Thailand’s Digital Economy Policy and Statistics

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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

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 ECONOMY

DIGITAL GOVERNMENT

DIGITAL WORKFORCE

DIGITAL SOCIETY

THAILAND 4.0

1.0 Agriculture

2.0 Light Industry
   Low wages

3.0 Heavy Industry
   Advanced Machine

Creativity + Innovation
+ Digital Transformation
Digital Thailand refers to the country’s brilliance in taking full and creative advantage of digital technology to develop infrastructure, innovation, data capability, human capital, and other resources, thus propelling the country’s economic and social development towards stability, prosperity, and sustainability.
Digital Thailand Strategy

1. Develop countrywide high-efficiency digital infrastructure
2. Drive the economy through digital technology
3. Build an equitable and inclusive society with digital technology
4. Transform the public sector into a digital government
5. Develop workforce for the age of digital economy and society
6. Build trust and confidence in the use of digital technology

Strategies

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

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

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

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

1 Year 6 Months

5 Years

10 Years

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

e-Transaction Statistics

ICT Infrastructure 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
Highlight of ICT Surveys conducted by NSO

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
Highlight of ICT Surveys conducted by NSO

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
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
Highlight some of e-Transaction statistics produced by Electronic Transactions Development Agency (Public Organization): ETDA

- Value of E-commerce Survey in Thailand (ETDA)
- Thailand Internet User Profile (ETDA)
- Thailand e-Transaction Statistics report
- Others

○ E-Payment (BOT)
○ E-Trading and Services (SET)
○ E-Certificate (DBD)
○ E-Health (MOPH)
○ E-Filing and E-Reporting (RD)
○ E-Tax invoice (RD)
The value of E-Commerce in Thailand during 2014-2016 and projected value in 2017, according to type of operators (Including e-Auction)

<table>
<thead>
<tr>
<th>Year</th>
<th>B2B (Business to Business)</th>
<th>B2C (Business to Customer)</th>
<th>B2G (Business to Government)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>1,234,226.18</td>
<td>411,715.41</td>
<td>387,551.76</td>
</tr>
<tr>
<td>2015</td>
<td>1,334,809.46</td>
<td>509,998.39</td>
<td>389,651.17</td>
</tr>
<tr>
<td>2016</td>
<td>1,542,167.50</td>
<td>703,331.91</td>
<td>314,603.95</td>
</tr>
<tr>
<td>2017P</td>
<td>1,675,182.23</td>
<td>812,612.68</td>
<td>324,797.12</td>
</tr>
</tbody>
</table>

Unit: million baht

Growth rate:
- 2014-2015: 10.41%
- 2015-2016: 14.03%
- 2016-2017: 9.86%

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

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)
Use of data for competitiveness
State of Digital Economy

DIGITAL THAILAND STATISTICS 2018

Global Competitiveness
- 2017 Rank: 40 (From 140 Countries)
- 2018 Rank: 38 (From 140 Countries)

Ease of Doing Business
- 2018 Rank: 26 (From 190 Countries)
- 2019 Rank: 27 (From 190 Countries)

World Competitiveness
- 2017 Rank: 27 (From 190 Countries)
- 2018 Rank: 30 (From 190 Countries)

E-Government Index
- 2016 Rank: 77 (From 193 Countries)
- 2018 Rank: 73 (From 197 Countries)

ICT Development Index
- 2016 Rank: 82 (From 175 Countries)
- 2017 Rank: 78 (From 176 Countries)

Global Competitiveness (Tech Readiness)
- 2016 Rank: 63 (From 138 Countries)
- 2017 Rank: 61 (From 137 Countries)

Digital Competitiveness
- 2017 Rank: 41 (From 63 Countries)
- 2018 Rank: 39 (From 63 Countries)

World Competitiveness (Tech Infra)
- 2017 Rank: 36 (From 63 Countries)
- 2018 Rank: 36 (From 63 Countries)

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

- **Goal 4**: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- **Goal 5**: Achieve gender equality and empower all women and girls
- **Goal 17**: Strengthen the means of implementation and revitalize the global partnership for sustainable development

**ICT indicators**

- Proportion of individuals with ICT skills, by type of skills
- Proportion of individuals who own a mobile telephone, by sex
- Proportion of individuals using the Internet
The examples of ICT statistics produced by NSO which provide competitiveness indicators

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

Source: ICT Development Plan 2013-2015, NSO
The examples of ICT statistics produced by NSO which provide competitiveness indicators (Contd.)

<table>
<thead>
<tr>
<th>ICT Indicators</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of individuals who used the Internet (from any location) in the last 12 months</td>
<td>ITU</td>
</tr>
<tr>
<td>Location of individual use of the Internet in the last 12 months</td>
<td>ITU</td>
</tr>
<tr>
<td>Internet activities undertaken by individual in the last 12 months</td>
<td>ITU</td>
</tr>
<tr>
<td>Frequency of individual use of the Internet in the last 12 months</td>
<td>ITU</td>
</tr>
<tr>
<td>Households with Internet access</td>
<td>NRI</td>
</tr>
<tr>
<td>Proportion of households with Internet access</td>
<td>ITU</td>
</tr>
<tr>
<td>Proportion of households with access to the Internet by type of access (narrowband fixed broadband mobile broadband)</td>
<td>ITU</td>
</tr>
</tbody>
</table>

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

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Challenges in measuring 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

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 owned 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
Thailand Ministry of Tourism and Sports is continuously developing the Tourism Satellite Accounts of Thailand.


Tourism Satellite Account
- Thailand Ministry of Tourism and Sports is continuously developing the Tourism Satellite Accounts of Thailand

Digital Economy Satellite Account

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

Way forward

Thailand’s Digital Economy Satellite Account (DESA-TH)
Way forward

OECD & ONDE Digital Economy Outlook Initiative

OECD’s Related Data Survey (Outlook + Measuring)

Data Analytic Tools (Prototype)

OECD’s Digital Economy Outlook 2020

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

Design a prototype analytic tools.
 ✓ Data Analytic Tools

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

Measuring the Digital Transformation thematic chapters

In the Context of the Going Digital Policy Framework
Thank you

謝謝