# **STATE OF ICT IN ASIA AND THE PACIFIC 2016**

## UNCOVERING THE WIDENING BROADBAND DIVIDE





Technical Paper by the Information and Communications Technology and Disaster Risk Reduction Division



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### Acronyms

3G	Third Generation (of wireless mobile telecommunications technology)
4G	Fourth Generation (of wireless mobile telecommunications technology)
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
B2B	Business-to-Business
B2C	Business-to-Consumer
ESCAP	Economic and Social Commission for Asia and the Pacific
GDP	Gross Domestic Product
GNI	Gross National Income
GSMA	Groupe Spécial Mobile Association
HAP	High Altitude Platform
ICT	Information and Communications Technology
IoT	Internet of Things
IP	Internet Protocol
ISOC	Internet Society
ISP	Internet Service Provider
ITU	International Telecommunication Union
LDC	Least Developed Country
LLDC	Landlocked Developing Country
LTE	Long-Term Evolution
NGO	Non-Governmental Organization
OBOR	One Belt One Road
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
SDG	Sustainable Development Goal
SIDS	Small Island Developing States
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
VoIP	Voice over Internet Protocol
WEF	World Economic Forum
WSIS	World Summit on the Information Society

#### 1. Overview 2016: ICT in Global and Regional Contexts

The digital technology has been fundamentally transforming not only the way we interact in society and the economy, but also the way the development paradigm is evolving. The Global Information Technology Report 2016,<sup>1</sup> published by the World Economic Forum (WEF) in July 2016, highlights that the digital revolution is changing the nature of innovation, which is increasingly based on the digital technology and associated new business models. Encouraging businesses to embrace the power of the digital technology, therefore, should be an imperative of governments. This requires, among others, the right governance frameworks to anticipate the impact of emerging technologies and react quickly to changing circumstances due to new economic and social dynamics. The WEF report concludes that the role of technology, broadband in particular, is critical to drive growth and enable collaborative innovation in many areas, from production to processes.

Asia and the Pacific has been leading information and communications technology (ICT) growth in the past decade. Some of the region's ICT-advanced economies are top performers in major ICT indicators. The above-mentioned WEF report reveals that seven Asia-Pacific countries (Australia, Hong Kong (China), Japan, Republic of Korea, New Zealand and Singapore) are among the top 20 countries in terms of overall ICT readiness in the Networked Readiness Index.<sup>2</sup> The United Nations Conference on Trade and Development (UNCTAD) published the Business-to-Consumer (B2C) E-Commerce Index<sup>3</sup> in July 2016 with updated e-commerce indicators<sup>4</sup> to help policy- and decision-makers assess the readiness of their economies to engage in online commerce. According to the index, three of the Asia-Pacific economies (Japan, Republic of Korea and New Zealand) are among the top 10 economies in e-commerce readiness. Furthermore, the United Nations E-Government Survey 2014<sup>5</sup> ranked the Republic of Korea, Australia and Singapore as the world's top three e-government leaders, followed by Japan and New Zealand, ranked 6th and 9th, respectively. The International Telecommunication Union (ITU) ICT Development Index 2015,<sup>6</sup> which measures ICT access, usage and skills, lists the Republic of Korea at the top of the list, followed by Hong Kong, China (9th), Japan (11th) and Australia (13th).

The question, however, remains—what happened to the rest of the countries in the region? Earlier this year, the World Bank published the World Development Report 2016: Digital Dividends.<sup>7</sup> While noting

<sup>&</sup>lt;sup>1</sup> WEF, Global Information Technology Report 2016 (Geneva, 2016). Available from

http://reports.weforum.org/global-information-technology-report-2016/.

<sup>&</sup>lt;sup>2</sup> Ibid. The Networked Readiness Index assesses and ranks 139 economies according to the state of networked readiness in order to provide insights into the economies' preparedness to reap the benefits from emerging technologies and opportunities created by digital innovation.

<sup>&</sup>lt;sup>3</sup> UNCTAD, "B2C E-Commerce Index 2016", UNCTAD Technical Notes on ICT for Development, April 2016. Available from http://unctad.org/en/PublicationsLibrary/tn\_unctad\_ict4d07\_en.pdf.

<sup>&</sup>lt;sup>4</sup> The updated e-commerce indicators are: Internet use penetration, secure servers per 1 million inhabitants, credit card penetration and a postal reliability score.

<sup>&</sup>lt;sup>5</sup> United Nations, *E-Government Survey 2014: E-Government for the Future we Want* (New York, 2014). Available from http://www.un.org/en/development/desa/publications/e-government-survey-2014.html.

<sup>&</sup>lt;sup>6</sup> ITU, "ICT Development Index 2015: IDI 2015 Rank". Available from http://www.itu.int/net4/ITU-D/idi/2015/.

<sup>&</sup>lt;sup>7</sup> World Bank, *World Development Report 2016: Digital Dividends* (Washington D.C., 2016). Available from http://live.worldbank.org/world-development-report-2016.

the transformative impacts the Internet has brought to businesses, governments and peoples around the world, the report reminds us that a significant digital divide still remains. Are countries in Asia and the Pacific making progress in ICT development and reaping the socioeconomic benefits of ICT investments, as anticipated at the World Summits on the Information Society a decade ago? Or is ICT widening the development gap, whereby the more ICT-advanced countries become more affluent and the rest are unable to catch up? Is the digital divide, in particular the broadband divide, actually shrinking or widening in the region?

Before we answer the questions, it is important to remind ourselves that ICT is a meta-infrastructure, a growth sector that contributes to economic development, and importantly, a key enabler for sustainable development. The Internet, as part of the meta-infrastructure, has transformed the way we live by providing instant connectivity to the remotest areas in the world and transmitting data, information and knowledge in multiple formats and languages over fibre optic cables, wireless networks or satellites. Being highly versatile, ICT now permeates every facet of our lives, by enabling trillions of dollars of financial transactions every day, connecting weather forecasts to agricultural production and disaster management, managing intelligent transport, controlling epidemics, advancing climate change adaptation, and creating new businesses, employment and even industries.

In addition, ICT-enabled financial, transport and trade facilitation infrastructure has encouraged innovations and developed an inclusive digital economy in the region. Broadband-enabled technologies, such as smart grids, intelligent transport systems, integrated water management systems and single e-government windows, are some of the efficiencies that will drive growth in all sectors of the economy. These emerging infrastructures are built on the broadband networks and facilitate the movements of goods, services, people and money across countries and thereby act as building blocks of the emerging digital economy.

This report intends to identify and bring to the attention of ICT decision- and policy-makers, regional ICT snapshots, emerging trends and salient features of ICT for development. The report will focus in particular on broadband connectivity in Asia and the Pacific as a basis for not only ICT development but also the achievement of the Sustainable Development Goals (SDGs) and other internationally-agreed development goals.

The initiatives towards building the digital economy, digital society and smart cities are based on the premise that reliable, resilient, affordable and robust connectivity exists. But the majority of the countries in Asia and the Pacific still have not reached the point set the state are this report illustrates. ICT ministries and

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