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Indonesia Telecoms Update 2023

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Introduction: Key Highlights

- This report explores the dynamics of the Indonesian telecoms market and the latest trends which we are witnessing in the marketplace.
- Indonesia ranks as the third fastest-growing economy among G20 nations and is the largest economy in the vibrant ASEAN region. In 2022, the country's GDP exhibited resilience, surging from USD 1.1 trillion in 2021 to USD 1.3 trillion, demonstrating an impressive growth rate of 5.3% compared to the global economy's 3.6% growth.
- According to the IMF, Indonesia's economy is projected to grow by 4.8% over 2022-23, outperforming the global average of 2.9%. The country is anticipated to maintain robust economic growth of approximately 5% from 2023 to 2027, with moderate inflation hovering around 3.5%.
- With the blended ARPU level remaining almost stagnant and stable over the last 4 years, telcos have been shifting their focus to convergent offerings, strategically targeting the enterprise segment and the anticipated release of 5G spectrum that will unravel over the time period 2023-25. The overall telecom revenue is now estimated to grow at a higher rate (CAGR of 6.1% over 2023-27 as compared to 4.6% over 2018-22) to reach to reach IDR 309.5 trillion (~USD 20.7 billion) by 2027.
- Indonesia's telecom market is highly competitive and concentrated with the top three players accounting for almost 95% of the overall revenue in 2022. The landscape shifted significantly in 2022 due to the merger of Indosat Ooredoo and Hutchison 3, propelling Indosat Ooredoo Hutchison to secure the second position with a revenue market share of approximately 20%.
- Indonesia holds the fourth position worldwide in terms of mobile subscribers, boasting an impressive 352 million mobile cellular subscriptions as of 2022. It is expected to emerge as the third largest mobile market by subscriptions by 2025.
- 4G accounted for ~84% of overall subscriptions in 2022. With the anticipated release of the 5G spectrum over the time period 2023-25, we expect 5G subscriptions to account for ~30% of the overall subscriptions by 2027, and 4G accounting for more than two-third of the subscription count.
- The Indonesian Government Digital Roadmap "2021-2024" is driving the digital ambitions and telcos are emphasising on upgrading subscribers on 4G and 5G networks. However, the limited availability of the 5G spectrum is resulting in slow and selective 5G network deployment.
- The average blended ARPU for Indonesian telcos remained one of the lowest among their global counterparts at around IDR 35,700 (USD 2.38). ARPU has remained almost stagnant owing to stiff competition, resulting in aggressive pricing by telcos. Increasing adoption of 5G during 2025-26 is likely to drive ARPU growth.

- The Indonesian telecom industry is undergoing a transformative phase, marked by a shift towards non-connectivity revenue streams, a focus on the enterprise segment as a new revenue engine, and a strategic move towards convergent offerings.

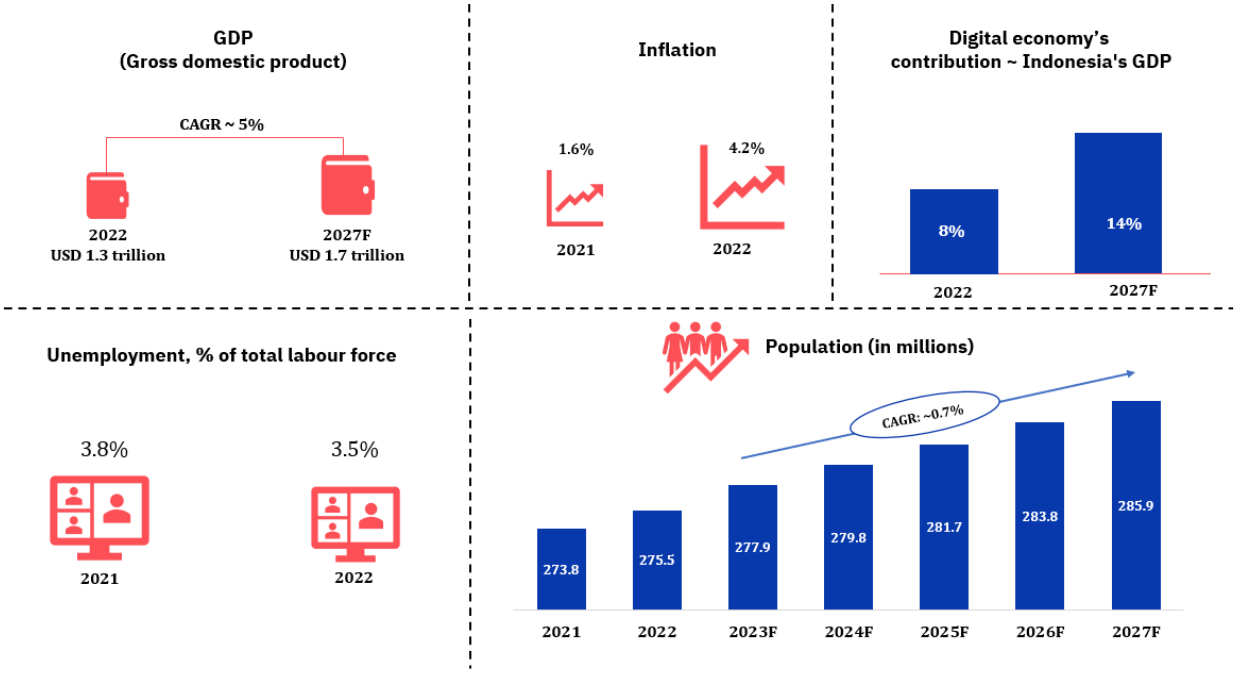
Macroeconomic Overview

Indonesia is the fourth most populous country with 57% population living in urban areas. Looking ahead, we anticipate a steady population growth from 275.5 million in 2022 to 285.9 million in 2027, with CAGR of 0.7%. Demonstrating economic resilience, the GDP increased from USD 1.1 trillion in 2021 to USD 1.3 trillion in 2022, with 5.3%, and is projected to grow with a CAGR of 5% from 2023-2027 and inflation is expected to moderate at approximately 3.5%.

Furthermore, Indonesia's digital economy is set to play a pivotal role in the nation's growth. The contribution of the digital economy to the GDP is anticipated to soar from 8% in 2022 to 14% in 2027. Within the digital economy, E-Commerce holds the largest share with 62%, followed by Fintech with 27%.

In line with the economic growth, the ICT sector too is responding to an increasing demand for telecommunications and data services, which is expected to grow significantly by 9.0% - 9.8% in 2023. Additionally, the upcoming general election in February 2024 is likely to influence regulations and market dynamics, impacting the telecom industry's development.

Exhibit 1: Macroeconomic Indicators- Indonesia



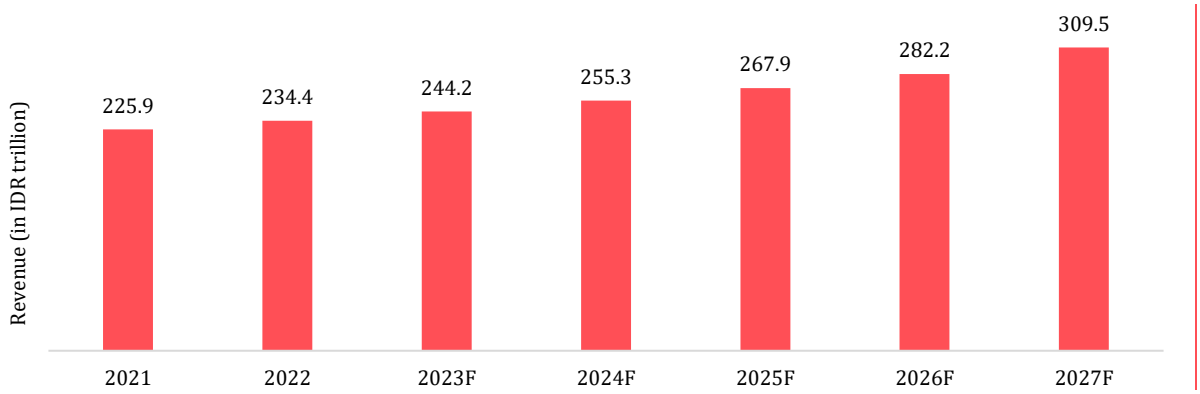
Source: World Bank, Twimbit analysis

Industry Snapshot

A. Telecom Market Size and Growth

Indonesia telecom market registered a growth (CAGR) of 4.6% over 2018-22. The blended ARPU has stabilised over the last 4 years and the telcos are now exploring new revenue growth avenues by focusing on convergent offerings, prioritising digital/non-connectivity propositions, and strategically targeting enterprise segment. As a result, the overall market is estimated to grow at a relatively higher rate (CAGR of 6.1% over 2023-27) to reach IDR 309.5 trillion (~USD 20.7 billion) by 2027.

Exhibit 2: Telecom revenue forecast in Indonesia, 2021-27F



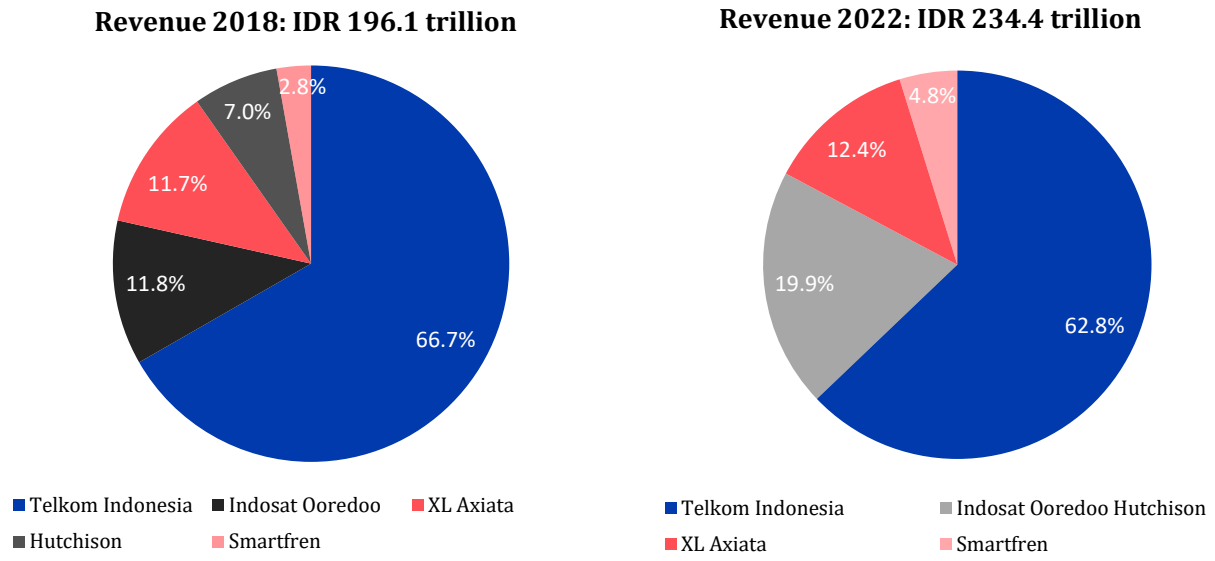
Note: Includes the overall telecom market revenue including fixed, mobile and other offerings
Source: Telco financials, Twimbit analysis

B. Competitive Landscape

Indonesia's telecom market is characterised by intense competition and a concentrated landscape, with the top three players commanding nearly 95% of the total revenue in 2022. Telekom Indonesia has historically held the largest revenue share; however, it experienced a revenue share decline from approximately 67% in 2018 to around 63% in 2022.

Until 2021, the race to become the second-largest revenue provider was fiercely contested, with Indosat Ooredoo and XL Axiata capturing market shares of 13.9% and 11.8%, respectively. In 2022, the market underwent a significant transformation following the merger of Indosat Ooredoo and Hutchison 3 Indonesia, giving rise to Indosat Ooredoo Hutchison. This strategic alliance propelled Indosat Ooredoo Hutchison to secure the second position in the market, boasting an impressive market share of approximately 20% in revenues.

Exhibit 3: Revenue market share of leading telcos, 2018 and 2022



Note: IOH was formed as a result of the merger between Indosat Ooredoo and Hutchison 3 Indonesia in 2022. Other players accounted for less than 2% of the market share and hence the market share has been provided for the four leading telcos.
Source: Telco financials, Twimbit analysis

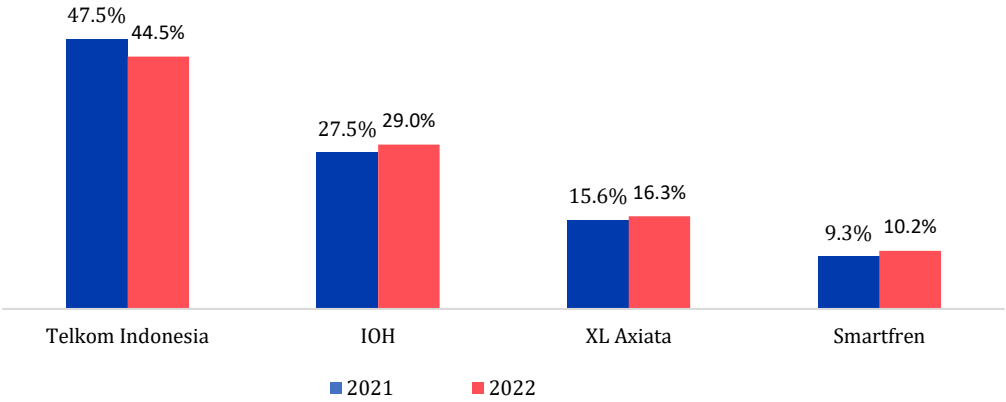
During 2018-22, XL Axiata managed to sustain its revenue share, maintaining its position with a market share of 12.4% in 2022. Meanwhile, Smartfren experienced notable growth, increasing its share from 2.8% to 4.8%.

C. Mobile Subscription Growth

The COVID-19 pandemic accelerated Indonesia's shift towards a digital-centric lifestyle, boosting data consumption and reinforcing the country's mobile network infrastructure. In 2022, Indonesia was ranked as the world's fourth-largest cellular market, boasting approximately 352 million mobile cellular subscriptions, trailing only China, India, and the USA.

Between 2021 and 2022, there was ~5% decline in overall mobile subscriptions, primarily attributed to Telekom Indonesia, which experienced a decline from 176 million to 156.8 million subscribers during this period. All other telcos experienced a growth in subscriber count, driven by their ambitious efforts to acquire and expand 4G subscriptions.

Exhibit 4: Mobile subscriptions market share, 2021-22



Source: Telco financials, Twimbit analysis

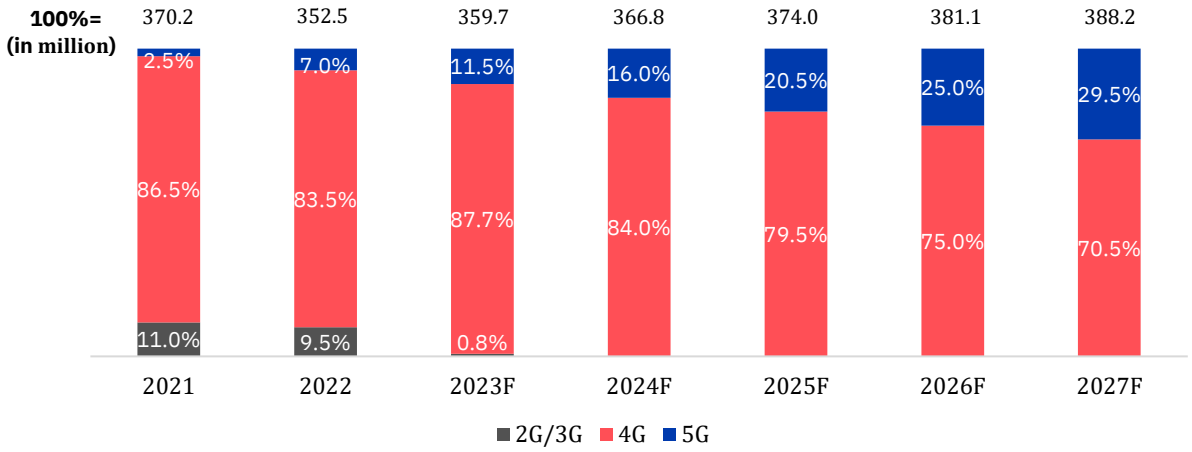
The overall subscriber count is projected to exhibit modest growth, with an anticipated CAGR of 1.9% from 2023 to 2027, resulting in approximately 388.2 million subscribers by 2027.

D.Subscriber Migration to 4G/5G services

The introduction of 5G technology in 2021, alongside the continued focus on 4G networks, led to a shift in subscribers from older 2G and 3G infrastructure. By 2022, approximately 84% of subscribers were utilising 4G technology, ~10% were on 3G, and only 7% had adopted 5G.

The Indonesian Ministry of Communication and Information (Kominfo) prompted telcos to discontinue 3G offerings and prioritise 4G and 5G coverage expansion in 2022, which is likely to drive significant growth in advanced technology subscriptions from 2023 to 2027. Additionally, with the anticipated release of 5G spectrum gradually over the period 2023-25, we expect 5G subscriptions to account for ~30% of the overall subscriptions by 2030.

Exhibit 5: Mobile subscriber forecast by technology generation, 2021-27F

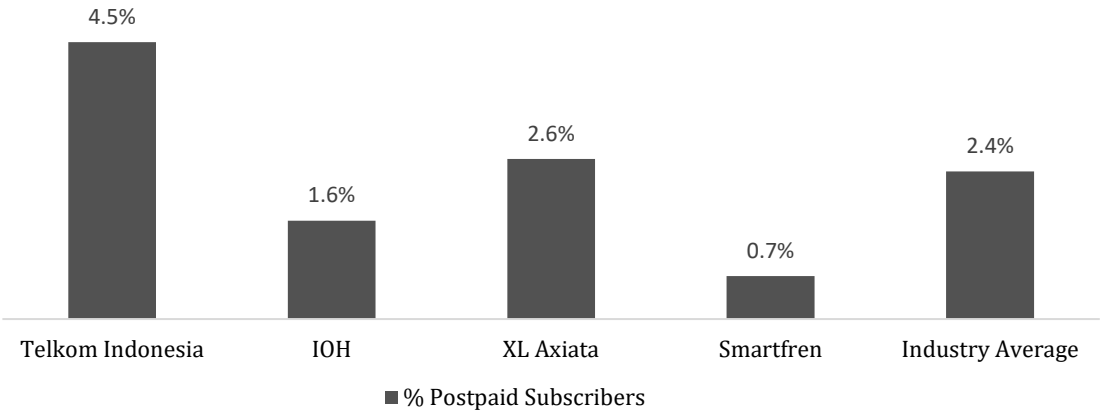


Source: Telco financials, Twimbit analysis

E. Prepaid vs. Postpaid Trend

Indonesia's telecom market is predominantly prepaid, with a 97.6% prepaid penetration rate. Telkom Indonesia and XL Axiata are the market leaders in postpaid subscriber penetration, boasting 4.5% and 2.6% respectively. On the other hand, Smartfren lags with less than 1% postpaid penetration.

Exhibit 6: Postpaid Subscribers Penetration (%), 2022



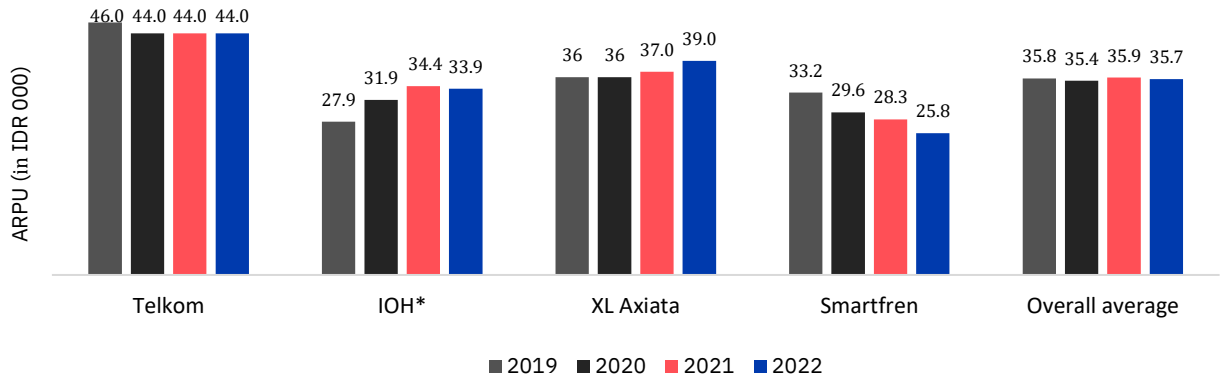
Source: Telco financials, Twimbit analysis

F. ARPU Trends

Despite the popularity of smartphones and tablets among consumers, in conjunction with the robust demand for fast data connectivity, mobile blended ARPU has remained almost stagnant over the period 2018-2022 in the range of ~IDR 34,000 (USD 2.7) – ~IDR 36,000 (USD 2.9) highlighting the competition intensity for subscriber acquisition, which has resulted in high prepaid subscription.

Telkom Indonesia and XL Axiata enjoy higher ARPU than industry average due to a strong market position, premium pricing, and higher penetration of postpaid customer base.

Exhibit 7: Blended ARPU for leading telcos, 2021-22



* For IoH, Blended ARPU is for Indosat Ooredoo for 2019, 2020 and 2021
Source: Telco financials, Twimbit analysis

Smartfren and IOH reported ARPU figures of IDR 87,400 (~USD 5.7) and IDR 68,200 (~USD 4.4), respectively in the post-paid segment, while in the pre-paid segment, Smartfren and IOH reported ARPU figures of IDR 25,500 (~USD 1.7) and IDR 33,300 (~USD 2.2) respectively.

G. Capital Expenditure and Infrastructure Upgrades

To support 4G capabilities and advance network infrastructure, telcos have increased their Capex. Telkom Indonesia's Capex increased by 12.6% from 2021 to 2022, reaching IDR 34,156 billion (~USD 2.2 billion), with a focus on 4G and 5G site deployment. IOH reported a Capex of approximately IDR 22,000 billion (~USD 1.4 billion) in 2022.

Deploying 4G Base Transceiver Stations (BTSs) has been a primary focus, with Telkom Indonesia, XL Axiata, and Smartfren operating over 165,000, 91,000, and 43,000 4G sites, respectively.

Exhibit 8: Telcos tower ownership trend by technology, 2018-22

Telecom Provider	BTS	2018	2019	2020	2021	2022
Telkom Indonesia	2G	50,310	50,297	50,252	50,241	50,158
	3G	82,118	82,104	73,397	63,149	49,632
	4G	56,653	79,834	1,07,523	1,37,613	1,65,120
	5G	-	-	-	113	284
XL axiata	2G 3G	88,824	89,953	90,681	85,078	53,136
	4G	29,772	40,264	54,297	77,204	91,632
smartfren	4G	19,032	31,143	38,814	41,845	43,537

Source: Telco financials, Twimbit analysis

The integration of 3G shutdowns with the migration to 4G/5G highlights the industry's efforts to modernise and meet the evolving demands of consumers for faster and more reliable connectivity.

Top Industry Challenges

A. Churn reduction and ARPU improvisation

The Indonesian mobile market's high prevalence of prepaid wireless subscribers, comprising approximately 97% of total mobile subscriptions in 2022, creates volatility as these subscriptions are frequently deactivated and customers can easily switch providers. Leading telcos like Telkom Indonesia (Telkomsel) emphasised on reducing churn, with sales activities being centered around pursuing renewal program to reduce rotational churn.

Strategic initiatives adopted by telcos to gain customer market share has led to intense pricing competition, resulting in low ARPU levels, and impacting the overall telcos' revenue growth.

B. Lack of sufficient 5G spectrum availability

The lack of sufficient 5G spectrum availability has affected the launch of 5G services, which remain limited to select regions and larger cities. Telkom Indonesia was the first operator to launch 5G services in Jakarta in 2021, followed by IOH in two cities in 2022. Smartfren and XL Axiata are focusing on strengthening their 4G network.

Exhibit 9: Indonesia's 5G spectrum roadmap summary, 2022-25

<table>
<tr><th>Existing Bands</th><th colspan="4">New Bands Release Targets</th></tr>
<tr><td>450/850/900/1800 MHz
2.1/2.3/5 GHz</td><td>700MHz</td><td>2.6GHz</td><td>3.3 GHz and 3.5GHz</td><td>26GHz</td></tr>
<tr><td>Started in 2021, some bands already being used for 5G</td><td>Expected to be available in 2023</td><td>Expected to be available in 2025 or earlier</td><td>Expected to be available in 2023 or earlier</td><td>Expected to be available in 2023 or 2024</td></tr>
<tr><td>• 2.3 GHz, 2.1 GHz, 1800 MHz have been utilized for 5G commercial services
• By harnessing the advanced feature of Dynamic Spectrum Sharing (DSS) and Carrier Aggregation (CA), existing 4G bands can be optimized to carry 5G payload traffic dynamically</td><td>• Current usage: Free-To-Air and Analog TV
• This band will be licensed nationwide after the completion of ASO</td><td>• Current usage: Pay-TV via satellite (BSS)
• This band will be available after the end of Broadcasting Satellite Service (BSS)</td><td>• Current usage: BWA & FSS
• Mostly 3.3 GHz band will be available after BWA migration
• 3.5 GHz band will be available gradually on defined areas</td><td>• This band is planned to be released in 2023 or 2024 bundled with low band (700 MHz) and middle band (3.3/3.5 GHz)</td></tr>
<tr><td rowspan="2">• National rearrangement or refarming of the 2.1 GHz radio frequency band was completed in Feb 2023.</td><td colspan="4">Other frequency bands also being studied and monitored for their ecosystems includes: 1427-1518 MHz; 4800-4990 MHz (WRC-23); 6425-7125 MHz (WRC-23)</td></tr>
<tr><td colspan="4">28 GHz band is still under study for 5G local network in the limited area, to protect satellite service</td></tr>
</table>

* Information sourced as on 17th July, 2023
Source: Kominfo, 5Gnow.id, Twimbit analysis

To expand the 5G services launch, much of the spectrum must be re-farmed from broadcasting services. Additionally, refarming can also be leveraged by telcos in the core frequency bands (3.3 GHz-4.2 GHz).

Telcos have taken a cautious approach to develop 5G infrastructure to build relevant use cases, although limited spectrum availability remains a key factor behind the slow and selective deployment of 5G.

To monetise 5G technology, telcos are forming strategic partnerships with technology vendors to enhance their network and infrastructure readiness ahead of spectrum allocation and service launches. For instance, XL Axiata has partnered with Huawei (for establishing smart city) and Juniper Networks (to accelerate the 5G network deployment). IOH has collaborated with ZTE, Ericsson, NEC and ADVA for 5G service offerings.

C. Data Protection Bill to further add to telcos cybersecurity expenses

In 2022, multiple alleged data breach incidents were reported, affecting state-owned telco IndiHome (owned by Telkom Indonesia) and an electricity company. The breaches involved sensitive information, including activation data for 1.3 billion telecom sim cards, records from the general election commission, and correspondences between the state intelligence agency and presidential office.

In response to the growing number of data leaks and breaches at government firms and institutions, the Indonesian parliament passed a Personal Data Protection (PDP) bill in September 2022. The PDP law applies to individuals, public bodies, and international organisations involved in processing personal data or performing legal activities under the law in the jurisdiction of Indonesia (Art 2).

This would require investments from telcos in cybersecurity infrastructure and possible realignment of their existing process to comply with Government regulations.

Key Trends and Growth Opportunities

A. Increasing Focus on Non-Connectivity Revenue Streams

In recent times, Indonesia's telecom industry has been experiencing a notable shift towards diversifying revenue streams beyond traditional connectivity services. For example, Telkomsel established a separate subsidiary named INDICO in March 2022. The primary objective of INDICO is to spearhead the development of cross-sectoral services and solutions, leveraging technology innovation to accelerate the adoption of digital lifestyle solutions. By capitalising on its adjacent ecosystem's assets and capabilities, Telkomsel aims to venture into cross-sectoral digital solutions beyond traditional telecom use cases.

INDICO's strategic focus centers around vertical digital business portfolios, with a specific emphasis on three key digital industry sectors: EdTech (Kuncie), HealthTech (Fita), and gaming (Majamojo).

This strategic shift towards non-connectivity offerings has proven to be fruitful for Telkomsel, as witnessed by the surge in its Digital Business revenue. Comparing Q2-2022 to Q2-2023, the Digital Business revenue witnessed a substantial growth of 17.4% on a year-on-year basis, soaring from IDR 2.6 trillion (USD 0.17 billion) to IDR 3.1 trillion (USD 0.21 billion).

B. Telcos focus on the enterprise segment as new revenue and value engine.

Effectively capitalising on the vast B2B market opportunity necessitates a strategic shift in positioning and alignment of business priorities for telcos. To tap into this potential, telcos are positioning themselves as product engineering companies (Techcos) and establishing dedicated enterprise units.

For instance, Telkomsel established a specialised business division named "Telkomsel Enterprise" offering customised enterprise solutions, including business internet packages, IoT services, cloud computing, and managed services. It also established FMC Commercial Team, with 2 main tasks, namely Joint Operations and Joint Sales Services. Indosat Ooredoo Hutchison also offers a range of enterprise solutions through its "Indosat Business" segment.

To bolster enterprise offerings, telcos are forging collaborations with technology vendors. For example, IOH has partnered with IBM and Tech Mahindra to develop enterprise digital solutions for Cloud and 5G networks. Indosat Ooredoo also had partnered with Google in Oct 2021, to offer Indosat Digital Analytics (iDA) as a data insight & analytics platform to enterprises. Later in October 2022, IOH, through Indosat Business, introduced digital platform Indosat Digital Ecosystem (IDE) to offer digital solutions for Micro, Small and Medium Enterprises (MSMEs).

Telkomsel has joined forces with ZTE to create 5G solutions for the enterprise segment, adopting Cloud PC for both corporate and public sectors.

The enterprise segment, following the extensive launch of 5G services, is poised to significantly contribute to the telcos' revenue growth. For instance, Telkom Indonesia's enterprise segment contributed 22% of the overall revenue in 2022 with a 5.5% growth over 2021-22.

C. Focus shifting towards convergent offerings to boost revenue

Indonesian telcos are strategically positioning themselves as integrated service providers to enhance their operating efficiencies and utilisation, thus seizing growth opportunities and improving their ARPU. For example, in April 2023, Telkom Indonesia announced a spin-off agreement with its mobile subsidiary Telkomsel to integrate its fixed broadband business, IndiHome, as part of its Fixed Mobile Convergence (FMC) strategy. This move aims to strengthen Telkom Indonesia's position in the market. Axiata group is also aiming to position XL Axiata as a converged mobile, fixed, and content service provider through its

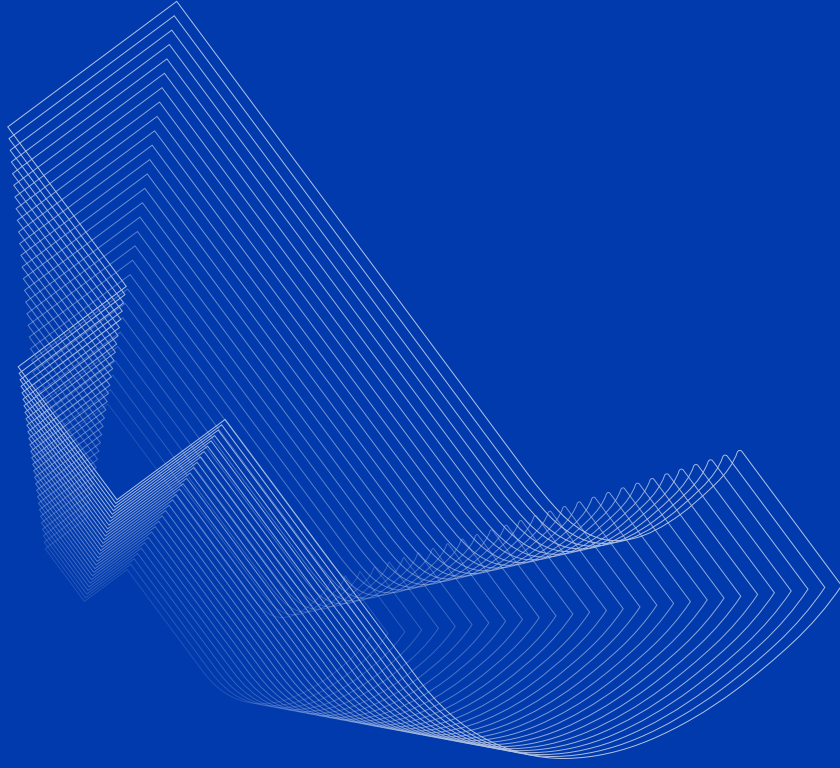
acquisition of Link Net, enabling it to capitalise on FMC and Fixed Broadband (FBB) market opportunities.

Conclusion

The Indonesian Government's digital roadmap for 2021-2024 will drive the digital transformation agenda, and the emphasis on adopting 4G and 5G services will result in robust growth in the telecommunications landscape.

The fixed telephony market, currently dominated by incumbent Telkom Indonesia, is likely to face increased competition as telcos implement FMC strategies to boost ARPU levels. In the mobile segment, which is expected to be primarily 4G-driven over the next few years, intense competition is anticipated with the availability of 5G spectrum to telcos from 2023 to 2025.

Given the intense competition in the market and the likelihood of further intensification, the industry is expected to see further consolidation as telcos explore options for consolidation or collaboration with other players to achieve operational efficiency. Earlier in October 2021, there were reports of XL Axiata and Smartfren exploring options of merger or network sharing arrangement. This trend aligns with the presence of only three major players in neighboring countries i.e. Philippines, Thailand, and Vietnam.



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