

South Korea

Potential 2035 economic impact of the metaverse

US\$36-67 B per year



South Korea

South Korea is a first-mover in articulating a comprehensive strategic blueprint to foster its metaverse industry, aiming to become the fifth largest metaverse market by 2026. From the K-pop industry to industrial conglomerates to government agencies, ecosystem actors across the value chain are leaning into the metaverse.

Earmarking KrW 223.7 billion (US\$167 million) to kickstart the industry, the Ministry of Science and ICT laid out four major goals – activating the ecosystem for metaverse platforms, nurturing talent, fostering companies, and setting up a safe environment for all metaverse.¹ Over 500 companies, including Samsung, Hyundai and Nexon, have formed a metaverse

alliance to coordinate the development of platforms. The government aims to nurture 40,000 metaverse professionals while facilitating foreign talent and startups to enter the Korean market. It will set up a Korean language institute in the metaverse and a “K-Metaverse Academy” that connects global startups with local content companies.² Government-sponsored metaverse labs to support the commercialization of metaverse-related technologies and one-stop customized consulting support are also in the plans.³

Under the metaverse roadmap, focus sectors include arts, culture, education, K-pop and tourism. These build on South Korea’s position as a global cultural trendsetter. Entertainment companies like HYBE (BTS),

SM Entertainment (Aespa) and YG (BLACKPINK) are moving its global celebrities into the metaverse with digital concerts and virtual avatars, a trend accelerated by the COVID-19 pandemic.⁴ South Korean metaverse social gaming app Zepeto is also a fast-growing creator marketplace for virtual fashion items and has teamed up with global brands like Disney and Nike, and celebrities like BTS.⁵

South Korea’s technological lead, with the highest 5G download speeds, universal fiber network access, and leading cybersecurity infrastructure, positions the country well to leverage its cultural advantage into further success within the metaverse.

“The Government will serve as talent ladder for outstanding work force trained at the K-Metaverse Academy to grow professionally in their respective field by expanding their participation opportunities in connection with government-led projects.”

Lee Jong-ho, Science Minister at the launch ceremony for the K-Metaverse Academy⁵

1. Ministry of Science and ICT (MSIT), “[MSIT to Announce Pan-Government Strategy on Metaverse](#),” accessed September 29, 2022.

2. The Korean Herald, “[Korea Aims to Become 5th Largest Metaverse Market by 2026](#),” accessed September 29, 2022.

3. Ministry of Science and ICT (MSIT), “[MSIT Full-fledged Training of Young Developers and Creators in the Expanded Virtual World](#),” accessed September 29, 2022.

4. Tamar Herman, “[K-pop labels embrace virtual stars and pursue metaverses to extend their artists’ online reach](#),” South China Morning Post, October 19, 2022.

5. Zepeto Studio, “[Business: ZEPTO Studio](#),” accessed October 19, 2022.



Macroeconomic Determinants

- South Korea is a service-based economy (62.5% of GVA), although the largest sectoral contributor to its economy is manufacturing (27.9% of GVA), followed by real estate activities (7.8%), and wholesale and retail trade (7.5%).
- As an export-driven economy (~40% of GDP),⁶ the metaverse will likely drive international demand for South Korea's electronic exports (e.g. semiconductors, which constitute 17% of its exports)⁷ and content exports (which reached almost US\$12 billion in 2020).⁸
- South Korea has a strong propensity for innovation, ranking 5th in the world and 1st among selected economies in the Global Innovation Index 2021, reflecting economic strength in innovative computing and mobile technologies.
- As a high income country, affordability of required immersive hardware on average may be less of a limiting factor on the economic impact of the metaverse. Nevertheless, the government has pledged to bridge the digital divide by providing metaverse education to digitally marginalized people.⁹
- To enhance accessibility and encourage interaction with the metaverse, some public and private providers in Korea have also opened VR experience spaces for people to utilize these technologies at a fraction of the cost of VR headsets.¹⁰

6. World Bank, "Export of goods and services (% of GDP)," accessed October 5, 2022.
7. Observatory of Economic Complexity (OEC), "South Korea Exports," accessed September 29, 2022.
8. The Korea Herald, "K-content industry sets another export record in 2020 at \$11.92b," accessed September 29, 2022.
9. Ministry of Science and ICT (MSIT), "MSIT to Announce Pan-Government Strategy on Metaverse," accessed September 29, 2022.
10. Kim Eun-jung, "VR theme parks emerge as new urban entertainment trend," Yonhap News Agency, March 22, 2019.

SOUTH KOREA IN NUMBERS

Potential 2035 economic impact of the metaverse:

US\$36-67B per year, 1.3-2.4% of GDP

2020 GDP:

US\$1.62T

Per capita
(Constant 2017 US\$):

US\$42,336
(high income)

Population:

52M

81% urban

26% below 25

72% with basic digital skills

1% unbanked

Key sectors:



ICT sector:

Global
innovation index:

#5/132

EIU business
environment ranking:

#21/99

Digital
readiness index:

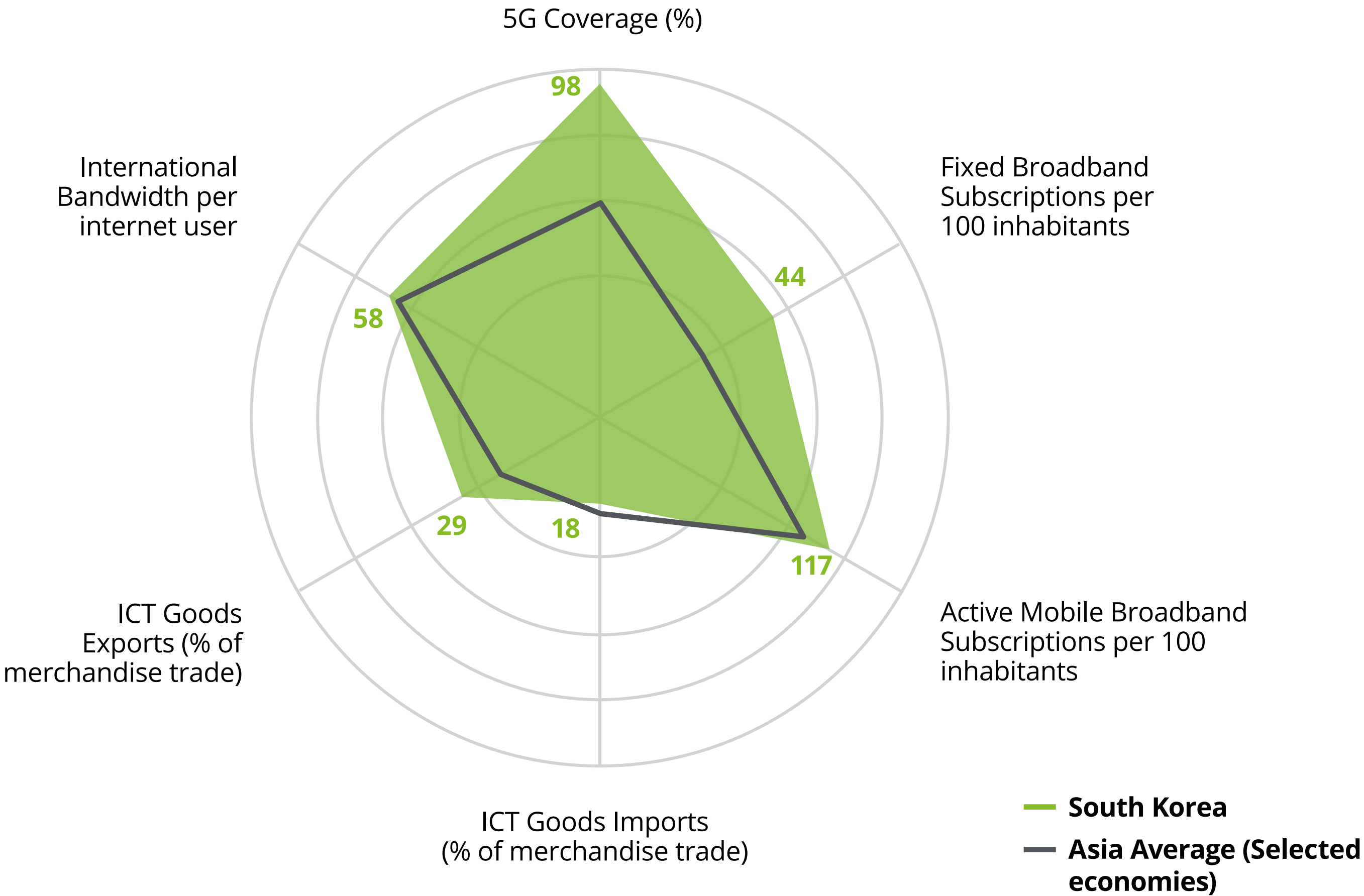
#8/141

Sources: World Bank World Development Indicators 2020, Our World in Data 2017, ITU Digital Development Dataset 2019, World Bank Global Findex, South Korea National Statistics

Technology Fundamentals

- South Korea leads in technology fundamentals in Asia, with a solid foundation in digital infrastructure. It stands as one of the global leaders in consumer 5G experience,¹¹ boasting the highest level of internet availability amongst OECD countries,¹² with widely accessible and affordable high speed internet.
- South Korea is also poised to extend its lead in 6G deployment through commercialization by 2028.¹³
- The gap in available shared data center facilities is closing as South Korea transitions away from local enterprise facilities towards a co-location centric data center market, allowing for more efficient and cheaper entry for enterprises to venture into the metaverse and will go towards closing the wide digital gap between SMEs and large enterprises.¹⁴
- South Korea has strong cybersecurity, ranking 4th in the ITU's Global Cybersecurity Index.¹⁵

11. Opensignal, "[Benchmarking the Global 5G Experience](#)," accessed September 29, 2022.
12. Organisation for Economic Co-operation and Development (OECD), "[OECD internet access data 2020](#)," accessed October 5, 2022.
13. Yonhap, "[S. Korea aims to commercialize 6G mobile services by 2028: ICT minister](#)," Korea Herald, October 19, 2022.
14. OECD, "[Economic Survey of Korea 2020](#)," accessed October 5, 2022.
15. International Telecommunication Union, "[Global Cybersecurity Index 2021](#)," accessed October 5, 2022.



Sources: 'GSMA Mobile Connectivity Index 2021, ITU Digital Development Dashboard 2020, UNCTADStat 2019'

Ecosystem Enablers

Technology Readiness of Business

In South Korea, platform providers such as Naver and Kakao, as well as entertainment, telecommunications, and financial companies draw consumers into the world of the metaverse. With that in mind, a government-led industry alliance, created to establish the country's metaverse ecosystem, has grown from 25 firms at launch to over 500, including Samsung, Hyundai, and SK Telecom.¹⁶ This alliance promises to unlock a wider range of business opportunities across multiple sectors.

South Korea faces the challenge of a high digital gap between large and small firms, particularly in areas like cloud computing, big data, and artificial intelligence.¹⁷ With technological giants like Samsung joining the metaverse alongside smaller and medium-sized companies, the hope is that knowledge transfer and partnerships between firms can accelerate development. The public sector's role in facilitating and fostering cooperation among companies cannot be underestimated.

Security and Privacy

Korea is ranked highly on cybersecurity, it also had the second highest share of internet users experiencing privacy violations in the OECD.¹⁸ The younger populace, aged 10-29, were found to be at much higher risk of internet or smartphone addiction than other age categories.¹⁹

The government is committed to setting ethical principles for the metaverse to make it a safe environment for all users.²⁰ As a first step, the metaverse alliance is a useful platform for companies to innovate under the watchful eye of regulators. Nevertheless, forward-leaning regulations and enforcement frameworks are necessary to ensure trust in economic transactions and social well-being.

Digital Skills

To meet its target of 40,000 metaverse professionals by 2026, the government has begun to foster a pipeline of digital talent. The “Metaverse Academy”, set up by the Ministry of Science and ICT, had its first intake of future developers and creators in December 2021.²¹

There are also complementary plans for metaverse graduate schools, with two universities, KAIST and Sogang University which will begin enrollment in the second semester of 2022.²² To attract foreign talent, a Korean language institute in the metaverse and a “K-Metaverse Academy” that connects global startups with local content companies are also in the works.

16. The Korea Times, "[Korea launches 'metaverse' alliance](#)," accessed October 19, 2022.

17. Ibid.

18. OECD, "[Economic Survey of Korea 2020](#)," accessed September 29, 2022.

19. Ibid.

20. Yahoo Finance, "[South Korea and Meta to ramp up metaverse safety](#)," accessed October 19, 2022.

21. Smart Times, "[S. Korea's science ministry opens metaverse academy for youths](#)," accessed October 19, 2022.

22. Smart City Korea, "[Selected by the Ministry of Science and Technology, Metaverse Graduate School of Convergence, KAIST and Sogang University](#)," press release, May 25, 2022.

Sectors to Watch

Entertainment and Media

Over the past decade, South Korea's entertainment and media industry has grown by leaps and bounds to capture the popular imagination. It has the 6th largest music industry in the world, the 2nd largest in Asia, the highest number of films consumed per capita, and is a top four gaming market worldwide.²³ These pillars of music, film, and gaming continue to grow rapidly as South Korea's cultural pull strengthens.

Metaverse-related content is making it big. Aespa is a 4-member metaverse-themed K-pop group that each have their own virtual avatars. Their first music video had YouTube's fastest climb to 100 million views for a K-pop debut.²⁴ As one of the most digitally connected societies in the world with fast and reliable internet, South Korea is well-placed to be a forerunner in creating metaverse entertainment experiences.

Manufacturing

The metaverse has the potential to supercharge the diverse manufacturing base of South Korea. South Korean auto giant Hyundai Motors signed a memorandum of understanding with leading real-time 3D content developer Unity to build a digital twin factory. With plans to apply this technology to its new center in Singapore, the virtual factory will enable Hyundai to test-run a factory remotely.²⁵

The bigger economic impact can be realized once smaller companies are able to deploy metaverse technologies too. At the world's largest industrial fair Hannover Messe 2022, South Korean start-up DigiForet impressed with its "Manufacturing AI Metaverse Factory", where participants operated various functions connected to a real factory, such as running the plating process and optimizing the operation of a plating bath based on the analysis of the manufacturing AI.²⁶ Sponsored by the Ministry of SMEs and startups, the experience showcased the possibilities of uplifting the manufacturing competitiveness of Korean SMEs.

23. Newzoo, "[Key Insights into South Korean Gamers | Newzoo Gamer Insights Report](#)," accessed October 19, 2022.

24. Raisa Bruner, "[How K-Pop Group Aespa is Making the Metaverse their Home](#)," Time, May 11, 2022.

25. Pulse, "[Hyundai Motor Teams Up with Unity on Metaverse Factory to Innovate Productivity](#)," Maeil Business News Korea, January 7, 2022.

26. Hannover Messe, "[DigiForet](#)," accessed October 19, 2022.

