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# North East Asia: A closer look

Extract from the Ericsson Mobility Report

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The North East Asia region consists of five distinct, vibrant markets at the center of modern digital innovation, with 5G being one of the key enabling technologies.

Service providers in the North East Asia region made significant investments in early 5G deployments. South Korea was the first country to launch commercial 5G networks, and these were available in all five markets by 2020. Currently, 5G population coverage and subscription uptake in the region is ahead of most of the rest of the world.

The region is home to key players from across the 5G ecosystem, including leading service providers, mobile infrastructure vendors, chipset manufacturers, terminal providers and over-the-top (OTT) players. This has helped to realize 5G monetization opportunities in the region with tariff premiums, content aggregation and new service introductions such as Fixed Wireless Access (FWA) and network slicing.

Supported by strong macroeconomics, healthy financial results for service providers and a full ecosystem of wireless and digital industries, regulators and service providers have the shared ambition to be leaders in 5G.

## Japan: Dynamic in technology, steady in deployment

The Japanese mobile market has a strong focus on both the introduction of advanced technologies and sustainability. Major service providers in Japan are exploring the potential for Cloud Radio Access Networks (RAN), making it a leading market in introducing this technology. The focus on sustainability in Japan is backed up by aggressive plans from service providers to be carbon neutral in their own activities by 2030.

In the telecom business environment, Japanese service providers have been impacted by a government-led initiative pressuring them to introduce lower tariff plans, causing ARPU declines since March 2020.

However, in recent quarters they have turned this around, and now show a modest increase in ARPU. In addition, they are proactively looking for other revenue opportunities from enterprises and consumer financial services.

Compared to some countries in North East Asia, Japan still has room for additional mid-band deployment, which is the optimum way for consumers to experience high-performance 5G. Service providers are expected to accelerate their investment in 5G deployment, especially with mid-band. This will continue to drive a positive experience for consumers and help to realize 5G monetization opportunities.

## Mainland China: Leading 5G in scale

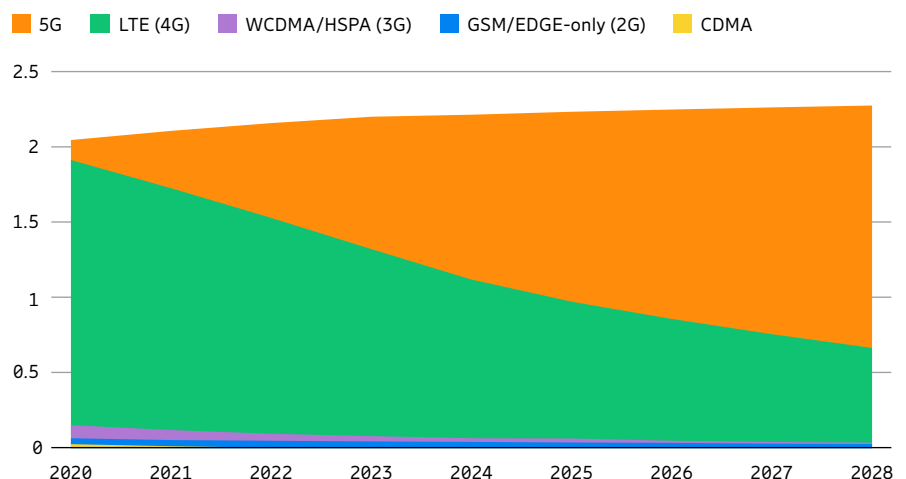
2023 is the fourth year since the commercial launch of 5G. There were 2.64 million 5G sites in the country by the end of the year's first quarter, including mid-band Massive MIMO in 2.6 GHz and 3.5 GHz, FDD 700 MHz and 2.1 GHz for national coverage, and plenty of dedicated 5G indoor sites.

Around one-third of all mobile subscriptions are currently for 5G. More than 200 million 5G smartphones had been delivered to the market in 2022, which accounted for 35 percent of all global shipments.

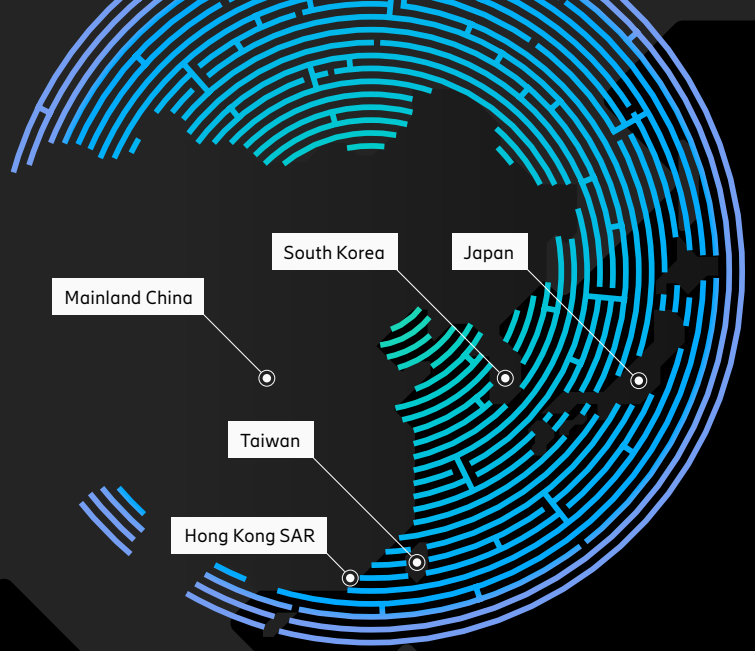
The upgrade to SA took place just one year after the 5G commercial launch. Now, all 5G sites and the majority of 5G smartphones have SA capability. Currently, more than 95 percent of 5G traffic is carried by 5G SA technology. Based on SA, new network capabilities have been commercially available for over a year, including network slicing for service separation and differentiated offerings, and Voice over New Radio (VoNR) for the evolution of voice. RedCap from 3GPP Release 17, which reduces cost, power consumption and network resource needs is under field trials for cellular IoT solutions.

Leveraging early 5G SA deployment, service providers in mainland China have successfully harnessed 5G private networks as a new growth engine. According to MIIT, more than 14,000 virtual private networks using network slicing were in service by 2022.<sup>1</sup>

Figure 4: North East Asia region mobile subscriptions by technology (billion)



<sup>1</sup> MIIT, [www.miit.gov.cn/zwgk/zcid/art/2023/art\\_9f5022af3cdf48789484117d9da03c58.html](http://www.miit.gov.cn/zwgk/zcid/art/2023/art_9f5022af3cdf48789484117d9da03c58.html).



**South Korea: Advanced in 5G adoption and service innovation**

Since South Korean service providers launched 5G commercial services in April 2019, they have been at the forefront of 5G deployment and performance. Focus is on 5G mid-band, with no low- or high-band services available yet. However, 5G population coverage has already reached 94 percent. To expand 5G coverage nationwide, service providers have introduced RAN sharing for cost-effective deployment in suburban and rural areas. Service providers have plans to achieve 100 percent population coverage during 2024.

By the end of February 2023, 5G subscription penetration reached over 37 percent, and 5G subscribers generated 78 percent of total mobile data traffic.

Monthly 5G data consumption was around 3.6 times higher than for 4G users when comparing the average across all types of data plans. When comparing data consumption on unlimited plans the difference is around 1.6 times. The government supports service providers' 5G ambitions and the need for capacity, and plans to allocate additional spectrum bands to three service providers. The 3.40–3.42 GHz band has already been assigned. South Korean service providers promote the utilization of renewable energy for RE100 roadmap implementation, an international climate initiative targeting 100 percent renewable energy for business activities.<sup>2</sup>

When it comes to monetization strategies, service providers offer service bundling including AR and VR services. Service providers are also expanding into the enterprise segment with AI, data centers and cloud.

**Taiwan: Focused on 5G performance**

Service providers are continuously improving network performance and are ranking highly in third-party as well as local government benchmarking. Taiwanese service providers often appear near the top of 5G global benchmarks.

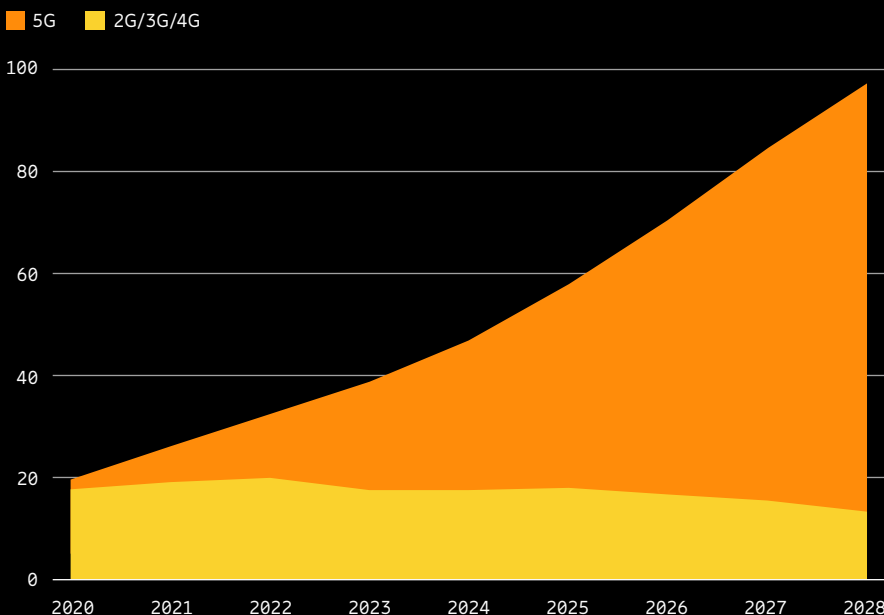
5G subscriptions reached 7 million in Taiwan in Q1 2023, which translates to 30 percent penetration. Major service providers expect penetration to reach 40 percent by the end of 2023. This uptake in 5G has driven an increase in mobile service ARPU over the last 24 months.

As unlimited data plans are prevalent in Taiwan, monthly data consumption is among the highest globally, with an average of 30 GB. A government survey shows 46 percent of consumers connect to mobile networks for internet access even at home.

**Hong Kong SAR: Positive 5G uptake**

While total mobile subscription growth remains flat-to-slightly-increasing, the transition to 5G continues, with penetration increasing from around 20 percent at the end of 2021 to over 30 percent at the end of 2022. The outlook is positive for 2023, with 5G uptake expected to continue, plus the return of revenue from roaming after the pandemic. 5G FWA and enterprise solutions are regarded as the new business growth areas for service providers.

Figure 5: North East Asia region mobile data traffic (EB per month)



<sup>2</sup> RE100, [www.there100.org](http://www.there100.org).



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