NOTA TEKNIKAL

TECHNICAL NOTES

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TECHNICAL NOTES

A. Introduction

Information and Communication Technology Satellite Account (ICTSA) of Malaysia 2024 is based on the System of National Accounts (SNA) 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.

B. Establisment 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.

C. Concepts and Definitions

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:*

I. *ICT manufacturing*
II. *ICT trade*
III. *ICT services*
IV. *Content and media*

3. Non ICT industries

Non ICT industries *refers to the industries other than ICT industries that produce ICT products.*

4. ICT products

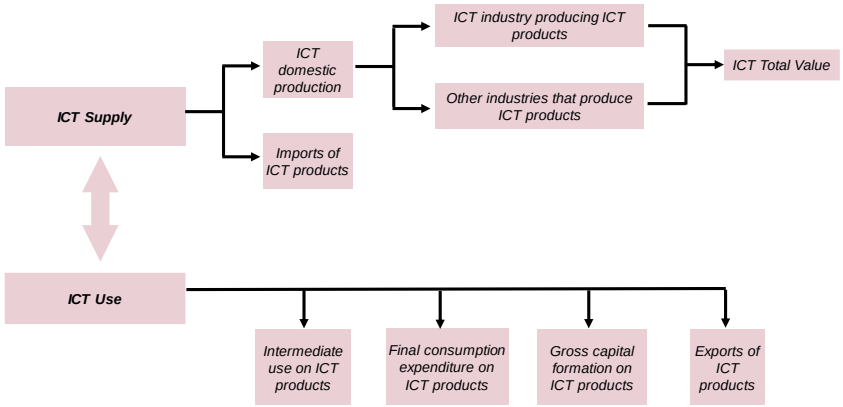
The details of ***ICT products*** *are listed in the Classification Section. The main categories of ICT products are as follows:*

I. *ICT goods*
   a. *Computers and peripheral equipment*
   b. *Communication equipment*
   c. *Consumer electronic equipment*
   d. *Miscellaneous ICT components and goods*

II. *ICT services*
   a. *Manufacturing services for ICT equipment*
   b. *Business and productivity software and licensing services*
   c. *Information technology consultancy and services*
   d. *Telecommunications services*
   e. *Leasing or rental services for ICT equipment*
   f. *Other ICT services*

II. *Content and media products*
   a. *Printed and other text-based content on physical media, and related services*
   b. *Motion picture, video, television and radio content, and related services*
   c. *Music content and related services*
   d. *Games software*
   e. *On-line content and related services*
   f. *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 of non ICT industries

E-commerce of non ICT industries *is an industries that is not categorised under the ICT industry classification.*

8. ICT to economy

ICT to economy *consists of ICT industry and e-commerce.*

D. Production Accounts of ICT Industry

1. 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 producer 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.

2. Value added

Value added *is the difference between output and intermediate consumption. It represents the added value of goods and services by economic activity. Hence, it is approximately equivalent to commercial profit, salaries and wages, depreciation and indirect taxes; plus interest paid less interest received.*

3. Gross Value Added of ICT Industry

Gross Value Added of ICT Industry (GVAICT) *is the sum of Gross Value Added of all ICT industry.*

E. Generation Income Accounts of ICT Industry

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

Operating surplus refers to 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

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.

F. 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 ICT 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 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 non ICT industries which produce ICT products. 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.*

G. 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 non ICT industries.

H. Data sources

The data sources in compiling ICT Satellite Account 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* *Non ICT industries*	• *GDP* • *Economic Census* • *Annual Survey* • *SUT*
Exports and imports of ICT goods and services	• *External Trade Statistics* • *Statistics of International Trade in Services*
Tax and subsidies	• *GDP Income Approach*
Government final consumption expenditure	• *Financial Accounts of Federal Government, State Government, Local Authorities and Statutory Bodies*
Private final consumption expenditure	• *GDP* • *Household Expenditure Survey*
Gross capital formation	• *GDP* • *Gross Fixed Capital Formation*

INDUSTRY / DATA	DATA SOURCES
Compensation of employees	• *GDP Income Approach*
Gross operating surplus	• *GDP Income Approach*
Employment	• *Annual Labour Force Survey* • *Annual Economic Survey* • *Quarterly Survey of Services* • *Monthly Manufacturing Survey* • *Monthly Survey of Wholesale & Retail Trade*

I. Main Tables ICTSA

ICTSA comprises of nine (9) tables of each table and the explanation are as follows:

Table 1

ICT industry and non ICT industries that produce ICT products

Table 1 *contains the statistics 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 2A, 2B *and* ***2C*** *present the statistics 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 ICT products.*

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).

Net exports are one of the important variables used to calculate the GDP. When net exports are positive, it shows a trade surplus and when it is negative, it represents a trade deficit.

Net Exports = Exports Value - Imports Value

Table 5

Income components of ICT industry

***Table 5** consists statistics on income components of ICT industry comprises of compensation of employees, gross operating surplus and taxes less subsidies on production and imports. This statistics is derived using on SUT 2015 according to the ICT industry. For the subsequent years, data is based on published Annual GDP Income Approach.*

Table 6

Employment in the ICT industry

***Table 6** is statistics on employment data in the ICT industry. The statistics is compiled using Annual Labor Force Survey, Annual Economic Survey, Quarterly Survey of Services, Monthly Manufacturing Survey and Monthly Survey of Wholesale & Retail Trade are obtained by the Department of Statistics Malaysia.*

Table 7A, 7B and 7C

Gross Value Added of ICT Industry

***Table 7A, 7B** and **7C** comprise the Value Added statistics of ICT Industry at current prices. The measurement of Gross Value Added of ICT Industry is the sum of Gross Value Added of all ICT industry. Statistics is obtained from 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/ Usage of ICT and E-Commerce (ICTEC).*

Table 9 ***ICT contribution to economy***

Table 9 *is statistics to economy which is comprises Gross Value Added of the ICT Industry* ***(Table 7)*** *and the Gross Value Added of e-commerce by non ICT industries* ***(Table 8A).***

I. Publication and Data Revision

This publication presents ICTSA for the year 2015 to 2024. The series will be updated whenever any latest data available.

J. Symbols

-	:	*negative*
..	:	*not applicable*
e	:	*estimate*
p	:	*preliminary*
0	:	*value less than 0.05*
%	:	*per cent*