

Review of Indonesia's Internet Infrastructure and Access 2022: Between Digital Rights and Government Policies

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Introduction: Internet Infrastructures Development in 2022

In 2022, Indonesia's Internet users increased significantly compared to previous years. Indonesia presently ranks third in the world in terms of Internet users, after China (1 billion) and India (833 million)ⁱ. In Indonesia, there are now 220 million internet users at the end of the year, an increase of 175 million in the last two years, driven by the necessity for an internet connection during the pandemic. Indonesia had 202.6 million internet users in 2021, which rose to 204.7 million just in the first quarter of 2022, according to Data Reportalⁱⁱ. APJII Association estimates that 77.02% of Indonesians have access to the internetⁱⁱⁱ. According to the Central Bureau of Statistics (BPS), household Internet users have increased sharply in the last five years. In 2017, only 57.33% of Indonesian households accessed the Internet, while at the end of 2021, BPS recorded an increase in household Internet access to 82.07%^{iv}.

Probably the most significant development to note is the Palapa ring project^v. Palapa Ring is a national fibre optic cable network development project that connects 90 districts/cities throughout Indonesia, with 57 service districts/cities and 33 interconnection districts/cities. This network comprises 12,148 kilometres of fibre-optic cable consisting of land and underwater optical cables and a 55-hop microwave radio network segment. The Palapa Ring project led by the Ministry of Communication & Informatics (MCIT) aimed to integrate the existing network with the new network and made the 3T (Disadvantaged, Frontier, and Outermost) areas previously not connected to the internet become connected. President Joko Widodo inaugurated the Palapa Ring on 14 October 2019. There are three phases of Palapa ring development, West, Central, and East Indonesia. The Central Palapa Ring was completed in early 2019, and the West Palapa Ring was completed last 2018. Meanwhile, the East Palapa Ring has a progress of 88.14%, and integration is expected to be completed in 2025^{vi}.

Looking forward to completing the Palapa Ring broadband project in Indonesia, the Government also plans to provide 150 thousand of internet points with satellite technology throughout the country. Since 2020, the plan to launch the SATRIA Satellite, which is believed to support internet needs in 93,900 schools, 47,900 regional government offices, 3,700 health centres, and 3,900 police and military headquarters, which are difficult to

reach by an optical cable^{vii}. SATRIA satellite is planned to be launched in 2023^{viii}. At least three layers of infrastructure must be carried out to fulfil the right to Internet access for the Indonesian people. Infrastructure development at the Backbone Layer (Palapa Ring Network), Middle-mile layer (Satellite Satria and Low Earth Orbit Satellite), and last-mile layer (Base Transceiver Station/BTS).

Review on Access to the Internet and Related Policies

With the Internet penetration rate in Indonesia in 2021-2022 ranging from 77.02%, this statistic also means that 26.3% of the population was still not served by an Internet connection at the start of the year. Indonesia is unfortunately also ranked 8th in a country with a large population that is not connected to the Internet. According to the statistics, 73.05 million Indonesians still do not have access to the Internet. The population of Indonesia ranks eighth in the world for not having access to the Internet^{ix}. The disparity between rural and urban areas demonstrates that the Internet has not yet reached approximately 84,000 villages^x.

In February 2022, the MCIT reported that 12,548 villages were still without 4G Internet access^{xi}. In contrast, the MCIT is implementing its digital transformation goal by implementing a policy of cutting off the 3G network, which telco operators have switched off since last July 2022. Geographically, in addition to unaffordable prices, digital divide conditions occur between rural communities in 3T areas that still rely on 3G connections and signal loss on many blank spot areas. Global Connectivity Report 2022 also states that internet users in rural areas are generally lower due to a lack of infrastructure^{xii}.

However, digital transformation and the development of 5G in Indonesia have forced cellular operators to turn off 3G signals and require individuals to replace sim cards and mobile devices that support them despite of lack of 4G and 5G signals in their areas and also schools in rural areas in 3T. For example, schools depend on operators when taking the National Computer-Based Assessment (ANBK) exam. Students in many 3T areas have to be willing to climb hills and set up tents to take ANBK exams because the cellular operator at their school does not have a 4G connection^{xiii}. Another problem is that The Palapa Ring project, which also requires the development of thousands of BTS (base transceiver stations), including mobile BTS, is often constrained by technical issues. From challenges in vulnerable areas in Papua that impede the installation and management of BTS^{xv}, the corruption cases of BTS procurements^{xvi}, and counterproductive policies.

One example of a counterproductive policy is MCIT Ministerial regulation No. 5/2020, which requires private Electronic System Operators (PSE) to register and provide access to the government and law enforcement to the personal data of its users, which officially took effect two years after it was promulgated. With this registration, MCIT can record

taxation. Still, several articles provide wider discretion for the government and law enforcement officials to request access and take out user content on the grounds of disturbing public order and blocking and opening access for no apparent reason. It is alleged that these problematic articles can be used haphazardly (abuse of power) and are not in accordance with human rights standards and mechanisms^{xvii}. As of August 2022, 48 applications, games, websites, and digital platforms have been or are being blocked^{xviii}, which may increase based on this subjectivity.

Disruption of Internet access as digital human rights

The practice of blocking and disconnecting the Internet still be carried out in 2022. This shows an imbalance between infrastructure development and allowing the public to use and advance through Internet facilities. In 2022, there were 36 (thirty-six) incidents of Internet disruption in Indonesia with or without explanation^{xix}. Underwater fibre-optic cable damages dominated Internet disruptions in the Papua region since early 2022, and it took months to be repaired until May 2022. There has also been a disconnection of the Internet shutdown in Wadas, Central Java, in early 2022^{xx}. Until the end of the year, several technical problems from operators and platforms also hampered the dynamics of Internet connectivity and access by citizens in Indonesia.

Socio-political activities in Indonesia are often parallel with disruptions to Internet access. According to the Southeast Asia Freedom of Expression Network (SAFE-net), internet disruptions in Papua and West Papua often occur parallel to government activities in those areas and separatist activities. Demonstrators against mining in Wadas Village, Central Java, who used social media to coordinate, later experienced connectivity restrictions, and several people were arrested. Although most informed the public that the reasons are technical constraints, such as a break in fibre optic cables. In its various forms, internet disturbances that the public feels include disconnection, blocking, and slowing connections. According to a survey by the APJII Association, 54.3% of respondents stated that internet disturbances most often felt in Indonesia are slow connections, and 32.35% of connections are intermittent. Interestingly, as many as 8.09% said they did not know why Internet interruptions occurred^{xxi}.

Affordability to access the Internet

The government also acknowledges that internet rates are expensive and rewarded with slow connections, especially in the 3T areas^{xxii}. Even though in 2019, Indonesia was known for its expensive Internet rates^{xxiii}, Indonesia is a Southeast Asia country with the cheapest mobile (cellular) Internet rates in 2021, according to the cable.co.cuk report^{xxiv}. Slightly below Indonesia, Myanmar and Cambodia also occupy the lower Internet speed ranks. As for home connections, CupoNation's 2019 research stated that Indonesia is still in the expensive category^{xxv}, and no other recent research looks at the percentage of the

price paid per Mbps. The higher the connection speed offered, the lower the bandwidth fee per Mbps charged. On the Asian continent, Indonesia only loses to Bangladesh and Sri Lanka regarding cheap Internet connection rates^{xxvi}. However, emphasis needs to be placed on, for example, Vietnam, which can provide low prices (only above Indonesia) but can provide fast Internet services to its citizens in a relatively balanced connection with cellular and home.

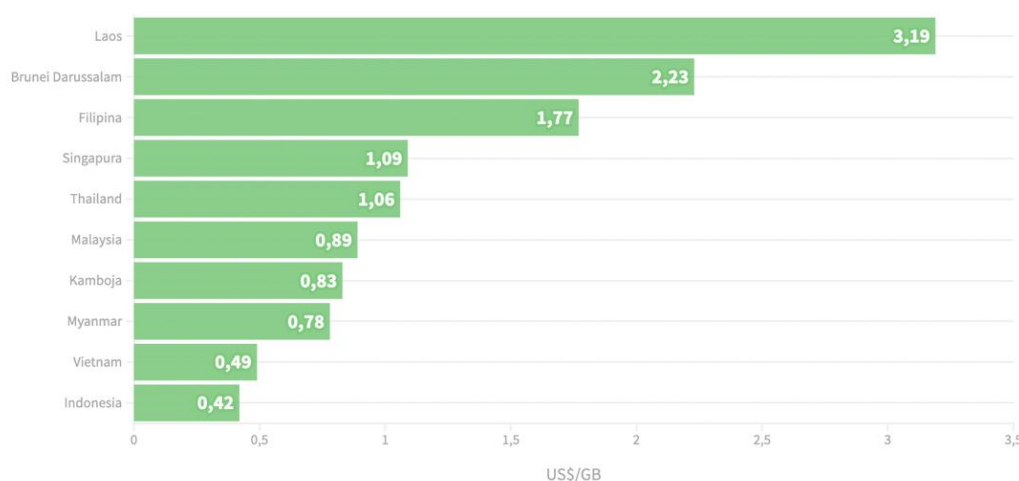


Figure 1. Mobile Internet prices in ASEAN in 2021 (source: cable.co.uk, 2022)

Even though Internet speed is increasing in 2022, men still dominate Internet usage. Having a population proportion of 49.7% women and 50.3% men, women are still lagging behind men in terms of fulfilling the right to Internet access. This is also reflected in Indonesia's position, which is only ranked 92 out of 146 countries in the 2022 Global Gender Gap Index^{xxvii} and is only in 10th position, above Cambodia (10), Malaysia (14), and Brunei Darussalam (15) in Southeast Asia. Several recommendations to address the issue of gender equality in the digital realm include, first, expanding internet access to remote villages. Second, strengthen digital literacy. Third, giving a special quota for women for educational scholarships and training.

ASEAN countries	Internet speed world ranking	
	Celluler (Mobile)	Cable/Household (Fixed)
Brunei Darussalam	10	86
Singapore	19	1
Vietnam	51	46
Thailand	56	6
Malaysia	45	36

Laos	68	111
Myanmar	78	131
Philippines	80	43
Cambodia	98	127
Indonesia	110	119
Timorleste	-	-

Table 1. World Internet speed ranking of ASEAN countries. December 2022. (Source: speedtest by ookla, January 2023)

In terms of Infrastructure availability and quality, the Internet connection test service provider site Speedtest Ookla released the Speedtest Global Index for the last quarter in 2022, showing increased fixed (home) Internet speeds^{xxviii}. However, of the 138 countries surveyed worldwide, Indonesia could only occupy the bottom half in the 110th position, down two ranks from 2021 (108th) in mobile Internet (mobile devices). Regarding cellular connection, Indonesia has the slowest internet connection, while the third-place winner in the domestic cable is only above Cambodia (127) and Myanmar (131)^{xxix}. That rank affirmed Indonesia as the lowest internet speed country in Southeast Asia in 2022.

Concluding Remarks

Firstly, Internet infrastructure, the backbone of Indonesia's economic levers, is a determining factor for digital-based financial performance. The link between access to infrastructure and barriers to entry also makes Indonesia's position on Freedom House's Freedom on the Net Index (FOTN) not show a satisfying leap, even though infrastructure development is considered satisfactory. Indonesia could only move up one rank from 48 to 49 and still be in the “partly free” category. The need to improve the infrastructure also required balancing the infrastructure to the proportion of people who can access the Internet as their fundamental digital human right.

Secondly, the quality of Internet services, which is assumed to be directly proportional to the cost of gaining access, needs to be reviewed. The purchasing power of the people in Indonesia, associated with economic and digital inequality conditions, has resulted in price discrimination by telecommunications operators in Indonesia. For example, the cost of subscribing to an Internet connection in Eastern Indonesia, especially Papua, is far more expensive than connection fees in Western Indonesia. With that high price, there should be better service. Further analysis of the mechanism for implementing Internet connection pricing to an appropriate equilibrium is needed. The right to access the Internet for society and the business nature of telecommunication operators should support each other in a government-intervened market environment. []

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- ⁱ Internet World Stats. 2023. Asia. <https://www.internetworldstats.com/stats3.htm#asia>
- ⁱⁱ Data Reportal. 2023. Digital Indonesia 2022. Retrieved from <https://datareportal.com/reports/digital-2022-indonesia>
- ⁱⁱⁱ KataData. June 10, 2022. APJII Internet Penetration in Indonesia Reach 77,02 in 2022. <https://databoks.katadata.co.id/datapublish/2022/06/10/apjii-penetrasi-internet-indonesia-capai-7702-pada-2022>
- ^{iv} BPS. Central Bureau of Statistics. September, 7, 2022. Statistics of Indonesia Telecommunication 2021. <https://www.bps.go.id/publication/2022/09/07/bcc820e694c537ed3ec131b9/statistik-telekomunikasi-indonesia-2021.html>
- ^v See more about Palapa Ring Project at <https://palaparing.id>
- ^{vi} Azmi, F. DetikJatim. November 1, 2022. Minister of ICT Expected Palapa Ring Development Finished in 2025. <https://www.detik.com/jatim/berita/d-6380501/menkominfo-harap-pembangunan-palapa-ring-selesai-tahun-2025>
- ^{vii} <https://nasional.tempo.co/read/1655769/strategi-lintasarta-hadapi-kesenjangan-digital-di-indonesia>
- ^{viii} https://www.kominfo.go.id/content/detail/29278/satelit-satria-ditargetkan-meluncur-2023/0/sorotan_media
- ^{ix} Karnadi, A. February 2, 2022. Many residents in these 8 countries are not connected to the internet <https://dataindonesia.id/digital/detail/penduduk-di-8-negara-ini-banyak-yang-belum-terkoneksi-internet>
- ^x CNN Indonesia, July 11, 2022. 84 Thousand Villages and Kelurahan Not Connected to the Internet <https://www.cnnindonesia.com/ekonomi/20220711131442-532-819960/84-ribu-desa-dan-kelurahan-tak-terkoneksi-dengan-internet>
- ^{xi} Dio Prasasti, G. February 12, 2022. Kemkominfo: 12,548 out of 83,218 Villages and Districts Not Yet Touched by 4G Internet <https://www.liputan6.com/tekno/read/4884963/kemkominfo-12548-dari-83218-desa-dan-kelurahan-belum-tersentuh-internet-4g>
- ^{xii} Dihni, V.A. July 13, 2022. Overview of the Internet Access Gap in Cities-Rurals on a Global Scale. <https://databoks.katadata.co.id/datapublish/2022/07/13/gambaran-kesenjangan-akses-internet-di-kota-des-skala-global>
- ^{xiii} Antognoni, Y. Sept 22, 2022. Students in NTT Hold ANBK in the Forest, Here's the Local Government's Response. <https://daerah.sindonews.com/read/889845/174/siswa-di-ntt-gelar-anbk-di-hutan-begini-tanggapan-pemda-1663632543>
- ^{xiv} Lalong, F. Sept 19, 2022. Willing to be bitten by mosquitoes for internet signal, students in remote areas of Matim hold ANBK in the middle of the forest. <https://www.posflores.com/pendidikan/pr-4414806301/rela-digigit-nyamuk-demi-sinyal-internet-siswa-di-pelosok-matim-gelar-anbk-di-tengah-hutan>
- ^{xv} Rahma Sari, H. May 13, 2022. In the Aftermath of the Beoga Massacre, the Papua Police Chief Stops the Construction of BTS in Vulnerable Areas <https://www.merdeka.com/peristiwa/buntut-pembantaian-di-beoga-kapolda-papua-setop-pembangunan-bts-di-daerah-rawan.html>
- ^{xvi} Alfarazi, MK. January 25, 2023. BTS Kominfo Corruption Case, Attorney General Names Huawei Employees as Suspects. <https://bisnis.tempo.co/read/1683600/kasus-korupsi-bts-kominfo-kejagung-tetapkan-karyawan-huawei-jadi-tersangka>
- ^{xvii} KOMPAS. August 3, 2022. Asking for Permenkominfo Number 5 of 2022 to be Revoked, LBH Jakarta: Not in Accordance with International Human Rights Standards and Mechanisms. <https://megapolitan.kompas.com/read/2022/08/03/19181921/minta-permenkominfo-nomor-5-tahun-2022-dicabut-lbh-jakarta-tidak-sesuai>
- ^{xviii} Prabowo, G. August 1, 2022. This is a list of 48 Game Applications and Websites that are Blocked by Kominfo for August 2022. <https://nextren.grid.id/read/013403108/ini-daftar-48-game-aplikasi-dan-website-yang-diblokir-kominfo-agustus-2022?page=all>

^{xix} SAFEnet. Digital Rights Situation Report in Indonesia 2022. Upcoming.

^{xx} Freedom House. 2022. Freedom On The Net 2022. https://freedomhouse.org/id/country/indonesia/freedom-net/2022#footnote30_wrrqzuz

^{xxi} Mahmudan, A. June 13, 2022. Slow Connections Become the Main Disturbance of the Internet in Indonesia. <https://dataindonesia.id/digital/detail/koneksi-lambat-jadi-gangguan-utama-internet-di-indonesia>

^{xxii} Rayana, U. Dec 14, 2021. Luhut's Statement About Expensive Indonesian Internet Tariffs Is Not Completely True, Why?. <https://selular.id/2021/12/ Pernyataan-luhut-soal-tarif-internet-indonesia-mahal-tak-sepenuhnya-benar-mengapa/>

^{xxiii} Pratnyaawan, A. April 18, 2019. Compared to other Southeast Asian countries, Indonesia's internet rates are expensive. <https://www.suara.com/tekno/2019/04/18/162222/dibanding-negara-asia-tenggara-lain-tarif-internet-indonesia-mahal>

^{xxiv} Karnadi, A. Mar 16, 2022. Indonesian Internet Mobile Price the cheapest in ASEAN. <https://dataindonesia.id/digital/detail/harga-internet-mobile-indonesia-paling-murah-di-asean>

^{xxv} Indonesian Cable Internet Tariffs Are One of the Expensive in Southeast Asia. <https://selular.id/2019/04/tarif-internet-kabel-indonesia-termasuk-yang-mahal-di-asia-tenggara/>

^{xxvi} Riyanto, GP. List of Internet Package Prices Worldwide, Indonesia Cheap or Expensive? <https://tekno.kompas.com/read/2021/09/02/18020067/daftar-harga-paket-internet-di-seluruh-dunia-indonesia-murah-atau-mahal-?page=all>

^{xxvii} WE Forum. Global Gender Gap Report 2022. <https://www.weforum.org/reports/global-gender-gap-report-2022/>

^{xxviii} Speedtest Global Index. Indonesia median country speeds January 2023. <https://www.speedtest.net/global-index/indonesia?mobile#market-analysis>

^{xxix} *ibid*