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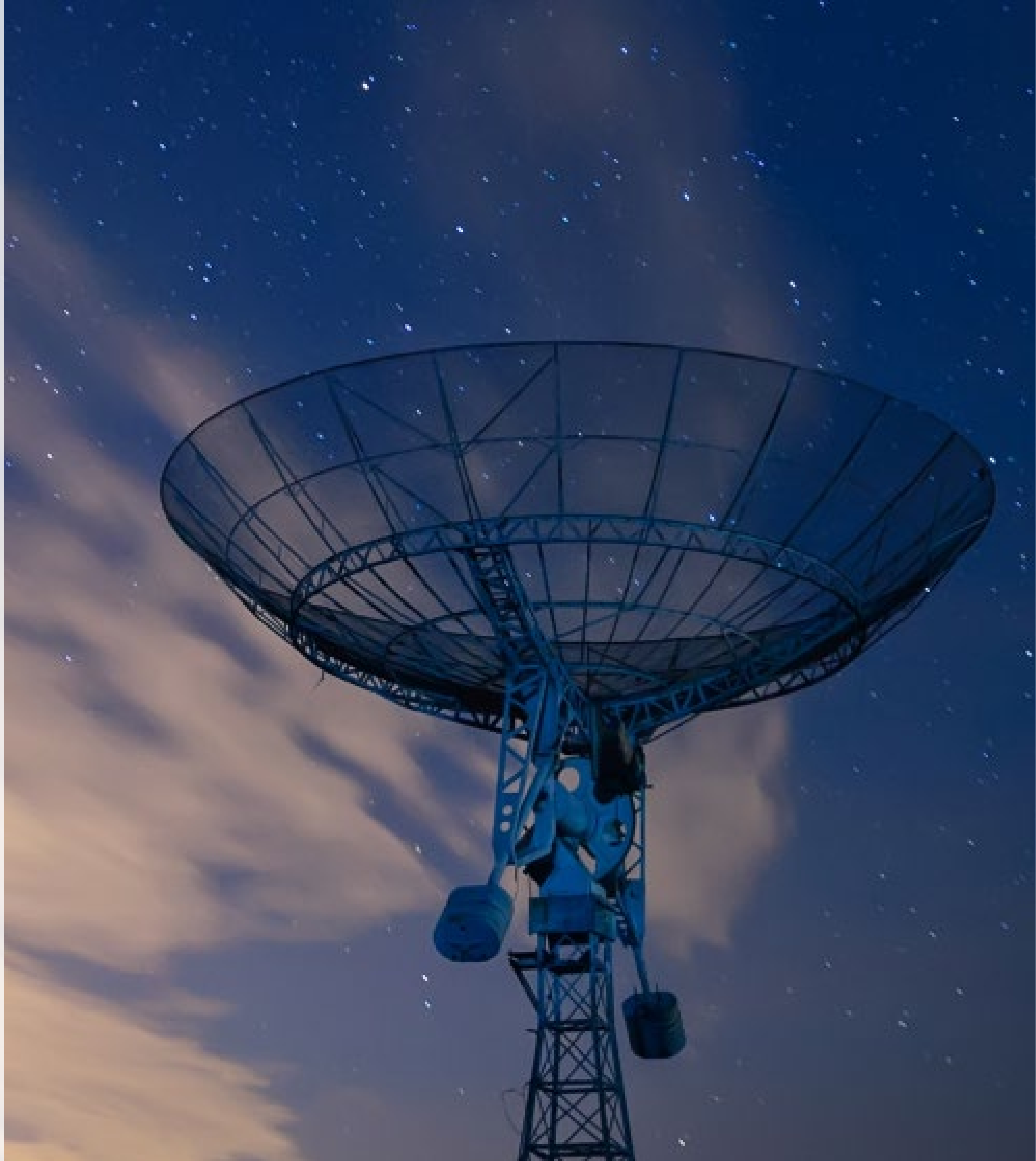

The Mobile Telecoms Industry in Indonesia Enters The 5G Era

October 2021

Wellington Capital
Advisory

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The Mobile Telecoms Industry in Indonesia

There are now four competing MNOs, following the recent merger of Indosat Ooredoo and Hutchison Tri ('Indosat Ooredoo Hutchison' / 'ISAT').
Telkomsel remains the **dominant provider with almost 50% subscriber market share** and the **highest CAPEX commitment**.

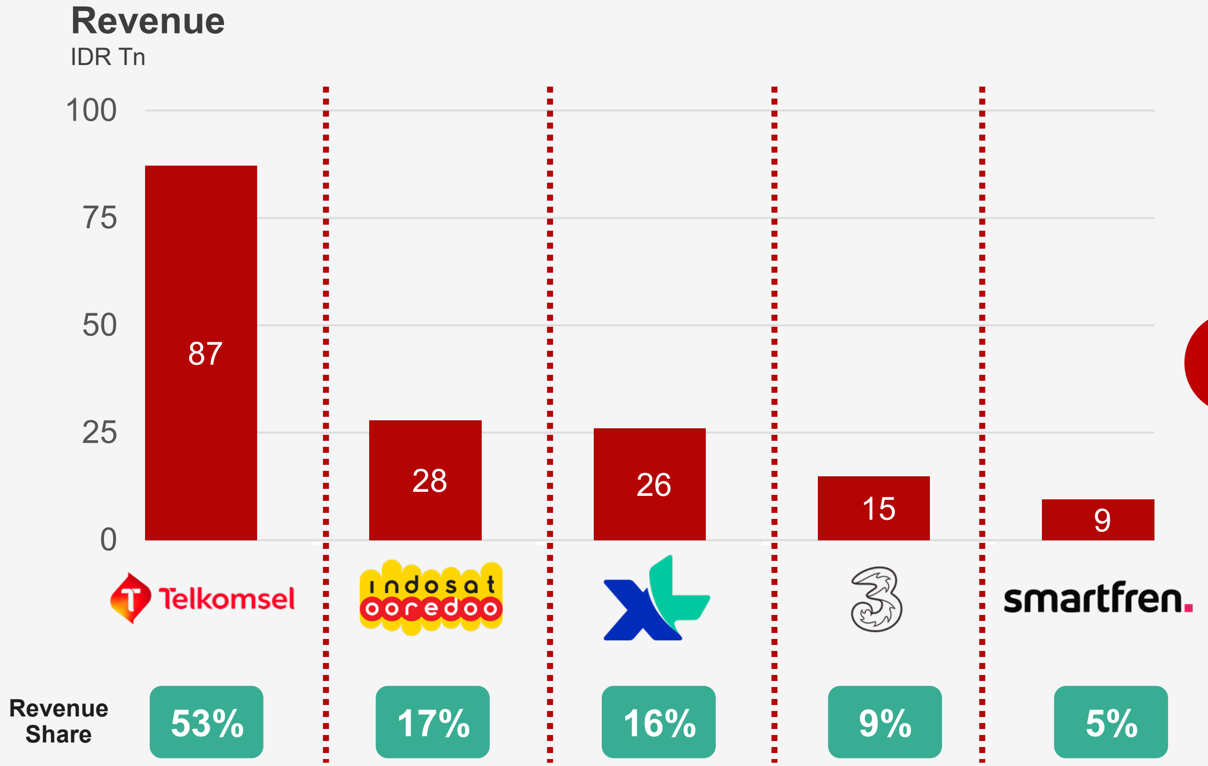
	Telkomsel	Indosat Ooredoo Hutchison	XL Axiata	Smartfren
Primary shareholders (End-2020)	Telkom: 65% Singtel: 35%	Ooredoo Group: 32.8% Hutchison Group: 32.8% Public: 14.0% Tri Telekomunikasi Indonesia: 10.8% Indonesian Government: 9.6%	Axiata Group: 66.7% Public: 33.3%	Global Nusa Data: 25.9% Public: 30.7% Sinarmas Group: 16.9% Wahana Inti Nusantara: 15.8% Bali Medika Telecom: 10.7%
Subscriber market share (End-2020)	47.9%	35.7%	16.4%	7.4%
No. of BTS (End-2020)	2G: 50,252 3G: 73,397 4G: 107,523	2G: 26,817 3G: 31,393 4G: 62,887 (Indosat Ooredoo); 31,000 (Tri Hutchison)	2G: 37,805 3G: 52,892 4G: 57,089	4G: 35,000
Capex spend (IDR Tn)	2018: 16.1 2019: 13.4 2020: 10.9 *Cash outflow from investing	2019: 13.7; 7.3 2020: 8.7; 7.3 P.2021: 8; 2.9	2019: 8.0 2020: 6.2 P.2021: 7	2019: 3.6 2020: 4.5 P.2021: 4.3
Spectrum Assets (MHz) 850 MHz / 1800 MHz / 2100 MHz / 2300 MHz	22.5 / 45 / 30 / 50 Total 147.5 MHz	22.5 / 60 / 60 Total 142.5 MHz	15 / 45 / 30 Total 90 MHz	22 / 40 Total 62 MHz
Market positioning	• Best coverage and network quality - especially in remote areas • Premium service pricing	• The best data experience with various bundling packages at competitive price points	• Dual brand strategy XL: Professional users AXIS: Youth segment	• Alternative provider for youth segment with active digital lifestyle • Pioneer of e-SIM service in Indonesia
Current development	• Commercial launch of 5G in 11 cities • Expansion of VoLTE service in 230 cities/districts	• Commercial launch of 5G in 3 cities • Migration of existing 3G network infrastructure to LTE 4G	• Commercial launch of 5G in 13 cities • Continued expansion of 4G network in rural geographies	• Currently testing 5G adoption within certain sectors in several cities

Sources : WCA analysis; Company Report

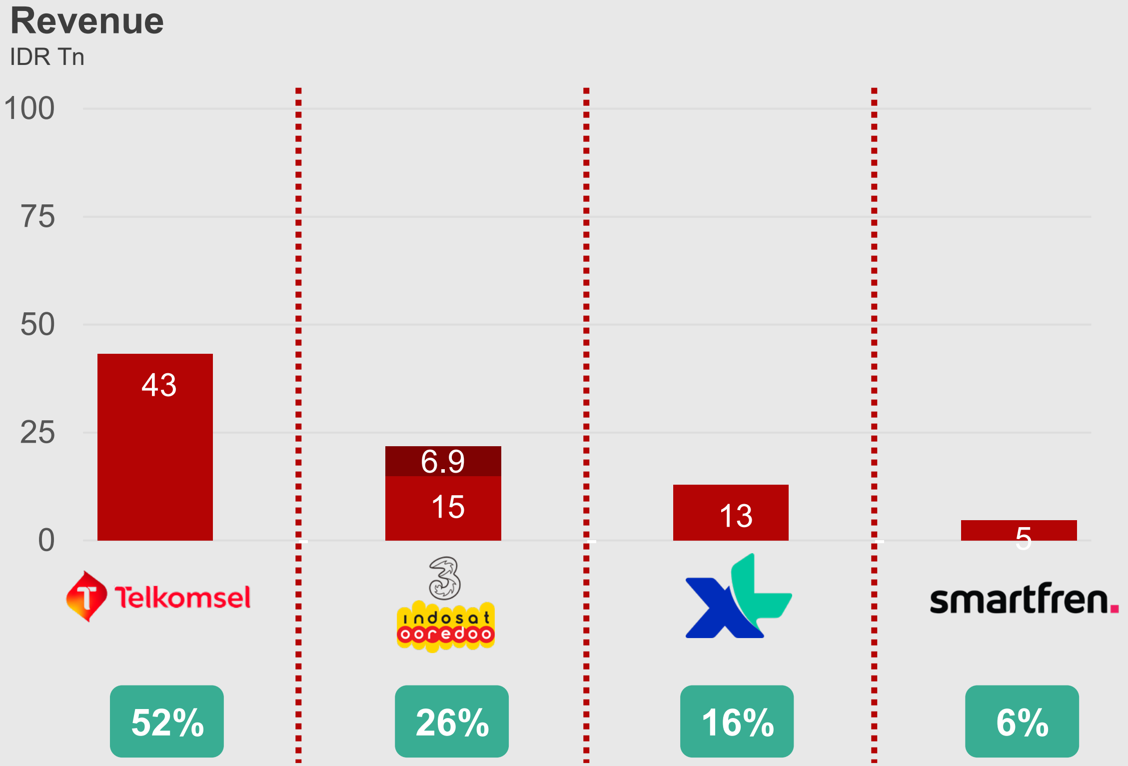
The Mobile Telecoms Industry in Indonesia is changing due to consolidation

Indosat Ooredoo Hutchison is now the clear #2 MNO in Indonesia – well ahead of XL Axiata in revenue terms

FY 2020 | Pre-Merger



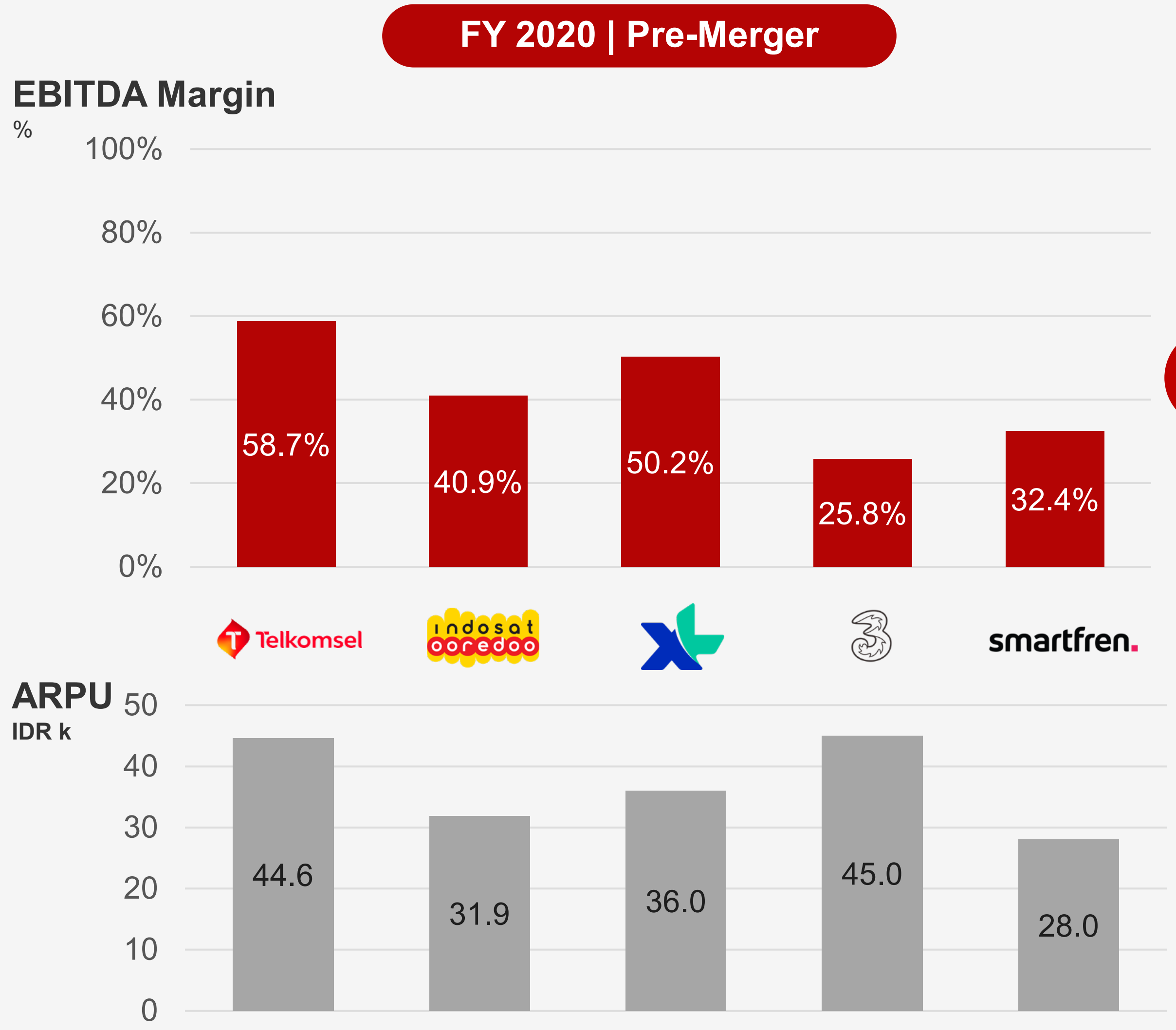
1H 2021 | Post-Merger

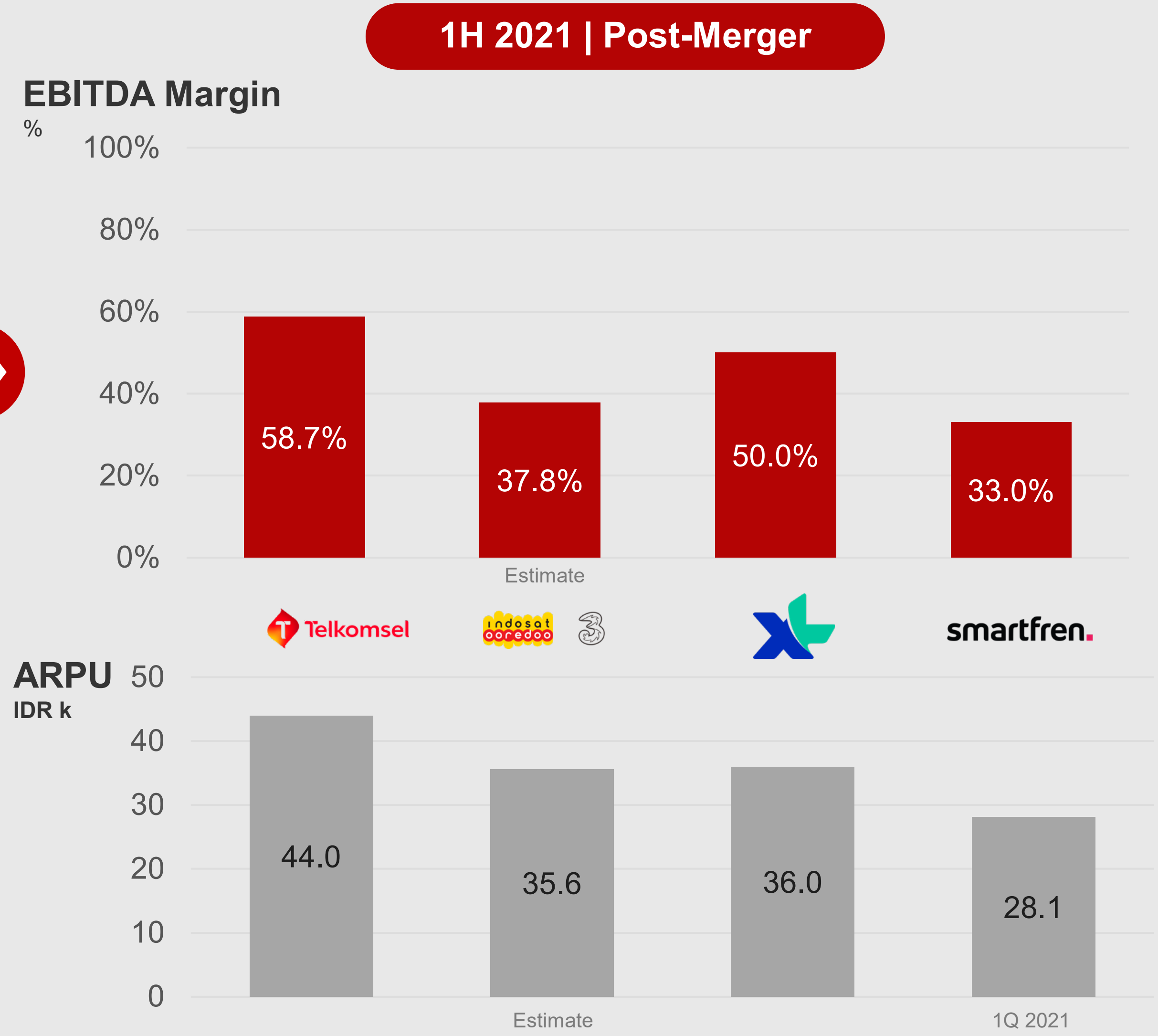


Sources : WCA analysis; Company Report

However, XL Axiata still outperforms Indosat Ooredoo Hutchison in selected key metrics

EBITDA margin performance and Average Revenue Per User (ARPU) yield illustrate the underlying strength and stability of XL Axiata





Sources : WCA analysis; Company Report

Competitive intensity is increasing in the Fixed Broadband Services market

With revenue mix for MNOs continuing to shift towards data services, operators are increasingly targeting the home internet access market. As a consequence, the dynamics between the MNOs and the incumbent ISPs are changing.

	MNOs					Non-MNOs			
Owners	Telkom Indonesia		Indosat Ooredoo	XL	smartfren.	Biznet	LIPPO GROUP	MNC	sinarmas
Brand	IndiHome	Telkomsel Orbit	GIG by indosat ooredoo	XL HOME Fiber; XL HOME IZI	smartfren. BUSINESS	Biznet; Biznet Home	linknet; FiRST MEDIA	MNC play	MyRepublic
Service Launch	2015	2020	2016	2017	2018	2000	2007	2013	2015
Target Market[1]	Retail	Retail	Retail, SME	Retail	SME, Corporate	Retail, SME, Corporate	Retail, Corporate	Retail, SME, Corporate	Retail, SME
Pricing[2]	Mid-market	Budget	Mid-market	Budget	Premium	Premium	Premium	Mid-market	Premium
Customer Base	8.3 m subs	250,000 subs	<100,000 subs	116,000 subs	1,000 subs	<N/A> subs *1.1 m home passes*	859,000 subs *2.7 m home passes*	301,000 subs *1.5 m home passes*	210,000 subs *2.0 m home passes*
Speed Score (Mbps)	17.78	28.02	26.38	20.96	16.69	40.66	16.51	N/A	35.63

[1] Retail; SME; Corporate

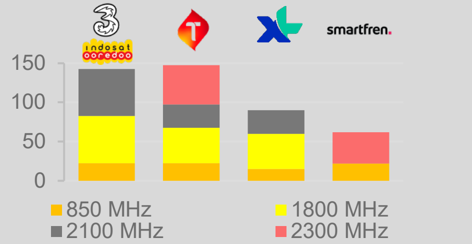
[2] **Budget:** < IDR 50K/month
Mid-market: starts from IDR 150K/month
Premium: starts from IDR 300K/month

Sources : News; McKinsey Report, Ookla

The merger of Indosat Ooredoo and Hutchison Tri signals the move towards industry consolidation and highlights the challenges of 5G rollout

Notable points from the merger

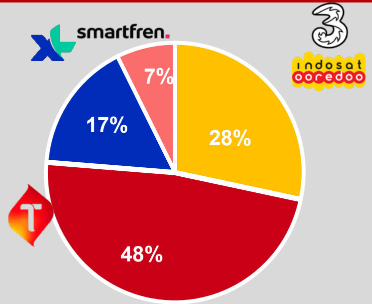
1. Spectrum from the merger is fully retained



- The Omnibus Law allows the merged entity to retain all combined spectrum
- Following consolidation, the company will have access to 142.5 MHz spectrum bandwidth
- ISAT is now the 2nd largest spectrum owner, just behind Telkomsel

2. Change in scale and scope

- The combined customer base comprises 100 million active subscribers (c. 28% market share)
- ISAT is now ranked as a the clear #2 in the market, with XL and Smartfren falling behind
- The merged entity now has the resources to scale up the existing 4G network and to accelerate 5G rollout



3. Trigger for further market consolidation

smartfren.

- The Indosat-Hutchison consolidation increases the competitive pressure on both XL and Smartfren, each faced with the task of developing a critical 5G presence
- A merger between XL and Smartfren merger is the likely scenario, enabling the merged entity to provide a credible alternative in an upcoming 3-player market

Comparison: Indosat Ooredoo/Tri merger vs. XL/Axis acquisition

	XL / AXIS 2014	Indosat Ooredoo / 3 2021
Transaction size (USD)	865 Mn	6,000 Mn
Subscriber market share	23.3% per 2013	28.4% per 2020
Spectrum ownership change (MHz)	15 / 30 (2014) Spectrum acquired: 15 MHz Spectrum rescinded: 20 MHz	60 / 110 (2021) Spectrum acquired: 60 MHz
Financial performance (IDR Tn)	2013 Revenue: 16, 2 Asset: 39, 8	2020 Revenue: 28, 15 Asset: 63, 52

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Sources : WCA analysis; Company Annual Report; News

The Telco Industry in Indonesia is maturing at pace

Market consolidation, a more permissive regulatory environment and the advent of 5G technology are the primary drivers of this change

	Events	Objectives	Impact
MNOs	Indosat – Tri merger	• Operational synergies deliver benefits for customers, partners and shareholders • Cost efficiencies for network build and operations • Accelerated 5G service rollout	• Merged entity becomes the clear #2 MNO after Telkomsel • ISAT credit rating is downgraded due to debt guarantees from Ooredoo parent company being eliminated
MNOs	XL Axiata negotiating the acquisition of Link Net	• Develop and expand access to enterprise sector • Strengthen XL's position as a full service operator, especially in fixed broadband	• XL ranks 2nd in fixed broadband subscriber share upon acquiring Linknet • Synergy with Linknet's fiber business and enterprise account base
MNOs / Government	Telkomsel-XL and government operational co-operation (KSO)	• Provide LTE 4G network access to communities in 7,903 villages located in remote and unserved geographic areas	• Wider coverage for Telkomsel and XL • Enhancement of CSR programs • Improved connectivity in rural areas.
MNOs / Government	Re-farming of 2.3 GHz spectrum frequency completed in September 2021	• Realigning spectrum assets into contiguous blocks to improve capacity allocation and throughput performance (i.e. Telkomsel and Smartfren)	• Optimum spectrum utilization
Government	Digital Road Map 2021-2024	• Ensure greater equity in digital infrastructure • Accelerate national digital transformation	• Near-ubiquitous network access • Greater empowerment of MSMEs
Government	Omnibus Law	• Strengthen mechanisms to ensure sharing of active and passive infrastructure assets • Remove FDI limitation for the telco industry	• Improve MNO business eco-system • Supportive environment for ongoing industry consolidation • Enhance investment prospects
Government	Analog Switch-Off (ASO) November 2022	• Re-allocate 700 MHz for 4G and 5G networks	• Optimization of spectrum allocation for mobile broadband services

Source: Company Publication; Kominfo.co.id; Omnibus Law

The Enablement of Digital Transformation is a critical focus for the MNOs

Each MNO is aiming to deliver extreme value to their respective customer bases through hyper-personalized services and loyalty programs – powered increasingly by data analytics capabilities and artificial intelligence smarts

	Data Analytics Platform-Partnerships	New Lines of Business			New Digital Channels
Telkomsel	Microsoft, facebook, CLOUDERA	Telkomsel Orbit Fixed Wireless Broadband	by.U Digital Service Provider for Gen Z	MyEnterprise Specialized services for corporations and SMEs	Telkomsel
indosat ooredoo, 3	ERICSSON, comviva (A TECH MAHINDRA COMPANY)	GIG by indosat ooredoo Fixed Wired (optic fiber) Broadband	mpwr Digital Service Provider for Gen Z	indosat ooredoo business Specialized services for corporations and SMEs	my im3 ooredoo, bima+
XL	Google Cloud, CLOUDERA	XL HOME Fixed Wired and Wireless Broadband	LIVE.ON Digital Service Provider for Gen Z	XL business solutions Specialized services for corporations and SMEs	My XL
smartfren.	sas	smartfren. Wifi Modem	POWER UP Digital Service Provider with e-Sim	smartfren. BUSINESS Specialized services for corporations and SMEs	my sf.
	Create hyper-personalized offers and AI-supported services for micro segments	Re-branding for specific market niches			Enhance customer engagement and loyalty

MNOs provide **seamless access** via **digital apps** to a broad array of **content categories** and **functionality domains**

- **OTT Services**
- **Gaming and Entertainment**
- **E-wallet/ e-Payment services**

Sources : WCA analysis; McKinsey Report

The behavior of Internet users has changed dramatically during the COVID-19 pandemic.

This phenomenon is presenting new opportunities to all MNOs in Indonesia

Source: BPS, We Are Social (2021); Google Mobility Report (2021);

Changing Behavior of Broadband Users

Home-based activities are driving broadband demand

Learn **Work** **Shopping**

…from Home

Impacts

Internet Users — **+ 73.7%** to 202.6 million users

Internet Spending — **14%** from total spending; Ranked 3rd after foodstuffs and healthcare spending

Duration — **+ 53 mins** to 8 hours 52 mins

Mobility Concentration — **+ 6%** in residential areas; **- 17%** in CBD areas

MNO-led Initiatives

Strategic collaboration with the Government
'Learn from Home' internet access quotas; Enhanced broadband infrastructure in rural areas, etc.

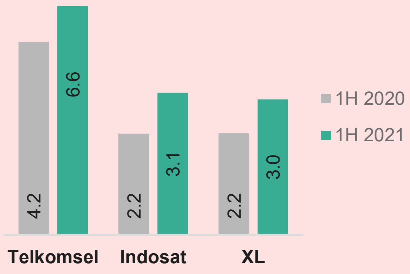
Capex allocation to increase capacity of existing infrastructure

Targeted marketing programs
'Pandemic'-related packages for all market segments impacted by COVID-19

Fixed broadband service expansion
Targeting end-user segments located in residential areas and multi-occupancy buildings

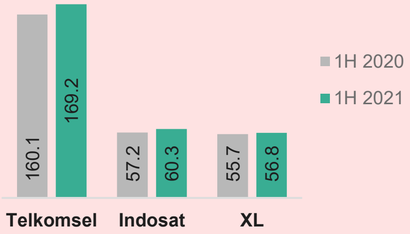
Performance Impact

Data Usage Traffic
(in thousand petabyte)



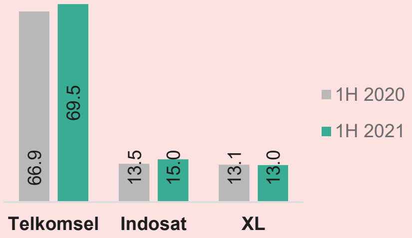
Growth 55.6% 40.3% 33.4%

Subscribers
(in million people)



Growth 5.4% 5.1% 1.9%

Revenue
(in billion rupiah)



Growth 3.9% 11.4% -0.8%

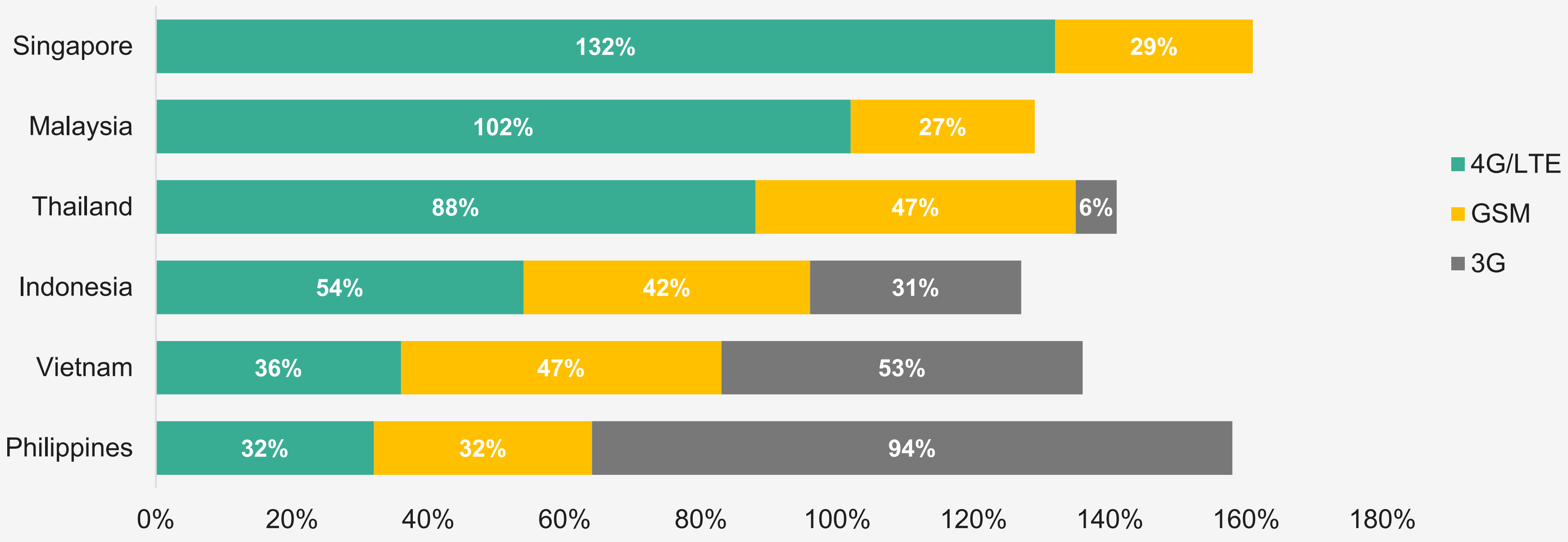
Comparative penetration of mobile and fixed broadband services across ASEAN

Fixed broadband penetration in Indonesia is amongst the lowest in ASEAN at < 4% nationwide.

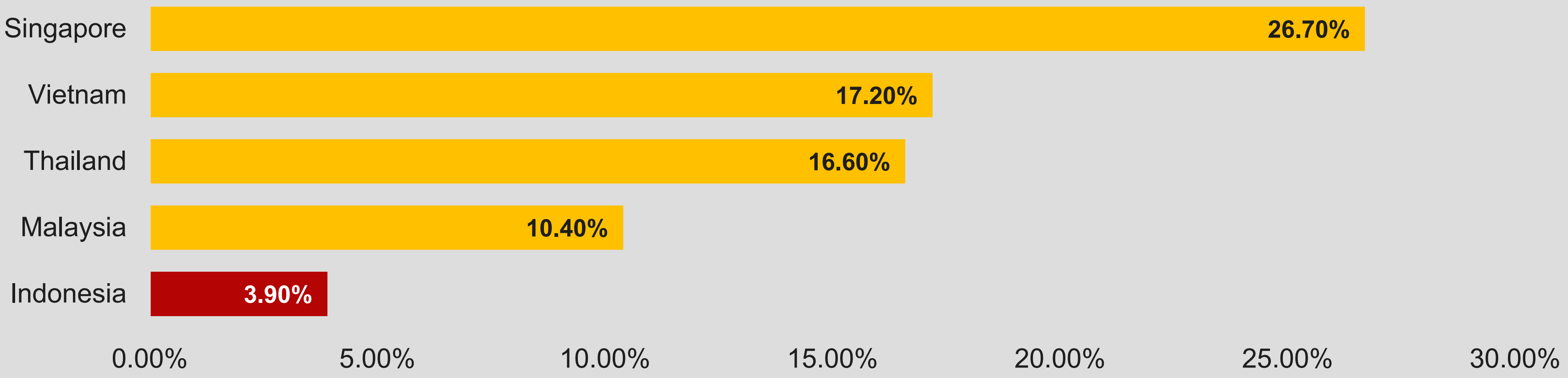
Geographic and administrative barriers are major constraints on network infrastructure rollout.

Source: Telegeography; World Bank

ASEAN peer markets: Mobile Broadband Penetration (2020; %)



ASEAN peer markets: Fixed Broadband Penetration (2020; %)



*) "0%" means the data from respectable countries aren't available

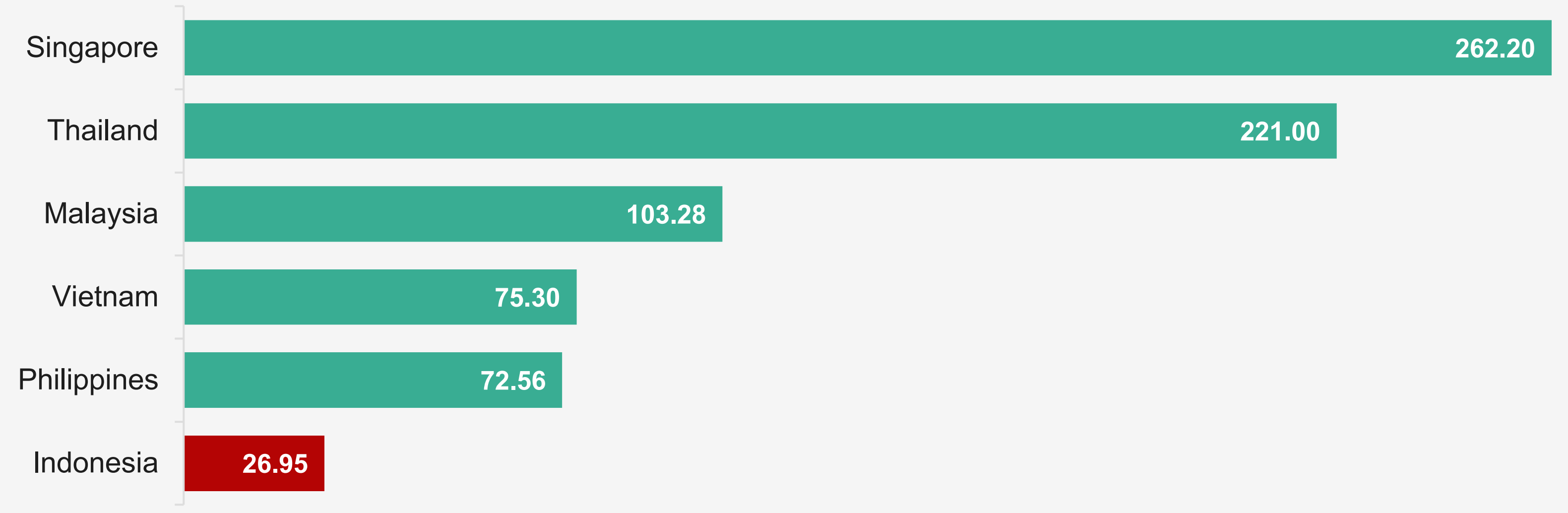
Throughput speeds for both fixed and mobile broadband services in Indonesia are the lowest across peer markets in ASEAN

The vast majority of Indonesian users favour mobile broadband services, due to the superior versatility and convenience offered.

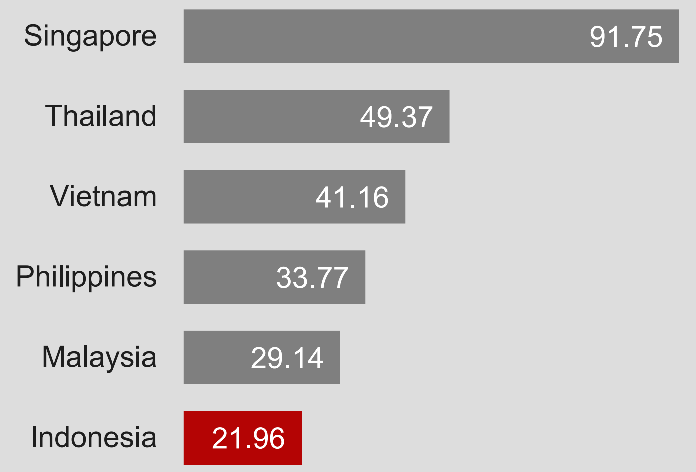
The availability of more affordable and flexible data packages is also a major consideration for Indonesian consumers.

Source: Speedtest Global Index

ASEAN peer markets : Fixed Broadband Throughput (August 2021; in Mbps)



ASEAN peer markets : Mobile Broadband Throughput (August 2021; in Mbps)



5G deployment is emerging as the major battleground for the MNOs in Indonesia

5G technology is being introduced on a limited basis, available currently in selected Tier 1 cities.

	Telkomsel	Indosat	XL	Smartfren
Status	Commercial operations *(May 2021)*	Commercial operations *(June 2021)*	Commercial operations *(August 2021)*	Commercial trials *(June 2021)*
Spectrum	2.3 GHz w/ standalone spectrum	1.8 GHz w/ DSS implementation	1.8 GHz w/ standalone spectrum 2.1 GHz w/ DSS implementation	Trial #1 @ 28 GHz Trial #2 @ 26 GHz
Strategic Imperatives	❑ Sustain a market leadership position through accelerated implementation of 5G technology ❑ Leverage 2.3 GHz spectrum to provide greater capacity and throughput ❑ Develop private 5G applications for the enterprise sector ❑ Migrate existing customers to 5G with attractive price promotions	❑ Utilize 5G technology as the foundation for building a world-class digital telecoms and internet company. ❑ Develop strategic vendor relationships with leading infrastructure partners (Nokia/Ericsson/Qualcomm) ❑ Align 5G service area rollout with established patterns of high mobile data consumption	❑ Build a scalable 5G ecosystem, including an integrated fiber network infrastructure ❑ Collaborate with leading technology partners to provide a robust supply chain network for 5G devices ❑ Deliver marketing programs to inform primary target segments of the benefits of 5G access	❑ Manage technology partnerships with equipment vendors and network services providers - Telenity/ZTE ❑ Utilize newly re-farmed 2300 MHz spectrum to harmonize network expansion programs - Existing 4G LTE coverage - Planned 5G services roll-out

Source: Company Website; News

The industry continues to address the technical and commercial challenges associated with the deployment of 5G technology

	Barriers	Latest Update
1 **Roll-out Challenges**	❑ **Legacy regulations** and **current policy provisions** are slowing the utilization of small cell clusters in the rollout of 5G coverage - especially in dense urban areas. ❑ Large scale 5G implementation programs require **high capex commitments** due to the inherent cell density characteristics	❑ The Omnibus Law encourages **active** and **passive infrastructure sharing**, which allow small cells to be installed in buildings, on electricity poles and other 'street furniture'. ❑ **Industry consolidation** will drive capex and opex efficiencies as a stimulus to accelerating nationwide 5G deployment.
2 **Fiber Infrastructure**	❑ Provision of **fiber backhaul** and **fronthaul** capacity to support core 5G network infrastructure – within all geographic sectors across the archipelago (viz. dense urban, metropolitan, rural, and remote areas).	❑ **Passive infrastructure sharing** regulations allow the installation of BTS fiberization/fronthaul capacity in 3rd party facilities. ❑ MNOs are testing **wireless broadband infrastructure** as a fiber-based backhaul alternative, thereby enabling them to expand coverage in rural areas.
3 **Spectrum Availability**	❑ The competition for **low-to-mid-band spectrum** in Indonesia has raised auction price levels and may affect the penetration and coverage of 5G technology in the short to medium term. ❑ Aggregate spectrum allocation of **2,047 MHz** is required to support 5G, while the current allocation is just **737 MHz.**	❑ The **Analog Switch Off** (ASO) is intended to reallocate 700 MHz spectrum for both 4G and 5G networks. ❑ **Re-farming** of 2.3 GHz spectrum frequency has been completed in order to enhance capacity provision and throughput speeds ❑ The **3.5 GHz band** is currently reserved for satellite transmission.
4 **Device Availability**	❑ Compatibility and inter-working of all device categories with **5G standards**	❑ Several manufacturers are introducing **5G-compatible smartphones** in Indonesia, but the range of devices is still limited due to the immaturity of the market
5 **5G Eco-system**	❑ The development of the **5G ecosystem** in Indonesia is still in progress and does not yet support the mass consumer market, as well as the delivery of private and public enterprise applications	❑ The **Indonesia Digital Road Map 2021-2024** comprises five policy components: 1) Regulation; 2) Availability of radio frequency spectrum; 3) Efficient and adaptable business operating models; 4) Adequate infrastructure; and 5) Commercial readiness (viz. end-user devices, eco-system, and digital talent).

Sources : News, Ministry of Communications and Informatics, WCA analysis

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