

## **Structural and Strategic Reforms to Improve Philippine Internet for a New “Digital Normal”: A Position Paper**

The Internet has long been considered a key enabler of socio-economic development and inclusive growth. According to the International Telecommunications Union (ITU), digital connectivity plays “a critical role in bettering lives, as it opens the door to unprecedented knowledge, employment and financial opportunities for billions of people worldwide.”<sup>1</sup>

But amid the COVID-19 pandemic, digital connectivity has served as a lifeline for everyone, prompting the United Nations’ International Telecommunications Union to call for universal digital access as part of the new normal.<sup>2</sup>

In the Philippines, under quarantine conditions, the Internet has helped the government in continuing its basic functions and in the fight against the outbreak. It has enabled citizens to carry out daily activities necessary for survival and for their well-being.

This public health emergency has exposed the country’s severe lack of digital infrastructure<sup>3</sup> and poor quality of Internet service that make it difficult for citizens to engage in work from home, online learning, e-commerce, and telehealth to access “meaningful connectivity.”<sup>4</sup>

According to the UN’s International Telecommunications Union, about **40% of Filipinos** are still offline<sup>5</sup> and about **57% of the country’s 23 million households** remain unconnected.<sup>6</sup> In a local survey, the Social Weather Stations reported that Internet use has always been **highest in Metro Manila** while Internet use has consistently fallen **below 50% in Luzon** (except in December 2018), **below 40% in the Visayas**, and **below 40% in Mindanao** (except in March 2018). About 88% Filipino households has access to a mobile phone, but **only 42% households can go online**. Only 23% has a computer/laptop.

There is a high mobile phone subscription rate but only **68.6% of Filipinos are mobile broadband subscribers**. A mealy **3.2% is subscribed to fixed broadband**.

<sup>1</sup> UN News Centre. Mobile broadband subscription on track to hit 4.3 billion in 2017 – UN report.

<http://www.un.org/apps/news/story.asp?NewsID=57283#.WgKjt62B0dU>

<sup>2</sup> United Nations. (2020, May 5). COVID-19 makes universal digital access and cooperation essential: UN tech agency. *UN News*.

<https://news.un.org/en/story/2020/05/1063272>

<sup>3</sup> Inquirer.net. (2020, May 2). DICT official on current technology infrastructure in PH: ‘kulang na kulang.’ <https://news.abs-cbn.com/business/05/02/20/dict-official-on-current-technology-infrastructure-in-ph-kulang-na-kulang>

<sup>4</sup> “Meaningful connectivity” means access to a good, affordable connection reliable enough for a user to harness the benefits of internet access. See A4AI. (2018, December 17). Access is more than cost: Measuring the quality of mobile broadband service.

<https://a4ai.org/access-is-more-than-cost-measuring-the-quality-of-mobile-broadband-service/>. Access the full report here: <https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2019/01/Improving-Mobile-Broadband-Quality-of-Service.pdf>

<sup>5</sup> Based on ITU estimates, this is higher than the ASEAN average of 55 percent.

<sup>6</sup> Percentage of individuals using the Internet and households with Internet access from ITU data, as of June 2018.

ITU. 2018. Measuring the Information Society Report Volume 2. <https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-2-E.pdf>

For a more detailed account of the state of Philippine Internet, please refer to [Annex A](#).

While unfortunate, the health crisis can provide an opportunity to push for bolder and much-needed structural interventions to improve digital connectivity in the country.

The Better Broadband Alliance is pleased to submit its recommendations on structural and strategic interventions to facilitate the development of digital infrastructure and accelerate the country's digital transformation.

1. **Expand the digital infrastructure** by taking down the barriers to network expansion and making it simpler and more efficient to deploy data transmission networks. More specifically:
  - a. Pass the **“Open Access in Data Transmission” bill** that will (i) allow Internet service providers, including those without a telco franchise, to own, construct, install and operate their own broadband networks; (ii) promote cross-sector infrastructure development and passive infrastructure sharing; (iii) streamline the permit process for network rollout; and (iv) introduce measures for transparent and equitable spectrum management;
  - b. Promulgate policy on **common towers and passive infrastructure sharing**;
  - c. Overhaul the spectrum management framework and regulation to promote **transparency and equitable distribution of spectrum**; and
  - d. Review and **update/amend existing laws**<sup>7</sup> to help facilitate ICT infrastructure development.
  
2. **Draw up a National Connectivity Plan** with sufficient implementation detail on how to provide Internet connectivity to the unserved and underserved areas of the country, down to the barangay and the household level, within two (2) years, with a minimum download speed of 2 Mbps.<sup>8</sup> The Plan shall:
  - a. Create and maintain a **broadband network map**, in collaboration with the private telcos and ISPs, of communities where telecommunication and Internet services are most needed and/or interrupted.
  - b. Incorporate the present National Broadband Plan (2017), which aims to provide Internet connectivity to all government offices, expedite the **completion of the key components of the Philippine Integrated Infostructure**<sup>9</sup> to end-2020, and expand it to include expenditures for the **middle mile and, where necessary, the last mile**.
  - c. Revise the present focus of the Free Wi-Fi in Public Places Act (RA 10949) to provide **connectivity in public schools, public hospitals, and barangay halls**, instead of public plazas and transportation hubs.
  
  - d. Overhaul the present NTC circulars<sup>10</sup> on Internet service standards in order to **upgrade the minimum paid broadband service requirement** to at least **4 Mbps** in

<sup>7</sup> Existing laws that need to be updated by Congress to support the propagation of digital connectivity include: the Radio Control Law of 1931 (Act 3846), the Public Service Act of 1936 (CA 146), and the Public Telecommunications Policy Act of 1995 (RA 7925).

<sup>8</sup> A minimum broadband download speed of 2 Mbps is provided in the National Broadband Plan (2017).

<sup>9</sup> The key components of the PhII include (1) the international cable landing stations; (2) the national government backbone network through the National Grid Corporation of the Philippines, and (3) the access network, primarily the provision of Free Wi-Fi in public places. See p. 38 of the National Broadband Plan. <https://dict.gov.ph/wp-content/uploads/2017/09/2017.08.09-National-Broadband-Plan.pdf>

<sup>10</sup> These include NTC MC 07-08-2015 or the Rules on the Measurement of Fixed Broadband/Internet Access Service, which defines “broadband” as data connection speed of at least 256 Kbps, and NTC MC 10-12-2016 or the Rules on the Measurement of Mobile Broadband/Internet Access Service. See [http://ntc.gov.ph/wp-content/uploads/2016/MC/2015/MCNo.2015\\_0708.pdf](http://ntc.gov.ph/wp-content/uploads/2016/MC/2015/MCNo.2015_0708.pdf) and <http://ntc.gov.ph/wp-content/uploads/2016/MC/MC-10-12-2016.pdf>

urban areas and 2 Mbps in rural areas,<sup>11</sup> subject to annual review, and improve other standards in order to achieve broadband quality at par with the rest of the Southeast Asian Region.

- e. Mandate the National Telecommunications Commission to exercise its powers under Section 16(h) of the Public Service Law to **require the public telecommunications entities to construct facilities in the unserved and underserved areas** of the country and provide cellular and broadband coverage in the areas within the next two (2) years;<sup>12</sup>
3. **Provide support for online and blended learning**, specifically:
    - a. Expedite the development of **DepEd’s digital learning platforms** and the re-engineering of processes at all levels of public-school education, which includes providing subsidies for training and research and development in this field;
    - b. Provide a subsidy to public school teachers, students and poor households for **Internet subscription for at least one (1) year**, to be given as **vouchers for subscription** with any of the existing Internet service providers;
    - c. Launch a **nationwide digital literacy program**, with the participation of schools for teachers and students and the barangays for out-of-school youth, poor families, and other vulnerable sectors of society, that will enable meaningful and productive participation of Filipino citizens in the digital economy.
  4. **Pro-actively pursue an “online-first” e-Government policy** that will enable government, businesses, and citizens to transact using digital platforms as the default, and physical or face-to-face transactions as the exception. This shall be the overarching framework of the E-Government Master Plan and the basis for connecting government institutions down to the barangay level to the Internet. The policy will also include the implementation of the National ID, with the highest data privacy and cybersecurity standards in place, and overhauling government rules and processes to recognize the validity of electronic documents and electronic signatures for G2G, G2B, and G2C transactions.
  5. **Develop and issue a national cybersecurity policy framework and mandatory security framework**<sup>13</sup> for all government systems in order to specify a certain degree of minimum best practices in cybersecurity and data privacy, as the government adopts an “online-first” policy and as more people and institutions gain access to digital connectivity and resources.

At the heart of these proposed structural and strategic policy interventions is ensuring that we introduce policy and regulatory reforms in order to provide pervasive and reliable digital connectivity and create a “digital normal”. With these recommendations, we hope that Philippine Internet will truly become an integral part of the lives of every Filipino, and will become an important

<sup>11</sup> The classification of urban or rural shall be based on the latest Philippine Statistics Authority census. See <http://www.psa.gov.ph/content/urban-population-philippines-results-2015-census-population>

<sup>12</sup> Section 16 (h) of CA 146, the Public Service Law, gives the NTC the power, with prior notice and hearing, “[T]o require any public service to establish, construct, maintain, and operate any reasonable extension of its existing facilities, where, in the judgment of said Commission, such extension is reasonable and practicable and will furnish sufficient business to justify the construction and maintenance of the same, and when the financial condition of the said public service reasonably warrants the original expenditure required in making and operating such extension.”

<sup>13</sup> The mandatory security framework for different systems can be similar to the United States’ FedRAMP (Federal Risk and Authorization Management Program) for government cloud, HIPAA (Health Insurance Portability and Accountability Act) for healthcare, and the PCI-DSS (Payment Card Industry Data Security Standard) for payment cards. Another option is to pass an E-Government Law with a section on information security, similar to the U.S. Federal Information Security Management Act.

pillar not only for rising above this pandemic but for nation-building and inclusive growth, where no one is left behind.

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The **Better Broadband Alliance (BBA)** is a coalition of citizens and stakeholders committed to supporting initiatives that bring better broadband services to the Philippines. BBA believes in 4As: Reliable broadband service for ANYONE, ANYTIME, ANYWHERE, using ANY technology.

BBA calls for a policy and regulatory environment that:

- promotes competition, a level playing field for service providers, and freedom of choice for consumers;
- adapts to innovation and encourages collaboration among stakeholders;
- ensures an open internet where all voices and ideas are welcome;
- allows democratic access to technology that enhances market dynamism and fosters innovation; and
- protects consumer rights and welfare

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## Annex A – State of Philippine Internet

The benefits of Internet access are well documented. A 2009 World Bank study found that low-income and middle-income countries experienced “about a 1.38 percentage point increase in GDP for each 10-percent increase in [broadband] penetration” between 2000 and 2006.<sup>14,15</sup> Broadband access was also found to have an impact on household income. A 2014 Ericsson study revealed that introducing a 0.5-Mbps broadband connection in less developed countries, such as India, and China, increases household income by US\$800 per year.<sup>16</sup>

In the Philippines, mobile broadband penetration was found to affect GDP growth by 0.61% after 2005 when 3G technology and cheaper smartphones became available. Applying 2016 figures, that’s almost \$1.9 billion or P97 billion.

Despite its link to socio-economic development, however, many developing countries still struggle with challenges in terms of broadband access, quality, and affordability, including the Philippines.

### **Broadband Infrastructure**

The availability of infrastructure is crucial to Internet access. Despite mobile phones, computers and tablets flooding the market, access is dictated by the absence or presence of Internet connectivity in an area. A survey by the National Telecommunications Commission (NTC) in 2016 shows that Northern Luzon, Palawan, Eastern and Central Visayas, and a significant part of Mindanao remain either unserved or underserved by Internet service providers (ISPs).<sup>17</sup>

**Wired.** Investment in fixed infrastructure, such as fiber optic networks, which is necessary to provide faster and reliable Internet connectivity, is fairly recent. There has been no massive effort to connect those outside the urban centers and IT-BPO locations, unlike in other Asian countries such as Indonesia and Vietnam. The Philippine Cable TV Association (PCTA) placed **wired Internet connectivity**<sup>18</sup> **penetration at 20% of the population.** Another estimate pegged **fiber optic broadband at just 5% coverage.**<sup>19</sup>

<sup>14</sup> Qiang, C. Rosotto, C., & Kimura, K. 2009. Economic impacts of broadband. *Information and Communications for Development 2009: Extending Reach and Increasing Impact*, pp. 35-50.

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/EXTIC4D/0,,contentMDK:22229759~menuPK:5870649~pagePK:64168445~piPK:64168309~theSitePK:5870636,00.html>

<sup>15</sup> In 2012, the results were corroborated by a study by Scott, C. which found that “...a 10% increase in broadband penetration is correlated with a 1.35% increase in GDP for developing countries and a 1.19% increase for developed countries.” Scott, C. 2012. Does broadband Internet access actually spur economic growth? <http://www.eecs.berkeley.edu/~rscs/classes/ictd.pdf>.

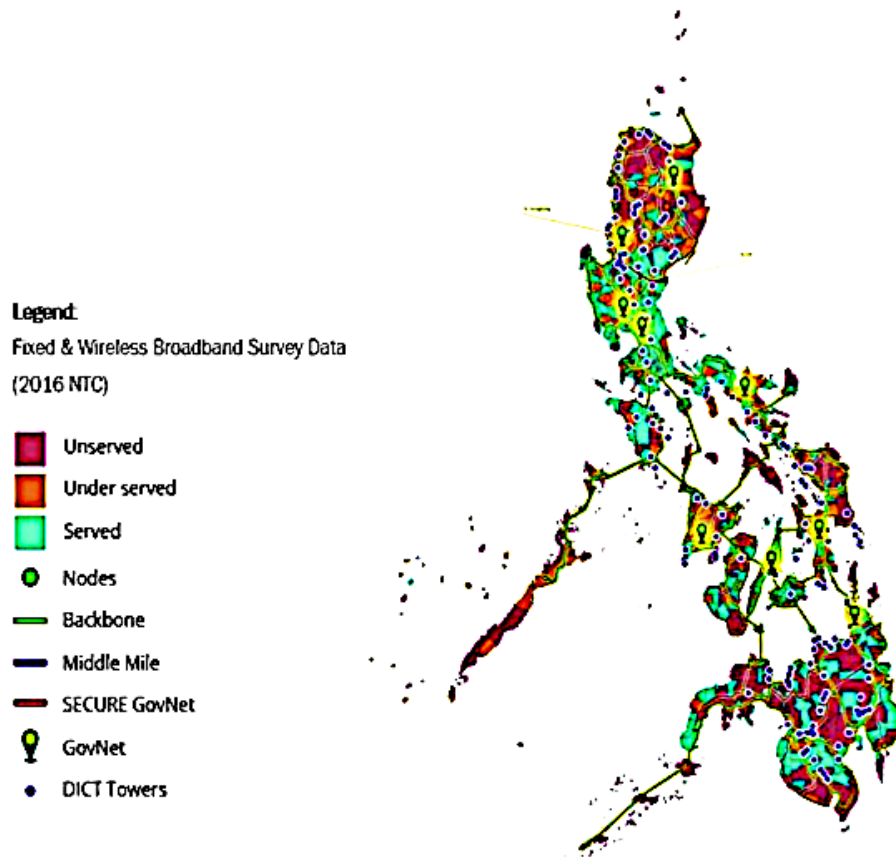
<sup>16</sup> Ericsson. 2014. Measuring the impact of broadband on income. <http://www.ericsson.com/res/thecompany/docs/corporate-responsibility/2013/impact-of-broadband-speed-on-household-income.pdf>.

<sup>17</sup> See the DICT. 2017. National Broadband Plan. <https://dict.gov.ph/wp-content/uploads/2017/09/2017.08.09-National-Broadband-Plan.pdf>

<sup>18</sup> Includes dial-up, DSL, coaxial cable, and fiber optic cable.

<sup>19</sup> <https://business.inquirer.net/273603/ph-firm-to-get-250-m-equity-from-warburg-pincus>

Figure 1. Unserved, Underserved, and Served Areas by ISPs



Source: Philippine Integrated Infostructure (PHII) Overview Map, National Broadband Plan (2017).

**Wireless.** Cellular mobile is the most prominent wireless Internet technology in the Philippines. This requires installing towers and repeaters to transmit data using radio frequency spectrum in the air. The distance of an end user to the nearest cell site and the number of users sharing the bandwidth of one cell site (contention ratio) determines the level of access and quality of mobile Internet. According to the DICT, there were **less than 20,000 towers nationwide** in 2018, making the Philippines one of the countries with the **lowest tower densities in the world**,<sup>20</sup> far below Vietnam's 70,000 and Indonesia's 90,000 towers.<sup>21</sup> In order to address this gap, the government drafted and conducted consultations on the common tower policy.<sup>22</sup>

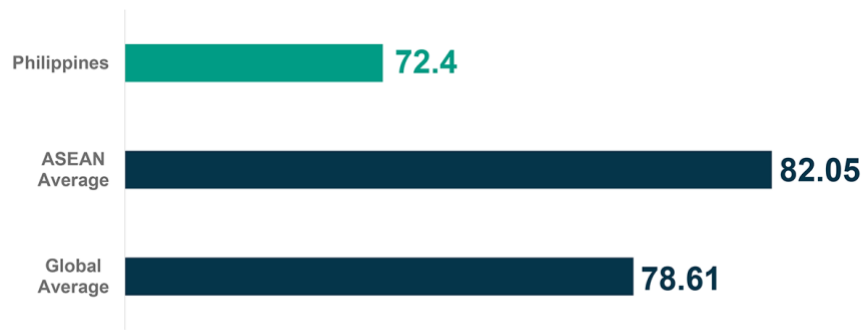
In 2019, Opensignal reported that **4G/LTE signal was available to mobile subscribers 72.4% of the time**, which is lower than the ASEAN and global averages.

Figure 2. 4G Availability (in %)

<sup>20</sup> Pateña, A.J. 2018, 27 September. PH needs more cell tower firms, telco stakeholders say. *Philippine News Agency*. Accessed from: <https://www.pna.gov.ph/articles/1049367>

<sup>21</sup> Camus, M. 2018, January 20. Gov't pushes new cell tower scheme for level field, better service. *Inquirer.net*. <http://business.inquirer.net/244506/govt-pushes-new-cell-tower-scheme-level-field-better-service>.

<sup>22</sup> The policy on common towers has not been issued yet as of this writing. It is not clear whether mobile network operators will be allowed to own equity in an enterprise that will operate as an independent tower company.



Source: Opensignal data (2019)

Note: Availability is the percentage of time that 4G mobile device users were able to access a 4G signal.

### Internet Use

In 2018, the United Nations Broadband Commission reported that about **40% of all Filipinos are still offline**<sup>23</sup> and **about 57% of the country's 23 million households remain unconnected**.<sup>24</sup> Low household internet penetration can be due to the limited availability of fixed Internet facilities in a community and a household's access to Internet-ready devices.

The ITU estimate of 60.05% is much higher than the latest results of local survey firm, Social Weather Stations (SWS). In June 2019, the SWS reported that **46% of adult Filipinos surveyed says they use the Internet**. Since 2006, Internet use has always been **highest in Metro Manila** or the National Capital Region and the proportion of Internet users was consistently higher in the urban areas.<sup>25</sup> According to the SWS surveys, Internet use in **Luzon** has consistently fallen below 50%, except in December 2018, below 40% in the **Visayas**, and below 40% in **Mindanao**, except in March 2018.

Table 1. Internet Use by Region (2019)

**% OF INTERNET USERS: BY AREA AND LOCALE,  
MAR 2018 TO MAR 2019**

	<u>PH</u>	<u>NCR</u>	<u>Bal Luz</u>	<u>Vis</u>	<u>Min</u>	<u>Urban</u>	<u>Rural</u>
Mar 2018	42%	60%	40%	34%	40%	50%	33%
Jun 2018	40	60	42	37	29	53	28
Sep 2018	41	64	47	28	27	54	31
Dec 2018	47	59	56	35	32	62	37
<u>Mar 2019</u>	<u>46</u>	<u>64</u>	<u>48</u>	<u>34</u>	<u>39</u>	<u>56</u>	<u>38</u>

Source: Social Weather Stations.

In 2020, the Department of Education (DepEd) found that around **52% of 47,000+ public schools nationwide are unable to connect to Internet facilities** in their communities, despite having the

<sup>23</sup> Based on ITU estimates, this is higher than the ASEAN average of 55 percent.

<sup>24</sup> Percentage of individuals using the Internet and households with Internet access from ITU data, as of June 2018.

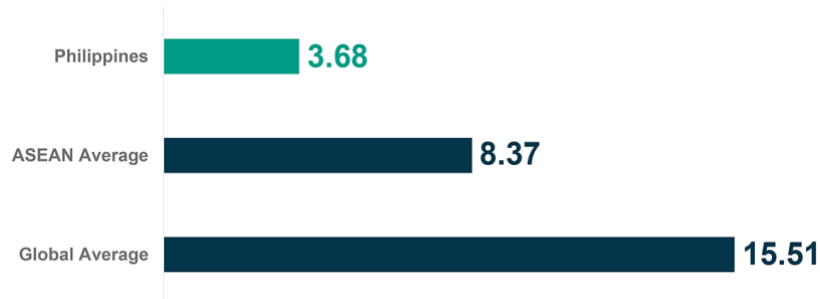
ITU. 2018. Measuring the Information Society Report Volume 2. <https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-2-E.pdf>

<sup>25</sup> According to the SWS, the latest survey was conducted from March 28-31, 2019 using face-to-face interviews of 1,440 adults (18 years old and above) nationwide: 360 each in Balance Luzon, Metro Manila, the Visayas, and Mindanao (sampling error margins of ±2.6% for national percentages, and ±5% each for Balance Luzon, Metro Manila, the Visayas, and Mindanao). For more information about the survey design and results. SWS. 2019 June 4. First Quarter 2019 Social Weather Survey: Internet usage steady at 46% of adult Filipinos. <https://www.sws.org.ph/swsmain/artclidispagg/?artcsyscode=ART-20190604221437>.

budget allocation<sup>26</sup> and about 88% of schools having electricity.<sup>27</sup> One explanation for this is the lack of wired infrastructure that is necessary to connect institutions or feed enough bandwidth to the wireless networks that reach the school's community.

Compared to its ASEAN neighbors, the Philippines' fixed and mobile broadband penetration is relatively low. In 2018, the Philippines' **fixed broadband** subscription was at **3.7 per 100 inhabitants**, lower than the ASEAN average of 8.37 and compared to neighboring countries like Malaysia (8.5), Viet Nam (13.6), and Thailand (13.2), although a little higher than Indonesia (3.3), a much larger archipelago with 10,000 more islands but comparable per capita income.<sup>28</sup>

Figure 3. Fixed Broadband Subscribers per 100 Persons (2018)



Source: ITU Broadband Commission

Given the archipelagic nature of the Philippines, the use of wireless Internet technology is more prominent. About **95% of Filipinos Internet users use wireless devices**, mainly cellular mobile. Mobile broadband subscription in the country was 68.6 per 100 inhabitants in 2018, lower than Malaysia (111.5), Indonesia (95.7), and Thailand (99.0), but higher than Viet Nam (46.9).

Figure 4. Active Mobile Broadband Subscribers per 100 Persons (2018)



Source: ITU Broadband Commission

### Quality of Service

The Philippines has one of the slowest and most expensive Internet services in the world, sans promos. Akamai Technologies' State of the Internet report ranked the Philippines as

<sup>26</sup> Data from the Department of Education. 2016. DepEd Order No. 13, s. 2016 provides for the inclusion of the budget for communications (telephone and internet connectivity) in a school's maintenance and other operating expenses (MOOE). According to a DepEd official, each public school is allocated P4,000/month for Internet connectivity.

<sup>27</sup> This includes alternative sources, such as solar power, generator sets, etc.

<sup>28</sup> The Philippines' total population in 2018 was 106 million. Its fixed broadband subscription was lower than the regional average of 8.37 per 100 inhabitants. See [https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2019/Fixed\\_broadband\\_2000-2018\\_Dec2019.xls](https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2019/Fixed_broadband_2000-2018_Dec2019.xls)



having the slowest average download speed for fixed broadband in Asia Pacific at 5.5 Mbps as of Q1 2017. OpenSignal reported that the Philippines' 4G/LTE speed ranks near bottom at 8.24 Mbps, the third slowest out of 76 countries, as of November 2017.

### ***Affordability***

Internet service in the Philippines is considered unaffordable. Although prices are dropping, entry-level fixed broadband (postpaid, 1GB) service is considered unaffordable to the typical Filipino, as it costs 6.5% of the country's gross national income (GNI) per capita<sup>98</sup> per month or a household's average monthly earnings. This cost is above the 2% affordability threshold recommended by the Broadband Commission and the Alliance for Affordable Internet.<sup>99</sup> Mobile (postpaid, 1GB) broadband service was unaffordable for quite some time, but there was a huge, sudden price drop seen in 2015, from 6.74% to 2.1% of GNI per capita in 2016.<sup>100</sup> In 2017, the cost of a 1-GB mobile broadband stood at 1.94% of GNI per capita, against Viet Nam's 2.94% and Indonesia's 1.39%.

