National Statistical Office Thailand

ONDE
Office of the National Digital Economy and Society Commission

Thailand's Digital Economy Policy and Statistics

Beijing, China, 15-17 November 2018

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Outline of Presentation

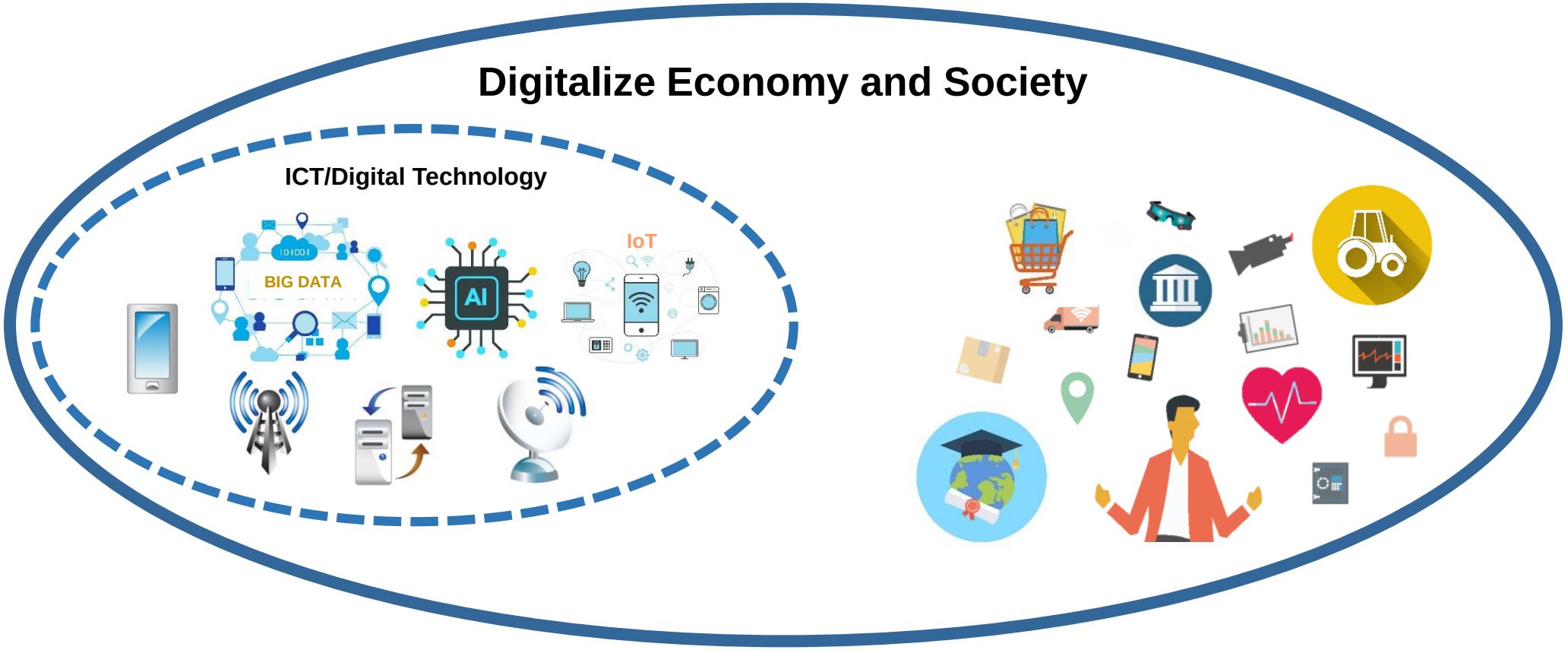
- Dynamic Context in the Digital Ages
- Thailand Digital Economy Policy Direction
- Thailand National Statistical System
- Data sources related to digital economy
  - •ICT Statistics
  - •e-Transaction Statistics
  - •ICT Infrastructures Statistics
- Use of data for competitiveness
- Challenges in measuring the Digital Economy
- Way forward

Dynamic Context in the Digital Ages

Challenges posed by Digital Technology Dynamics

- Exponential growth of technological changes
- Convergence of online and offline activities
- Tendency to use digital technology for production rather than consumption
- Competition on the basis of innovation
- Increasing prevalence of smart everything
- Data-driven competition
- Proliferation of cyberthreats
- Change in workforce structure

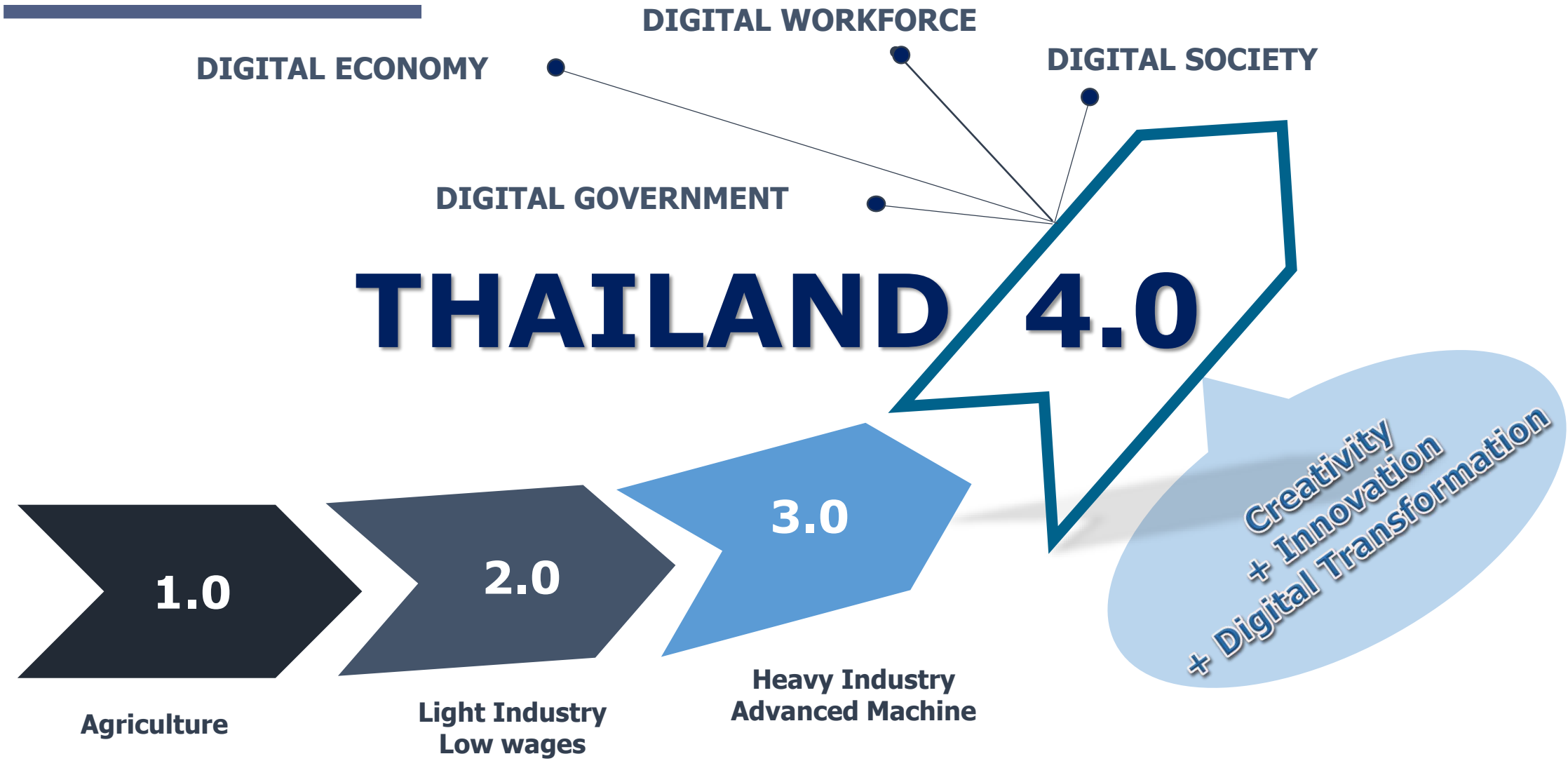
Shifting from ICT to Digitalize Economy and Society



Source: Adapted from Rumana Bukht & Richard Heeks, Centre for Development Informatics, University of Manchester, UK

Thailand Digital Economy Policy Direction

Thailand 4.0 Model



Digital Thailand Vision

Digital Thailand Strategy

Digital Law and Standard

Cybersecurity

Digital Manpower

Digital Literacy

Government Transformation

Digital Infrastructure

Smart City

Digital SMEs

Digital Manufacturing

Digital Agriculture

Digital Services

Digital Technology And Content Industry

Digital Community

Digital Learning and Knowledge

Digital Health

Digital Thailand 20 Years Landscape

Phase 1
Digital Foundation
Investing and building digital foundation

1 Year 6 Months

Phase 2
Digital Inclusion
Ensuring everyone can reap the benefits of digital technology

5 Years

Phase 3
Full Digital Transformation
Driving the country with digital technology and innovation

10 Years

Phase 4
Global Digital Leadership
Leading with digital technology and innovation
(Becoming a developed country)

10-20 Years

2017

2036

Digital Thailand Goals

Goal 1 — Raising the Country Competitiveness with Innovation

Goal 2 — Creating Equal Opportunity with Information and Digital Service

Goal 3 — Develop Human Capital in the Digital Era

Goal 4 — Revolutionizing government Operation for better transparency and effectiveness

Digital Thailand Key Indicators

1 Competitiveness

- Thailand will be placed in the top 15 of the World Competitiveness Scoreboard
- Digital sector will contribute at least 25% of the country's GDP

2 Equal Opportunity

- Every citizen must have access to broadband as a public utility
- Thailand will be placed in the top 40 of the ITU ICT Development Index (IDI)

3 Human Capital

- Every citizen will be digitally literate

4 Government Operation

- Thailand will be ranked in the top 50 of the UN e-Government Development Index

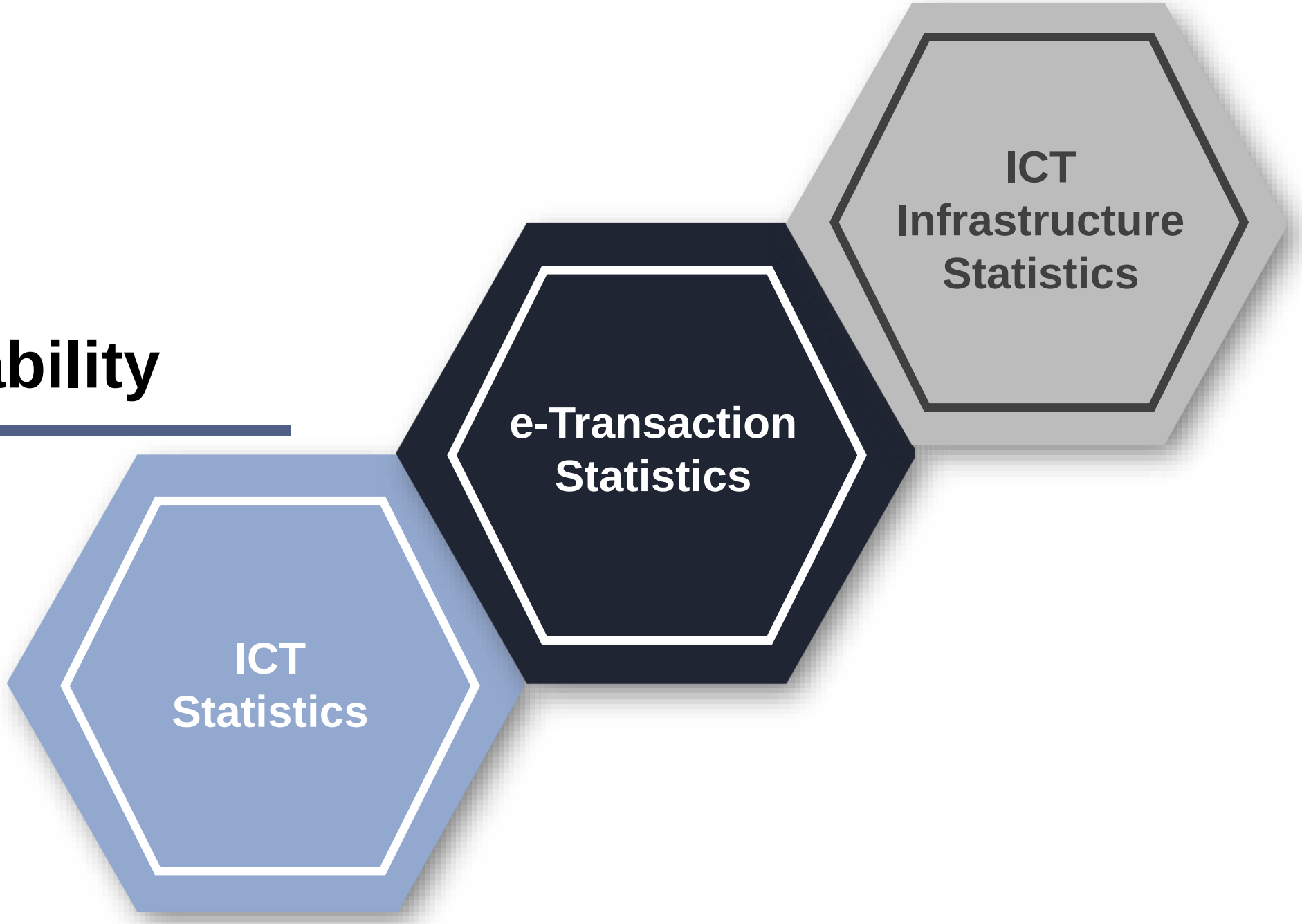
Thailand National Statistical System (NSS)

Thailand National Statistical System (NSS)

- The National Statistical Office (NSO) is **the central statistical organization** in Thailand, which produces basic statistics from surveys in almost all sectors.
- **Decentralization statistical system**
  A number of government agencies produce statistics and also administrative data from their reporting and registration system for their own purposes.
- NSO plays a key role in the **national coordination of statistical activities**
- **Statistical Act (2007)** prescribes NSO duties to formulate and implement Thailand Statistical Master Plan

Data sources related to digital economy

Data availability



ICT Statistics

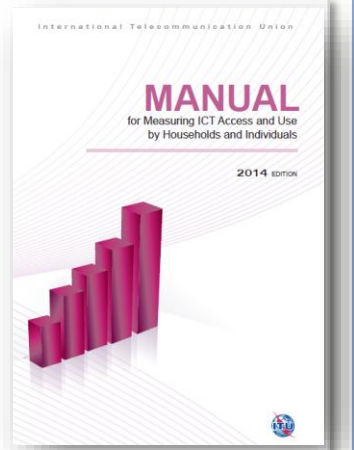
Highlight of national surveys which provide key competitiveness indicators and SDG indicators

- The Household Survey on the use of ICT: HS-ICT
- The Establishment Survey on the use of ICT: ES-ICT

ICT Statistics

01

The Household Survey on the use of ICT : HS-ICT



Conceptual Framework:

HS-ICT adopt the international Standard according to manual for measuring ICT access and use by Households and Individuals by ITU

Survey Coverage:

Private Household in all Provinces (77 provinces) both in Municipal and Non-municipal area

Frequency : Annually

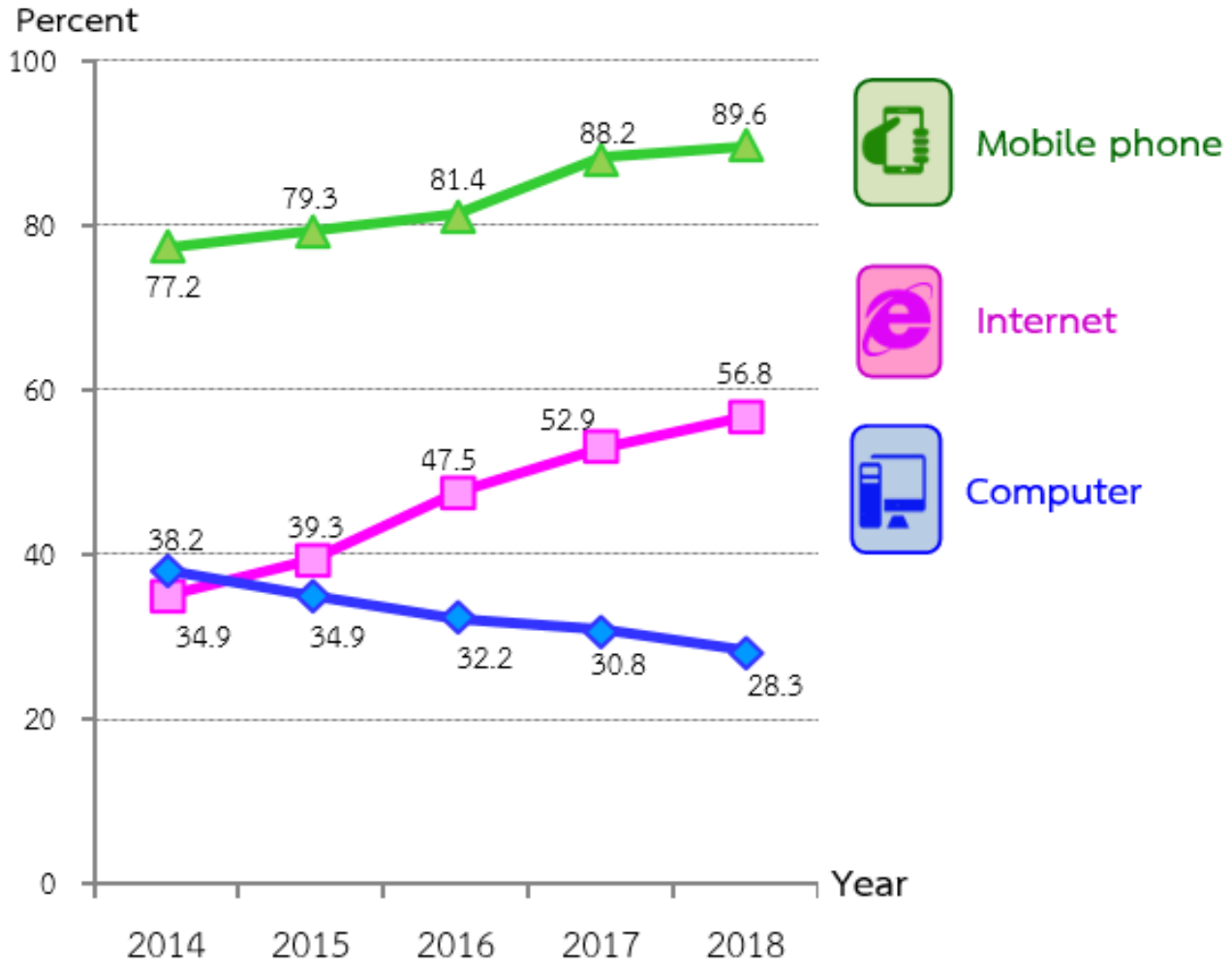
Sample size : 83,880 HH samples (Data collected by Interviewing head of HH and all members aged 6 years and above)

Data collection: Face to Face interviews (Using Tablet)

Data Items:

- Computer usage
- Internet usage
- Mobile phone usage
- ICT usage in household
- ICT equipment to watch TV program in household

Percentage of population aged 6 years and over who used information and communication technology in 2014-2018



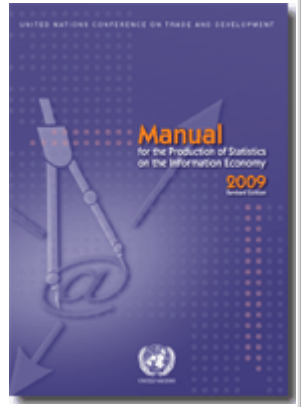
Source: The 2017 Households Survey on the use of ICT, NSO

ICT Statistics

02

The Establishment Survey on the use of ICT : ES-ICT

Conceptual Framework:
ES-ICT adopt the international Standard according to UNCTAD manual



Survey Coverage:
All establishments engaged in economic activity, Classified in accordance with the TSIC 2009 (Base on ISIC rev.4) as follows: Trade and Services, Manufacturing, Construction, ICT activities, Private Hospital activities

Frequency : Annually

Sample size : Around 35,000 establishments

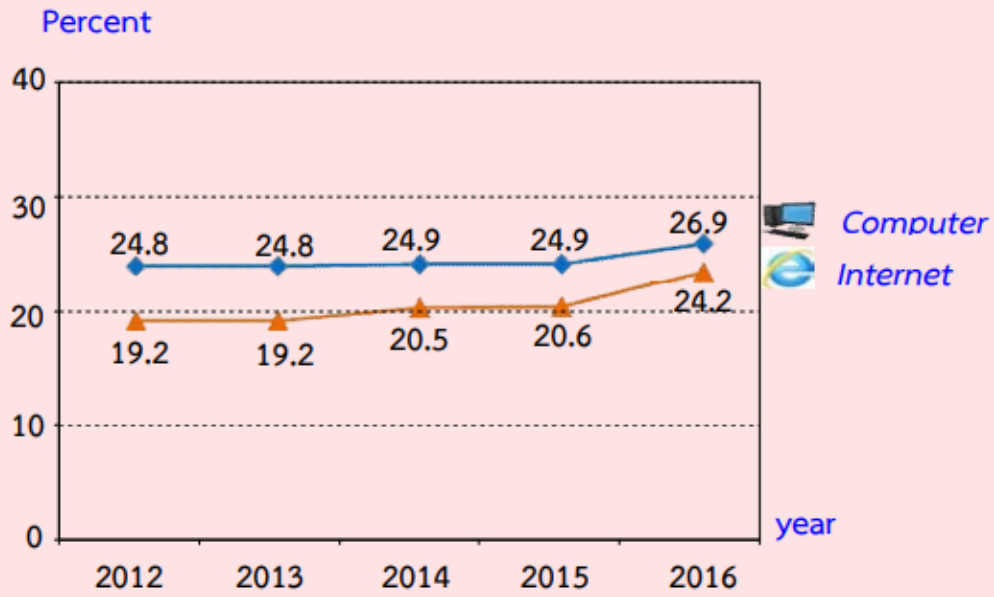
Data collection: Face to Face interviews (the paper-based questionnaire)

Data Items:

- Use of computers for business in the establishment
- Use of internet for business in the establishment
- Use of websites for business in the establishment
- Placing/receiving order for goods or services via the internet (purchasing/selling)
- Making/receiving a payment via the internet
- Expenditure on ICT usage
- ICT personnel in the establishment

Percentage of Establishments Using Computers and Internet in 2012 - 2016

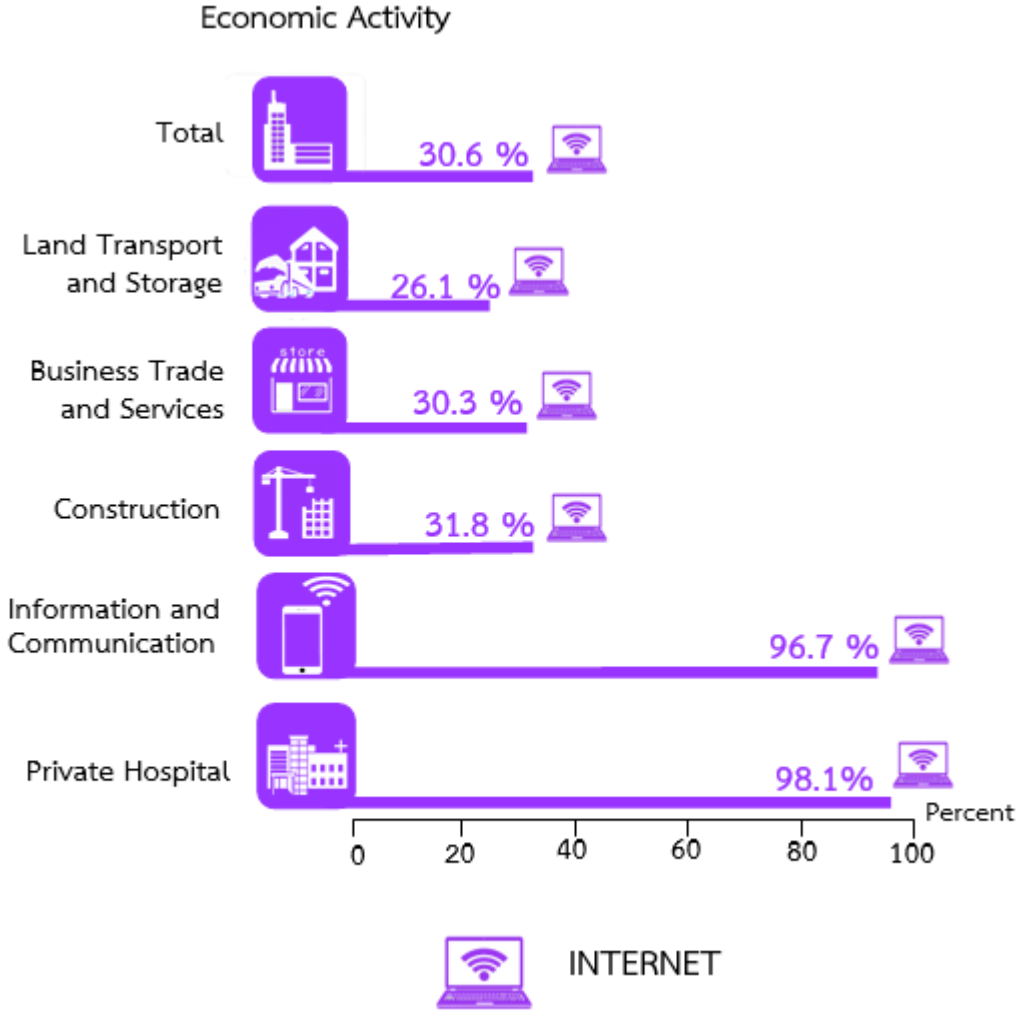
Figure 1 Percentage of Establishments Using Computer and Internet in 2012 - 2016



Note : Computers including tablets in 2016.

Source: The 2016 Establishments Survey on the use of ICT, NSO

Percentage of Establishments with Using Internet by Economic Activity in 2017



Source: The 2017 Establishments Survey on the use of ICT, NSO

Highlight some of ICT Surveys conducted by other agencies

ICT Statistics

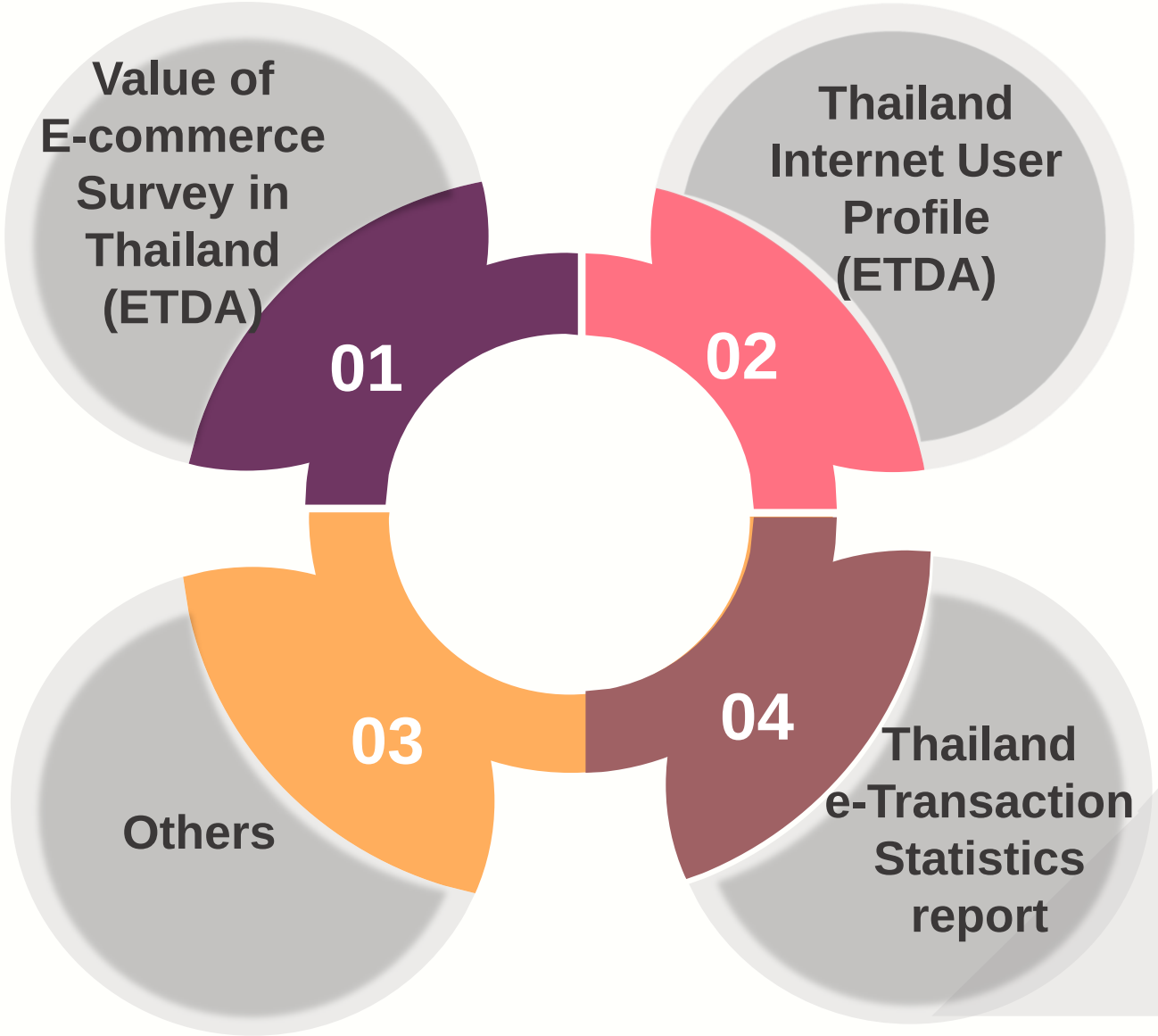
03

- **The Digital Content survey (DEPA)**
  - The value of Animation and Gaming Industry
  - The value of Character industry
- **The Software Market survey (DEPA)**
  - The value of Software/Software service
  - The value of Software-enabled service provider
  - The value of Software-using business
  - Software personnel Demand & Supply
- **The Survey of Value of Computer Hardware Market (NSTDA&MDES)**
  - PC, System, Peripheral
- **The Survey of the Value of Thailand's Communications Market (NBCT & NSTDA)**
  - **Communication Equipment** (Telephone Handset , TelCo Network Equipment , Wireline Equipment)
  - **Communication Service** (Fixed Line Service , Mobile Service , Internet Service)

Note:

- **Digital Economy Promotion Agency : DEPA**
- **Office of the National Broadcasting and Telecommunications Commission :NBCT**
- **National Science and Technology Development Agency :NSTDA**

e-Transaction Statistics

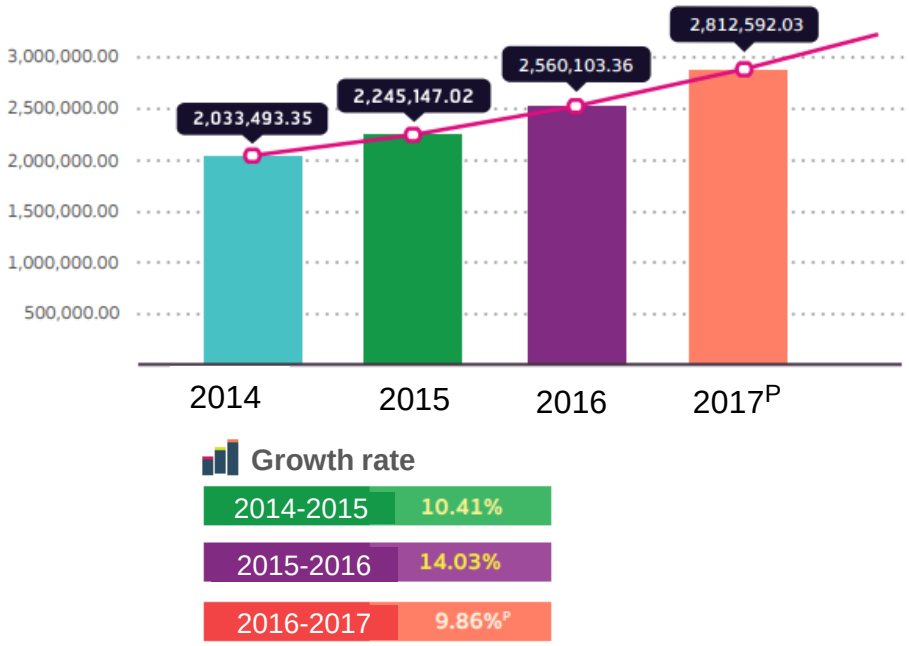


- E-Payment (BOT)
- E-Trading and Services (SET)
- E-Certificate (DBD)
- E-Health (MOPH)
- E-Filing and E-Reporting (RD)
- E-Tax invoice (RD)

01 E-commerce 2014-2017

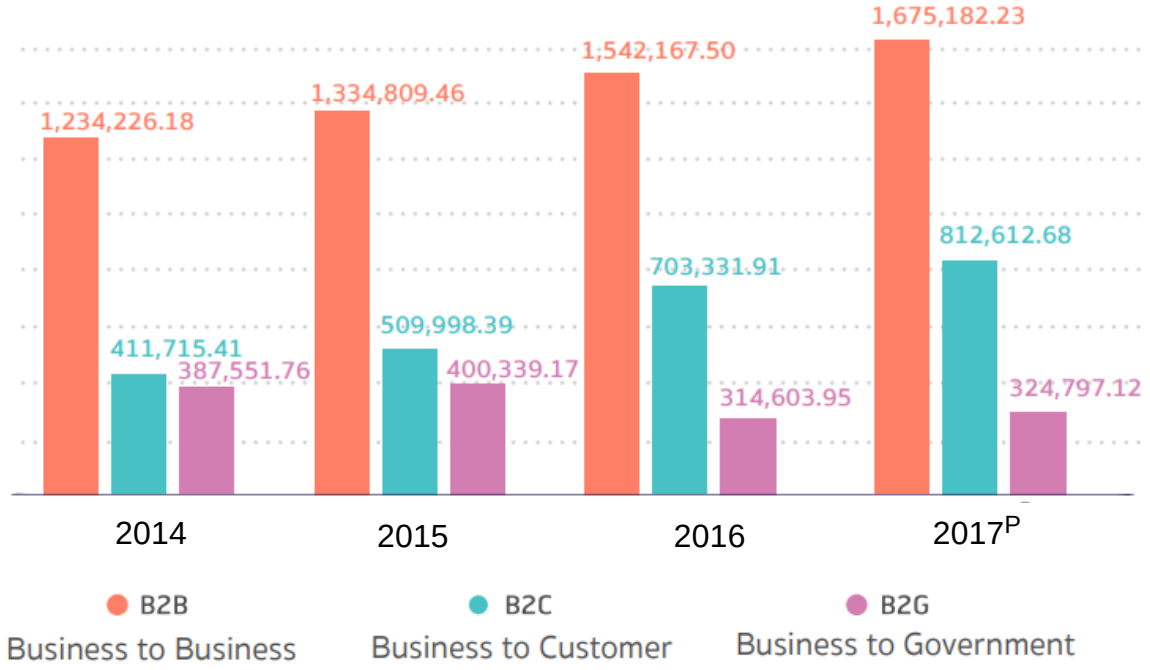
The value of E-Commerce in Thailand during 2014-2016 and projected value in 2017

Unit: million baht



The value of E-Commerce during 2014-2016 and projected value in 2017, according to type of operators (Including e-Auction)

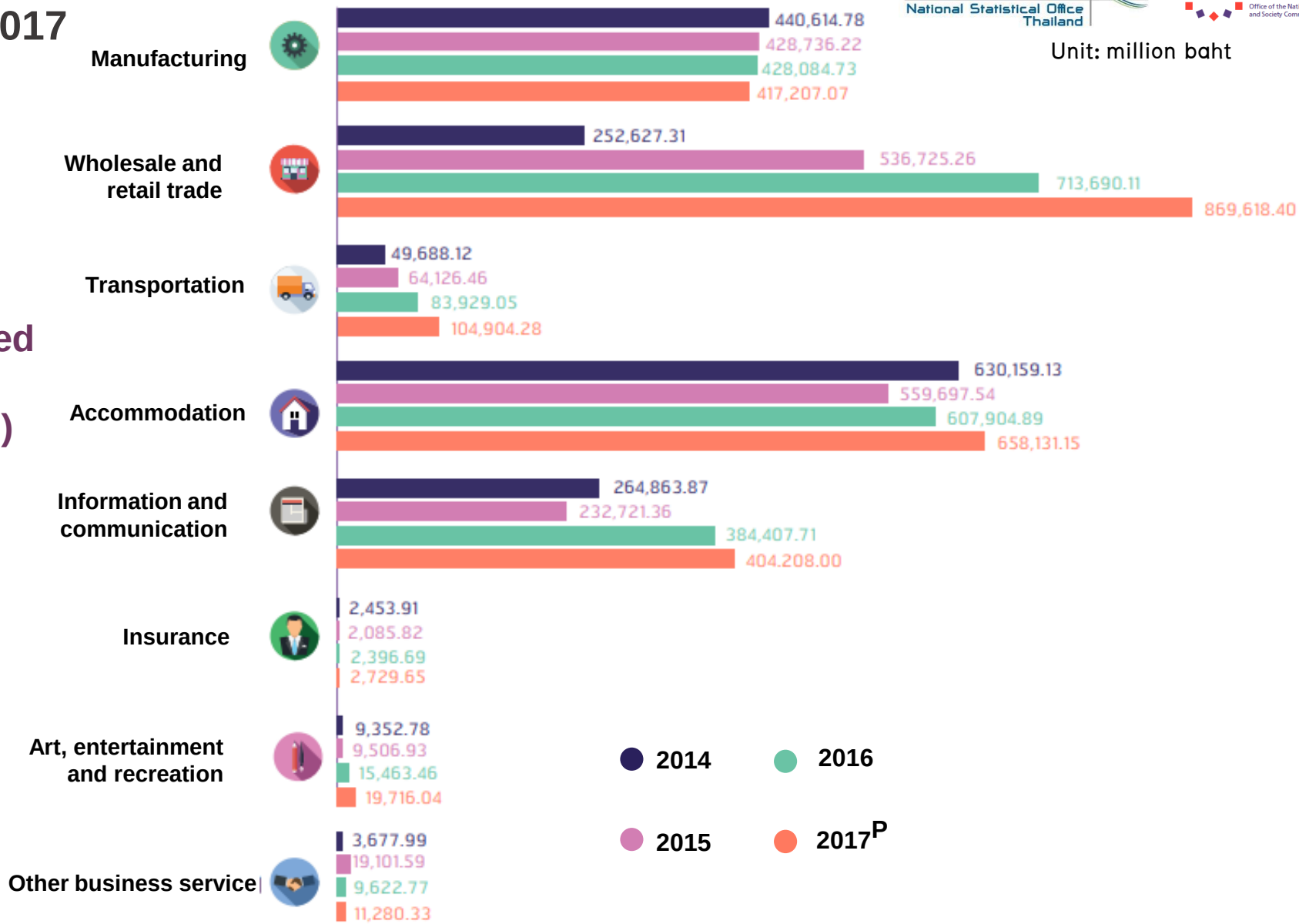
Unit: million baht



Source: Value of E-Commerce Survey in Thailand 2014-2017, ETDA

01 E-commerce 2014-2017

The value of E-Commerce during 2014-2016 and projected value in 2017, according to industry (excluding e-Auction)



Source: Value of E-Commerce Survey in Thailand 2014-2017, ETDA

ICT Infrastructure Statistics

ICT Infrastructure (Service provider infrastructure)

by Office of the National Broadcasting and Telecommunications commission (NBCT)

1 Telecommunication Infrastructure

a) Telecommunication infrastructure (Fixed Telephone)

- Fixed Line Subscribers
- Fixed Existing Number
- Fixed Line Penetration

b) Telecommunication Infrastructure (Mobile phone)

- Mobile Broadband Internet Subscriptions
- Mobile Broadband Subscribers per 100 Inhabitants
- Mobile telephone costs (IMD)
- Percentage of Population Covered by a Mobile Cellular Telephone Network (ITU)
- Investment Telecommunications (%) (IMD)

2 Internet infrastructure

a) Internet Infrastructure

- Internet Bandwidth
- International Bandwidth
- Domestic Bandwidth
- International Internet bandwidth per Internet user (NRI, GCI)
- International Internet bandwidth per inhabitants (ITU) (bits/second/inhabitant)
- Internet bandwidth speed (IMD)
- Number of ICT community Center (MDES)

Reports & Database

- Thai Telecom industry DB
- Mobile Market report (CAT TOT DTAC AIS TRUE) mobile revenue, mobile subscribers
- Fix Line market (fix line subscribers, fix line penetration per HH/ population)

Use of data for competitiveness

State of Digital Economy

DIGITAL THAILAND STATISTICS 2018

Competitiveness

Global Competitiveness 4.0 (World Economic Forum)

2017 Rank	2018 Rank
40	38
From 140 Countries	From 140 Countries

Ease of Doing Business (World Bank)

2018 Rank	2019 Rank
26	27
From 190 Countries	From 190 Countries

World Competitiveness (IMD)

2017 Rank	2018 Rank
27	30
From 63 Countries	From 63 Countries

DIGITAL

E-Government Index (United Nations)

2016 Rank	2018 Rank
77	73
From 193 Countries	From 197 Countries

ICT Development Index (ITU)

2016 Rank	2017 Rank
82	78
From 175 Countries	From 176 Countries

Global Competitiveness (Tech Readiness) (World Economic Forum)

2016 Rank	2017 Rank
63	61
From 138 Countries	From 137 Countries

Digital Competitiveness (IMD)

2017 Rank	2018 Rank
41	39
From 63 Countries	From 63 Countries

World Competitiveness (Tech Infra) (IMD)

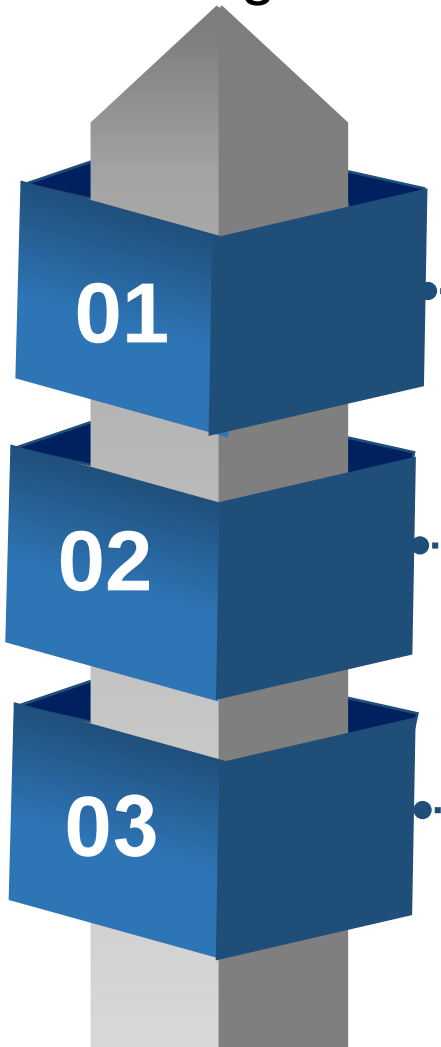
2017 Rank	2018 Rank
36	36
From 63 Countries	From 63 Countries

SPECIFIC

Total Population	Mobile Cellular Subscription	Mobile Broadband Subscription	International Internet Bandwidth	Internet Users		ICT Worker	E-Commerce Value
67.7 mil.	172.6%	94.7%	49.2 kbit/s	56.8%	45.2 mil.	386 Thousand people	78.1 Billion USD
(NSO 2018)	(ITU 2017)	(ITU 2017)	(ITU 2017)	(survey by NSO 2018)	(calc. by NBTC 2017)	(NSO 2017)	(ETDA 2016)

Use of data for competitiveness:

The examples of ICT statistics produced by NSO which provide the indicators for monitoring SDG Goals



SDG Goals	ICT indicators
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Proportion of individuals with ICT skills, by type of skills
Goal 5: Achieve gender equality and empower all women and girls	Proportion of individuals who own a mobile telephone, by sex
Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development	Proportion of individuals using the Internet

The examples of ICT statistics produced by NSO which provide competitiveness indicators

ICT Indicators	
Proportion of households with a radio	ITU
Proportion of households with a television	ITU
Proportion of households with fixed telephone	ITU
Proportion of households with mobile cellular telephone	ITU
Households with a Personal Computer	NRI
Proportion of households with a computer	ITU
Proportion of individuals who used a computer (from any location) in the last 12 months	ITU
Internet users	GCI, NRI
Number of internet users per 1000 people	IMD
Internet users per 100 persons	UN

Source: ICT Development Plan 2013-2015, NSO

The examples of ICT statistics produced by NSO which provide competitiveness indicators (Contd.)

ICT Indicators	
Proportion of individuals who used the Internet (from any location) in the last 12 months	ITU
Location of individual use of the Internet in the last 12 months	ITU
Internet activities undertaken by individual in the last 12 months	ITU
Frequency of individual use of the Internet in the last 12 months	ITU
Households with Internet access	NRI
Proportion of households with Internet access	ITU
Proportion of households with access to the Internet by type of access (narrowband fixed broadband mobile broadband)	ITU

etc.

Source: ICT Development Plan 2013-2015, NSO

Challenges in measuring the Digital Economy

Challenges in measuring the Digital Economy:

The issues in census / survey (traditional data sources)

Use of a combination of techniques to collect data:

1. Face to Face Interviews / using Tablet

- Low response rate
- Time consuming
- High cost

2. e-Survey via Web application / Mail questionnaire/ QR code

- Low response rate
- Still need to contact in person

Use of administrative data/ registers:

- Legal obstacle to access some data source
- An issue in data quality
- Still need to verify the administrative data/ registers

Traditional data sources ➡ response burden ➡ Combine with new data sources

Challenges in measuring the Digital Economy:

The issues in the measurement of the digital economy

- **The existent statistical data** (ICT/e-transaction/ICT infrastructure) does not seem to reflect the digitalize economy.
- **Definition and Scope** for the measurement of the digital economy and society are in development.
- **The framework of Digital Economy Satellite Accounts** has been studying and hasn't been finalized.
- New data source especially the unstructured data in the digital world are too large and too complex, **Data scientist are needed** in public sectors.

Way forward

Way forward

Internet of Things

Technology changes

Digital era

Industrial era

Traditional data sources

NSO was assigned to deal with BIG DATA issues such as BIG DATA usage (now, it is in process)

- Encounter with a problem in accessing big data own by private sectors
- However, it also depends on government policy to solve the problem. (amending a law)

BIG DATA will be used for statistical production, ETDA

- BIG DATA will be complementary of E-commerce survey by using them for producing E-commerce statistics every quarter rather than a year

Set up the SDU (Service Delivery Unit) under the ONDE to account for BIG DATA analysis

- BIG DATA specialists recruitment
- Provide BIG DATA analysis report to the government

Way forward

Thailand's Digital Economy Satellite Account (DESA-TH)

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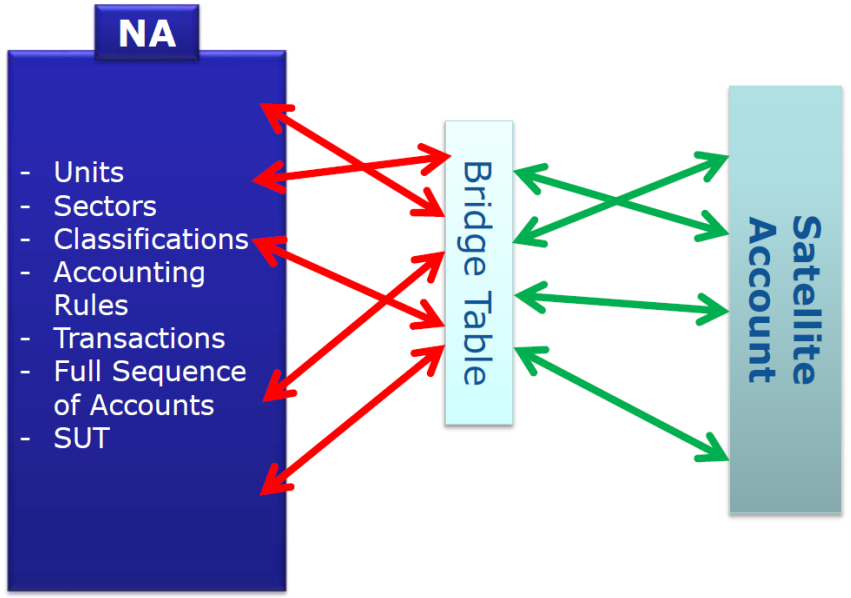
National Accounts

National Accounts are defined as a measure of macroeconomic categories of production, purchase and income activities in a nation.



Satellite Account

A Satellite Account is a term developed by UN to measure the size of economic sectors that are not defined as industries in national accounts.

"

"Methodology and Procedures for establishing Satellite Accounts"
Eurostat 2017

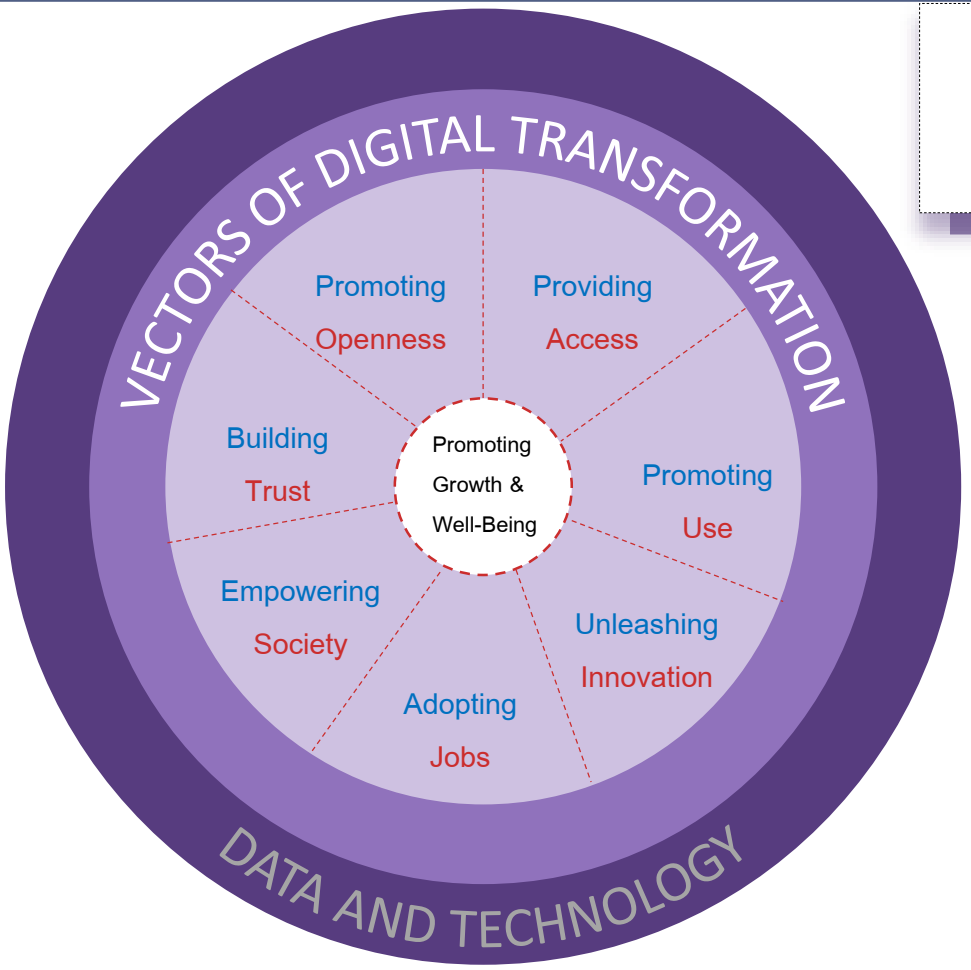
Tourism Satellite Account

- UNWTO's Tourism Satellite Account, The International Recommendations for Tourism Statistics 2008
- Thailand Ministry of Tourism and Sports is continuously developing the Tourism Satellite Accounts of Thailand

Digital Economy Satellite Account

OECD proposed framework for a Satellite Account for Measuring the Digital Economy : STD/CSSP/WPNA(2017)10

Way forward



Measuring the Digital Transformation thematic chapters

In the Context of the Going Digital Policy Framework

OECD & ONDE
Digital Economy Outlook Initiative

OECD's Related Data Survey (Outlook + Measuring)

Design methodology and questionnaire to cover all OECD requirement. (Data collected in specific area e.g. Ratchaburi, Etc.)
✓ Raw Data

Data Analytic Tools (Prototype)

Design a prototype analytic tools.
✓ Data Analytic Tools

OECD's Digital Economy Outlook 2020

- CDPE Meeting at OECD
- Workshop
- Press conference
✓ Cooked Data.

Thank you

謝謝