Ericsson Mobility Report

June 2026

Letter from the publisher

Era of AI, cloud and mobile

The explosive growth of AI is undeniable. Todays generative AI (GenAI) and agentic AI result in new usage patterns, and with the upcoming transition to physical AI, traffic patterns will fundamentally shift as we move from centralized models in data centers to distributed, autonomous AI agents embedded across our devices, vehicles and cities, commonly connected by 5G. Mobile networks are no longer only about providing best-effort connectivity, they are becoming critical, intelligent infrastructure that meets diverse application needs. Reflecting part of this shift is the continued rise in new commercial service offerings based on 5G standalone (SA) network slicing and the number of communications service providers deploying 5G SA.

In this edition of the Ericsson Mobility Report, we continue to look at how service providers are exploring new service offering opportunities with differentiated connectivity, and how networks must evolve to support emerging services with more demanding performance requirements, especially in the uplink.

Today, 5G subscriptions have passed 3 billion, and half of the world's mobile data traffic is carried over 5G. Additionally, Fixed Wireless Access (FWA) is expanding steadily, with 5G-based adoption, monetization and scale increasing as a growing majority of service providers now offer FWA over 5G, representing around 70 percent of all FWA providers. As this 5G momentum continues, we are entering a phase where 5G SA and 5G Advanced are unlocking new capabilities for industries, from ultra-precise manufacturing to immersive remote collaboration.

Together with Qualcomm, we look at how AI is expanding mobile experiences, with smartglasses and other wearables emerging as new complementary user interfaces that extend digital interactions. Qualcomm also sees a growing interest in XR for enterprise and industrial environments, where mobility, reliability, security and deterministic performance are critical.

We examine how SoftBank Corp. implemented a 5G SA-based network slicing trial at a major sporting event this year. They created five network slices on a shared physical infrastructure, running multiple use cases in parallel, each with distinct quality parameters. Learnings from such events can be used to refine commercial offerings.

The next wave of innovation is being defined by cross-industry collaboration. No single player can unlock the full potential of network connectivity alone. By working together – across industries, ecosystems, and geographies – we can ensure that the networks of the future are not only more capable, but also more inclusive and resilient.

I hope you find this report both engaging and useful. Let's continue to shape the future together.

Erik Ekudden
Senior Vice President and
Chief Technology Officer

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Articles

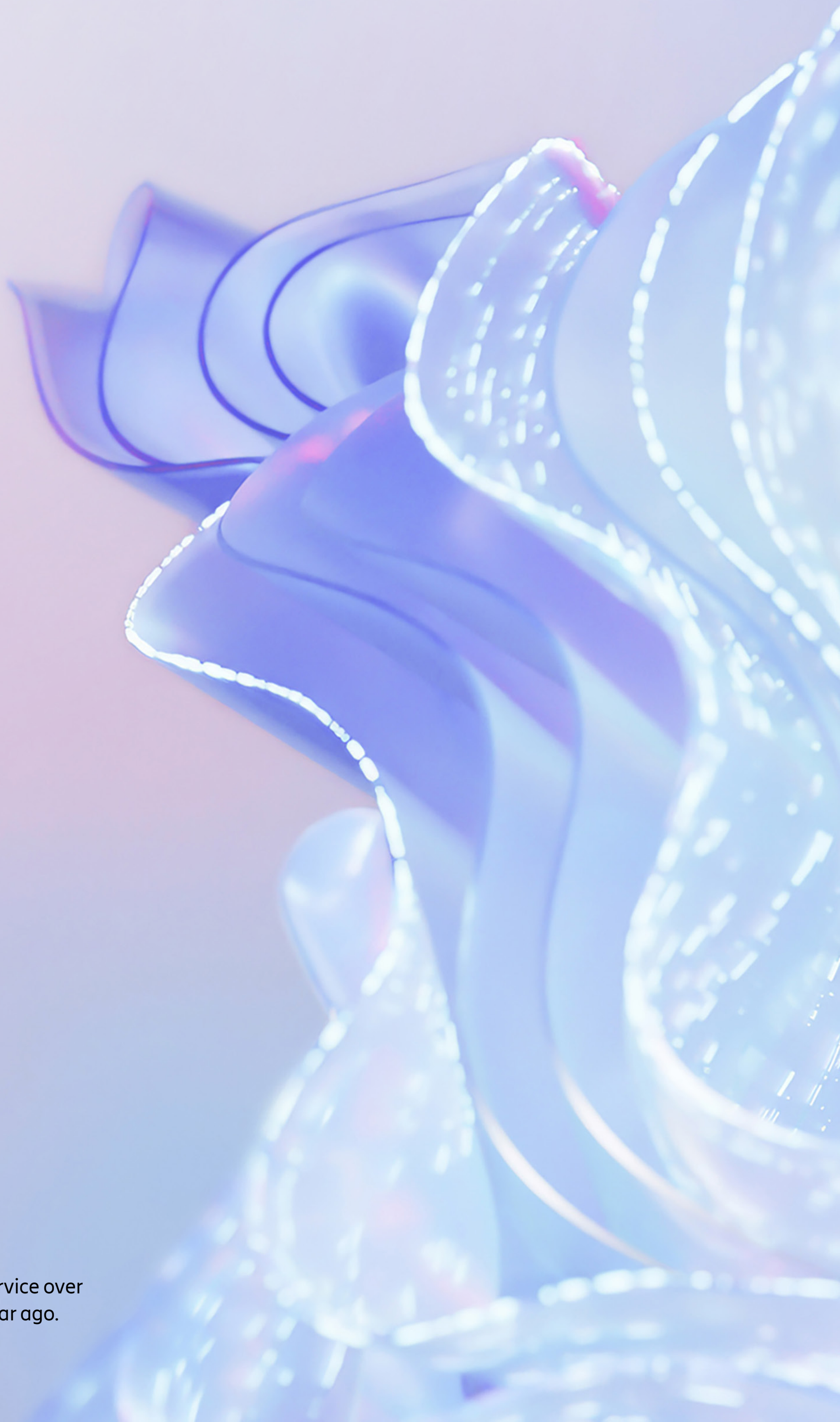
Executive Editor: Peter Jonsson
Project Sponsor: Patrik Cerwall
Project Manager: Anette Lundvall
Forecasts: David von Koch
Writer Editor: Steven Davis

Co-writers:
Hemanth Sampath, Pratik Das, Prashanth Hande (Qualcomm)
Noriyuki Fujino, Yuka Sugimoto (SoftBank Corp.)

Contributors:
Fredrik Alriksson, Christian Andersson X, Jari Arkko, Greger Blennerud, Mischa Dohler, Lisa Englund, Jonas Kronander, Fredric Kronestedt, Per Lindberg, Frank Muller, Takayuki Takatori, Kosuke Takizawa, Allan Tart, Lisa Elénius Taylor, John Yazlle

Forecasts

The number of 5G subscriptions has passed the 3 billion mark, and half of the world's mobile data traffic is now carried over 5G. Mobile network data traffic growth continued to exceed expectations, at 22 percent between Q1 2025 and Q1 2026. Fixed Wireless Access (FWA) adoption is also expanding – around 70 percent of all FWA providers now offer the service over 5G. Looking ahead, standardization discussions for 6G are already underway, with the first launches expected in markets that were quick to launch 5G.



3bn

The adoption of 5G continues, and the number of 5G subscriptions has now passed 3 billion.

50%

5G networks now carry half of all mobile data traffic globally.

22%

Mobile network data traffic grew 22 percent between Q1 2025 and Q1 2026.

71%

The proportion of FWA service providers offering the service over 5G has increased to 71 percent, up from 57 percent a year ago.

5G subscriptions have now passed 3 billion

5G subscription uptake continues, adding 162 million to the total during the first quarter of 2026 to reach 3.1 billion.

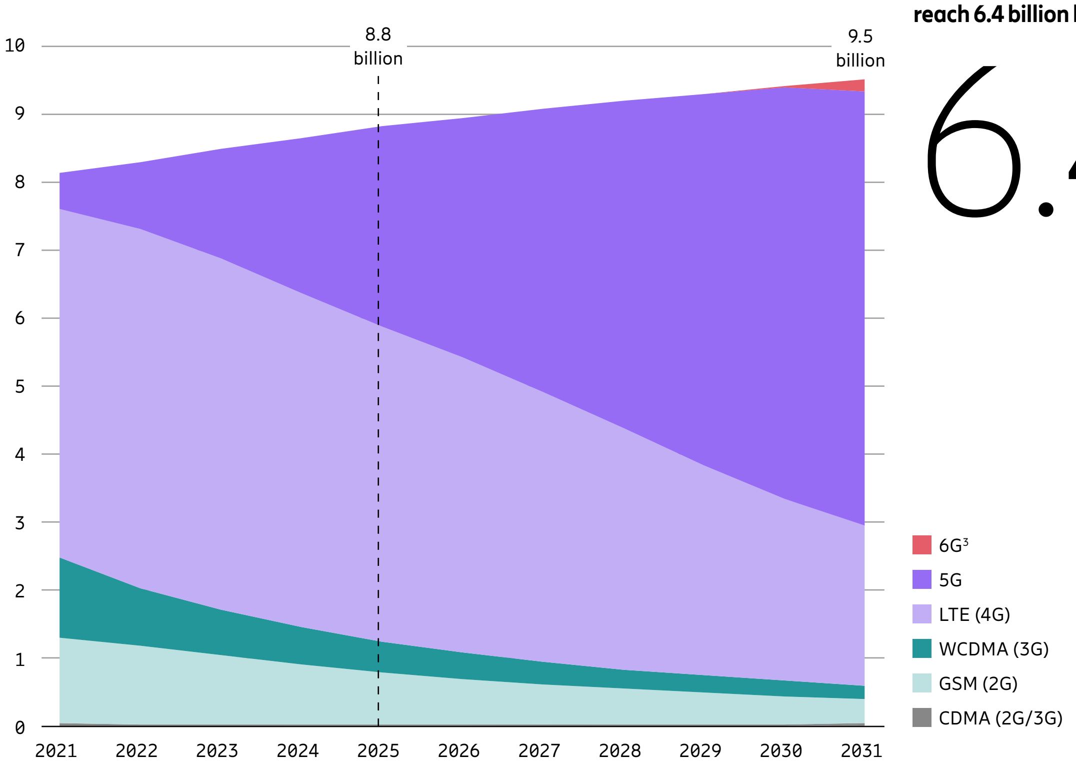
During 2025, around 660 million 5G subscriptions were added globally, with the total accounting for one-third of all mobile subscriptions at the end of the year. The highest penetration was in North America with 79 percent, followed by North East Asia at 60 percent, Western Europe at 54 percent and the Gulf Cooperation Council (GCC) countries at 53 percent. By the end of 2027, the number of 5G subscriptions is expected to increase by 1.2 billion compared with the end of 2025, and will overtake 4G as the dominant mobile access technology by subscription nine years after launch.

Around 390 service providers have now launched commercial 5G services, and more than 90 of those have launched 5G standalone (SA).[1]

As subscribers migrate to 5G, the number of 4G subscriptions continues to decline. During the first quarter of 2026, 4G subscriptions declined by 77 million, bringing the total to just below 4.6 billion. 3G subscriptions declined by 18 million during the same period, while 2G subscriptions dropped by 23 million.

2G and 3G network sunsetting continues around the world. The phasing out of 3G networks is predicted to happen more quickly than that of 2G in the coming years, but the timeline for this transition varies based on country and service provider. By the end of 2025, 80 service providers had completely finished shutting down their 3G networks, while 46 service providers had fully turned off all 2G services.[2]

Figure 1: Mobile subscriptions by technology (billion)



5G subscriptions are forecast to reach 6.4 billion by the end of 2031.

6.4bn

[1] GSA and Ericsson (May 2026).
[2] GSA (December 2025).
[3] This does not include early uptake of subscriptions for AI-enabled devices such as autonomous vehicles, smartglasses and drones.

Two-thirds of all mobile subscriptions expected to be 5G at the end of 2031
Global 5G subscriptions are forecast to reach 6.4 billion in 2031 and comprise two-thirds of all mobile subscriptions. Leading service providers are expected to continue deploying 5G SA globally, with subscriptions projected to reach around 3.9 billion in 2031, representing approximately 60 percent of all 5G subscriptions at that time. This is a somewhat more conservative outlook than six months ago, reflecting a moderate 5G SA subscription growth in India toward the end of the period and slower 5G SA adoption in Latin America, Europe and the Middle East.

In 2031, it is predicted that Western Europe and North America will have a 5G subscription penetration of 95 and 92 percent respectively, with the GCC countries and North East Asia following with a penetration of just below 90 percent.

6G on the horizon
Standardization discussions for 6G[4] have begun. AI-native 6G is expected to bring new capabilities, including: full support for integrated sensing and communication (ISAC); seamless integration between terrestrial and satellite networks to reduce coverage gaps; and a strong focus on energy efficiency. 6G is anticipated to have a core network built on the architectural principles of 5G SA and a new Radio Access Network (RAN) architecture with a new radio interface. For traditional use cases, such as enhanced mobile broadband (eMBB), Fixed Wireless Access (FWA) and the Internet of Things (IoT), 6G will advance the performance and service differentiation with guarantees. As enhanced and new network technologies open up new service possibilities, use cases like massive digital twinning, autonomous mobility and wide-area mixed reality are likely to gain broader commercial adoption.

The first implementable specifications for 6G are targeted for finalization by the end of 2028 or early 2029. The first commercial 6G services are anticipated to appear around 2030, varying between regions and countries. Early adopters are predicted to be the US, China, Japan, South Korea and the GCC countries, which all launched commercial 5G services relatively early compared to many other countries. India is positioning itself to accelerate its 6G timeline relative to its 5G deployments. Europe is expected to launch 6G about one year later than it did for 5G, relative to other regions, reflecting its later 5G SA deployment.

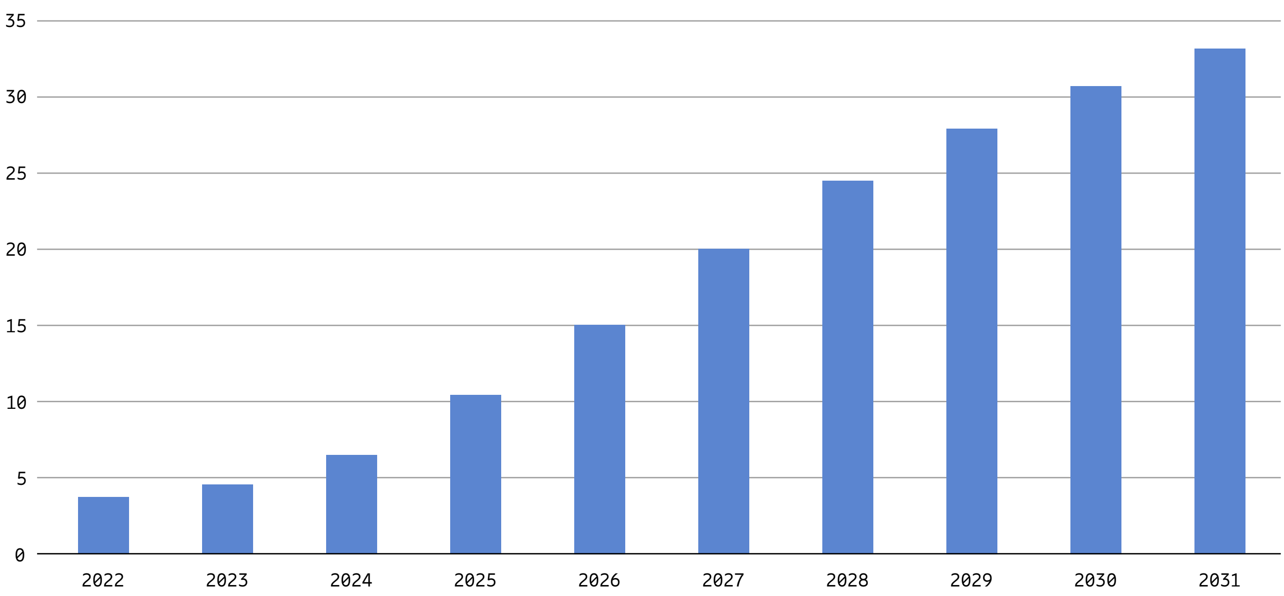
Global 6G subscriptions[5] are forecast to reach 180 million by the end of 2031, not including early uptake of subscriptions for AI-enabled devices such as autonomous vehicles, smartglasses and drones. If 6G subscription uptake happens earlier, the current forecast could be surpassed significantly.

Satellite broadband subscriptions

In recent years, there has been a growth in satellite networks, in particular large constellations of low-Earth orbit (LEO) satellites. These satellite networks can provide multiple services such as direct-to-device connectivity and fixed broadband internet. To meet the fixed broadband connectivity needs as we approach 2031, the mix of fiber, 5G FWA and satellite technologies will all be crucial to support an increasingly digital world. Globally, satellite broadband subscriptions are forecast to increase from around 10 million at the end of 2025 to around 33 million by the end of 2031. By comparison, there will be a projected 350 million FWA connections on mobile networks by 2031. The total number of all types of fixed broadband connections will be around 2 billion by 2031.

Satellite broadband subscriptions:
The number of subscriptions using a satellite broadband service operating in the fixed-satellite service (FSS) spectrum, using a dedicated satellite terminal/CPE, typically a dish or high-gain antenna.

Figure 2: Satellite broadband subscriptions (million)



[4] 3GPP Release 21, based on ITU IMT-2030.
[5] Currently, 6G subscriptions are not published at a regional level.

Devices are increasingly shaped by AI

AI's rapid progression opens multiple scenarios for what will be possible in devices, even in the short term.

Smartglasses in the AI era
The smartglasses market is nascent but growing rapidly. Global shipments reached about 10 million units in 2025 and analysts project strong double-digit growth in the coming years. AI/audio glasses are expected to represent the largest share, while smartglasses with displays must evolve to achieve mainstream adoption, affordability and all-day battery life. Already, early smartglasses integrate 4G connectivity, with 5G reduced capability (RedCap) modems expected within the next three years.

Smartglasses volumes are expected by analysts to grow 2–3 times in 2026, and are leading the way toward 6G for large-scale network use. The always-on aspect requires optimized uplink performance, paired with intelligent compute distribution between the device and network assets. Distributed compute is starting in 5G and expected to excel in 6G.

Foldable devices evolving
Foldable smartphones have become a flagship device, with offerings expected from all major vendors. Initial issues with hinges and display creases have been addressed and the segment is maturing, with volumes fluctuating but trending upward. Two distinct models exist: The "flip" currently drives volume, while the "fold" is expected to lead in innovation and AI differentiation, as the format is better suited to multitasking. In a flat or shrinking smartphone market due to memory constraints, the foldable segment's market share is expected to grow significantly. Foldables are memory-intensive, but are still expected to be only moderately impacted by the memory crisis.

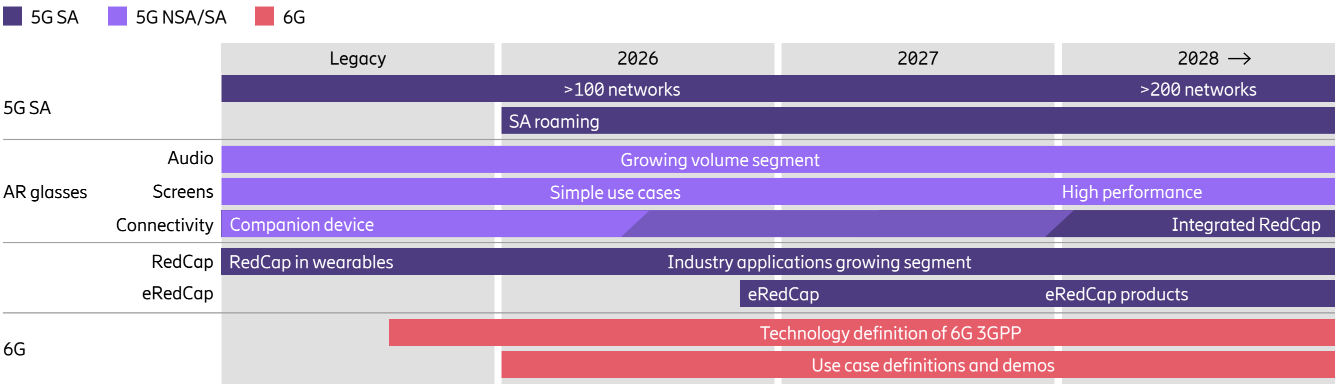
eRedCap coming to market
RedCap is now supported by most chipset and module vendors, with growth expected primarily in industrial devices and use cases. Market demand for RedCap sensors and other appliances continues to build. The first RedCap smartwatch has emerged, and this segment is anticipated to grow as 5G standalone (SA) deployments increase. To make 5G fully relevant for low-cost IoT, enhanced RedCap (eRedCap) will be introduced, with lab trials starting this year and full commercial potential expected from 2028. At least five chipset vendors have committed to commercializing eRedCap. The key aspect is to be on par with LTE Cat-1bis pricing of a few USD per module, to become the 5G IoT solution of choice.

Differentiated connectivity in devices
The focus of network slicing has been on developing revenue-generating use cases for service providers. Major smartphone vendors now support UE Route Selection Policies (URSP) across OS platforms, enabling communication apps to benefit from network slicing. Service providers are combining this with Low Latency, Low Loss, and Scalable Throughput (L4S) in the application layers to create differentiated commercial offerings that can be monetized.

6G taking shape
Commercial 6G devices are expected within 3–4 years, and planning for the first 6G mode chipset feature content has started in parallel with the 3GPP standardization discussion. Decisions on hardware-affecting features are the most time-critical. As chipset development takes years, initial commitments on the standard direction must be made now.

Notably, 6G discussions are already centered on use cases and commercialization. 6G could trigger a supercycle, an unusually strong multi-year upgrade wave, for several reasons: agentic AI will be native at the introduction of 6G; smartglasses will enter the 6G era with their full capabilities; connected physical AI device form factors established; and many chipset vendors are interested in being in the next generation from the start.

Figure 3: Technology area readiness on devices and networks



Note: Readiness means more than one infrastructure and device vendor is ready.

Cellular IoT connections expected to approach 8 billion by the end of 2031

The total number of cellular IoT connections was around 4.5 billion at the end of 2025 and is forecast to have a CAGR of around 10 percent through to 2031, approaching 8 billion by that time.

The Massive IoT technologies NB-IoT and Cat-M – supporting wide-area use cases involving large numbers of low-complexity, low-cost devices with long battery lives and low-to-medium throughput – continue to be rolled out around the world. 5G reduced capability (RedCap) is starting to gain traction and has now been commercially launched by 14 service providers across multiple global markets. Furthermore, 42 service providers in 27 countries are currently investing in 5G RedCap technology.[1] Enhanced RedCap (eRedCap) is designed to further reduce the complexity and cost of 5G IoT devices. It offers lower peak data rates of 10 Mbps compared with RedCap. Use cases for eRedCap are similar to LTE Cat-1 and LTE Cat-1 bis, offering a compromise between performance and cost. To make 5G fully relevant for low-cost IoT, eRedCap will be introduced, with lab trials starting this year. Full commercial potential for eRedCap is expected in 2028 and beyond.

The number of Broadband and Critical IoT (4G/5G) connections was around 2.6 billion by the end of 2025 and these are expected to continue to connect the largest share of cellular IoT devices through 2031. This segment mainly includes wide-area use cases that require higher throughput, lower latency and larger data volumes than can be supported by Massive IoT devices. LTE Cat-1 devices, which support 10 Mbps downlink and 5 Mbps uplink speeds, are increasingly being used for a variety of use cases. This rise is fueled by growing demand for new use cases and the need to shift away from legacy technologies.

2G and 3G networks continue to be shut down around the world to refarm spectrum for use with 4G and 5G. In many markets, the phasing-out of 3G networks is expected to occur more rapidly than that of 2G in the upcoming years, as sunsetting 3G networks enables the reuse of spectrum to strengthen 4G and 5G user experiences. 2G networks, with their minimal use of spectrum, will continue to be utilized for voice and legacy IoT services for a longer duration. By the end of 2025, 80 service providers had completely finished shutting down their 3G networks, while 46 service providers had fully turned off all 2G services.[2]

The growth of Massive IoT technologies is enhanced by added capabilities in the networks, enabling Massive IoT to co-exist with 4G and 5G in frequency division duplex (FDD) bands, via spectrum sharing.

By the end of 2031, a majority of cellular IoT connections are forecast to be Broadband IoT. As 5G New Radio is being introduced in old and new spectrum, throughput data rates will increase substantially for this segment. North East Asia is the leading region in terms of the number of cellular IoT connections, with a share of around 70 percent of all connections by the end of 2025.

Figure 4: Cellular IoT connections by segment and technology

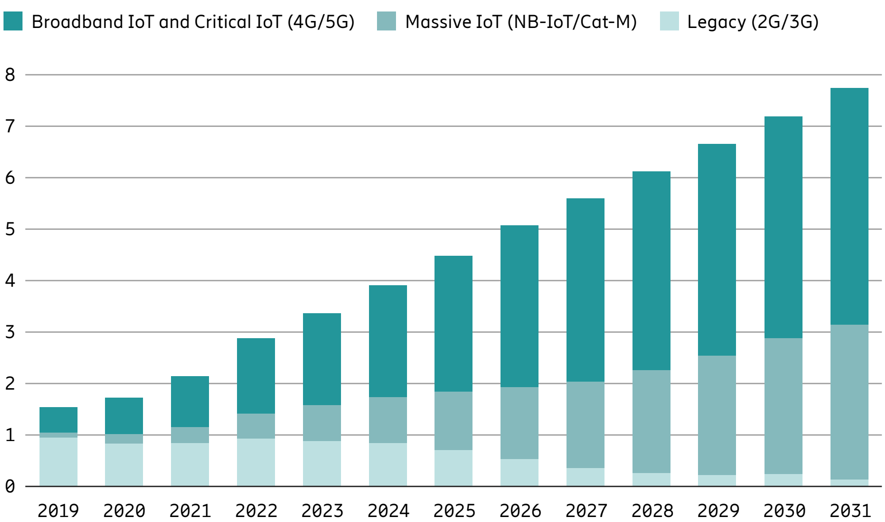


Figure 5: IoT connections (billion)

IoT	2025	2031	CAGR
Wide-area IoT	4.9	8.3	9%
Cellular IoT	4.5	7.8	10%
Short-range IoT	17.5	38.8	14%
Total	**22.3**	**47.1**	**13%**

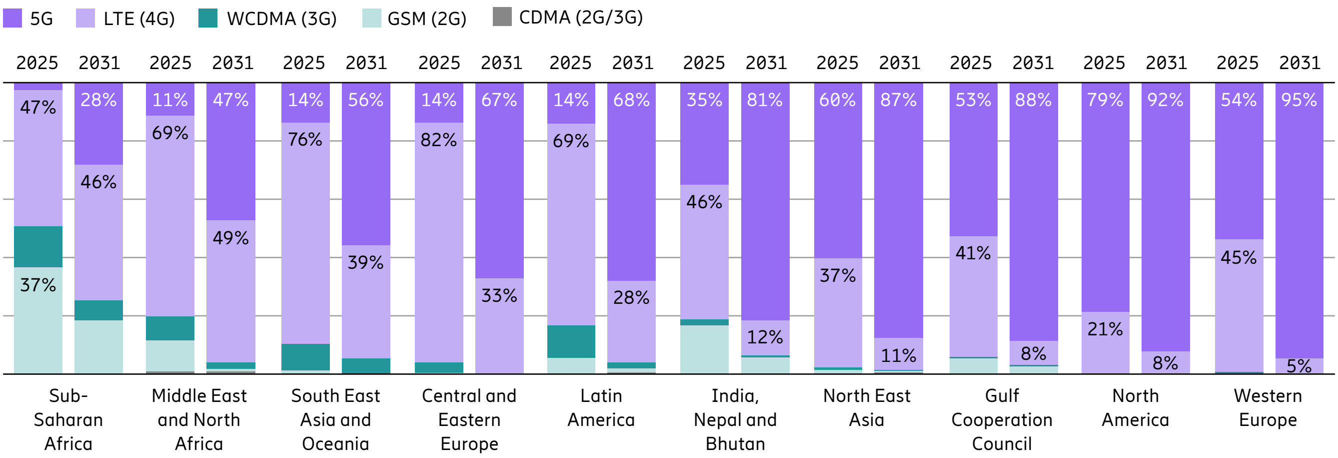
Note: Based on rounded figures. Cellular IoT figures are also included in the figures for wide-area IoT.

[1] GSA, (April 2026).
[2] GSA, (December 2025).

5G subscriptions are expanding across regions

In 2031, 8 out of 10 regions will have more than 50 percent 5G subscription penetration.

Figure 6: Mobile subscriptions by region and technology (percent)



Note: All Middle East and North Africa figures include GCC countries. Currently, 6G subscriptions are not published on a regional level, but are included in 5G figures in regions where 6G is expected to launch early.

Sub-Saharan Africa
The telecom sector continues to drive growth in the region, fueled by a young population, wider access to affordable smartphones, and a rising demand for mobile data and digital services.

Ongoing 4G rollouts and early 5G deployments are expected to gradually phase out legacy technologies. 3G networks are anticipated to sunset sooner than for 2G, with 3G subscriptions expected to decline by 8 percent annually to reach around 90 million in 2031. 2G subscriptions are projected to fall by around 7 percent annually to a total of around 245 million. In 2031, 4G is set to account for 46 percent of all mobile subscriptions, while 5G is expected to reach 28 percent.

Smartphone subscriptions are projected to rise to 960 million in 2031, increasing the share of total mobile subscriptions from 57 percent to 73 percent, reflecting growing consumer demand and the evolving mobile ecosystem.

Service providers are increasingly diversifying their offerings, with a strong focus on fintech – particularly mobile money services – and Fixed Wireless Access (FWA) to connect both consumers and enterprises. The sector's resilience and long-term momentum will hinge on ongoing infrastructure developments and supportive regulatory environments.

Middle East and North Africa
Challenging economic and societal forces are driving rapid change in this region. However, the telecom sector continues to show resilience, providing a communication lifeline for consumers, businesses and mission-critical organizations.

Efforts to diversify economies and drive digital transformation are helping to stabilize the sector and sustain investment momentum in some countries. Although mobile subscriptions are projected to grow at a rate of just 1 percent annually to 2031, 5G subscriptions are forecast to rise with a CAGR of around 30 percent over the same period. This signals a shift in how users engage with digital services.

In 2031, 4G is anticipated to make up 49 percent of mobile subscriptions, with 5G increasing from 11 percent to 47 percent of total subscriptions. 5G FWA is gaining traction as a complement to traditional broadband offerings. Service providers are enhancing network capacity while minimizing energy consumption and their carbon footprint – modernization is key to achieving business goals and reducing energy costs to meet net-zero ambitions.

South East Asia and Oceania
5G subscriptions in the region are forecast to reach around 670 million in 2031. Most markets are focusing on coverage and incremental performance gains. While only one service provider has deployed nationwide 5G standalone (SA), many are beginning their SA journey with limited deployments focused on urban areas.

5G subscription growth is led by Thailand, Vietnam and the Philippines. Australia is progressing toward 5G Advanced and autonomous networks to deliver high-performance wireless broadband and enterprise-grade connectivity. Singapore is embedding 5G into solutions like secure mobile workspaces, positioning 5G as a platform for innovation and new digital services for both business and consumers. Thailand is accelerating 5G adoption with personalized, digital value-added services that improve customer satisfaction. Vietnam stands out for the speed and scale of its 5G expansion. Indonesia's upcoming 700 MHz and 2.6 GHz spectrum auction could accelerate 5G deployment, with all major service providers likely to participate.

5G FWA is emerging as a monetization opportunity. In Australia, FWA is maturing into a mainstream offering with predictable performance and service differentiation. In the Philippines, 5G FWA growth highlights how 5G is connecting fiber-constrained areas.

Central and Eastern Europe

Technology adoption and subscription uptake has historically been slower in this region than in Western Europe. 5G deployment varies by country, partly due to slower spectrum allocation processes. However, the region has seen several accelerated 5G deployments, driven by growing demand. Czechia has progressed with deployments of private mobile networks for manufacturing, educational campuses and mission-critical medical facilities. Croatia actively leverages 5G to support tourism and build connected smart cities, while 5G in Hungary is going beyond smartphones to the automotive sector and other use cases. New data shows a higher 5G share of subscriptions in the region than previously forecast, reaching around 80 million at the end of 2025.

4G is the dominant technology, accounting for 82 percent of all subscriptions at the end of 2025, but this share is expected to decline as subscribers migrate to 5G.

Latin America

5G is gaining momentum in Latin America after a slow start. Although the region has a relatively small base of around 110 million 5G subscriptions, the large overall subscriber base is projected to drive 5G subscriptions to 550 million by the end of 2031. 5G SA deployment has been slower than expected. However, 5G SA frontrunner deployment of 5G Advanced, network slicing and open programmable architectures is expected to fuel a broader digital transformation wave.

India, Nepal and Bhutan

5G adoption in India is continuing to grow. The availability of affordable 5G-enabled smartphones and devices, expanded 5G footprint covering almost all districts, combined with the expansion of 5G FWA services by Indian service providers is fueling data traffic growth. The expansion of 5G FWA broadband to homes and businesses, especially in rural and semi-urban areas, is helping bridge the digital divide. In a first for India, one service provider recently launched differentiated connectivity services based on network slicing for its postpaid 5G customers.

Regionally, 5G subscriptions reached 430 million at the end of 2025, accounting for 35 percent of total mobile subscriptions. Around 1.1 billion 5G subscriptions are expected by the end of 2031, reaching 81 percent subscription penetration. 4G is currently the dominant subscription type, making up 46 percent of the total.

4G subscriptions are forecast to decline from around 570 million in 2025 to around 160 million in 2031, as subscribers migrate to 5G.

North East Asia

The region had the second-highest 5G subscription penetration globally at the end of 2025, at 60 percent — with three major markets surpassing 65 percent.[1] Adoption of differentiated connectivity is expanding, enhancing user experience and creating opportunities for service providers to monetize personalized services.

In mainland China, 5G subscriptions reached 1.2 billion at the end of 2025, with about 70 percent of mobile data traffic carried on 5G networks. Over 90 percent of smartphone shipments in 2025 were 5G-capable,[2] and 5G Advanced is available nationwide. Two million 5G sites have been upgraded to support reduced capability (RedCap), and high-order carrier aggregation is activated in more than 300 cities.[3]

In Japan, progress in 5G SA is improving consumer experiences, and offerings leveraging differentiated connectivity are emerging. Service providers are increasing investments in AI to support future monetization.

South Korea continues to offer high average 5G throughput while expanding coverage, including in rural areas, through network sharing. Service providers remain focused on improving user experience and preparing networks for the AI era, alongside efforts to monetize 5G services.

In Hong Kong, service providers report that 5G ARPU outperforms 4G, contributing positively to financial performance.

In Taiwan, service providers are testing differentiated connectivity offerings in segments such as live entertainment, while FWA services continue to gain traction as a new revenue opportunity. Commercial 5G SA services are expected within one to two years.

Gulf Cooperation Council (GCC)

The GCC has a small mobile subscriber base, yet it is notable for its high penetration, levels of urbanization and consumer spending power. Service providers are transitioning from traditional telcos to digital service providers. This is enabled by extensive 5G deployment and the adoption of technologies such as AI, cloud computing and edge solutions. Network slicing is expected to be key for delivering customized services.

In 2031, mobile subscriptions are expected to reach 95 million. Legacy network subscriptions will decline as users migrate to next-generation connectivity. By the end of 2031, 5G is expected to represent 88 percent of all mobile subscriptions, totaling 84 million.

FWA adoption is driven by demand for high-speed alternatives to fixed broadband, as well as national initiatives aimed at reaching underserved areas and supporting smart-city ambitions.

North America

5G subscriptions reached around 370 million at the end of 2025, accounting for 79 percent of all mobile subscriptions at that time and are expected to reach around 460 million in 2031. Leading service providers anticipate continued growth for FWA and are introducing differentiated connectivity to offer tailored experiences. Extensive mid-band 5G network coverage is the foundation for new consumers, enterprises and government innovations across the broader tech ecosystem. The upcoming major international soccer tournament is driving updates to networks in venues and across host cities to deliver the digital portion of the destination experiences millions of fans expect.

Western Europe

5G subscription growth is strong in the region, reaching around 300 million in 2025, which equals a penetration of 54 percent. The penetration varies between countries, where markets that launched 5G early, such as the UK and Finland, have already achieved high penetration relative to other markets. 5G mid-band and SA are gaining traction, with leading service providers launching new offerings based on differentiated connectivity in areas such as payment terminals, live broadcasting and photojournalism. In Spain, a major service provider launched the first commercial service in the country based on differentiated connectivity in Q1 2026, designed to guarantee enhanced connectivity during periods of extreme demand, such as concerts, major public celebrations, or cultural events with large numbers of users in attendance.

Going forward, 4G is expected to decline in favor of 5G. 5G subscriptions are anticipated to reach around 540 million at the end of 2031, representing 95 percent penetration at that time.

[1] Ministry of Industry and Information Technology (MIIT).
[2] China Academy of Information and Communications Technology (CAICT).
[3] Ministry of Industry and Information Technology (MIIT).

Continued strong growth of mobile network data traffic in Q1 2026

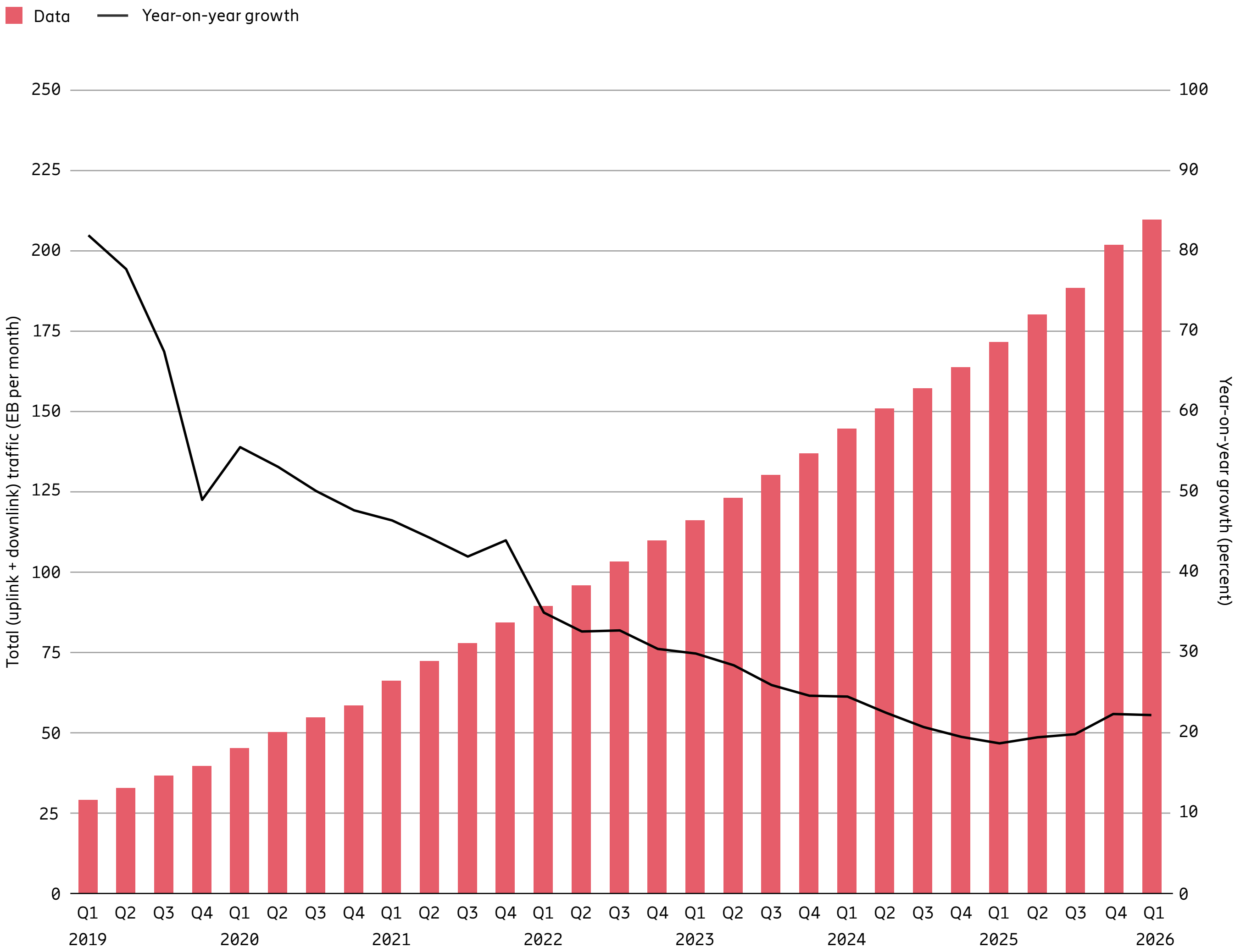
Mobile network data traffic growth continued to exceed expectations, rising 22 percent between Q1 2025 and Q1 2026.

The year-on-year growth in Q1 2026 was mainly driven by continued strong growth in India and North America. Total monthly global mobile network data traffic reached 210 EB. The quarter-on-quarter mobile network data traffic growth between Q4 2025 and Q1 2026 was around 5 percent.

Mobile data traffic growth is being driven by both rising smartphone subscriptions and increasing average data volume per subscription, fueled primarily by increased video content consumption. At the end of 2025, video traffic accounted for around 75 percent of all mobile data traffic.

Figure 7 shows the total monthly global network data traffic from Q1 2019 to Q1 2026, along with year-on-year percentage growth for mobile network data traffic.

Figure 7: Global mobile network data traffic and year-on-year growth



Note: Mobile network data traffic also includes traffic generated by Fixed Wireless Access services.

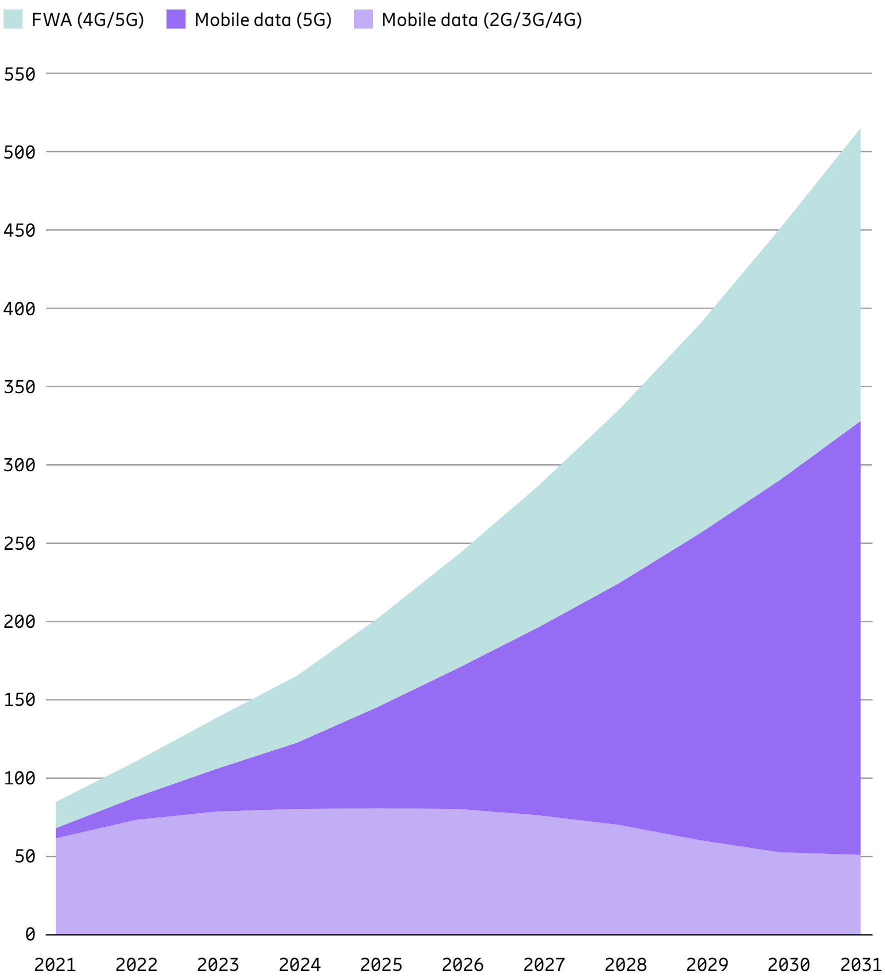
Traffic growth in mobile networks continues as 5G carries a larger share

Mobile network data traffic growth is projected to continue, driven by 5G and Fixed Wireless Access (FWA).

Both global mobile data traffic and total mobile network data traffic, which includes FWA, grew slightly above expectations during 2025, ending the year at 146 EB per month and 203 EB per month respectively. Looking ahead, the projected growth rate for mobile data traffic during the forecast period remains consistent with the estimate from six months ago, with a growth factor of around 2.2 to reach 328 EB per month in 2031. Including FWA, total mobile network data traffic is anticipated to grow by a factor of around 2.5 during the period, slightly higher than the estimate six months ago, reaching 515 EB per month. Notably, 2025 marked the highest yearly net addition of mobile network data traffic so far.

During 2025, the share of mobile data traffic carried over 5G increased from 34 percent to 48 percent and is projected to reach 85 percent in 2031. Total mobile network data traffic is expected to grow at 14 percent year-on-year in 2031, with a CAGR of 17 percent over the full forecast period. Mobile data traffic generated by 6G subscriptions is anticipated to represent a small share of the total in 2031.

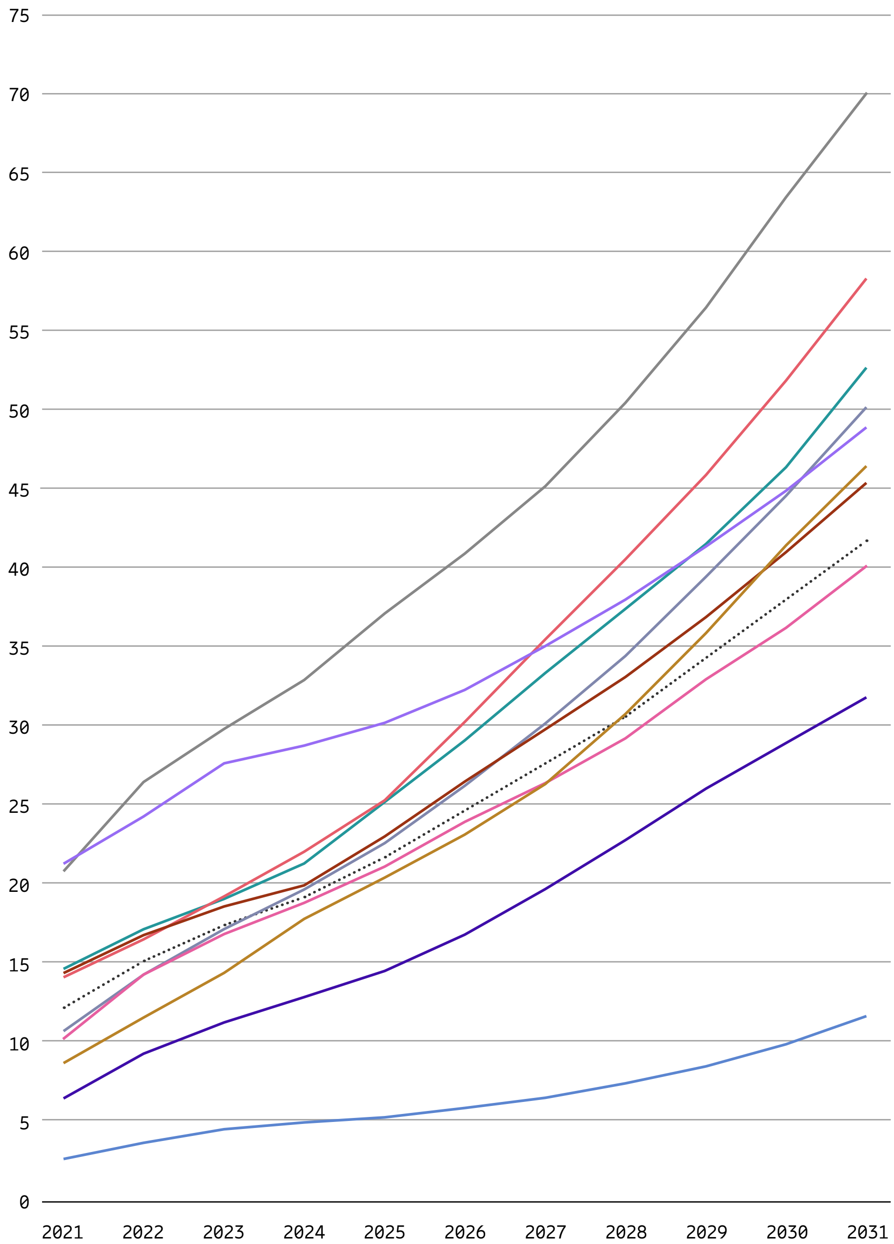
Figure 8: Global mobile network data traffic (EB per month)



Multiple factors impact traffic growth
Mobile data traffic growth can be highly volatile and vary significantly between years, regions, markets and service providers, depending on local market dynamics. Factors that impact traffic growth include:

- **New use cases and devices:** Adoption of AR-enabled devices and scalable, multimodal generative AI (GenAI) applications will be key. Current forecasts assume initial XR uptake (AR, VR, MR) toward the end of the forecast period. Faster adoption could drive traffic significantly beyond current projections.
- **Service and tariff evolution:** Changes in available plans and pricing structures.
- **Content data intensity:** Growth in data-demanding services and applications.
- **Network improvements:** Continued performance gains in deployed infrastructure.
- **Technology migration:** The pace at which subscribers in populous markets like India, Latin America, South East Asia, and Africa adopt newer mobile generations.
- **Split between FWA and mobile data traffic:** As FWA connections expand in regions lacking fixed broadband, household traffic may shift from smartphones to FWA – especially for streaming services.
- **Device distribution:** Smartphone shipment volumes in different regions.

Figure 9: Mobile data traffic per active smartphone[1] (GB per month)



Regions	2025	2031	CAGR 2025–2031
India, Nepal and Bhutan	37	70	11%
Western Europe	25	59	15%
North America	25	52	13%
Central and Eastern Europe	23	50	14%
Gulf Cooperation Council	30	49	8%
Middle East and North Africa[2]	21	47	14%
North East Asia	23	45	12%
Global average	22	42	12%
South East Asia and Oceania	21	40	12%
Latin America	15	32	14%
Sub-Saharan Africa	5	12	14%

There are significant variations in monthly data consumption within all regions, with some individual countries and service providers having considerably higher or lower consumption than the regional averages.

Both Western Europe and the Middle East and North Africa regions are projected to have the strongest growth in monthly mobile data traffic per active smartphone during the forecast period, with a 15 percent CAGR, despite the already high consumption levels in Western Europe. The India region – including Nepal and Bhutan – continues to have the highest average monthly consumption of mobile data traffic per active smartphone, reaching 37 GB at the end of 2025, and is expected to reach 70 GB in 2031.

By comparison, the global monthly average was 22 GB at the end of last year and is anticipated to reach 42 GB in 2031, representing a CAGR of 12 percent.

As traffic demand varies across regions and over time, it is important to keep in mind that average monthly data traffic growth in a region cannot be used to estimate daily peak traffic growth in a local area, or to support network evolution strategies there. Traffic growth is not uniform across locations within a service provider's network. For example, in dense urban locations, traffic demands can be up to 1,000 times larger relative to rural areas.[3]

Average mobile data traffic per active smartphone reached 22 GB per month globally at the end of 2025.

22GB

[1] Traffic per active smartphone refers to all traffic generated by that device, regardless of the number of subscriptions attached.
[2] All Middle East and North Africa figures include the Gulf Cooperation Council countries.
[3] Ericsson Mobility Report, "Exploring how traffic patterns drive network evolution" (June 2023).

During 2025, an additional 400 million people worldwide gained 5G coverage

Significant regional coverage gaps and site upgrade opportunities remain, as half of the world outside mainland China still lacks 5G coverage.

There are currently 838 4G networks deployed worldwide, with 359 upgraded to LTE-Advanced and 452 LTE devices supporting Cat-16.[1] By the end of 2025, 4G population coverage outside mainland China had reached 90 percent globally and is projected to exceed 95 percent in 2031.

The build-out of 5G continues, with around 390 networks launched worldwide. Global 5G population coverage reached 60 percent at the end of 2025, extending 5G coverage to an additional 400 million people during the year. Outside mainland China, 5G coverage is projected to increase from 50 percent in 2025 to about 85 percent in 2031.

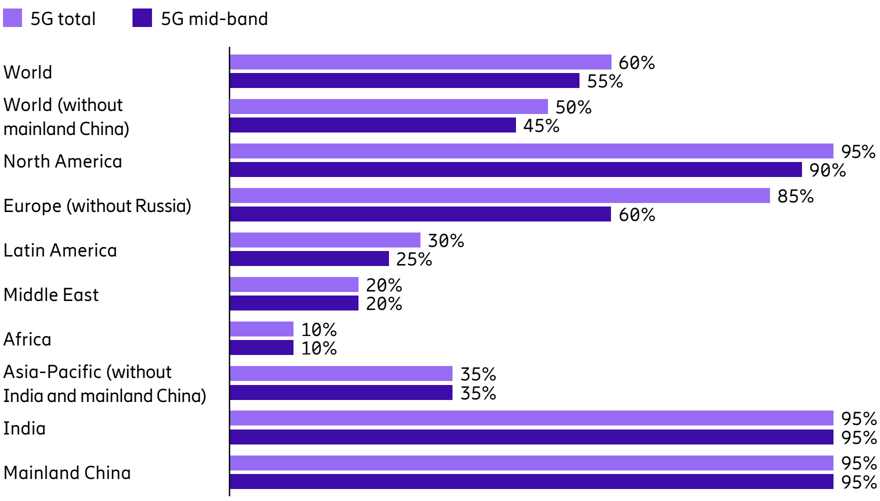
5G mid-band, either delivered through time division duplex (TDD) or frequency division duplex (FDD), combines high capacity with good coverage. It is available in most markets, making it an ideal choice for delivering the full 5G experience. When combined with a low-band FDD 5G carrier, mid-band can provide full coverage and mobility. Good mid-band coverage is also essential for enabling differentiated connectivity and unlocking new revenue opportunities across consumer and enterprise use cases.

Large regional variations in 5G coverage

By the end of 2025, 5G mid-band population coverage outside mainland China reached about 45 percent, but coverage levels vary significantly across regions. Africa has the lowest total and mid-band 5G coverage, which both reached about 10 percent at the end of 2025. The Middle East shows somewhat higher levels, with total and mid-band coverage of about 20 percent. Latin America, with 30 percent total and 25 percent mid-band 5G coverage, and Asia-Pacific (outside India and mainland China), with around 35 percent total and mid-band coverage, both remain below the global average for 5G population coverage. Extensive total and mid-band 5G coverage has been established across North America, mainland China and India, now covering 90–95 percent of the population in these regions.

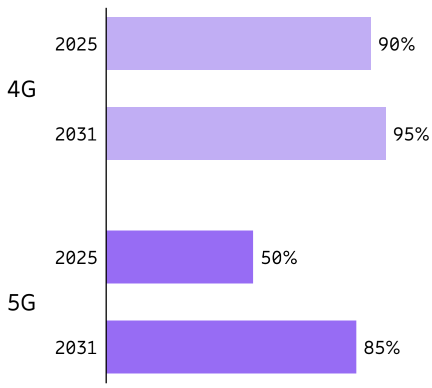
Despite these coverage advancements, only around 35 percent of sites globally, outside of mainland China, have been upgraded to 5G mid-band.

Figure 10: World population and mid-band coverage[2] split by region (end of 2025)



Note: The figures in these graphs are rounded and refer to the coverage of each technology. The ability to utilize the technology is subject to factors such as access to devices and subscriptions.

Figure 11: World population coverage outside mainland China, by technology



[1] Ericsson and GSA (May 2026).
[2] Please see the Methodology for a full definition of population coverage.

5G FWA adoption accelerating

Fixed Wireless Access (FWA) is a clear 5G monetization use case. The share of FWA service providers offering the service over 5G has reached 71 percent, with the highest annual increase in 4 years.

Continued global FWA momentum
FWA is continuing to grow solidly in terms of the:
- **Adoption:** Proportion of service providers offering FWA over 5G
- **Monetization:** Share of service providers with speed-based tariff plans
- **Scale:** Number of connections and the traffic volume per connection

An updated study[1] of retail packages offered by service providers reveals that 83 percent have an FWA offering. There are 175 service providers offering FWA services over 5G, representing 71 percent of all FWA service providers.

Globally, the share of service providers offering FWA over 5G has grown 14 percentage points in the past year, the highest annual increase in adoption in four years. This momentum is reflected in new 5G FWA launches across diverse markets, including Algeria, Argentina, Bangladesh, Morocco, Taiwan, Türkiye and Vietnam.

Figure 12: Global FWA service provider adoption 2022–2026

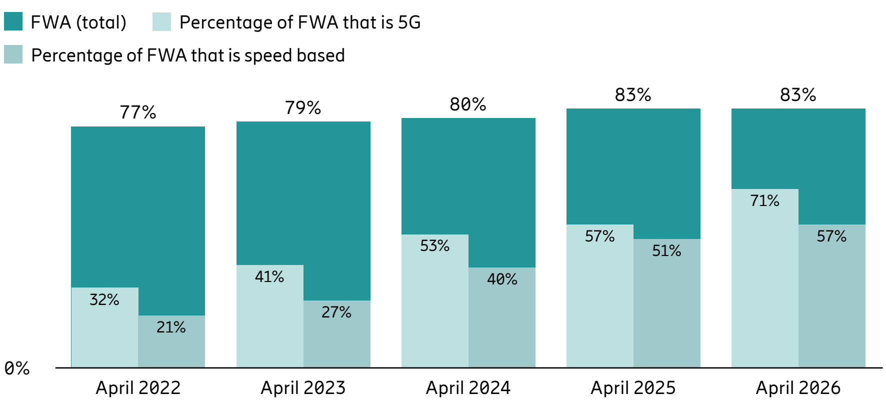
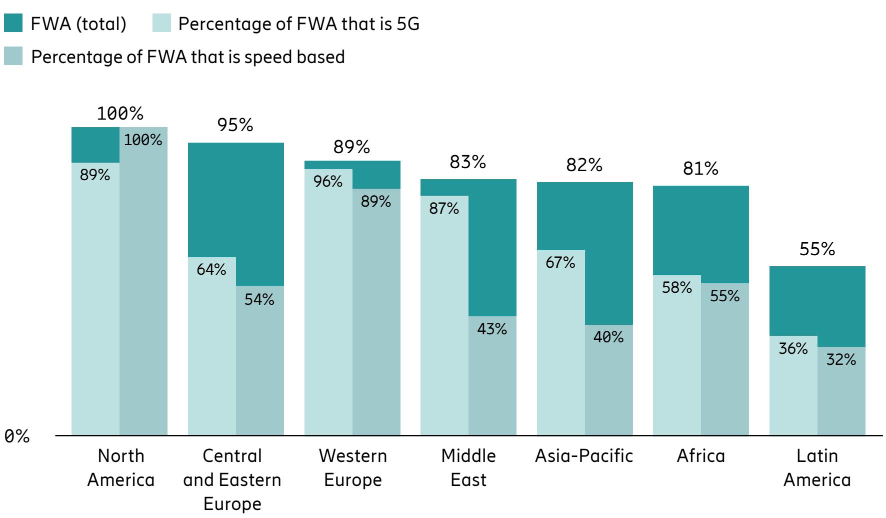


Figure 13: Regional FWA service provider adoption 2026

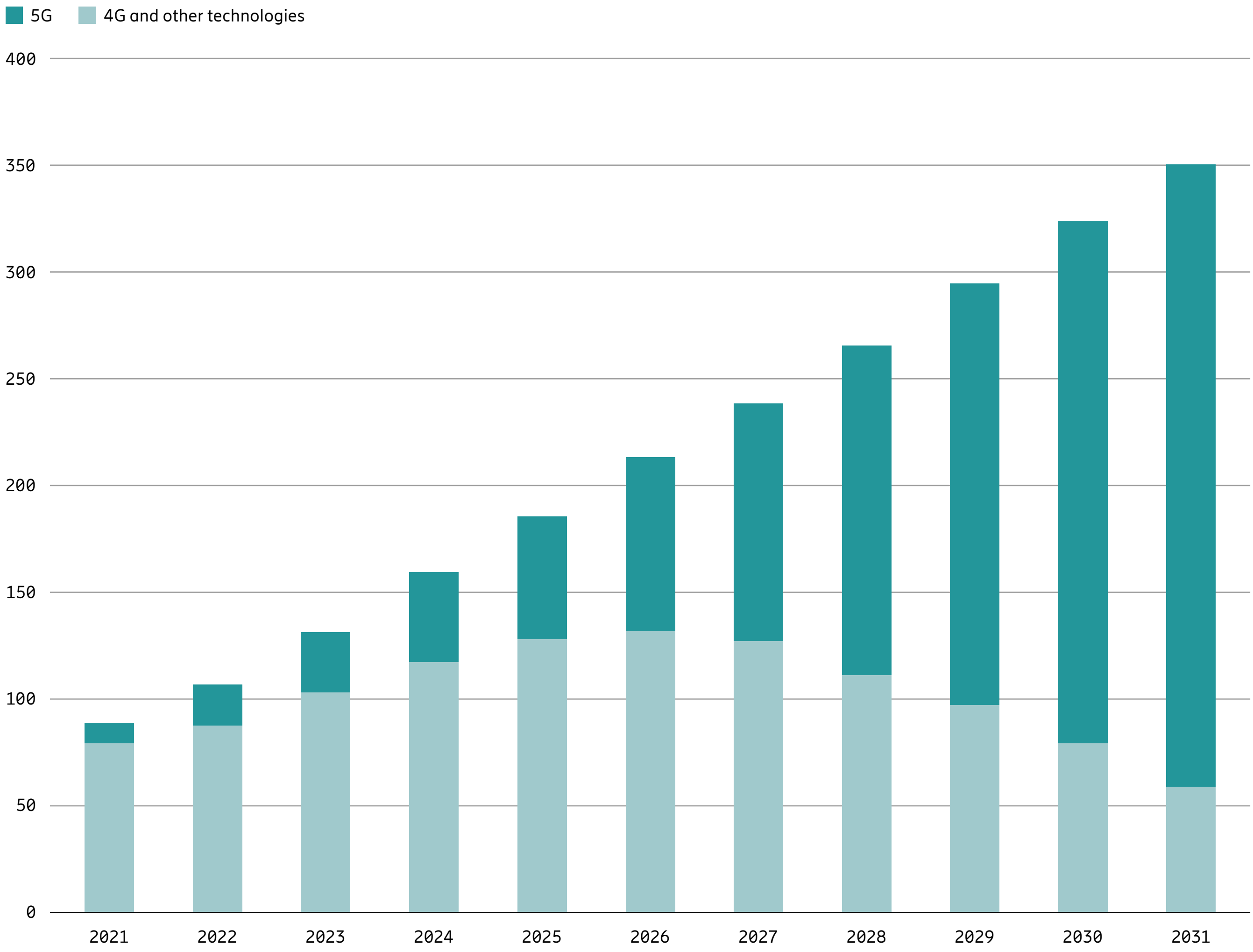


Speed-based FWA tariff plans continue to grow
Speed-based tariff plans are commonly offered for fixed broadband services, such as those delivered over fiber or cable. Consumers understand this type of tariff well, enabling service providers to monetize FWA as a broadband alternative. Speed-based tariff plans are now offered by 57 percent of FWA service providers, up from 51 percent a year ago. The remaining 43 percent offer only volume-based tariff plans (buckets of GB per month). Among those offering 5G FWA services, 70 percent offer speed-based tariff plans.

Regional variations
There are regional variations in how service providers adopt FWA:
- FWA adoption is widespread globally. In six out of seven regions, 81 percent or more of service providers offer FWA.
- In the past year, there has been continuous growth in the number of service providers offering speed-based plans, driven primarily by Western Europe.
- Latin America remains the region with the most untapped potential for FWA.

[1] Ericsson study of 304 service providers, representing around 90 percent of global mobile revenues.

Figure 14: FWA connections (millions)



350 million FWA connections in 2031
Global FWA connections are expected to grow from 185 million at the end of 2025 to 350 million by the end of 2031, representing 17 percent of all fixed broadband connections. Of these 350 million connections, close to 85 percent are expected to be over 5G. 4G FWA connections are predicted to peak in 2026. Considering a global average household size of about four people, 350 million FWA connections equates to approximately 1.4 billion individuals being served by FWA broadband by the end of 2031.

FWA impact on global mobile network data traffic
At the end of 2025, FWA accounted for 28 percent of global mobile network data traffic and is projected to grow by more than 3 times to around 187 EB per month by the end of 2031, representing 36 percent of total mobile network data traffic.

FWA connection advancements

- T-Mobile US closed 2025 with 8.5 million FWA connections, subsequently raising its long-term target to 15 million by 2030.
- AT&T US reported 292,000 FWA net additions in Q1 2026, highlighting strong momentum in its 5G-based offering towards the consumer and business segments.
- In Q1 2026, the three largest US service providers added almost 1 million FWA net add connections, and they have captured the majority of the broadband growth for the past 16 consecutive quarters. As a result, their combined FWA user base stands at over 17 million connections.
- There is robust demand for FWA in India, with the combined number of connections from Jio and Airtel reaching almost 17 million at the end of Q1 2026.

In 2031, around 1.4 billion people globally will be served by FWA broadband.

1.4bn

Progress in differentiated connectivity[2]

- COSMOTE TELEKOM in Greece launched 5G FWA with differentiated connectivity, fueling nearly threefold growth in FWA connections, surpassing 100,000 as of Q1 2026.
- Telia Company has launched FWA offerings based on differentiated connectivity in Estonia and Lithuania, targeting premium connectivity needs.
- In December, Verizon launched a new FWA solution for businesses, delivering superior uplink capacity and SLA-backed performance through 5G standalone and differentiated connectivity.

Fastest-growing FWA markets are highly mature

In an Ericsson global benchmarking study[3] assessing 5G FWA maturity, two key dimensions were evaluated:

- **5G deployment maturity:** Characterized by 5G mid-band population coverage, which delivers the step-change performance needed for a fiber-like FWA experience.
- **FWA monetization maturity:** Refers to the maturity of FWA offerings based on adoption of 5G FWA and speed-based tariff plans.

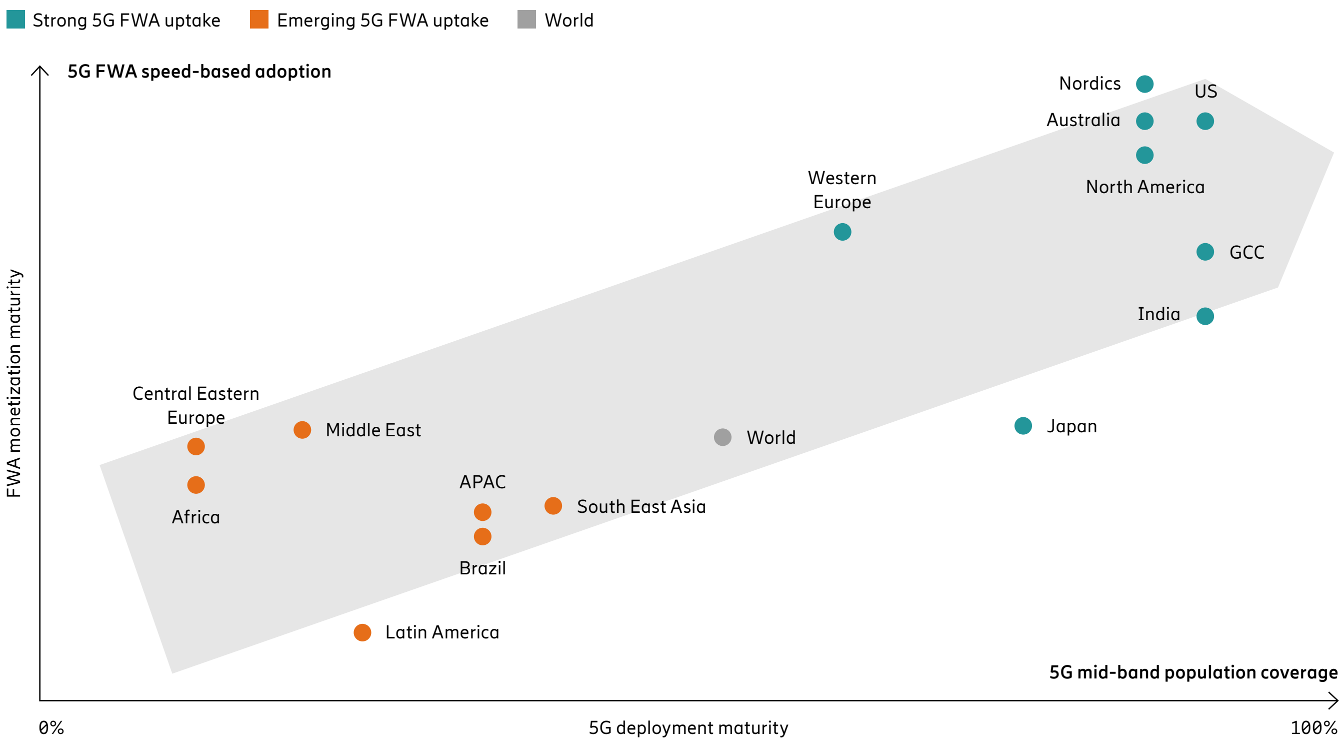
Markets with strong FWA growth consistently excel across both dimensions, while slower-growth regions typically show limited progress in 5G deployment and monetization maturity.

5G FWA uptake is strong in North America, the Nordics, the Gulf Cooperation Council (GCC) countries and parts of Asia, spanning markets with over 95 percent fiber-connected homes to low-ARPU markets like India. By contrast, growth in Latin America, Africa and parts of South East Asia remains limited, despite significant underlying demand and long-term potential.

COSMOTE TELEKOM has seen close to a threefold increase in FWA connections.

3x

Figure 15: Successful 5G FWA markets excel in two dimensions



[2] All FWA service provider data comes from the latest company official quarterly financial reports.
[3] For further details, please see the Ericsson FWA Handbook.

Articles

AI is changing the telecom landscape. Our articles include a discussion on how it is shifting mobile user experiences and behavior, written in collaboration with Qualcomm; the growth in uplink traffic AI is likely to bring about; and how the convergence of AI, cloud and mobile is enabling enterprise transformation. Differentiated connectivity services are another important topic, with further articles touching on the growing number of network slicing services coming to market, and an exploration of a real-world network slicing trial that SoftBank Corp. ran at a major sporting event.

Differentiated connectivity offerings are entering the market at speed, with 84 offerings based on 5G SA network slicing now commercially available.

Page 18

SoftBank ran a network slicing trial at a major sporting event that successfully demonstrated how to serve multiple use cases simultaneously, without impacting general user experience.

Page 20

Uplink growth already outpaces downlink in some networks, with many not currently dimensioned for the shifting traffic patterns brought about by AI applications.

Page 23

With Qualcomm, we explore how shifting mobile experiences, from user-initiated sessions to continuous, "heads-up" engagement with AI and XR will increase demands on networks.

Page 27

AI, cloud and mobile is the foundation for enterprise digital transformation, but many organizations have not yet scaled them, representing an opportunity for service providers.

Page 30

Differentiated connectivity entering the market at speed

The number of commercially available offerings based on 5G standalone (SA) network slicing has surged to 84 – a significant jump from the 65 reported just 6 months ago – signaling that differentiated connectivity is rapidly moving from early adoption to mainstream commercialization.

Key insights

- Growth is broadly distributed across regions, with Europe and Asia-Pacific continuing to lead, consistent with findings from six months ago.
- Ambition is outpacing execution in many markets. Service providers have the intent and, increasingly, the network capability, but gaps in marketing strategy, go-to-market readiness and contextual engagement models remain critical obstacles to scaling.
- Context-driven engagement dramatically outperforms traditional sales channels: In-the-moment, app-integrated offers have been shown to be up to 20 times more effective than conventional outreach.

From 65 to 84: The numbers tell a story of rapid scaling

The previous edition of the Ericsson Mobility Report identified that 65 out of 118 total differentiated connectivity offerings were commercially available. Updated analysis of publicly available information across more than 300 service providers in 134 markets shows that number has risen to 84 out of 151 – equivalent to an annual growth rate of around 58 percent.

The regional distribution of these offerings remains broadly consistent – Europe leads with approximately 41 percent of all commercial offerings globally, followed by Asia-Pacific at around 24 percent. North America contributes approximately 16 percent, with the remainder distributed across the Middle East and Africa, Latin America and North East Asia regions.

The majority of new offerings come from service providers with existing commercial services. However, seven service providers have introduced their first offering(s), alongside their recent launches of 5G SA. Most of these service providers, six out of the seven, are in Europe, while the other is in North East Asia.

There are also 14 new trials and proofs of concept, of which about half are venturing into use cases outside of the existing commercial cases. These include slicing for self-driving trucks on public roads and autonomous drone systems, along with various advanced public safety and defense applications. About 57 percent of these trials are happening in Europe, 29 percent in Asia Pacific and the rest are split between North and Latin America.

Most of the new commercial offerings are found in the B2B segment, but B2C and B2B2C offerings are growing as service providers develop more consumer use cases. The majority of the B2C offerings are boost solutions. While they leverage 5G SA to deliver performance improvement, they are typically too generic to address any specific needs of most consumers or businesses, and mostly become "just another G" type of offering. The exceptions are more targeted offerings – focusing on gaming, live event connectivity, video calling and premium FWA tiers.

Understanding the drivers: Why now?

The number of service providers with commercially deployed 5G SA is now around 90. The evidence points to a market building real and sustained momentum – and the high growth in commercially launched differentiated connectivity offerings is no coincidence. Several converging factors are at work.

Network readiness has crossed a threshold: For several years, 5G SA – the architecture that enables true network slicing and differentiated connectivity – was limited to a small number of early movers. That picture has changed materially. Today, conversations with service providers on the topic of differentiated connectivity have largely shifted from "whether" they will deploy 5G SA, to "when" they will – and what they can offer once they do so. Technology is no longer the gating factor.

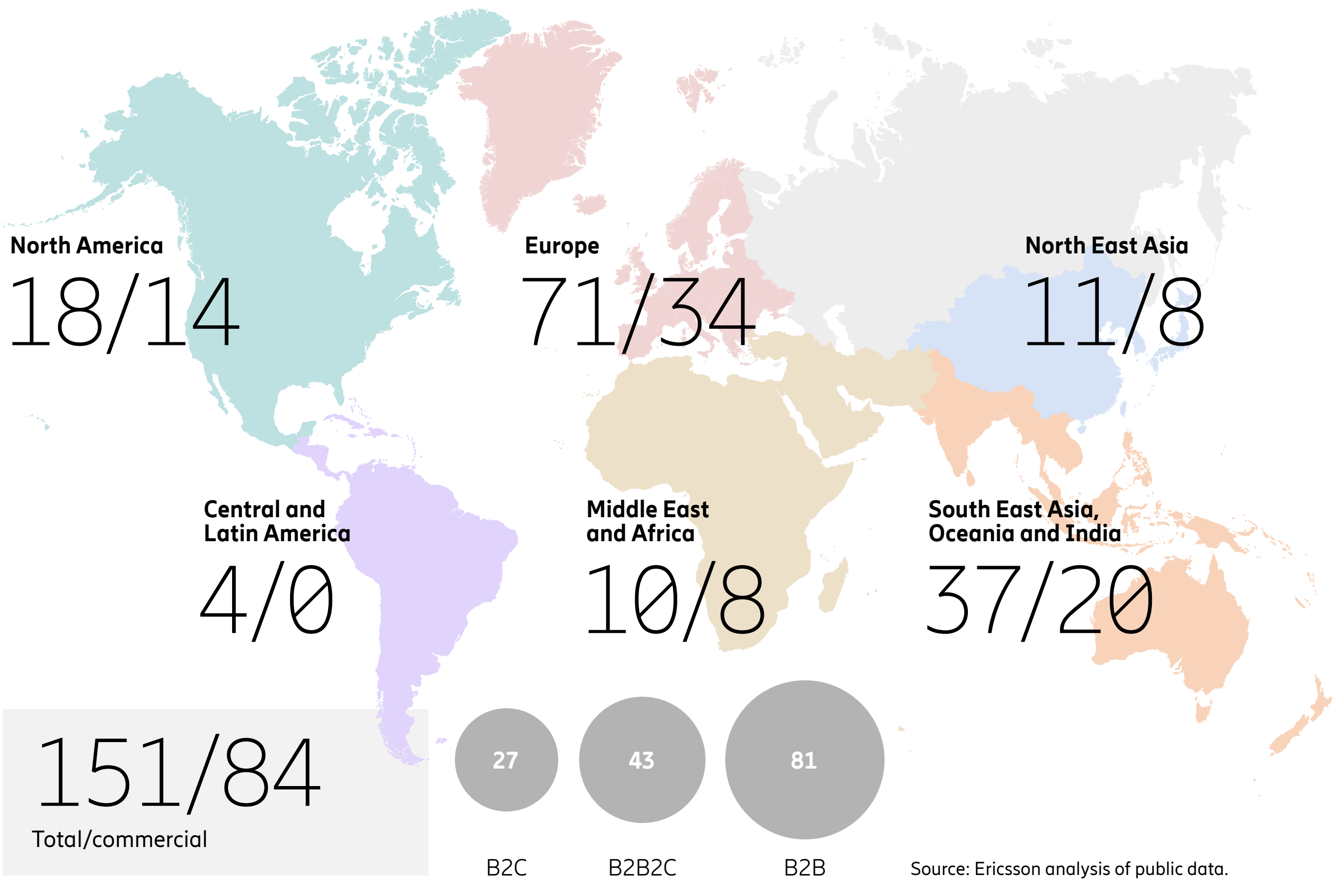
Confidence is spreading through the ecosystem: The service providers that launched commercial services earliest – some as far back as 2022 – have had time to validate their approaches and refine their offerings. Some service providers are now beginning to report tangible results, whether in financial terms or through measurable uptake. Early movers' experiences show that customers are willing to pay for guaranteed performance at key moments, such as during a gaming session or for priority connectivity at a crowded venue. The rest of the market is taking note.

Business model innovation is maturing: The range of approaches in the market – from subscription-based consumer tiers and event-specific boosts, to enterprise SLA-backed services – reflects growing sophistication in how service providers approach monetization of differentiated connectivity services. As mentioned above, now that the network technology is available, focus has shifted toward defining offers for customer segments and working out how to communicate their value.

Commercially available differentiated connectivity offerings have risen from 65 to 84, equivalent to an annual growth rate of 58 percent.

+58%

Figure 16: Global instances of network slicing coverage – total/commercial



Source: Ericsson analysis of public data.

The persistent challenge: Bridging ambition and execution

Despite the encouraging trajectory of uptake, a significant gap remains between the ambition many service providers express and their ability to execute at scale. This pattern repeats consistently in discussions and collaborative engagements with service providers across markets.

In these settings, a familiar dynamic plays out. A service provider articulates a clear ambition: to launch a differentiated gaming offer, provide enterprises with SLA-backed mobile connectivity, or offer real-time connectivity boosts for consumers at live events. The vision is there, but when the conversation turns to execution, important gaps appear.

The marketing strategy may be underdeveloped – a compelling proposition exists on a slide deck, but the customer segmentation, pricing logic and channel strategy have not been worked through. Additionally, technical requirements may not yet be fully aligned with service design – the network capability exists in principle, but the majority of service providers have not updated operational systems in order to provision, monitor and assure the service at scale. Furthermore, the go-to-market assumptions about how customers will discover and adopt the offering often do not hold up under scrutiny.

This reflects the inherent complexity of bringing a new category of connectivity service to market. Differentiated connectivity requires alignment across the entire organization, spanning technology, business and customer experience functions in ways that traditional service plans did not. Getting that alignment right takes time, cross-functional effort and a willingness to work through the details.

The right message at the right moment

Of all the execution challenges, the question of how to reach customers with the right offer at the right moment remains the most underestimated. Evidence consistently shows that connectivity performance is most salient – and most valued – when it is about to matter, with app-integrated offers having shown to be up to 20 times more effective than any other marketing channel. A user preparing to start a gaming session, join a critical video call, or stream a live event in a crowded venue is in exactly the right state of mind to respond to a guaranteed performance offer.

Yet, very few service providers are taking advantage of this. Most offerings are still marketed in broadly traditional ways, with the only notable shift being the use of the word "guarantee" alongside a connectivity performance metric.

That is not enough. In a world where consumers are flooded with messages across social media and digital platforms, a value proposition must be very clear and concise. If a user has to translate a performance metric into personal relevance and value, the moment – and the sale – is likely lost. The most effective messaging translates technical capabilities into experience outcomes: Guaranteeing a minimum 3 or 4 Mbit/s may be what makes a video call reliable, but what resonates with the user is the assurance that their camera stays on for the entire call. Messaging should not promise "priority QoS," but rather "your game won't lag, even in a packed arena." Not "guaranteed bandwidth," but "your video call stays sharp, wherever you are."

The service providers who find the language for these benefits that resonates clearly with consumers are the ones building the most loyal and engaged customer bases.

Real-world slicing that delivers performance when it matters most

When SoftBank deployed multiple network slices in a real-world trial at the 2026 Formula 1 Japanese Grand Prix, the main focus was on enhancing user experience while enabling multiple use cases to be delivered simultaneously, each with connectivity optimized for its specific requirements.

Key insights

- To deliver differentiated service quality while maintaining a seamless connectivity experience for general attendees, SoftBank's approach at Suzuka Circuit was based on a simple principle: First, build sufficient network headroom, then, apply intelligent control.
- Continuous granular monitoring and closed-loop automation proved essential for maintaining service quality under changing traffic conditions.
- The results highlighted the ability to shift mobile connectivity – from maximizing speed and capacity – toward delivering connectivity optimized for the requirements of each service and user group.

At the 2026 Formula 1 Japanese Grand Prix at Suzuka Circuit, SoftBank ran a real-world trial that deployed five network slices over a shared 5G standalone (SA) infrastructure, with multiple use cases running simultaneously. To support this, SoftBank increased the network capacity, resulting in improved spectral efficiency through Massive Multiple-Input Multiple-Output (MIMO) and the addition of millimeter-wave capacity. Combined with software-based controls, including network slicing and per-minute optimization via closed-loop automation, this allowed quality to be managed at a granular level. Together, these measures confirmed that quality for specific use cases can be maintained while preserving a seamless connectivity experience for general attendees.

The connectivity challenge

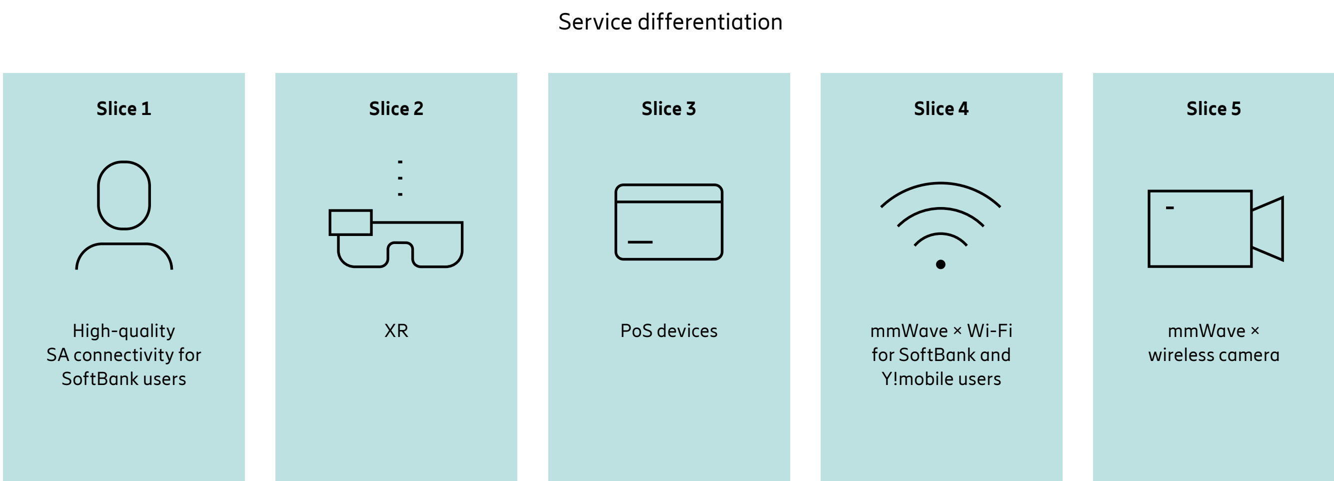
This spring, more than 315,000 people passed through the Suzuka Circuit's gates over three days. They streamed videos, posted to social media, and tapped their phones to pay for food and merchandise – all at once. Behind the scenes, broadcast crews were also transmitting high-resolution footage, while operations staff coordinated logistics across the venue.

In this kind of scenario, different types of communication, each with different quality requirements, are competing for the same radio spectrum in the same physical space. Speed alone isn't the answer. The real challenge is figuring out how to deliver the right quality for each type of service and how to maintain that quality when the network gets congested.

SoftBank

This article was written in collaboration with SoftBank Corp. (SoftBank), a leading communications and technology company operating one of Japan's most advanced 5G networks.

Figure 17: SoftBank's differentiated connectivity service offerings



There is also a tension at the heart of this challenge: Allocating resources for high-value use cases risks degrading the experience for ordinary attendees. Serving both groups well requires more than just slicing the traffic. It means first building enough overall capacity, then applying control. SoftBank used this year's Suzuka Circuit event to put that approach to the test.

What was tested

SoftBank implemented a 5G SA-based network slicing trial, constructing five logical networks, or slices, on a shared physical infrastructure while running multiple use cases in parallel, each assigned different quality parameters.

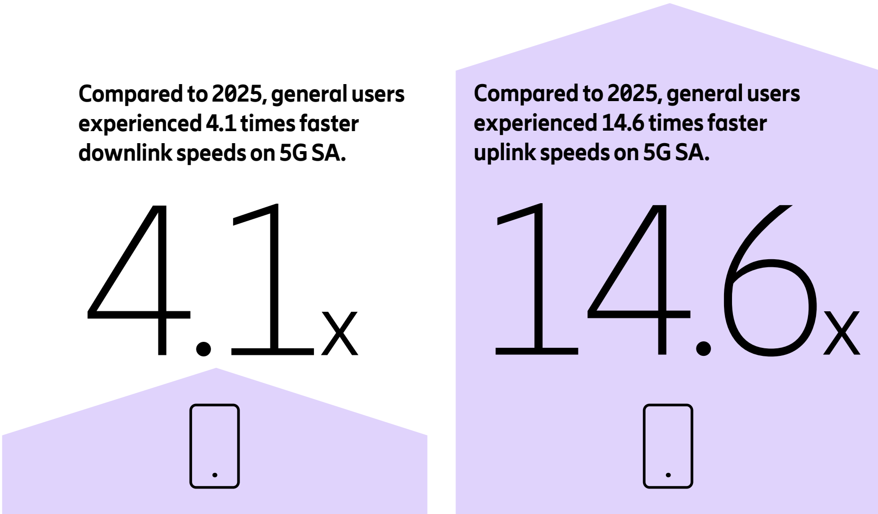
The slice architecture was built on a foundation of increased network capacity. High-capacity Massive MIMO deployment more than doubled the number of cells, significantly improving both downlink and uplink capacity through higher-order antenna configurations and multi-band operations. In addition, the early adoption of the latest features – such as throughput control, low-latency optimization, and millimeter-wave coordination – further enhanced performance and capacity. The underlying design philosophy was straightforward: First, raise the floor for everyone, then apply intelligent control. The intention of building headroom into the network before carving out slices was to maintain a seamless experience for general users, even when differentiated quality control was applied to certain portions of traffic.

What the validation revealed

Importantly, and aligned with the design philosophy, was the validation that premium services and general connectivity services can coexist. The combination of Massive MIMO-driven capacity expansion with network slicing made it possible to ensure quality for specific use cases without affecting general attendees' connectivity. In fact, in this scenario there were clear improvements compared with the same event in 2025. For general attendees, based on average performance over the weekend, 5G SA customers experienced a performance uplift of 4 times in the downlink and more than 14 times in the uplink, while for non-standalone (NSA) customers this was around 1.5 times and 6 times respectively.

Beyond the general users, the specific performance requirements of the multiple slices running in parallel were all fulfilled with the needed connectivity. For payment slices, what matters is not speed, but responsiveness. For QR code payments and point-of-sale (PoS) terminals, high throughput is not a strict requirement.

Figure 18: Relative performance improvements in 2026 for general attendees on 5G SA compared to 2025



What these services need is a connectivity experience that is immediate and uninterrupted even under congestion. From a network perspective, that means low latency and stable sessions, rather than raw bandwidth. During the validation, terminals assigned to the payment slice maintained stable connectivity even as the congestion in the surrounding environment grew. Throughout the event, even during periods of congestion, there were no reports of service unavailability. This confirmed in a live event setting what is theoretically well understood: Different use cases, that call for different definitions of what "good connectivity" actually means, can be delivered.

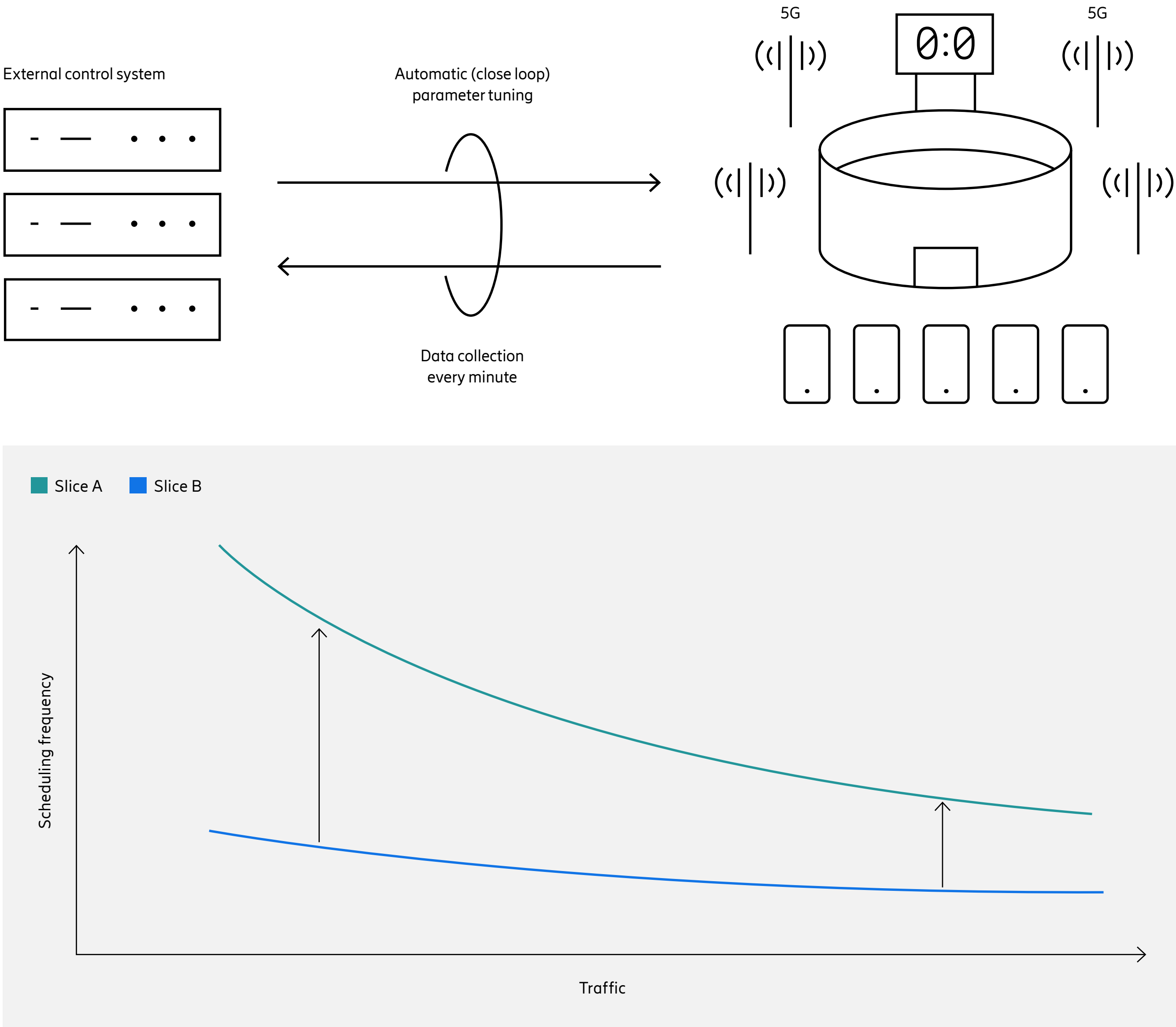
For broadcast, millimeter-wave delivers the capacity needed in the uplink. Transmitting broadcast-quality footage from a live venue has very different requirements from, for example, a fan uploading a short clip. Continuous delivery of high-resolution, low-compression video demands wide, stable bandwidth in the uplink. The trial confirmed that millimeter-wave spectrum is well-suited to this role, and it was used for the live broadcasting of four programs. Beyond the measured performance itself, the setup also demonstrated practical operational value for live production teams, reinforcing confidence in wireless broadcasting workflows during the event.

The need for granular monitoring of SLAs

A less obvious but important finding had to do with the granularity of monitoring. In traditional operations, KPIs are typically collected at 15-minute intervals. But traffic at an event venue shifts quickly, driven by crowd movement, purchase surges, and broadcast schedules. At 15-minute granularity, a temporary SLA breach on a given slice could go undetected until it has already had an impact. In some cases, by the time an automated optimization would have triggered, the moment and the event itself will have already passed. During this validation, per-minute observability was established, providing greater visibility into each slice's status and enabling high-speed automated adjustment of radio parameters in response. The conclusion was that per-slice SLA management only becomes operationally meaningful once monitoring granularity is fine enough to keep pace with actual network behavior. Introducing slicing without updating how the network is monitored leaves a practical ceiling on how precisely quality can actually be maintained.

Figure 19 illustrates how intent-based service differentiation is used on network slices to ensure SLA fulfilment. In this example, flexible control is applied across Slice A and Slice B, each with different SLA requirements during different traffic conditions (normal and high traffic). Slice A has a more demanding SLA than Slice B. Under normal traffic conditions, Slice A has more scheduling frequency than Slice B, and more bandwidth. As traffic increases due to congestion during the event, the external control system optimizes the network automatically to fulfil the SLA for high-traffic conditions. As a result, the more demanding SLA for Slice A can be fulfilled, while still delivering on the SLA for Slice B.

Figure 19: Intent-based service differentiation



Applying the learnings to commercial operations

"Not having to think about connectivity" is increasingly what attendees at large events simply expect. This validation showed, in concrete terms, what it takes to deliver that experience. Serving attendees seeking a premium experience alongside those who simply expect reliable connectivity requires not only expanded physical capacity, but also intelligent control technologies – neither alone is sufficient. That's one of the key lessons from the Suzuka Circuit trial. More broadly, connectivity design at large-scale events is not only a matter of engineering, but also of determining what kind of experience should be delivered, to whom, and under what operational structure. In that sense, this work goes beyond a purely technical evaluation and provides insights into future network design and operational approaches for large-scale events.

Beyond speed: Toward quality-based connectivity

For many years, mobile network evolution was primarily discussed in terms of higher speeds and greater capacity. However, as networks become increasingly tied to business outcomes and user experiences, service quality optimization is becoming just as important as raw throughput. The Suzuka Circuit validation demonstrated that different services can require fundamentally different definitions of "good connectivity." In some cases, the requirement is extremely high uplink throughput, while in others it is low latency, stable sessions, or predictable responsiveness under congestion.

From this perspective, network slicing is not simply about traffic separation. It represents a shift toward intent-driven connectivity, where network behavior can be adapted according to the specific requirements of each service or user group. While many of these capabilities have been discussed since the early stages of 5G, large-scale real-world validation has remained limited. The Suzuka Circuit trial provided an opportunity to validate multiple technologies together under live operational conditions, rather than as isolated technical functions.

SoftBank will continue applying these insights across broader real-world environments as it evolves its network to deliver differentiated connectivity experiences and create new service value.

The rise of uplink demand in AI-driven mobile networks

Uplink is becoming the new bottleneck in mobile networks, driven by AI-powered and user-generated content. As traffic patterns shift, networks designed for downlink dominance must evolve to support a more uplink-intensive future.

Key insights

- AI-driven applications – spanning smartphones, AI/AR smartglasses and autonomous vehicles – are inherently uplink heavy, generating continuous data streams that challenge traditional downlink-dominated traffic patterns.
- Uplink traffic growth is already outpacing downlink for many service providers, with field measurements indicating capacity constraints under peak load. Scenario modeling suggests that additional AI traffic will result in uplink traffic being three times higher in 2031 compared to 2025.
- Current networks are not dimensioned for sustained uplink demand, calling for a step change in design – from 5G software and hardware enhancements in the near term to 6G-native uplink innovations over the longer horizon.

AI is rapidly enabling new use cases and accelerating the design of new applications and devices. This enables hyper-personalization that increases app engagement and gives rise to an entirely new class of fully autonomous, agentic AI systems. As the adoption of new use cases increases, network performance requirements rise significantly. While these services will increase both downlink and uplink traffic, the impact is particularly pronounced on the uplink, reshaping network performance and design priorities.

Uplink traffic on the rise

Mobile networks have historically been designed and dimensioned for downlink dominated traffic, driven mainly by consumption of content such as video streaming and web browsing. Analysis of mobile network traffic growth across 55 service providers globally in 2025,[1] comparing downlink and uplink growth rates at network level, shows a clear and consistent pattern – uplink traffic is growing faster than downlink for most service providers and, in many cases, significantly faster:

- 43 out of 55 service providers experienced a higher uplink growth rate than downlink
- 17 out of 55 service providers experienced a more than 1.5 times higher uplink growth rate than downlink

While downlink traffic still dominates in terms of absolute volume, shifts in traffic patterns are becoming evident, with increasing uplink traffic. Naturally, uptake of new devices and applications that drive uplink traffic occurs at different speeds across markets. In areas with fast adoption and heavy usage, uplink capacity will be strained sooner, requiring urgent measures to meet the increased demand.

Near term: AI-native smartphones and changes in user behavior drive uplink growth

In the near term, large-scale uplink traffic growth is driven primarily by smartphone applications,[2] as evolving smartphone user behavior contributes to an increase in uplink demand. As hundreds of millions of 4G devices are replaced by 5G smartphones each year, the base of high-resolution devices (1080p and higher) continues to grow. Because a typical smartphone HD (720–1080p) video call generates about 1–3 Mbps per uplink stream, each upgrade effectively raises the potential uplink load, leading to a steady increase in overall uplink traffic.

User-generated content – especially short-form clips and live streaming from smartphones – together with smartphone-to-cloud storage is also driving increased uplink usage. In addition, digital-native demographics continue to grow, with more people spending additional time on their smartphones, amplifying these uplink effects when averaged across the global population.

Mid term: AI/AR smartglasses and agentic AI systems drive additional uplink growth

The AI and AR smartglasses market is still in an early phase, but it is growing rapidly. Global shipments reached around 10 million units in 2025, and multiple analyst firms project strong double-digit growth over the coming years. Services used with these types of devices can put high requirements on the network uplink performance. Depending on the specific use case, uplink throughput can range from 1 Mbps to 10 Mbps. As camera feed, audio and sensor data are continuously streamed to cloud AI for real-time processing, the download-to-upload ratio is typically 1:8 (heavily uplink-dominated). However, because AI/AR smartglasses are power constrained, device original equipment manufacturers (OEMs) often employ an aggressive duty-cycling schedule to extend operating time, which increases the instantaneous uplink requirement even further.

[1] Based on network traffic measurements conducted by Ericsson.
[2] Note: The impact from FWA traffic is not addressed in this article.

Long term: Autonomous vehicles, AI agents and drones will drive future uplink growth

A single 5G network can support a wide range of autonomous vehicle use cases, from (near) real-time training data collection and autonomous driving telemetry to remote assistance, future vehicle-to-everything (V2X) safety messaging and vehicle-as-a-sensor use cases:

- Autonomous driving telemetry: The telemetry requires intermittent 1–10 Mbps uplink, running almost continuously during operation but without hard real-time latency requirements, while safety-critical functions remain local in the vehicle. Today's telemetry consists mainly of data such as basic kinematics and position data, operational status data, and surrounding environment data and perception metadata.
- Remote assistance: Live video uplink of several Mbps with less than 100 ms latency and extremely high reliability, but used for less than 1 percent of the operational time.
- V2X and vehicle-as-a-sensor: Vehicles in the future will be able to form a distributed set of sensors, which will be used for many purposes, such as providing safety messaging and spatial data collection. This will drive much higher uplink and downlink capacity and reliability requirements.

For commercial drones, the network requirements are already demanding, as autonomous flight typically requires around 100 kbps of resilient, low-latency downlink throughput for command-and-control, while telemetry and live HD video streaming during flight can generate several Mbps of uplink traffic per camera. Similar patterns appear in other enterprise use cases, including AI/AR-assisted field services, 5G-native laptops and a growing number of intelligent devices.

Each autonomous or AI-enabled unit effectively becomes an uplink-intensive endpoint. As AI systems strive to understand and interact with the physical world, the network itself turns into a critical data source. Positioning, timing and radio-based sensing information can be used to infer rich environmental context – from spatial geometry and object motion to situational dynamics. This further reinforces the need for robust, high-performing uplink connectivity.

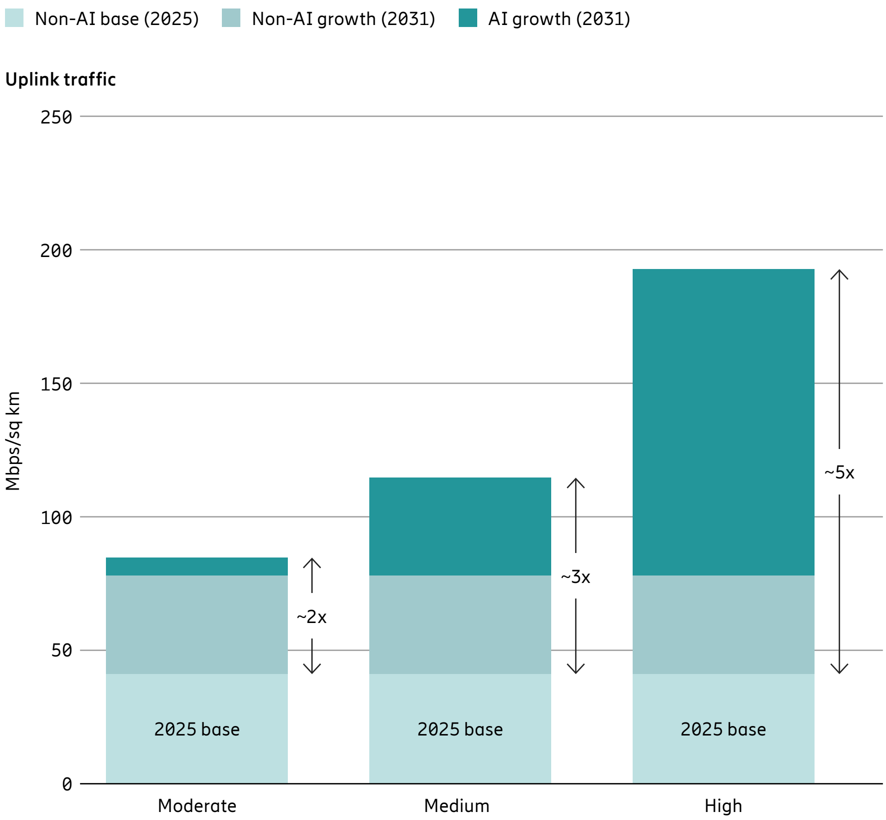
Autonomous systems may evolve into an entirely new use-case class. Autonomous software AI agents are typically almost always on, continuously streaming information about their physical surroundings in the uplink. This can enable new types of services, such as continuous "recording of my life," real-time physical security perimeters, or spatial advertisement opportunities. Data rates vary by application, from a few hundred kbps to several Mbps, but importantly, this creates an always-on uplink background load that current networks are not dimensioned for.

Autonomous droids can also be considered part of the agentic use-case category, as they execute tasks and manipulate the physical environment in a similar way to software agents in the digital domain. The droids' spatial intelligence, together with other tasks requiring compute offload, is expected to generate uplink traffic of several Mbps, while downlink traffic for control commands is often below 1 Mbps.

Scenario modeling: AI traffic impact on uplink growth

Our current forecast projects that global mobile data traffic will approximately double between 2025 and 2031. To assess the potential impact of new AI-related traffic on uplink growth in a geographical area, three scenarios were simulated with different assumptions on AI-device penetration and application usage, based on a typical urban subscriber density of 1,155 subscribers per sq km. These scenarios consider a mix of emerging AI-enabled devices, including AI/AR smartglasses, AI cloud gaming, AI companions and AI-enabled connected cameras for different use cases. The analysis shows that increasing adoption of AI-driven applications can significantly change traffic composition and accelerate uplink growth in mobile networks.

Figure 20: AI traffic impact on uplink growth



Medium scenario

Device	Subscriber penetration	Usage
	43%	AI through phone 10 mins per day
	7%	AI/AR glasses 28 mins per day
	2%	AI cloud gaming 20 mins per day
	1%	AI companions 60 mins per day
	80 devices per sq km	AI cameras 20 mins per day

Note: % here refers to AI device subscriber penetration among the population in an urban area, with a subscriber density of 1,155 subscribers per sq km.

The three scenarios analyzed were:

- Moderate: AI usage is limited and primarily smartphone-based, with low penetration of AI/AR smartglasses, so the additional AI traffic remains small compared with the expected baseline growth.
- Medium: AI usage through smartphones has reached substantial penetration, AI/AR smartglasses are gaining notable traction, and AI cloud gaming and AI companion usage have begun. The additional AI traffic results in uplink traffic being 3 times higher in 2031 than in 2025.
- High: AI usage is pervasive across smartphones, AI/AR smartglasses have significant penetration, and AI cloud gaming and AI companion usage show strong uptake. The additional AI traffic results in uplink traffic being five times higher in 2031 than in 2025.

Depending on the pace of AI application adoption, uplink traffic could increase significantly compared with the 2025 baseline. This growth is expected to be driven not only by consumer usage, but also by industrial applications. In the medium adoption scenario, the analysis assumes that 43 percent of subscribers use an AI assistant on smartphones, 7 percent use the same application on smartglasses, 2 percent engage in AI-assisted cloud gaming, and 1 percent interact with AI companions. In addition, the scenario assumes 80 AI-assisted connected industrial devices per sq km, including AI-enhanced security cameras, autonomous vehicles and other similar devices.

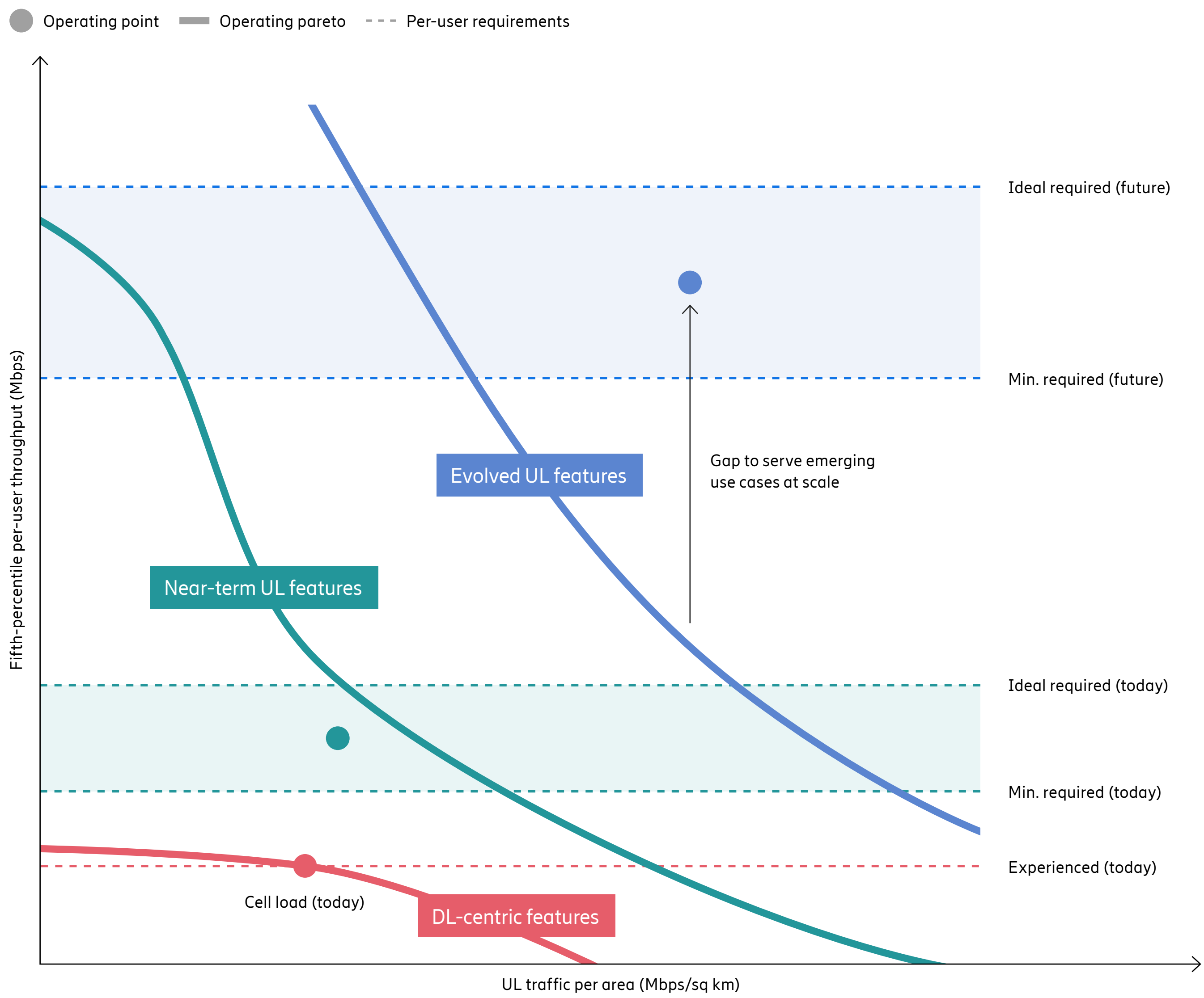
AI-driven use cases are inherently more uplink-intensive, driven by real-time interaction, video capture and continuous data generation. To secure a good user experience, the analysis assumes an average uplink throughput requirement of 1.5 Mbps across the applications, with a corresponding downlink throughput requirement of 0.5 Mbps. The actual requirements for delivering an ideal user experience are likely to be considerably higher for many demanding use cases.

While uplink traffic is expected to grow faster than downlink traffic, mobile networks are still expected to remain downlink-dominated. In the high uplink traffic growth scenario, AI-supported applications account for 20 percent of the total traffic increase, whereas in the medium uplink traffic growth scenario they are expected to account for 8 percent.

Uplink performance is not scaling with new services

The expected increase in uplink traffic over the coming years will have a profound impact on network dimensioning, deployment and operations. Networks are typically dimensioned for the fifth-percentile outage users, that is, the minimum performance needed to ensure an adequate or better experience for 95 percent of users. This is captured in the relationship between uplink traffic per area (Mbps/sq km) and the fifth-percentile per-user throughput (Mbps).

Figure 21: Uplink capacity lags expected traffic growth



The red operating point (see Figure 21) reflects today's reality for many service providers around the world. At current uplink traffic loads, users at the cell edge experience very low uplink throughput, showing that the minimum required uplink performance is constrained by both coverage and capacity. Already available near-term uplink-enhancing features, for example, 5G standalone (SA) and uplink optimized primary cell (PCell) selection, can move performance toward the green curve (where networks ideally should be today), but a significant gap remains when future demand is considered.

Even with uplink improvements, such as advanced multi-antenna techniques (FDD MU-MIMO), coordinated uplink transmission between sites, (inter-site UL CoMP) and wider low-band spectrum, today's (and near-term) network configurations will still not meet minimum – or ideal – per-user uplink throughput targets at scale in the future. This is represented by the blue operating curve in Figure 21 and the gap to serve emerging use cases at scale. Overall, the figure highlights a structural imbalance, demonstrating that uplink capacity is not keeping pace with expected traffic growth and service requirements. Without substantial increases in uplink capabilities and more efficient resource utilization, service providers will struggle to deliver a consistent user experience for new emerging use cases.

Evolving the network for future demands

The rise of AI-native, sensor-rich and immersive applications is pushing mobile networks beyond their roots as content-delivery platforms into intelligent networks. However, networks optimized for downlink-centric streaming are poorly aligned with devices that continuously upload sensor, video and telemetry data for cloud and edge processing. This shift places uplink, rather than downlink, as a key bottleneck that must be addressed in future network evolution.[3]

Service providers can start evolving by maximizing existing network assets through software-driven uplink enhancements, extracting immediate gains in both capacity and coverage without requiring major hardware changes.

The next step is targeted radio evolution to structurally improve uplink link budgets and capacity. Deploying advanced frequency division duplex (FDD) radios with higher receive diversity (for example, 8RX), adding new FDD bands, and leveraging Massive MIMO and advanced antenna systems can materially boost uplink coverage and throughput. These upgrades are particularly important in mid- and low-band spectrum, where uplink performance is most constrained, significantly boosting overall network capacity. In parallel, service providers can prioritize solutions that explicitly enhance uplink gain, ensuring that radio investments are aligned with the emerging asymmetry in traffic demand.

Beyond radio upgrades, service providers can increase network density and spectrum availability to sustain long-term growth. Adding macro and indoor sites, refarming existing spectrum, and introducing new bands will be critical to scale uplink capacity per area unit.

Embedded AI is also becoming indispensable in the RAN, as telco-grade AI models outperform the highly optimized traditional algorithms. There are clear gains in terms of spectrum efficiency and network capacity, in both uplink and downlink. Embedding AI-driven software is already providing clear benefits for service providers in terms of performance while providing a foundation for AI-native systems.

Looking further ahead, 6G capabilities, such as uplink/downlink decoupling and contention-based uplink access, will enable more flexible and efficient resource utilization, allowing networks to dynamically adapt to uplink-heavy traffic patterns and support next-generation, real-time applications at scale.

New monetization models for uplink-centric connectivity

Network evolution must be accompanied by new monetization models. Differentiated connectivity enables clearly defined performance tiers for uplink-intensive services, each associated with its own service-level agreement (SLA) and price point. Rather than relying on best-effort uplink capacity, these models make reliability and predictability monetizable attributes.

Premium differentiated services are designed and priced to ensure sustainable delivery of assured outcomes. This includes provisioning capacity where needed and applying prioritization selectively, particularly in contention-driven scenarios where performance can be meaningfully improved. By focusing on situations where network intelligence can add real value, differentiated connectivity delivers confidence and fairness across the service experience for all users.

With 5G SA and network APIs, applications and automated systems can request and be billed for differentiated uplink performance in real time. This supports event-based premiums for guaranteed uplink performance during peak demand, continuous assured tiers for services requiring consistent performance, and API-driven usage models embedded directly into applications. Together, these approaches establish uplink connectivity as a distinct, outcome-based value proposition and provide a scalable foundation for monetizing uplink-centric and AI-driven services.

[3] Ericsson, Future Network Architecture 2026.

The evolution of AI-enabled XR in mobile networks

AI is expanding into mobile experiences, with smartglasses and other wearables emerging as new complementary user interfaces that extend digital interactions. 5G already provides the capabilities needed for early AI and XR services, while 6G is being designed to scale data-intensive and AI-driven experiences as uptake grows.

Key insights

- While mobile interactions today are largely smartphone-based and user-initiated, "heads-up" extensions enabled by smartglasses and wearables are expected to become more common. These experiences enable continuous, AI-driven interactions and increase demands on mobile networks.
- Use cases such as "see-what-I-see" sharing and multi-modal AI assistants are expected to drive an increase in uplink traffic over time.
- Cellular AR can already be enabled using 5G-connected devices, while 6G is expected to efficiently scale AI-driven XR as adoption grows.

From user-initiated interactions to continuous, AI-driven experiences
Mobile user experiences have traditionally involved opening an app GUI on a smartphone, performing specific actions, consuming content and then disengaging. AI is increasingly acting as an intermediary between users and digital services, enabling more natural, continuous interactions through voice, vision and gestures. Over time, AI has the potential to become an integral part of user interfaces, particularly as smartphones are complemented by smartglasses and other wearables that support "heads-up" experiences. In this model, agentic AI systems can understand context and intent, and coordinate actions across multiple user devices, supported jointly by cloud or edge compute resources.

Emerging inflection points in consumer XR adoption
Consumer XR adoption is at an early stage, but momentum is building as market scale, device readiness, and AI capabilities begin to align. Smartglasses account for a growing share of XR shipments, driven by sleeker form factors, integrated displays, advances in optical technologies and multi-hour battery life.

AR is emerging as an everyday companion wearable within a multi-device smartphone ecosystem. In the near term, AR devices are typically wirelessly tethered to a smartphone or compute puck, while longer-term evolution includes standalone cellular-enabled glasses. Form-factor constraints are expected to limit antenna configurations, while interoperability with other connected wearables can augment connectivity and capability.

Advances in multimodal and generative AI enable persistent, context-aware agents that see, hear and reason over time, as well as increasing the utility of consumer AR devices. However, adoption will also depend on design and consumer expectations in relation to always-available sensing.

Consumer AI and AR use cases
Unlike traditional mobile applications, AI-driven XR experiences are characterized by larger uplink data generation as AI agents gather data while operating across devices. Application behavior is shaped by sampled sensing – varying with capture settings and user intent – and by opportunistic data transmission. To reduce radio energy consumption, data is often transmitted or received in short bursts using power-optimized mechanisms such as discontinuous transmission and reception via sleep-wake cycles, rather than a continuous stream. As a result, instantaneous uplink rates depend on available network capacity rather than fixed data rates.

Over time, even moderate daily usage can accumulate into substantial data volumes. For example, an AI recall application[1] capturing a few compressed frames per second (around 1–3 FPS at 720p) for one hour a day can generate as much as tens of gigabytes of uplink data per month, depending on compression efficiency, frame encoding and data retention policies.

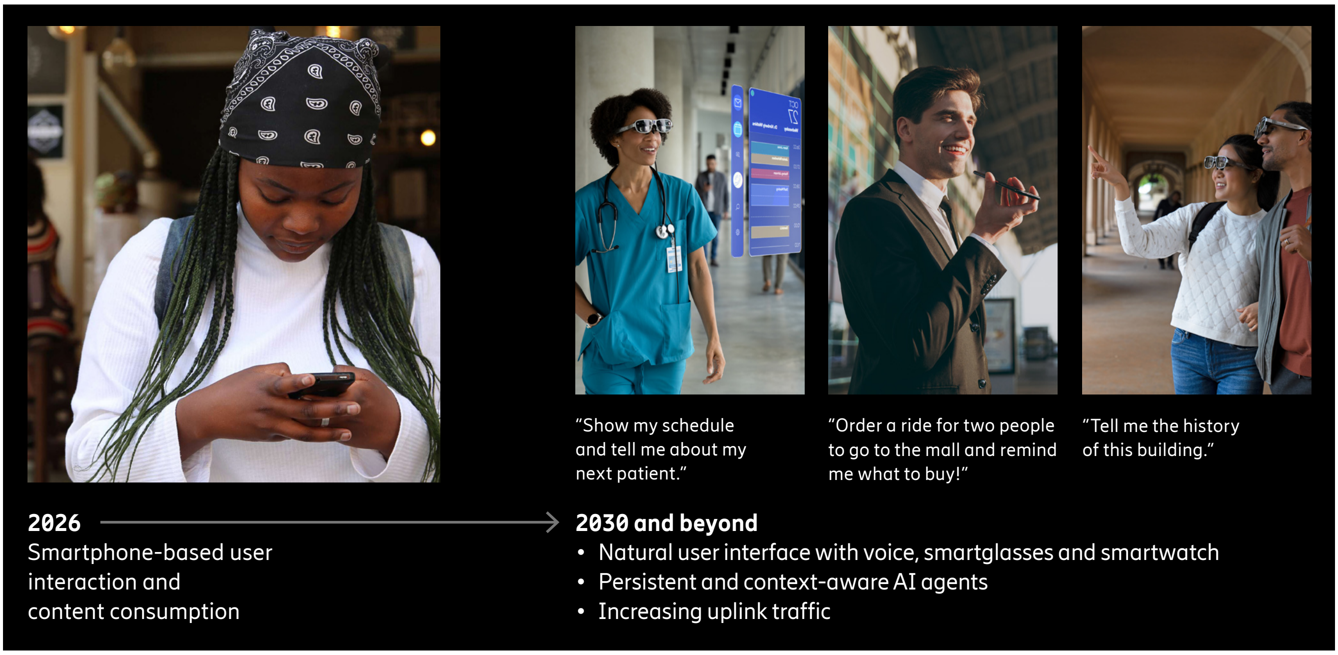
This article was written in collaboration with Qualcomm Technologies, Inc., a leading technology company that innovates to deliver intelligent computing everywhere.

Consumers are ready and waiting to adopt AR applications
AR applications that have demonstrated consumer interest, and may evolve into mainstream experiences, include:

- Turn-by-turn navigation – which involves smartglasses intermittently capturing location data and compressed video at a few Mbps (10–15 FPS, 480–1080p resolution) in the uplink, and receiving AR guidance overlays in the downlink.
- "See-what-I-see" sharing – which enables first-person audio and video streaming during activities such as sports, concerts or other recreational activities. Typical consumer implementations require a few Mbps, assuming 480–720p video at low frame rates and power-optimized modes. More demanding use cases – such as higher frame rates, higher resolution, creator-focused experiences or future higher fidelity implementations – may require rates of 10 Mbps or higher.

[1] AI agent that stores user experiences, enabling it to search, identify people/objects, replay moments and provide contextual reminders over time.

Figure 22: Changing consumer behaviors



- Live AI conversations and avatar-based communication are evolving toward real-time 3D representations of speakers, objects and environments. While today's avatar-driven interactions tolerate standard voice/video call latencies, richer 3D communication is governed by motion-to-render-to-photon latency. With visual compute and network transport consuming much of that budget, the wireless link should deliver around 30 ms or less to ensure smooth, natural interactions.
- Interactive shopping – which allows users to visualize products in different scenarios or try on clothing digitally, with uplink traffic consisting of intermittent image or video capture and downlink traffic dominated by rendered assets, textures and overlays.

Today, uplink data rates for these applications are typically a few Mbps, reflecting current device capabilities, compression efficiency and the practical constraints of today's networks, including varying capacity and coverage. As rollout of more capable 5G standalone networks accelerates and AR adoption broadens alongside improving device capabilities, richer applications are expected to emerge, contributing progressively to overall uplink traffic growth in mobile networks. From a network dimensioning perspective, even a representative uplink demand of 10 Mbps per user with around 30 ms latency can significantly impact cell capacity; for example, in a dense urban environment with 100 MHz of FR1 spectrum, typical TDD deployments, and a high proportion of indoor users, fewer than 5 simultaneous users per cell could be supported at this performance level.

Enterprise and industrial AR use cases
There is growing interest in XR for enterprise and industrial environments, where mobility, reliability, security and deterministic performance are critical. In factories, warehouses, construction sites and large indoor/outdoor facilities, mobile private networks offer clear advantages over Wi-Fi in terms of coverage, scalability and predictable quality of service (QoS) – especially for latency and jitter-sensitive AR workloads.

In the near term, we expect AR devices in industrial settings to be paired with a cellular-capable companion compute device for mobility and coverage, with architectures potentially evolving toward more standalone cellular-enabled devices over time. Key use cases include:

- Remote assistance and hands-free operations, where field technicians receive step-by-step AR overlays aligned with the equipment in the downlink while a remote expert or AI assistant remains engaged by "seeing what the technician sees" via uplink video.
- Upskilling and training, where manufacturing workers on complex assembly lines use AR guidance and real-time feedback delivered in the downlink, supported by uplink video and sensor data capturing actions and task execution.
- Enterprise and holographic collaboration, where distributed teams interact with shared, photorealistic 3D models and realistic avatars with the downlink delivering rendered viewpoints and the uplink carrying geometry, pose and interaction updates.

These industrial use cases may require uplink data rates of 1–25 Mbps, driven by high-quality video, gestures, pose and geometry updates. Applications involving high-quality 3D rendering, such as training and holographic collaboration, also require data rates of several tens of Mbps. To maintain stable overlays and interaction fidelity, low wireless latencies below 30 ms and tight jitter control (around 5–10 ms) are often required.

Scaling AI-driven XR in the 6G era
The XR device industry is expected to experience strong growth from 2026 through 2030, with glasses contributing a significant share. AR glasses tethered to 5G smartphones are already being deployed in today's networks, with glasses based on 5G reduced capability (RedCap) expected to emerge in the near future, helping address the thermal and battery constraints of wearable form factors. Continued evolution of 5G, including 5G Advanced, is expected to deliver targeted improvements in power efficiency, latency and mobility. Key enhancements include smarter sleep cycles, application-aware IP-packet grouping (PDU Set), network congestion feedback to applications (L4S) and faster handovers, which are all defined within 3GPP standards.

As personal AI devices (such as AR glasses), pendants and neural bands (including EEG headbands and EMG wristbands) coexist with smartphones, and new physical AI categories such as robots and autonomous systems emerge, mobile networks will need to support growing volumes of user- and device-generated data for interaction, training and access to capable AI models.

To address this, 6G is being designed to scale such AI-driven services through improved uplink performance, wider bandwidths and more energy-efficient systems operation. Additional spectrum in the upper mid-band (FR3), combined with advanced antenna techniques such as Giga-MIMO, is expected to enable capacity overlays on existing cellular infrastructure without requiring cell-densification. Lower power, 6G-capable AR glasses and wearables are also expected to be considered from the onset as a native design category.

Evolving mobile networks can benefit from architectures that natively support multi-device experiences, distributed compute, and context- or intent-aware communication. These capabilities will be increasingly important as intelligence and perception are distributed across personal AI devices and network resources.

Multi-device collaborative communications can improve wearable performance by mitigating inherent device constraints such as a limited number of antennas, bandwidth, thermal headroom and battery capacity. For example, by enabling complementary communication paths through a companion device, the system can improve robustness to head and body shadowing and improve reliability, coverage and latency.

Distributed computing further complements this approach by allowing workloads such as rendering, perception and interference modeling to run either on-device or be offloaded to edge or cloud resources. When network conditions are favorable, offloading can provide access to larger models and higher-fidelity experiences while reducing device power consumption, though it increases network demand and sensitivity to latency and congestion. When connectivity degrades, workloads can shift back to on-device execution to preserve responsiveness, albeit with higher local power consumption.

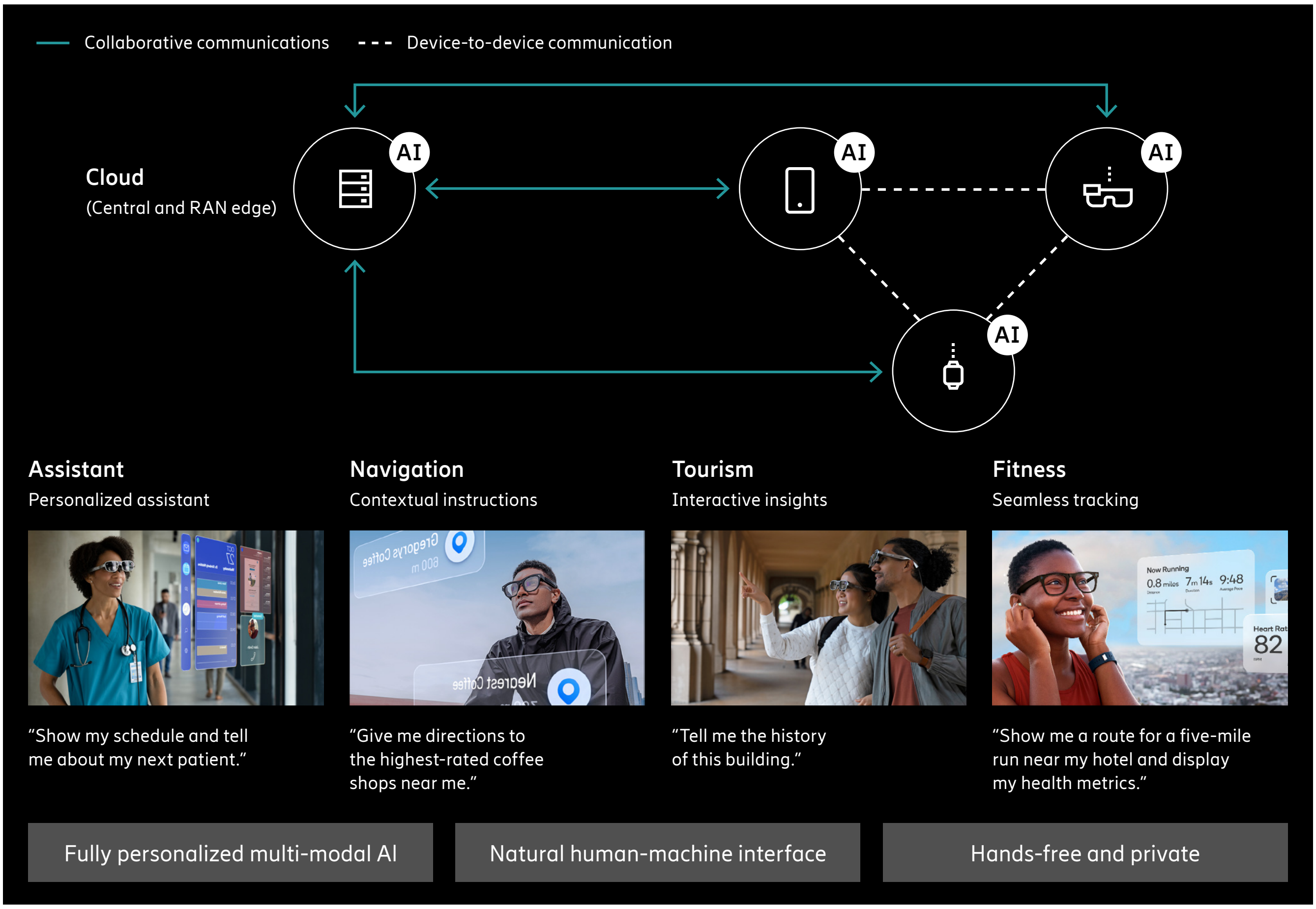
Context-aware or intent-aware communications can also leverage on-device intelligence to infer application type and user experience in real time, enabling adaptive behavior that better matches current communication needs. Devices can derive application and user-experience context by classifying traffic flows with on-device AI, observing hardware and software signatures, and leveraging proximity to application logic. By coupling traffic characterization with user equipment and network adaptation, context-aware communication can more effectively balance device power consumption, network efficiency, and user experience.

Scaling XR with 6G to enable a "heads-up" transformation of life and work

Personal AI wearables and XR services are expected to evolve gradually from a niche category into a more common workload for future mobile networks. As 6G becomes the dominant mobile access technology, it will help to scale such services through continued improvements in connectivity, system efficiency and architectural flexibility. Together with ongoing 5G Advanced evolution in the near term, these capabilities can support XR growth across the consumer, enterprise and industrial domains, enabling a future where digital and physical experiences are seamlessly integrated throughout the day.

Realizing the full potential of 6G and beyond will require sustained ecosystem collaboration, anchored by technology creators and spanning device OEMs, infrastructure vendors, cloud and edge providers, service providers and application developers.

Figure 23: Multi-device collaborative communications, distributed compute and AI



Mobility powers AI-driven enterprise transformation

Service providers can help enterprises realize the full value of AI-led digital transformation. Mobile networks provide the real-time foundational capabilities enterprises need to scale AI securely and reliably.

Key insights

- Research shows that enterprises increasingly view AI as essential for digital transformation, however, only a minority have scaled it across their organizations.
- While AI is a driver of digital transformation, it cannot succeed without the support of robust mobile networks and cloud capabilities.
- Service providers offering solutions that help enterprises realize the full value of AI-led digital transformation have the opportunity to generate new revenues by transitioning from connectivity enablers to strategic partners.

AI cannot succeed in isolation
Enterprises now require greater agility, scalability and mobility to support distributed operations and real-time data processing. AI is rapidly becoming the engine of this transformation, but success depends on a modern digital foundation where mobile, cloud and AI together automate core operational tasks and free capacity for innovation and growth. This will create reusable capabilities that scale across use cases to improve efficiency, enhance experiences and accelerate innovation. Research commissioned by Ericsson[1] confirms that AI is viewed as essential for digital transformation, and its full value can be realized only when underpinned by robust mobile and cloud capabilities. However, it also reveals an execution gap: While almost 9 in 10 organizations see AI as critical, only a minority have successfully scaled it across their operations.

AI ambitions exceed enterprises' digital readiness
In our study, 37 percent of enterprises report accelerating their digital transformation with positive momentum. AI is no longer confined to IT – it is now embedded across business functions, increasingly running core operational tasks.

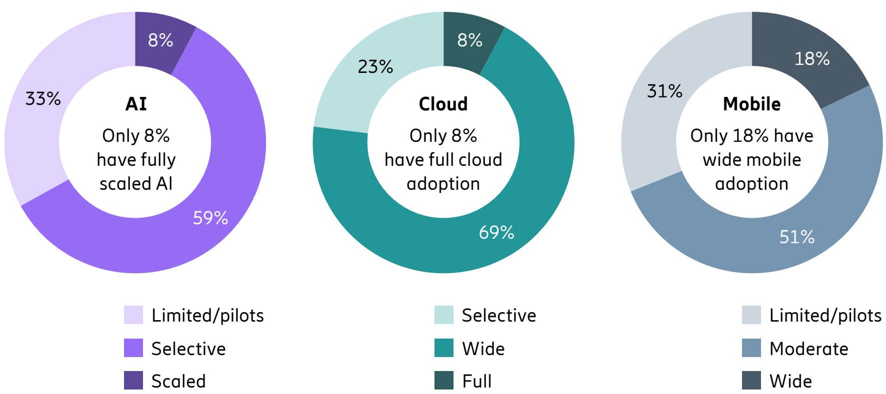
Yet, a critical gap exists. While 88 percent of enterprises expect their AI solutions to depend on real-time data, adoption of the enabling technologies remains low: Only 8 percent have fully scaled AI across multiple business areas or adopted cloud-based technologies and solutions, while just 18 percent have widely adopted cellular technologies and solutions that provide secure, reliable, real-time mobile connectivity.

This disconnect between AI ambition and technology adoption represents a clear opportunity. Service providers are well positioned to close the gap – by offering solutions that deliver the secure, always-on enterprise connectivity that AI-driven operations demand.

Mobility: Powering enterprise AI
Enterprises increasingly rely on distributed data sources – mobile devices, industrial sensors, vehicles and field equipment – to feed analytics and models that inform operations, customer engagement and new services. AI platforms, data lakes and analytics engines are often distributed across cloud, on-prem and the edge, and the demands of these use cases reshape enterprises' network requirements. Mobile connectivity enables seamless data flow and unified workflows, evolving mobility from a basic utility into an imperative, strategic asset that underpins safety, productivity and new revenue streams.

Realizing value from AI requires the alignment of network services with business processes and measurable outcomes. This represents a pragmatic opportunity for service providers; to move from being pure infrastructure vendors, to become strategic partners, by packaging connectivity, edge compute, security and managed services for enterprises as part of their AI roadmaps to meet specific transformation objectives.

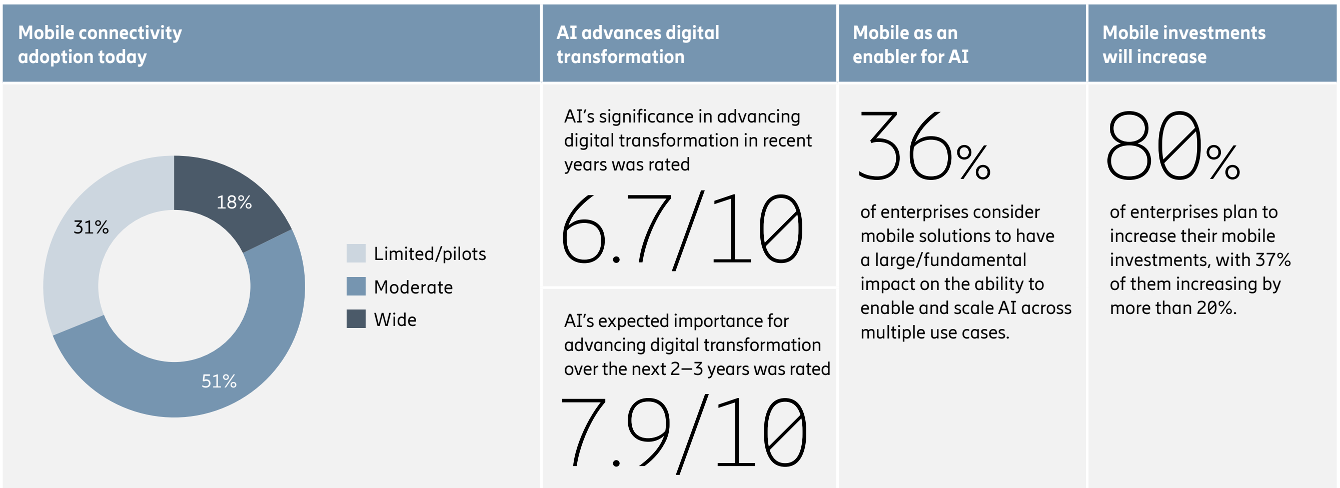
Figure 24: Enterprise technology adoption



Base: 100 decision-makers across 5 industry segments in large companies in North America, Europe and Asia.

[1] The research findings draw on insights from surveys and interviews with over 100 enterprise chief officers (CxOs), senior decision-makers and managers across five industry segments in large companies in North America, Europe and Asia. Source: Arthur D Little, Ericsson.

Figure 25: How mobile connectivity is foundational for scaling enterprise AI



Note: Survey of over 100 CxOs, senior decision makers and managers across 5 industry segments in large companies in North America, Europe and Asia.

Mobile connectivity and cloud provide the real-time foundational capabilities enterprises require to scale AI securely and reliably. On the mobile side, enterprises in this study rank security (78 percent), reliability (72 percent) and bandwidth (67 percent) as the top enablers, highlighting the need for protected, dependable, high-throughput data flows. Mobile delivers the real-time connectivity that AI depends on. Of the surveyed enterprises, 80 percent have plans to increase their mobile investments.

Moreover, 75 percent identified 5 use case categories where they believe AI will have a significant business impact:

- Tracking and monitoring – continuous sensor and location telemetry for assets, goods and customers, needing scalable connectivity and edge processing.
- Connected operations – remote control, autonomous mobile robots (AMRs) and industrial control requiring private networks, low-latency edge compute and secure orchestration.
- Enterprise collaboration – real-time, secure Unified Communication and interoperable workspaces needing QoS, managed end points.
- Customer engagement – omnichannel, video and conversational AI with edge inference.
- Digital devices – kiosks, wearables and vehicles requiring device lifecycle, SIM/eSIM and security.

Why mobile connectivity matters most

Although AI attracts headlines and cloud receives significant architectural attention, it is the mobile part of the foundation that ultimately determines whether enterprise AI-led digital transformation will be successful. Global coverage, multi-operator support and adherence to global standards ensure AI workloads scale instantly across locations and business units without bottlenecks.

First, mobile networks provide the reach and coverage needed to connect distributed operations. A single enterprise may span multiple locations and include mobile fleets, each with different performance, security and regulatory requirements. 5G, private networks and wireless WAN (WWAN) can be tailored per site and per use case, while being managed as part of a unified enterprise architecture.

Second, 5G's inherent low latency, high reliability and robust security make it possible to deploy AI and automation in scenarios where delays or outages are unacceptable, such as safety-critical environments, high-value production lines or real-time customer interactions. This is particularly relevant as new applications, including AI computer vision, AR-assisted operations and physical AI (which enables machines to perceive and interact with the physical world in real time) will drive rapid uplink growth, placing new demands on mobile networks that were historically optimized for downlink.

Third, mobile networks are increasingly becoming programmable platforms. With 5G standalone and network APIs, service providers can expose differentiated connectivity characteristics – such as assured throughput, low jitter or location awareness – directly to enterprise developers and ISVs.
This enables them to design AI-powered applications that dynamically request the network performance they need.
Network-powered solutions that combat fraud are the first use cases to come to market for service providers' monetization, as this is an urgent enterprise digital transformation need.

From connectivity provider to strategic AI partner

Our research highlights that enterprises increasingly see mobility, AI and cloud as the foundation for digital transformation, and plan to step up investments in mobile-enabled initiatives over the coming years. At the same time, many organizations struggle to move beyond isolated AI proofs of concept, citing gaps in connectivity, data readiness and operational integration as major barriers. This highlights that service providers could evolve their role to provide not only high-performance public 5G, but become orchestrators of the AI–mobile–cloud digital foundation for enterprises, for example as a managed service provider delivering outcomes instead of only connectivity. If they evolve their networks towards AI-native, cloud-native architectures that can handle the complexity of AI workloads, service providers can help enterprises unlock the full value of AI-led digital transformation.

As AI use cases are increasingly adopted, and enterprises demand more agility and intelligence, the importance of getting the mobile foundation right will only increase. Therefore, service providers need to evolve networks into AI- and cloud-ready platforms, build differentiated enterprise offerings around private and public 5G, and position mobile connectivity as the backbone of AI-driven digital transformation.

Methodology

Forecast methodology
Ericsson makes forecasts on a regular basis to support internal decisions and planning, as well as market communications. The forecast time in the Ericsson Mobility Report is six years and this moves forward one year in the November report each year. All estimates in Ericsson Mobility Report are for the month of December each year. The subscription and traffic forecast baseline is established using historical data from various sources, validated with Ericsson internal data, including measurements in customer networks. Future developments are estimated based on macroeconomic trends, user trends, market maturity and technological advances. Other sources include industry analyst reports, together with internal assumptions and analyses.

Historical data may be revised if the underlying data changes – for example, if service providers report updated subscription figures.

Mobile subscriptions
Mobile subscriptions include all mobile technologies. Subscriptions are defined by the most advanced technology that the mobile phone and network are capable of. Our mobile subscriptions by technology findings divide subscriptions according to the highest-enabled technology they can be used for. LTE (4G) subscriptions, in most cases, also include the possibility for the subscription to access 3G (WCDMA/HSPA) and 2G (GSM or CDMA in some markets) networks. A 5G subscription is counted as such when associated with a device that supports New Radio as specified in 3GPP Release 15, and connected to a 5G-enabled network. Mobile broadband includes radio access technologies HSPA (3G), LTE (4G), 5G, CDMA2000 EV-DO, TD-SCDMA and Mobile WiMAX. WCDMA without HSPA and GPRS/EDGE are not included. FWA is defined as a connection that provides broadband access through mobile network enabled customer premises equipment (CPE). This includes both indoor (desktop and window-mounted) and outdoor (rooftop and wall-mounted) CPE. It does not include portable battery-based Wi-Fi routers or dongles.

Rounding of figures
As figures are rounded, summing up data may result in slight differences from the actual totals. In tables with key figures, subscriptions have been rounded to the nearest 10th of a million. However, when used in highlights in the articles, subscriptions are usually expressed in full billions or to one decimal place. Compound annual growth rate (CAGR) is calculated on the underlying, unrounded numbers and is then rounded to the nearest full percentage figure. Traffic volumes are expressed to two significant figures.

Subscribers
There is a large difference between the numbers of subscriptions and subscribers. This is because many subscribers have several subscriptions. Reasons for this could include users lowering traffic costs by using optimized subscriptions for different types of calls, maximizing coverage and having different subscriptions for mobile PCs/tablets and mobile phones. In addition, it takes time before inactive subscriptions are removed from service provider databases. Consequently, subscription penetration can be above 100 percent, which is the case in many countries today. However, in some developing regions, it is common for several people to share one subscription, for example via a family- or community-shared phone.

Mobile network traffic
Ericsson regularly performs traffic measurements in around 100 live networks covering all major regions of the world. These measurements form a representative base for calculating worldwide total mobile network traffic. Mobile network data traffic also includes traffic generated by FWA services. More detailed measurements are made in a select number of commercial networks with the purpose of understanding how mobile data traffic evolves. No subscriber data is included in these measurements. Please note that the Ericsson Mobility Report data traffic forecast, both global and regional, represents the estimated traffic volume in all networks over the duration of one month in December. Traffic (in terms of throughput) in high-traffic areas will be much higher than the average traffic.

Population coverage
Population coverage is estimated using a database of regional population and territory distribution, based on population density. This is then combined with proprietary data on the installed base of radio base stations (RBS), together with estimated coverage per RBS for each of six population density categories (from metro to wilderness). Based on this, the portion of each area that is covered by a certain technology can be estimated, as well as the percentage of the population it represents. By aggregating these areas, world population coverage per technology can be calculated.

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Explore actual and forecast data from the Ericsson Mobility Report in our interactive web application. It contains a range of data types, including mobile subscriptions, mobile broadband subscriptions, mobile data traffic, traffic per application type, VoLTE statistics, monthly data usage per device and an IoT connected device forecast. Data can be exported and charts generated for publication subject to the inclusion of an Ericsson source attribution.

Find out more
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Glossary

2G: 2nd generation mobile networks (GSM, CDMA 1x)

3G: 3rd generation mobile networks (WCDMA/HSPA, TD-SCDMA, CDMA EV-DO, Mobile WiMAX)

3GPP: 3rd Generation Partnership Project

4G: 4th generation mobile networks (LTE, LTE-A)

4K: In video, a horizontal display resolution of approximately 4,000 pixels. A resolution of 3840 × 2160 (4K UHD) is used in television and consumer media. In the movie projection industry, 4096 × 2160 (DCI 4K) is dominant

5G: 5th generation mobile networks (IMT-2020)

AI agent: An autonomous software entity that perceives its environment, makes independent decisions and takes actions to achieve specific goals

API: Application Programming Interface. A set of rules and protocols that allows software applications to communicate and exchange data

AR: Augmented reality. An interactive experience of a real-world environment whereby the objects that reside in the real world are "augmented" by computer-generated information

B2B: Business-to-business. A company sells products or services to another businesses

B2B2C: Business-to-business-to-consumer. A company sells to another business, which then uses that product or service to deliver value directly to consumers

B2C: Business-to-consumer. A company sells products or services directly to individual consumers

CAMARA: An open-source project to develop APIs.

Cat-M1: A 3GPP standardized low-power wide-area (LPWA) cellular technology for IoT connectivity

CDMA: Code-division multiple access

EB: Exabyte, 10^{18} bytes

FDD: Frequency division duplex

FWA: Fixed wireless access

GB: Gigabyte, 10^{9} bytes

Gbps: Gigabits per second

GHz: Gigahertz, 10^{9} hertz (unit of frequency)

GSA: Global mobile Suppliers Association

HSPA: High speed packet access

IoT: Internet of Things

Kbps: Kilobits per second

LTE: Long-Term Evolution

MB: Megabyte, 10^{6} bytes

Mbps: Megabits per second

MIMO: Multiple Input Multiple Output is the use of multiple transmitters and receivers (multiple antennas) on wireless devices for improved performance

mmWave: Millimeter waves are radio frequency waves in the extremely high frequency range (30–300 GHz) with wavelengths between 10 mm and 1 mm. In a 5G context, millimeter waves refer to frequencies between 24 and 71 GHz (the two frequency ranges 26 GHz and 28 GHz are included in millimeter range by convention)

Mobile broadband: Mobile data service using radio access technologies including 5G, LTE, HSPA, CDMA2000 EV-DO, Mobile WiMAX and TD-SCDMA

Mobile PC: Defined as laptop or desktop PC devices with built-in cellular modem or external USB dongle

Mobile router: A device with a cellular network connection to the internet and Wi-Fi or Ethernet connection to one or several clients (such as PCs or tablets)

MR: Mixed reality. Immersive technology in which elements from both the real world and a virtual environment are fully interactive with each other

NB-IoT: A 3GPP standardized low-power wide-area (LPWA) cellular technology for IoT connectivity

Net Zero: Defined in ITU standards as a future state where all emissions that can be reduced are reduced, with like-for-like or permanent removals applied by carbon-removal technologies to balance the remaining emissions

NSA 5G: Non-standalone 5G is a 5G Radio Access Network (RAN) that operates on a legacy 4G/LTE core

Operating Pareto: A management framework applying the Pareto Principle, or 80/20 rule, to business operations, used to maximize operational efficiency. It states that 80% of operational outputs, bottlenecks, or costs stem from just 20% of inputs or causes

QoS: Quality of service. Refers to the capability of the cellular network to guarantee specific performance levels for different types of data traffic

RedCap: Reduced capability

Short-range IoT: Segment that largely consists of devices connected by unlicensed radio technologies, with a typical range of up to 100 meters, such as Wi-Fi, Bluetooth and Zigbee

SLA: Service-level agreement. A formally negotiated contract between a service provider and a customer that defines the exact level of service expected

TD-SCDMA: Time division-synchronous code-division multiple access

TDD: Time division duplex

VoIP: Voice over IP (Internet Protocol)

VR: Virtual reality

WCDMA: Wideband code-division multiple access

Wide-area IoT: Segment made up of devices using cellular connections or unlicensed low-power technologies like Sigfox and LoRa

XR: Extended reality. An umbrella category for virtual or combined real/virtual environments, which includes AR, VR and MR

Key figures

Global key figures

Mobile subscriptions	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
Worldwide mobile subscriptions	8,670	8,840	9,540	1%	million
• Smartphone subscriptions	7,170	7,470	8,490	2%	million
• Mobile PC, tablet and mobile router subscriptions	290	330	530	9%	million
• Mobile broadband subscriptions	7,710	8,020	9,230	2%	million
• Mobile subscriptions, GSM/EDGE-only	880	760	360	-12%	million
• Mobile subscriptions, WCDMA/HSPA	550	460	200	-13%	million
• Mobile subscriptions, LTE	4,950	4,660	2,370	-11%	million
• Mobile subscriptions, 5G	2,280	2,940	6,400	14%	million
Mobile subscriptions, 5G standalone	1,240	1,650	3,870	15%	million
• Mobile subscriptions, 6G	0	0	180	N/A	million
Fixed broadband connections	**1,620**	**1,690**	**2,030**	**3%**	**million**
Fixed Wireless Access connections	160	185	350	11%	million
Satellite broadband subscriptions	6	10	33	21%	million

Mobile data traffic	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
• Data traffic per smartphone	19	22	42	12%	GB/month
• Data traffic per mobile PC	26	28	40	6%	GB/month
• Data traffic per tablet	15	18	29	9%	GB/month

Total data traffic**	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
Mobile data traffic	123	146	328	14%	EB/month
• Smartphones	121	143	322	14%	EB/month
• Mobile PCs and routers	1.2	1.5	2.7	11%	EB/month
• Tablets	1	1.2	2.6	13%	EB/month
Fixed Wireless Access	43	57	187	22%	EB/month
Total mobile network traffic	166	203	515	17%	EB/month
Total fixed data traffic	330	380	710	11%	EB/month

Regional key figures

Mobile subscriptions	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
North America	450	460	500	1%	million
Latin America	730	750	820	1%	million
Western Europe	550	550	570	0%	million
Central and Eastern Europe	560	560	560	0%	million
North East Asia	2,270	2,320	2,450	1%	million
China[1]	1,790	1,830	1,890	1%	million
South East Asia and Oceania	1,180	1,170	1,210	0%	million
India, Nepal and Bhutan	1,190	1,230	1,360	2%	million
Middle East and North Africa	740	750	780	1%	million
Gulf Cooperation Council (GCC)[2]	81	84	95	2%	million
Sub-Saharan Africa	1,000	1,050	1,310	4%	million

Regional key figures

LTE subscriptions	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
North America	130	100	40	-14%	million
Latin America	530	520	230	-13%	million
Western Europe	320	250	30	-31%	million
Central and Eastern Europe	480	460	190	-14%	million
North East Asia	1,030	870	270	-18%	million
China[1]	720	580	80	-28%	million
South East Asia and Oceania	930	890	470	-10%	million
India, Nepal and Bhutan	620	570	160	-19%	million
Middle East and North Africa	490	510	380	-5%	million
GCC[2]	39	35	8	-22%	million
Sub-Saharan Africa	410	490	610	4%	million

5G subscriptions[3]	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
North America	320	370	460	3%	million
Latin America	60	110	550	32%	million
Western Europe	220	300	540	10%	million
Central and Eastern Europe	30	80	380	30%	million
North East Asia	1,180	1,400	2,140	6%	million
China[1]	1,010	1,200	1,790	5%	million
South East Asia and Oceania	110	160	670	27%	million
India, Nepal and Bhutan	290	430	1,110	17%	million
Middle East and North Africa	60	80	370	28%	million
GCC[2]	37	44	84	11%	million
Sub-Saharan Africa	10	30	370	54%	million

Data traffic per smartphone	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
North America	21	25	52	13%	GB/month
Latin America	13	15	32	14%	GB/month
Western Europe	22	25	59	15%	GB/month
Central and Eastern Europe	20	23	50	14%	GB/month
North East Asia	20	23	45	12%	GB/month
China[1]	21	24	47	12%	GB/month
South East Asia and Oceania	19	21	40	12%	GB/month
India, Nepal and Bhutan	33	37	70	11%	GB/month
Middle East and North Africa	19	21	47	14%	GB/month
GCC[2]	29	30	49	8%	GB/month
Sub-Saharan Africa	5	5.3	12	14%	GB/month

Total mobile data traffic	2024	2025	Forecast 2031	CAGR* 2025–2031	Unit
North America	8.7	11	22	13%	EB/month
Latin America	6.9	8	21	17%	EB/month
Western Europe	9.9	12	26	15%	EB/month
Central and Eastern Europe	7.3	8.9	20	15%	EB/month
North East Asia	37	44	90	13%	EB/month
China[1]	32	38	78	13%	EB/month
South East Asia and Oceania	17	20	40	13%	EB/month
India, Nepal and Bhutan	24	30	68	15%	EB/month
Middle East and North Africa	9.2	11	30	18%	EB/month
GCC[2]	1.6	1.8	3.3	11%	EB/month
Sub-Saharan Africa	2.3	2.8	9.7	23%	EB/month

[1] These figures are also included in the figures for North East Asia.
[2] These figures are also included in the figures for Middle East and North Africa.
[3] Currently, 6G subscriptions are not published on a regional level, but included in 5G figures in regions where 6G is expected to launch early.

* CAGR is calculated on unrounded figures.
** Figures are rounded (see methodology) and therefore summing up of rounded data may result in slight differences from the actual total.

About Ericsson

Ericsson's high-performing networks provide connectivity for billions of people every day. For nearly 150 years, we've been pioneers in creating technology for communication. We offer mobile communication and connectivity solutions for service providers and enterprises. Together with our customers and partners, we make the digital world of tomorrow a reality.

www.ericsson.com

Ericsson
SE-164 80 Stockholm, Sweden
Telephone +46 10 719 0000
www.ericsson.com

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