

From B2B Collaboration to B2C Services: Challenges of Starlink Internet Services in Indonesia

Unggul Sagena, Lecturer

University of Indonesia, School of ICT and Digital Transformation for Tourism Industry

Introduction: 3T Regions and Internet in Indonesia

Indonesia is home to numerous islands, a significant portion of which are inaccessible through undersea cable connectivity. However, the advent of satellite technology provides a viable solution for reaching these remote islands and inland regions. In early 2023, the launch of the SATRIA-1 satellite marked a momentous occasion for Indonesia. The government of Indonesia intends to utilize this satellite for the purpose of enhancing internet networks and digital services at 50 thousand specific locations, particularly in regions that are commonly identified as **underdeveloped, frontier, and outermost (3T)**.

The Indonesian government asserts that the existence of SATRIA-1 possesses the capability to reinforce educational and Islamic boarding school activities, expedite public services in regional governmental institutions, store data regarding community health centers and regional hospitals, as well as provide assistance in regional supervision carried out by the Indonesian National Armed Forces (TNI) and the Indonesian National Police (Polri) [1]

The pace of progress in the endeavor to achieve equitable Internet access in the 3T region remains tardy, as the efficacy of satellite support is still subject to scrutiny. The SATRIA-1 satellite, under the auspices of the Ministry of Communication and Information (Kominfo) and the Indonesian Telecommunications Accessibility Agency (BAKTI Kominfo), has not yielded sufficient impetus.

This is due to the fact that shortly after the announcement of its launch, the Ministry of Health entered into a Memorandum of Understanding (MoU) with the Starlink corporation in August 2023. By submitting a proposal to furnish affordable Internet connectivity to all local healthcare facilities in Indonesia, the Ministry of Health aspires to find a resolution through collaboration with Starlink.

Race for 3T: Why We Need Starlink?

Starlink is an internet company operating under the auspices of Elon Musk's SpaceX, which offers internet connectivity services through a satellite network. Starlink utilizes advanced satellite technology that enables the provision of high-speed internet with minimal latency or data transmission delays. Unlike traditional satellite internet services that rely on a single satellite orbiting the Earth at an altitude of 35,786 km, Starlink's satellites operate in a lower orbit, approximately 550 km above the Earth's surface. This low orbit configuration allows for reduced latency and facilitates efficient high-speed data transmission.

The employment of low-orbit satellites, such as those deployed by Starlink, holds promise in addressing the internet accessibility challenges faced by remote regions. Beyond the 3T regions, which encompass underdeveloped, frontier, and outermost areas, there exist approximately 1,000

districts and cities that lack adequate telecommunications coverage. Efforts to bridge the infrastructure divide between western and eastern Indonesia have encountered significant setbacks due to rampant corruption within the Kominfo.

Therefore, the collaboration of the government through the Ministry of Health is deemed more rational in order to expedite internet services for public institutions. This rationale has also been articulated by the Minister of Health, who has highlighted that currently, out of the over 10 thousand existing Puskesmas (local community health centers), approximately 2,200 Puskesmas and 11,100 Sub-Puskesmas still lack internet connectivity.[2]

From B2B Collaboration to B2C Services

It is a well-documented fact that Starlink has already commenced operations in Indonesia through the implementation of a business-to-business (B2B) framework. The entry of Starlink into the Indonesian market took place subsequent to Kominfo granting anchoring Special Landing Rights for Non-Geostationary Satellite Orbit (NGSO) upon Telkomsat, granting them authorization to employ Starlink as a backhaul [3]

At present, Starlink has established a collaboration with the government, aiming to provide internet connectivity to healthcare facilities, in addition to its deployment at National Border Posts (PLBN). This implies that the presence of Starlink remains confined to the realm of business-to-business (B2B) interactions rather than directly catering to the general public (B2C). However, on both schemes, the entry of foreign Internet companies like Starlink is viewed as a potential threat to the operations of cellular operators and internet service providers in Indonesia.[4]

Yet, Starlink has already initiated a partnership with the cellular operator Smartfren, utilizing Starlink's low Earth orbit (LEO) satellite for its services. The LEO Telkomsat satellite, operated by Starlink is further supported by a Memorandum of Understanding (MoU) between the Indonesian Internet Service Providers Association (APJII) and Telkomsat for ISP backhaul operations in Indonesia. According to APJI, this MoU was established to assist the Indonesian government in achieving its objective of achieving 100 percent internet penetration by 2024.[5]

At its inception, there were optimistic expectations regarding the initial collaboration between Starlink and Telkomsat, which aimed to promote the optimal utilization of satellite-based telecommunications services through a business-to-business (B2B) framework. This partnership proves advantageous for underdeveloped outermost frontier (3T) areas, as well as areas that are geographically challenging to access using terrestrial base transceiver stations (BTS), such as those located in Indonesian waters [6].

Nevertheless, towards the end of this year, Starlink underwent a transformation in its business model, transitioning to a direct service provider for end users in Indonesia. In November 2023, Kominfo commenced the processing of the operating permit application submitted by the company owned by billionaire Elon Musk, with the intention of enabling retail services by 2024. Upon reviewing the official Starlink website [7] for the Southeast Asia region, it becomes evident that Indonesia will be the second-tier recipient of service provision in early 2024.

11 Southeast Asia Countries	Status of Starlink Services
Singapore	Available Now
Malaysia	Available Now
The Philippines	Available Now
Indonesia	Starting 2024
Timorleste	Starting 2024
Brunei	Starting 2024
Laos	Starting 2024
Cambodia	Pending regulatory approval
Viet Nam	Pending regulatory approval
Thailand	Pending regulatory approval
Myanmar	Servis date is unknown at this time

Tabel 1. Starlink services across Southeast Asia. (Source: starlink.com)

Pros-Cons and Requirements

The government through the Ministry of Communication and Information stated several requirements for Starlink to operate for larger consumers next year. There are three things that are required organizationally. Firstly, If Starlink intends to build its own company, it is required to be an Indonesian legal entity. Secondly, Starlink can enter Indonesia by collaborating with local providers, as has been done by Telkomsat. Finally, Starlink can enter Indonesia by acquiring an Indonesian company.[8]

Furthermore, Starlink is also obliged to fulfill the obligation to pay telecommunications operation rights fees, namely Tel BHP of 0.5% and USO BHP of 1.25% of Starlink's gross income, and implement commitments to develop and/or provide a comprehensive telecommunications network.[9]

In addition, in accordance with the guidance of the President of the Republic of Indonesia, there exist regulations pertaining to the Domestic Component Level (TKDN) that Starlink is required to adhere to, as outlined in the Minister of Communication and Information Regulation 13 of 2021. It is mandatory for Starlink to satisfy a TKDN threshold of at least 35%.[10] Furthermore, as per the declaration made by the recently appointed Minister of Communication and Information Technology, it is an absolute prerequisite for Starlink to utilize an Indonesian IP address, with the objective of upholding "national security" [11].

Aside from competition, what has generated debate regarding the presence of Starlink is the matter of “cyber sovereignty”. If Starlink disregards the terms and regulations mandated by the government, there is apprehension that the primary concern lies in the potential limitation of the ability to filter or regulate content, which in turn could jeopardize national security. However, as of now, Starlink has yet to acknowledge this request. With these requisites, currently, Starlink, a subsidiary of Elon Musk's SpaceX, is still in the process of examination. In the latest report, Elon Musk acknowledged that he has no intention of employing local personnel as he intends to solely operate utilizing an over-the-top (OTT) service model [12]

Competition for access optimization in Indonesia?

Considering the diverse array of governmental appeals, it is logical for Starlink to reassess its business-to-consumer (B2C) service strategies, even though, with the emergence of new contenders like Starlink, competition in internet service provision will inevitably intensify. Consequently, this will facilitate the populace in realizing their entitlement to internet access.

Currently, some telco operators are concerned about the move of Starlink to B2C service. Consumers will choose Starlink connection because compared to local telco operators, Starlink speed is highly superior. Some operators such as XL and Indosat have already shown their concern on Starlink disruption and ask the government to make “balance of services” [13], and also beginning to strategize themselves, for example, cooperation with Starlink competitors with LEO satellite services such as OneWeb.[14]

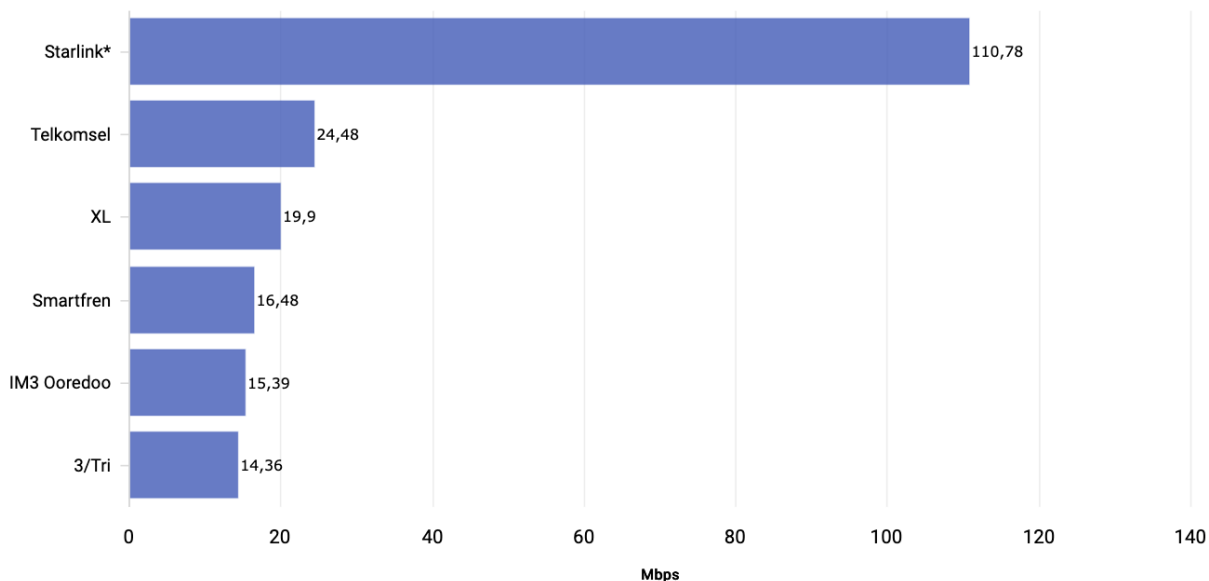


Figure 1. Median Download Speed of Starlink Internet and Local Mobile Internet Providers (Q1 2023)* (Source: databoks.katadata.co.id)

In the end, competition, rather than monopoly which has been the pattern of telecommunications business in developing and authoritarian countries, becomes an opportunity. Even though there was internet penetration of 77% at the beginning of 2023, this still shows that 23% of the population does not have internet access. This means that there are 63.51 million people in Indonesia who do not have Internet access. [15]

With the existence of internet services triggered by the presence of Starlink on ISP capabilities, internet services can develop both in quantity and quality. Even the large number of national telco operators will inevitably innovate services. Competitive conditions will trigger improved services and reduced rates. Moreover, currently, Indonesia is a country with almost the slowest internet connection in Southeast Asia. Indonesia is only one position above the lowest, Timorleste.

ASEAN countries	World Rank Internet Speed	
	Mobile/Celuller	Fixed/Home
Singapore	#22	#1
Brunei	#16	#85
Malaysia	#46	#36
Viet Nam	#52	#39
Laos	#68	#111
Myanmar	#75	#133
Thailand	#54	#6
The Philippines	#80	#40
Cambodia	#96	#127
Indonesia	#103	#120

Figure 1. Internet speed in Southeast Asia countries, February 2023 (source: SAFEnet, 2023).

For civil society, the presence of Starlink will actually open the door to greater democratization and increased fulfillment of digital rights, especially internet access rights. Behind concerns about "state security" [16] is the obligation to fulfill the right to Internet access as encouraged by the UN. Since being reported by Frank La Rue, UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, the Internet has become a “new right”[17]. Although this does not necessarily make it a priority if people in remote areas do not yet have basic access to food and education.

As the UN itself views it as a non-binding resolution for a "human rights-based approach when providing and expanding access to the internet". The UN also firmly condemned Internet shutdowns as a violation of human rights.[18] The resolution builds on the UN's previous statement on digital rights, reaffirming the organization's stance that "the same rights people have offline must also be protected online," in particular the freedom of expression covered under article 19 of the Universal Declaration of Human Rights.[19]

Conclusions: Challenges from B2B to B2C

In the realm of business-to-business (B2B) collaboration and the subsequent shift towards business-to-consumer (B2C) services, the emergence of Starlink presents an intriguing case study. The rapid advancement of technology has paved the way for new avenues of collaboration between businesses. B2B collaboration has become increasingly prominent, allowing companies to streamline their operations and enhance efficiency through the exchange of goods, services, and information. However, as the focus shifts towards B2C services, a different set of challenges emerges.

Challenges from the regulatory landscape surrounding internet development in Indonesia may present challenges for Starlink. Ensuring compliance with laws and regulations, especially on the basis of national security issues, is essential for the successful integration of Starlink's services into the Indonesian market. Collaborative efforts between Starlink and local providers as B2B, not

only with the government entities, are necessary to navigate these regulatory challenges and foster a conducive environment for internet development.

The transition from B2B collaboration to B2C services, exemplified by the emergence of Starlink, brings forth a new set of challenges in the context of internet development in Indonesia. Overcoming logistical obstacles, addressing cultural and linguistic diversity, and navigating the regulatory landscape are crucial steps toward harnessing the full potential of Starlink's services in Indonesia. By tackling these challenges, the country can pave the way for inclusive internet development and contribute to the growth and digital transformation of its society and economy. Importantly, fulfilling digital rights; in particular, access to the internet.

References:

- [1] Ministry of Education & Culture. 22 June 2023. Get to know SATRIA-1, Indonesia's Largest Satellite in Asia. <https://ditsmp.kemdikbud.go.id/mengenal-satria-1-satelit-terbesar-di-asia-milik-indonesia/>
- [2] Rokom, 6 Agustus 2023. Minister of Health Meets with Elon Musk to Build Internet Access in Remote Health Centers. <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20230806/2643614/menkes-temui-elon-musk-untuk-bangun-akses-internet-di-puskesmas-terpencil/>
- [3] Southeast Asia Freedom of Expression Network. November 2023. “Third Quarter of Digital Rights Situation Report in Indonesia 2023”. <https://safenet.or.id/id/2023/11/laporan-pemantauan-hak-hak-digital-triwulan-iii-2023/>
- [4] “Starlink entering Indonesia is a threat signal for cellular operators.” <https://inet.detik.com/law-and-policy/d-6902633/starlink-masuk-indonesia-jadi-sinyal-an-caman-bagi-operator-seluler>
- [5] Indonesia Internet Service Provider Association. 20 March 2023. APJII and Telkomsat Accelerate Digital Transformation Through Elon Musk's Starlink Satellite Service. <https://apjii.or.id/berita/d/apjii-dan-telkomsat-percepat-transformasi-digital-lewat-layanan-satelit-starlink-milik-elon-musk>
- [6] Dear Starlink, Focus on B2B services in Indonesia. <https://inet.detik.com/telecommunication/d-6979171/dear-starlink-fokus-layanan-internet-b2b-di-indonesia>
- [7] Starlink service address availability. <https://www.starlink.com/map>
- [8] <https://www.merdeka.com/teknologi/tiga-syarat-ini-diajukan-pemerintah-ke-starlink-agar-bisa-beroperasi-di-indonesia-36764-mvk.html>
- [9] “Starlink Wants to Operate in Indonesia? Must Follow These Regulations” Detik.com <https://inet.detik.com/telecommunication/d-6945736/starlink-mau-beroperasi-di-indonesia-harus-ikut-regulasi-ini>.

- [10] <https://inet.detik.com/law-and-policy/d-6970486/syarat-starlink-pakai-ip-address-indonesia-pakar-demi-keamanan-nasional>
- [11] “Starlink Entering Indonesia, Government Must Create Balances”
<https://selular.id/2023/10/xl-axiata-starlink-masuk-indonesia-pemerintah-perlu-buat-keseimbangan/>
- [12] “Indosat update cooperation with Starlink satellite competitor oneweb”
<https://market.bisnis.com/read/20231109/192/1712834/indosat-isat-update-kabar-kerja-sama-dengan-satelit-saingan-starlink-oneweb>
- [13] Simon Kemp. 9 February 2023. “Digital 2023: Indonesia”. DataReportal.
<https://datareportal.com/reports/digital-2023-indonesia>
- [14] Starlink Entering Indonesia, Investment that Threatens Cyber Sovereignty?
<https://inet.detik.com/telecommunication/d-6971438/starlink-masuk-indonesia-investasi-yang-mengancam-kedaulatan-siber>
- [15] Special Rapporteur on freedom of opinion and expression. OHCHR.
<https://www.ohchr.org/en/special-procedures/sr-freedom-of-opinion-and-expression>
- [16] The Verge.com 4 July 2016. UN Resolution Condemns Disrupting Internet Access.
<https://www.theverge.com/2016/7/4/12092740/un-resolution-condemns-disrupting-internet-access>
- [17] Laura Villadiego. 17 January 2022. Internet access: a new human right?
<https://www.equaltimes.org/internet-access-a-new-human-right?lang=en>