The state of 5G in Asia Pacific, 2023

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The Asia-Pacific (APAC) region was an early adopter of 5G. Covid-19, the uncertainty around the global economy and geopolitical concerns have done little to slowdown the rollout of 5G across the region. 11 countries in the region have launched commercial availability of 5G including China, Japan, South Korea, Australia, India, Indonesia, Malaysia, New Zealand, the Philippines, Singapore, and Thailand.

The countries of South Korea, Japan, Australia, Singapore, and China have been the pioneers. China's large, early 5G deployment has meant that it is at the forefront of the 5G race globally.

In this report, we take a closer look at the key trends shaping the growth of 5G in APAC. The key takeaways include:

- 5G subscribers expect to almost double to 2.1 billion by the end of 2026, with a CAGR of 16.1 percent from 2021 to 2026.
- We expect telcos across APAC to invest almost 10 percent of revenue as CAPEX between 2022 and 2026.
- Smartphone mobile traffic is projected to increase from 17 GB per month in 2022 to 38 GB per month in 2026, with a CAGR of almost 17 percent.
- 5G is estimated to create a positive increase in Indian telecom industry's revenue by INR 1 trillion (US\$ 12 billion) every 3 years.
- 5G has significantly increased user engagement by 2X with digital services when compared to 2020

Challenges in 5G deployment

The need for higher CAPEX

The deployment of small cells in a large geographical area drives a need for a higher CAPEX outlay. The CAPEX investment in North-East Asian countries has declined over the years as the market has since stabilized post the initial rollout. Telcos in APAC region expect to invest US\$ 282 billion as CAPEX mainly for 5G deployments between 2022 and 2026.

Meanwhile, the growth markets, India, and Thailand, continue to increase their CAPEX investments. Indian telcos will look to have CAPEX investment of US\$ 30 billion between 2023 and 2026 for 5G deployments.

Spectrum challenges with 5G

High-frequency bands have the potential for 5G. Yet, it comes with one key caveat – a very short range. This caveat is precisely why telcos need new frequency bands, specifically both low and mid-frequency bands. In addition, telecom authorities across APAC need to begin revising their spectrum allocation for 5G.

For instance, Indonesian telcos are currently using 5G services with their existing spectrum holdings of 1,800 MHz, 2,100 MHz, and 2,300 MHz. Deployment has also slowed due to a lack of mid-band spectrum availability. As a result, new 5G spectrum bands (700 MHz, 2.6 GHz, 3.5 GHz, and 26 GHz) will likely be made available to service providers from 2023.

The outlook for 5G subscribers

In 2021, there were 4.9 billion mobile subscribers in Asia Pacific. It is predicted that the number would continue to grow with a CAGR of 0.8 percent from 2021 to 2026. 5G subscribers in APAC almost reached 1.2 billion by the end of 2022 and is expected to grow with a CAGR of 16.1 percent from 2021 to 2026.

Country	5G subscribers in 2022 (in millions)
South Korea	24.6
Japan	40.6
Australia	3.1
Singapore	2.1
China	1,076.3
Thailand	5.0
Indonesia	15.4
Malaysia	0.58
New Zealand	2.0
Philippines	27.1
Total	1196.7

Exhibit 1
5G subscribers in APAC (2022)

Source: twimbit analysis

Exhibit 2 5G subscriber forecast APAC (2022-2026)



Source: twimbit analysis

5G subscribers is projected to reach 2.1 billion by 2026. Developed 5G markets like South Korea will achieve 77.5 percent penetration, followed by China with 74.3 percent, Singapore with 71 percent and Japan with 53 percent by 2026.

Indian telcos have also announced the commercial availability of 5G in October 2022 while Vietnam and Laos have completed successful trials. Commercial availability of 5G in Vietnam is expected by 2023 end or by early 2024 while one of telcos in Laos have launched commercial availability of 5G.

5G to drive data traffic in APAC

Globally, there are three main factors that are driving the increase in mobile data traffic per smartphone: better device capabilities, an increase in data-intensive content, and an increase in data consumption because of ongoing network performance improvements.

There is an increasing availability of 5G handsets and that will spur demand. Global mobile traffic per smartphone is expected to grow from 15 GB per month in 2022 to 33.8 GB per month in 2026, a CAGR of almost 18 percent.

Mobile traffic per smartphone per user for 5G in APAC is on average 2–3X more than 4G subscribers. As more 4G subscribers migrate to 5G, average mobile data traffic per smartphone will increase from 17 GB in 2022 to 38 GB per month in 2026 with a CAGR of 17 percent from 2022-2026.





Source: twimbit analysis

Regional trends

Nationwide 5G in Malaysia with a single wholesale network

To expedite and accelerate 5G deployment for the nation, Malaysia is implementing 5G through a single wholesale network via a newly created entity, Digital Nasional Berhad (DNB). By 2026, Malaysia is expected to have about 32 percent of its mobile subscribers on 5G.

5G is still in its early stage in Indonesia

Since 2021, 5G has been available in major Indonesian cities. Using their available spectrum holdings (1,800 MHz, 2,100 MHz, and 2,300 MHz), Indonesia's top service providers have started offering commercial 5G services.

However, the lack of sufficient mid-band spectrum has slowed down the rollout of the 5G network. Because of this, service providers will probably have access to new 5G spectrum bands (700 MHz, 2.6 GHz, 3.5 GHz, and 26 GHz) starting in 2023.

Storming ahead with a focus on eMBB (Enhanced Mobile Broadband) and FWA (Fixed Wireless Access) in New Zealand

In December 2019, New Zealand became one of the region's first countries to launch 5G commercially. Since then, 5G has captured the eye of all three service providers in New Zealand.

Additionally, these service providers found 5G FWA as a possible solution for both residential and commercial users. By 2023, service providers in New Zealand hope to have 90 percent of the population covered by FWA.

To speed up its 5G rollout, Spark said it would invest an additional NZ\$ 35 million (US\$ 24.6 million) in August 2022. The company aims to reach about 90 percent of 5G population coverage by the end of 2023.

Making progress with FWA in the Philippines

In 2019, the Philippines became the first country in the region to launch 5G FWA and continued to debut its commercial 5G mobile service in 2020. Currently, the two major service providers in the country have started offering 5G in the 3.5 GHz band. In addition, a third service provider has introduced a 5G FWA home broadband service.

5G subscribers to reach 300 million subscribers in India by 2026

In October 2022, India's service providers announced the launch of their commercial 5G services, with its primary use case being to deliver enhanced mobile broadband (eMBB). 5G subscriptions in India are predicted to reach close to 54 million by the end of 2023 and is projected to represent nearly 30 percent of India's mobile subscriptions by the end of 2026, with the total estimated mobile subscription to grow to 1.2 billion.

5G expected to boost revenue by USD 12.5 billion every three years, and the adoption of 5G will have a positive effect on industry revenues, with a CAGR of 10.1 percent between 2023 and 2025 predicted, compared to 8.2 percent between 2020 and 2022 for the telecom sector.

Vietnam's telcos carried out commercial trials

Although Vietnam has not formally introduced 5G services, most service providers have begun conducting commercial trials across several bands. Specifically, three service providers in Vietnam have tested 5G services in the nation's major cities and provinces. And in 2023 and 2024, service providers can look forward to new 5G spectrum bands, which will be made accessible.

Consumer and enterprise applications growing with 5G

5G capabilities are rapidly evolving and starting to enable a number of new use cases such as machine vision with Artificial Intelligence (AI) analysis from the cloud and real-time analysis of massive Internet of Things (IoT) connections. Consumers can expect to integrate and enjoy the benefits of 5G in smart homes, synced watch-and-phone IoT devices, and fitness apps, etc. These applications will grow with the speed and performance capabilities of 5G.

5G has significantly increased user engagement by 2X with digital services when compared to 2020. In the case of enterprise users, large-scale autonomous vehicle deployments and service automations such as waste management will be seen soon. Additionally, other use cases such as energy production through smart grids and smart environmental monitoring to reduce greenhouse gases and pollution will also be observed. For example, farmers will be able to monitor and track crops, livestock and machinery through drones and super-dense sensor networks.

Ushering a new age with 5G

Every ten years, the telecom sector experiences a new generation of mobile technology, promising many improved features by offering faster data connectivity speeds. As a result, the sector has developed into a strong, trustworthy supplier of connectivity services.

5G has also triggered the business model for telcos to generate new capabilities for enterprises and consumers. Private 5G is the game changer for telcos to help enterprises enhance their capabilities with industry 4.0.