

Making digital dividends inclusive

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Jnformation and communications technologies (ICT) have changed the way people do things, especially in interconnecting, accessing and sharing information, and doing business and providing services. The Internet, social media, and various ICT gadgets have provided people with the means to transmit and exchange data faster and easier compared to decades ago. Digital technologies also give key support to firms across economic sectors. ICT infrastructure is important to sustain economic activity. Qiang et al. (2009) note that for every 10-percent increase in high-speed Internet connections, economic growth increases by 1.3 percent. With the growing importance of ICT, select statistics on ICT, such as fixed telephone subscriptions per 100 inhabitants, mobile-cellular subscriptions per 100 inhabitants, and Internet users per 100 inhabitants, have been monitored for

the Millennium Development Goals (MDGs). Monitoring the Sustainable Development Goals, the successor to the MDGs, will likely also contain some ICT statistics.

With its new economic growth trajectory, the Philippines requires reliable, accessible, and affordable ICT infrastructure. Policies need to be formulated and implemented to maximize digital dividends or the development effects of these technologies. This *Policy Note* presents a brief history of the Internet in the Philippines and examines trends in various ICT statistics. It also discusses issues confronting the ICT sector and provides some policy recommendations to make digital dividends more inclusive.

Internet in the Philippines

This year marks the 22nd anniversary of the Internet in the Philippines. Ayson (2011)

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reports, however, that even in 1986, some Filipinos experimented with the bulletin board systems (BBSs). In 1991, the local network linked with the international Fidonet community through dial-up but this incurred costs for IDD phone charges and required imposition of a subscription scheme. The first commercial BBS, “First-Fil BBS”, went online and charged PHP 1,000 for a year’s worth of premium access. With access speeds limited to 1,200 bps and poor dial-ups, many users had access of only 300 bps.

On March 29, 1994, the Philippines connected to the Internet via an IP connection to a Sprint gateway in California. This was initiated through the Philnet project, a collaboration between the Department of Science and Technology and the academic community. Since then, the Philippines has maintained Internet connectivity and improved Internet access at an increasing trend.

The International Telecommunication Union (ITU), a specialized agency of the United Nations for ICT, estimates that Internet penetration has gone up in the Philippines from 2.0 percent in 2000 to 39.7 percent in 2014 (Figure 1). There was a steep rise in 2010 when the penetration rate jumped to 25 percent from 9 percent in the previous year. Across the Association of Southeast Asian Nations (ASEAN), Internet access in the Philippines ranks fifth, behind Singapore, Brunei Darussalam, Malaysia, and Viet Nam. Thailand ranks sixth; it was fourth up to 2004 when it was overtaken by Viet Nam, and has

stayed in fifth place since 2010, when it was overtaken by the Philippines.

According to “We are Social”, an agency that examines social media data, social media penetration in the Philippines as of January 2014 was at 40 percent. However, while penetration rates for Internet and social media are increasing, more than half of the population is still not using them.

Trends in indices measuring ICT development

In the *2015 Measuring the Information Society Report*, the ITU provides an ICT development index (IDI) in 2013 and 2014 for 167 countries. The IDI combines 11 indicators that measure access, use, and skills into one composite measure to monitor and compare developments in ICT among countries over time. South Korea tops the IDI, followed by Denmark and Iceland. In Asia Pacific, Hong Kong (China), Japan, Australia, and New Zealand ranked highest in IDI after South Korea. The IDI exhibits a correlation with many MDG indicators, but illustrates a divide in ICT development between developed and developing countries, with the gap more pronounced in the availability and uptake of wireless broadband and fixed broadband services.

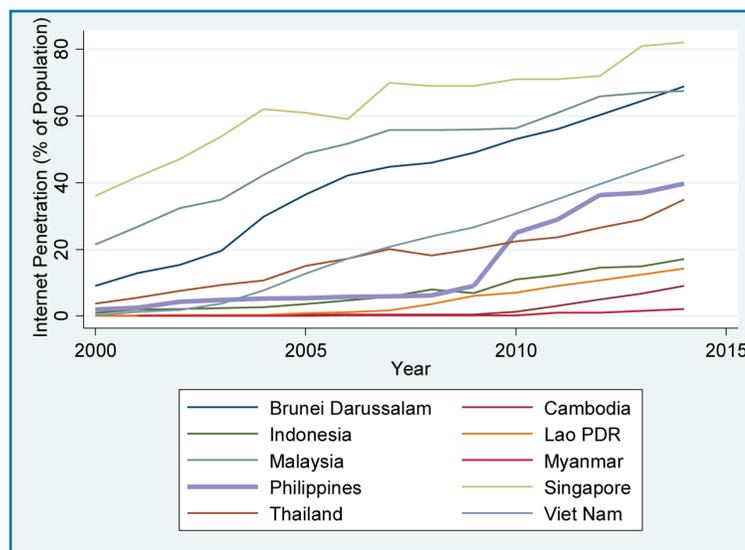
The Philippines improved its IDI ranking from 105 (in 2014) to 98 in the previous year, and is ranked 15th across Asia Pacific, following Singapore (ranked 19 globally, 6 in Asia Pacific), Malaysia (ranked 64 globally, 8 in Asia Pacific), Brunei Darussalam (ranked

71 globally, 9 in Asia Pacific), and Thailand (ranked 74 globally, 10 in Asia Pacific). The Philippines has slightly overtaken Viet Nam (ranked 102, from 94 in the previous year).

Like many countries, the Philippines has improved its access to mobiles and subscription of fixed broadband. Telephone density, measured as the number of fixed telephone subscriptions per 100 inhabitants, however, has remained at an average of 3 subscriptions per 100 persons in recent years (Figure 2). Fixed broadband subscription per 100 population increased to 23.22 per 100 persons in 2014 from 0.14 in 2005. The rate of increase was steepest in 2011 when it surged by nearly four times the previous year. In 2012, mobile subscriptions surpassed the total number of persons in the Philippines as many Filipinos have multiple mobile subscriptions. In addition, there is overcounting of mobile subscriptions with each telecommunication company (hereinafter “telco” or “telcos”) claiming market dominance, not paying attention to whether subscriptions are active. Overcounting could be prevented through full registration of cellular subscribers, to include prepaid ones, and full implementation of a national ID system.

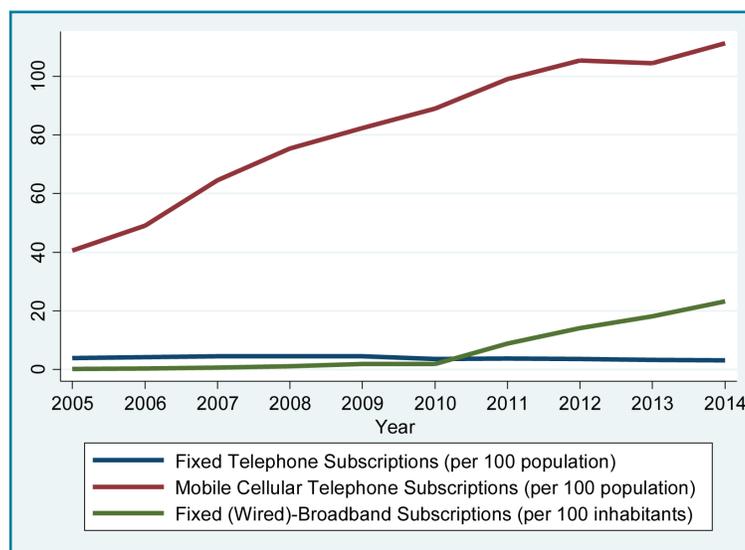
Similar trends in ICT development are seen in the networked readiness index (NRI), which is released by the World Economic Forum, in the *Global Information Technology Report*. The NRI is based on 53 individual indicators spread across four main categories, namely, environment, readiness, usage, and impact.

Figure 1. Internet penetration in ASEAN economies, 2000–2014



Source: ITU (2015)

Figure 2. Selected ICT statistics in the Philippines, 2005–2014



Source: ITU (2015)

Globally, Singapore topped all countries in the NRI. The Philippines trails behind Singapore, Malaysia, Brunei Darussalam, and Thailand.

Its standing has improved in recent years, slightly surpassing Indonesia's.

High costs of ICT services in the Philippines

The price of ICT services in the Philippines is among the highest in the ASEAN (Table 1). Unfortunately, the Internet speed is not worth its cost.

Akamai, a cloud data network that monitors Internet traffic in real time, suggested in its *State of the Internet Report* on Asia Pacific that the Philippines has the second lowest average connection speed in the region at 2.8 megabits per second (Mbps) for the third quarter of 2015, much lower than the global average connection speed of 5.1 Mbps (Table 2). Moreover, the Philippines also ranks third in terms of lowest peak connection speed, at 25.3 Mbps, lower than the global average of 32.2 Mbps.

LIRNEasia, a regional ICT policy and regulation think tank, reports that in the Philippines, there is a decreasing performance of average actual speeds of Internet service providers (ISPs) versus advertised speeds. Examining different ISPs across South Asia and Southeast Asia, LIRNEasia also suggests that Philippine telcos give the lowest value for money (Figure 3).

The high costs of Internet in the Philippines is partly attributed to the monopoly of fee-charging Internet exchanges (IX). An IX is formed when several networks come together to exchange Internet traffic among themselves. Most of them connect via an ISP with tolls paid by the ISPs for passage through their networks. In the Philippines, the Philippine Long Distance Telephone Company (PLDT)-Smart holds the majority of fee-charging IXs. Local providers other than PLDT-Smart represent only a minority of the

Table 1. Prices of selected ICT services in ASEAN economies (USD) per month, 2013

	Fixed Telephone	Mobile Cellular	Fixed Broadband	Mobile Broadband, Postpaid Handset-Based	Mobile Broadband, Prepaid Handset-Based	Mobile Broadband, Postpaid Computer-Based	Mobile Broadband, Prepaid Computer-Based
Brunei Darussalam	18.91	29.6	78.28	33.72	30.11	33.72	24.09
Cambodia	9.81	16.16	30.55	7	7	12.73	12.73
Indonesia	9.54	16.38	48.92	12.54	5.7	12.54	11.4
Lao PDR	12.01	17.84	41.65	12.82	0	16.02	0
Malaysia	17.99	14.2	41.52	23.91	23.91	30.2	30.2
Myanmar	-	-	-	-	-	-	-
Philippines	36.15	22.24	51.59	25.77	25.77	51.38	25.77
Singapore	9.1	9.04	20.58	32.97	12.4	20.58	0
Thailand	14.55	12.61	52.85	24.51	24.51	32.71	36.31
Viet Nam	4.44	8.81	7.15	-	-	-	-

Source: ITU (2015)

Internet pathways so their exchanges are limited to what they can afford. Thus, they interconnect through free IXs resulting in poor quality services for users. If they would be able to connect through PLDT-Smart's IXs, we would expect more interconnectivity of networks. Internet advocates suggest that local service providers be given access to PLDT-Smart's IXs through Internet peering.

Peering results when two or more autonomous networks directly interconnect with each other to exchange traffic (Van der Berg 2008). PLDT-Smart has recently responded to the call of its telco rival, Globe Telecom, for a peering agreement, but the initial proposal for Internet peering was not mutually well-received. Negotiations between PLDT-Smart and Globe are still ongoing. Meanwhile, Globe has decided to use fiber-to-the-home technology for its broadband plans that effectively cut their prices.

Improving regulatory mechanisms for ICT

Although there is progress in ICT development, much still needs to be done to fully leverage ICT in the country, starting with the policy and regulatory environment to address gaps and weaknesses. ICT policies should be implemented to narrow the digital divide and to promote competition, interconnection, and convergence in the ICT sector (Padojinog 2005).

A landmark legislation on ICT came about with the passage of the Data Privacy Act of 2012 or

Republic Act (RA) 10173. Instituting effective data privacy laws and their enforcement are among the safeguards needed to instill confidence and increase ICT use. Protecting personal privacy and data, cybersecurity, and digital literacy are demand-side issues that have been identified to help improve digital connectivity by making the Internet open and safe (WB 2016). Unfortunately, the implementing rules and regulations on the Data Privacy Act have still not been written as the National Privacy Commission (NPC) has yet to be established.

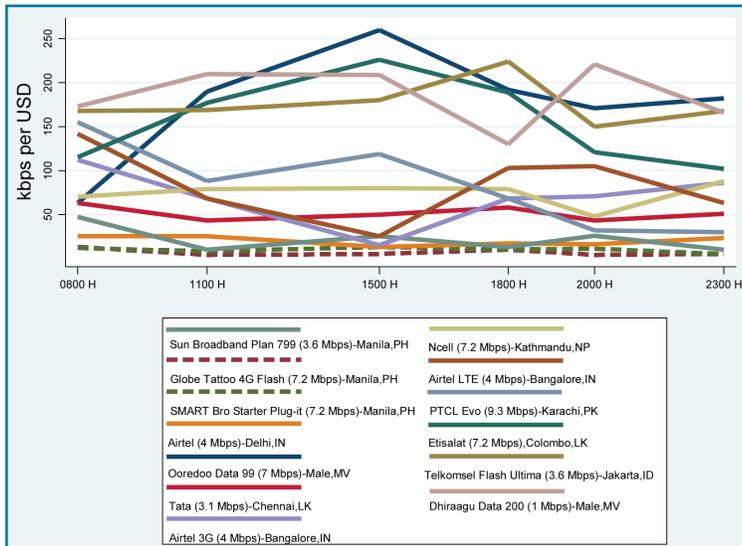
The Philippine Competition Act (RA 10667), another recent legislation, can be a

Table 2. Average connection speed and average peak connection speed in the third quarter of 2015 among Asia-Pacific countries

Country	Average Connection Speed		Average Peak Connection Speed	
	Average Mbps	Global Rank	Peak Mbps	Global Rank
South Korea	20.5	1	86.6	3
Hong Kong	15.8	5	101.1	2
Japan	15.0	7	78.4	4
Singapore	12.5	17	135.4	1
Taiwan	10.1	33	77.9	5
New Zealand	8.7	42	42.0	45
Thailand	8.2	43	58.3	18
Australia	7.8	46	41.9	46
Sri Lanka	5.1	71	33.5	66
Malaysia	4.9	73	38.3	54
China	3.7	91	23.1	101
Viet Nam	3.4	97	25.5	92
Indonesia	3.0	104	31.0	72
Philippines	2.8	108	25.3	94
India	2.5	116	18.7	116

Source: Akamai (2015)

Figure 3. Value for money (Kbps per USD), 2014



Source: Mirandilla-Santos (2015)

mechanism to correct market failures among telcos. This law provides for a quasi-judicial body, the Philippine Competition Commission (PCC), to check anticompetitive practices and to open doors to more market players. Currently, there are a number of barriers to entry for new ISPs. The Internet is viewed as a value-added service rather than a basic service. In addition, an ISP is required to secure a franchise from Congress as part of the application process for a license.

Beyond legislation, there must be effective implementation of regulations and constant review of regulations to adjust them accordingly when they do not serve their purpose. Last August 2015, Memorandum Circular No. 07-08-2015 was issued by the National Telecommunications Commission (NTC) to impose better Internet quality

standards on telcos. The circular states that broadband “for fixed line services must have data connection speed of at least 256 kilobits per second (Kbps).” The NTC claims that this is the same standard imposed by the ITU, but the circular is insufficient because 90 percent of Internet users in the country use mobile services, and the circular covers only fixed line services (digital subscriber line, fiber, and cable). The standard of 256 Kbps is 10 times less than the public expectation of 2 Mbps, which stakeholders consider to be doable.

Accountability should play a major role in the effective regulation of ICT. To protect consumers, the government should implement regulatory policies, assess the performance of telcos based on the standards they set, and provide penalties to hold them accountable for violation of laws and regulations. In the United States, the Federal Communications Commission (FCC) imposed a USD 100-million fine to AT&T Mobility for misleading customers about its “unlimited” mobile data plans and violating other relevant rules that the FCC has set for telcos. In the Philippines, administrative complaints against telcos are handled by two agencies. In line with the Consumer Act of the Philippines (RA 7394), the Department of Trade and Industry (DTI) deals with misleading advertisements, deceptive sales practices, and similar problems. Meanwhile, the NTC deals with poor technical and customer services, billing problems, fair use policy, and other similar issues. It has been noted that the current penalties for violations

are very low, discouraging compliance. The Public Telecommunications Policy Act of the Philippines (RA 7925) does not have penal provisions, and, thus, the NTC only uses penalties from an 80-year-old law, the Public Services Act of 1936 (Commonwealth Act 146), which sets fines at not more than PHP 200 per day until the violation is corrected (Cabarios 2015).

Building better infrastructures for ICT

More than the imposition of quality standards, and the improvement in accountability measures, the government should find other ways to improve ICT in the country, such as regulating the interconnectivity of networks, building better ICT infrastructures, and expanding ICT services to include other sectors for development.

Improving the ICT sector and the stock of physical infrastructure go hand in hand. Both entail investments from the private sector and the government. Telcos claim that they have been making investments in network expansion and technology upgrades to provide better and faster service. One of the key attractions of the Philippines as a business process outsourcing hub is the availability of telco infrastructure that meets the requirements of the industry. The challenge is to make high-quality broadband accessible to the rest of the population. Shahani (2015) points out that the national Internet backbone facilities are poor: 70 percent of domestic Internet traffic is routed through Hong Kong

on its way to another domestic user (thus providing China access to local messaging and email). Clearly, the Philippines needs a national broadband to increase Internet speed and lower the service costs. Increasing foreign equity restrictions in telecommunications, which is currently set at 40 percent under the 1987 Philippine Constitution, is another channel for attracting capital and expertise into this industry.

Diffusion of benefits of ICT

ICT, especially the Internet, promotes inclusion. Micro and small firms can connect with potential buyers in another country through Internet and social media. They can also gain knowledge and skills to trust a new business partner based on information gained from the Internet. Digital technologies help overcome information barriers and provide a means to improve social services, especially to marginalized groups. The Philippines, with its recurring natural disasters, has started to use ICT tools for disaster preparedness and risk management, particularly in improving forecasting of imminent climate and hydrological hazards, and in disseminating disaster information.

Much more can be done to harness ICT. With the implementation of the K to 12 program in basic education and requisite changes in higher education, the extent of using ICT in the classroom and outside will need to be improved. Foundational ICT skills and competencies must be given to the young. With technology likely to get more advanced,

Filipino workers will also need to continuously upgrade their skills and competencies. Much of these changes will happen even outside the formal education system, but government should provide firms and workers with an incentive to have mechanisms for lifelong learning to meet the ever-growing demands of the information-driven economy.

Government agencies must be capable and accountable in harnessing ICT. The DTI, NTC, PCC, and NPC will need to develop the capacity to investigate and, if warranted, work to prosecute violations to competition and privacy laws, given the fast-evolving nature of the sector. Many cases in high-income countries can provide guidance to the Philippines as it promotes a conducive environment to further enhance and sustain economic activity. E-government delivery and citizen engagement can be developed and strengthened. The establishment of a dedicated agency for ICT—the Department of Information and Communications Technology—as proposed by Senate Bill No. 2686 and House Bill No. 6198, to focus on

developing and implementing a national broadband plan, is essential. All these steps will make ICT an effective force for development, spread digital dividends across socioeconomic sectors, and further expand opportunities for all. 

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