

10 May 2022

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PT WIR Asia Tbk (WIRG IJ)

Buy

Only Proxy To The Metaverse; Initiate BUY

Target Price (Return):	IDR1,900 (+85%)
Price (Market Cap):	IDR1,025 (USD838m)
ESG score:	3.20 (out of 4)
Avg Daily Turnover (IDR/USD)	151,395m/10.5m

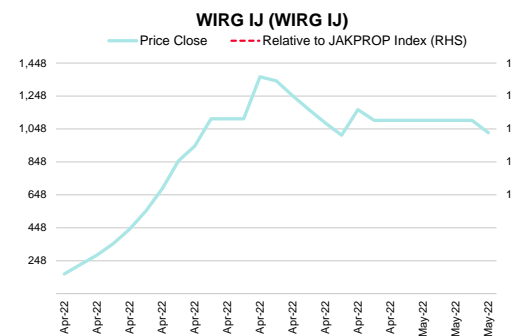
- Initiate coverage with a BUY and IDR1,900 TP, 85% upside.** We believe that as the metaverse becomes the “big thing since the Internet”, WIR Asia, being one of ASEAN’s leading augmented reality (AR) and 3D technology companies, will be able to fully capitalise on this trend. The group’s plans also include creating Metaverse Indonesia with the Indonesian Government (Nusantara and G20 virtual reality (VR)), three large state-owned enterprise (SOE) banks and multiple conglomerates on board.
- Accelerating growth in margin lucrative segments with a global customer base.** Similar to a property company, the long-term growth drivers are the sale of the metaverse land and recurring revenue streams from advertising placements, revenue sharing from the tenants, and in-game currency. Meanwhile, the existing five business segments currently generating IDR8-12bn operating cash flows are: i) Top-up prepaid and electricity through owned platform Mind Store (67.9% of revenue); ii) software development (17.9%); iii) digital media advertising (5.8%); iv) brand consulting (6.9%); and v) platform commission (1.5%). However, software development and brand consulting have the largest gross profit contributions (51.4% and 30.4%).
- Financial outlook: c.76% revenue CAGR growth in 2021-2026F.** This is mainly fuelled by an underdeveloped AR industry, providing a large headroom for growth in the advertising and educational sectors to increase customer engagement. Metaverse virtual land sales are expected to only contribute 15-20% of revenue in the forecasted period, while the remaining growth drivers are generating commission-based transactions and advertising revenue as well as its DAV business’ online to offline (O2O) multimedia platform in Alfamart outlets and public places.
- Valuation:** Our SOP-based IDR1,900 TP is based on 60% NAV discount of the metaverse’s current average market value, 0.8x EV/Sales for commission-based transactions, and 3.6x EV/Sales for projects.
- Downside risk:** Low take-up rate on WIRG’s metaverse (ie low land sales) as the initial investment on the project is substantial (of around IDR80-100bn) and the fixed cost in maintaining the system, due to: i) Indonesia’s slow internet connection with low fixed broadband penetration, ii) added cost for VR headset, and iii) limited human capital resources for Web 3.0 developers.
- We have incorporated a 4% ESG premium to our TP,** based on our in-house methodology.

Analyst

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Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	0.0	86.4	0.0	0.0	0.0
Relative	0.0	86.4	0.0	0.0	0.0
52-wk Price low/high (IDR)					168 – 1,365



Source: Bloomberg

Forecasts and Valuation	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
Total turnover (IDRb)	439	751	1,810	4,139	6,607
Recurring net profit (IDRb)	11	11	288	746	1,403
Recurring net profit growth (%)	77.6	(5.4)	2,596.1	158.8	88.1
Recurring P/E (x)	1,081.56	1,143.33	42.41	16.38	8.71
P/B (x)	101.4	85.3	28.3	10.4	4.7
P/CF (x)	2,528.01	29,085.12	40.46	16.94	8.43
Dividend Yield (%)	na	na	na	na	na
EV/EBITDA (x)	541.26	530.81	29.03	10.74	5.29
Return on average equity (%)	7.9	8.1	100.3	92.7	74.7
Net debt to equity (%)	2.9	net cash	net cash	net cash	net cash

Source: Company data, RHB

Overall ESG Score: 3.20 (out of 4)

E: GOOD

The company is committed in creating effective environmental management in all business operations. Its business nature supports a cleaner environment because of the absence of transportation due to the VR experience that should lower CO2 emissions.

S: EXCELLENT

WIRG organises social events and workshop events with various non-profit organisations including Yayasan Emmanuel and SD Juara (by Rumah Zakat). Additionally, WIRG enable local artists to monetise their expertise digitally through the creation of the metaverse.

G: EXCELLENT

WIRG implemented a whistleblowing system and formulated anti-corruption policies according to Good Corporate Governance principles.

10 May 2022

Technology | Technology

Financial Exhibits

Asia	Financial summary (IDR)	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
Indonesia	Recurring EPS	0.95	0.90	24.17	62.56	117.69
Technology	BVPS	10.10	12.02	36.19	98.75	216.44
PT WIR Asia Tbk	Return on average equity (%)	7.9	8.1	100.3	92.7	74.7
WIRG IJ						
Buy						
	Valuation metrics	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
	Recurring P/E (x)	1,081.56	1,143.33	42.41	16.38	8.71
	P/B (x)	101.4	85.3	28.3	10.4	4.7
	FCF Yield (%)	0.0	0.0	(0.1)	4.9	11.1
Valuation basis	EV/EBITDA (x)	541.26	530.81	29.03	10.74	5.29
SOP	EV/EBIT (x)	756.69	850.15	31.02	11.38	5.56
	Income statement (IDRb)	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
Key drivers	Total turnover	439	751	1,810	4,139	6,607
i. Digitalisation of industries;	Gross profit	51	60	518	1,268	2,233
ii. Higher usage of cryptocurrency in Indonesia;	EBITDA	23	23	421	1,082	1,941
iii. Growing number of gamers	Depreciation and amortisation	(6)	(9)	(27)	(61)	(95)
	Operating profit	16	14	394	1,021	1,846
	Net interest	(1)	0	1	1	24
Key risks	Pre-tax profit	12	15	395	1,021	1,870
i. Slower-than-expected metaverse development;	Taxation	(3)	(4)	(107)	(276)	(468)
ii. Slower-than-expected internet penetration;	Reported net profit	9	11	288	746	1,403
iii. Regulation-related issues	Recurring net profit	11	11	288	746	1,403
	Cash flow (IDRb)	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
Company Profile	Change in working capital	(13.8)	(18.9)	(13.1)	(85.3)	(47.9)
WIR Asia is one of the leading players in digital reality technology, which includes Augmented Reality (AR), Virtual Reality (VR), and Artificial Intelligence (AI) in Indonesia, and internationally.	Cash flow from operations	4.8	0.4	301.9	721.0	1,449.7
	Capex	(1.3)	0.0	(308.4)	(125.7)	(89.6)
	Cash flow from investing activities	(5.8)	(0.3)	(308.4)	(125.7)	(89.6)
	Cash flow from financing activities	1.5	16.0	0.0	0.0	0.0
	Cash at beginning of period	6.5	7.0	23.1	16.7	612.0
	Net change in cash	0.6	16.2	(6.4)	595.3	1,360.1
	Ending balance cash	7.1	23.1	16.7	612.0	1,972.1
	Balance sheet (IDRb)	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
	Total cash and equivalents	7	23	17	612	1,972
	Tangible fixed assets	26	16	298	363	358
	Total assets	196	302	639	1,546	3,104
	Short-term debt	6	10	10	10	10
	Total long-term debt	4	3	3	3	3
	Total liabilities	75	159	207	369	524
	Total equity	120	143	431	1,177	2,580
	Total liabilities & equity	196	302	639	1,546	3,104
	Key metrics	Dec-20	Dec-21	Dec-22F	Dec-23F	Dec-24F
	Revenue growth (%)	79.3	71.1	140.9	128.7	59.6
	Recurrent EPS growth (%)	77.6	(5.4)	2596.1	158.8	88.1
	Gross margin (%)	11.6	8.0	28.6	30.6	33.8
	Operating EBITDA margin (%)	5.1	3.1	23.2	26.1	29.4
	Net profit margin (%)	2.0	1.4	15.9	18.0	21.2
	Capex/sales (%)	0.3	0.0	17.0	3.0	1.4
	Interest cover (x)	11.8				

Source: Company data, RHB

Investment Thesis

The only listed proxy to the metaverse ecosystem

Established since 2009, WIRG has done over 1,000 projects developing AR projects in over 20 countries. The company’s vision is to enrich life experiences for individuals, companies and societies through digital reality solutions covering AR, through marrying VR technology with Artificial Intelligence (AI). This creates a new immersive media in generating fresh ideas and products. Customer engagement is key to any business for retaining, raising brand awareness and obtaining customer feedback.

Figure 1: WIRG has served global clients with state-of-the-art AR/VR/AI custom-made solutions



Figure 2: Below are some prominent brands that are WIRG’s clients



Source: Company

Source: Company

Mega projects to develop Metaverse Indonesia

WIRG plans to launch a metaverse land with the geographical map of Indonesia during the 17th G20 Summit in Bali this year. The company has received commitments from all three SOE banks and the Government as tenants of the project. The initial project will see WIRG launch plots of virtual land with maps of major cities of Indonesia (ie Jakarta, Bali, Surabaya), something that users can relate to in real-life, unlike imaginary maps in the leading metaverse platforms, Sandbox or Decentraland. WIRG will have c.800,000 plots of land available for sale in the first phase. Estimated revenue for virtual land sales in 2022-2026 will total USD352.8m. By 2026F, revenue generated from the metaverse land sales could reach 18% of total consolidated revenue. In addition, the Government has asked WIRG to create a virtual model of the new capital city, Nusantara.

Figure 3: Metaverse Indonesia is slated to be launched during the G20 summit



Source: Company, RHB

IoT revenue growth tech-savvy individuals

Having the world's third largest gamer population, Indonesia provides a strong base for the growth of the metaverse or AR users, enriching life experiences and improving customer engagement. WIRG has a decade of experience in developing AR platforms with one of its key projects, the franchisable virtual Alfamart stores, allowing customers to have a VR experience of entering Alfamart stores to purchase goods online. This enables WIRG to monetise from advertising and commission-based revenues. A strong, easily adaptable young population in Indonesia should quicken the process of customers embracing AR into their day-to-day lives.

Increasing engagement in education technology (EdTech) platform

WIRG recently launched 'IseeAR', an interactive AR for Video Conference tool (Zoom, Google Meet, etc). This increases audience engagement through online video conferencing services. Because of COVID-19, customers are accustomed to doing activities online. This enables opportunities for cross-border education services with better interaction through AR technology.

Figure 4: Concrete application of VR/AR for enhancing educational activities



Source: Company, RHB

Key competitive advantage: Strong AR foothold in metaverse ecosystem

A decade long experience in developing AR has provided WIRG with a valuable network of large enterprises or conglomerate groups that can support the metaverse ecosystem. WIRG has online and offline platforms that enables it to efficiently have O2O synergies. The company, through its technology unit, DAV, provides Internet of Things (IoT) offline portals (currently 1,000 networks) with plans to reach 22,000 Alfamart outlets and public places. Mind Stores provide a virtual store network, while AR&Co provides the AR solutions. WIRG has its own cryptocurrency called Minar, which is collectively able to support the new portal to Metaverse Indonesia.

How important is Metaverse? Next level of customer engagement

We think that customers still favour omnichannel support, especially after the pandemic. Customers love to be able to move seamlessly from brick-and-mortar stores to online ordering to social media to email. A good metaverse customer experience will be one where the customer can move easily between an offline business and the digital world. We see more immersive potential of customer experience that engages a customer's full attention with a plethora of brands. Aside from investing in the metaverse and purchasing virtual real estate properties, WIRG's number of brands have also started to strengthen and add more value to its business in these digital dimensions. Brands are slowly moving to the metaverse, enabling them to connect with more digital-savvy consumers in new ways. Aside from opening up new opportunities, this transition to the metaverse also has an impact on the company's operations, services, and what it is able to provide to its customers.

In our view, not only are international brands placing a strong initiative in connecting their offline business to the digital world, local companies are also following suit. Currently most of the initiatives are aimed at adding gimmicks to add excitement. On top of being able to substantially improve the customer experience, the metaverse can bring greater economic benefits, in our view. We think by setting up a presence in the metaverse, brands can reduce their capex allocated to open more outlets, more pronounced for industries like retail, banking, etc. Local and smaller players can stand to benefit by embracing the metaverse as it presents an opportunity to invest in a new type of technology that does not come with a huge price tag. This new way of interacting has the potential to level the playing field for brands and bring an all-new meaning to "storefront" for those with a digital-only channel.

10 May 2022

Technology | Technology

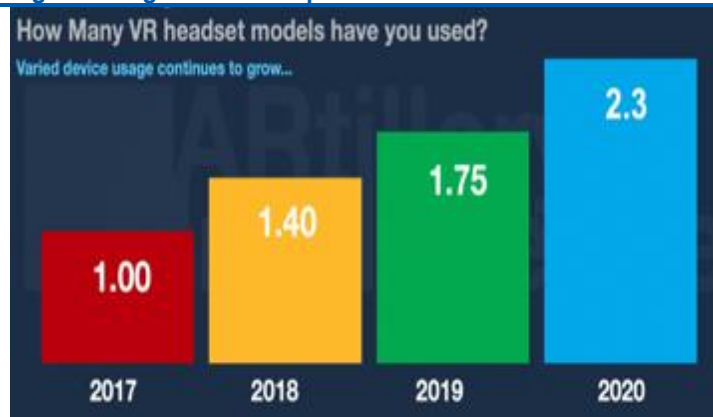
Industry Outlook

Increased affordability of VR headsets, especially the most popular, Oculus

Instead of being on a computer, in the metaverse, you might use a headset to enter the virtual world, connecting to a variety of digital environments. This headset can trick the human eye into seeing objects in 3D as the player moves around the virtual world. Several platforms still do not need special equipment to interact – neither Fortnite, Roblox nor Decentraland utilise the VR headset for now. However, we think incorporating one or both supports for this technology will create better interaction and enjoyment in the virtual world. For instance, Project Cambria, aka the Oculus Quest Pro (developed by Facebook), is a VR headset with cameras for full body tracking so it can monitor and project your movements and facial expressions onto an avatar. As such, we believe the wider distribution of VR equipment will play a vital role in increasing the popularity and adoption of the metaverse.

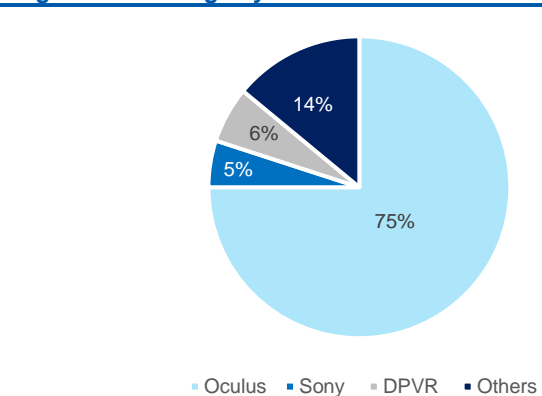
Currently there are number of famous headsets available in the market – Oculus Quest, Oculus Rift, HTC Vive, Playstation VR, Samsung HMD Odyssey, and Lenovo Mirage Solo. However, VR headsets are generally quite expensive. If someone wants to get into the metaverse, he/she might need to spend a lot of money on the headset. However, we see VR headsets become more affordable. One of the most aggressive metaverse developers, Facebook, has invested heavily in virtual reality through its Oculus headset. The VR headset is at the center of an ambitious plan by Meta Platforms to build out of the metaverse ecosystem. It is also building VR apps for social hangouts and for the workplace, including ones that interact with the real world. Oculus took the lion's share in 1Q21, and we believe the trend will continue to persist.

Figure 5: Higher ownership of VR headset



Source: Artillery Intelligence, Thrive Analytics

Figure 6: VR usage by headset



Source: Counterpoint Research, Statista

In a corporate blog in Oct 2021, Facebook CEO Mark Zuckerberg detailed how the company will spend USD10bn over the next several years building infrastructure to help developers take the new digital world mainstream. Facebook is offering its VR headset with a low price, cheaper than rivals – perhaps, even at a loss – according to some analysts. The company has cut the price of its product several times. In 2017, the Oculus Rift fell from USD599 to USD499 and the Touch (sold separately) from USD199 to USD99, and in that same year, Oculus further repriced its Rift headset at USD399.

Other brands joined the bandwagon. In 2017, HTC cut the price of its Vive virtual reality headset by USD200, bringing the system's cost down to USD599. A year later, Sony also cut the price of its PlayStation VR Camera Bundle by USD100, meaning would-be virtual reality explorers can now get their hands on the deal for USD299.99.

Furthermore, new product launches saw headsets sold at lower prices. In 2020, the Quest 2 started at just USD299 despite having a higher resolution, more features, and less weight than its predecessor. That entry-level price, however, may just be the start of Meta's long-term ambitions. In 2020, Facebook permanently cut the price of its Oculus Go VR headset, to USD149, a further USD50 price drop. This makes it much lower than Apple's iPhone 12 series – the lowest range iPhone 2 mini was priced at USD599 – launched in the same year.

We note, this initiative has been fruitful. It has become more mainstream, too – the Oculus Quest 2 VR gaming headset was a popular Christmas gift in 2020. On the app stores' ranking for software downloaded during the Christmas holiday, the most downloaded app was Oculus, the software for Meta Platforms (FB) virtual reality headsets. The Oculus app topped perennial store favorites like Tik Tok, YouTube, SnapChat, Instagram and Amazon Alexa. All of these are established digital communications platforms. It was also the first

10 May 2022

Technology | Technology

time Oculus was in the Top 10 during the holidays, according to a report at Quartz. Nearly five months after launch, Facebook's Oculus Quest 2 became the most used VR headset on Steam. That is according to the Feb 2021 results for the Steam Hardware Survey.

Figure 7: Oculus managed to show strong traction

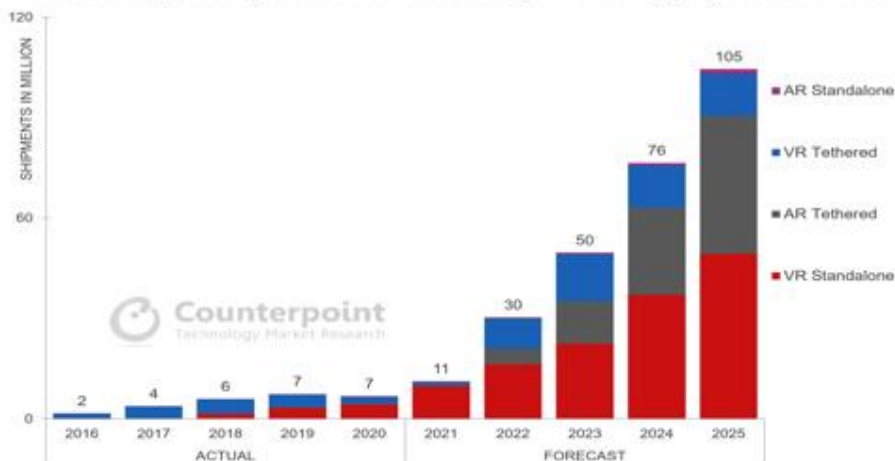


Source: Company data, RHB

All in, we remain strong optimistic of the wider distribution of VR usage going ahead. Global XR (VR/AR) headsets are expected to jump by 15x by 2025 from 2020, according to Counterpoint Research. This should bode well to catapult the adoption of the metaverse in the future, especially in Indonesia. We are already starting to see strong interest towards VR technology. Indonesia's virtual reality device ownership reached 5.5% of the country's internet users aged 16 to 64 (increased strongly by 31.0% YoY) in Feb 2022, placing the country at the top spot in South-East Asia followed by Singapore (4.4%), Malaysia (3.9%) and Thailand (3.0%).

Figure 8: Global XR (VR/AR) headset is expected to rise 15x by 2025 from 2020

Global XR (VR/AR) Headset Forecast by Device Type, 2016 to 2025



Source: Counterpoint's Global XR (VR/AR) Forecast, Dec 2021

The next level of more seamless customer experience in the metaverse

Imagine you creating another phase of your life in the virtual world. Well, the beauty of metaverse is creating a virtual world which largely similar and interlinked to the real world. People are able to collaborate with colleagues in one part of the metaverse, then swing by a virtual showroom and check out the interior of a new car. There could also be the potential to create individual experiences. The metaverse would be just one click away to explore and create in.

Figure 9: Metaverse tries to create more seamless experience by providing features that are quite similar with the real world



Source: Company, RHB

Figure 10: Sandbox ecosystem of assets



◆ Sandbox is an example of the metaverse platform that manages to create an end-to-end ecosystem largely similar with the real world

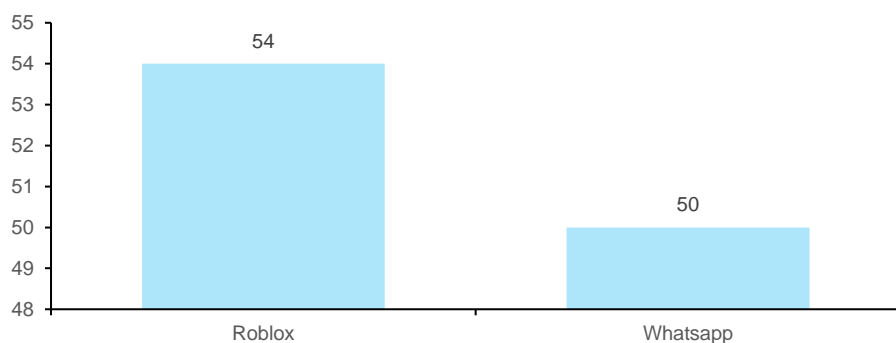
Source: Messari, RHB

In our view, customers might still favour omnichannel support, especially after the pandemic. Customers love to be able to move seamlessly from brick-and-mortar stores, online ordering, social media to email. A good metaverse customer experience will be one where the customers can move easily between offline businesses and other parts of the channel. We currently do not have an open and connected metaverse. But the success of services like Fortnite and Roblox with the younger audience is paving the way for more virtual worlds with their own economies. A number of trends are driving the emergence of a metaverse, many as a result of the digitally-native Generation (Gen) Z and Millennials. A recent study from Squarespace and The Harris Poll found that more than 60% of them believe how you present yourself online is more important than in real life.

We see that a digital presence and innovation have gained importance for companies post pandemic. According to the “Into the Metaverse” report, 76% of consumers say their daily lives now depend on technology (79% for Gen Z and 80% for Millennials) while 85% reported a digital presence will be essential for brands to succeed in the future. In fact, 66% of consumers prefer to engage with brands digitally and 73% find it easier to interact with brands via online channels.

Furthermore, the metaverse existence has begun to gain strong traction currently. 48% of Millennials and 38% of Gen Z think that the metaverse will be part of their daily lives in the next 10 years (based on a Harris survey). Furthermore, 51% of Millennials and 37% of Gen Z think that having unique assets in the metaverse is a justified expense. All in, the next generation is comfortable with this technology. As such, they are going to want companies to meet them there. We think companies that plan to provide a metaverse customer experience now will have the upper hand in the future when the presently young audience transform into core customers. And it is not just the youngsters, either. Research shows that about half of the Baby Boomers are interested in VR, and 64% feel positively about it.

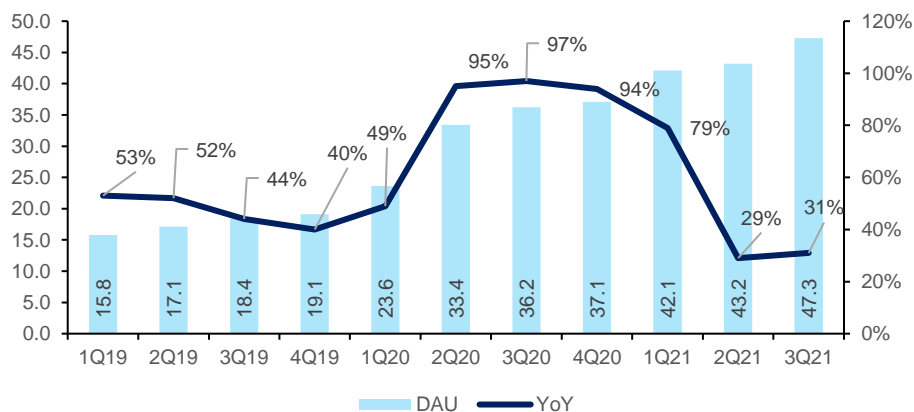
Figure 11: Instant messaging – Roblox vs WhatsApp (messages per daily active user)



- ◆ Roblox users are typically younger and more active than WhatsApp.
- ◆ Its users (half under 13) typically spend 2.5 hours a day on the platform and send more instant messages (54) than WhatsApp (50) based on a daily active user (DAU).

Note: Based on 2020 data
Source: Bloomberg Intelligence

Figure 12: Roblox daily active users (m)



- ◆ We have seen strong growth on its quarterly DAU which continues to be above 25%.
- ◆ This brought its DAU to almost triple from over the span of 1Q19 to 3Q21.

Source: Company data, blog.roblox.com

Moreover, we see more immersive potential of customer experience that engages customers fully with the plethora of brands starting to pay more attention. Aside from investing in the metaverse and purchasing virtual real estate properties, these brands have started to strengthen and add more value in the digital dimensions. Brands are slowly moving to the metaverse, enabling them to connect with more digital-savvy consumers in new ways. Aside from opening up new opportunities, this transition to the metaverse also has an impact on operations, services, and what they are able to provide their customers.

Figure 13: A number of big brands have started buying into digital land in Sandbox



- ◆ Even companies like South China Morning Post have already set up a presence in Sandbox.

Source: Company

10 May 2022

Technology | Technology

Below are number of examples of brand initiatives that have tried providing a new level of customer engagement in the metaverse. In our view, not only are international brands placing a strong initiative in connecting their offline business to the digital world, local companies are also following suit. Currently, most of the initiatives are aimed at adding gimmicks to add excitement. On top of being able to substantially improve the customer experience, the metaverse can bring greater economic benefits. We think by setting up a presence in the metaverse, brands can reduce their capex to open more outlets. The benefits may be more prevalent for brands that have the need to open offline stores such as retailers, banking, and others. Therefore, local and small brands, in our view, can start to monetise ample initiatives by embracing the metaverse, which can present an opportunity to invest in a new type of technology that does not come with a huge price tag. This new way of interacting has the potential to level the playing field for brands and bring an all-new meaning to the storefront for those with “digital-only” channels.

- A) Retailers. Walmart has filed several new trademarks indicating a nascent metaverse strategy. Nike filed trademarks with the US patent office to sell branded sneakers in the virtual world. The company filed seven requests for trademarks and patents on its goods ranging from footwear, clothing, and sports bags to art, toys, and accessories. It later launched an online game zone on Roblox called Nikeland where fans can create an avatar of themselves and play sports in the virtual space. In its latest foray, Nike acquired digital collectibles company RTFKT Studios, which will allow the retailer to sell real sneakers that can also be used as virtual sneakers that people can use to outfit their online avatars.

Figure 14: Nike Avatar in Roblox



Source: Gamebrott.com

Figure 15: Nikeland in Roblox



Source: Gamebrott.com

According to Morgan Stanley, brands can generate an additional USD50m before 2030, thanks to these new virtual universes. In the short term, certain markets like the luxury market have already started to invest in social games and non-fungible token (NFTs) through new immersive universes. These opportunities will help the luxury market to grow more than 10% over the next eight years and to increase the sector's profit by about 25%. Gucci has also seized this opportunity by partnering with platforms Roblox and Sandbox that have allowed for the creation of new and original virtual experiences. A virtual Gucci bag sold for more money on Roblox than the actual bag – one user paid almost USD800 more than the real Dionysus Bag with Bee, which sold for USD3,400.

Figure 16: Gucci Garden in Roblox



Source: Company

Figure 17: Gucci presence in Sandbox



Source: Company

10 May 2022

Technology | Technology

- B) Concert provider. On 6-8 Aug 2021, Ariana Grande headlined a virtual concert series called the Rift Tour on Fortnite, marking the first time in nearly two years since the pint-sized diva had a concert, which was viewed by around 1m people. Her concert became the second most viewed Fortnite concert. We see virtual concerts having the potential to be more profitable than physical concerts, which deal with challenges such as capacity and parking, among others.

Figure 18: Ariana Grande's Fortnite Rift Tour



Source: [epicgames.com](https://www.epicgames.com)

- C) Banking. We see a number of banks starting to jump on the bandwagon. This should play a very important part in reshaping the overall industry landscape. Customer interaction may be easier and more responsive. Banks are likely to reach a wider customer base in a more cost efficient manner. In our view, capex for outlet expansion can be minimised with less people required to serve customers. A number of banks have started concrete initiatives although features are limited. Three Indonesia SOE banks have stated their intention to set up a virtual presence in Metaverse Indonesia.

Aside from this, the use of the several features in the metaverse (ie cryptocurrency) may present other business opportunities to monetise. For instance, U.S Bank, the country's fifth biggest retail bank, announced that its cryptocurrency custody service is available to fund managers. Other financial companies have also started to monetise by providing metaverse mortgage, for example.

Figure 19: BNP Paribas has rolled out VR-based services



Source: Company

- ◆ This service was created in 2017, which is designed to improve and streamline customer journey

Figure 20: KB Kookmin Bank has also ventured into the metaverse



Source: Company

- ◆ The company, which is one of the South Korea's largest financial institutions, announced that it has developed the KB Metaverse VR branch testbed
- ◆ This is aimed to experiment along with allowing customers wearing a head mounted VR device to access banking services in the metaverse

Figure 21: JP Morgan has also jumped on the bandwagon



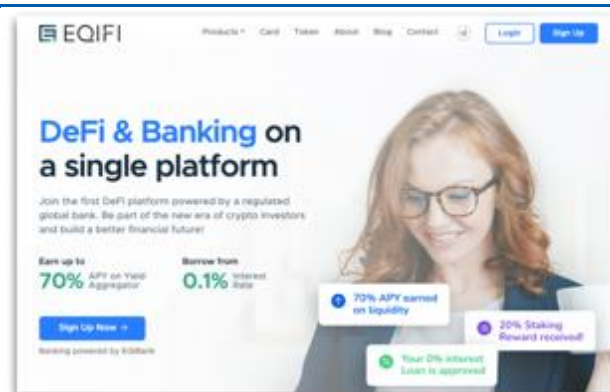
Source: Company

- ◆ JP Morgan recently launched its presence in Decentraland. Features at this moment are limited as it can only be used for virtual meeting
- ◆ However, we think further initiatives such as digital account opening and transactions can be created ahead

Figure 22: Financial services in the metaverse



Source: Company



Source: Company

D) Manufacturing companies. Companies including those in the automotive industry, have started to increase their engagement in the metaverse. One such company is Indonesia's largest automotive company, Astra International (ASII IJ, BUY, TP: IDR7,650). ASII uses VR technology to generate the introduction to new products and training among its dealers. This may help to create trainings on a larger scale and in a more efficiently manner in terms of time and cost. This service is conducted by WIRG. We think this initiative can be implemented at the metaverse level going forward. Other companies that also deal with end customers can produce virtual samples without the expense of manufacturing physical samples.

10 May 2022

Technology | Technology

The virtual samples will enable the company to not only broadly distribute the products but also reduce ASP and improve profitability.

- E) Government. Aside from private sector, WIRG believes the metaverse may help small countries to establish diplomatic missions effectively. For instance, Caribbean countries are mulling to set up a presence in the metaverse instead of enacting presence or having diplomatic missions to all around the world as it may be more efficient and effective. Aside from that, the Governments may likely use blockchain technology to provide single identity for each of its citizens using multiple persons' characteristics. This would make the database more credible and reduce the cost of database management.

Looking ahead, we think a more immersive experience can engage greater customer attention across various industries. One study (cited in [enchant.com](#)) showed that the amount of information stored in the memory is 70% higher when using AR. That could mean a much bigger impact for brands. VR can even help businesses offer a customer experiences in the metaverse that they could not offer in the real world. Also, early research already shows VR and AR can impact a company's bottomline. Cosmetics brand We Make-Up saw a 53% higher click-through rate when it ran AR ads that let customers virtually try on different lipstick shades. Another report showed that 71% of customers would shop more often if they could use AR.

A single interconnected metaverse is more likely still decades away. But with companies like Epic Games, Microsoft and Facebook putting their resources behind creating a metaverse of their own, virtual worlds could be a big part of the future. With so many young people engaging in VR games like Minecraft, Fortnite and Roblox, the next generation will be much more comfortable with the virtual world. They may even want their favorite brands to meet them there. If the metaverse becomes a reality, businesses that already have plans in place to provide a metaverse customer experience will have the upper hand.

Companies that are able to dive into the metaverse have an opportunity to gain stronger customer relationship among loyal supporters and new fans. With 82% of companies which try AR and VR (based on the survey by [enchant.com](#)) reporting benefits that meet or exceed expectations, businesses are clearly becoming more open to the metaverse. Overall, the metaverse offers brands the opportunity to develop deeper personal and more meaningful relationships with customers by creating virtual experiences that combine entertainment, personalisation and value.

Today, it is normal for customers to communicate with their favorite brands on Facebook Messenger. We believe in the future, Facebook may bring the customer experience into the metaverse via a virtual world where its 2.8bn users can communicate in real time. And Facebook is unlikely to be the only company to do so. We do not foresee the metaverse being ready to take over all business activities any time soon. The number of challenges still remain such as the lack of a regulatory platform, internet connectivity, legal aspects, including security and privacy, qualified human resources, etc. But it could become one of many channels customers can use to interact with businesses.

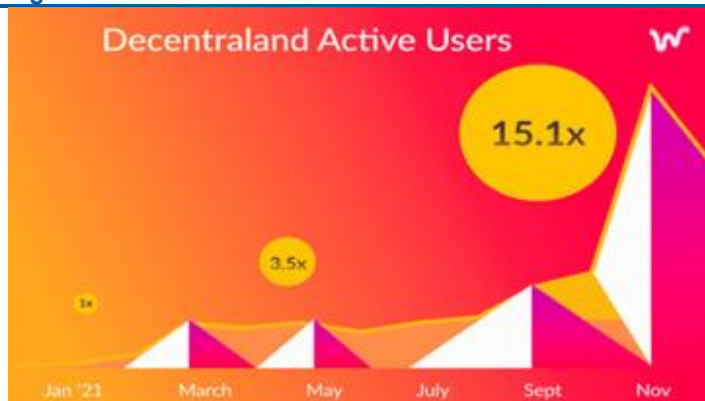
Also, Bloomberg Intelligence estimates that the market size for metaverse could reach USD800bn by 2024. Moreover, the existence of the metaverse may disrupt existing traditional industries such as convention centre providers and exhibitions, which can be just as efficiently conducted in the metaverse. Educational activities too can also conduct in the metaverse, which can bring about a more attractive experience. For that reason, we believe conventional businesses, even if they secured offline, world need to be prepared for the metaverse.

Ample benefits of metaverse providers

The above opportunities have lured a number of entities to build the platform such as META, Sandbox, Decentraland, and others. Aside from WIRG, SHINTA VR also developed a metaverse for Indonesia's biggest digital entertainment company, RANS Entertainment. Meanwhile, WIRG has committed to launch Metaverse Indonesia, which is based on the real map of Indonesia at the G20 Summit in Bali later this year.

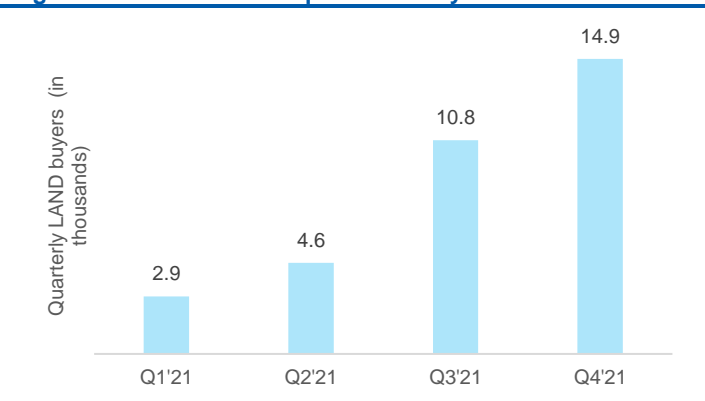
We see a lot of interest generated, attracting many active users in a short span of time and boosting its valuation, especially on its virtual land selling price. Decentraland succeeded in growing its active users by 15.1x over the period of 11 months. Sandbox, too, has been able to grow its unique active buyers by about five times during the year

Figure 23: Decentraland's active users



Source: rew-online.com

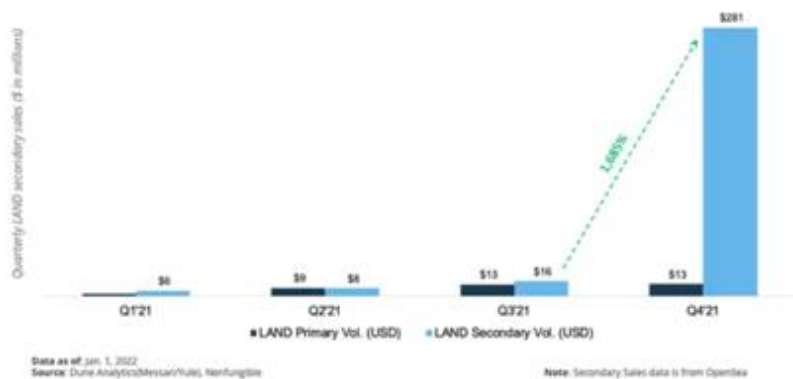
Figure 24: Sandbox's unique active buyers



Source: Messari

Metaverse developers can also gain a number of financial benefits from a number of sources. First, the sale of virtual land, as virtual real estate is a growing market. The average price of a parcel of land doubled in a 6-month window in 2021. It jumped from USD6,000 in Jun 2021 to USD12,000 by Dec 2021 across the four main Web 3.0 metaverses. Partly, this growth has been because brands have been buying up space so they can create virtual stores and other experiences. In Jun 2021, one land package in Decentraland sold for USD913,000, with the developer turning every realm into an entire shopping district, Metajuku (inspired by Japan's Harajuku shopping district). Secondary land sales have also continued to be enticing, even outpacing primary sale prices.

Figure 25: Sandbox's LAND secondary sales outpace primary sales



Source: Company, Messari

Note that three state owned Indonesia banks Bank Mandiri (BMRI), Bank Negara Indonesia (BNI) and Bank Rakyat Indonesia (BRI) have signed a commitment to buy virtual land and set up their footprint in Metaverse Indonesia. WIRG indicated that the size is quite substantial and more big companies have since shown interest to follow suit in the near term. Aside from the one-time virtual land sales, metaverse developers can earn from rental income should some companies decide to rent the virtual land instead.

In time, the virtual real estate market could start seeing services similar to the physical world, including credit, mortgages and rental agreements. However, with the emergence of decentralised finance (DeFi), collateralised lending primitives and the composability of blockchain token-based digital assets, a next-generation financing company could potentially leverage on digital clothing as a collateral to underwrite virtual land and property mortgages.

In fact, the financing company may not be a company at all, but instead, a self-organising, mission-based community of people (who may not have met at all in person), also known as a decentralised autonomous organisation (DAO). The DAO may have seeded its original balance sheet into a multi-signature wallet to create the mortgages. An additional layer of tokenomics to incentivise certain participants or community behaviours creates another level of gamification and commercialisation. The creation of the NFT marketplace may become another source of income for metaverse developers.

10 May 2022

Technology | Technology

It will be interesting to see how marketing and advertising pans out, as it is potentially one of the biggest segments of the meta-economy. There are huge opportunities for branding and immersive ad experiences in the virtual world due to the mass audiences available. As with the current generation of social media companies, advertising is the model that many platforms use to generate revenue. In-game ad spending is set to reach USD18.41bn by 2027.

Further, play to earn is a concept where players can monetise the amount of time they spend playing video games including breed, buy, train, engage in tasks and participate in battles, place bets, participate in referral earnings, etc. The main objective is to obtain an in-game token with which players can perform all of the above functionalities that in turn allows them to have a competitive advantage and enables them to earn more money. These in-game tokens are spent continuously in-game and can be worth up to USD300. In addition to the game’s own unique assets, the created creatures themselves (complex assets) with these kinds of new abilities and functionalities can be sold as NFT in an open market and thus, monetised.

Play-to-earn games are based on a financial reward in cryptocurrencies for each user who contributes value when playing, as well as to reward the loyalty of dedicating part of the player’s time to the ecosystem. It complements the system not only for fun but also offers the possibility of an economic return with their participation. The traction of play to earn games has been due to their economic model. Thus, Axie Infinity (Pokémon-inspired blockchain game) and The Sandbox have gained popularity for their relational economic system and in-game liquidity, which have been solved through the use of blockchain technology.

But the time spent playing the game is also rewarded with tokens that can be exchanged in a decentralised way for cryptocurrencies in a fully open peer-to-peer market. A whole new world of value creation. As such, the developers might be able to gain a certain commission from game developers. Lastly, we think metaverse developers can also gain a certain commission from the establishment of online shopping, online partying and concert participation.

Indonesia presents ample potential from a sizeable population base and gamers fans

According to official reports, Indonesia’s population in 2020 was 270,2m, covering an area of 1,919,440 km². The country is the largest in the region by both statistics. It is the fourth most populous country in the world and the 14th largest by area. On top of the sizeable population base to capitalise, we see online gaming flourishing in Indonesia. This may ease the adoption of the metaverse as most people are already tech savvy, with most of the metaverse platforms starting from the game format. Additionally, in-game is one the features to enhance the experience in the metaverse as well as one of the developers’ revenue stream. That said, the proliferation on the gaming industry may be a factor in determining the metaverse’s success.

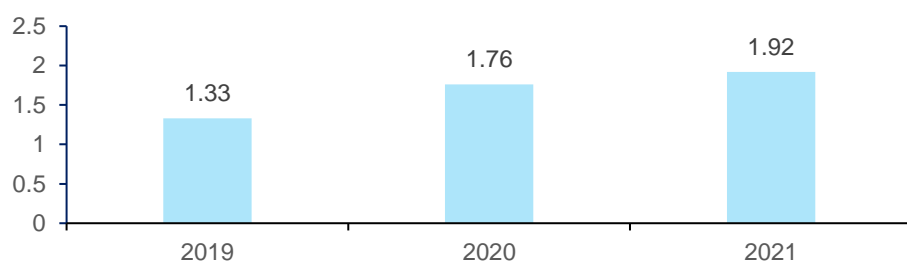
The gaming market in Indonesia is the 16th largest in the world and the largest in South-East Asia. As at end-2021, sales accounted for USD1.92bn. The eSports sector in South-East Asia is developing mainly on account of Indonesia, as 43% of the total number of players in the region are from Indonesia.

Figure 26: Popular e-Sports games in Indonesia



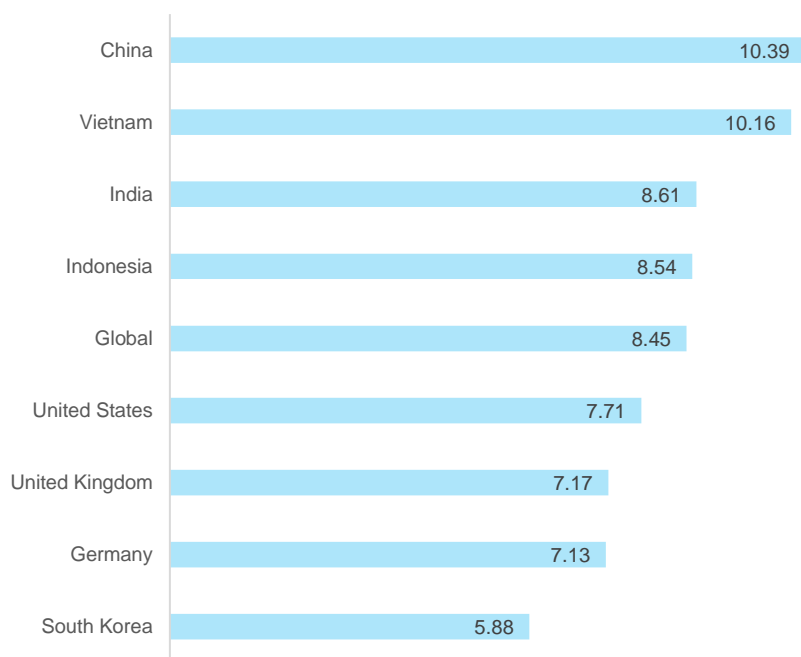
◆ Looking at the higher demand on first-person-shooter (FPS) game, Rapid Fire would be suitable for the Indonesian market.

Source: KINCIR, RHB

Figure 27: Growth of revenue for the Indonesia's gaming industry (IDRbn)

Source: Allcorrect.com

According to a report by Limelight Networks, Indonesians spend around 8.54 hours per week gaming, which is slightly higher than the average (8.45 hours per week). Indonesia ranks fourth, behind China, Vietnam, and India. It is predicted that by 2025, 89.2% of Indonesians will own smartphones. The number of smartphone users in rural areas has also grown, increasing from 47.3% in 2015 to around 55% in 2019. In Jan 2021, Indonesia had 202.6m internet users in total. From 2020 to 2021, the number of internet users in Indonesia increased by 27m (+16%).

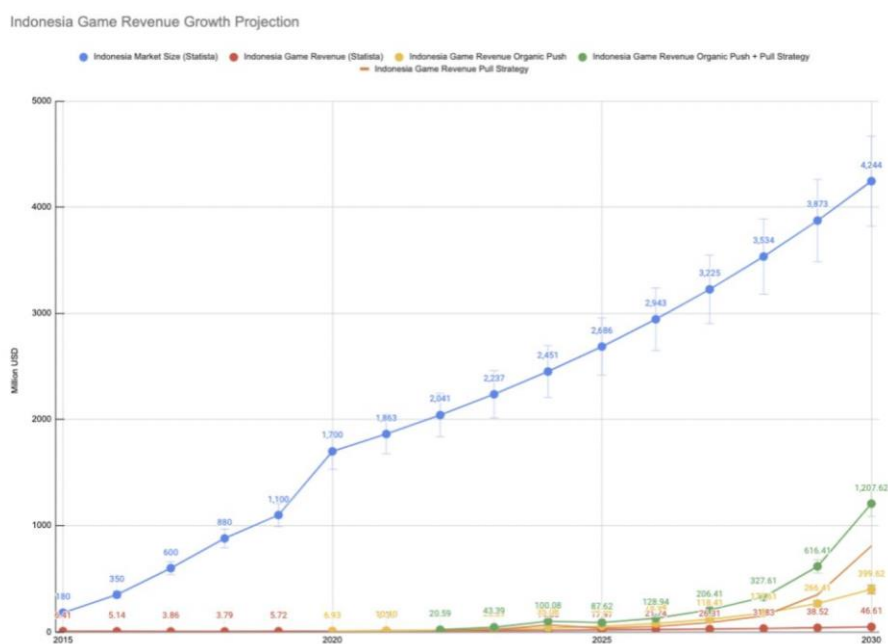
Figure 28: Hours spend weekly on gaming activity

Source: Allcorrect.com

Mobile games will most likely continue to dominate the Indonesian gaming market, due to the increased number of smartphones and internet users. Based on data from 1Q21, Indonesia is currently ranked second for yearly growth in the number of downloads of mobile games (App Store and Google Play). The number of downloads increased by 26% to reach 790m. Also, 79% of Indonesians consider themselves to be gamers. Almost half of users play every day, and one-fifth play about 4-6 times a week, spending on average 30-60 minutes playing each time.

10 May 2022

Technology | Technology

Figure 29: Indonesia's game revenue growth projection

Source: Indonesia Game Association

- ◆ The local gaming sector is growing at a pace of CAGR of 51% annually in 2020, greater than other South-East Asian nations. This should be positive for the metaverse given it has an objective to entice the partnering of many local players
- ◆ Local game developers are preferred as they have better knowledge of the Indonesia market, and come with lower cost

The rising number of game players should positively impact the metaverse adoption. We deem playing a game provides an initial experience on having interaction in the digital world. This should ease the transition into the metaverse. We also note the metaverse development came from game platforms such as Roblox. Additionally, metaverse developers also plan to provide in-game activities as one of the key attraction points.

Growing internet penetration

About 90Mhz of additional spectrum in the 700Mhz band should be up for bid in 1H22F – which will boost network capacity and coverage, especially in rural areas. Indonesia's low fixed broadband penetration provides growth opportunities outside the highly competitive cellular business. However, 5G spectrum sharing regulations are still not finalised yet, and remains an overhang factor.

Operators have continuously increased network capacities to support rapidly growing data traffic (9M21: +43% YoY). With economic activities slowly moving towards a new normal, we should be able to see larger growth in the enterprise business-to-business segments. This would stem from improved confidence in spending on IT and fixed broadband services – consumers are becoming more willing to let telco technicians into residential areas or even into their homes. That said, we are upbeat on the growth in data traffic, even with the situation moving closer to pre-pandemic conditions. According to DataReportal, Indonesia should record 27m new internet users this year (+15% YoY).

Meanwhile, telco operators have successfully improved network quality with regards to the average speed of mobile internet connection (up 24.8% YoY to 17.3mbps). 98.5% and 74.3% of internet users aged 16-64 years each month have watched online videos or video logs. Higher internet speeds should entice users to search for more video-based entertainment online vs photo-based.

The additional spectrum will increase the sector's network capacity, and boost data consumption. As at 3Q21, the industry's average data usage was at 9GB per user – which is still much lower than Malaysia's 26GB per user, China's 22GB per user, and India's 15GB per user. These countries have an average network speed of 23.6mbps, or 36% higher than that of Indonesia. As Indonesia is an archipelago, this creates challenges for fixed broadband operators to expand – the country's fixed broadband internet penetration is only at 14% of total households – with ARPU being 8-10x more than that of cellular ARPU (IDR250,000-370,000).

10 May 2022

Technology | Technology

Indonesia has one of the highest numbers of YouTube, TikTok, Instagram and Facebook users – totalling 526m users (+20% YoY) as of 2020. The average mobile internet speed has grown by 87% in the past four years, but still has a lot of room to ramp up further to boost data revenue growth. We are also more bullish on non-cellular segment growth opportunities (ie enterprise and fixed broadband), although revenue contributions are still much lesser than that of the cellular segment.

We view that better coverage and higher network speeds should entice subscribers to consumer more data. The most significant network expansions are in the outer major islands (Sumatera, Kalimantan and Sulawesi), while Telekomunikasi Indonesia (TLKM IJ, BUY, TP: IDR4,500) still dominates coverage in East Indonesia. The 700mhz spectrum auction in 2022 should provide a strong catalyst for operators to expand into more rural areas with less tower capex requirement.

Based on data from the top three telco operators, average monthly data traffic has grown by 135%, from 4GB in 1Q19 to 9.6GB in 3Q21. However, data ARPU only grew 21%. Data yields have normalise, but are still declining naturally, as subs consume more data. Regional average mobile data consumption in developed markets is nearly at 20GB per month – which points to significant growth potential for the Indonesian telco players. From the customer side, Indonesians are more inclined to use video-based entertainment over photo-based alternatives – as seen in the growing number of users on apps like Instagram, YouTube and TikTok (+16%, +19% and +64% YoY). We expect data traffic to continue increasing, as the usage in Indonesia is still minimal, at just about 10GB per month.

Figure 30: Growth in industry’s data ARPU is much lower than ...



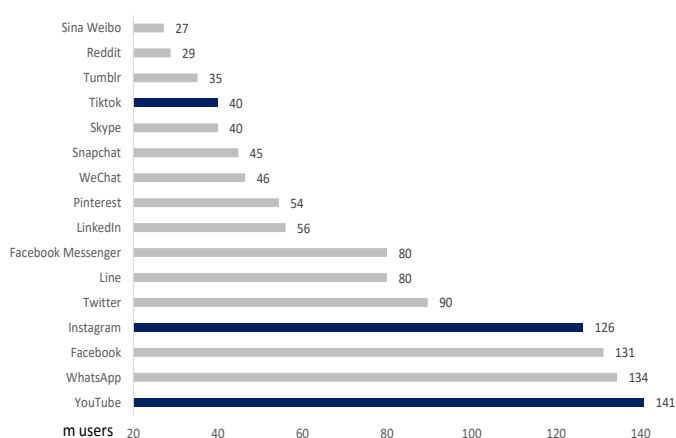
Source: Company data, RHB

Figure 31: ... the growth in data traffic



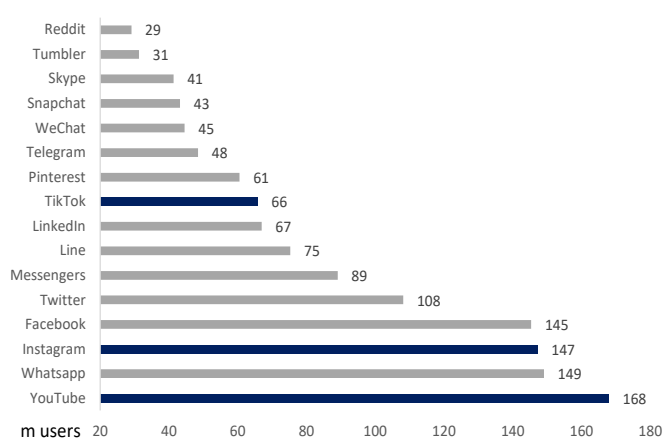
Source: Company data, RHB

Figure 32: Indonesia – most visited social media apps/websites in 2019



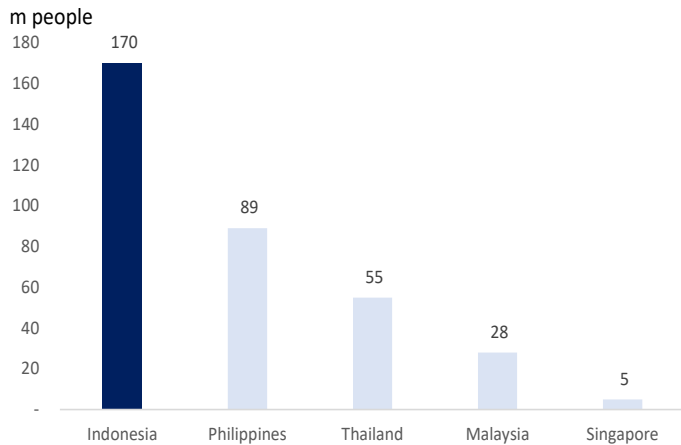
Source: Hootsuite, RHB

Figure 33: Indonesia – most visited social media apps/websites in 2020



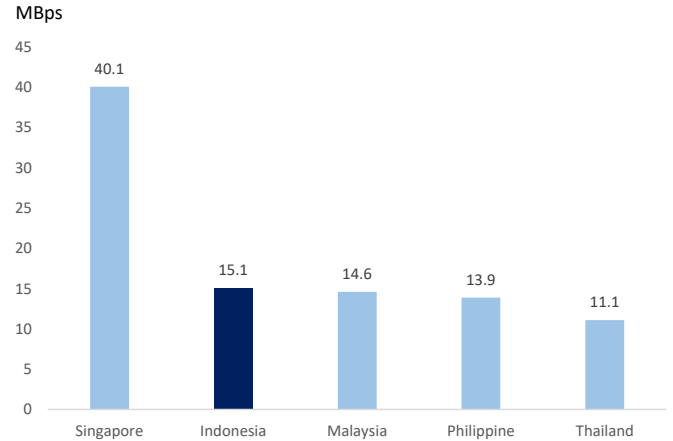
Source: Hootsuite, RHB

Figure 34: Indonesia has the highest number of social media users in the region



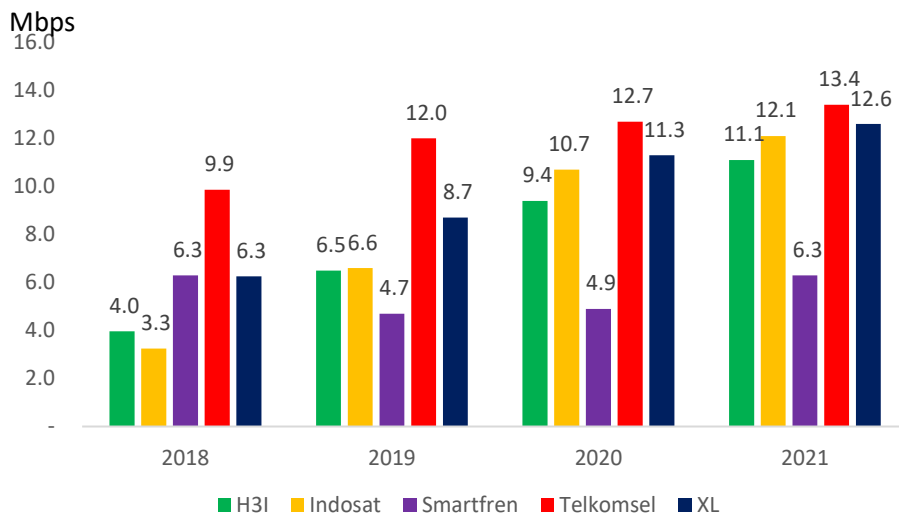
Source: Hootsuite, RHB

Figure 35: Large data traffic growth potential, as Indonesia has faster mobile speeds than Malaysia, but its data usage is less than half that of the latter



Source: Opensignal, RHB

Figure 36: Historical download speeds of IND telco operators



◆ Download speeds of five operators have increased by 35-267% since 2018

Source: Opensignal, RHB

Financial Outlook

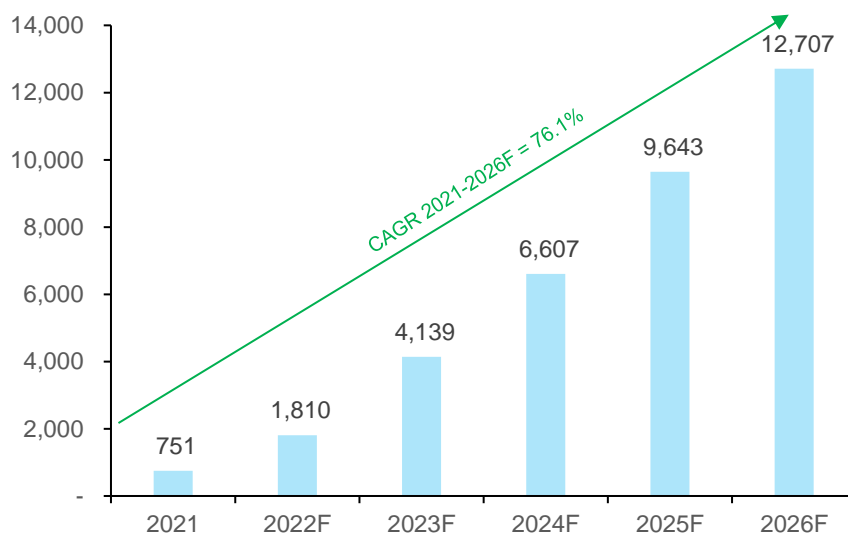
Revenue to grow 76.1% 2021-2026F CAGR

WIRG has commitments from Sumber Alfaria Trijaya (AMRT IJ, NR) to expand its DAV multimedia network to 10,000 Alfamart outlets. WIRG also plans to expand into public places (ie hospital, public stations). This would boost electronic voucher sales and more-margin-lucrative advertising revenue and brand consultancy. The long-term plan for WIRG is to have over 20,000 DAV to provide a strong connection for offline networks. Currently, the company is working to increase around 6,000 DAVs for 2022. Additionally, it is also on progress to expand its MIND Stores business. It has around 600,000 individuals and traditional retailers as the potential customers at this juncture. Only around 10-20% have converted and use the services, presenting ample opportunity to capitalise ahead. Aside from adding new users, WIRG will also cooperate with a number of entities as well as improve its features (ie adding more products, payment channels, etc). This can become WIRG's new revenue stream going forward.

Being the world's third highest gamers population, Indonesia has a strong foundation for customers demanding the next-level experience. From the fast moving consumer goods (FMCG) industry alone, 7-12% of the USD10bn FMCG industry is spent on advertising and promotion. This presents potential that can be channelled into AR-based advertisements, which have much higher engagement with customers.

Additional growth drivers will likely stem from the new metaverse business ventures, which are still in the early years of development. We conservatively expect revenue generation to only come from virtual land sales, contributing 15-20% of total revenue in 2023-2026F. There could be additional revenue streams from advertising and transaction commission done in the metaverse, once it is fully developed (ie high traffic and number of users).

Figure 37: WIRG's revenue profile

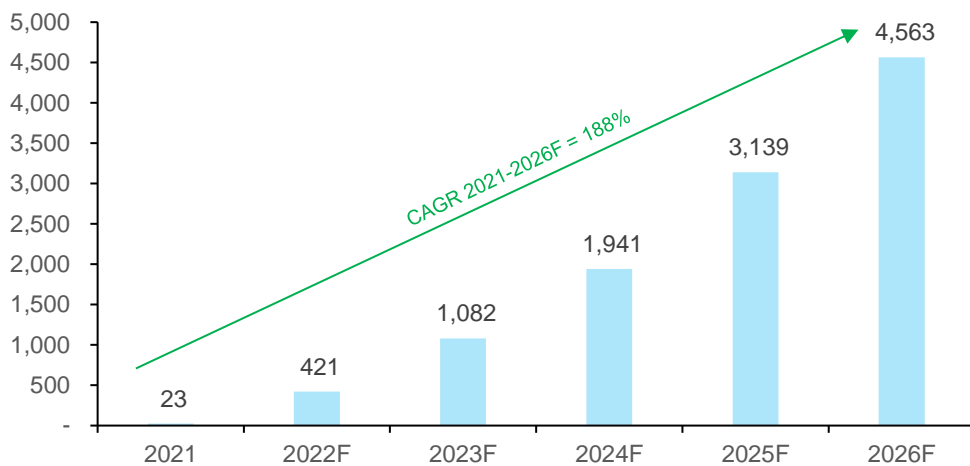


Source: Company data, RHB

EBITDA to grow 188% CAGR 2021-2026F

Most of WIRG's COGS is the cost of the electronic vouchers or e-money top-ups done via DAV or Mind Stores. The remaining costs are associated with developing software applications and digital media advertising (revenue sharing with partners). The company has an average take rate of 1.86% from selling electronic vouchers, while GPM for the other segments are in the range of 30-72%, where they are more human-capital intensive costs booked under G&A expenses. We expect GPM to expand in the future as most of the costs are fixed, with the expansion in DAV networks and metaverse land sales directly translating to margin expansion. The company aims to improve its platform's features, which should help it to obtain higher sharing revenue portion or take rate. Once the software is developed, the G&A costs are relatively fixed, similar to the metaverse. Hence, we expect EBITDA margin to significantly rise going forward as WIRG continues to launch AR products.

Figure 38: WIRG's EBITDA profile

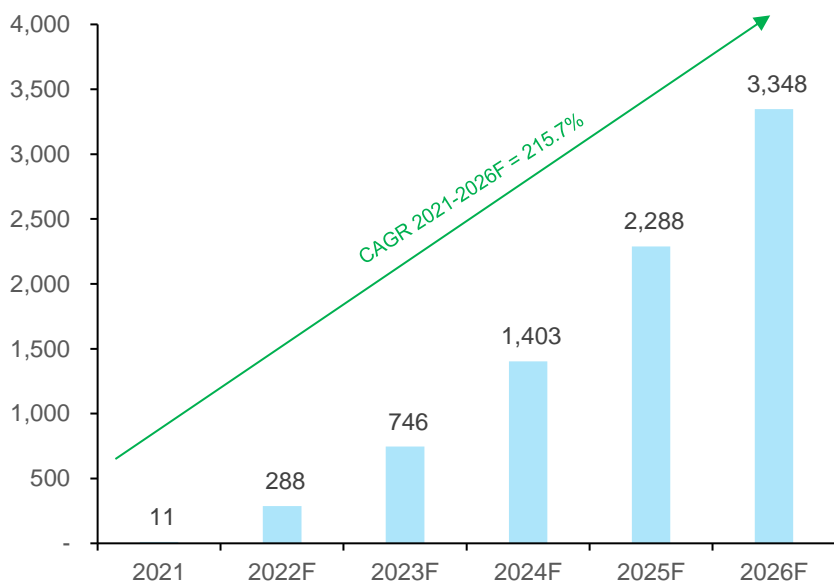


Source: Company data, RHB

NPAT to grow 215.7% CAGR 2021-2026F

The company has an insignificant debt level, which contributes to uneventful, and below-the-line items. Depreciation is expected to rise as the cost of developing the metaverse (IDR100bn) will be capitalised, and we assume a 10-year linear depreciation ahead. Strong NPAT growth is mainly driven by strong EBITDA margin expansion with most of the development costs fixed, including some of the G&A costs.

Figure 39: WIRG's net profit profile



Source: Company data, RHB

10 May 2022

Technology | Technology

Valuation

Since WIRG is an organisation with business units operating in several industries, we believe an SOP valuation is the most appropriate method. Using SOP, we derived a TP of IDR1,900. We divided WIRG into two separate business segments – metaverse and non-metaverse. Additionally, we apply a 4% ESG premium as the company's scored 3.2, which is above our country median at 3.0 based on our proprietary model. We still see a substantial upside for its share price as the current market cap is lower than its market cap value.

We used an EV/Revenue to calculate the equity value of WIRG's non-metaverse businesses at 3.0x 2023F based on the entertainment and gaming sector average.

Similarly, we used an EV/Supply valuation to compute the market capitalisation of the metaverse business unit (Metaverse Indonesia). Comparable peers such as Sandbox, Decentraland, NFT Worlds, CryptoVoxels, and Worldwide Webb Land were used to determine the floor price of Metaverse Indonesia. Based on CryptoVoxels's valuation, 1.09 Ethereum (ETH) floor price was used for our computation. However, Sandbox, Decentraland, NFT Worlds, and Worldwide Webb Land, CryptoVoxels do not have a supply cap and can be expanded accordingly. Metaverse Indonesia, similar to CryptoVoxels, is an expandable virtual world. Hence, we believe CryptoVoxels is WIRG's closest comparable peer.

Figure 40: SOP valuation

Metaverse Indonesia	
Supply	800,000
Floor Price	
ETH	1.09
IDR (m)	48
Floor Market Cap	
ETH	872,000
IDR (bn)	38,172
Discount (60% based on NAV discount property sector)	(22,903)
Net Asset Value (IDRbn)	15,269
Non-Metaverse (IDRbn)	
EV/Revenue (voucher sales - ERAA)	0.8x
EV/Revenue (AR-related - avg ent and gaming sectors)	3.6x
Revenue Voucher 2023	2,529
Revenue AR-related 2023	1,241
EV	6,489
Less: Total Debt	(13)
Less: Minority Interest	(14)
Plus: Cash	23
Equity Value	6,485
Total WIRG	
Total Equity Value (IDRbn)	21,754
Shares Outstanding (bn shares)	11.9
Price per Share (IDR)	1,830
Additional 4% ESG premium	73
Total Price	1,903
TP	1,900

Source: Bloomberg, Company data, RHB

10 May 2022

Technology | Technology

Figure 41: Peer comparison of digital companies

Name	BBG Ticker	Market Cap (USDm)	P/S (x)			EV/Sales (x)			EV/EBITDA (x)		
			2021F	2022F	2023F	2021F	2022F	2023F	2021F	2022F	2023F
Entertainment											
Netflix Inc	NFLX US	153,661	5.17	4.60	4.10	5.58	4.96	4.42	24.58	22.74	18.24
Spotify Technology SA	SPOT US	26,487	2.54	2.12	1.82	2.37	1.97	1.69	162.00	109.02	49.94
Tencent Music Entertainment Gr	TME US	8,395	1.71	1.82	1.69	1.12	1.19	1.10	8.60	9.48	8.49
Bilibili Inc	BILI US	9,758	3.22	2.45	1.89	3.03	2.31	1.78	-14.76	-14.95	-29.18
iQIYI Inc	IQ US	3,660	0.77	0.76	0.71	1.22	1.21	1.13	-9.99	347.72	11.06
Average			2.68	2.35	2.04	2.66	2.33	2.02	34.09	-44.28	11.71
Gaming											
Tencent Holdings	TCEHY US	450,632	5.04	4.60	3.91	5.27	4.81	4.09	13.11	12.96	11.60
Activision Blizzard Inc	ATVI US	61,693	7.08	7.14	6.13	6.33	6.39	5.48	14.54	14.65	12.16
Electronic Arts Inc	EA US	34,184	5.62	4.54	4.25	5.49	4.43	4.16	15.44	11.82	11.52
Take-Two Interactive Software	TTWO US	15,938	4.67	4.62	4.00	4.02	3.98	3.44	15.33	18.11	15.27
NetEase Inc	NTES US	63,606	4.62	4.09	3.60	3.79	3.36	2.96	17.21	15.10	12.95
Average			5.41	5.00	4.38	4.98	4.59	4.02	15.13	14.53	12.70

Source: Bloomberg, Company data

Figure 42: Peer comparison in the metaverse

	Sandbox	Decentraland	NFT Worlds	CryptoVoxels	Worldwide Webb Land
Supply	166,464	97,434	10,000	7,280	9,508
Floor Price					
ETH	1.95	2.75	8.3	1.09	1.539
IDR (m)	85	120	363	48	67
Floor Market Cap					
ETH	324,605	267,944	83,000	7,935	14,633
IDR (Bn)	14,210	11,729	3,633	347	641

Source: Dappradar.com, Nitpriceloor.com

10 May 2022

Technology | Technology

Company Background & Milestones

WIR Asia, established in 2009, is a leading player in digital reality technology (digital reality) which includes AR, VR, and AI. The company's main business activities are providing AR-based technology services by combining VR, AI, IoT and other supporting technologies. Currently, the company has completed over 1,000 projects for clients from various industrial sectors located in more than 20 different countries.

WIRG has been recognised by the international community for its achievements. Recently, it was included in the list of "Metaverse Technology Companies to Watch in 2022" by Forbes.

The company offers a variety of technological solutions through its three strategic business pillars, which are:

AR&Co – AR, VR and AI development

AR&Co offers unique technological solutions through an immersive digital reality experience. Through 3D AR-based technology, AR&Co provides business solutions in marketing, education, gaming, and special events. This project-based business unit has served clients globally in countries such as Malaysia, Spain, Vietnam, and Nigeria.

AR&Co also functions as a R&D centre for WIRG. Technologies developed by AR&Co can be utilised by other business units to enter into new business segments such as media, gaming, health, education, finance, transportation, and agriculture, among others.

Figure 43: Notable AR&Co's projects

Year	Client	Country	Industry	Project Description
2019	Indosat Ooredoo	Indonesia	Telecommunication	AR application development ("Messi Challenge")
2019	Kimia Farma	Indonesia	Retail	Interactive application using sensors and AR
2019	Astra Honda Motor	Indonesia	Automotive	AR application development for virtual showroom
2018	Faber Castell	Indonesia	Stationary supplies	AR application development for colouring books
2018	UBS AG	Netherlands	Financial	Neuro science application for display technology
2017	DAMN! I Love Indonesia	Indonesia	Fashion	Application development for pins
2016	Pemprov DKI Jakarta	Indonesia	Government	AR application for a museum event and art display
2015	Friesland Campina	Vietnam	F&B	AR game application
2015	All Progressives Congress	Nigeria	Retail	AR application development for a political campaign
2014	Nestle	Indonesia	F&B	AR application for Dancow event
2014	Junction Square	Myanmar	Retail	AR photobooth for atrium shopping center
2013	Toonami	Asia	Entertainment	AR application for promotional event
2013	SATS	Singapore	Airport services	AR application for food packaging promotion
2013	Ediciones Saldana S.A	Spain	Publisher	AR books
2012	Caltex	Asia	Oil & Gas	Interactive promotion for Techron (AR application)
2012	Cartoon Network	Asia	Entertainment	AR game application for Ben10
2011	Cartoon Network	Asia	Entertainment	AR photobooth application
2011	XL Axiata	Indonesia	Telecommunication	AR application

Source: Company data

DAV – IoT platform

DAV, launched in 2015, produces and distributes AR-powered kiosks in strategic retail locations. Customers can use these AR-powered kiosks to purchase digital and physical goods. As of today, nearly 1,000 DAV kiosks have been installed across major cities in Indonesia.

DAV has established partnerships with retailers including Alfamart, Alfamidi, Watsons and Lawson. The partnership also covers advertisements and/or promotions from well-known brands such as Danone, A/X, SGM Eksplor, Unilever, Sari Husada, Pocari Sweat etc. DAV's devices are a solution for big-brand names to reach and acquire new customers without requiring them to download any additional application. DAV's 1-on-1 AR advertising feature has succeeded in increasing the client's/partner's product sales by 2-56%.

Figure 44: DAV's clients and partners

Partner/Client	Industry	Type of Partnership
Alfamart Group	Retail	DAV Devices and product advertising
Kimia Farma	Pharmacy	DAV Devices and product advertising
Electronic City	Electronic Retail	DAV Devices and product advertising
Lawson	Retail	DAV Devices and product advertising
Watsons	Retail	DAV Devices and product advertising
Unilever	FMCG	Product advertising
P&G	FMCG	Product advertising
Indolakto	FMCG	Product advertising
Saka Farma	FMCG	Product advertising
WINGS	FMCG	Product advertising
De'Sound	Electronic Retail	Product supply
Sayurbox	Food Distributor	Product supply
SNIPS	Plastic Packaging	Product supply
DAMN! I Love Indonesia	Fashion & Merchandise	Product supply
Persija Juara	Fashion & Merchandise	Product supply
Youvit	Supplement	Product supply
Alfapop	Retail	Product supply
Kallala	Cosmetics	Product supply
Smesco	Retail	Product supply

Source: Company data

Figure 45: DAV's devices



Source: Company

Figure 46: DAV's business process



Source: Company

Mind Stores – solutions for commerce

Mind Stores allows users to access virtual stores that can be organised with products of their choice, providing a personalised shopping experience for each individual. As of 31 Dec 2021, Mind Stores has over 60,000 registered users or independent store owners. Mind Stores has partnered with large retail-chains such as Alfamart, and will continue to increase its network of mom-pop stores.

Figure 47: Mind Stores' partner merchants

Partner Merchant	Total number of store owners (Jul 2021)
Alfamind	23,869
Kimia Farma	12,487
Mili	30,704
Toko Awadah	806

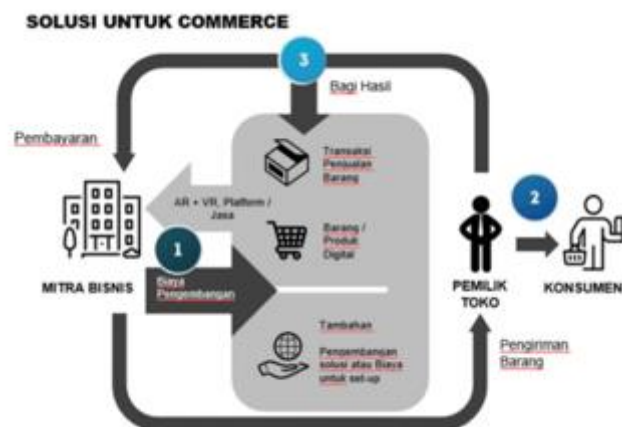
Source: Company data

Figure 48: Mind Stores' platform



Source: Company

Figure 49: Mind Stores' business process




Source: Company

Figure 50: Company milestones

Year	Description
2011	WIRG introduced a neuro-sensing technology that is activated through the power of concentration
2013	WIRG, in collaboration with Ediciones Saldana, was one of the first to launch AR books in Europe
2014	WIRG was recognised as "Top 40 Global Innovative Companies" by the London Stock Exchange
2015	WIRG was invited to Slush Helsinki
2015	WIRG started introducing early versions of the DAV and distributed around 300 units in various strategic locations
2015	WIRG established PT Are Teknologi Kreasi which runs its business activities such as advertising, web portals and digital platforms
2016	WIRG was invited to APAC Media Forum and Slush Asia Tokyo
2016	Mind Stores won the MURI award as the first 3D retail network in Indonesia
2017	WIRG was part of the first Bekraf contingent to represent Indonesia at SXSW Austin Texas (USA)
2018	WIRG acquired PT Tiga Akar Dreams and PT Vatar Media Raya
2018	WIRG divested its subsidiary, PT Kreatif Global Indonesia
2019	WIRG introduced the latest version of DAV
2019	WIRG introduced MINAR at the Mediterranean Tourism Forum
2019	PT Are Tekonologi Kreasi established PT Mata Nilai Republik
2019	PT Jendela Pulsa Indonesia was acquired by PT Tiga Akar Dream
2019 - 2020	WIRG represented Indonesian technology at the World Economic Forum in Davos, Switzerland
2021	WIRG was included in the list of "Metaverse Technology Companies to Watch in 2022" along with other global companies such as Apple, Microsoft, Meta, etc (Forbes GE)



Source: Company

Figure 51: Board of Commissioners

Name	Position	Description
<p>Daniel Surya Wirjatmo</p> 	President Commissioner	<p>Daniel Surya Wirjatmo obtained his Masters of Arts degree from York St. John University in 2011.</p> <p>He has served as the company's President Commissioner since 2019. He is the co-founder of WIR Group and previously he served as President Director (2009-2018). Concurrently, he also serves as Advocate at Tech Nordic Advocate (since 2016), Founder of Disrupto (since 2018), Member of Forbes Business Council (since 2020), and Executive Chairman and Co-Founder at WIR Group (since 2019). Previously, he served as Program Director at Addison (1997-1998), Chief Representative at Landor Associates Indonesia (1998-2006), Country Director at The Brand Union (2007-2010), and Advisor at AISEC (2011-2020).</p>
<p>Surya Tatang</p> 	Vice President Commissioner	<p>Surya Tatang obtained his Bachelor of Science degree from the Philippines School of Business Administration in 1995.</p> <p>He has served as Vice President Commissioner of the company since 2021. Concurrently, he serves as Director at PT Lippo Karawaci Tbk (2019-present) and PT Cinemaxx Global Pacific (2019-present). Previously, he served as Chief Financial Officer at PT Matahari Putra Prima Tbk (2016-2017), Chief Financial Officer & Independent Director at PT Link Net Tbk (2013-2015), Head of Research at PT Sucorinvest Central Gani (2000-2001), Corporate Finance at PT Batavia Prosperindo International (1999-2000), and Credit Analyst & Corporate Dealer at Bank Bira (1995-1998).</p>
<p>Philip Cahyono</p> 	Commissioner	<p>Philip Cahyono obtained his Bachelor of Economics degree from Dr Soetomo University in 1999 and Master of Arts degree from C. Leadership, Harvest International Theological Seminary in 2001.</p> <p>He has served as Commissioner of the company since 2021. He is also the co-founder of the WIR Group (since 2009), and previously served as Chief Controlling Officer of the WIR Group (2010-2021). Previously, he served as a Commissioner at PT BPR Surya Katialo (2008-2010).</p>
<p>Dr Andreyanto Toemali</p> 	Commissioner	<p>Dr Andreyanto Toemali obtained his MBA degree from the Royal Melbourne Institute of Technology, Australia in 1996.</p> <p>He has served as Commissioner of the company since 2019 and concurrently serves as President Commissioner of PT Mega Manunggal Property Tbk (2019-present). Previously, he served as President Director at PT Kedoya Adyaraya (2011-2021), and as GM Finance at Asia Pulp & Paper (1997-2006).</p>
<p>Agus Wijaya Soehadi</p> 	Independent Commissioner	<p>Agus Wijaya Soehadi obtained his Master of Industrial Management degree from the Bandung Institute of Technology in 1988 and Doctor of Philosophy in Marketing Strategy from the University of Strathclyde, Scotland in 2001.</p> <p>He has served as an Independent Commissioner of the company since 2021. Concurrently, he also serves as Vice Rector 1 of Prasetya Mulya University, as well as Project Head of Doctoral Program of Prasetya Mulya University (since 2013), National Team Leader of GEM Indonesia at Global Entrepreneurship Monitor (GEM) (since 2006), Vice Chairman of the Indonesia Training & Courses Assembly (HIPKI), and Academic Position Professor of Marketing Prasetya Mulya Business School (since 2004). Previously, he served as Deputy Dean at Prasetya Mulya University Business & Economics School (2012-2016).</p>
<p>Asmarawaty Zaini</p> 	Independent Commissioner	<p>Asmarawaty Zaini obtained her Bachelor of Japanese Literature degree from the University of Indonesia in 1992, and was granted a scholarship of Japanese literature from Kyoto University in 1990.</p> <p>She has served as the company's Independent Commissioner since 2021. Concurrently, she also serves as Chairman at JAC Recruitment (2016-present), as founding partner at Learning Farm Indonesia (2016-present), and as co-founder of Anjo Ventures (2016-present).</p>

Source: Company

Figure 52: Board of Directors

Name	Position	Description
<p>Michel Budi Wirjatmo</p> 	President Director	<p>Michel Budi Wirjatmo obtained his Diploma in Programming at the Grone Institute, Germany in 1996.</p> <p>He has served as the company's President Director since 2019 and he is also the co-founder of WIR Group (since 2009). Previously, he served as Chief Innovations Officer at WIR Group (2009-2018). Prior to establishing WIR, he served as Educational Software Design Developer at Yohanes Surya Institute & TOFI (Indonesian Physics Olympiad Team) (2000-2008).</p>
<p>Jeffrey Budiman, MA</p> 	Director	<p>Jeffrey Budiman obtained his Master of Arts degree in Multimedia Arts from Birmingham City University in 2003, Bachelor of Arts (Hons) in Multimedia Arts from Birmingham City University (formerly known as University of Central England) in 2002, and Diploma with Distinction in Multimedia Arts from LaSalle College of Arts in 2001.</p> <p>He has served as Director of the company since 2020, and he is also the co-founder of WIR Group (since 2009). Previously, he served as Chief Technology Officer at WIR Group (2009-2019).</p>
<p>Stanislaus Aries Baju Nugroho</p> 	Director	<p>Stanislaus Aries Baju Nugroho obtained his Accounting degree from Brawijaya Polytechnic Malang in 1993.</p> <p>He has served as Director of the company since 2017. Concurrently, he serves as Commissioner at PT Shape Up Indonesia (since 2020), Commissioner at PT Investama Hipa Teknologi (HiPajak) (since 2019), and Managing Partner at KAN & Mofars Tax Consultant (since 2005). Previously he served as Tax Consultant at Taira & Hsi Capital (2004-2007), Tax Consultant at Efata Papua Airlines (2004 - 2007), Tax Consultant at PT Finan Corpindo Nusa (2004-2007), Finance & Accounting Manager at PT Uluwatu Persada Rezeki (2004-2005), Tax Consultant at PT JAIC (Japan Asia Investment Corporation) and Tax Consultant at KAP Y Dwi Sulisty Cahyo (2000-2004).</p>
<p>Senja Lazuardy, ST</p> 	Director	<p>Senja Lazuardy, 38 years old, was educated at Strata 1 Information Technology at Al-Azhar University, Indonesia in 2006. He has served as Director of the company since 2019. He is the Chief Technology Officer and Co-Founder of a solutions unit WIR Group namely AR&Co (since 2009). Previously he served at Altelindo Karyamandiri as Linux System Administrator (2007-2008).</p>
<p>Jimmy Halim</p> 	Director	<p>Jimmy Halim obtained his Bachelor of Graphic Design degree from RMIT University in 2000, and a Diploma in Graphic Design from Nanyang Academy of Fine Arts in 1997.</p> <p>He has served as Director of the company since 2015. Jimmy also serves as co-founder of Mind Stores, which is a solutions unit of the WIR Group (since 2015). Previously, he served as Deputy Managing Director at Brand Finance Indonesia (2015-2019), Chief Executive Officer at PT Starlight Prime Thermoplas (2011-2014), Chief Operating Officer at PT Numedia Global (2010), Chief Marketing Officer at PT Skybee (2009-2010), and Head of Marketing at PT Infracom Telesarana (2009-2010).</p>
<p>David Tahir</p> 	Director	<p>David Tahir obtained his Accounting degree from Atmajaya University in 1998</p> <p>He has served as Director of the company since 2021. Previously, he served as Director and Asia Financial Controller at PT NOW Indonesia (2014-2019), Finance Director at National Oilwell Varco (2008-2015), Group Finance Controller at Ogilvy & Mather Indonesia / PT Indo-Ad (2007-2008), and as Audit Manager at Ernst & Young Indonesia (1996-2007).</p>

Source: Company, RHB

Recommendation Chart

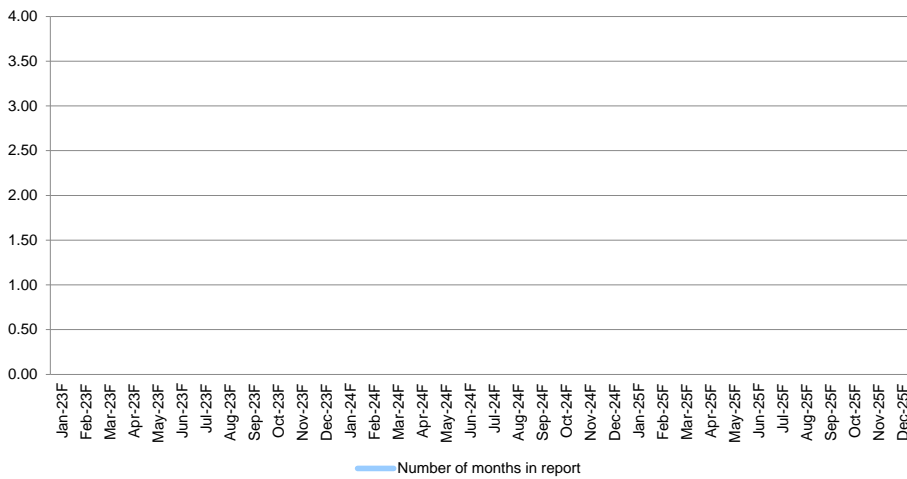


Date	Recommendation	Target Price	Price
2022-05-09			

Source: RHB, Bloomberg

Source: RHB, Bloomberg

ESG Rating History



Source: RHB

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