



JABATAN PERDANA MENTERI
JABATAN PERANGKAAN MALAYSIA

AKAUN SATELIT TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

*Information and Communication Technology Satellite
Account*

2021

Pemakluman

Jabatan Perangkaan Malaysia (DOSM) sedang menjalankan Survei Pendapatan, Perbelanjaan Isi Rumah dan Kemudahan Asas (HIES/BA) 2022 bermula dari 1 Januari 2022 sehingga 31 Disember 2022. DOSM amat menghargai kerjasama daripada responden yang terpilih untuk memberikan maklumat kepada DOSM serta menjayakan survei ini. Sila layari www.dosm.gov.my untuk maklumat lanjut.

Penerbitan statistik ekonomi dan sosial iaitu PocketStats yang mengandungi statistik suku tahunan dan tahunan boleh diperoleh dari portal DOSM atau melalui pautan https://bit.ly/PocketStats_2022.

Dimaklumkan bahawa Kerajaan Malaysia telah mengisytiharkan Hari Statistik Negara (MyStats Day) pada 20 Oktober setiap tahun. Tema sambutan MyStats Day adalah "Connecting the World with Data We Can Trust".

Announcement

The Department of Statistics Malaysia (DOSM) is conducting the Household Income, Expenditure and Basic Amenities Survey (HIES/BA) 2022 from 1st January 2022 until 31st December 2022. DOSM greatly appreciates the cooperation given by selected respondents by sharing their information with DOSM and making the survey a success. Please visit www.dosm.gov.my for more information.

Economic and social statistics publication namely PocketStats which contain quarterly and annual statistics can be obtained from the DOSM portal or via the link https://bit.ly/PocketStats_2022.

Please be informed that the Government of Malaysia has declared National Statistics Day (MyStats Day) on October 20 each year. MyStats Day theme is "Connecting the World with Data We Can Trust".

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA

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Pengguna yang mengeluarkan sebarang maklumat dari terbitan ini sama ada yang asal atau diolah semula hendaklah meletakkan kenyataan berikut:

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KATA PENGANTAR

Akaun Satelit Teknologi Maklumat dan Komunikasi adalah satu kerangka statistik untuk mengukur perkembangan prestasi industri Teknologi Maklumat dan Komunikasi (TMK) termasuk e-dagang dan sumbangannya kepada ekonomi. Penyusunan statistik ini dilaksanakan berdasarkan rangka kerja *System of National Accounts 2008*, *OECD Guide to Measuring the Information Society 2011* dan *OECD Internet Economy Outlook 2012*. Statistik ini disusun secara tahunan dengan mengintegrasikan produk dan industri berkaitan teknologi maklumat dan komunikasi.

Penerbitan ini dibahagikan kepada tiga bahagian utama. Bahagian pertama memaparkan penemuan utama, ringkasan penemuan dan rencana. Bahagian kedua menyediakan jadual statistik terperinci. Aspek teknikal berkaitan konsep, definisi, metodologi, sumber data serta kod & klasifikasi produk dan industri teknologi maklumat dan komunikasi yang digunakan dalam penerbitan ini diterangkan di bahagian ketiga bagi memudahkan pengguna memahami statistik yang diterbitkan.

Jabatan merakamkan penghargaan atas kerjasama dan sumbangan yang diberikan oleh semua pihak dalam menjayakan penerbitan ini. Semua maklum balas dan cadangan untuk penambahbaikan penerbitan ini pada masa akan datang amatlah dihargai.

DATO' SRI DR. MOHD UZIR MAHIDIN

Ketua Perangkawan Malaysia

Oktober 2022

PREFACE

Information and Communication Technology Satellite Account is a statistical framework to gauge the performance of the Information and Communication Technology (ICT) industry inclusive of e-commerce and its contribution to the economy. The compilation of these statistics is in accordance with the framework of the System of National Accounts 2008, the OECD Guide to Measuring the Information Society 2011 and the OECD Internet Economy Outlook 2012. These statistics are compiled annually and integrate products and industries related to information and communication technology.

This publication is divided into three main parts. The first part displays the main findings, summary of findings and an article. The second part provides the detailed statistical tables. The technical aspects related to concepts, definitions, methodology, data sources and code & classification of information and communication technology products and industries used in this publication are described in the third part to assist users to understand the published statistics.

The Department acknowledges all the parties concerned for their cooperation in realising this publication. All feedback and suggestions towards improving future publications are highly appreciated.

DATO' SRI DR. MOHD UZIR MAHIDIN

Chief Statistician Malaysia

October 2022

SINGKATAN / ABBREVIATIONS

Singkatan / Abbreviations

ASTMK	: Akaun Satelit Teknologi Maklumat dan Komunikasi
b	: bilion / <i>billion</i>
BPM6	: <i>Balance of Payments and International Investment Position Manual Sixth Edition</i>
CPC	: <i>Central Products Classification</i>
DOSM	: Jabatan Perangkaan Malaysia / <i>Department of Statistics, Malaysia</i>
etc	: <i>et cetera / and other things</i>
GDP	: <i>Gross Domestic Product</i>
GVAICT	: <i>Gross Value Added of Information and Communication Technology industry</i>
i.e.	: <i>Latin expression meaning "that is; in other words"</i>
ICT	: <i>Information and Communication Technology</i>
ICTSA	: <i>Information and Communication Technology Satellite Account</i>
ISIC	: <i>International Standard Industrial Classification of All Economic Activities</i>
j	: juta
HS	: <i>Harmonized Commodity Description and Coding Systems</i>
KDNK	: Keluaran Dalam Negeri Kasar
m	: <i>million</i>
MCPA	: <i>Malaysian Classification of Products by Activity</i>
MSIC	: Piawaian Klasifikasi Industri Malaysia / <i>Malaysia Standard Industrial Classification</i>
n.e.c	: <i>not elsewhere classified</i>
NDKTMK	: Nilai Ditambah Kasar Industri Teknologi Maklumat dan Komunikasi
OECD	: <i>Organisation for Economic Co-operation and Development</i>
RM	: Ringgit Malaysia
SNA	: <i>System of National Accounts</i>
SUT	: Jadual Penawaran dan Penggunaan / <i>Supply and Use Table</i>
t.t.t.l.	: tidak terkelas di tempat lain
TMK	: Teknologi Maklumat dan Komunikasi

Simbol / Symbols

-	: negatif / <i>negative</i>
..	: tidak berkenaan / <i>not applicable</i>
e	: anggaran / <i>estimate</i>
p	: permulaan / <i>preliminary</i>
0	: nilai kurang daripada 0.05 / <i>value less than 0.05</i>

Nota / Note

Penjumlahan angka komponen mungkin tidak bersamaan dengan angka jumlah kecil atau jumlah besar disebabkan pembundaran.

The sum of the component figures may not tally with the sub-total or total figures due to rounding.

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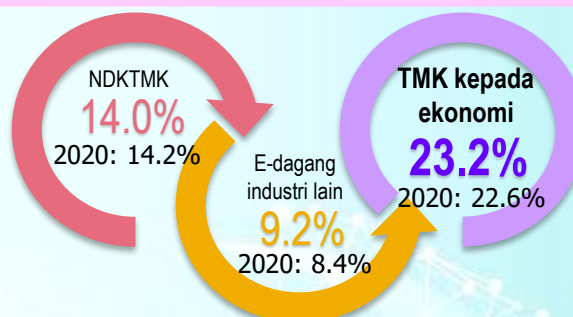


AKAUN SATELIT TEKNOLOGI MAKLUMAT DAN KOMUNIKASI 2021

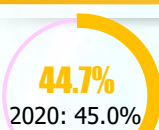
Teknologi Maklumat dan Komunikasi (TMK) menyumbang **23.2%** kepada KDNK dengan pertumbuhan sebanyak **12.1%**.

RM359.3b

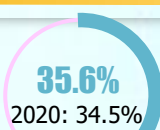
2020: RM320.4b



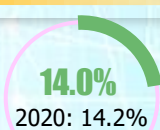
Nilai Ditambah Kasar Industri TMK (NDKTMK)



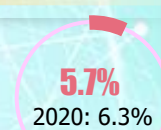
Perkhidmatan TMK



Pembuatan TMK

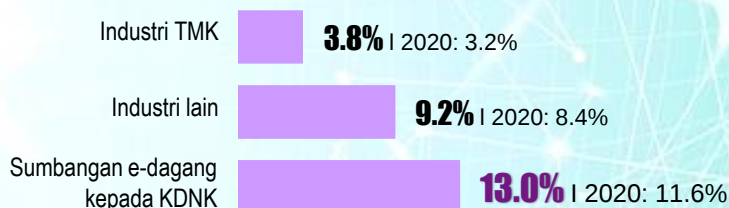


Perdagangan TMK



Kandungan & media

Nilai Ditambah Kasar E-dagang



Eksport & Import Produk TMK



Guna Tenaga Industri TMK

Guna tenaga dalam industri TMK meningkat kepada **1.21 juta** orang



35.9%
2020: 35.3%

Pembuatan TMK

29.2%
2020: 29.5%

Perkhidmatan TMK

21.9%
2020: 21.7%

Perdagangan TMK

13.0%
2020: 13.5%

Kandungan & media

*Sumbangan (%)

Sumber: Akaun Satelit Teknologi Maklumat dan Komunikasi 2021, Jabatan Perangkaan Malaysia (DOSM)

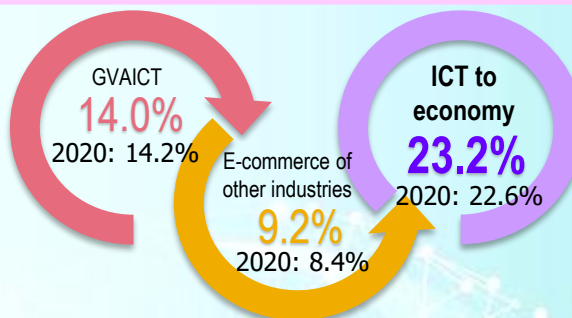


INFORMATION AND COMMUNICATION TECHNOLOGY SATELLITE ACCOUNT 2021

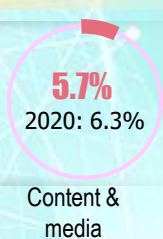
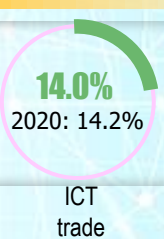
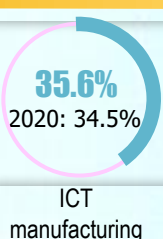
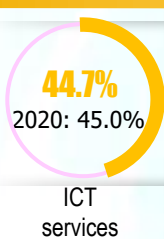
The Information and Communication Technology (ICT) contributed **23.2%** to the GDP with a growth of **12.1%**.

RM359.3b

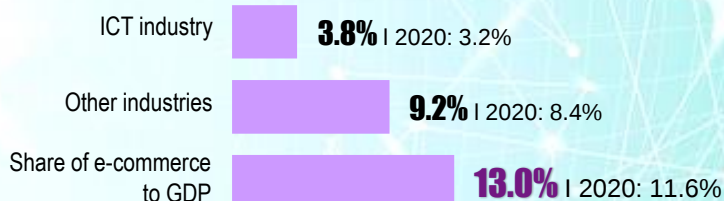
2020: RM320.4b



Gross Value Added ICT Industry (GVAICT)



Gross Value Added of E-commerce

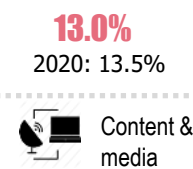
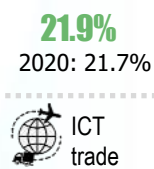
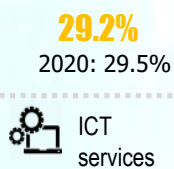
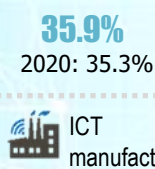


Exports & Imports of ICT Products



Employment of ICT Industry

Employment in the ICT industry increased to **1.21 million** persons



RINGKASAN PENEMUAN

PENGENALAN

Industri TMK
menunjukkan
perkembangan
yang positif

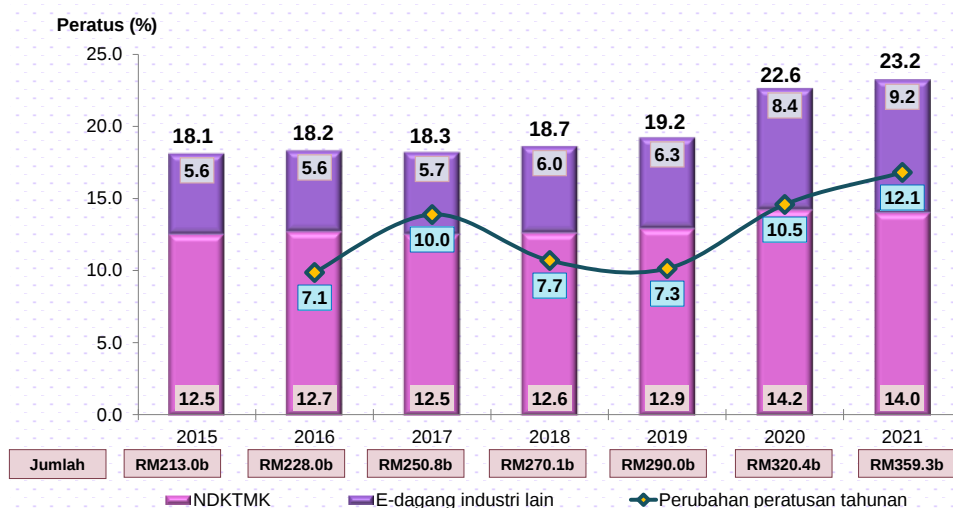
Penerbitan ini menyediakan statistik bagi Akaun Satelit Teknologi Maklumat dan Komunikasi (ASTMK) di Malaysia bagi tahun 2021. ASTMK merangkumi statistik akaun satelit dan komponen bagi ekonomi digital. Statistik bagi akaun satelit menyediakan maklumat terperinci mengenai industri Teknologi Maklumat dan Komunikasi (TMK) dan industri lain yang mengeluarkan produk TMK, penawaran dan penggunaan produk TMK, eksport & import produk TMK, komponen pendapatan dan guna tenaga dalam industri TMK. Sementara itu, Nilai Ditambah Kasar industri TMK (NDKTMK), e-dagang dan sumbangan TMK kepada ekonomi merupakan komponen bagi ekonomi digital turut disertakan dalam penerbitan ini. Statistik ini dibentangkan mengikut industri dan produk berkaitan TMK pada harga semasa.

SUMBANGAN TMK KEPADA EKONOMI

Sumbangan TMK kepada ekonomi kekal mencatatkan pertumbuhan dua digit meningkat 12.1 peratus pada tahun 2021 (2020:10.5%) dengan nilai RM359.3 bilion. TMK menyumbang 23.2 peratus kepada Keluaran Dalam Negeri Kasar (KDNK), merangkumi NDKTMK (14.0%) dan e-dagang bagi industri lain (9.2%) seperti ditunjukkan di **Paparan 1**.

Paparan 1

Sumbangan TMK kepada Ekonomi:
Nilai, perubahan peratusan tahunan dan peratus sumbangan



Sumbangan TMK
kepada ekonomi
23.2%

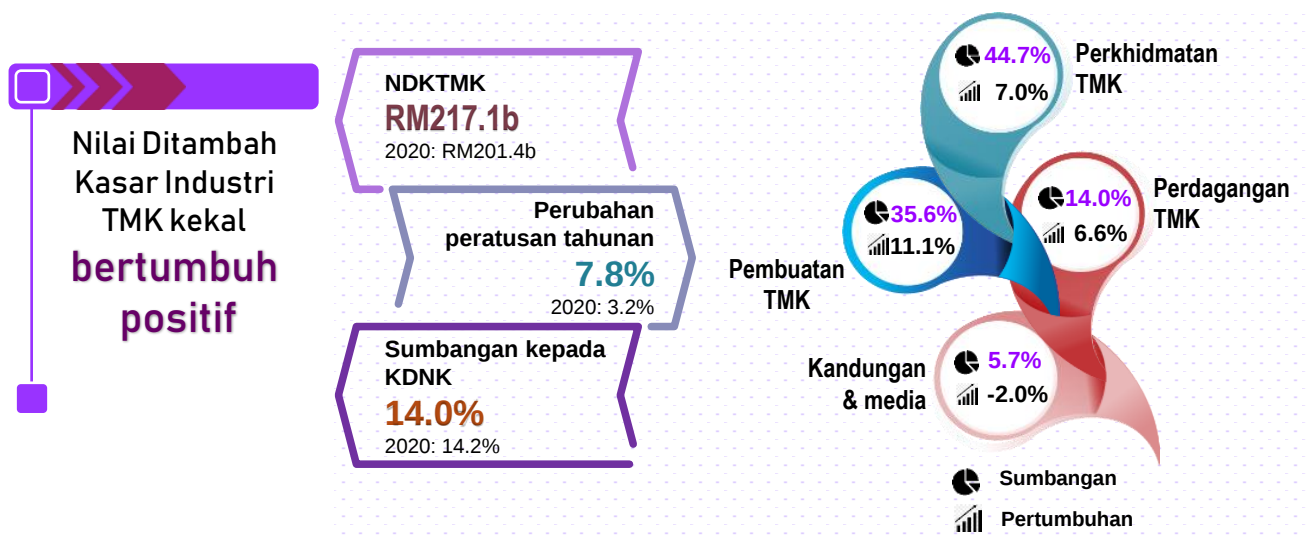
PRESTASI INDUSTRI TMK

NDKTMK meningkat kepada RM217.1 bilion dengan pertumbuhan yang lebih baik iaitu 7.8 peratus pada tahun 2021 berbanding 3.2 peratus pada tahun sebelumnya. Pertumbuhan ini disokong oleh industri pembuatan TMK dan perkhidmatan TMK dengan masing-masing mencatatkan pertumbuhan 11.1 peratus dan 7.0 peratus seperti ditunjukkan dalam **Paparan 2**.

Komponen & papan elektronik, peralatan komunikasi dan elektronik pengguna merupakan penyumbang utama kepada industri pembuatan TMK dengan 32.6 peratus. Manakala, bagi industri perkhidmatan TMK, ia diterajui oleh perkhidmatan telekomunikasi dengan sumbangan 31.5 peratus.

Paparan 2

Nilai Ditambah Kasar Industri TMK: Nilai, perubahan peratusan tahunan dan peratus sumbangan



NILAI DITAMBAH KASAR E-DAGANG

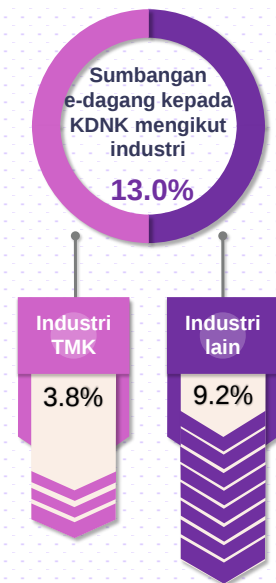
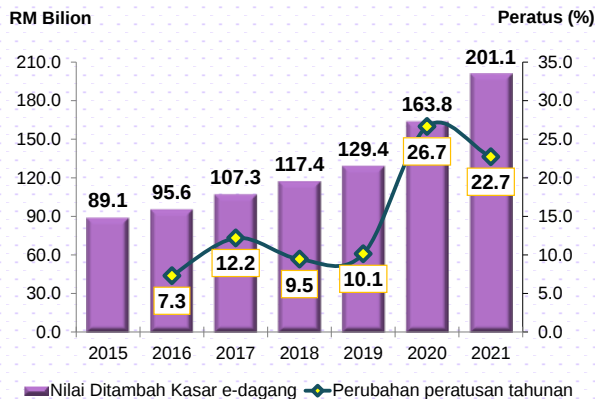
Nilai Ditambah Kasar e-dagang mencatatkan RM201.1 bilion, meningkat sebanyak RM37.2 bilion pada 2021 dengan pertumbuhan 22.7 peratus. Pertumbuhan ini disokong oleh industri pembuatan TMK dan perkhidmatan TMK. Dari segi sumbangan kepada KDNK, e-dagang bagi industri TMK menyumbang sebanyak 3.8 peratus, manakala e-dagang bagi industri lain adalah 9.2 peratus (**Paparan 3**).

Sektor Pembuatan mendominasi Nilai Ditambah Kasar e-dagang dengan sumbangan 57.7 peratus dan mencatatkan nilai RM116.1 bilion. Sektor Perkhidmatan kekal sebagai penyumbang kedua tertinggi dengan 38.5 peratus.

Sumbangan e-dagang kepada KDNK
13.0%

Paparan 3

Nilai Ditambah Kasar E-dagang kepada KDNK: Nilai, perubahan peratusan tahunan dan peratus sumbangan



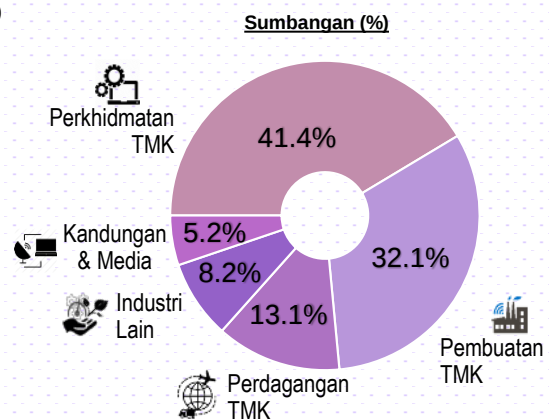
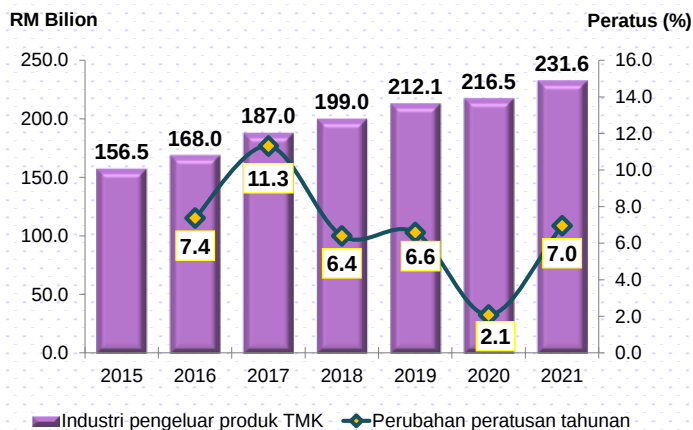
PENGELUARAN PRODUK TMK MENGIKUT INDUSTRI

Pengeluaran produk TMK berjumlah RM231.6 bilion pada 2021, meningkat 7.0 peratus berbanding tahun sebelumnya (2020: 2.1%). Pertumbuhan ini disokong oleh prestasi yang lebih baik dalam industri pembuatan TMK (2021: 12.8%; 2020: 5.5%) dan perkhidmatan TMK (2021: 6.8%; 2020: 5.9%). Industri perkhidmatan TMK masing-masing menyumbang sebanyak 41.4 peratus sementara pembuatan TMK adalah 32.1 peratus kepada jumlah keseluruhan pengeluaran produk TMK (Paparan 4).

Pengeluaran produk TMK didominasi oleh **Perkhidmatan TMK**

Paparan 4

Industri TMK dan Industri Lain yang Mengeluarkan Produk TMK: Nilai, perubahan peratusan tahunan dan peratus sumbangan

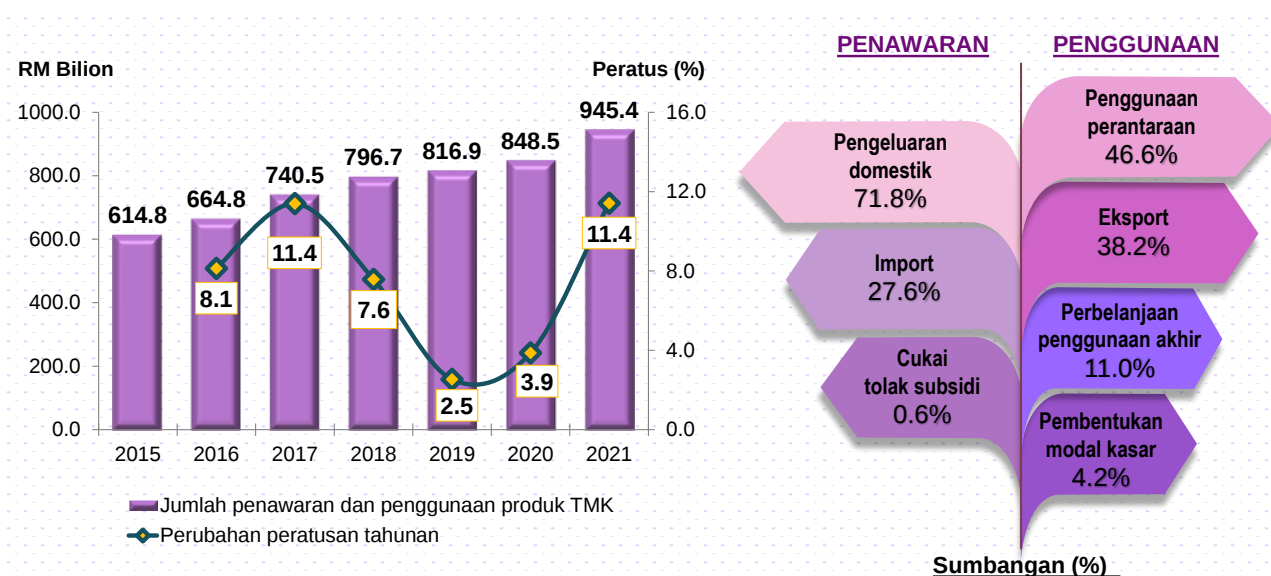


PENAWARAN DAN PENGGUNAAN PRODUK TMK

Penawaran dan penggunaan produk TMK menjana nilai RM945.4 bilion pada 2021, dengan pertumbuhan 11.4 peratus. Pengeluaran domestik menerajui jumlah penawaran produk TMK dengan sumbangan 71.8 peratus, diikuti oleh import produk TMK 27.6 peratus. Sementara itu, sumbangan penggunaan perantaraan produk TMK mencatatkan 46.6 peratus dan eksport, 38.2 peratus kepada jumlah penggunaan TMK (**Paparan 5**).

Paparan 5

Penawaran dan Penggunaan Produk TMK: Nilai, perubahan peratusan tahunan dan peratus sumbangan



EKSPORT DAN IMPORT PRODUK TMK

Eksport produk TMK melonjak 14.6 peratus berbanding 6.3 peratus pada 2020 dengan mencatatkan nilai RM360.8 bilion. Pengukuhan dalam eksport barangan TMK dan perkhidmatan TMK telah mempengaruhi prestasi eksport produk TMK. Eksport produk TMK menyumbang 33.9 peratus kepada jumlah eksport negara.

Import produk TMK berjumlah RM261.2 bilion, dengan peningkatan 21.0 peratus dipacu oleh pertumbuhan barangan TMK sebanyak 22.6 peratus. Import bagi produk TMK menyumbang 27.4 peratus kepada keseluruhan import pada tahun 2021 (**Paparan 6**).

Justeru, eksport bersih produk TMK kekal mencatatkan lebih dengan nilai RM99.7 bilion pada tahun 2021.

Eksport bersih produk TMK kekal bertumbuh positif

GUNA TENAGA DALAM INDUSTRI TMK

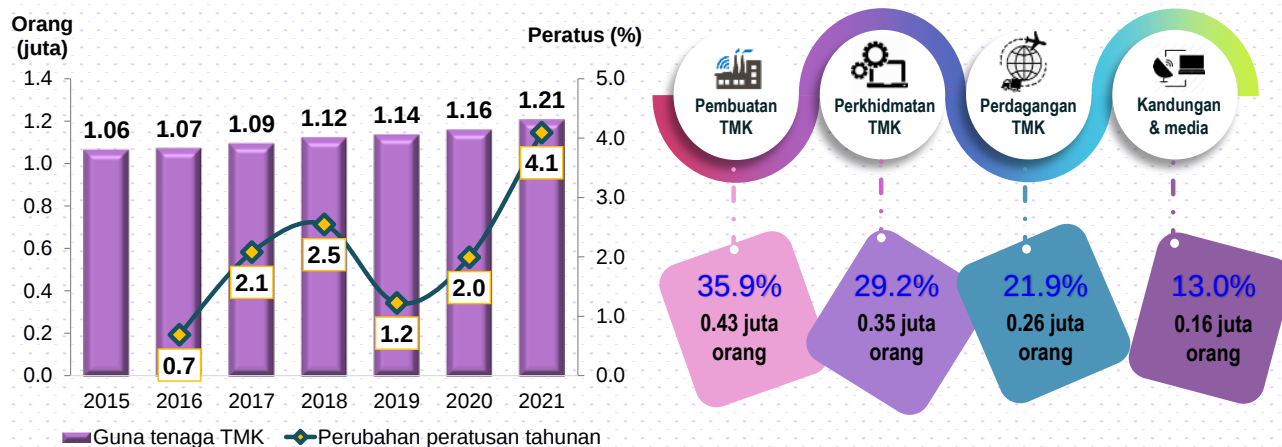
Jumlah guna tenaga dalam industri TMK
1.21 juta orang

Guna tenaga dalam industri TMK berjumlah 1.21 juta orang pada tahun 2021 dengan sumbangan 8.0 peratus kepada keseluruhan guna tenaga. Industri pembuatan TMK merupakan penyumbang utama dengan sumbangan 35.9 peratus, diikuti oleh perkhidmatan TMK (29.2%) dan perdagangan TMK (21.9%) seperti ditunjukkan dalam **Paparan 8**.

Paparan 8

Guna Tenaga dalam Industri TMK:

Nilai, perubahan peratusan tahunan dan peratus sumbangan



SUMMARY OF FINDINGS

INTRODUCTION

The ICT Industry shows positive growth

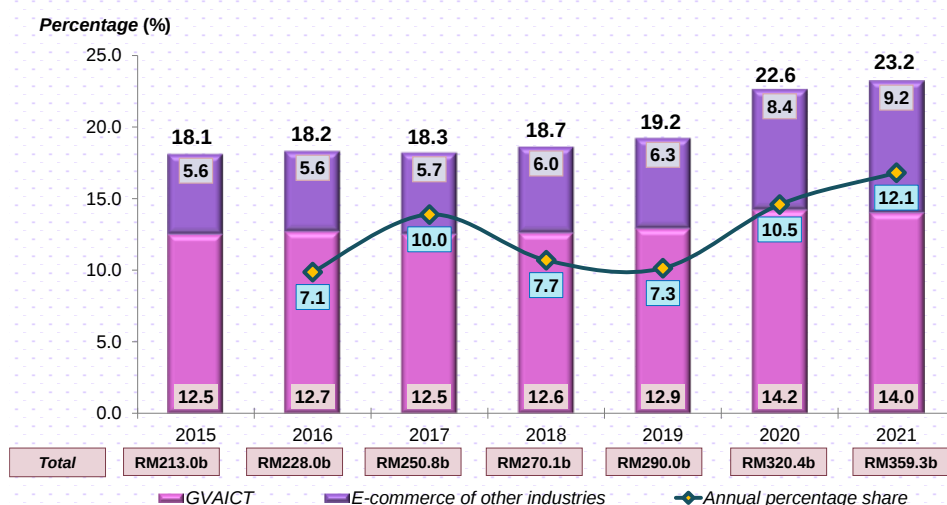
This publication provides statistics on the Information and Communication Technology Satellite Account (ICTSA) in Malaysia for the year 2021. ICTSA comprises statistics on satellite accounts and components of the digital economy. The satellite account statistics provide details on the Information and Communication Technology (ICT) and other industries producing ICT products, supply and use of ICT products, exports & imports of ICT products, income components and employment in the ICT industry. Meanwhile, Gross Value Added of the ICT industry (GVAICT), e-commerce and the contribution of ICT to the economy are the components of digital economy also included in this publication. The statistics are presented by industries and products related to ICT at current prices.

CONTRIBUTION OF ICT TO THE ECONOMY

The contribution of ICT to the economy remained double-digit increased by 12.1 per cent in 2021 (2020: 10.5%), valued at RM359.3 billion. ICT contributed 23.2 per cent to the Gross Domestic Product (GDP), comprises of GVAICT (14.0%) and e-commerce of other industries (9.2%) as shown in **Exhibit 1**.

Exhibit 1

ICT Contribution to the Economy:
Value, annual percentage change and percentage share



ICT contribution to the economy
23.2%

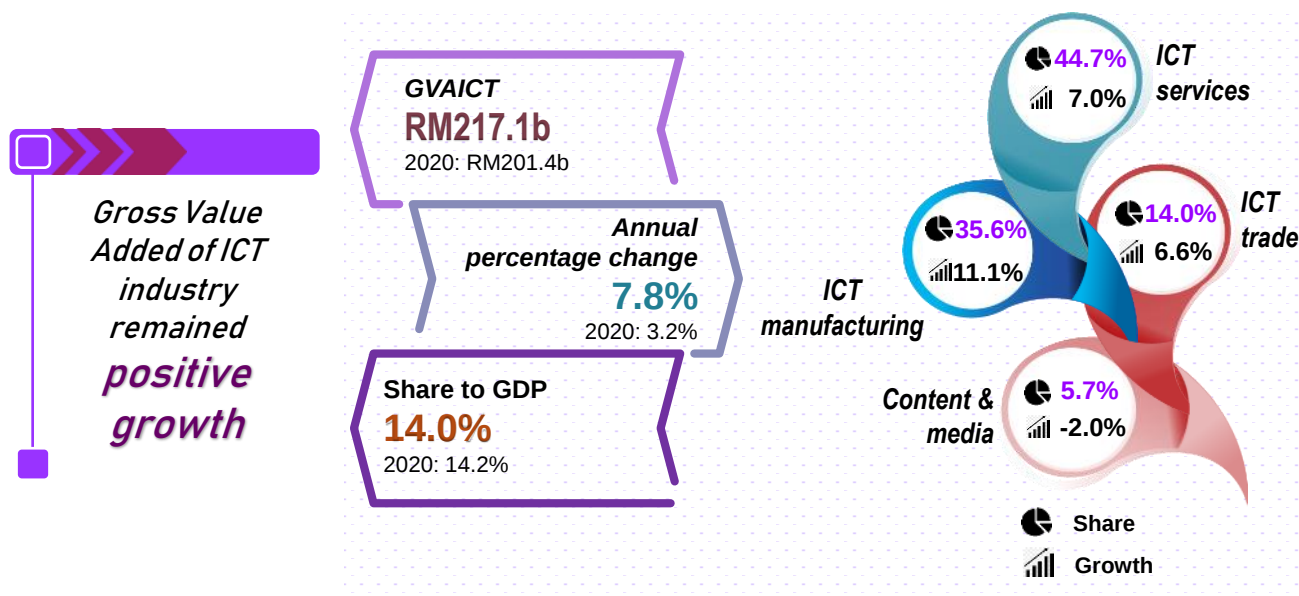
PERFORMANCE OF ICT INDUSTRY

GVAICT increased to RM217.1 billion with a better growth of 7.8 per cent in 2021 compared to 3.2 per cent in the previous year. The growth was supported by ICT manufacturing industry and ICT services industry with a growth of 11.1 per cent and 7.0 per cent respectively as shown in **Exhibit 2**.

Electronic components & boards, communication equipment and consumer electronics was the main contributor to the ICT manufacturing industry with 32.6 per cent. Meanwhile, the ICT services industry, was led by telecommunications services with a share of 31.5 per cent.

Exhibit 2

Gross Value Added of ICT Industry: Value, annual percentage change and percentage share



GROSS VALUE ADDED OF E-COMMERCE

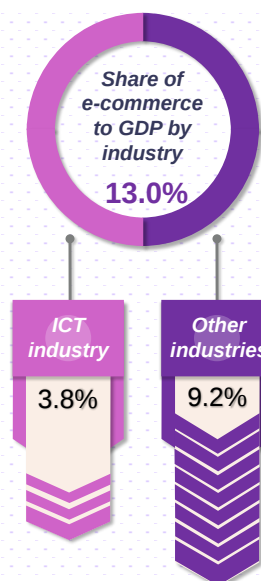
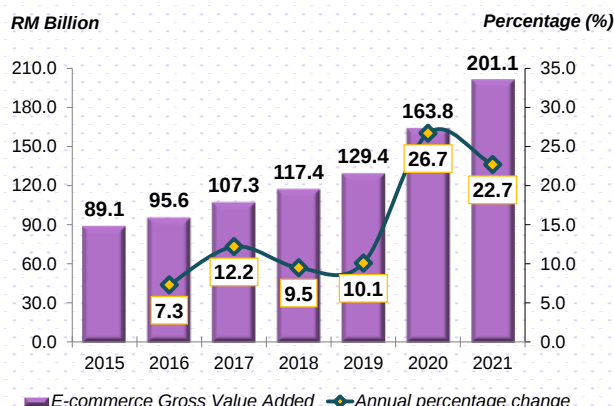
Gross Value Added of e-commerce registered RM201.1 billion, an increase of RM37.2 billion in 2021 with a growth of 22.7 per cent. The growth was supported by the ICT manufacturing and ICT services industries. In terms of contribution to GDP, e-commerce in the ICT industry contributed 3.8 per cent, while e-commerce in other industries contributed 9.2 per cent (**Exhibit 3**).

Contribution of
e-commerce to
GDP
13.0%

The Manufacturing sector dominated the Gross Value Added of e-commerce with a share of 57.7 per cent and registered a value of RM116.1 billion. The Services sector remained the second highest contributor with 38.5 per cent.

Exhibit 3

Gross Value Added of E-commerce to GDP: Value, annual percentage change and percentage share



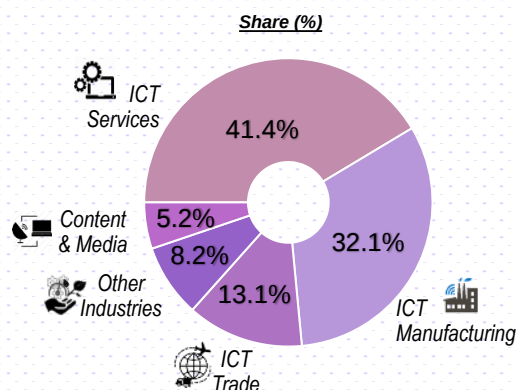
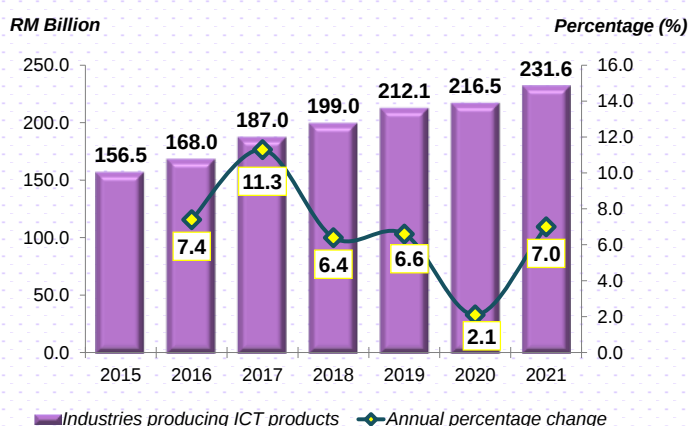
PRODUCTION OF ICT PRODUCTS BY INDUSTRY

The production of ICT products amounted to RM231.6 billion in 2021, a rise of 7.0 per cent compared to the preceding year (2020: 2.1%). The expansion was supported by favorable performance in the ICT manufacturing (2021: 12.8%; 2020: 5.5%) and ICT services (2021: 6.8%; 2020: 5.9%) industries. The ICT services industry contributed 41.4 per cent while ICT manufacturing 32.1 per cent respectively to the total production of ICT products (Exhibit 4).

Production of ICT product dominated by **ICT services**

Exhibit 4

ICT Industry and Other Industries that Produce ICT Products: Value, annual percentage change and percentage share

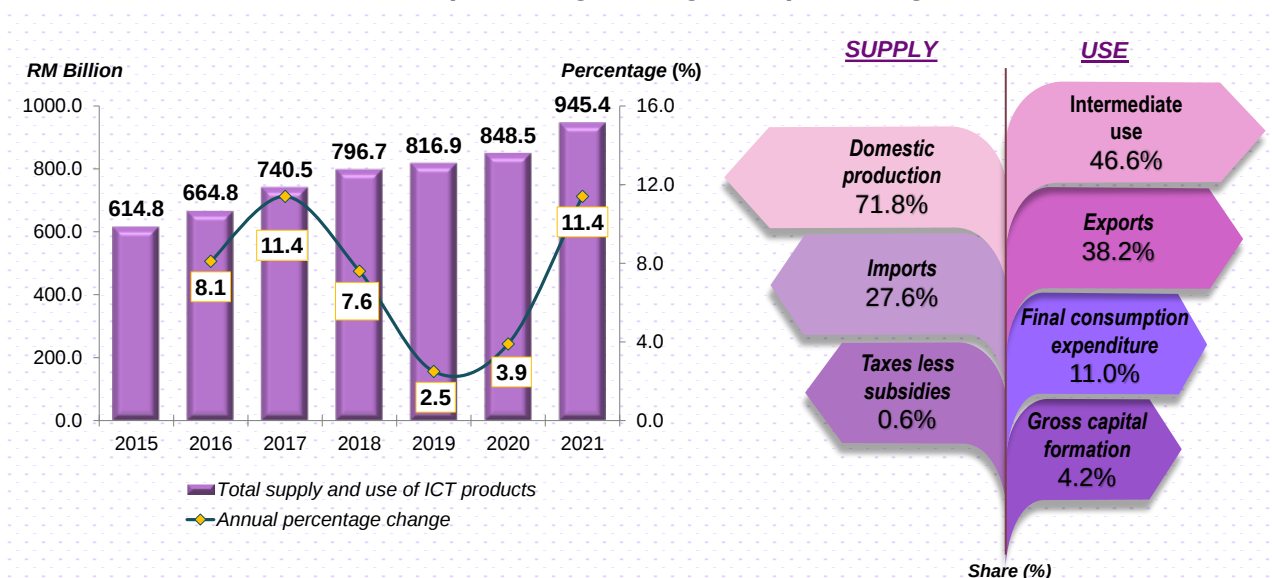


SUPPLY AND USE OF ICT PRODUCTS

The supply and use of ICT products generated a value of RM945.4 billion in 2021, with a growth of 11.4 per cent. Domestic production buoyed the total supply of ICT products with a contribution of 71.8 per cent, followed by imports of ICT products at 27.6 per cent. Meanwhile, the share of intermediate use of ICT products recorded 46.6 per cent and exports, 38.2 per cent to the total use of ICT (Exhibit 5).

Exhibit 5

Supply and Use of ICT Products: Value, annual percentage change and percentage share



EXPORTS AND IMPORTS OF ICT PRODUCTS

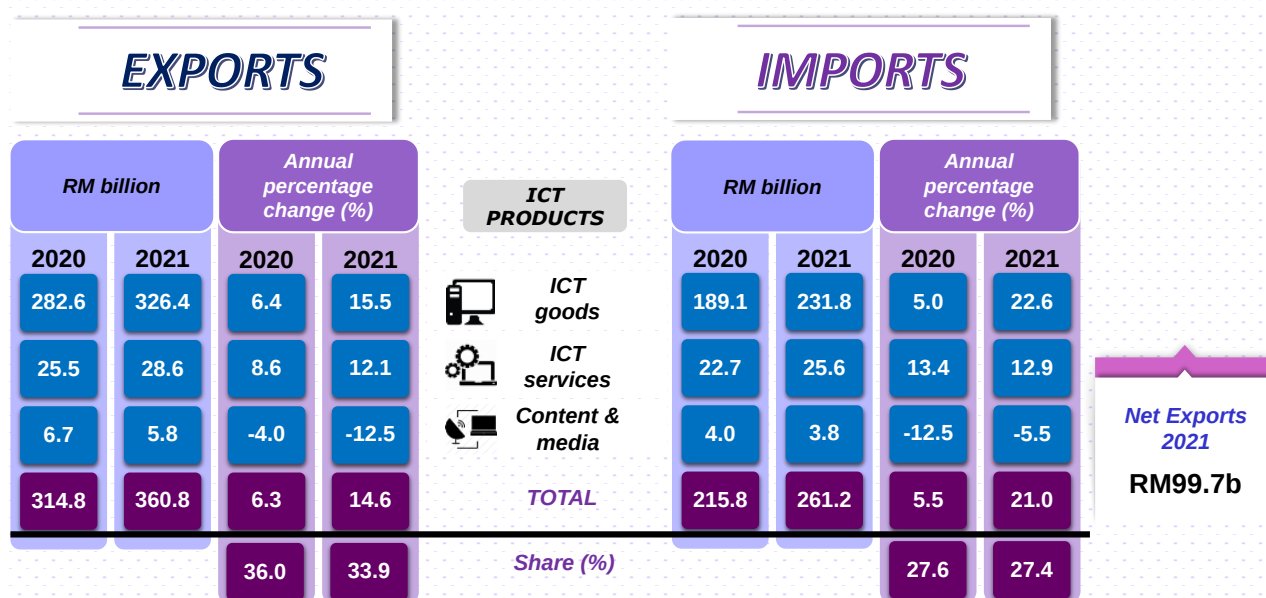
Net exports of
ICT products
remained
positive

Exports of ICT products rose 14.6 per cent as compared to 6.3 per cent in 2020 with a value of RM360.8 billion. The strength in exports of ICT goods and ICT services have influenced the exports performance of ICT products. Exports of ICT products contributed 33.9 per cent to the total national exports.

Imports of ICT products amounted to RM261.2 billion, an increase of 21.0 per cent driven by the growth of ICT goods of 22.6 per cent. Imports of ICT products accounted for 27.4 per cent of total imports in 2021 (Exhibit 6).

Hence, the net exports of ICT products remained surplus with a value of RM99.7 billion in 2021.

**Exports and Imports of ICT Products:
Value, annual percentage change and percentage share**



INCOME COMPONENTS OF ICT INDUSTRY

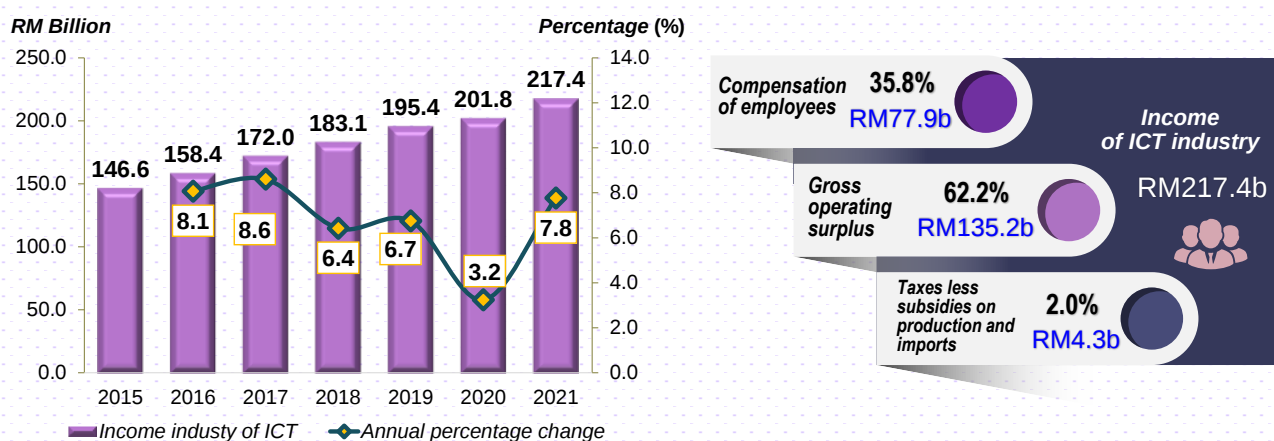
Income of the ICT industry tallied at RM217.4 billion in 2021 with an increase of 7.8 per cent. Compensation of employees recorded RM77.9 billion, accounted for 35.8 per cent of the total ICT industry income. Meanwhile, gross operating surplus accounted for 62.2 per cent and taxes less subsidies on production and imports accounted for 2.0 per cent (**Exhibit 7**).

*Contribution of
compensation of
employees*

35.8%

Exhibit 7

Income Components of ICT Industry:
Value, annual percentage change and percentage share



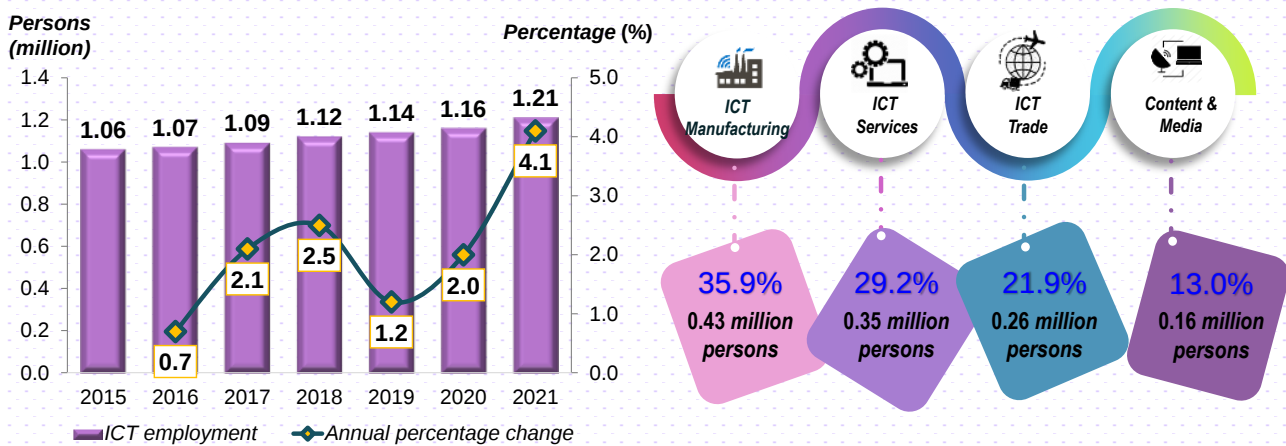
EMPLOYMENT IN THE ICT INDUSTRY

*Total
employment in
the ICT
industry
1.21 million
persons*

Employment in the ICT industry amounted to 1.21 million persons in 2021 with a share of 8.0 per cent to total employment. The ICT manufacturing industry was the major contributor with a share of 35.9 per cent, followed by ICT services (29.2%) and ICT trade (21.9%) as shown in **Exhibit 8**.

Exhibit 8

**Employment in the ICT Industry:
Value, annual percentage change and percentage share**



INISIATIF KERAJAAN UNTUK MENGUKUHKAN SEKTOR TMK PADA TAHUN 2021



13 – 26 Jan 2021

PKP 2.0

PKP bagi negeri Pulau Pinang, Selangor, Wilayah Persekutuan, Melaka, Johor dan Sabah



18 Jan 2021

Pengumuman pakej Perlindungan Ekonomi dan Rakyat Malaysia (PERMAI) bagi membantu kelangsungan rakyat dan perniagaan



19 Feb 2021

Pelancaran inisiatif MyDIGITAL dan Rangka Tindakan Ekonomi Digital Malaysia

12 April 2021

#SayaDigital

Gerakan #SayaDigital bertujuan meningkatkan kemahiran digital rakyat Malaysia dalam mendepani ekonomi digital

6 April 2021



KPDNHEP melancarkan program Inisiatif Pendigitalan Sektor Peruncitan (ReDi) bagi menggalakkan penggunaan e-wallet

17 Mac 2021

PEMERKASA

Pengumuman Program Strategik Memperkasa Rakyat dan Ekonomi (PEMERKASA) bagi memacu pertumbuhan ekonomi

8 Mac 2021



Pelancaran program Bantuan "MyKasih Kapital" bagi mendorong golongan wanita menjana pendapatan dari rumah

25 Mei – 28 Jun 2021

PKP 3.0

Semua sektor tidak dibenarkan beroperasi kecuali perkhidmatan perlu dan sektor ekonomi



15 Jun 2021

Pengumuman Pelan Pemulihan Negara (PPN) untuk memulihkan ekonomi rakyat

28 Jun 2021

PEMULIH

Pengumuman Pakej Perlindungan Rakyat dan Pemulihan Ekonomi (PEMULIH)

25 April 2021

Warongku

KUSKOP melancarkan aplikasi e-dagang Warongku

10 Sept 2021

Peralihan PPN

Peralihan PPN Fasa 1 ke PPN Fasa 2 bagi Lembah Klang

22 Julai 2021

JANAONIAGA

MOF melancarkan platform JanaNiaga

1 Julai 2021

SHOP MALAYSIA ONLINE

Pelancaran kempen Go-eCommerce Onboarding & Shop Malaysia Online

30 Jun 2021

MY ASSIST MSME

SME Corp menubuhkan MyAssist MSME sebagai portal khidmat nasihat perniagaan atas talian



16 Sept 2021

Kehadiran semula penonton yang telah lengkap divaksinasi ke panggung wayang dan acara rekreasi

20 Sept 2021

Go-eCommerce

Penganjuran Go-eCommerce Expo 2021

1 Okt 2021

Peralihan PPN

Peralihan ke PPN Fasa 3 bagi Lembah Klang

16 Okt 2021

Peralihan PPN

Peralihan ke PPN Fasa 4 bagi Lembah Klang

6 Dis 2021

JENDELA

Pelancaran Jalinan Digital Negara (JENDELA) @PPR

30 Nov 2021

MyVeteranMall

Pelancaran aplikasi MyVeteranMall untuk veteran ATM dan keluarga

21 Nov 2021

MCMC

Pelancaran Pusat Ekonomi Digital Keluarga Malaysia (PEDi)

21 Nov 2021

MDEC

Pelancaran Program Pemerkasaan Pendigitalan PMKS bagi membantu usahawan mengetengahkan pendigitalan perniagaan

5G

14 Dis 2021

Pelancaran Makmal Ujian Keselamatan Siber 5G (My5G)

Nota:
KPDNHEP: Kementerian Perdagangan Dalam Negeri dan Hal Ehwal Pengguna
KUSKOP: Kementerian Pembangunan Usahawan dan Koperasi
PMKS: Perusahaan Mikro, Kecil dan Sederhana

GOVERNMENT INITIATIVE TO STRENGTHEN THE ICT SECTOR IN 2021



13 – 26 Jan 2021

MCO 2.0

MCO for the states of Pulau Pinang, Selangor, Federal Territories, Melaka, Johor and Sabah



18 Jan 2021

Announcement of Perlindungan Ekonomi dan Rakyat Malaysia (PERMAI) package to help the survival of the people and businesses



19 Feb 2021

Launching of MyDIGITAL initiative and Malaysian Digital Economy Blueprint

12 April 2021

#SayaDigital

Launching of #SayaDigital Malaysia aims to improve the digital skills of the Malaysian people in facing the digital economy

6 April 2021



KPDNHEP launched the Retail Sector Digitisation Initiative (ReDI) programme to encourage usage of e-wallets

17 Mar 2021

PEMERKASA

Strategik Memperkasa Rakyat dan Ekonomi (PEMERKASA) to drive the economic growth

8 Mar 2021



Launching of "MyKasih Kapital" programme to encourage women to generate income from home

warongku

25 April 2021

MEDAC launched the Warongku platform as e-merchant

25 May – 28 June 2021

MCO 3.0

All sectors are not allowed to operate except for the essential services and economic sectors



15 June 2021

Announcement of the National Recovery Plan (NRP) to restore the economy

peMulih

28 June 2021

Announcement of the Perlindungan Rakyat dan Pemulihan Ekonomi (PEMULIH) package

10 Sept 2021

NRP transition

Transition of NRP Phase 1 to NRP Phase 2 for the Klang Valley

22 July 2021

JANAONIAGA

MOF launched the JanaNiaga platform

1 July 2021

SHOP MALAYSIA ONLINE

Launching of the Go-eCommerce Onboarding & Shop Malaysia Online campaign

30 June 2021

MY ASSIST MSME

SME Corp established MyAssist MSME as an online business advisory service portal



16 Sept 2021

Audience who are fully vaccinated are permitted into theaters and recreational events

Go-eCommerce

20 Sept 2021

Launching of Go-eCommerce Expo 2021

1 Oct 2021

NRP transition

Transition to NRP Phase 3 for the Klang Valley

16 Oct 2021

NRP transition

Transition to NRP Phase 4 for the Klang Valley

6 Dec 2021

Jendela

Launching of Jalinan Digital Negara (JENDELA) @PPR

30 Nov 2021

MyVeteranMall

Launching of the MyVeteranMall application for ATM veterans and families

21 Nov 2021

MCMC

Launching of Keluarga Malaysia Digital Economy (PEDi)

21 Nov 2021

MDEC

Launching of Program Pemerkasaan Pendigitalan MSME to help entrepreneurs digitize commerce



14 Dec 2021

Launch of 5G Cyber Security Test Lab (My5G)

Notes:

KPDNHEP: Kementerian Perdagangan Dalam Negeri dan Hal Ehwal Pengguna

MEDAC: Ministry of Entrepreneur Development and Cooperatives

MSME: Micro, Small & Medium Enterprises



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MANFAAT KEMAJUAN TEKNOLOGI SEMASA PANDEMIK COVID-19¹

Oleh: Salmah Salleh², Farhana Ja'afar³, Mohamad Fahmi Razali⁴

^{2,3,4}Bahagian Perangkaan Akaun Negara, Jabatan Perangkaan Malaysia

1. Pengenalan

Perkembangan pesat dalam Teknologi Maklumat dan Komunikasi, telah membawa kepada perubahan gaya hidup dalam kalangan masyarakat. Situasi pandemik COVID-19 yang melanda dunia sejak awal tahun 2020, telah mencetuskan fenomena norma baharu dalam kehidupan merangkumi aspek komunikasi, sosial, ekonomi, pendidikan dan perniagaan. Menurut Dr. Romlah (2020), Pelaksanaan Perintah Kawalan Pergerakan Fasa 1 bermula pada 18 Mac 2020 telah menyebabkan berlakunya peralihan kehidupan rakyat Malaysia dalam meneruskan urusan kerja seharian daripada secara fizikal kepada maya. Perkembangan yang pesat dalam bidang teknologi ini membawa kepada penggunaan elektronik yang menyeluruh dalam urusan harian seperti aplikasi e-niaga, e-kerajaan, e-dagang, e-pembelajaran dan e-kesihatan.

Bidang komunikasi, teknologi maklumat dan pemasaran telah mewujudkan perubahan yang baharu terhadap penggunaan internet untuk perkhidmatan dan pembelian produk. Penggunaan internet telah menjadi semakin meluas semasa pelaksanaan Perintah Kawalan Pergerakan bagi mengekang penularan COVID-19, terutamanya dalam dari aspek bekerja dari rumah, membuat pesanan barangan atas talian, mendapatkan maklumat kesihatan secara atas talian dan perbankan atas talian.

Kewujudan rangkaian mudah alih 5G yang diperkenalkan pada penghujung tahun 2020 telah merancakkan lagi penggunaan internet di seluruh dunia. Rangkaian ini merupakan sambungan internet mudah alih yang menawarkan kelajuan yang lebih pantas berbanding 4G. Ini secara tidak langsung dapat mempercepatkan lagi proses kemajuan masyarakat ke arah teknologi dan memberi manfaat kepada semua pengguna terutama semasa pandemik COVID-19. Berdasarkan *Digital 2021 Global Overview Report*, terdapat 4.66 bilion pengguna internet di seluruh dunia pada 2020 meningkat sebanyak 316 juta pengguna berbanding 2019 dan secara purata pengguna memperuntukkan masa selama 6 jam 54 minit dalam talian setiap hari. Begitu juga, Laporan Survei Penggunaan dan Capaian ICT oleh Individu dan Isi Rumah menunjukkan peratus penggunaan internet oleh individu telah meningkat

¹ Artikel ini adalah pandangan penulis dan tidak semestinya mencerminkan pandangan Jabatan Perangkaan Malaysia.

kepada 89.6 peratus pada tahun 2020 berbanding 84.2 peratus pada 2019 (DOSM, 2021).

Artikel ini bertujuan untuk melihat manfaat kemajuan teknologi dalam membantu masyarakat Malaysia memudahkan urusan harian semasa pandemik COVID-19 dari segi membuat pesanan barangan atau perkhidmatan atas talian, bekerja dari rumah, menggunakan perbankan internet dan mendapatkan maklumat kesihatan.

2. Sorotan Karya

Teknologi merupakan satu istilah yang bukan lagi asing dalam kalangan masyarakat pada masa kini. Boleh dikatakan setiap individu memiliki peralatan teknologi dan komunikasi sendiri seperti komputer riba atau komputer peribadi, telefon bimbit, internet, radio, telefon talian tetap dan sebagainya. Pertalian teknologi dan masyarakat pada hari ini sangat sinonim kerana kebanyakannya telah menjadikan media sosial sebagai suatu status perhubungan sesama masyarakat. Menurut kajian oleh Farhan et al. (2016) mendapati permintaan terhadap pembelian atas talian telah meningkat sejak satu dekad yang lalu selaras dengan peningkatan jumlah penggunaan internet. Hasil kajian oleh Nur Ain et al. (2021) menunjukkan 91.3 peratus responden menyatakan bahawa internet merupakan keperluan utama dalam menjalankan tugas harian terutama semasa pandemik COVID-19.

Perkembangan pesat teknologi hari ini telah memberi impak yang sangat besar kepada hampir ke semua sistem seluruh dunia. Tranformasi ledakan maklumat yang berlaku sejak akhir-akhir ini telah menjadikan kehidupan masyarakat bergantung kepada teknologi digital. Tambahan pula, dengan wabak pandemik COVID-19 yang merencatkan kehidupan normal telah menguatkan lagi kebergantungan kepada teknologi digital untuk kelangsungan urusan harian. Kemajuan teknologi ini bukan sahaja memudahkan proses sesuatu sistem dalam meningkatkan kualiti dan kuantiti penghasilan, bahkan ia mempercepatkan lagi aliran kerja (Ahmad et al., 2014).

Menurut Lan Ho, Pengarah Urusan Serantau Shopee, telah mengubah cara hidup, bekerja dan berbelanja secara atas talian di Malaysia (Bernama, 2020). Masyarakat dilihat semakin selesa dengan keseluruhan kemajuan digital yang semakin berkembang pesat. Sejak peningkatan penggunaan internet dan pelaksanaan Perintah Kawalan Pergerakan, membeli-belah dalam talian telah menjadi keutamaan dalam budaya moden.

Kemunculan virus COVID-19 telah memberi impak yang besar kepada semua pihak dalam menjalani kehidupan seharian. Menurut kajian yang dilakukan oleh Abdul Rashid et al. (2021) masyarakat mula menjadi paranoid terhadap virus COVID-19. Perasaan takut telah mengubah gaya perbelanjaan daripada melakukan pembelian secara fizikal kepada

berbelanja atas talian. Pandemik ini juga mencetuskan peningkatan yang mendadak terhadap jualan atas talian. Pergerakan ke kedai fizikal yang terhad telah memberi kesan kepada pengguna untuk beralih membeli belah secara atas talian yang menyebabkan pembelian atas talian meningkat (Shengyu Gu et al., 2021). Kajian ini disokong oleh Azlina dan Nurhafizah, 2020 yang mendapati sebanyak 94.0 peratus responden mengakui telah menggunakan kaedah pembelian tanpa tunai semasa tempoh Perintah Kawalan Pergerakan.

3. Metodologi

Analisis ini menggunakan data siri masa bagi tahun 2019 hingga 2021 daripada penerbitan Laporan Survei Penggunaan dan Capaian ICT oleh individu dan Isi Rumah, Jabatan Perangkaan Malaysia. Analisis deskriptif digunakan dalam artikel ini dengan melihat manfaat penggunaan Teknologi Maklumat dan Komunikasi dalam membantu masyarakat memudahkan urusan harian semasa pandemik COVID-19. Analisis berdasarkan kepada peratusan dari segi membuat pesanan barangan atau perkhidmatan atas talian, bekerja dari rumah, menggunakan perbankan internet dan mendapatkan maklumat kesihatan mengikut negeri dan jantina.

4. Hasil Analisis

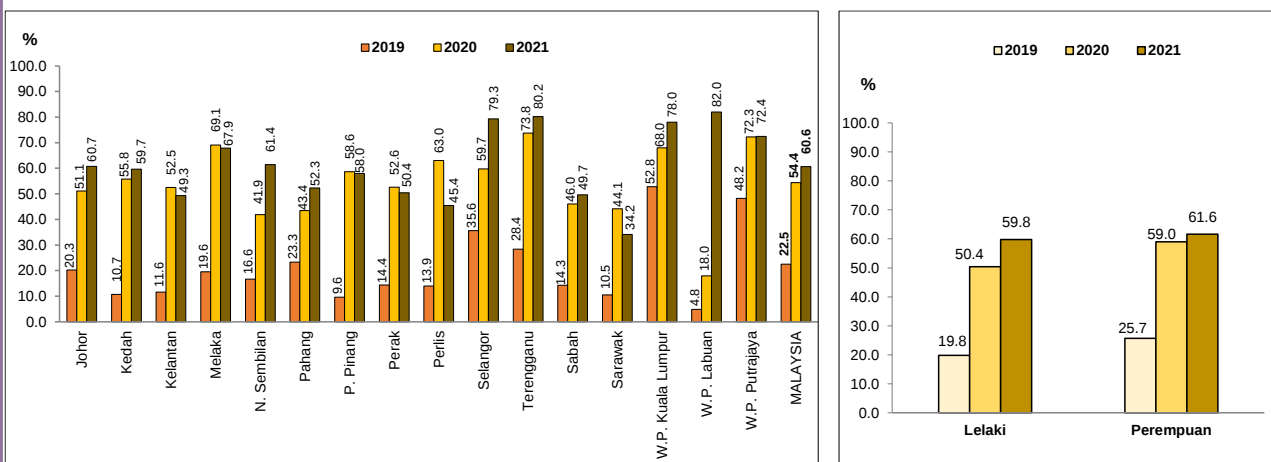
Data yang digunakan merujuk kepada data daripada Laporan Survei Penggunaan dan Capaian ICT oleh individu dan Isi Rumah (ICTHS) bagi tahun 2019 hingga 2021. Survei ICTHS 2019 dilaksanakan selama tiga bulan iaitu pada September hingga November 2019, manakala bagi Survei ICTHS tahun 2020 dan 2021 dilaksanakan dari bulan Oktober hingga Disember 2020 dan 2021. Rangka persampelan yang digunakan bagi pemilihan sampel ICTHS 2019 dan 2020 adalah berdasarkan Rangka Persampelan Isi Rumah yang terdiri daripada blok penghitungan yang diwujudkan untuk Banci Penduduk dan Perumahan 2010 yang dikemaskini dari semasa ke semasa. Blok penghitungan dari operasi survei ini mengandungi 80 hingga 120 Tempat Kediaman.

i. Membuat Pesanan Barangan atau Perkhidmatan Atas Talian

Berdasarkan **Carta 1**, corak perbelanjaan atas talian telah meningkat daripada 22.5 peratus pada 2019 kepada 54.4 peratus pada 2020 dan terus meningkat sebanyak 60.6 peratus pada 2021. Analisis mengikut negeri menunjukkan bahawa negeri Terengganu mencatatkan peratusan paling tinggi individu dalam membuat pesanan barangan atau perkhidmatan atas talian pada 2020 meningkat daripada 73.8 peratus kepada 80.2 peratus pada 2021. Dari segi jantina pula, peratusan perempuan lebih tinggi membuat pesanan barang dan perkhidmatan atas talian

iaitu 61.6 peratus berbanding lelaki 59.8 peratus yang menggunakan perkhidmatan ini. Aplikasi yang digunakan antaranya adalah *Facebook, Instagram, WhatsApp, Shopee, Lazada, Foodpanda* dan pelbagai lagi aplikasi yang menawarkan perkhidmatan atas talian. Dengan bantuan teknologi, tingkah laku membuat pesanan barang atau perkhidmatan menjadi lebih mudah terutama semasa Perintah Kawalan Pergerakan.

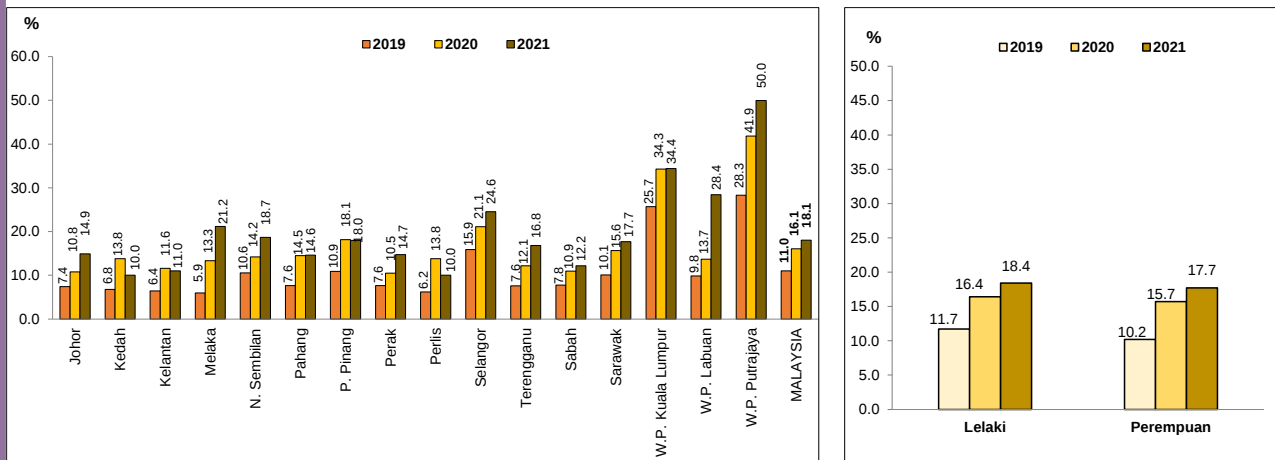
Carta 1: Peratusan Individu yang Membuat Pesanan Barangan atau Perkhidmatan Atas Talian mengikut Negeri dan Jantina, 2019-2021



ii. Bekerja dari Rumah

Peratusan individu yang bekerja dari rumah meningkat pada 2020 dan 2021 dengan masing-masing 16.1 peratus dan 18.1 peratus berbanding 11.0 peratus pada 2019. Berdasarkan analisis mengikut negeri didapati W.P Putrajaya mencatatkan peratusan tertinggi bekerja dari rumah pada 2020 iaitu 41.9 peratus dan terus meningkat pada 2021 dengan 50.0 peratus berbanding tahun sebelumnya (2019: 28.3%). Ini diikuti oleh W.P. Kuala Lumpur dan Selangor dengan masing-masing mencatatkan 34.4 peratus dan 24.6 peratus pada 2021. Analisis berdasarkan jantina mendapati peratusan golongan lelaki yang bekerja dari rumah lebih tinggi berbanding perempuan bagi ketiga-tiga tahun seperti di **Carta 2**. Peratusan bekerja dari rumah lebih rendah berbanding aktiviti-aktiviti lain disebabkan oleh sepanjang Perintah Kawalan Pergerakan hanya perkhidmatan perlu sahaja dibenarkan untuk beroperasi.

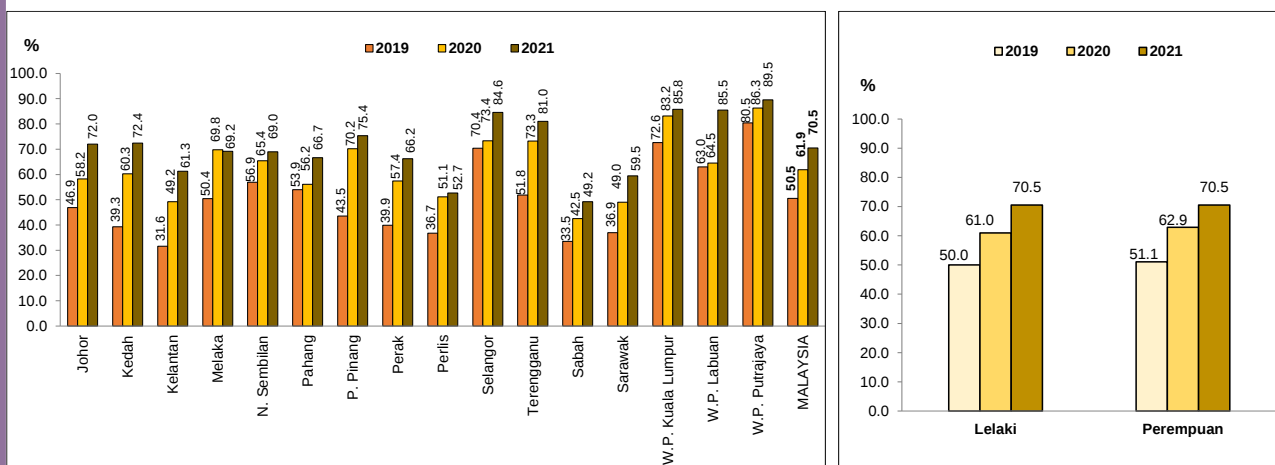
Carta 2: Peratusan Individu yang Bekerja dari Rumah mengikut Negeri dan Jantina, 2019-2021



iii. Menggunakan Perbankan Internet

Berdasarkan **Carta 3**, peratusan penggunaan perbankan internet mencatatkan peningkatan daripada 50.5 peratus pada 2019 kepada 61.9 peratus pada 2020 dan terus meningkat kepada 70.5 peratus pada 2021. Analisis mengikut negeri menunjukkan W.P. Putrajaya mencatatkan peratusan tertinggi pada 2020 iaitu 86.3 peratus berbanding 80.5 peratus pada 2019. Jumlah peratusan ini terus meningkat pada 2021 dengan 89.5 peratus. Dari 2019 hingga 2021, tidak terdapat perbezaan yang signifikan antara lelaki dan perempuan dalam menggunakan perbankan internet.

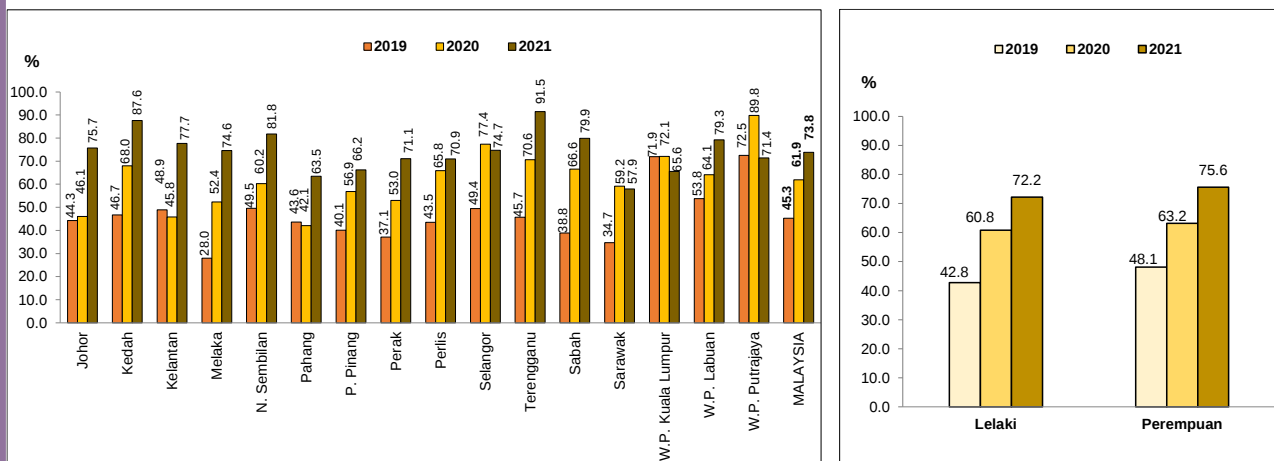
Carta 3: Peratusan Individu Menggunakan Perbankan Internet mengikut Negeri dan Jantina, 2019-2021



iv. Mendapatkan Maklumat Kesihatan

Jumlah peratusan individu yang mendapatkan maklumat kesihatan telah meningkat daripada 45.3 peratus pada 2019 kepada 61.9 peratus pada 2020. Peratusan ini terus menunjukkan peningkatan pada 2021 dengan 73.8 peratus (**Carta 4**). W.P. Putrajaya mencatatkan peratusan tertinggi dengan 89.8 peratus pada 2020. Walau bagaimanapun, pada 2021 negeri Terengganu telah mencatatkan jumlah peratusan tertinggi iaitu 91.5 peratus, diikuti oleh negeri Kedah 87.6 peratus. Analisis mengikut jantina menunjukkan bahawa golongan perempuan mencatatkan peratusan lebih tinggi bagi mendapatkan maklumat kesihatan melalui aplikasi kesihatan berbanding lelaki iaitu 75.6 peratus.

Carta 4: Peratusan Individu Mendapatkan Maklumat Kesihatan mengikut Negeri dan Jantina, 2019-2021



4. Perbincangan dan Rumusan

Penularan pandemik COVID-19 di Malaysia telah memberi pelbagai impak kepada ekonomi dan sosial. Pelbagai kajian telah dijalankan bagi melihat kesan positif dan negatif daripada COVID-19 dan pelbagai langkah telah dilaksanakan oleh kerajaan bagi menggalakkan aktiviti-aktiviti seperti pembelian atas talian, bekerja dari rumah, penggunaan perbankan internet dan mendapatkan maklumat kesihatan dari atas talian.

Berdasarkan *Internet Users Survey 2020* oleh Suruhanjaya Komunikasi dan Multimedia Malaysia mendapati aktiviti yang sering digunakan atas talian dan berada di kedudukan paling atas adalah aktiviti komunikasi melalui teks iaitu sebanyak 98.1 peratus pada tahun 2020 berbanding 96.5 peratus pada 2018, contohnya aplikasi *WhatsApp*, *Telegram* dan *Messenger*. Penggunaan aplikasi *WhatsApp*, akses kepada semua aktiviti seperti mesej, panggilan, video dan pesanan suara, sekaligus menjadikan teknologi ini sangat mudah diakses dan dapat

memberikan manfaat kepada semua golongan secara percuma. Justeru, kemajuan teknologi digital ini dilihat banyak memberikan manfaat kepada masyarakat dalam memudahkan urusan seharian.

Menurut Laporan Bank Negara Malaysia, transaksi perbankan atas talian di kalangan rakyat Malaysia meningkat pada tahun 2021 dan 2020 dengan masing-masing berjumlah 3.5 bilion dan 2.5 bilion berbanding tahun 2019 iaitu 1.7 bilion. Amalan transaksi tanpa tunai lebih menjadi keutamaan di kalangan masyarakat Malaysia berikutan kebimbangan terhadap jangkitan wabak COVID-19. Masyarakat mula selesa beralih kepada pembayaran tanpa tunai bagi segala jenis urusan termasuklah membuat pembelian barangan, pembayaran bil utiliti, pembelian makanan, pembaharuan insurans dan lain-lain.

Kemajuan teknologi telah banyak membantu masyarakat mendapatkan pelbagai jenis maklumat kesihatan melalui medium internet. Terdapat pelbagai laman sesawang yang menyediakan perkhidmatan berkaitan kesihatan seperti aplikasi MySejahtera, laman sosial kesihatan Kementerian Kesihatan Malaysia dan sebagainya. Ekoran daripada pandemik COVID-19 yang melanda, kerajaan secara proaktif telah membangunkan aplikasi MySejahtera.

Bagi menggalakkan aktiviti pembelian atas talian, pelbagai platform telah diwujudkan antaranya melalui pakej rangsangan PRIHATIN yang bertujuan mengurangkan beban dan meningkatkan kecekapan usahawan dengan mengintegrasikan platform digital dan pakej kurier, Penubuhan Pasukan Petugas Ekonomi Digital (DETF), program eRezeki, platform Warong Rider dan Program Impian Ekonomi Digital (PRIME). Hasil kajian analisis ini menunjukkan corak perbelanjaan atas talian telah meningkat daripada 22.5 peratus pada 2019 kepada 54.4 peratus pada 2020 dan 60.6 peratus pada 2021.

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BENEFITS OF TECHNOLOGICAL ADVANCEMENT DURING THE COVID-19 PANDEMIC¹

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1. Introduction

The advancement of Information and Communication Technology, can be seen in the change of lifestyle in the community. The situation of the COVID-19 pandemic that hit the world at the beginning of 2020 has triggered the phenomenon of a new norm in life, including aspects of communication, social, economic, educational and business. According to Dr. Romlah (2020), the implementation of the Movement Control Order Phase 1 starting on 18 March 2020 has caused a shift in the lives of Malaysians in continuing their daily work from physical to virtual. This rapid development in the field of technology leads to the comprehensive use of electronics in daily affairs such as e-business applications, e-government, e-commerce, e-learning and e-health.

The fields of communication, information technology and marketing have created new changes to the use of the internet for services and product purchases. The use of the internet has become more widespread during the implementation of the Movement Control Order to curb the spread of COVID-19, especially in the aspect of working in home, ordering goods online, seeking health information online and online banking.

The existence of the 5G mobile network that was introduced at the end of 2020 has boosted the use of the internet around the world. This network is a mobile internet connection that offers faster speeds than 4G. This can indirectly speed up the process of society's progress toward-technology and benefit all users, especially during the COVID-19 pandemic. Based on the Digital 2021 Global Overview Report, there are 4.66 billion internet users worldwide in 2020, an increase of 316 million users compared to 2019, and on average, users spend 6 hours and 54 minutes online every day. Likewise, the ICT Use and Access Survey Report by Individuals and Households shows that the percentage of internet use by individuals has increased to 89.6 per cent in 2020 compared to 84.2 per cent in 2019 (DOSM, 2021).

¹ This article represents authors' view and does not necessarily reflect the view of the Department of Statistics Malaysia

This article aims to observe the benefits of technological advances in helping the Malaysian community to facilitate daily affairs during the COVID-19 pandemic in terms of ordering goods or services online, working from home, using internet banking and seeking health information.

2. Literature Review

Technology is a term that is no longer foreign in today's society. It can be said that every individual has their own technology and communication equipment, such as a laptop or personal computer, mobile phone, internet, radio, landline phone and so on. The relationship between technology and society today is very synonymous because most of them have made social media the status of relationships in society. According to a study by Farhan et al. (2016), found that the demand for online purchases has increased over the past decade in line with the increase in internet usage. The results of a study by Nur Ain et al. (2021) showed that 91.3 per cent of respondents stated that the internet was the main requirement in carrying out daily tasks, especially during the COVID-19 pandemic.

The rapid development of technology today has had a huge impact on almost all systems around the world. The transformation of the information boom that has occurred lately has made people's lives dependent on digital technology. In addition, with the outbreak of the COVID-19 pandemic that inhibits normal life, our dependence on digital technology for the survival of daily affairs has strengthened. This technological advancement not only facilitates the process of a system in improving the quality and quantity of production, it even speeds up the workflow (Ahmad et al., 2014).

According to Lan Ho, Regional Managing Director of Shopee, the emergence of the COVID-19 pandemic has changed the way of living, working and shopping online in Malaysia (Bernama, 2020). Society is seen to be increasingly comfortable with the overall digital progress that is growing rapidly. Since the rise internet usage and the implementation of Movement Control Order, online shopping has become more prominent in modern culture.

The emergence of the COVID-19 virus has had a great impact on all parties in daily life. According to a study conducted by Abdul Rashid et al. (2021), society is starting to become paranoid about the COVID-19 virus. The feeling of fear has changed the shopping style from physical shopping to online shopping. The pandemic also triggered a sharp increase in online sales. The limited movement to physical stores has prompted consumers to switch to online shopping which causes online purchases to increase (Shengyu Gu et al., 2021). This study is supported by Azlina and Nurhafizah, 2020 who found that 94.0 per cent of respondents admitted to using cashless purchase methods during the Movement Control Order period.

3. Methodology

This analysis uses time series data for the years 2019 to 2021 from the publication of the ICT Use and Access by Individuals and Households Survey Report, Department of Statistics Malaysia. Descriptive analysis is used in this article by observing the benefits of using Information and Communication Technology in helping the community to facilitate daily affairs during the COVID-19 pandemic. The analysis is based on percentages in terms of ordering goods or services online, working from home, using internet banking and seeking health information by state and gender.

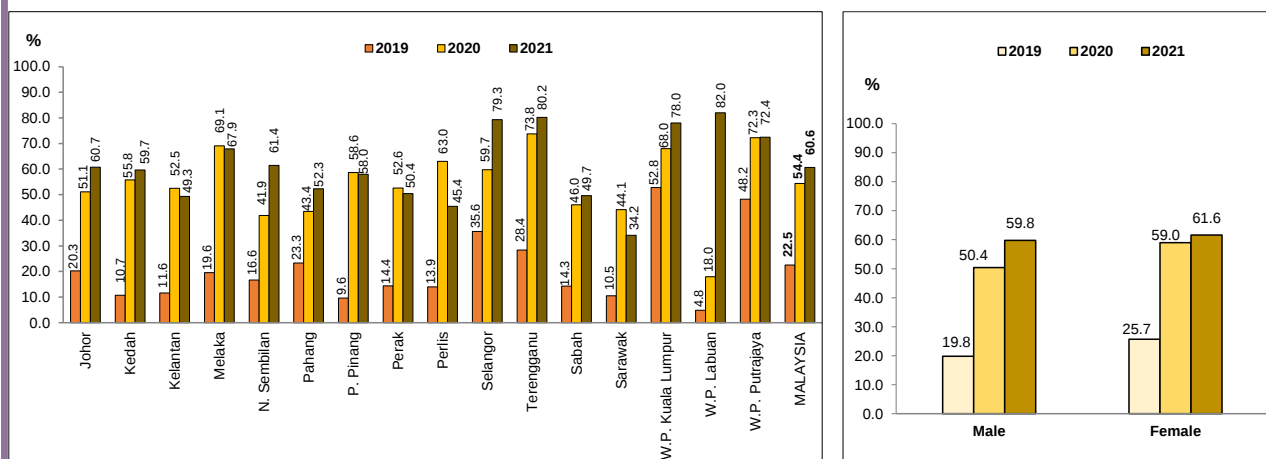
4. Analysis Results

The data used refers to the data from the ICT Use and Access by Individuals and Households Survey Report (ICTHS) for the years 2019 to 2021. The ICTHS Survey 2019 was conducted for three months, from September to November 2019, while the ICTHS Survey for the years 2020 and 2021 was conducted from October to December 2020 and 2021. The sampling frame used for the selection of the ICTHS 2019 and 2020 samples is based on the Household Sampling Frame, which is made up of enumeration blocks created for the 2010 Population and Housing Census and updated from time to time. The enumeration block from this survey operation contains 80 to 120 living quarters.

i. Ordering Goods or Services Online

*Based on **Chart 1**, the online spending pattern has increased from 22.5 per cent in 2019 to 54.4 per cent in 2020 and continued to increase by 60.6 per cent in 2021. Analysis by state shows that the state of Terengganu recorded the highest percentage of individuals ordering goods or services online in 2020, which increased from 73.8 per cent to 80.2 per cent in 2021. In terms of gender, a higher percentage of women ordering goods and services online is 61.6 per cent compared to men 59.8 per cent, who use this service. Among the applications used are Facebook, Instagram, WhatsApp, Shopee, Lazada, Foodpanda and various other applications that offer online services. With the help of technology, the behavior of ordering goods or services online has become easier, especially during the Movement Control Order.*

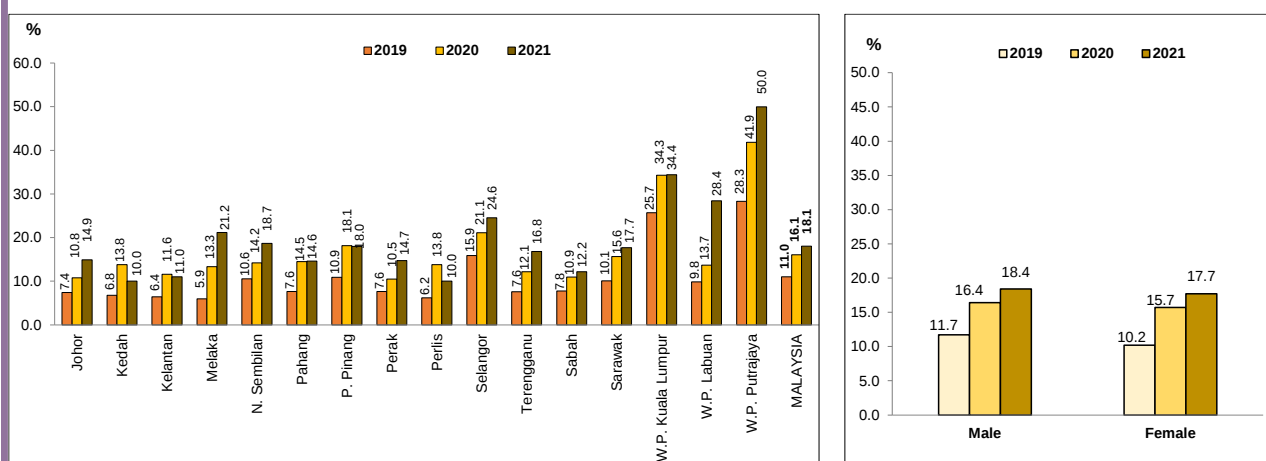
Chart 1: Percentage of Individuals Ordering Goods or Services Online by State and Gender, 2019-2021



ii. Work from Home

The percentage of individuals who work from home increased in 2020 and 2021 which is by 16.1 per cent and 18.1 per cent respectively compared to 11.0 per cent in 2019. Based on analysis by states, it was found that W.P. Putrajaya recorded the highest percentage of working from home in 2020, which was 41.9 per cent and continued to increase in 2021 with 50.0 per cent compared to the previous year (2019: 28.3%). This was followed by W.P. Kuala Lumpur and Selangor with 34.4 per cent and 24.6 per cent respectively in 2021. Analysis based on gender found that the percentage of males working from home was higher than females for all three years as shown in **Chart 2**. The percentage of working from home is lower than other activities due to the Movement Control Order, where only the essential services were allowed to operate.

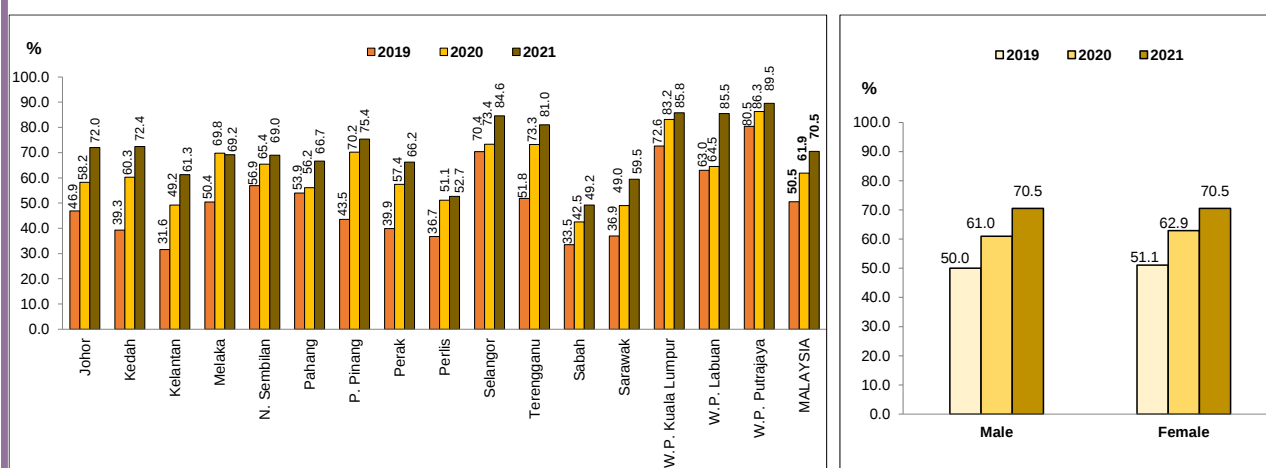
Chart 2: Percentage of Individuals Working from Home by State and Gender, 2019-2021



iii. Using Internet Banking

Based on **Chart 3**, the percentage of internet banking usage recorded an increase from 50.5 per cent in 2019 to 61.9 per cent in 2020 and continued to increase to 70.5 per cent in 2021. Analysis by states showed that W.P. Putrajaya recorded the highest percentage in 2020, which was 86.3 per cent compared to 80.5 per cent in 2019. This total percentage continues to increase in 2021 to 89.5 per cent. From 2019 to 2021, there is no significant difference between male and female in their use of internet banking.

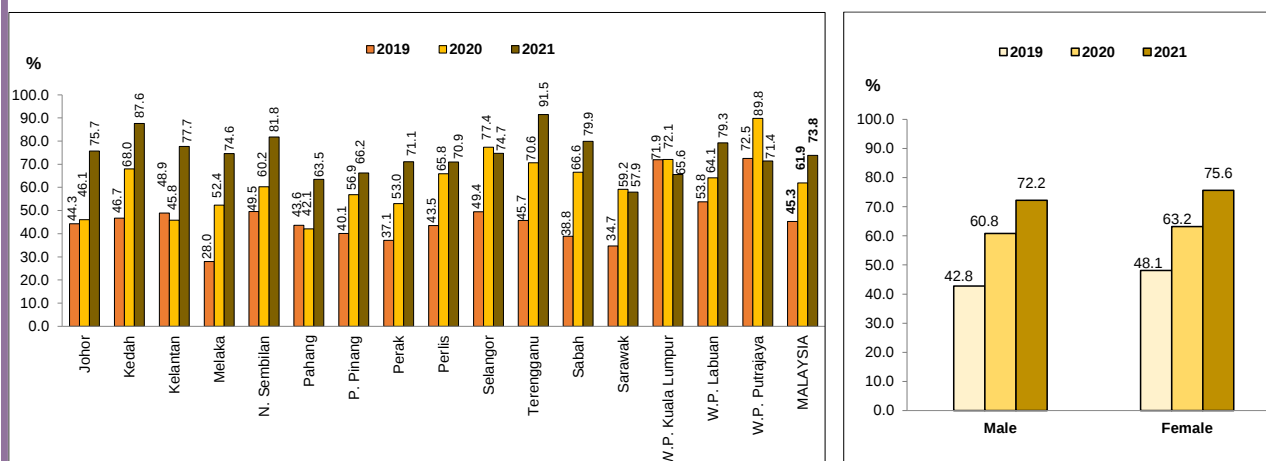
Chart 3: Percentage of Individuals Using Internet Banking by State and Gender, 2019-2021



iv. Seeking Health Information

The total percentage of individuals who get health information has increased from 45.3 per cent in 2019 to 61.9 per cent in 2020. This percentage continued to increase in 2021 with 73.8 per cent (**Chart 4**). W.P. Putrajaya recorded the highest percentage with 89.8 per cent in 2020. However, in 2021 Terengganu recorded the highest total percentage of 91.5 per cent, followed by Kedah at 87.6 per cent. Analysis by gender shows that women recorded a higher percentage of seeking health information through health applications than men, which is 75.6 per cent.

**Chart 4: Percentage of Individuals Obtaining Health Information
by State and Gender, 2019-2021**



5. Discussion and Summary

The spread of the COVID-19 pandemic in Malaysia has had various economic and social impacts. Various studies have been conducted to see the positive and negative effects of COVID-19 and various measures have been implemented by the government to encourage activities such as online purchases, working from home, the use of internet banking and seeking health information online.

Based on the Internet Users Survey 2020 by the Malaysian Communications and Multimedia Commission, it was found that the activities that are often used online and are at the top are communication activities via text, which is 98.1 per cent in 2020 compared to 96.5 per cent in 2018, for example WhatsApp, Telegram and Messenger applications. The use of the WhatsApp application gives access to all activities such as messages, calls, videos and voice messages. At the same time, this technology is very accessible and can provide benefits to all groups for free. Therefore, the advancement of digital technology is seen to provide many benefits to the community in facilitating daily affairs.

According to the Bank Negara Malaysia Report, online banking transactions among Malaysians increased in 2021 and 2020 with 3.5 billion and 2.5 billion respectively compared to 2019 with 1.7 billion. The practice of cashless transactions is becoming more prominent among the Malaysian community due to concerns about the spread of the COVID-19 pandemic. Publics starts to feel comfortable switching to cashless payments for all kinds of business including purchasing goods, paying utility bills, buying food, renewing insurance and others.

Advances in technology have greatly helped the community to obtain various types of health information through the internet. There are various websites that provide health-related services such as the MySejahtera application, the health social site of the Ministry of Health Malaysia and so on. As a result of the ongoing COVID-19 pandemic, the government has proactively developed the MySejahtera application.

To encourage online purchasing activities, various platforms have been launched including the PRIHATIN stimulus package which aims to reduce the burden and increase the efficiency of entrepreneurs by integrating digital platforms and courier packages, the establishment of the Digital Economy Task Force (DETF), the eRezeki program, the Warong Rider platform and Digital Economy Dream Program (PRIME). The findings of this analysis indicate that online spending patterns increased from 22.5 per cent in 2019 to 54.4 per cent in 2020 and 60.6 per cent in 2021.

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The cover features a stylized illustration of a city skyline, including the Petronas Towers and the Kuala Lumpur Tower, rendered in a light gray line-art style. This illustration is framed by a white, curved, tunnel-like shape that recedes into the distance. The background is a solid black field, which is bordered by flowing, wavy shapes in shades of purple and gray. The title is printed in a bold, white, sans-serif font, with the words 'JADUAL' and 'STATISTIK' in all caps, and 'STATISTICAL' and 'TABLES' in a mix of caps and italics.

**JADUAL
STATISTIK**
*STATISTICAL
TABLES*

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NOTA TEKNIKAL

KONSEP DAN DEFINISI

A. PENGENALAN Akaun Satelit Teknologi Maklumat dan Komunikasi (ASTMK) Malaysia 2021 adalah berdasarkan *System of National Accounts 2008*, *OECD Guide to Measuring the Information Society 2011* dan *OECD Internet Economy Outlook 2012*. Konsep dan definisi yang digunakan telah disesuaikan mengikut keperluan Malaysia.

Bahagian ini akan menerangkan konsep dan definisi yang dipraktikkan oleh Malaysia dalam menyusun jadual-jadual ASTMK.

B. KONSEP DAN DEFINISI

1. TMK **Teknologi Maklumat dan Komunikasi (TMK)** merujuk kepada teknologi dan perkhidmatan yang membolehkan maklumat dicapai, disimpan, diproses, diubah, dimanipulasi dan disebarkan, termasuk penyiaran atau komunikasi melalui suara, gambar dan/atau data melalui pelbagai media penyiaran.

2. Industri TMK **Industri TMK** merujuk kepada industri yang menghasilkan produk TMK sebagai aktiviti utama. Perincian industri TMK dinyatakan di Bahagian Klasifikasi. Kategori utama industri TMK yang digunakan di dalam penyusunan ASTMK adalah:

1. Pembuatan TMK
2. Perdagangan TMK
3. Perkhidmatan TMK
4. Kandungan dan media

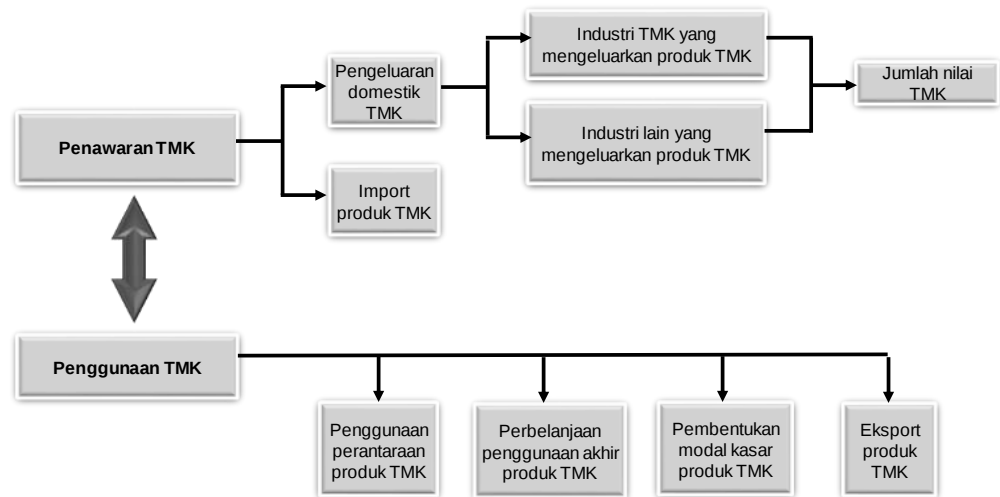
3. Industri lain **Industri lain** adalah industri bukan TMK yang mengeluarkan produk TMK.

4. Produk TMK Perincian **produk TMK** adalah seperti yang disenaraikan di Bahagian Klasifikasi. Kategori utama produk TMK adalah seperti berikut:

1. Barangan TMK
 - 1.1. Komputer dan kelengkapan peranti

- 1.2. Kelengkapan komunikasi
 - 1.3. Kelengkapan elektronik pengguna
 - 1.4. Pelbagai komponen dan barangan TMK
2. Perkhidmatan TMK
 - 2.1. Perkhidmatan pembuatan bagi kelengkapan TMK
 - 2.2. Perkhidmatan perniagaan dan produktiviti perisian dan pelesenan
 - 2.3. Perkhidmatan dan perundingan teknologi maklumat
 - 2.4. Perkhidmatan telekomunikasi
 - 2.5. Perkhidmatan pajakan atau sewaan kelengkapan TMK
 - 2.6. Perkhidmatan TMK lain
 3. Produk kandungan dan media
 - 3.1. Cetakan dan lain-lain kandungan berasaskan teks pada media fizikal dan perkhidmatan berkaitan
 - 3.2. Kandungan wayang gambar, video, televisyen dan radio dan perkhidmatan berkaitan
 - 3.3. Kandungan muzik dan perkhidmatan berkaitan
 - 3.4. Perisian permainan
 - 3.5. Kandungan atas talian dan perkhidmatan berkaitan
 - 3.6. Lain-lain kandungan dan perkhidmatan berkaitan

5. Pandangan skematik ASTMK



6. E-dagang

Urusniaga **e-dagang** adalah penjualan atau pembelian barangan atau perkhidmatan yang dijalankan melalui rangkaian pengkomputeran/internet dengan kaedah yang direka untuk tujuan menerima atau membuat pesanan (untuk tujuan pembelian atau jualan). Urusniaga ini berlaku sama ada antara perniagaan, isi rumah, individu, kerajaan dan organisasi-organisasi awam atau swasta lain.

Kaedah pembayaran dan penghantaran muktamad barangan atau perkhidmatan urusan e-dagang ini boleh dijalankan melalui atau bukan melalui rangkaian pengkomputeran/internet.

Urusniaga e-dagang termasuk pesanan yang dibuat di laman web, *extranet* atau Pertukaran Data Elektronik (PDE). Walau bagaimanapun, urusan yang dibuat melalui panggilan telefon, faksimili, e-mel (e-mel yang ditaip manual) dan yang seumpamanya tidak dikategorikan sebagai urusan e-dagang.

7. E-dagang industri lain

Industri yang tidak dikategorikan di bawah klasifikasi industri TMK.

8. TMK kepada ekonomi

TMK kepada ekonomi adalah meliputi industri TMK dan e-dagang bagi industri lain.

C. AKAUN PENGELUARAN TMK

1. Akaun Pengeluaran

Akaun Pengeluaran merekodkan aktiviti pengeluaran barangan dan perkhidmatan berdasarkan *System of National Accounts*. Akaun Pengeluaran menunjukkan output sebagai sumber dan penggunaan perantaraan sebagai penggunaan dan nilai ditambah sebagai item pengimbang.

2. Keluaran Dalam Negeri Kasar

Keluaran Dalam Negeri Kasar (KDNK) adalah jumlah nilai barangan dan perkhidmatan yang dikeluarkan dalam tempoh tertentu selepas ditolak kos barangan dan perkhidmatan yang digunakan dalam proses pengeluaran. Nilai ini merupakan nilai sebelum ditolak nilai peruntukan bagi modal tetap; iaitu jumlah nilai ditambah pada harga pengeluar bagi pengeluar residen ditambah dengan duti import. KDNK ini juga bersamaan dengan perbelanjaan ke atas KDNK (pada harga pembeli) iaitu jumlah bagi semua komponen perbelanjaan akhir ke atas barangan dan perkhidmatan tolak dengan import barangan dan perkhidmatan. KDNK boleh diukur dengan menggunakan tiga kaedah iaitu Kaedah Pengeluaran, Perbelanjaan dan Pendapatan.

3. Nilai Ditambah

Nilai Ditambah merupakan 'nilai' yang ditambah oleh pengeluar ke atas bahan mentah barangan dan perkhidmatan yang dibeli semasa proses pengeluaran. Justeru, nilai ditambah adalah output ditolak dengan input penggunaan perantaraan.

- 4. Nilai Ditambah Kasar TMK** **Nilai Ditambah Kasar Industri TMK (NDKTMK)** ialah jumlah Nilai Ditambah Kasar bagi semua pertubuhan yang berada di dalam industri TMK, tanpa mengira sama ada semua output disediakan untuk TMK dan juga peringkat proses pengeluaran.

D. AKAUN PENDAPATAN TMK

- 1. Pampasan pekerja** **Pampasan pekerja** termasuk saraan, wang tunai atau bukan berbentuk wang, yang perlu dibayar oleh sesebuah perusahaan kepada pekerja sebagai balasan bagi kerja-kerja yang dilakukan dalam tempoh perakaunan.
- 2. Lebihan Kendalian kasar** **Lebihan kendalian kasar** merujuk kepada lebihan kendalian operasi sebelum ditolak penggunaan modal tetap dan pendapatan campuran.
- 2.1. Lebihan kendalian Mengukur lebihan atau defisit terakru daripada proses pengeluaran sebelum ditolak apa-apa caj faedah implisit atau eksplisit, sewa atau pendapatan harta lain yang dibayar ke atas aset kewangan, tanah atau lain-lain sumber semula jadi yang diperlukan untuk menjalankan pengeluaran. Secara definisi, lebihan kendalian operasi hanya boleh diperoleh oleh industri.
- 2.2. Pendapatan campuran Pendapatan campuran meliputi elemen ganjaran yang tidak diketahui bagi kerja yang dijalankan oleh pemilik enterpris atau ahli isi rumah, serta lebihan kendalian hasil daripada pengeluaran.
- 2.3. Penggunaan modal tetap Penggunaan modal tetap didefinisikan sebagai penurunan nilai semasa stok aset tetap yang dimiliki dan digunakan oleh pengeluar dalam tempoh perakaunan disebabkan oleh kerosakan fizikal, keusangan biasa atau kerosakan biasa yang tidak disengajakan.
- 3. Cukai tolak subsidi ke atas pengeluaran dan import** **Cukai tolak subsidi ke atas pengeluaran dan import** merupakan cukai ke atas produk dan cukai lain ke atas pengeluaran ditolak subsidi ke atas produk dan subsidi lain ke atas pengeluaran.
- 3.1. Cukai ke atas produk Cukai yang dibayar bagi satu unit barangan atau perkhidmatan dan biasanya akan dibayar apabila ia dikeluarkan, dihantar, dijual, dipindah atau sebaliknya dilupuskan oleh pihak pengeluar. Cukai tersebut mungkin merupakan satu amaun yang spesifik bagi setiap unit kuantiti barang atau perkhidmatan, atau ia mungkin dikira *ad valorem* sebagai peratusan

spesifik harga satu unit atau nilai barang atau perkhidmatan yang diniagakan. Contohnya, cukai jualan, cukai eksais, duti import, duti eksport dan lain-lain.

3.2. Cukai lain ke atas pengeluaran Cukai lain ke atas pengeluaran meliputi semua cukai kecuali cukai ke atas produk yang ditanggung oleh perusahaan hasil penglibatan dalam pengeluaran seperti bayaran ke atas tanah, aset tetap atau buruh yang digunakan dalam proses pengeluaran atau untuk aktiviti atau transaksi tertentu. Contoh cukai lain ke atas pengeluaran adalah cukai yang dibayar oleh perusahaan bagi lesen perniagaan, cukai gaji, duti setem dan lain-lain.

3.3. Subsidi ke atas produk Subsidi yang dibayar bagi satu unit barang atau perkhidmatan. Subsidi ini mungkin dalam amaun spesifik bagi satu unit kuantiti barang atau perkhidmatan, atau ia mungkin dikira *ad valorem* sebagai peratusan spesifik harga satu unit barang atau perkhidmatan. Subsidi ke atas produk biasanya dibayar apabila barang atau perkhidmatan dikeluarkan, dijual atau diimport, tetapi ia juga dibayar dalam keadaan lain seperti apabila barang dipindah, dipajak, dihantar atau untuk penggunaan sendiri atau pembentukan modal sendiri.

Subsidi mungkin diberikan untuk mempengaruhi tahap pengeluaran perusahaan residen atau harga di mana output mereka dijual.

3.4. Subsidi lain ke atas pengeluaran Merangkumi subsidi selain daripada subsidi ke atas produk di mana perusahaan residen mungkin menerimanya hasil daripada penglibatan dalam pengeluaran seperti subsidi ke atas gaji atau tenaga kerja. Subsidi mungkin diberikan untuk mempengaruhi saraan bagi unit institusi yang terlibat dalam pengeluaran.

Pembangunan ASTMK

Penyusunan ASTMK dapat dilaksanakan berikutan daripada pematuhan *System of National Accounts* yang kukuh di Malaysia. Terma “akaun satelit” digunakan bagi menggambarkan dengan jelas keadaan akaun yang dibangunkan. Ia merupakan “satelit” kepada set utama Akaun Negara yang mana ia memberikan maklumat tambahan di luar daripada maklumat sedia ada di dalam Akaun Negara.

Maklumat satelit memfokuskan kepada aspek ekonomi tertentu sebagai contoh sumbangan TMK kepada negara. Ia juga membolehkan hubung kait yang lebih banyak kepada maklumat tambahan yang spesifik bagi TMK seperti pendapatan, eksport, import dan guna tenaga. TMK terdiri daripada industri seperti pembuatan, perdagangan, perkhidmatan dan kandungan & media.

Pembangunan akaun satelit merupakan pengukuran statistik bersistematik yang mana ia merangkumi konsep, definisi dan klasifikasi berdasarkan piawaian antarabangsa bagi membolehkan perbandingan di antara Negara dilaksanakan. Pelbagai maklumat diperoleh daripada agensi yang berbeza dikumpulkan di dalam akaun ini untuk memberikan gambaran yang lebih baik dan holistik berkenaan impak industri TMK di Malaysia.

Penerangan bagi sembilan (9) jadual adalah seperti berikut:

Jadual 1

Industri TMK dan industri lain yang mengeluarkan produk TMK

Jadual 1 mengandungi maklumat berkaitan semua industri yang mengeluarkan produk TMK. Jadual ini dijana berdasarkan SUT 2015 mengikut pengkelasan produk TMK. Bagi tahun-tahun seterusnya, data adalah berdasarkan KDNK tahunan.

Jadual 2A, 2B dan 2C

Penawaran dan penggunaan produk TMK

Jadual 2 mempersembahkan maklumat penawaran dan penggunaan produk TMK. Nilai penawaran mestilah sama dengan nilai penggunaan produk TMK. Data penawaran dan penggunaan produk TMK diperoleh daripada SUT 2015. Bagi tahun-tahun seterusnya, data adalah berdasarkan KDNK tahunan. Industri dan produk dipilih berdasarkan klasifikasi ASTMK. Data penawaran produk TMK terdiri daripada pengeluaran domestik produk TMK, import produk TMK dan cukai tolak subsidi ke atas produk

TMK. Data penggunaan produk TMK pula terdiri daripada penggunaan perantaraan produk TMK, penggunaan akhir oleh isi rumah dan kerajaan ke atas produk TMK, pembentukan modal kasar produk TMK dan eksport produk TMK.

**Jadual 3 dan
Jadual 4**

Eksport dan Import produk TMK

Jadual 3 dan 4 mengandungi statistik eksport dan import bagi produk TMK. Data daripada barangan diperolehi daripada perisytiharan kastam (Perangkaan Perdagangan Antarabangsa) di mana penyusunan adalah berdasarkan kod Harmonized Commodity Description and Coding Systems (HS). Manakala, nilai eksport dan import perkhidmatan diperolehi daripada data Perangkaan Imbangan Pembayaran. Penyusunan ini juga telah mengambil kira saranan daripada 2008 SNA serta *Balance of Payments and International Investment Position Manual Sixth Edition* (BPM6) khususnya dalam pelaksanaan *Goods for Processing from Abroad* (GFP) dan *Manufacturing Services* (MS).

Jadual 5

Komponen pendapatan industri TMK

Data komponen Pendapatan industri TMK di **Jadual 5** terdiri daripada pampasan pekerja, lebihan kendalian kasar dan cukai tolak subsidi ke atas pengeluaran dan import. Jadual ini dijana berdasarkan SUT 2015 mengikut industri yang mengeluarkan produk TMK. Bagi tahun-tahun seterusnya, data adalah berdasarkan KDNK kaedah pendapatan tahunan.

Jadual 6

Guna tenaga dalam industri TMK

Jadual 6 merupakan data guna tenaga dalam industri TMK. Data diperolehi daripada Penyiasatan Tenaga Buruh yang diterbitkan oleh Jabatan Perangkaan Malaysia.

**Jadual 7A, 7B
dan 7C**

Nilai Ditambah Kasar Industri TMK

Jadual 7 terdiri daripada Nilai Ditambah Kasar Industri TMK pada harga semasa. Pengukuran Nilai Ditambah Kasar Industri TMK adalah secara keseluruhan tanpa mengambil kira sama ada output dikeluarkan untuk menghasilkan produk TMK atau sebaliknya. Data adalah berdasarkan KDNK tahunan.

Jadual 8A dan 8B

Nilai Ditambah Kasar e-dagang

Terdapat dua jadual bagi Nilai Ditambah e-dagang. **Jadual 8A** memaparkan Nilai Ditambah Kasar e-dagang mengikut industri TMK manakala **Jadual 8B** adalah Nilai Ditambah Kasar e-dagang mengikut sektor utama. Pengukuran Nilai Ditambah Kasar e-dagang adalah berdasarkan kepada *OECD Internet Economy Outlook 2012*. Data adalah berdasarkan kepada peratus pendapatan e-dagang mengikut industri yang diperolehi daripada Banci Ekonomi 2016.

Jadual 9

Sumbangan TMK kepada ekonomi

Jadual 9 dijana hasil daripada Nilai Ditambah Kasar Industri TMK (**Jadual 7**) dan Nilai Ditambah Kasar e-dagang bagi industri lain (**Jadual 8A**).

Rangka kerja ASTMK

Asas bagi penyusunan ASTMK di Malaysia adalah rangka kerja jadual penawaran dan penggunaan (SUT). Walau bagaimanapun, ia hanya memfokuskan kepada industri dan produk TMK sahaja. Jadual penawaran mengandungi barangan dan perkhidmatan bagi produk TMK yang dikeluarkan oleh setiap pengeluar. Sementara itu, jadual penggunaan mengandungi penggunaan bagi setiap produk mengikut industri, kerajaan, isi rumah dan eksport.

Penawaran bagi setiap produk (dinilai pada harga pembeli) adalah terdiri daripada:

- Pengeluaran domestik mengikut industri (dinilai pada harga asas);
- Import;
- Pengangkutan, margin perdagangan bagi borong dan runcit; dan
- Cukai tolak subsidi atas pengeluaran dan import.

Penggunaan bagi setiap produk (dinilai pada harga pembeli) adalah terdiri daripada:

- Penggunaan perantaraan mengikut industri (produk yang digunakan mengikut industri tersebut diproses semula bagi menghasilkan produk lain); dan
- Penggunaan akhir mengikut jenis perbelanjaan. Penggunaan akhir adalah merujuk kepada produk yang digunakan oleh isi rumah dan kerajaan, perubahan inventori dan eksport.

Jadual penggunaan terperinci mengandungi input utama yang dikeluarkan bagi setiap industri iaitu pampasan pekerja, lebihan kendalian kasar dan lain-lain cukai tolak subsidi bagi setiap produk dan pengeluaran mengikut industri.

Jadual berikut menunjukkan struktur asas bagi SUT.

JADUAL PENAWARAN

Penawaran mengikut produk	Output mengikut industri pada harga asas* (aktiviti ekonomi)				Import	Jumlah penawaran pada harga asas	Margin perdagangan dan pengangkutan	Cukai tolak subsidi ke atas produk	Jumlah penawaran pada harga pembeli**
	Industri A	Industri B	Industri ...	Jumlah industri (1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (3) + (4) +(5)
Produk TMK A	Output mengikut produk dan industri				Import mengikut produk	Penawaran mengikut produk			
Produk TMK B									
Produk TMK C									
Produk TMK ...									
Jumlah penawaran (produk TMK)	Jumlah output mengikut industri				Jumlah import	Jumlah penawaran mengikut produk			

JADUAL PENGGUNAAN

Penggunaan mengikut produk	Penggunaan perantaraan mengikut industri (aktiviti ekonomi)				Perbelanjaan penggunaan akhir	Pembentukan modal kasar	Eksport	Jumlah penggunaan pada harga pembeli**
	Industri A	Industri B	Industri ...	Jumlah penggunaan perantaraan (1)	(2)	(3)	(4)	(5) = (1) + (2) + (3) + (4)
Produk TMK A	Penggunaan perantaraan mengikut produk dan industri				Penggunaan akhir mengikut produk dan jenis perbelanjaan***			
Produk TMK B								
Produk TMK C								
Produk TMK ...								
Jumlah penggunaan (produk TMK)	Jumlah penggunaan perantaraan mengikut industri				Jumlah penggunaan akhir mengikut produk dan jenis perbelanjaan***			
Pampasan pekerja	Nilai ditambah mengikut komponen dan industri							
Lebihan kendalian kasar								
Cukai tolak subsidi ke atas pengeluaran dan import								
Output industri pada harga asas*								

Nota:

* Harga asas adalah harga yang diterima oleh pengeluar bagi setiap unit barangan dan perkhidmatan yang dikeluarkan sebagai output, tidak termasuk sebarang cukai yang perlu dibayar, termasuk subsidi yang diterima ke atas setiap produk hasil daripada pengeluaran atau penjualan. Ia juga tidak termasuk sebarang bayaran penghantaran yang dicaj secara berasingan oleh pengeluar.

** Harga pembeli adalah harga yang dibayar oleh pembeli di mana barangan dan perkhidmatan tersebut dihantar pada masa dan tempat yang ditentukan oleh pembeli. Ia termasuk sebarang caj pengangkutan yang dibayar secara berasingan oleh pembeli.

*** Jenis perbelanjaan adalah merujuk kepada perbelanjaan penggunaan akhir, pembentukan modal kasar dan eksport.

SUT digunakan untuk mengumpul dan mengintegrasikan semua data yang diperlukan bagi menghasilkan anggaran ekonomi berkaitan TMK secara agregat. Output terdiri daripada barangan dan perkhidmatan yang dihasilkan oleh sesebuah pertubuhan yang boleh digunakan di luar daripada pertubuhan. Nilai bagi output TMK merupakan nilai pasaran bagi barangan dan perkhidmatan TMK. Nilai ditambah dikira bagi industri TMK dan industri lain yang mengeluarkan produk TMK.

Pengukuran e-dagang

Pengukuran nilai ditambah e-dagang adalah berdasarkan manual *OECD Internet Economy Outlook 2012*. Dua kaedah pendekatan yang disarankan adalah *narrow approach* dan *broad approach*. *Narrow approach* hanya meliputi sektor Perdagangan borong dan runcit. Manakala, *broad approach* meliputi kesemua industri dalam ekonomi.

Diandaikan bahawa peratus keuntungan daripada e-dagang kepada keuntungan industri adalah berkadaran dengan peratusan nilai ditambah e-dagang kepada nilai ditambah industri tersebut. *Broad approach* digunakan dalam pengukuran e-dagang di Malaysia. E-dagang terdiri daripada nilai bagi industri TMK dan industri lain.

Sumber data

Sumber data dalam penyusunan ASTMK adalah seperti berikut:

INDUSTRI / DATA	SUMBER DATA
Industri pembuatan TMK Industri perdagangan TMK Industri perkhidmatan TMK Aktiviti penerbitan buku, terbitan berkala dan penerbitan lain Aktiviti wayang gambar, video dan program televisyen Aktiviti rakaman bunyi dan penerbitan muzik Aktiviti pemrograman dan penyiaran Aktiviti perkhidmatan maklumat lain Industri lain	• Banci Ekonomi • Survei Tahunan • SUT • KDNK
Eksport dan import bagi barang dan perkhidmatan TMK	• Perangkaan Perdagangan Luar Negeri • Statistik Perdagangan Perkhidmatan Antarabangsa

INDUSTRI / DATA	SUMBER DATA
Cukai dan subsidi	- Jabatan Akauntan Negara Malaysia - Jabatan Kastam Diraja Malaysia - KDNK Kaedah Pendapatan
Perbelanjaan penggunaan akhir kerajaan	Akaun Kewangan Kerajaan Persekutuan, Kerajaan Negeri, Pihak Berkuasa Tempatan dan Badan Berkanun
Perbelanjaan penggunaan akhir swasta	Survei Perbelanjaan Isi Rumah
Pembentukan modal kasar	- KDNK - Pembentukan Modal Tetap Kasar
Pampasan pekerja	- Survei Pendapatan Isi Rumah - Akaun Kewangan Kerajaan Persekutuan, Kerajaan Negeri, Pihak Berkuasa Tempatan dan Badan Berkanun - Survei Tenaga Buruh - KDNK Kaedah Pendapatan
Lebihan kendalian kasar	KDNK Kaedah Pendapatan
Guna tenaga	Survei Tenaga Buruh

**Semakan
penerbitan dan
data**

Penerbitan ini mempersembahkan ASTMK bagi tahun 2015 hingga 2021. Siri ini akan dikemaskini berdasarkan data terkini yang diperolehi.

TECHNICAL NOTES

CONCEPTS AND DEFINITIONS

A. OVERVIEW *Information and Communication Technology Satellite Account (ICTSA) of Malaysia 2021 is based on the System of National Accounts 2008, the OECD Guide to Measuring the Information Society 2011 and the OECD Internet Economy Outlook 2012. The concepts and definitions are adapted to Malaysia's requirement.*

This section will briefly present the concepts and definitions practiced by Malaysia in constructing ICTSA tables.

B. CONCEPTS AND DEFINITIONS OF ICT

1. ICT *Information and Communication Technology (ICT) refers to the technologies and services that enable information to be accessed, stored, processed, transformed, manipulated and disseminated, including the transmission or communication of voice, image and/or data over a variety of transmission media.*

2. ICT industry *ICT industry refers to the industries which produce ICT products as primary activities. Details of ICT industry are described in the Classification Section. The main categories of ICT industry in the compilation of ICTSA are as follows:*

- 1. ICT manufacturing*
- 2. ICT trade*
- 3. ICT services*
- 4. Content and media*

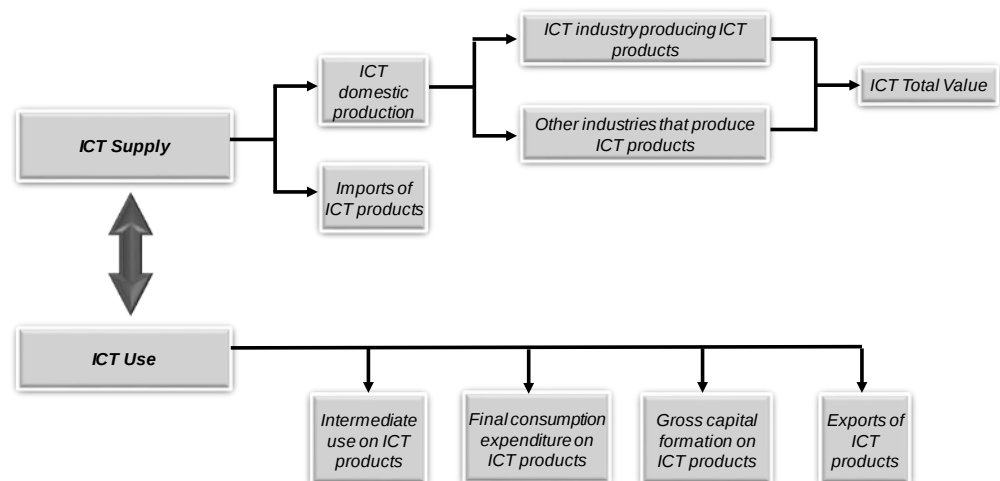
3. Other industries *Other industries refers to the other non ICT industries that produce ICT products.*

4. ICT products *The details of ICT products are listed in the Classification Section. The main categories of ICT products are as follows:*

- 1. ICT goods*

- 1.1. *Computers and peripheral equipment*
- 1.2. *Communication equipment*
- 1.3. *Consumer electronic equipment*
- 1.4. *Miscellaneous ICT components and goods*
2. *ICT services*
 - 2.1. *Manufacturing services for ICT equipment*
 - 2.2. *Business and productivity software and licensing services*
 - 2.3. *Information technology consultancy and services*
 - 2.4. *Telecommunications services*
 - 2.5. *Leasing or rental services for ICT equipment*
 - 2.6. *Other ICT services*
3. *Content and media products*
 - 3.1. *Printed and other text-based content on physical media, and related services*
 - 3.2. *Motion picture, video, television and radio content, and related services*
 - 3.3. *Music content and related services*
 - 3.4. *Games software*
 - 3.5. *On-line content and related services*
 - 3.6. *Other content and related services*

5. Schematic view of ICTSA



- 6. E-commerce** *E-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. E-commerce transaction can be between enterprises, households, individuals, governments and other public or private organisations.*

Method of payment and the ultimate delivery of the e-commerce goods or services might be done through computer network/internet or traditionally.

E-commerce transactions include orders made in web pages, extranet or Electronic Data Interchange (EDI). Nevertheless, orders made by telephone calls, facsimile or manually typed e-mail are not categorised as an e-commerce transactions.

7. E-commerce other industries *Industries not categorized under the ICT industry classification.*

8. ICT to economy *ICT to economy consists of ICT industry plus e-commerce of other industries.*

C. PRODUCTION ACCOUNTS FOR ICT

1. Production account *The **production account** records the activity of producing goods and services as defined within the System of National Accounts. The production account shows output as resources and intermediate consumption as uses and the balancing item is value added.*

2. Gross Domestic Product ***Gross Domestic Product (GDP)** is the total value of all goods and services produced in a certain period after deducting the cost of goods and services used up in the process of production. This value is before deducting the allowances for consumption of fixed capital i.e. the sum of value added of resident producers in producers' prices plus import duties. GDP is equivalent to expenditure on the GDP (in purchasers' prices) i.e. the sum of all components of final expenditure on goods and services less imports of goods and services. GDP can be measured by using three approaches namely Production, Expenditure and Income Approach.*

3. Value added ***Value added** is the value that a producer adds to the raw material of goods and services it purchases in the process of production. Thus, value added is the value of output less the value of intermediate consumption.*

4. Gross Value Added of ICT ***Gross Value Added of ICT industry (GVAICT)** is the total Gross Value Added of all establishments belonging to ICT industry, regardless of whether all their output is provided for ICT and of degree of specialisation of their production process.*

D. INCOME ACCOUNTS FOR ICT

- 1. Compensation of employees** **Compensation of employees** includes remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done during the accounting period.
- 2. Gross operating surplus** **Gross operating surplus** refers the operating surplus before deducting the consumption of fixed capital and mixed income.
- 2.1. Operating surplus Measures the surplus or deficit accruing from processes of production before deducting any explicit or implicit interest charges, rent or other property income payable on the financial assets, land or other natural resources required to carry on the production. By definition, operating surplus can only be earned by industries.
- 2.2. Mixed income Mixed income includes an unknown element of remuneration for work done by the owner of the enterprise, or other members of the household, as well as operating surplus accruing from the production.
- 2.3. Consumption of fixed capital Consumption of fixed capital is defined as the decline in the current value of the stock of fixed assets owned and used by a producer during the course of the accounting period as a result of physical deterioration, normal obsolescence or nominal accidental damage.
- 3. Taxes less subsidies on production and imports** **Taxes less subsidies on production and imports** consists of taxes on products and other taxes on production less subsidies on product and other subsidies on production.
- 3.1. Taxes on products Taxes that are payable per unit of some goods or services and usually become payable when they are produced, delivered, sold, transferred or otherwise disposed by their producer. The tax may be a specific amount of money per unit of quantity of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit or value of the goods or services transacted. For example, sales taxes, excise taxes, import duties, export duties, etc.
- 3.2. Other taxes on production Other taxes on production consists of all taxes except taxes on products that enterprises incur as a result of engaging in production such as taxes payable on land, fixed assets or labour employed in the production process

or certain activities or transactions. Examples of other taxes on production are taxes payable by enterprises for business licenses, payroll taxes, stamp duties, etc.

3.3. Subsidies on products A subsidy payable per unit of a good or service. The subsidy may be a specific amount of money per unit of quantity of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit of the goods or services. A subsidy on products usually becomes payable when the good or service is produced, sold or imported, but it may be also payable in other circumstances such as when a good is transferred, leased, delivered or used for own consumption or own capital formation.

The subsidy may be designed to influence resident enterprises' levels of production or the prices at which their outputs are sold.

3.4. Other subsidies on production Consists of subsidies except subsidies on products that resident enterprises may receive as a consequence of engaging in production such as subsidies on payroll or workforce. The subsidy may be designed to influence the remuneration of the institutional units engaged in production.

Establishment of ICTSA *The compilation of ICTSA is made possible due to the well established of System of National Accounts in Malaysia. The term "satellite account" is adopted to reflect the nature of the account developed. It is a "satellite" to the core set of National Accounts that presents additional information which is beyond the available information provided in the National Accounts.*

This satellite information focuses on a particular aspect of the economy for example contribution of ICT to the nation. It also permits further linkages to additional information specific to ICT such as income, exports, imports and employment. ICT consists of industries such as manufacturing, trade, services and content & media.

The development of satellite account is a systematic statistical measurement that applies concepts, definitions and classification which are based on international standard to enable comparison among countries. Various information available in different agencies is compiled to provide holistic and better picture of the impact of ICT industry in Malaysia.

The explanation of the nine (9) tables are as follows:

Table 1 ***ICT industry and other industries that produce ICT products***

Table 1 *contains the information on all industries that produce ICT products. This table derived from SUT 2015 according to the ICT product classification. For the subsequent years, data is based on published Annual GDP.*

Table 2A, 2B and 2C ***Supply and use of ICT products***

Table 2 *presents the information on the supply and use of ICT products. The value of supply must be equal to the value of use of ICT product. The data on the supply and use of ICT products are derived from the SUT 2015. For the subsequent years, data are based on published Annual GDP. Industry and products have been selected based on the ICTSA classification. Supply of ICT products data comprises of domestic production of ICT products, imports of ICT products and tax less subsidies on ICT products. Use of ICT products data consists of intermediate use of ICT products, final consumption expenditure of ICT products by households and governments, gross capital formation for ICT products and export of*

**Table 3 and
Table 4** **Exports and Imports of ICT products**

Tables 3 and 4 consists the exports and imports statistics for ICT products. Data from goods extracted from the customs declaration (International Trade Statistics) where the compilation is based on the Harmonized Commodity Description and Coding Systems (HS) code. Meanwhile, the value of the exports and imports services is derived from the balance of payments statistics. The arrangement also took into account the recommendations by the 2008 SNA and Balance of Payments and International Investment Position Manual Sixth Edition (BPM6) particularly in implementation on treatment of Goods for Processing from Abroad (GFP) and Manufacturing Services (MS).

Table 5 **Income components of ICT industry**

Income components of ICT industry in Table 5 consists of compensation of employees, gross operating surplus and taxes less subsidies on production and imports. This table is derived based on SUT 2015 according to the industry that produces ICT products. For the subsequent years, data is based on published Annual GDP Income Approach.

Table 6 **Employment in the ICT industry**

Table 6 shows the employment data in the ICT industry. Data are obtained from the Labour Force Survey (LFS) produced by Department of Statistics, Malaysia.

**Table 7A, 7B
and 7C** **Gross Value Added of ICT Industry**

Table 7 comprises the value added of ICT industry at current prices. Its measure the Gross Value Added of ICT industries as a whole, whether the output is provided for ICT or non ICT products. Data is based on published Annual GDP.

Table 8A and 8B **Gross Value Added of e-commerce**

There are two table for e-commerce. Table 8A are present the Gross Value Added of e-commerce by ICT industry while table 8B was Gross Value Added of e-commerce by main sector. Measurement of e-commerce value added is based on the OECD Internet Economy Outlook 2012. Data are based on the percentage of e-commerce revenues by industries from the Economic Census 2016.

Table 9

ICT contribution to economy

Table 9 is derived from the Gross Value Added of the ICT industry (**Table 7**) and the Gross Value Added of e-commerce by other industries (**Table 8A**).

**Framework of
ICTSA**

The basis of ICTSA compilation in Malaysia is the framework of supply and use tables (SUT). However, it only focuses on ICT products and industries. The supply table indicates the goods and services of ICT products that are supplied by each producer. Meanwhile, use table tracks the usage of those products by industries, government, households and exports.

Supply of each product (valued at purchasers' prices) consists of;

- Domestic production by industry (valued at basic prices);
- Imports;
- Transport, retail and wholesale trade margins; and
- Taxes less subsidies on production and imports.

Use of each product (valued at purchasers' prices) consists of:

- Intermediate use by industries (products that are consumed by industries in the process of producing other products); and
- Final use by type of expenditure. Final use includes consumption households and government, products that have been capitalised, changes in inventories and exports.

A comprehensive use table includes primary inputs of production namely compensation of employees, gross operating surplus and other taxes less subsidies on products and production for each industry.

The following table illustrates the basic structure of SUT.

SUPPLY TABLE

Supply of product	Output of industries at basic prices* (economic activities)				Imports	Total supply at basic prices	Trade and transport margins	Taxes less subsidies on products	Total supply at purchasers' prices**
	Industry A	Industry B	Industry ...	Total industry (1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (3) + (4) + (5)
ICT product A	Output by product and by industry				Imports by product	Supply by product			
ICT product B									
ICT product C									
ICT product									
Total Supply (ICT product)	Total output by industry				Total imports	Total supply by product			

USE TABLE

Use of product	Intermediate use by industry (economic activities)				Final consumption expenditure	Gross capital formation	Exports	Total use at purchasers' prices**
	Industry A	Industry B	Industry ...	Total intermediate use (1)	(2)	(3)	(4)	(5) = (1) + (2) + (3) + (4)
ICT product A	Intermediate consumption by product and by industry				Final use by product and by type of expenditure***			
ICT product B								
ICT product C								
ICT product ...								
Total use (ICT product)	Total intermediate consumption by industry				Total final use by product and by type of expenditure***			
Compensation of employees	Value added by component and by industry							
Gross operating surplus								
Taxes less subsidies on production and imports								
Industry output at basic prices*								

Note:

* Basic prices is the price received by the producer for a unit of good and service produced as output, excluding any tax payable or including any subsidy receivable on the product as a subsequent of its sales or use. It also excludes any delivery charges invoiced separately by the producer.

** Purchasers' prices is the price paid by the purchaser to take delivery of a good and service at the time and place required by the purchaser. It includes any transport charges paid separately by the purchaser.

*** Type of expenditure refers to the final consumption expenditure, gross capital formation and exports.

The SUT are used to assemble and integrate all data required to produce estimates of economic aggregates related to ICT. Output consists of those goods and services produced within an establishment which become available for use outside that establishment. The value of ICT output is the market value of ICT goods and services. Value added will be computed for ICT industry and other industries which produce ICT products.

Measurement of e-commerce

Measurement of e-commerce value added is based on the manual OECD Internet Economy Outlook 2012. There are two recommended approaches, which are narrow and broad approaches. Narrow approach only takes into account value added from the wholesale and retail sectors. While, broad approach includes all industries across the economy.

It is assumed that the share of revenue from e-commerce to total revenue for each industry is proportional to the percentage of value added from e-commerce to the total value added for the same industry. Broad approach is used in measuring the e-commerce in Malaysia. E-commerce consists of the value of ICT industry and other industries.

Data sources

The data sources in compiling ICTSA are as follows:

INDUSTRY / DATA	DATA SOURCES
ICT manufacturing industries ICT trade industries ICT services industries Publishing of books, periodicals and other publishing activities Motion picture, video and television programme activities Sound recording and music publishing activities Programming and broadcasting activities Other information service activities Other industries	- Economic Census - Annual Survey - SUT - GDP
Exports and imports of ICT goods and services	- External Trade Statistics - Statistics of International Trade in Services

INDUSTRY / DATA	DATA SOURCES
<i>Tax and subsidies</i>	• <i>Accountant General's Department of Malaysia</i> • <i>Royal Malaysian Customs Department</i> • <i>GDP Income Approach</i>
<i>Government final consumption expenditure</i>	• <i>Financial Accounts of Federal Government, State Government, Local Authorities and Statutory Bodies</i>
<i>Private final consumption expenditure</i>	• <i>Household Expenditure Survey</i>
<i>Gross capital formation</i>	• <i>GDP</i> • <i>Gross Fixed Capital Formation</i>
<i>Compensation of employees</i>	• <i>Household Income Survey</i> • <i>Financial Accounts of Federal Government, State Government, Local Authorities and Statutory Bodies</i> • <i>Labour Force Survey</i> • <i>GDP Income Approach</i>
<i>Gross operating surplus</i>	• <i>GDP Income Approach</i>
<i>Employment</i>	• <i>Labour Force Survey</i>

Publication and data revision

This publication presents ICTSA for the year 2015 to 2021. The series will be updated whenever any latest data available.

The graphic features a stylized city skyline in the background, including recognizable buildings like the Petronas Towers and the Kuala Lumpur Tower. This skyline is framed by a white, curved, tunnel-like shape. To the right of this frame is a large, dark purple, abstract shape that resembles a stylized 'C' or a swoosh. The text is positioned within this dark purple area.

KOD DAN KLASIFIKASI

***CODE AND
CLASSIFICATION***

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KOD DAN KLASIFIKASI

Klasifikasi industri TMK adalah berdasarkan Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Ver.1.0 yang diselaraskan dengan *International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4*. Klasifikasi bagi produk TMK adalah berdasarkan Klasifikasi Produk Mengikut Aktiviti Malaysia (MCPA) 2009 yang diselaraskan dengan *Central Products Classification (CPC) Ver. 2*.

Industri TMK

Keterangan ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
1. Pembuatan TMK				
1.1	Komputer dan kelengkapan peranti			
	1.1.1	Pembuatan komputer dan kelengkapan peranti	2620	26201, 26202
1.2	Komponen & papan elektronik, peralatan komunikasi dan elektronik pengguna			
	1.2.1	Pembuatan komponen dan papan elektronik	2610	26101, 26102, 26103, 26104, 26105, 26109
	1.2.2	Pembuatan peralatan komunikasi	2630	26300
	1.2.3	Pembuatan elektronik pengguna	2640	26400
	1.2.4	Pembuatan media magnetik dan optikal	2680	26800
2. Perdagangan TMK				
2.1	Perdagangan borong			
	2.1.1	Jualan borong barang sukan, barang permainan, barang kulit, barang pengembaraan dan peralatan muzik	4643	46432, 46434
	2.1.2	Jualan borong lain-lain barangan isi rumah t.t.t.l.	4649	46496
	2.1.3	Jualan borong komputer, peralatan peranti komputer (<i>peripheral</i>) dan perisian	4651	46510
	2.1.4	Jualan borong kelengkapan dan komponen (termasuk alat ganti) elektronik dan telekomunikasi	4652	46521, 46522
	2.1.5	Jualan borong lain-lain jentera dan kelengkapan	4659	46593
	2.1.6	Jualan borong bahan buangan dan sekerap dan produk lain t.t.t.l.	4669	46699
2.2	Perdagangan runcit			
	2.2.1	Jualan runcit di kedai khusus yang menjual komputer, peralatan peranti komputer (<i>peripheral</i>), sofwer dan peralatan telekomunikasi	4741	47411, 47412, 47413
	2.2.2	Jualan runcit di kedai yang khusus menjual peralatan audio dan video	4742	47420
	2.2.3	Jualan runcit di kedai khusus yang menjual peralatan elektrik, perabot, lampu dan barangan lain isi rumah	4759	47597, 47598

Keterangan ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
	2.2.4	Jualan runcit di kedai khusus yang menjual buku, akhbar dan alat tulis	4761	47611
	2.2.5	Jualan runcit di kedai khusus yang menjual instrumen muzik dan rakaman video	4762	47620
	2.2.6	Jualan runcit di kedai khusus yang menjual permainan dan barang mainan	4764	47640
	2.2.7	Jualan runcit di kedai khusus yang menjual barang baru lain	4773	47731
	2.2.8	Jualan runcit barang terpakai	4774	47742
	2.2.9	Jualan runcit barangan lain di gerai dan pasar	4789	47892, 47893, 47894, 47895
	2.2.10	Jualan runcit melalui pesanan mel atau internet	4791	47911, 47912, 47913, 47914
	2.2.11	Lain-lain jualan bukan di kedai, gerai atau pasar	4799	47992
3. Perkhidmatan TMK				
3.1	Telekomunikasi			
	3.1.1	Aktiviti telekomunikasi berwayar	6110	61101, 61102
	3.1.2	Aktiviti telekomunikasi tanpa wayar	6120	61201, 61202
	3.1.3	Aktiviti telekomunikasi satelit	6130	61300
	3.1.4	Aktiviti telekomunikasi lain	6190	61901, 61902, 61903, 61904, 61905, 61909
3.2	Pengaturcaraan komputer, perundingan, maklumat dan aktiviti yang berkaitan			
	3.2.1	Aktiviti pengaturcaraan komputer	6201	62010
	3.2.2	Aktiviti perundingan komputer dan pengurusan kemudahan komputer	6202	62021, 62022
	3.2.3	Aktiviti perkhidmatan teknologi maklumat dan komputer lain	6209	62091, 62099
	3.2.4	Aktiviti proses data, <i>hosting</i> dan yang berkaitan	6311	63111, 63112
	3.2.5	Web portal	6312	63120
3.3	Perkhidmatan TMK lain			
	3.3.1	Pembaikan mesin	3312	33120
	3.3.2	Pembaikan peralatan elektronik dan optikal	3313	33131, 33133
	3.3.3	Pembaikan bagi peralatan elektrik	3314	33140
	3.3.4	Pemasangan bagi perindustrian mesin dan kelengkapan	3320	33200

Keterangan ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
	3.3.5	Pemasangan elektrik	4321	43212, 43213, 43214, 43216
	3.3.6	Pemasangan sistem paip, pemanasan dan pendinginan udara	4322	43223
	3.3.7	Penerbitan perisian yang sedia cipta (bukan tempahan khas)	5820	58201, 58202, 58203
	3.3.8	Penyelidikan dan pembangunan eksperimen sains semula jadi dan kejuruteraan	7210	72106
	3.3.9	Aktiviti profesional, saintifik dan teknikal lain t.t.t.l.	7490	74903
	3.3.10	Aktiviti perkhidmatan sistem keselamatan	8020	80200
	3.3.11	Aktiviti perkhidmatan awam am	8411	84111, 84112
	3.3.12	Pembaikan komputer dan peralatan sampingan	9511	95111, 95112, 95113
	3.3.13	Pembaikan dan penyelenggaraan peralatan komunikasi	9512	95121, 95122, 95123, 95124, 95125, 95126, 95127
	3.3.14	Pembaikan peralatan elektronik pengguna	9521	95211, 95212, 95213, 95214
	3.3.15	Pembaikan kelengkapan isi rumah dan peralatan rumah dan halaman	9522	95221
4. Kandungan dan media				
4.1	Aktiviti penerbitan buku, terbitan berkala dan penerbitan lain		1811, 1812, 1820, 5811, 5812, 5813, 5819, 8219	18110, 18120, 18200, 58110, 58120, 58130, 58190, 82196, 82199
4.2	Aktiviti wayang gambar, video dan program televisyen		5911, 5912, 5913, 5914, 7410, 7420, 9000	59110, 59120, 59130, 59140, 74102, 74200, 90009
4.3	Kandungan dan media lain			
	4.3.1	Aktiviti rakaman bunyi dan penerbitan muzik	5920	59200
	4.3.2	Aktiviti pemrograman dan penyiaran	6010, 6020	60100, 60200
	4.3.3	Aktiviti perkhidmatan maklumat lain	6391, 6399, 8220, 9329	63910, 63990, 82200, 93297

Produk TMK

Keterangan CPC Ver. 2		CPC Ver. 2	MCPA 2009 (5 Digit)
1. Barangan TMK			
1.1	Komputer dan kelengkapan peranti	45142, 45221, 45222, 45230, 45240, 45250, 45261, 45262, 45263, 45264, 45265, 45266, 45269, 45271, 45272, 45289, 45290, 47315, 47550	26201, 26202, 28170
1.2	Kelengkapan komunikasi	46921, 47211, 47212, 47213, 47221, 47222, 47223, 47401, 54612, 54613	26300, 43216
1.3	Kelengkapan elektronik pengguna	38581, 47214, 47215, 47311, 47312, 47313, 47314, 47321, 47323, 47330, 47402, 48321, 48322, 48323, 48324, 48330, 48353, 88748	26400, 26701, 26702, 32400
1.4	Pelbagai komponen dan barangan TMK	45281, 47130, 47140, 47150, 47160, 47173, 47403, 47530, 47540, 47590, 47910, 47920, 48220, 48244, 48315, 48354	26101, 26102, 26104, 26105, 26109, 26511, 26800, 32909
2. Perkhidmatan TMK			
2.1	Perkhidmatan pembuatan bagi kelengkapan TMK	88741, 88742, 88743, 88744, 88749	26103
2.2	Perkhidmatan perniagaan dan produktiviti perisian dan pelesenan	47811, 47812, 47813, 47814, 47821, 47829, 73311, 81129, 83143, 84341, 84342, 84392, 85220, 85230	58201, 58203, 72106, 74903, 80200
2.3	Perkhidmatan dan perundingan teknologi maklumat	83117, 83131, 83132, 83141, 83142, 83151, 83152, 83159, 83161, 83162	62010, 62021, 62022, 63111, 63112, 70201
2.4	Perkhidmatan telekomunikasi	84110, 84121, 84122, 84131, 84132, 84140, 84150, 84190, 84210, 84221, 84222, 84290, 85931, 85939	61101, 61201, 61300, 61901, 61902, 61903, 61904, 61905, 61909, 82200
2.5	Perkhidmatan pajakan atau sewaan kelengkapan TMK	73124, 73210, 73215	77292, 77301, 77307
2.6	Perkhidmatan TMK lain	54614, 83325, 87120, 87130, 87151, 87152, 87153, 87155, 87331, 87332, 87340, 87350	33120, 33140, 33200, 43213, 43214, 62099, 71102, 95111, 95112, 95113, 95121, 95122, 95123, 95124, 95125, 95126, 95127, 95211, 95212, 95213, 95214, 95221
3. Produk kandungan dan media			
3.1	Cetakan dan lain-lain kandungan berasaskan teks pada media fizikal dan perkhidmatan berkaitan	32210, 32220, 32230, 32291, 32292, 32299, 32300, 32410, 32420, 32490, 32511, 32530, 32540, 32620, 32630, 32690, 32800, 47691, 47692, 83631, 84311, 85951, 89121	18110, 18120, 58110, 58120, 58130, 58190, 82196, 82199

Keterangan CPC Ver. 2		CPC Ver. 2	MCPA 2009 (5 Digit)
3.2	Kandungan wayang gambar, video, televisyen dan radio dan perkhidmatan berkaitan	38950, 47620, 83632, 83919, 84611, 84612, 84621, 84622, 84631, 84632, 84633, 84634, 96121, 96122, 96123, 96131, 96132, 96133, 96134, 96135, 96136, 96137, 96139, 96140, 96150	59110, 59120, 59130, 59140, 60100, 60200, 74102
3.3	Kandungan muzik dan perkhidmatan berkaitan	32520, 47610, 89123, 96111, 96112, 96113	18200, 59200
3.4	Perisian permainan	38582, 47822, 84391	58202
3.5	Kandungan atas talian dan perkhidmatan berkaitan	73312, 83633, 84311, 84312, 84313, 84321, 84322, 84331, 84332, 84393, 84394, 84399	63120
3.6	Lain-lain kandungan dan perkhidmatan berkaitan	38941, 38942, 47699, 73320, 83611, 83620, 83639, 83811, 83812, 83813, 83814, 83815, 83819, 83820, 83940, 84410, 84420, 85991, 89110, 96330	63910, 63990, 73100, 74200, 90001, 90002, 90003, 90004, 90005, 90006, 90007, 90009

CODE AND CLASSIFICATION

The classification of ICT industry is based on Malaysia Standard Industrial Classification (MSIC) 2008 Ver.1.0. which is in concordance with International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4. The classification of ICT products is based on Malaysian Classification of Products by Activity (MCPA) 2009 which conforms with Central Products Classification (CPC) Ver. 2.

ICT industry

Description ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
1. ICT manufacturing				
1.1	Computers and peripheral equipment			
	1.1.1	Manufacture of computers and peripheral equipment	2620	26201, 26202
1.2	Electronic components & boards, communication equipment and consumer electronics			
	1.2.1	Manufacture of electronic components and boards	2610	26101, 26102, 26103, 26104, 26105, 26109
	1.2.2	Manufacture of communication equipment	2630	26300
	1.2.3	Manufacture of consumer electronics	2640	26400
	1.2.4	Manufacture of magnetic and optical media	2680	26800
2. ICT trade				
2.1	Wholesale trade			
	2.1.1	Wholesale of sports goods, games, leather, travelling goods and musical instruments	4643	46432, 46434
	2.1.2	Wholesale of other household goods n.e.c.	4649	46496
	2.1.3	Wholesale of computers, computer peripheral equipment and software	4651	46510
	2.1.4	Wholesale of electronic and telecommunications equipment and parts	4652	46521, 46522
	2.1.5	Wholesale of other machinery and equipment	4659	46593
	2.1.6	Wholesale of waste and scrap and other products n.e.c.	4669	46699
2.2	Retail trade			
	2.2.1	Retail sale of computers, peripheral units, software and telecommunications equipment in specialized stores	4741	47411, 47412, 47413
	2.2.2	Retail sale of audio and video equipment in specialized stores	4742	47420
	2.2.3	Retail sale of electrical household appliances, furniture, lighting equipment and other household articles in specialized stores	4759	47597, 47598
	2.2.4	Retail sale of books, newspapers and stationery in specialized stores	4761	47611

Description ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
	2.2.5	Retail sale of music and video recordings in specialized stores	4762	47620
	2.2.6	Retail sale of games and toys in specialized stores	4764	47640
	2.2.7	Other retail sale of new goods in specialized stores	4773	47731
	2.2.8	Retail sale of second-hand goods	4774	47742
	2.2.9	Retail sale via stall and market of other goods	4789	47892, 47893, 47894, 47895
	2.2.10	Retail sale via mail order houses or via Internet	4791	47911, 47912, 47913, 47914
	2.2.11	Other retail sale not in stores, stalls or markets	4799	47992
3. ICT services				
3.1	Telecommunications			
	3.1.1	Wired telecommunications activities	6110	61101, 61102
	3.1.2	Wireless telecommunications activities	6120	61201, 61202
	3.1.3	Satellite telecommunications activities	6130	61300
	3.1.4	Other telecommunications activities	6190	61901, 61902, 61903, 61904, 61905, 61909
3.2	Computer programming, consultancy, information and related activities			
	3.2.1	Computer programming activities	6201	62010
	3.2.2	Computer consultancy and computer facilities management activities	6202	62021, 62022
	3.2.3	Other information technology and computer service activities	6209	62091, 62099
	3.2.4	Data processing, hosting and related activities	6311	63111, 63112
	3.2.5	Web portals	6312	63120
3.3	Other ICT services			
	3.3.1	Repair of machinery	3312	33120
	3.3.2	Repair of electronic and optical equipment	3313	33131, 33133
	3.3.3	Repair of electrical equipment	3314	33140
	3.3.4	Installation of industrial machinery and equipment	3320	33200
	3.3.5	Electrical installation	4321	43212, 43213, 43214, 43216
	3.3.6	Plumbing, heat and air-conditioning installation	4322	43223
	3.3.7	Publishing of ready-made (non-customized) software	5820	58201, 58202, 58203
	3.3.8	Research and experimental development on natural sciences and engineering	7210	72106

Description ISIC Rev. 4			ISIC Rev. 4	MSIC 2008
	3.3.9	<i>Other professional, scientific and technical activities n.e.c.</i>	7490	74903
	3.3.10	<i>Security systems service activities</i>	8020	80200
	3.3.11	<i>General public administration activities</i>	8411	84111, 84112
	3.3.12	<i>Repair of computers and peripheral equipment</i>	9511	95111, 95112, 95113
	3.3.13	<i>Repair of communication equipment</i>	9512	95121, 95122, 95123, 95124, 95125, 95126, 95127
	3.3.14	<i>Repair of consumer electronics</i>	9521	95211, 95212, 95213, 95214
	3.3.15	<i>Repair of household appliances and home and garden equipment</i>	9522	95221
4. Content and media				
4.1	<i>Publishing of books, periodicals and other publishing activities</i>		1811, 1812, 1820, 5811, 5812, 5813, 5819, 8219	18110, 18120, 18200, 58110, 58120, 58130, 58190, 82196, 82199
4.2	<i>Motion picture, video and television programme activities</i>		5911, 5912, 5913, 5914, 7410, 7420, 9000	59110, 59120, 59130, 59140, 74102, 74200, 90009
4.3	<i>Other content and media</i>			
	4.3.1	<i>Sound recording and music publishing activities</i>	5920	59200
	4.3.2	<i>Programming and broadcasting activities</i>	6010, 6020	60100, 60200
	4.3.3	<i>Other information service activities</i>	6391, 6399, 8220, 9329	63910, 63990, 82200, 93297

ICT products

Description CPC Ver. 2		CPC Ver. 2	MCPA 2009 (5 Digit)
1. ICT goods			
1.1	Computers and peripheral equipment	45142, 45221, 45222, 45230, 45240, 45250, 45261, 45262, 45263, 45264, 45265, 45266, 45269, 45271, 45272, 45289, 45290, 47315, 47550	26201, 26202, 28170
1.2	Communication equipment	46921, 47211, 47212, 47213, 47221, 47222, 47223, 47401, 54612, 54613	26300, 43216
1.3	Consumer electronic equipment	38581, 47214, 47215, 47311, 47312, 47313, 47314, 47321, 47323, 47330, 47402, 48321, 48322, 48323, 48324, 48330, 48353, 88748	26400, 26701, 26702, 32400
1.4	Miscellaneous ICT components and goods	45281, 47130, 47140, 47150, 47160, 47173, 47403, 47530, 47540, 47590, 47910, 47920, 48315, 48354, 48220, 48244	26101, 26102, 26104, 26105, 26109, 26511, 26800, 32909
2. ICT services			
2.1	Manufacturing services for ICT equipment	88741, 88742, 88743, 88744, 88749	26103
2.2	Business and productivity software and licensing services	47811, 47812, 47813, 47814, 47821, 47829, 73311, 81129, 83143, 84341, 84342, 84392, 85220, 85230	58201, 58203, 72106, 74903, 80200
2.3	Information technology consultancy and services	83117, 83131, 83132, 83141, 83142, 83151, 83152, 83159, 83161, 83162	62010, 62021, 62022, 63111, 63112, 70201
2.4	Telecommunications services	84110, 84121, 84122, 84131, 84132, 84140, 84150, 84190, 84210, 84221, 84222, 84290, 85931, 85939	61101, 61201, 61300, 61901, 61902, 61903, 61904, 61905, 61909, 82200
2.5	Leasing or rental services for ICT equipment	73124, 73210, 73215	77292, 77301, 77307
2.6	Other ICT services	54614, 83325, 87120, 87130, 87151, 87152, 87153, 87155, 87331, 87332, 87340, 87350	33120, 33140, 33200, 43213, 43214, 62099, 71102, 95111, 95112, 95113, 95121, 95122, 95123, 95124, 95125, 95126, 95127, 95211, 95212, 95213, 95214, 95221
3. Content and media products			
3.1	Printed and other text-based content on physical media, and related services	32210, 32220, 32230, 32291, 32292, 32299, 32300, 32410, 32420, 32490, 32511, 32530, 32540, 32620, 32630, 32690, 32800, 47691, 47692, 83631, 84311, 85951, 89121	18110, 18120, 58110, 58120, 58130, 58190, 82196, 82199

Description CPC Ver. 2		CPC Ver. 2	MCPA 2009 (5 Digit)
3.2	<i>Motion picture, video, television and radio content, and related services</i>	38950, 47620, 83632, 83919, 84611, 84612, 84621, 84622, 84631, 84632, 84633, 84634, 96121, 96122, 96123, 96131, 96132, 96133, 96134, 96135, 96136, 96137, 96139, 96140, 96150	59110, 59120, 59130, 59140, 60100, 60200, 74102
3.3	<i>Music content and related services</i>	32520, 47610, 89123, 96111, 96112, 96113	18200, 59200
3.4	<i>Games software</i>	38582, 47822, 84391	58202
3.5	<i>On-line content and related services</i>	73312, 83633, 84311, 84312, 84313, 84321, 84322, 84331, 84332, 84393, 84394, 84399	63120
3.6	<i>Other content and related services</i>	38941, 38942, 47699, 73320, 83611, 83620, 83639, 83811, 83812, 83813, 83814, 83815, 83819, 83820, 83940, 84410, 84420, 85991, 89110, 96330	63910, 63990, 73100, 74200, 90001, 90002, 90003, 90004, 90005, 90006, 90007, 90009