which affects most of the major service providers:

MAJOR NON-COMPLIANCES	
No.	**QoS Indicator/Standard**
1	Promptness in Resolving Customer Complaints
2	Non-billing Related Complaints Per 1,000 Customers
3	Promptness in Answering Calls to Customer Hotline • 80% in 20 seconds • 90% in 40 seconds

Source: MCMC
Figure 6.26 Major Non-Compliances

As at end 2019, total of 22 licensees were issued with Notice on Non-Compliances for breach on minimum standard and late submission. Below are the list of standards that the licensees failed to comply, which led to the issuance of the notices.

LIST OF STANDARDS					
No.	**Standard**	**Number of Non-Compliance**			
		Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
1	Late Submission	-	1	1	1
2	Promptness in Resolving Customer Complaints (Non-Billing Related Complaints)	2	2	-	1
3	Promptness in Resolving Customer Complaints (Billing Related Complaints)	-	2	-	1
4	Promptness in Answering Calls to Customer Hotline	3	3	3	4
5	Non-Billing Related Complaints per 1000 Customers	1	3	-	2
6	Service Restoration Fulfillment	1	1	1	1
7	Service Disruption	1	1	1	-
	TOTAL	**8**	**13**	**6**	**10**

Source: MCMC
Figure 6.27 List of Standards

NETWORK PERFORMANCE ASSESSMENT

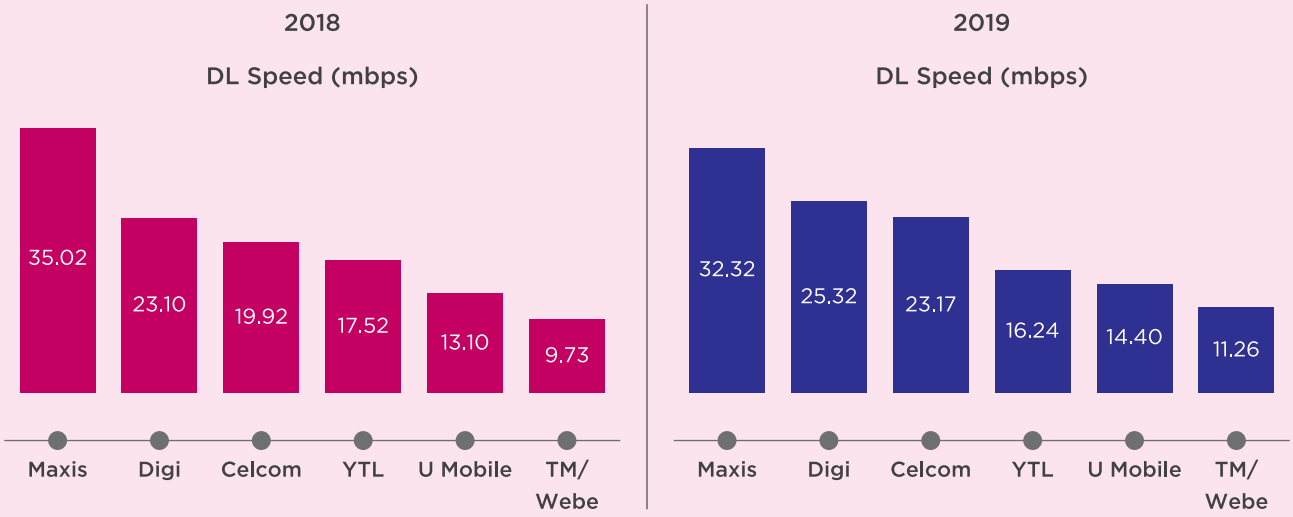
MCMC conducts yearly network performance assessment on public cellular voice, mobile broadband and fixed broadband services. Service providers' performance are measured nationwide based on standards specified in the MSQoS that encompasses Public Cellular Service, Wireless Broadband Access Service and Wired Broadband Access Service. In 2019, measurements were carried out from January to December 2019 and the full network performance report will be published in early 2020.

Service providers' performance in terms of network QoS is a determining factor of the quality that the customers will experience. The International Telecommunication Union for Standardization (ITU-T) viewpoints of QoS defines that QoS offered and delivered by service providers will relate to the QoS perceived and required by the customers. The MSQoS is in place to ensure the minimum QoS requirements are met by the service providers to satisfy the demands of the customers.

WIRELESS BROADBAND ACCESS SERVICE PERFORMANCE

Monitoring the network performance for consumer experience of using mobile data is essential in today's digital environment of data hungry consumers. Figure 6.28 and Figure 6.29 below describe average download throughput (Mbps) and average network latency (ms) respectively, for each mobile service provider in Malaysia for 2019, in comparison to 2018.

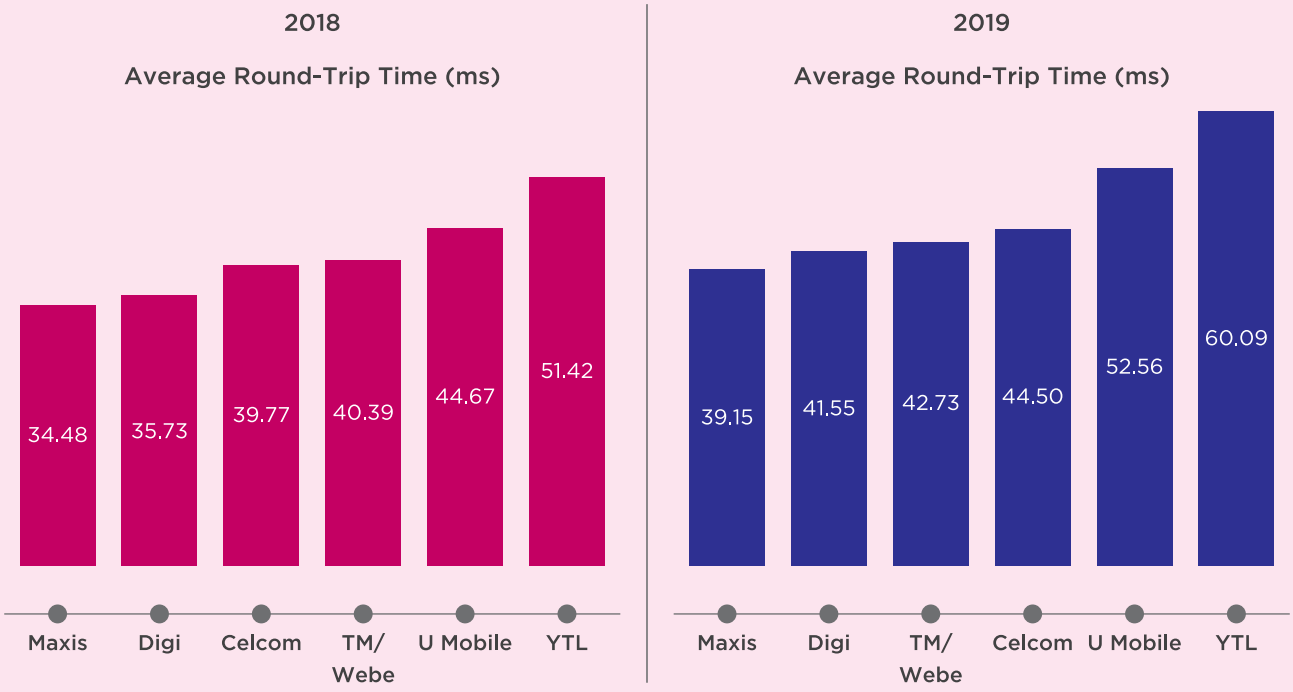
NETWORK PERFORMANCE FOR WIRELESS BROADBAND – AVERAGE DOWNLOAD (DL) THROUGHPUT



Source: MCMC

Figure 6.28 Network Performance for Wireless Broadband – Average Download (DL) Throughput

NETWORK PERFORMANCE FOR WIRELESS BROADBAND – NETWORK LATENCY



Source: MCMC

Figure 6.29 Network Performance for Wireless Broadband – Network Latency

In 2019, the test locations for wireless broadband assessment comprises more on residential and industrial areas while maintaining samples for business and urban areas.

WIRELESS BROADBAND PERFORMANCE TEST RESULT 2019

Service Provider	% of Time		Packet Loss (%) (≤ 3%)
	Speed ≥ 1 Mbps (≥ 80%)	Latency ≤ 250ms (≥ 70%)	
Celcom	98.10%	99.77%	0.12
Digi	97.97%	99.07%	0.02
Maxis	98.76%	99.78%	0.00
U Mobile	91.67%	99.26%	0.00
TM/Webe	89.29%	99.47%	0.03
YES (LTE)	98.16%	98.42%	0.00

Source: MCMC

Figure 6.30 Wireless Broadband Performance Test Result 2019

WIRED BROADBAND ACCESS SERVICE PERFORMANCE

As for wired broadband network performance, MCMC measures the QoS of individual home Internet. Measurements were performed on premise to gauge the actual service received vis-à-vis customer's subscription package.

Network performance parameters for both digital subscriber line (DSL) and fibre connections in the MSQoS shall be complied by the fixed service providers to safeguard the interest of the paying customers. Figure 6.31 below shows the network performance of wired broadband services for fixed broadband service providers in Malaysia for 2019.

WIRED BROADBAND PERFORMANCE TEST RESULT 2019

Service Provider	Digital Subscriber Line Technology (%)				Fibre Technology (%)			
	Upload Speed	Download Speed	Round Trip Time	Packet Loss	Upload Speed	Download Speed	Round Trip Time	Packet Loss
	≥ 70% subscribed speed for ≥ 90% of the time		≥ 95% of the time	≤ 1.0%	≥ 90% of subscribed speed for ≥ 90% of the time		≥ 95% of the time	≤ 1.0%
TM	100.0	99.9	96.2	1.0	98.8	92.2	98.9	0.2
Maxis	39.5	96.6	96.6	0.2	93.7	93.7	95.4	0.5
TIME	N/A				95.1	95.7	100.0	0.0

Source: MCMC

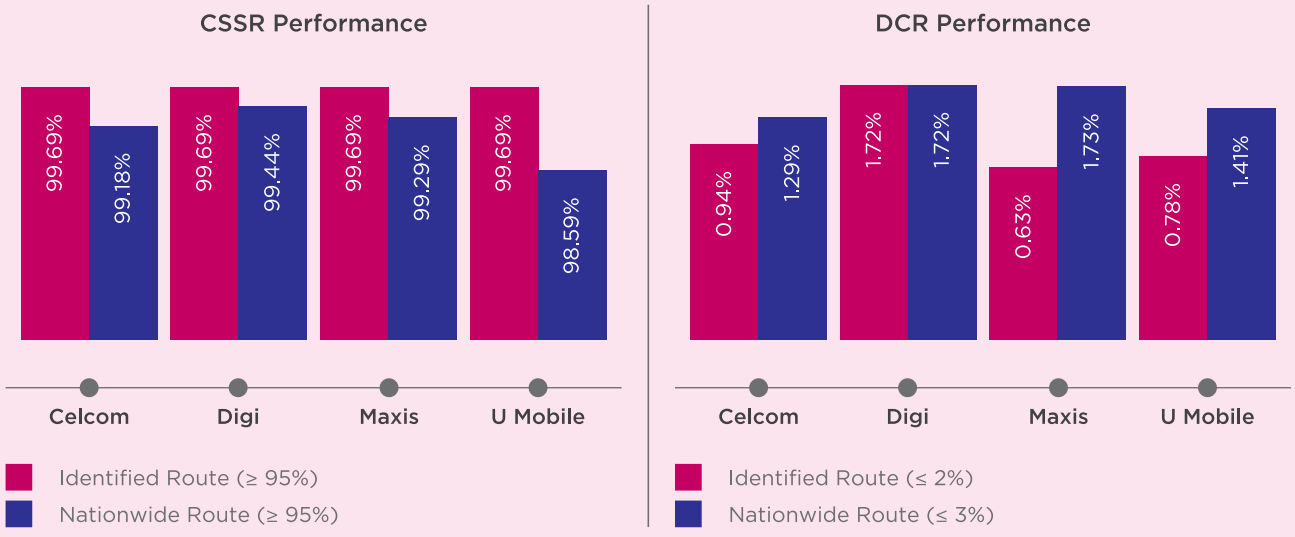
Figure 6.31 Wired Broadband Performance Test Result 2019

In terms of speed and latency, fibre connection as the last mile is expected to perform better than DSL. As fibre technology could reach higher Gigabit speed, service providers are gradually moving towards replacing the DSL technology to fibre for better performance.

PUBLIC CELLULAR SERVICE PERFORMANCE

Public cellular service (PCS) or voice call service is essential even in today's trend of growing demand for data. Voice calls made on traditional circuit switch utilising 3G and 2G networks are still prevalent for communications. Hence, network performance on voice accessibility and retainability are measured nationwide by MCMC to ascertain service providers' network capability to meet the minimum requirement for call setup success rate (CSSR) and dropped call rate (DCR) as stated in the MSQoS. Figure 6.32 shows the CSSR and DCR performance on nationwide and identified routes for 2019.

PCS PERFORMANCE RESULT 2019



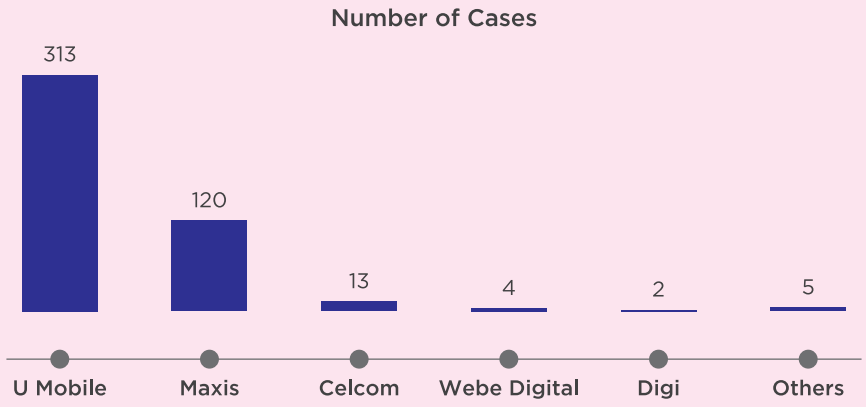
Source: MCMC

Figure 6.32 PCS Performance Result 2019

RADIO FREQUENCY INTERFERENCE

In 2019, a total of 467 Radio Frequency Interference (RFI) cases were resolved. By service category, resolved RFI cases under Mobile Service remain the highest with 457 cases in total. 97.8% of these cases are under Mobile Service as shown in Figure 6.33.

RESOLVED RFI CASES 2019



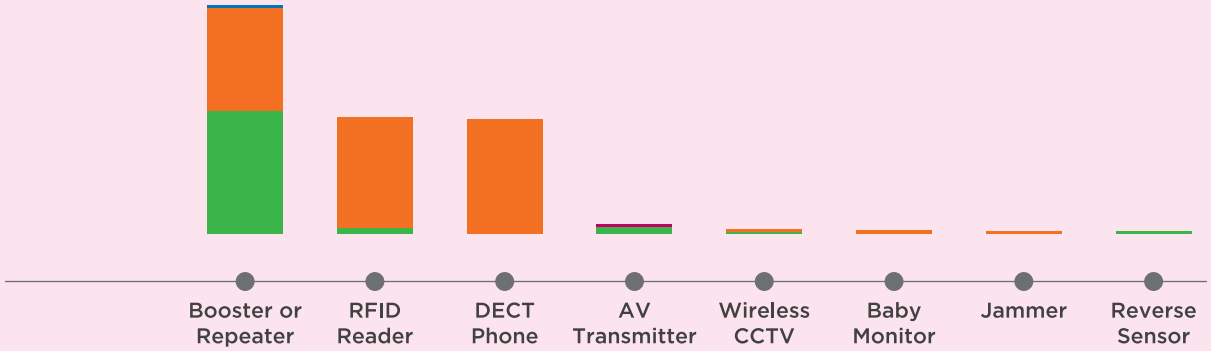
Source: MCMC

Figure 6.33 Resolved RFI Cases 2019

U Mobile Sdn Bhd cases significantly increased to 313 cases in 2019 from 113 cases in 2018. This is mainly due to aggressive site roll out in new 900MHz band across Malaysia as well as continuous public usage of non-standard equipment.

Figure 6.34 below summarised the number of RFI cases involving non-standard equipment such as cellular boosters or repeaters, RFID readers and Digital Enhanced Cordless Technology (DECT) phones.

NUMBER OF RFI CASES INVOLVING NON-STANDARD EQUIPMENT 2019



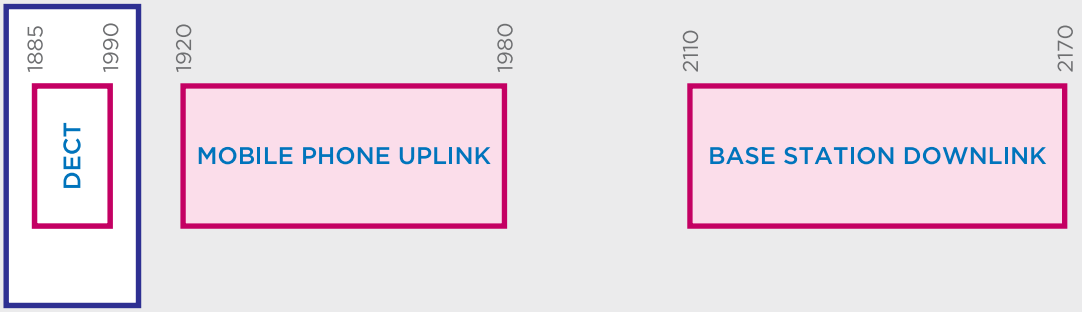
	Booster or Repeater	RFID Reader	DECT Phone	AV Transmitter	Wireless CCTV	Baby Monitor	Jammer	Reverse Sensor
Webe	0	0	0	1	0	0	0	0
Celcom	1	0	0	0	0	0	0	0
U Mobile	35	44	49	0	1	2	1	0
Maxis	60	6	0	7	1	0	0	1

Source: MCMC

Figure 6.34 Number of RFI Cases Involving Non-Standard Equipment 2019

DECT phone is a cordless phone that connects to a landline telephone system. It consists of a phone base and one or two headsets that communicates wirelessly via radio spectrum. MCMC allocates radio spectrum between 1885MHz and 1990MHz for DECT as shown below.

SPECTRUM ALLOCATION FOR DECT IN MALAYSIA



Source: MCMC
Figure 6.35 Spectrum Allocation for DECT in Malaysia

However, the number of non-standard DECT phones caused interference has increased by 33 sets compared to 2018, marking the highest increase in interference cases amongst other non-standard equipment. The non-standard DECT phone operates in same frequency range as mobile phone uplink whereby its operation will interfere with the nearest base station to receive mobile phone signals.

Unfortunately, non-standard DECT phones are widely sold on e-commerce platforms such as Lazada and Shopee. Apart from investigations conducted by MCMC, the public are advised to check for MCMC label prior to purchase any DECT phones. Table below shows models of non-standard DECT phones found during RFI investigation.

NON-STANDARD DECT PHONE MODELS FOUND DURING RFI INVESTIGATION

Brand	Non-standard DECT Models
PANASONIC	KX-TG1031S, KX-TG4011, KX-TG4021, KX-TG4023, KX-TG4031, KX-TG4131, KX-TG4731, KX-TG6411ML, KX-TG6521, KX-TG6591, KX-TG7641, KX-TG7731, KX-TG7871, KX-TG9541, KX-TGA470, KX-TGD510 and KX-TGC350
VTECH	CS6929
MOTOROLA	L603M

Source: MCMC
Figure 6.36 Non-Standard DECT Phone Models Found During RFI Investigation

DIGITAL TERRESTRIAL TELEVISION (DTT) SIGNAL MEASUREMENT - MYFREEVIEW

MCMC concluded the DTT measurement for all 44 DTT sites on 27 June 2019. A total of 14 DTT sites were measured in 2019, consists of five sites located in West Malaysia and nine sites in East Malaysia. DTT broadcasts its services through transmission towers and its coverage are influenced by the location of the transmitter antenna. A total of 46 from 504 test points failed to decode mostly due to blind spot. Direct-to-Home (DTH) satellite service is made available at these 46 locations to achieve 100% population coverage for myFreeview.

Transition from analogue TV to digital myFreeview was completed on 31 October 2019. Public are advised to check the coverage in their area with MYTV Broadcasting Sdn Bhd before deciding to purchase a DTT or DTH set-top-box. This is due to DTT and DTH set-top-box has different set up, whereby DTT set-top-box receives digital TV channels from an Ultra High Frequency (UHF) Yagi antenna, whereas DTH set-top-box receives channels from a satellite dish.

Figure 6.37 shows a recent DTT measurement at Pekan Rabu, Langkawi.

DTT MEASUREMENT FOR GUNUNG RAYA SITE AT PEKAN RABU, LANGKAWI

Source: MCMC

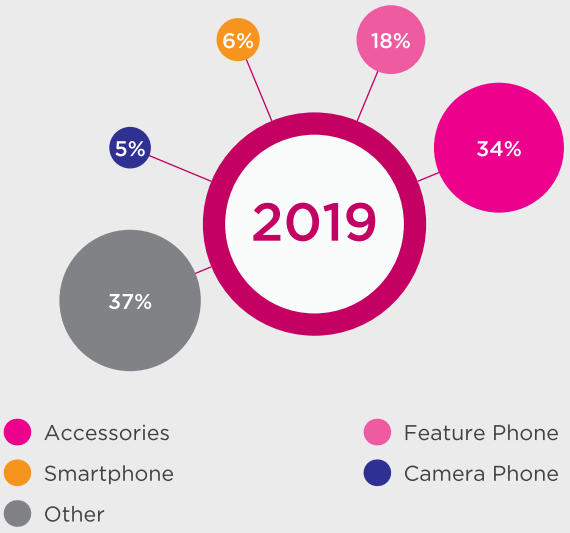
Figure 6.37 DTT Measurement for Gunung Raya site at Pekan Rabu, Langkawi

MOBILE E-WASTE PROGRAMME

The Mobile e-Waste programme is an initiative of MCMC with strategic partners to spread awareness for responsible disposal of electronic waste. The programme has received encouraging traction in 2019 with additional new members and implementation of several advocacy activities.

Mobile e-Waste collection trend shows an encouraging rate of growth since 2015. Total collection increased by over 49% (1,530.99kg) to 4,638kg from 3,107.01kg in 2018. In total, over 7,000 units of old and faulty mobile phones were collected, thus far.

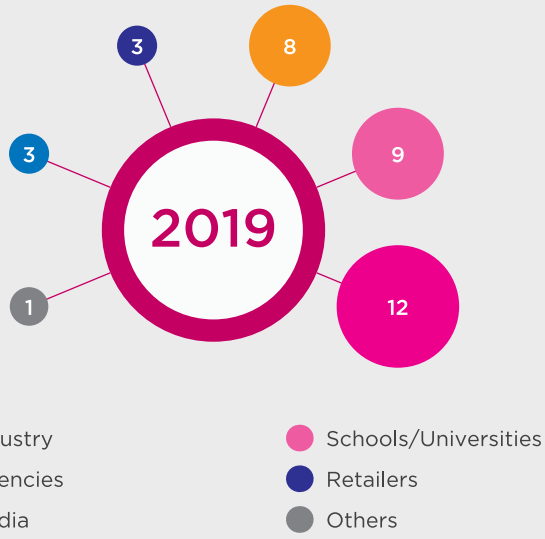
MOBILE PHONES AND ACCESSORIES COLLECTION 2019



Source: MCMC

Figure 6.38 Mobile Phones and Accessories Collection 2019

MOBILE E-WASTE PARTNERS BY CATEGORIES 2019



Source: MCMC

Figure 6.39 Mobile e-Waste Partners by Categories 2019

The Mobile e-Waste programme started in 2015 with a total of six partners from the C&M industry. Currently, the programme has more than 40 participating partners contributing to placement of more than 200 collection boxes throughout Peninsular Malaysia, Sabah and Sarawak. MCMC partners include companies from various industries, retail companies, media agencies, government agencies and NGOs, including schools and universities (Figure 6.39).

STAR RATING AWARD

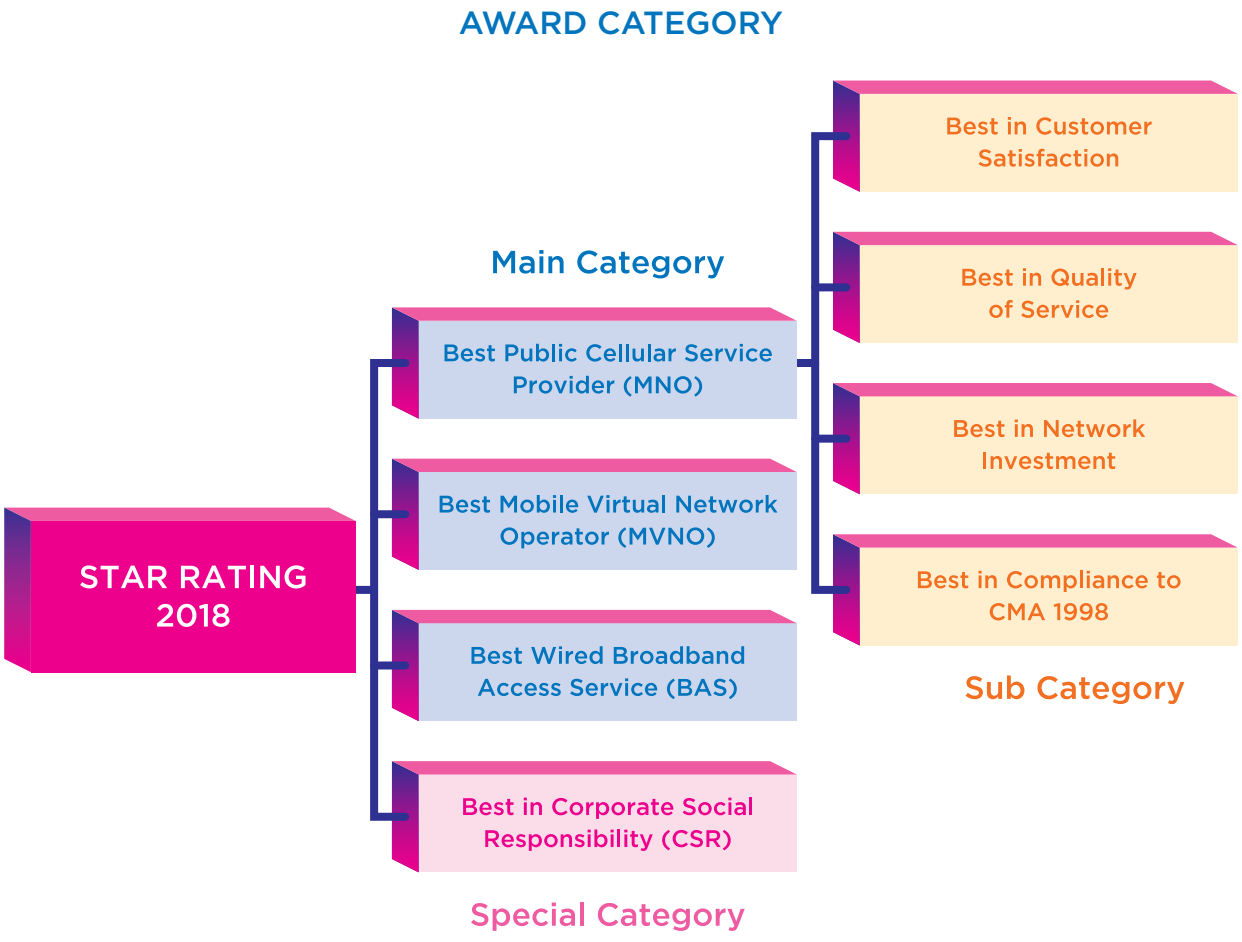
Star Rating Award is held once in every two years since 2014, aims at recognising the outstanding services provided by telecommunication companies to consumers as well as to instill a culture of quality excellence and create a healthy competitive environment amongst the service providers.

The Star Rating Award is based on the performance of service providers throughout the one year assessment period. The assessments made are based on strategic parameters set by MCMC and verified by the Evaluation Committee and independent Consultant.

CATEGORY AND CRITERIA OF SELECTION

Star Rating 2018 is divided into two major telecommunications services, namely the Public Cellular Service (PCS) and Wired Broadband Access Service (BAS). BAS is a new category added in this Star Rating Award 2018.

The Award further categorised PCS into two groups which are Mobile Network Operator (MNO) and MVNO.



Source: MCMC
Figure 6.40 Award Category

The Award retained different sets of assessment parameter for both MNO and MVNO and also CAS to ensure each service provider is able to compete in level-playing field and stimulate a positive competitive environment. The key assessment parameters consist of:

Consumer Satisfaction	Quality of Service	Network Investment	Compliance to the CMA

Methodology used for the evaluation comprise Consumer Satisfaction Survey and Report Evaluation. The weightage of each assessment parameter was developed based on the importance of the parameter to consumers. In order to ensure that the Award is more consumer centric, the voice of consumers via "Consumer Satisfaction" parameter carries the highest weightage.

The PCS (MNO and MVNO) with more than 250,000 active subscribers and BAS with more than 50,000 active subscribers as at 31 December 2018 are eligible to compete for the Award.

STAR RATING AWARD 2018

The Star Rating Award 2018 Ceremony was held on 3 December 2019, to recognise and honour the achievement of the winners of the Star Rating Award 2018.

Star Rating Award received overwhelming response from the telecommunications service providers as it encourages them to continuously strive in uplifting their performances in each parameter set by MCMC.

digi	Digi Telecommunications Sdn Bhd won 3 out of 8 award categories for the "Best MNO Provider", "Best Consumer Satisfaction" and "Best Quality of Service" awards
XOX MOBILE	XOX Com Sdn Bhd won the "Best Mobile Virtual Network Operator" award
celcom	Celcom Axiata Bhd won the "Best Corporate Social Responsibility" award for overall excellence in organising various impactful CSR programmes.
U mobile	U Mobile Sdn Bhd crowned with the "Best Quality of Service" award
maxis	Maxis Broadband Sdn Bhd won the "Network Investment" award
webe	Webe Digital Sdn Bhd clinched the award for the "Best in Compliance to CMA"
TIME	A new category, "Best Wired Broadband Access Service" was introduced at the Star Rating Award 2018 which was won by TT Dotcom Sdn Bhd

CHAPTER 7: POSTAL AND COURIER

This chapter addresses the statutory requirements under Postal Services Act 2012 and reports on the performance and growth of the postal and courier industry. It provides data on postal services traffic, revenue and total number of courier licences in 2019. Interestingly, this chapter also highlights the competitive market in the courier industry due to the rapid growth of e-commerce parcel market and the challenges in embracing digital technology to remain competitive.

KEY HIGHLIGHTS 2019

Postal and Courier Services

896
Post Offices
(2018: 914)

116
Courier Licences
(2018: 119)

63.7K
Employees
(2018: 53.9K)

2,102
Consumer Complaints
(2018: 1,235)

Postal Services Traffic

Domestic

596.53 million
Letter Post Items
(2018: 672.34 million)

16.73 million
Registered Items
(2018: 19.4 million)

945,581
Ordinary Parcels
(2018: 910,213)

International

43.22 million
Letter Post Items
(2018: 36.85 million)

3.90 million
Registered Items
(2018: 6.47 million)

330,596
Ordinary Parcels
(2018: 342,829)

Courier Services Traffic

Domestic

90.82 million
Documents
(2018: 86.78 million)

115 million
Parcels
(2018: 79.25 million)

International

2.16 million
Documents
(2018: 2.65 million)

8.1 million
Parcels
(2018: 11.13 million)

POSTAL SERVICES INDUSTRY PERFORMANCE 2019

The postal and courier industry continues to navigate the digital challenges – the inevitable decline of the traditional core business of mail delivery as communications move online and the rapidly growing e-commerce parcel market which has brought about intense competition in the industry.

The courier service providers improved their services and handling simultaneously with the growing popularity of online shopping and periodic massive e-market place discount-day spurred by digitally connected consumers who constantly seek lower prices including product and delivery charges, greater convenience and a seamless experience.

To meet such demand and remain competitive in the challenging market, service providers are strengthening their positions and pursuing growth by investing in e-commerce logistics, such as on the application of advanced logistic technologies and revitalise the supply delivery system.

POSTAL SERVICES ACCESS

The key function of MCMC under the Postal Services Act 2012 (Act 741) is to ensure the implementation of the universal postal services provisions in Malaysia. Pos Malaysia Bhd is the sole appointed and licensed universal postal services provider to provide basic and competitive postal services in Malaysia.

896
Post Offices
(2018: 914)

Basic postal services as defined under the Postal Services (Universal Service) Regulations 2015 comprise:

- Provision of basic and registered domestic and international mail and parcel service;
- Provision of 5-day a week collection and delivery service with exception in rural areas; and
- Provision of a minimum 1,000 postal outlets nationwide.

POSTAL INFRASTRUCTURE 2019

Types	Total
Post Office	681
Mini Post Office	215
Postal Agent	98
Stamp Vendor	1,058
Mobile Post Office	32
Post Offices Accepting Financial Transactions	681
Sorting Office	21
International Office of Exchange	1

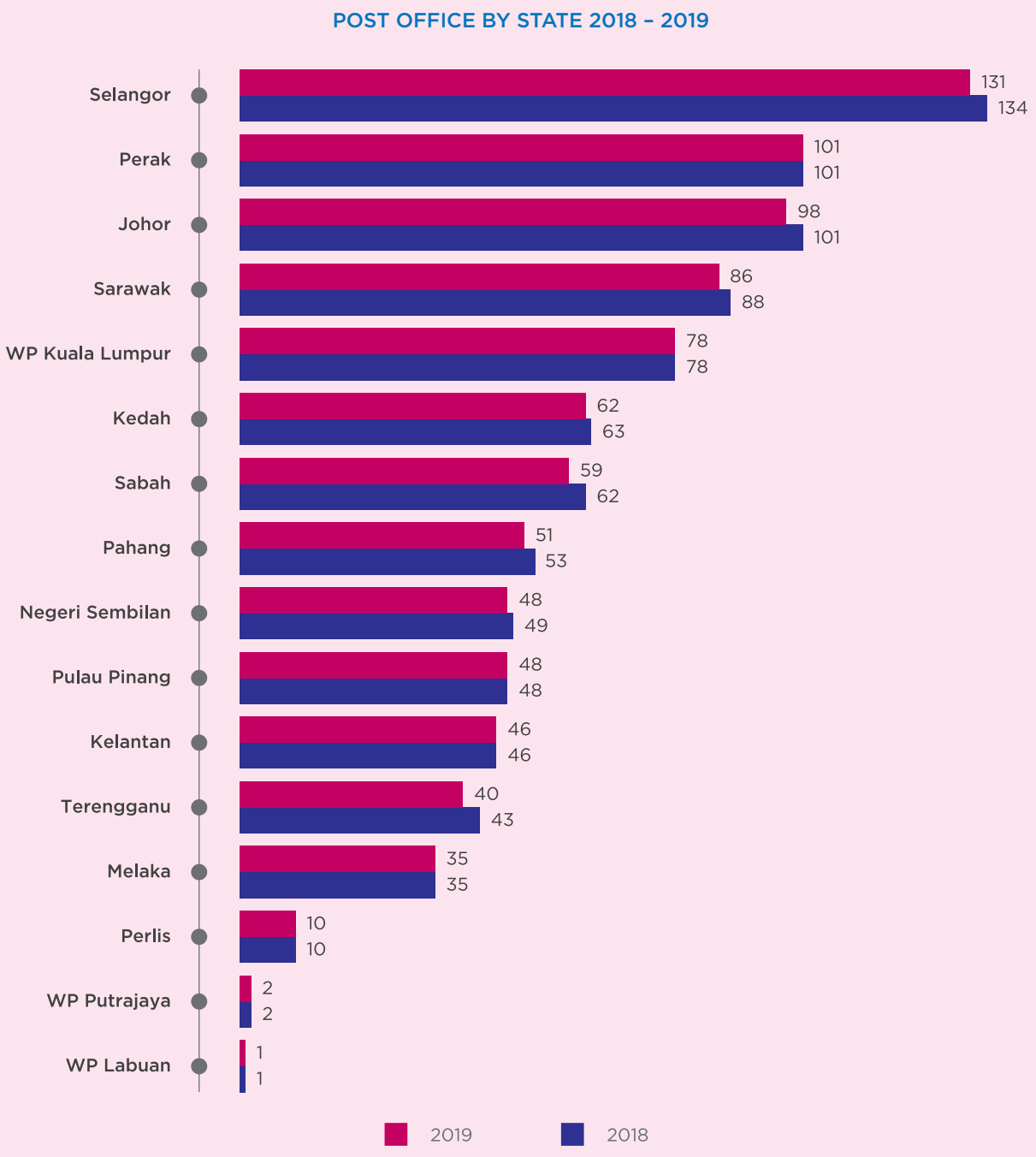
Source: Pos Malaysia
Figure 7.1 Postal Infrastructure 2019

Pos Malaysia also provides 826 express postal boxes and 2,660 postal boxes nationwide.

A summary of postal infrastructure as at December 2019 is shown in Figure 7.1.

As at end 2019, there are 896 post offices in Malaysia including mini post office, a reduction of 18 post offices compared with 914 in 2018.

Selangor has the highest number of post office establishments, with 131 offices followed by Perak (101) and Johor (98). Figure 7.2 shows the total number of post offices by state (including mini post office) between 2018 and 2019.



Source: Industry, MCMC

Figure 7.2 Post Office by State 2018 – 2019

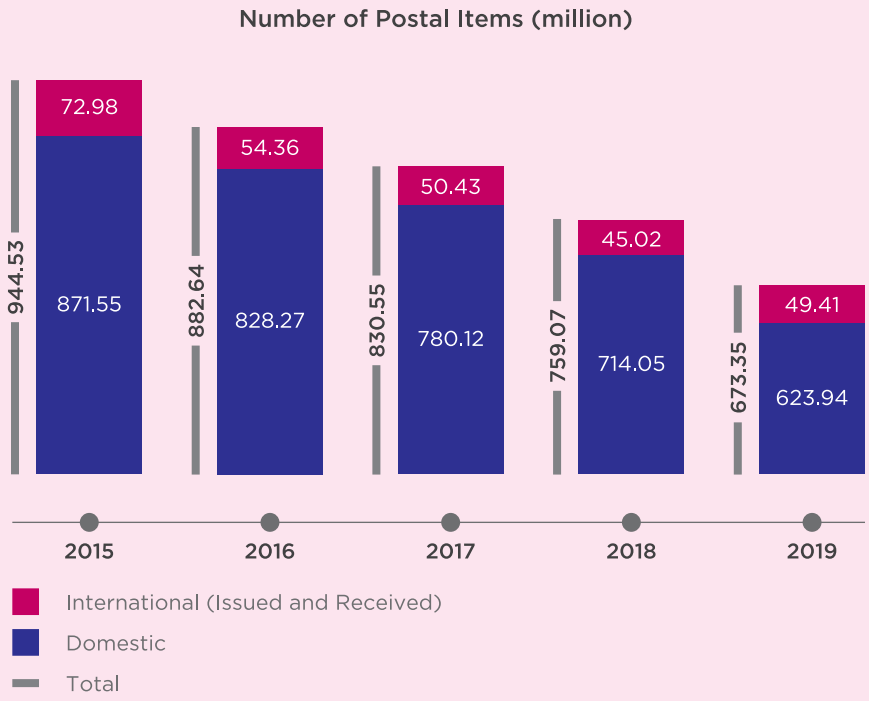
POSTAL SERVICES TRAFFIC

There were 673.35 million postal items delivered at as end 2019. The postal items consist of letter post, registered mail, ordinary parcel, express item, post free item and advertising item (Figure 7.3).

By letter post items for domestic services, a total of 596.53 million items were handled (2018: 672.34 million). There was a decline of 11.3% or 75.81 million in 2019 (Figure 7.4).

By letter post items for international services, 43.22 million items were handled with 36.51 million issued and 6.71 million items received respectively. Remarkably, total volume for international letter post items shows an increase of 17% between 2018 and 2019 period, particularly for letter post item issued (Figure 7.5).

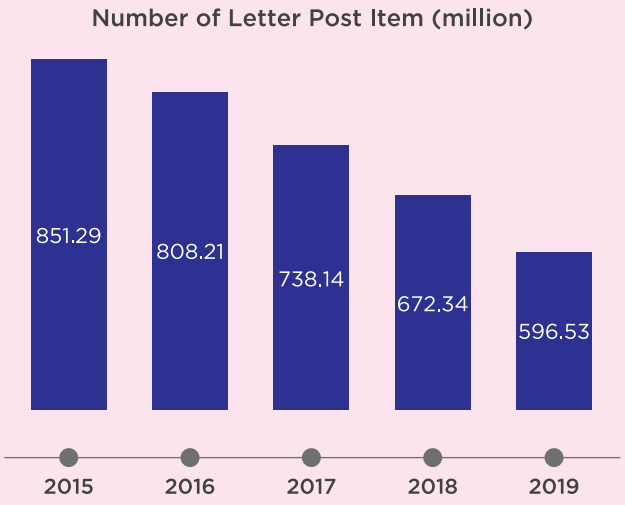
POS MALAYSIA: POSTAL SERVICES TRAFFIC 2015 –2019 (OVERALL)



Note: 1. Items handled by postal segment only. PosLaju items is classified as courier traffic
2. For 2018 and 2019, there were 2.1 million and 1.2 million post free item (domestic) respectively
3. For 2018 ad 2019, there were 1.6 million and 1.1 million express item (domestic) respectively; whilst there were 1.4 million and 2 million express item (international)
4. For 2017, 2018 and 2019, there were 19 million, 17.7 million and 7.5 million advertising items (domestic) respectively

Source: Industry, MCMC
Figure 7.3 Pos Malaysia: Postal Services Traffic 2015 – 2019 (Overall)

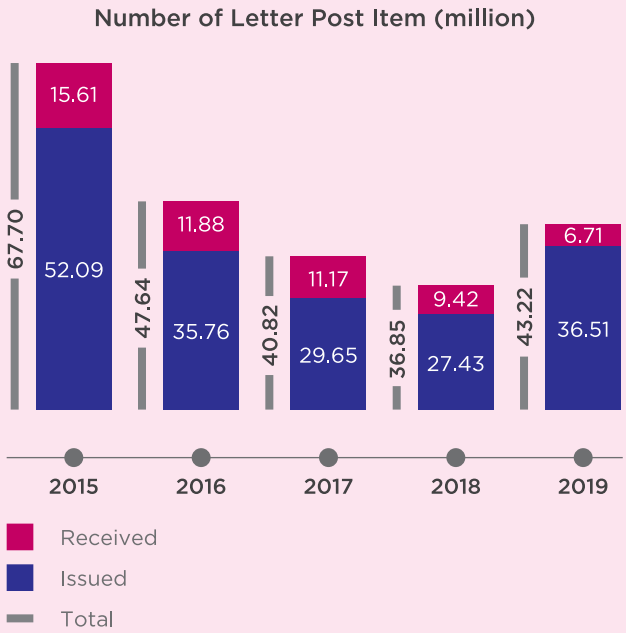
POS MALAYSIA: LETTER POST 2015 – 2019 (DOMESTIC SERVICES)



Source: Pos Malaysia

Figure 7.4 Pos Malaysia: Letter Post 2015 – 2019 (Domestic Services)

POS MALAYSIA: LETTER POST 2015 – 2019 (INTERNATIONAL SERVICES)

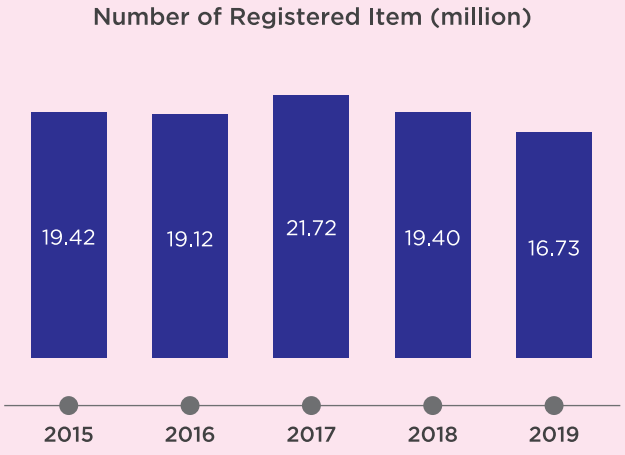


Source: Pos Malaysia

Figure 7.5 Pos Malaysia: Letter Post 2015 –2019 (International Services)

By registered items, domestic services in 2019 was at 16.73 million (Figure 7.6). For international services, there were 3.9 million registered items with 3.32 million issued and 0.58 million items received respectively (Figure 7.7).

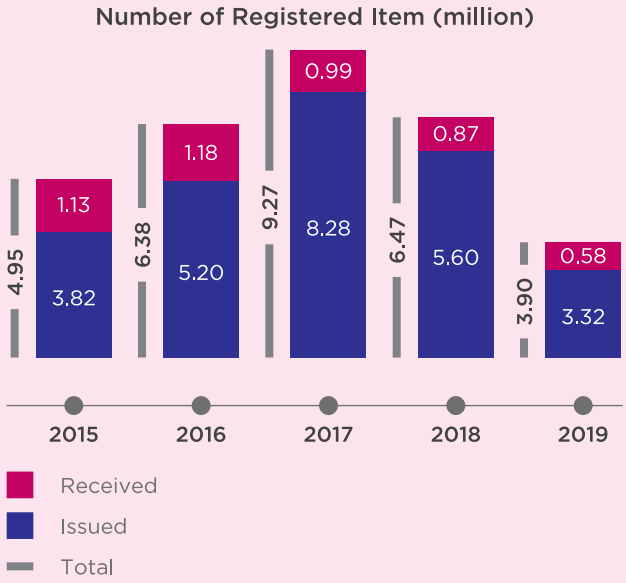
POS MALAYSIA: REGISTERED ITEM 2015 – 2019 (DOMESTIC SERVICES)



Source: Pos Malaysia

Figure 7.6 Pos Malaysia: Registered Item 2015 – 2019 (Domestic Services)

POS MALAYSIA: REGISTERED ITEM 2015 – 2019 (INTERNATIONAL SERVICES)

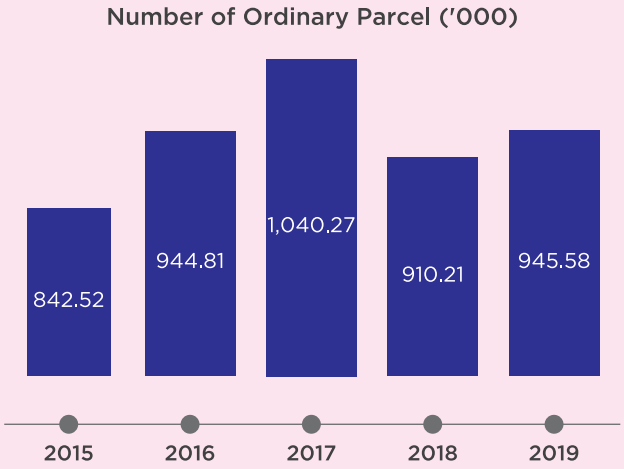


Source: Pos Malaysia

Figure 7.7 Pos Malaysia: Registered Item 2015 – 2019 (International Services)

By ordinary parcels for domestic services, there were 945,581 parcels handled in 2019, an increase of 3.9% compared with 910,213 items in 2018. However, ordinary parcel for international services declined 3.6% to 330,596 items in 2019 compared with 342,829 items in 2018.

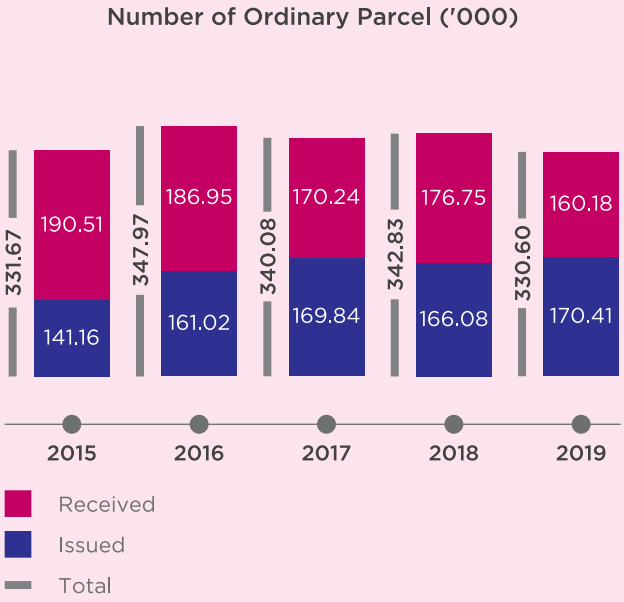
POS MALAYSIA: ORDINARY PARCEL 2015 – 2019 (DOMESTIC SERVICES)



Source: Pos Malaysia

Figure 7.8 Pos Malaysia: Ordinary Parcel 2015 – 2019 (Domestic Services)

POS MALAYSIA: ORDINARY PARCEL 2015 – 2019 (INTERNATIONAL SERVICES)



Source: Pos Malaysia

Figure 7.9 Pos Malaysia: Ordinary Parcel 2015 – 2019 (International Services)

Postal Services Traffic 2019

Domestic

596.53 million
Letter Post Items
(2018: 672.34 million)

16.73 million
Registered Items
(2018: 19.4 million)

945,581
Ordinary Parcels
(2018: 910,213)

International

43.22 million
Letter Post Items
(2018: 36.85 million)

3.90 million
Registered Items
(2018: 6.47 million)

330,596
Ordinary Parcels
(2018: 342,829)

INTERNATIONAL ROLE AND POLICY

UNIVERSAL POSTAL UNION CELEBRATES ITS 145TH ANNIVERSARY

Year 2019 marks a historic year for the Universal Postal Union (UPU) as it celebrates 145 years of service to the world. Established in 1894, UPU is one of the world's oldest international organisation and is the primary forum for cooperation between postal sector players. UPU is a UN specialised agency with its headquarters in Berne, the capital of Switzerland.

In 2019, Malaysia's postal service attained 33rd position from 172 countries for the Postal Development Integration Index (2IPD)[33] executed by the Universal Postal Union (UPU)[34]. The position is based on an in-depth analysis of UPU member countries involved covering the assessment of the four dimensions of postal development namely Reliability, Reach, Relevance and Resilience;

Reliability reflects performance in terms of speed and predictability of delivery, across all the key segments of physical postal services (letter-post, parcel post and express)

Reach synthesises global connectivity by evaluating the breadth and depth of the postal operators' international network. The number of partner networks and the volumes of international exchanges measure these, respectively, across all the key segments of physical postal services

Relevance measures the intensity of demand for the full portfolio of postal services relative to the best performers in each category of postal activity, also taking into account elements such as the number of international transactions and the number of post offices

Resilience indicates the level of diversification of revenue streams and the capacity to innovate, deliver inclusive postal services, and integrate sustainable development targets into postal business operations

MALAYSIA'S ROLE IN INTERNATIONAL ARENA FOR POSTAL SECTOR DEVELOPMENT

Malaysia was elected to the UPU Council of Administration (CA) at the 26th UPU Congress in 2016 in Istanbul, Turkey for a 4-year tenure (2017-2020). As an elected member of CA, Malaysia will continue to play an active role in ensuring continued reform of the UPU and deliver strategy and programmes under the Istanbul Postal Strategy for the 2017-2020 period. Other international appointment that Malaysia currently holds is being Co-Chairman of CA Committee 1 on Finance, Human Resources and Governance together with Switzerland.

33 http://www.upu.int/uploads/tx_sbdownloader/postalDevelopmentReport2019En.pdf

34 Universal Postal Union (UPU) is a worldwide postal organisation under the United Nations established to address global administrative and postal management issues. The Council of Administration and the Postal Operation Council are two councils under the UPU that formulate the policy and direction of the UPU and its members elected among member countries during the Congress session held every four years

SUSTAINABLE DEVELOPMENT IN POSTAL AND COURIER SERVICES

E-COMMERCE DELIVERY AWARDS 2019

The prestigious and most anticipated annual event in the postal and courier services industry, the E-Commerce Delivery Awards 2019 (EDA 2019) aims to reward outstanding individuals and excellent industry players' performance in 2018. This event is organised for the third year by MCMC in partnership with the Malaysian Communications and Multimedia Ministry, the Association of Malaysian Express Carriers (AMEC) and several industry players.

E-COMMERCE DELIVERY AWARDS 2019

Source: MCMC

Figure 7.10 E-Commerce Delivery Awards 2019

Pos Malaysia bagged the new award category, the Best Improvement Award, which was introduced in EDA 2019 in recognition of service providers that have shown significant improvement in their delivery service performance from the previous years.

The recipients of the following list of awards are as follows:

- Best Improvement Award – Pos Malaysia
- Best Industry Role Model Award – Pos Malaysia
- Best Innovation Award – Contactus Sdn Bhd
- Best Delivery Performance Award – City-Link Express (M) Sdn Bhd
- Best Customer Service Award (Front Desk) – DHL Express (M) Sdn Bhd
- Best Customer Service Award (Call Centre) – United Parcel Service (M) Sdn Bhd
- Best Corporate Social Responsibility Award – City-Link Express (M) Sdn Bhd
- Road Safety Excellence Award – Nationwide Express Courier Services Bhd

WORLD POST DAY 2019

The World Post Day 2019 celebration was held at MCMC headquarters and all MCMC region, state and branch offices. The World Post Day is celebrated on 9 October every year to create awareness and recognise the important roles and contributions of postal to the nation, society, business, social and economic development.

Among the awards given during the celebration were Best Postman, Counter Clerk and PosLaju Courier Man for WP Kuala Lumpur and Selangor. The celebration also includes the handing over ceremony of the "Places of Worship Series II" stamps book to JAKIM, JAIS, JAWI, Perpustakaan Negara Malaysia and Persatuan Filateli Malaysia, followed by a talk from CEO of PTS Bookcafe Sdn Bhd and founder of Bookcafe.com.my. In addition, to light up the celebration, MCMC also held a World Post Day Mini Bazaar.

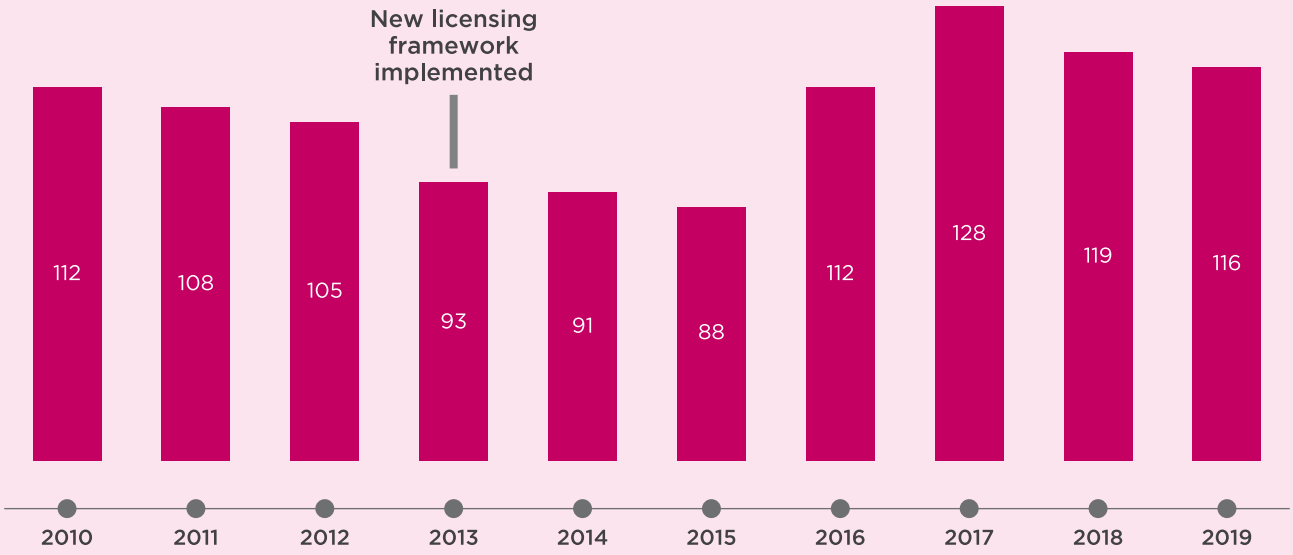
COURIER SERVICES

LICENSING PROFILE

The courier services industry in Malaysia is a highly competitive industry particularly in the rapidly growing e-commerce parcel market. As at end 2019, there were 116 courier licences.

116
Courier Licences
(2018: 119)

TOTAL NUMBER OF COURIER LICENCES 2010 – 2019



Source: Industry, MCMC
Figure 7.11 Total Number of Courier Licences 2010 – 2019

The licensing scheme classifies three types of licence in line with the scope of services the licensees wish to provide. In March 2013, all licensees were successfully migrated under the Postal Services Act 2012 and the new licensing scheme according to class A, B and C as shown in Figure 7.12.

COURIER SERVICE LICENCE: SPECIAL CONDITIONS	
CLASS A	
• Licensee may perform services as follows: i) international courier services; and ii) domestic courier services nationwide	• Provide track and trace system • Provide at least five outlets locally • Provide appropriate customer service
CLASS B	
• Licensee may perform services as follows: i) international inbound service only; and ii) domestic courier services nationwide	• Provide track and trace system • Provide at least five outlets locally • Provide appropriate customer service
CLASS C	
• Licensee may perform domestic intra-state services	• Due to the geographical reasons, these areas are considered as one: i) Selangor, Kuala Lumpur and Putrajaya ii) Sabah and Labuan

Source: MCMC
Figure 7.12 Courier Service Licence: Special Condition

In short, the services scope for Class A includes international and domestic courier services, Class B for international inbound and domestic, whilst Class C for domestic intra-state.

NEW COURIER LICENCES 2019	
Type of Licence	**Company**
A	Allied-Link Express (Port Klang) Sdn Bhd Manjung Naluri Sdn Bhd May Express Logistics Sdn Bhd
B	Tuudi 3PL Sdn Bhd DGB Networks Sdn Bhd Xend Sdn Bhd World Asia Logistic (M) Sdn Bhd
C	Dropicks Sdn Bhd Sure-Reach Sdn Bhd Lambomove Sdn Bhd Shopee Express Malaysia Sdn Bhd Early Riser Sdn Bhd

Source: MCMC
Figure 7.13 New Courier Licences 2019

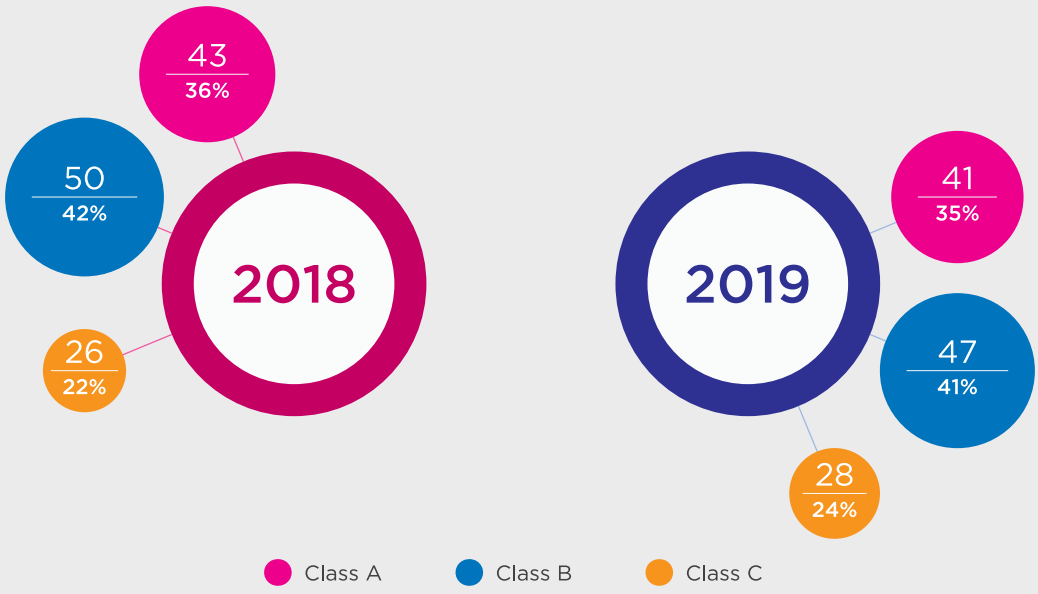
The courier services market in Malaysia continues to attract new investment from international and domestic investors including business communities.

In 2019, the industry was startled by J&T Express (M) Sdn Bhd (J&T) having more than 300 outlets nationwide and operating 365 days. Such accomplishment is astounding as J&T is relatively a new entrant to the Malaysian courier services industry in 2018. The industry players again confronted the challenge to replicate the business model to remain competitive and maintain their business edge since courier services epicentre is meeting the consumers' expectations and providing the speediest delivery.

There are 116 courier services licensees as at end 2019. By licence types, there are 41 Class A, 47 Class B and 28 Class C. Following Lazada's footsteps, Shopee Express Malaysia Sdn Bhd also embarked on a courier services delivery arm for their operations in 2019, with a Class C courier service licence.

The breakdown of courier licences is shown in Figure 7.14.

COURIER LICENCES BY CLASS 2018 – 2019



Source: MCMC

Figure 7.14 Courier Licences by Class 2018 – 2019

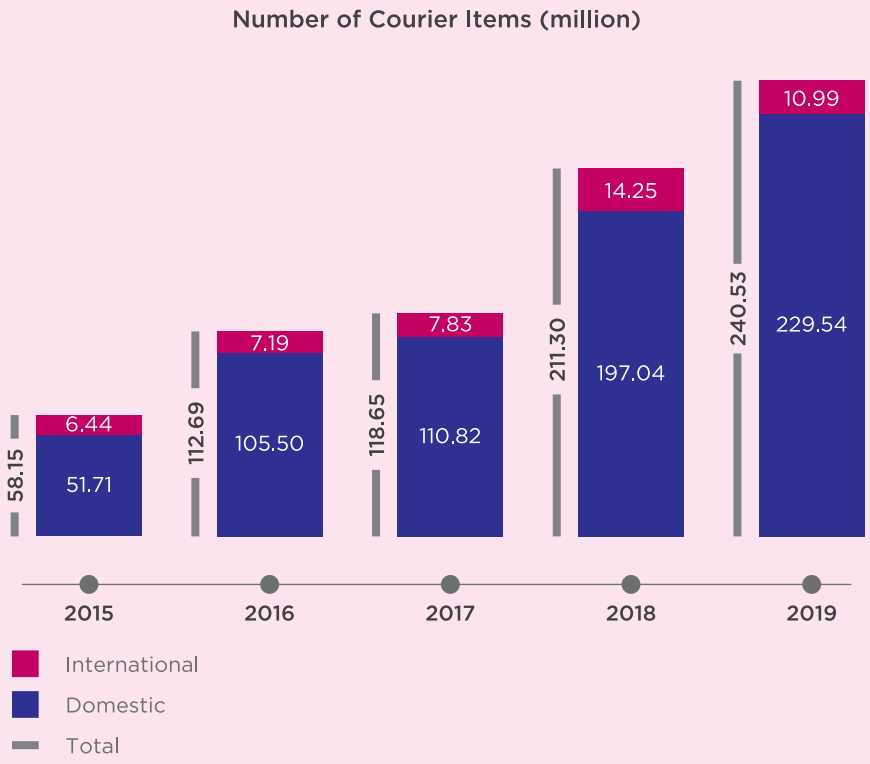
COURIER SERVICES TRAFFIC

As at end 2019, the courier service providers handled an impressive amount of 240.53 million courier items. This amounts to an increase of 13.8% from 211.3 million for the same period last year. These courier items consist of documents, parcels and others.

Figure 7.15 shows the increase in overall courier services traffic for the past five years. Courier items handled by courier service providers continue to record increment, courier items handled in 2019 is fourfold of that in 2015.

Further breakdown on types of courier items is available in the next sections.

COURIER SERVICES TRAFFIC 2015 – 2019 (OVERALL)



Note: For 2018 and 2019, courier traffic was collated from 81 and 85 courier companies respectively including PosLaju. Prior to that, it was based on top 10 courier companies.
Overall courier items includes documents, parcels and others (non-priority mail, walk-in courier, prepaid and post express)

Source: Industry
Figure 7.15 Courier Services Traffic 2015 – 2019 (Overall)

In 2019, total volume for document in domestic services increased 4.7% to 90.82 million compared to 86.78 million in 2018. Total volume for document in international services experienced double digit decline of 18.5% to 2.16 million from 2.65 million.

COURIER SERVICES TRAFFIC 2015 – 2019 (DOCUMENT)

Note: For 2018 and 2019, courier traffic was collated from 81 and 85 courier companies respectively including PosLaju. Prior to that, it was based on top 10 courier companies

Source: Industry

Figure 7.16 Courier Services Traffic 2015 – 2019 (Document)

COURIER SERVICES TRAFFIC 2015 – 2019 (PARCEL)

Note: For 2018 and 2019, courier traffic was collated from 81 and 85 courier companies respectively including PosLaju. Prior to that, it was based on top 10 courier companies

Source: Industry

Figure 7.17 Courier Services Traffic 2015 – 2019 (Parcel)

In 2019, the number of parcels handled increased by 36.2% to 123.1 million from 90.38 million in 2018, in which domestic and international parcels comprise 115 million and 8.1 million.

Courier Services Traffic 2019

Domestic

90.82 million
Documents
(2018: 86.78 million)

115 million
Parcels
(2018: 79.25 million)

International

2.16 million
Documents
(2018: 2.65 million)

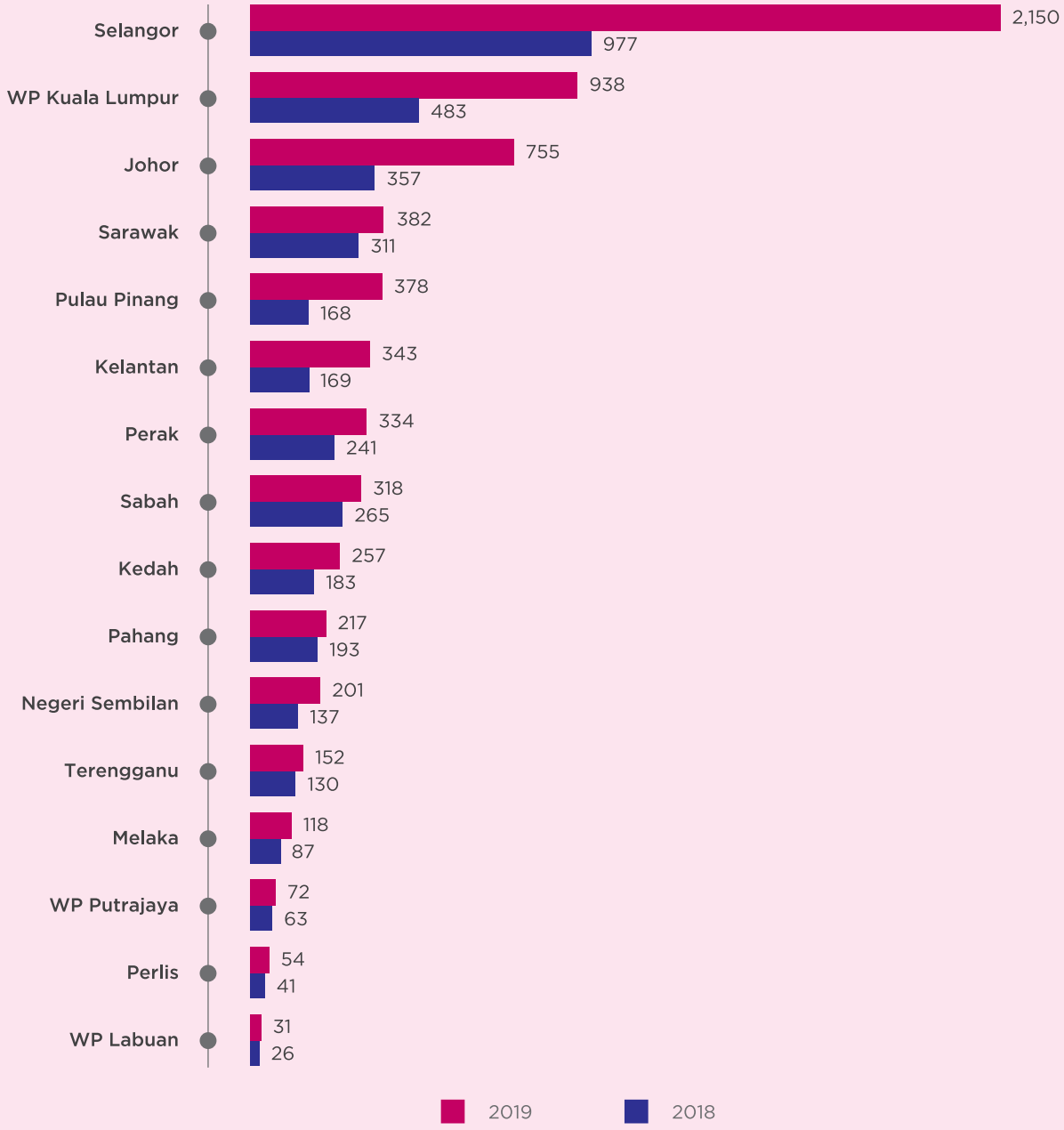
8.1 million
Parcels
(2018: 11.13 million)

COURIER INFRASTRUCTURES

As at end 2019, there are 6,700 courier infrastructures (2018: 3,831), consisting of hubs, branches, gateways, franchises, affiliates, agents, drop-in centre and others.

By state, Selangor has the highest number of courier infrastructures at 2,150 in 2019, more than double from 977 in 2018. The rapid increase in total number of courier infrastructures in Malaysia indicated that such services are gaining its tractions and in demand in conjunction with the popularity of online shopping as well as development of local economic activities.

COURIER INFRASTRUCTURES BY STATE



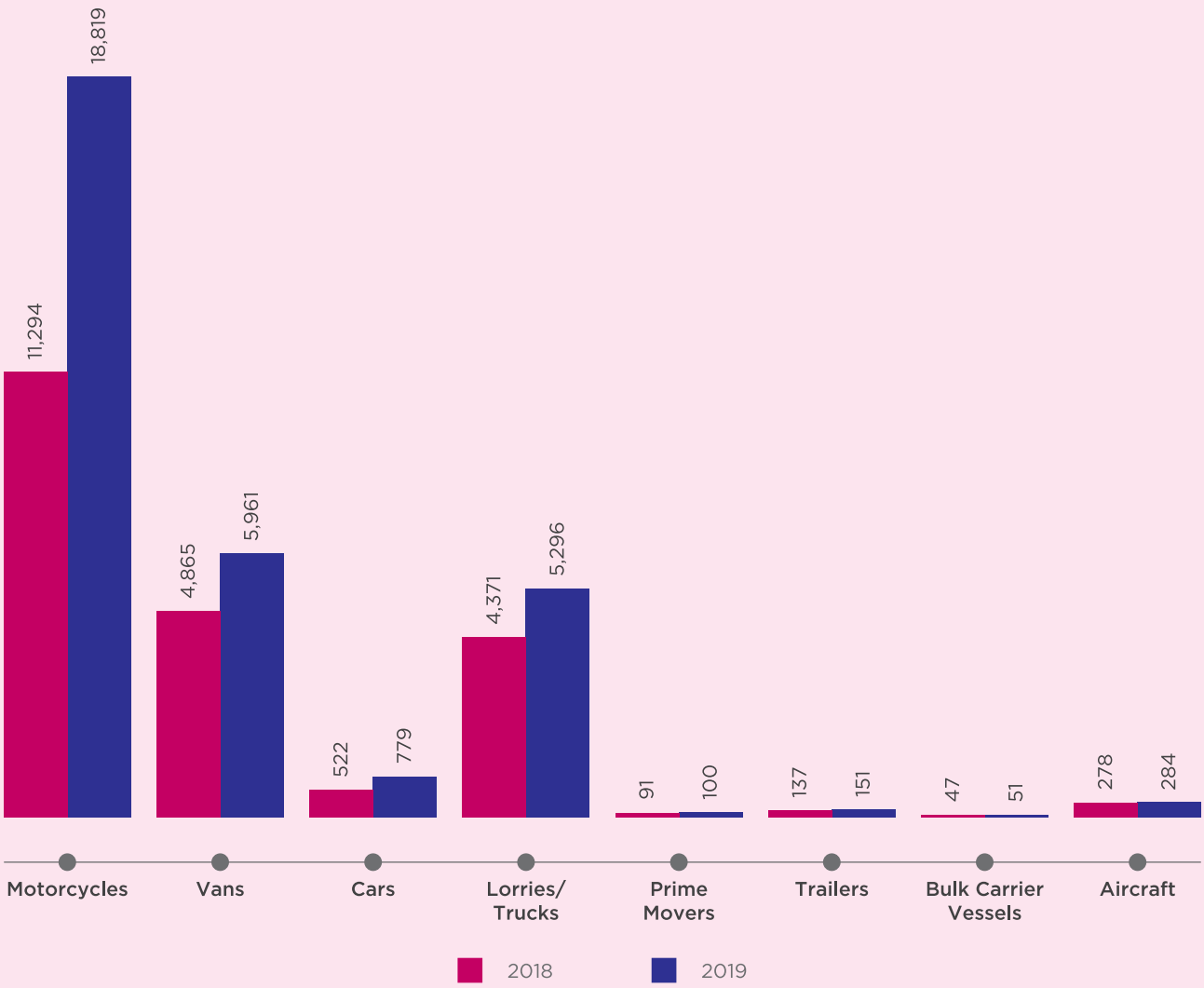
Note: For 2018 and 2019, courier infrastructures data was collated from 81 and 85 courier companies respectively including PosLaju.

Source: Industry

Figure 7.18 Courier Infrastructures by States

In 2019, the number of courier vehicles increased by 46% to 31,441 from 21,605 in 2018. Motorcycles are the most used vehicles for delivery, constituted 60% of total courier vehicles, followed by vans (5,961) and lorries/ trucks (5,296).

COURIER VEHICLES 2018 – 2019



Note: For 2018 and 2019, courier vehicles datawas collated from 81 and 85 courier companies respectively including PosLaju.

Source: Industry, MCMC
Figure 7.19 Courier Vehicles 2018 – 2019

EMPLOYMENT IN POSTAL AND COURIER SERVICES

63.7K
Postal and Courier Services Employees
(2018: 53.9K)

As at end 2019, total number of employees (both full time[35] and part time[36]) in postal and courier services industry increased by 18% to 63,700 from 53,900 in the previous year. Of which, Pos Malaysia employed 21,700 and 21,500 in 2018 and 2019 respectively to ensure universal service postal delivery are met.

Courier services is a labour-intensive industry, due to the physical delivery work and amount of labour time required in the 'last mile' of delivery. It is expected that the number of courier employees will continue to grow for years to come in line with increasing volume of courier items with the plethora of e-commerce activities. Quality delivery services are required by retailers, online stores, e-commerce sites to deliver goods to customers through parcel delivery services.

Based on industry feedback[37], 37% of respondents have indicated that they are planning to increase their workforce. As demand for courier services is increasing, service providers are planning for expansion of network and infrastructure to cater to their business expansion. Generally, the service providers indicated that they intend to increase 10% to 20% of their workforce, particularly in logistics (drivers), operations, sales and marketing department.

In contrast, more than half of the respondents indicated that they will maintain their current workforce level as they do not anticipate much changes in business trending and they view that the current workforce is sufficient to cater to company's day to day operations. Nonetheless, in achieving organisation optimisation, some respondents indicated that they will perform rightsizing and redeploy staff in areas that require more attention or improvement to cater to the e-commerce demands.

35 Full time staff includes established or unestablished staff under contract to the designated operator, including persons employed by contractors, or temporary staff taken on during holiday periods or for occasional events. However, retired employees as well as workers in subsidiaries abroad (if applicable) should be excluded. All employees performing their functions during normal working hours. Normal working hours means the number of working hours per week set by the designated operator for full-time employment.

36 Part time staff includes established or unestablished staff under contract to the designated operator, including persons employed by contractors, or temporary staff taken on during holiday periods or for occasional events. However, retired employees as well as workers in subsidiaries abroad (if applicable) should be excluded. This covers all employees working for less than the normal number of working hours each week.

37 Responses received from IPR 2019 questionnaire.

QUALITY OF SERVICES

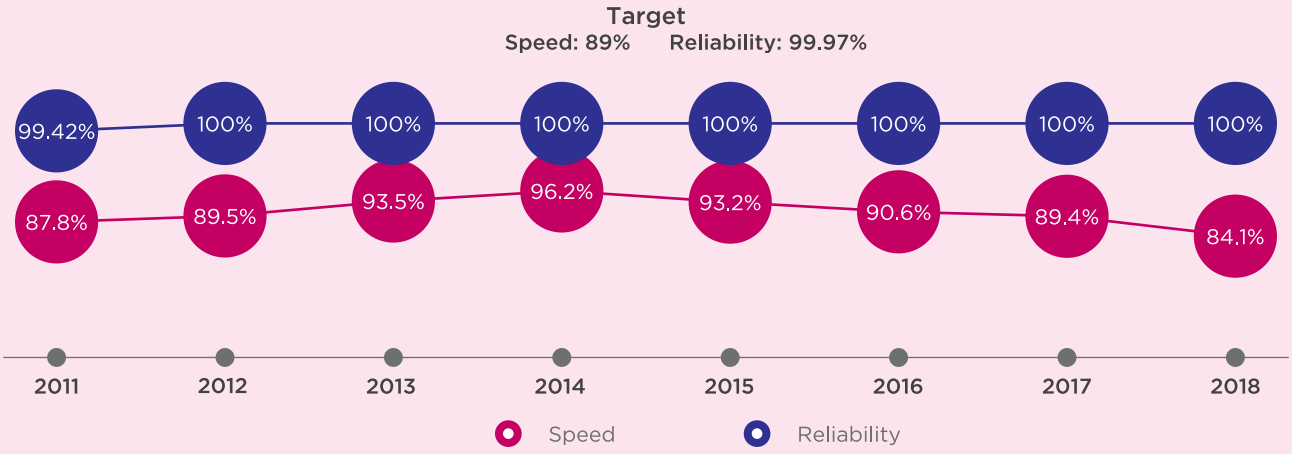
Under the Postal Services Act 2012, MCMC has a role to regulate the delivery services of licensees including the determination of performance standards and standard of services provided.

POSTAL SERVICES

Pos Malaysia reported achieving 100% reliability and 84.1% speed for the postal services domestic letter performance standard for 2018 with 5.3% lower for speed from 2017.

For postal services domestic parcel, Pos Malaysia also achieved 100% reliability and 83.9% speed performance standard in the same year with 2.3% lower for speed from 2017. Reliability for domestic letter and parcel remains good at 100% achievement.

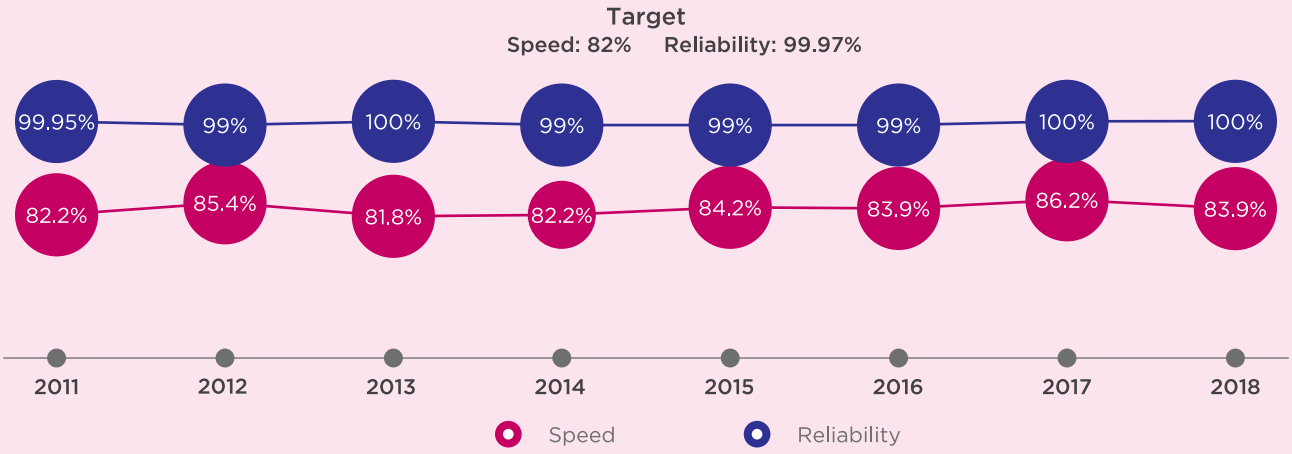
DOMESTIC LETTER SERVICE PERFORMANCE TREND 2011 – 2018



Source: Pos Malaysia

Figure 7.20 Domestic Letter Service Performance Trend 2011 – 2018

DOMESTIC PARCEL SERVICE PERFORMANCE TREND 2011 – 2018



Source: Pos Malaysia

Figure 7.21 Domestic Parcel Service Performance Trend 2011 – 2018

COURIER SERVICES

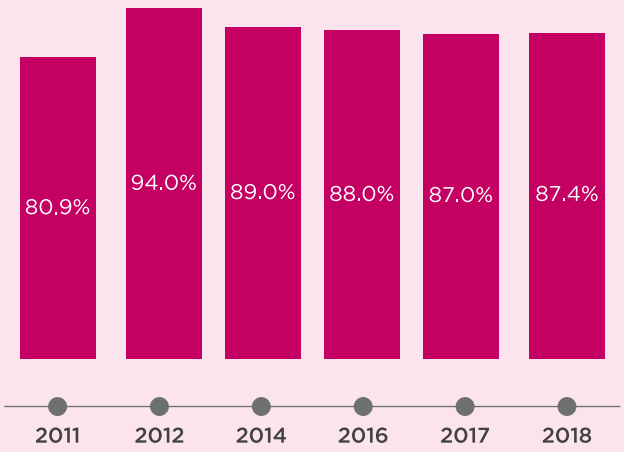
Since 2010, MCMC has undertaken a sampling survey to measure delivery services of 10 major courier services companies in Malaysia. A strategic initiative, which measures the service performance of major courier services players to guide the industry towards a higher level of achievements. The measurement comprised of delivery service (speed and reliability) and customer service (counter and call centre).

Based on the measurements carried out for 2018, 7 out of 10 test sample parcels were received according to the designated period of D+1 for delivery in major cities of Peninsular and D+2 for transmission to Sabah and Sarawak.

For reliability testing, 9 out of 10 test samples were received within three days of delivery (D+3).

In terms of customer service, average wait time for services on the counter is 3 minutes and service period is between 5-10 minutes. For quality of customer service at the call centre, on average the industry's achievements are 'Good'.

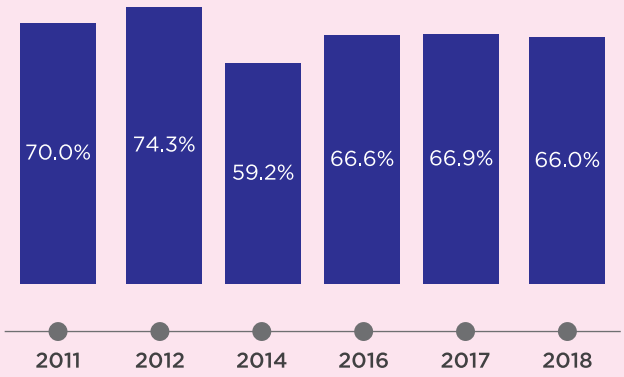
AVERAGE TREND OF COURIER SERVICES INDUSTRY DELIVERY QUALITY – RELIABILITY



Source: MCMC

Figure 7.22 Average Trend of Courier Services Industry Delivery Quality – Reliability

AVERAGE TREND OF COURIER SERVICES INDUSTRY DELIVERY QUALITY – SPEED



Source: MCMC

Figure 7.23 Average Trend of Courier Services Industry Delivery Quality – Speed

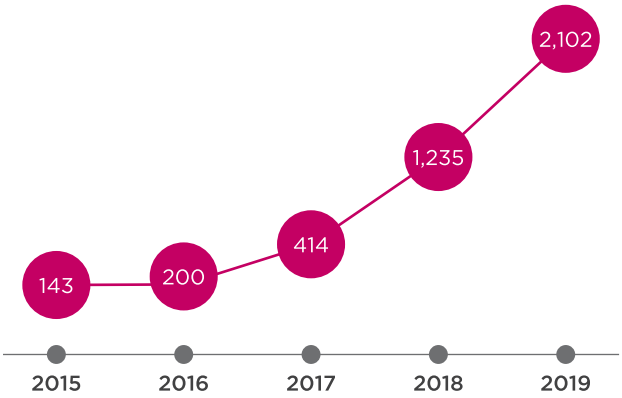
CONSUMER COMPLAINTS

As at end 2019, 2,102 complaints were received by MCMC from postal and courier services users. This was an increase of 70% from 1,235 cases in 2018.

The rising number of complaints is due to higher e-commerce sales volume especially during the major online sales such as the 11.11 Online Sales.

2,102
Postal and Courier Services Consumer Complaints
(2018: 1,235)

POSTAL AND COURIER SERVICES COMPLAINTS



Source: MCMC
Figure 7.24 Postal and Courier Services Complaints

Breakdown of complaints received by categories in 2019 is as follows:

COMPLAINTS RECEIVED BY CATEGORY

Source: MCMC
Figure 7.25 Complaints Received by Category

Based on MCMC questionnaire survey, the service providers highlighted that late or delayed delivery is the most challenging complaints to handle. This issue is more prevalent during peak seasons due to increased volumes of e-commerce delivery.

Generally, service providers emphasised that they have improvised their systems for logistics that enables among others, volume forecasting to ensure adequate workforce during the peak season such as the online festive sales or super shopping day sales. In addition, they have advanced tracking system that constantly gives accurate updates to customers on potential delivery timelines and track parcels movement, thus providing excellent customer service. There was also feedback on delayed delivery due to traffic congestions in towns or cities. In such cases, service providers will compensate customers with vouchers as good gesture.

SUSTAINABILITY THROUGH DIGITAL TRANSFORMATION

Globalisation has led to a rapid increase in courier business and the industry is expanding at its best. The demand for faster, efficient and trackable delivery is soaring and competition is severe when it comes to last-mile delivery. Such situations pose a few challenges to the courier industry.

The key lies in providing specialised services to customers such as personalised service choices. This is one way of expanding the potential for carving ones' niche for market penetration. The aim should be to be unique and differentiating the services from the rest of the competitors. Offering new features for tracking the order, custom packaging and blending in other innovations grab customers' attention. These require the adoption of the latest delivery solutions and committed to revolutionising and innovating operational processes.

Pos Malaysia has embarked on their Digital Transformation Plan in 2019. The company aims to be more efficient, cost-effective, and relevant in order to future-proof its business by adopting digital solutions and automating relevant processes, enabling it to expand its courier capabilities. Pos Malaysia has already started the move by launching its track-and-trace system to increase service quality. Amongst Pos Malaysia's future deployment in its Digital Transformation Plan are cashless payment capabilities via selected Pos Automated Machines which allows bills to be paid using several e-wallet services and online data analytics capabilities.

Clearly, embarking on a digital transformation is an instrumental step in securing and seizing new market opportunities.

CHAPTER 8 : OUTLOOK

This chapter sets out the outlook for the C&M industry and postal and courier industry. It highlights some projects and studies currently underway towards developing, among others, conceptual framework, regulatory review and economic forecast that will further shape the future of the industry. This chapter also presents the service providers strategic plans and sentiments amid challenging current environment.

FIFTH GENERATION MOBILE TECHNOLOGY (5G)

5G technology is an economic imperative for Malaysia as it has the power to rejuvenate industries that are integral to the country's economy. Nine industries have been identified as the focus areas of Malaysia's 5G technology. The industries are agriculture, education, entertainment, healthcare, manufacturing, oil and gas, smart city, smart transportation, and tourism.

Malaysia is laying the foundation in deploying 5G in Southeast Asia (SEA) through the implementation of 5G Demonstration Projects (5GDP). The 5GDP began in Langkawi with 35 use cases involving six verticals at 25 live 5G sites, actively operating from October 2019 until March 2020, with a total investment of USD24.9 million (RM101 million). This constitutes half of the total 72 use cases demonstrated in six states that include Kedah, Penang, Perak, Selangor, Terengganu and Kuala Lumpur. The 5GDP in these six states is expected to be completed in the middle of year 2020.

In addition to the technical and business preparation for 5G, MCMC will be conducting an in-depth economic study on the impact of 5G in Malaysia. Among the key areas of the study are projection growth of GDP and employment in the nine identified industries, return of investments and challenges of implementation. The study will address the impact of 5G at national and state levels.

The reality is that 5G is set to change our lives from daily routines, work processes to our personal sphere. Individuals and businesses alike will soon experience a new way of doing things when 5G becomes commercially available.

CONTENT SERVICES

The OTT providers are increasingly encroaching the traditional spaces occupied by the broadcasters in tandem with consumers' viewing preference, thus eroding the broadcasters' revenue. The growth of video streaming will continue to explode. More people will have streaming subscriptions than traditional pay TV subscriptions.

In order to sustain from the disruptive competition from OTT providers, broadcasters are required to implement digital transformation plan which includes new business models, understanding consumers need or demand and talent management. Future proofing this paradigm shifts also calls for a more inclusive and sustainable policy and regulatory intervention.

As the regulator of the C&M industry, MCMC is committed to protect the licensed content applications service provider (CASP) in this current challenging environment. MCMC will be conducting a study on a regulatory review of content applications service to address mainly the issues on OTT. The study will cover among others, the impact of the digital terrestrial television roll-out and OTT on traditional content applications service market, identify challenges faced by current CASP and opportunities for growth, and conduct a benchmarking study against the best practices of other regulatory jurisdictions.

On the consumer side, the outlook for content services will be much more exciting with wide array of content choices available on digital platforms including local and international movies, series and documentaries. In terms of user experience, the sheer convenience of browsing shows without being bound to a broadcast schedule or worrying about programming a DVR makes traditional TV prehistoric. Also with the increased competition in the digital platform, consumers will enjoy attractive packages from various content service providers.

POSTAL AND COURIER SERVICES INDUSTRY

Over the last few years, the Malaysian e-Commerce market has experienced strong growth and this trend is expected to continue. The courier and delivery business is indeed a lucrative business, opening up new avenues for the e-commerce markets by simplifying the way how products are delivered. Based on industry feedback[38], majority of service providers (88% of respondents) are positive on the industry outlook for the next three years. Their sentiment is based on the explosive growth of e-commerce which can create higher demand for delivery services and enables the industry to prosper further.

Intense competition in the courier sector is expected to continue. Any benefits from capacity expansion or digital transformation are likely negated by competitors' price-cutting strategies. Several service providers have stated that while the volume is growing, there is stiff competition due to intensifying price competition and more varied service offerings from established and new service providers. In addition, the emergence of logistic start-ups, including local and foreign entities entering their space is also squeezing their margins. Such situation poses a huge challenge to service providers but offers positive opportunity to raise the bar, especially to the ones who are experiencing the transition from conventional services to the modern one with digital technology solutions.

On the postal side, Pos Malaysia may see its earnings lifted this year on the back of the company's recent postage hike. The increased postage rates for registered mails, commercial mails and small parcels took effect on 1 February 2020. Subsequently, Pos Malaysia's management is seeking to further address its tariff rebalancing mechanism for a sustainable and economical road map given its mailing universal service obligation. The group also aims for an organic top-line growth, driven by e-commerce's rapid expansion fuelling its courier businesses, while managing its cost structure.

NATIONAL DIGITAL IDENTITY

Technological advancements bring about new opportunities and today, technology forms an integral part of our lives. The rise of digital services calls for an imperative need for a safe, secure and protected National Digital Identity (ID) platform.

A comprehensive study to establish a user centric National Digital ID framework for Malaysians commenced in November 2019. The National Digital ID Study Task Force will oversee the 30-week study, which will recommend the implementation model of digital ID in Malaysia. The study's primary focus includes local contextual analysis, implementation strategy, operating model, technology and enabling policies as well as related legislations.

The National Digital ID will be an advanced method of authenticating a user's identity online. However, it is not a substitute for the national registration identity card nor will it be compulsory for everyone. The benefits of having a National Digital ID include, having a secure and trusted digital credential as well as a platform for authentication that can improve convenience, promote inclusivity, reduce cost of access to services, and enhance service delivery to Malaysians where online transactions are concerned.

38 Responses received from IPR 2019 questionnaire.

LIST OF FIGURES

LIST OF ABBREVIATIONS

3G	3rd Generation
4G LTE	4th Generation Long Term Evolution
5G	5th Generation

A	
ACE	"Access", "Certainty", "Efficiency"
ADEX	Advertising Expenditure
ADSL	Asymmetric Digital Subscriber Line
AI	Artificial Intelligence
ARPU	Average Revenue Per User
ASO	Analogue Switch Off
ASP	Applications Service Provider
ASEAN	Association Of Southeast Asian Nations
AVOD	Advertisement-Supported Video On Demand

B	
B2B	Business to Business
BAS	Wired Broadband Access Service

C	
C&M	Communications and Multimedia
CA	Certification Authority
CAS	Content Applications Services
CASP	Content Applications Service Provider
CCID	Commercial Crime Investigation Department
CFM	Communications and Multimedia Consumer Forum of Malaysia
CMA	Communications and Multimedia Act 1998
CSSR	Call Setup Success Rate

D	
DCR	Dropped Call Rate
DEL	Direct Exchange Line
DIAS	Dial Up Internet Access Service
DL	Download
DLL	Digital Leased Line Service
DSL	Digital Subscriber Line

DTH	Direct-to-Home
DTTB	Digital Terrestrial Television Broadcasting

E

EA	Education and Awareness
ECP	External Content Provider
EDA	E-Commerce Delivery Award
EMF	Electronic Magnetic Fields

F

FAMA	Federal Agricultural Marketing Authority
FTA	Free-to-Air
FYE	Fiscal Year End

G

GA	Government Agency
GCC	General Consumer Code of Practice for the Communications and Multimedia Industry Malaysia
GLC	Government-linked Company
GLIC	Government-linked Investment Company
GPRS	General Packet Radio Services

H

HSBB	High Speed Broadband

I

iDTV	Integrated Digital TV
ICT	Information and Communications Technology
IoT	Internet of Things
IP	Internet Protocol
IPC	Integrated Parcel Centre
IPTV	Internet Protocol Television
ISP	Internet Service Provider
ITU	International Telecommunication Union

K

KLIA	Kuala Lumpur International Airport
KYC	Know Your Customer

L	
LTE	Long Term Evolution

M	
Mbps	Megabits Per Second
MCS	Mobile Content Services
MNC	Multi-National Companies
MNO	Mobile Network Operator
MNP	Mobile Network Portability
MO	Modus Operandi
MRT	Mass Rapid Transit
MSA	The Commission Determination on the Mandatory Standard on Access, Determination No. 3 of 2016
MSAP	The Commission Determination on the Mandatory Standard on Access Pricing, Determination No. 1 of 2017
MSMCS	Mandatory Standards for the Provision of Mobile Content Services, Determination No. 4 of 2009
MSQoS	Mandatory Standards for Quality of Service
MVN	Mobile Virtual Network
MyIX	Malaysia Internet Exchange

N	
NFCP	National Fiberisation and Connectivity Plan
NFP	Network Facilities Provider
NSP	Network Services Provider

O	
OCR	Optical Character Recognition
OTT	Over-the-Top

P	
PCS	Public Cellular Service
POS	Point-of-Sale
PoP	Points-of-Presence
PSS	Public Payphone Service
PSTN	Public Switched Telephone Network Service

Q	
QoS	Quality of Service
QR Code	Quick Response Code

R	
R&D	Research and Development
RAO	Reference Access Offers
RAN	Radio Access Network
RBB	Rural Broadband
RFID	Radio Frequency Identification
RTT	Round-Trip Time

S	
SB	Statutory Bodies
SGOV	State Government
SIM	Subscriber Identity Module
SME	Small and Medium Enterprises
SMS	Short Messaging Service
STB	Set Top Box
SUBB	Suburban Broadband
SVOD	Subscription Video On Demand

U	
UHD	Ultra High Definition
UHF	Ultra High Frequency
UPU	Universal Postal Union
USD	United States Dollar
USP	Universal Service Provision

V	
VAS	Value-Added Services

Y	
YoY	Year on Year

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