Introduction to Thailand 4.0

Driving the country to value-based economy era

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Abstract

The Royal Thai government has formed the national direction to support economic and social development by using digital technology (information and telecommunication with innovation) as a strategic tool. Since 2014, there have been many of new proprietary words regarding Thailand's direction, for example, Thailand 4.0, Digital Thailand, and Digital Economy (DE). Those have been supporting the country's direction and change its positioning to a developed country. In this article, the authors intend to illustrate background of national scheme of Thailand 4.0 to enhance country development by using ICT and innovation to drive the country's economy. In this paper, the study will identify the DE policies and initiatives, Government plans of development and using the information management on the broadband network to earn higher incomes and increasing the quality of life. The projects initiated and measures taken by the Government of Thailand in the financial services, healthcare, transportation and government sectors have been launched to boost up the Thai economy.

Introduction

With globalization, the society is constantly changing by information technology and Internet access which play an important role in communication, social, political, economic or even environmental. Because of the rapid-technological advancement, many countries are moving up their focus on developing infrastructure to enhance the information technology and innovation. The data transmission, not only text messages but also pictures such as VDO conference, are important to make use of information technology faster and more efficient. The perception is very convenient and faster and hence requires a good core broadband infrastructure.

Generally, the national economic and social development plan is required for long term development, while Thailand has been implementing the 11th plan during 2012-2016. The next is 12th plan (currently is in a draft) will replace the 11th plan in 2017, which will be divided into 10 strategies, where Thailand 4.0 scheme is one layer of them. However, this ongoing national plan seemed to focus on economic and social circumstances based on country strategic positioning by increased economic growth and sustainablity, while there is partial focus on digital technology promotion and adoption by using both information and telecommunication technology (ICT).

Since 16 September 2016, Ministry of Information and Communication Technology has been transformed to Ministry of the Ministry of Digital Economy and Society. The role of the Ministry of Digital Economy and Society is to enable leaders to take governments' decision based on the real time and reliable information. Of course, the government leaders in many countries realize that the quality and performance on the connecting network would directly affect developing countries. In order to monitor the countries in the crisis situation, a stable and qualified network is required which is called as broadband network. In the past, according to ICT2020 Policy Framework and Broadband Policy, Ministry of ICT has tried to accelerate connecting broadband network to develop ICT infrastructure in Thailand.

The country development model has been starting from Thailand 1.0, which emphasizes on agricultural development, and Thailand 2.0 and 3.0 mainly focused on manufacturing development (both light and heavy industries) and export business. However, those 3 versions improved the country positioning from low middle-income to upper middle-income range but cannot shift to high-income country due to the middle-income trap situation like limitations in productivities, technology transfer, human capital management, FDI policy, as well as research and development (R&D) plan. In addition, the other traps to obstruct the country growth are inequality trap and imbalance trap.

In this article, the authors intend to illustrate background of national scheme of Thailand 4.0 to enhance country development by using ICT and innovation to drive country's economy. Focusing on this scheme, there are many vertical sectors influencing the economy such as manufacturing, agriculture, financial services, healthcare, transportation, and government sectors. The information has been gathered by interacting with the executive officers of the International Telecommunication Unions (ITU), the National Broadcasting and Telecommunications Commission (NBTC), Ministry of Information and Communication Technology, Thailand, by interviewing the officers of government departments: Ministry of Finance (MOF), Ministry of Commerce (MOC), Ministry of Public Health (MOH), Ministry of Education (MOE) and etc.

Driving the country by Thailand 4.0 scheme

To increase the competitiveness and shift to high-income category country,

Thailand 4.0 scheme is raised as a national scheme to increase productivity by introducing and adopting technologies and innovations along with value creation to build a new economy platform.

The Thailand 4.0 is a scheme to transform the current economy platform, which is propelled by non-agricultural sectors, to value-based economy, that requires ICT and innovation. This scheme expected to increase the country's productivity, competitiveness, as well as to increase the income of population. According to a message of Deputy Minister of Ministry of Commerce, driving of Thailand 4.0 scheme requires 3 engines of growth factors. These are (1) Productive growth engine, driven by technology and innovation; (2) Inclusive growth engine, driven by provincial economy cluster, building good business environment, and negative income tax; and (3) Green growth engine, which promote and support green technologies such as renewable energy to balance between cost and lost advantages of environmental effect.

New economy model as the value-based economy would have impacts in the following ways:

1) From production-based to services-based economy: This will be accomplished by building national human capabilities (or national human capital development) of citizens in the country. In fact, high skill human resources generate high services value and productivity stimulating the economic system. Moreover, more skilled citizens generate higher income for the country in the long run.
2) From "general" to "innovative" products and services: By building awareness and promoting research and development. In term of product development, the production of cross-functional product concept would be presented in the new product development process (NPD).
3) From industrial-driven to technology and innovation-driven country: This will be done by government policy initiatives and implemented by government agencies to support innovation practices in the real sectors.

   For example, The Board of Investment of Thailand (BOI) provides different types of incentives in several dimensions such as tax reduction or special privileges for innovative manufacturers or enterprises that demand high skill, technology, and innovation.

   Another agency that supports innovation-driven strategy is The National Innovation Agency (NIA) in providing innovation support in 5 strategic-based innovating programs, led by the Royal Thai Government initiative. These are Innovation for kitchen to the world, Organic agriculture business, Bio-based materials, Bio-medical industry, and Clean energy industry.

Government in action: from 6 pillars to digital economy

To achieve Thailand 4.0 scheme, digital infrastructure improvement in several dimensions is required to support roll-out plan. Digital Economy (DE) roadmap plays an important role for its development. As the first step, the Royal Thai Government has continued to push this roadmap to be adopted nationwide by dividing into 6 pillars since 2014 and amended to 6 major driving strategies in 2015 to ensure that the digital economy roadmap will be implemented to support digital infrastructure improvement. These 6 strategies to drive digital economy roadmap are:

1) **Hard infrastructure development:** This involves network infrastructure improvement and expansion to reduce digital divide and Internet penetration gap. Broadband penetration expansion nationwide and network infrastructure and frequency of policy development plans are examples.
2) **Soft infrastructure development:** This strategy is to review and issue the law and regulation supporting digital economy. Definitely, there are a number of laws and bills to be revised and updated to cope with the digital economy era. For example, digital economy and personal data protection (online) bills are prioritized in this pillar.
3) **Service infrastructure development:** To enhance digital services such as building of an open data standard platform at national level and providing government's electronic platform like "e-service" as a digital gateway to serve businesses and individuals.
4) **Digital economy acceleration:** It is to optimize and promote business competency and increase business competitiveness for future competition. For example, to encourage SMEs segment to utilize digital technology in business, promote new digital entrepreneurs with innovation, and promote research and development with innovation that is related to digital businesses.
5) **Digital society development:** This strategy is to improve digital society readiness in several dimensions. These are: preparation of Thai citizens to digital era, increase equality of technology access, develop digital content for whole life learning, increase net income of the Thai citizens, and augment the Thai educational system by using digital and relating technologies.
6) **Digital workforce development:** This strategy involves human capital development in both private and public sectors to understand and familiarise with digital platforms. The strategy moreover promotes skill set development (interdisciplinary), builds international workforce networks, and facilitates expatriate workforces in special professions for working in the country. Last but not the least, it plans to develop government' CIOs to be aware and ready for digital economy and technologies in the near future.

In the roadmap, these 6 crucial strategies will drive the national strategic plan named Digital Economy and Society Development Plan that brings Thailand to DIGITAL THAILAND theme and support the country to Thailand 4.0 era. The plan

is aligned with strategies and composed of a number of ICT projects implementation.

DIGITAL THAILAND examines about the use of creativity and innovation of digital technology to develop infrastructure, human capital, and other resources to push country's economic and social development for stability and sustainable development.

DIGITAL THAILAND theme divides country's development into 4 phases with 20 years' timeline. In a whole picture, it is starting from building digital infrastructure capabilities in order to be ready for digital economy and society effectiveness. The goal of the theme is to bring Thailand to become a developed country within the timeline. The plan can be divided into 6 driving dimensions, which are aligned with 6 strategies of digital economy roadmap as follows:

Dimension 1: Infrastructure improvement and development for digital coverage nationwide
Dimension 2: Business and economy driven by digital technology
Dimension 3: Social quality improvement with digital technology
Dimension 4: Government transformation: transforms all government processes and services to digital government platform
Dimension 5: Develop country's workforce to be available for digital economy and society
Dimension 6: Build confidence on the use of digital technology

During the first 18 months during the digital foundation phase, Ministry of Digital Economy and Society (MDES), formally Ministry of Information and Communication Technology (MICT) will be taking care of infrastructure improvement and development. As a technological infrastructure possibility, the ministry is going to implement a number of new ICT initiative projects. These are new Wi-Fi network expansion with at least 10,000 hot spots nationwide to increase the coverage serving areas, expand broadband Internet to village level, promote new business to business tourism online service platform for SMEs named Tourism Thailand Open platform, and initiate at least 1,500 new entrepreneurship incubation programs for Tech Start-up.

As new digital ecosystem platform, it has a plan to promote smart city for 4 provinces, where Phuket and Chiang-Mai provinces will be pilot provinces at this stage. In addition, as social and public services possibility, at least 600 prototype community-based digital centers (Tambon level) will be constructed and to transform pilot 79 traditional government services platforms to smart services platforms (digital platforms) to serve businesses and individuals. These project implementations are the first move to change Thailand to DIGITAL THAILAND and be as an essential piece of initiative from technological side to transform our country to be Thailand 4.0.

Next to digital foundation phase, DIGITAL THAILAND I-focusing on inclusive growth and development will be followed with a 5 years implementation period. The goal of this phase is for everyone to access and use digital technology for economy and social life. It will start transforming to digital-oriented country.

Phase 3 is called DIGITAL THAILAND II. This is a full country transformation phase, which will be happening within 10 years of its theme. The country will be driven by digital technology and innovation. Some key measurements of this phases are full use of digital technology by businesses, have capability to compete in global market, access to digital technology equally by all, and wide adoption of digital public services where technologies are used in every process of government operational services to improve quality of life.

Phase 4 is named Global Digital Leadership, which transforms and changes country's positioning to developed country in 20 years. All digital technologies will be utilized to keep the country sustainable.

Thailand 4.0 implementation

Thailand 4.0 scheme can be applied to leading industries to enhance product development and services innovation. Introduction of emerging technologies and innovation adoption will increase service competencies, market competitiveness, and value of products and services. Finally, these will increase national income and stimulate economy of the country. Examples of technology and innovation adoption in leading industries are demonstrated as follows:

1) **Food, agricultural and biotechnology industries:** Emerging technologies and biotechnology will by applied to increase yield and productivity of food products. In term of agriculture, Smart farming concept is used by applying smart sensors, IoT devices, and ICT to help agriculturists and farmers to monitor corps and agricultural products. These will enhance both quality of life and quality of work.
2) **Healthcare industry with medical technology:** Advanced diagnosis technologies and ICT will be applied in this industry to enhance quality of services. In term of services adoption, Digital Health platform enables the use of various digital technologies to support clinical practice, reduce diagnosis time as well as accuracy and precision improvement. In Thailand, currently, there are many emerging medical technologies supporting medical professionals such as telehealth and tele-medicine, advanced diagnosis modalities like online computed tomography (CT) and magnetic resonance imaging (MRI), positron emission tomography (PET) scan, smart mobility in the form of wearable devices for personal care and pre-diagnosis purposes, and health information technology such as electronic medical record (EMR) and laboratory information system (LIS). Those technology adoptions generate revenue stream and increase professional service capability in this sector.
3) **Manufacturing industry:** A parallel theme named Industry 4.0, drives all manufacturers to adopt ICT and innovation to enhance productivity and accuracy. These technologies

include machine-to-machine communication (M2M), IoT, embedded system, advanced robot control system, artificial intelligence (AI), and machine learning system. Details will be elaborated in Thailand Industries 2025 (T.I. 2025) session.

Government initiatives

The Thai government is developing a national e-payment system comprising Thailand 4.0 and Digital Economy Master Plan 2016 which has been operating since the middle of 2016. Actually, Any ID, the first module which is a collaboration between the Ministry of Finance and "the Bank of Thailand, will enable anyone to transfer money and make financial transactions using their ID card, mobile number or email address. All companies will be required to register with the Commerce Ministry to be equipped with the EDC system.

Thailand's payment environment is changing as more people adopt smartphones, use online and mobile banking, and the financial infrastructure becomes more supportive of electronic payments, including mobile. Key drivers of mobile payments include broad smart-phone adoption, developed financial infrastructure, and consumer interest in payment innovation. Although mobile payment availability is currently limited in Thailand, consumers are eager to try digital wallets and other new technologies. Barriers evaluated include preference for cash, security concerns and consumer behavior.

Thailand has 110 million mobile subscribers, expected to rise to 150 million in 2016 (according to NBTC). This gain will be fuelled by the continued growth of mobile data users and the arrival of machine-to-machine communications or the Internet of Things. Thailand has more than 40 million mobile internet users and only 35 million desktop internet users. It is a mobile-first country.

Smartphone adoption

Availability of affordable smart phones in recent years has fueled a shift from feature phones to smart phones across Southeast Asia, including in Thailand. Smart phones are becoming an increasingly ubiquitous and essential part of daily life for Thais. In Q1 2015, 76.5% of the 4.3 million handsets sold in Thailand were smart phones. According to Nielsen's 2014 Smartphone Insights study, 58% of Thais owned smart phones in 2014, up 9% from 49% in 2013 and is projected to reach 100% by 2018. The survey by Nielsen also found that smart phone adoption is more prevalent among the affluent, younger and urban consumer segments, not unlike adoption in the U.S. Similarly, Google found that 64% of Thais used smart phones in 2014.

Availability of affordable smart phones in recent years has fueled a shift from feature phones to smart phones in Thailand. Thailand's mobile industry consists of three leading mobile network operators (MNOs): Advanced Info Service (AIS), DTAC, and True-Move. Most mobile subscriptions are prepaid (85%) and a smaller percentage is postpaid (15%). Android has 74% of the smart phone operating system (OS) market share, far ahead of Apple iOS with 17%. Widespread availability of faster mobile network service (3G/4G) has allowed Thais to use a broader range of features and capabilities on their smart phones, including mobile banking and commerce.

Financial infrastructure helps to promote electronic and mobile payments

The Bank of Thailand's (BOT) objectives include developing payment systems infrastructure and formulating policies that promote safety and efficiency in the national payment systems. In conjunction with the expanding financial infrastructure in Thailand, the BOT in 2011 issued its Payment Systems Roadmap 2012-2016 that promotes broader use of electronic payments, including mobile, as one of its key projects. The BOT has been working with financial institutions (FIs), businesses, and government agencies to encourage use of electronic payments in both the public and private sectors through development of standard processes, regulatory modifications and other economic incentives.

Thailand has a highly developed financial sector with bank branches and ATMs widely available. According to the World Bank, 78% of the country's population over 15 years of age had a bank account in 2014. Despite the prevalence of cash payments, the number of credit and debit cards issued has been increasing rapidly, and credit cards are beginning to penetrate the low-income market. Debit cards are replacing ATM cards. The growth in point-of-sale (POS) terminals is resulting in broader merchant acceptance of payment cards. Additionally, several large banks now offer mobile POS services that work with plug-in card readers attached to Android and iOS mobile devices (e.g., Krungri Bank's Quick Pay and Kasikorn Bank's K-Merchant on Mobile), making it easier for small businesses to accept card payments and reduce cash.

Consumer interest in payment innovation

A growing number of Thais conduct banking transactions via the mobile channel. Mobile banking enrollment rose steadily between 2010 and 2013, representing a CAGR of 31%. Data on mobile banking activity was limited until the BOT revised its definition to distinguish between online and mobile banking in 2014, resulting in more FIs reporting their mobile banking data. The number of enrolled bank accounts increased 435% from 1.2 million in 2013 to 6.2 million in 2014. Mobile banking transaction volume and value also increased during this period. Most large banks now offer mobile banking services, and many have apps for Android and iOS devices. Similar to FIs in the United States, basic features include checking account balance and activity, fund transfers, bill payment, and branch/ATM locator. The 2014 McKinsey Asia Personal Financial Services Survey found that 15% of Thais used mobile banking in 2014, an increase from 9% in 2011, with usage skewing towards affluent and younger consumers. In comparison, in the U.S., use of mobile banking among mobile phone users with a bank account was much

higher – 39% in 2014, an increase from 21% in 2011.

Mobile technologies drive mobile payments

The Thai market is embracing multiple technologies for mobile payments, such as QR codes, near field communication (NFC) and in-app solutions. For example, Uber launched its mobile app for taxi and rideshare service in Bangkok in early 2014. Starbucks implemented its QR code mobile payment app at all 215 locations across Thailand in March 2015. In July 2015, LINE mobile messaging app launched a mobile payment feature called LINE Pay that allows users to register their credit and debit cards to make payments at affiliated online and physical POS stores. Some retailers, including Tesco Lotus, Big C, Family Mart, Tops and Starbucks, are equipped with contactless POS terminals that can accept mobile NFC payments, although not all are NFC-enabled yet.

Thai consumers are interested in mobile payments

Consumers are interested in making mobile purchases and trying new technologies, such as digital wallets and contactless mobile payments using NFC. Thais are open to trying new mobile payment technologies. More than half (57%) of respondents in Deloitte's 2014 Global Mobile Consumer Survey said they would use an in-store mobile payment solution if available. Additionally, over three-quarters of the same respondents indicated they would be "somewhat" or "definitely" likely to use digital wallets (77.4%) and mobile NFC payments (76.4%) if the technologies were available, even though fewer than 7% of respondents currently use either method.

According to Visa's 2014 Consumer Payment Attitudes Study, 61% of Thai consumers are "aware of" and 66% "prefer" to use contactless payments, indicating a strong consumer desire to use new payment technologies. However, less than one percent of credit and debit cards are contactless and only two percent of POS terminals are NFC-enabled, limiting consumer opportunities to make NFC payments in Thailand. Visa has been working with FIs and merchants to expand contactless issuance and acceptance, and partnered with McDonald's in 2014 to launch contactless readers in their restaurants across Thailand.

Increasing mobile financial services in Thailand

Mobile users in Thailand are now able to conduct money transfers across three leading mobile networks, thanks to the collaboration of mobile money systems among operators. Starting from 1 December 2015, mobile users can directly transfer money across the three mobile networks to a receiver simply by entering the receiver's mobile number without a bank account. The maximum amount of transfer is limited to 10,000 baht per transaction, with maximum transfers capped at 30,000 baht per day. Operators will charge a fee of five baht per transaction, good until the year-end. Thailand has 5.5 million e-wallet users. Of the total, 4 million use AIS's mPay service, and the rest use True Move's True Money service. DTAC plans to roll out its e-wallet service, called Jaew Wallet. The mobile payment service through the three operators is expected to be worth 90 billion baht this year. A report by the Thai Bankers' Association estimates e-payments will allow the country to save 100 billion baht a year incurred from cash transactions after its five-year "Payment Roadmap" through 2019 was completed. MasterCard provides security and authentication systems including interoperability networks under this collaboration, while Thanachart Bank provides the settlement system. Universal e-wallet could also be expected to widen the opportunities for mobile commerce, particularly among users who do not want online purchases to have any link to a bank account or credit card.

Different types of market players are taking the lead in pioneering services, developing relationships with customers and capturing revenues. These players include financial institutions, mobile operators, technology companies and large merchants as below.

For instance, the technology company such as "Line Pay service" is now available in Thailand. Apart from Japan, Line will focus on countries where it has a strong mobile user base, including Thailand, Taiwan province of China and Indonesia. Thailand 33 million Line users, while there are 205 million users globally. The service received an e-payment license from the Bank of Thailand. Line earns revenue from stickers, games, music and digital content for television streaming, as well as the e-commerce marketplace, business-to-business marketing and mobile payment

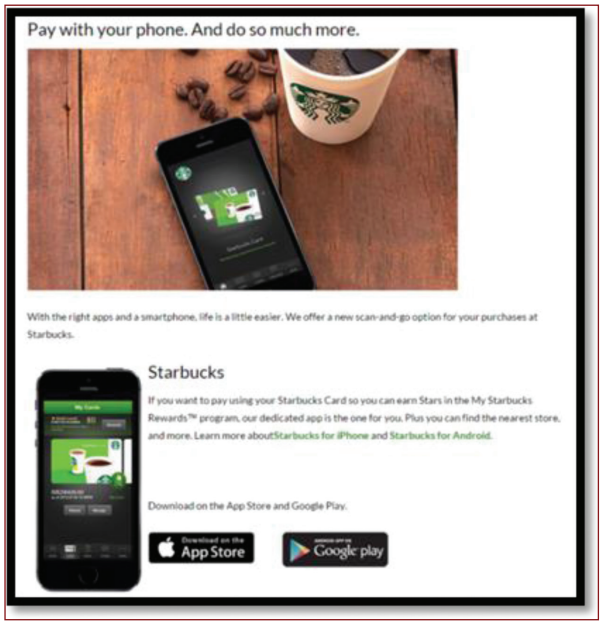

Figure 1: Starbuck's mobile payment service

services. To access Line Pay, users register their personal information and credit or debit card number in the Line Pay app. Goods and services can be bought using a bank account with pre-deposited cash for purchases.

Another example for the large merchants: Three technology companies have collaborated to provide the first cloud-based mobile payment platform in Thailand that allows users to process credit card payments on their smart phones. MFEC Plc, Simply Tapp from the US and Japan's TIS Inc have jointly developed the NFC-based mobile payment service, called the Asian payment cloud project. SimplyTapp has created Host-Card Emulation (HCE) technology, which enables NFC-enabled devices operating on the Android system to use mobile phones to accept credit card payments via NFC-ready point-of-service terminals. Visa and MasterCard have supported HCE technology since last year. Up to 65% of Android-based devices globally use SimplyTapp's HCE technology. HCE can eliminate the dependency on mobile operators as the technology returns control of payment issuance back to the card issuers. Currently, NFC mobile payment requires users to change their SIM card, causing inconvenience to users and eroding the adoption of mobile payment services. Thailand has 10,000 NFC-enabled point-of-service terminals. NFC-ready mobile handsets account for 20-25% of total Android-based smart phones.

The second module to follow will be an expansion of the Electronic Data Capture (EDC) software that collects and stores customer data. The country now has only 300,000 EDC units while it expects another 2 million EDC units required. EDC uses point-of-sale terminals or specialized software for online transactions to submit and validate transactions to a merchant account provider or some other transaction processor. E-payment is aimed at allowing people to access money transfer services even if they do not have a bank account, serving e-commerce, stemming loopholes in the tax system and directing subsidies to the underprivileged. To facilitate the national e-payment system, the amended draft on e-payment will seek cabinet approval.

The third module will link e-payments and the Revenue Department's taxation system, making tax collection more efficient, as the e-payment system will allow the government to receive transaction data.

The fourth module will help the government to subsidize all low-income earners directly by using only their ID cards. Finally, the fifth module will be a campaign offering incentives to make e-payments. The national e-payment plan is expected to be forwarded for cabinet approval.

By the way, the policy-makers and regulatory bodies are balancing two broad aims regarding mobile payments and related services:

1) Ensuring that any new financial services are regulated to protect consumers and prevent misuse; and
2) Encouraging the development of services that will bring significant economic and social benefits.

Thailand Industries 2025 – A parallel concept contributing to Thailand 4.0

Thailand Industries 2025 or T.I. 2025 is an industrial concept of Thailand, let by The Federation of Thai Industries (F.T.I.) to follow Industry 4.0 era. The objective is to upgrade existing Thai industries to world class leading industries for better competitiveness, targeted in the next 10 years. According to the T.I. 2025 plan, the goal is to transform at least 50% of manufacturers to comply with Industry 4.0, which operate and manage by not only automation system but also digital workflow while machine to machine communication (M2M), artificial intelligence, and Internet communication will be integrated as common practice in manufacturing processes. In addition, the production based on T.I. 2025 concept will evolve from mass production to mass customization to cope with dynamic market demands.

When the T.I. 2025 is successfully implemented, it will improve all productivity and process activities in manufacturing sector. These will support the growth of industry, and also contribute to the national scheme Thailand 4.0 in the future.

With respect to these aims – and considering the market context set out earlier – this section addresses the following challenges:

- The need for regulators to clarify their roles and collaborate with other regulatory bodies;
- Developing a regulatory framework to ensure safe and secure payments;
- Adapting regulatory approaches to fit the proper market contexts; and
- Creating an enabling environment for services to grow.

Figure 2: Money transfers across mobile networks

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State of ICT in Asia and the Pacific 2016
Uncovering the Widening Broadband Divide

Despite the widely reported phenomenal growth in Information and Communications Technology (ICT) in the Asia-Pacific region, a new study by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), has found that broadband capabilities and access are highly concentrated in East and North-East Asia. The report titled, "State of ICT in Asia and the Pacific 2016: Uncovering the Widening Broadband Divide", also confirms that the gap between advanced and developing countries in fixed broadband access is indeed widening, and unless targeted policy interventions are put in place, the trend will continue to the detriment of future development opportunities.

The Report shows that 74.89 per cent of total fixed broadband subscriptions in Asia and the Pacific are concentrated in East and North-East Asia, followed by South and South-West Asia (9.77 per cent), North and Central Asia (7.68 per cent), South-East Asia (5.74 per cent) and the Pacific (1.93 per cent), according to the 2015 data. Findings indicate that over 52.3 per cent of global fixed broadband subscribers now come from ESCAP member States, a dramatic increase from 2005 when the region constituted only 38.1 per cent. The Report also found that in 2015, less than 2 per cent of the population had adopted fixed broadband in as many as 20 countries in Asia and the Pacific, widening the digital divide between high-income and low-income countries at an alarming speed.

United Nations Under-Secretary-General and Executive Secretary of ESCAP Dr. Shamshad Akhtar underlined that broadband connectivity is a critical foundation for the digital economy and the achievement of the Sustainable Development Goals in Asia-Pacific, and that ESCAP is working with member States to improve broadband access for countries in the region. "As a result of this digital divide, millions of people are shut out from transformative digital opportunities in education, health, business and financial services," said Dr. Akhtar. "In response to the widening gap, ESCAP is promoting the Asia-Pacific Information Superhighway (AP-IS) initiative, to increase the availability and affordability of broadband Internet across Asia and the Pacific, by strengthening the underlying Internet infrastructure in the region," she added.

In particular, the Report shows that e-commerce strongly correlates with access to fixed broadband connectivity, suggesting that enhancing ICT infrastructure connectivity would increase business-to-business e-commerce in the region. The Report also examined emerging trends in developing online content, differential patterns of mobile broadband expansion and usage, as well as the impact of regulatory quality and investment in broadband adoption. The study findings will serve as the basis for the inaugural ESCAP Committee on ICT, Science, Technology and Innovation to be held from 5 to 7 October 2016 in Bangkok, Thailand.

The report is available at:
http://www.unescap.org/sites/default/files/State%20of%20ICT%20in%20Asia%20and%20the%20Pacific%202016.pdf