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5G value: Turning performance into loyalty

**Exploring what drives 5G network
satisfaction and user retention**



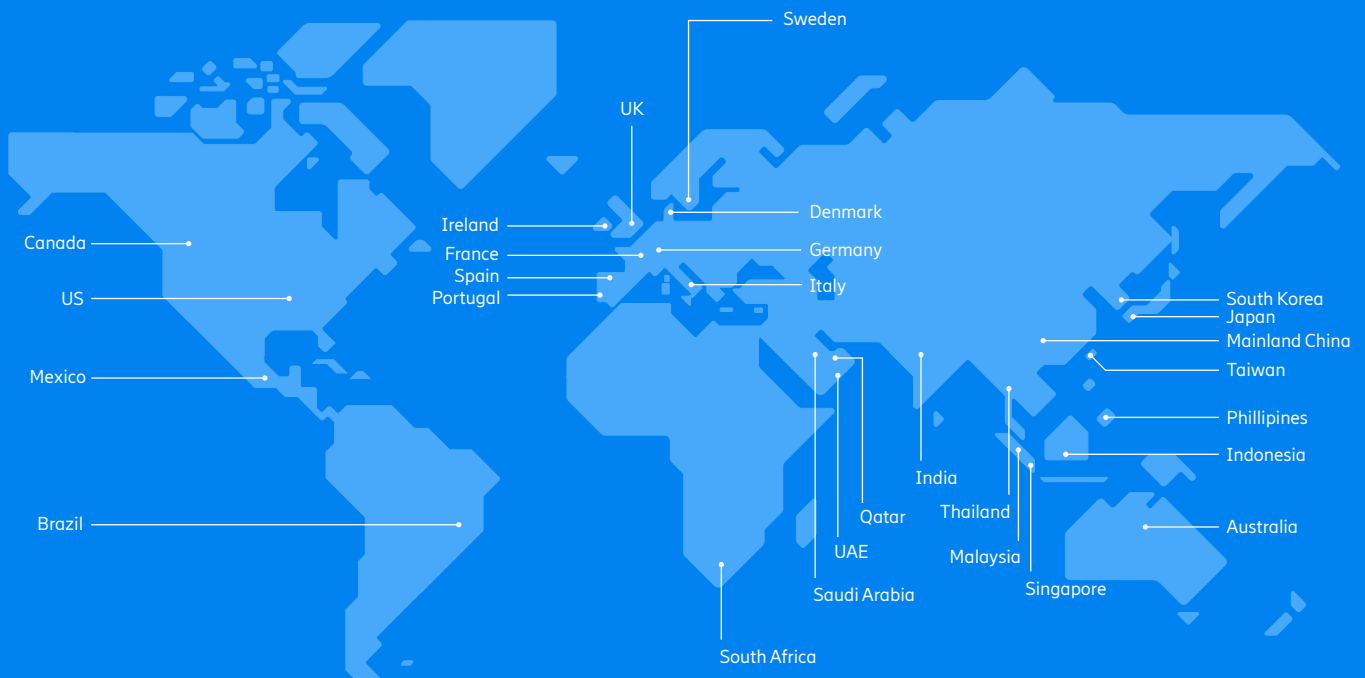
Methodology

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Ericsson ConsumerLab has been at the forefront of exploring the consumer potential surrounding 5G adoption. This report is part of an exclusive research series tracking 5G consumer market evolution for half a decade, making it the most extensive global consumer study on 5G thus far. One year on from our previous report – 5G: The Next Wave – we have undertaken an additional survey to assess consumer sentiments regarding 5G adoption, satisfaction, usage and more. Conducted between May and June 2023, our online interviews engaged with 37,000 consumers across 28 markets, including 10,000 active 5G users.

The respondents are a representation of the online population aged between 15 and 69 within the surveyed markets, providing a statistical reflection of the opinions of a total of 1.5 billion consumers and 650 million 5G users. Our research explores whether exceptional network quality can act as the primary driver for 5G adoption and customer loyalty. This understanding creates fresh opportunities for communications service providers to leverage the potential of 5G in the forthcoming wave of technological advancements.



28

Markets covered
in the study

37K+

Consumers surveyed
globally

10K+

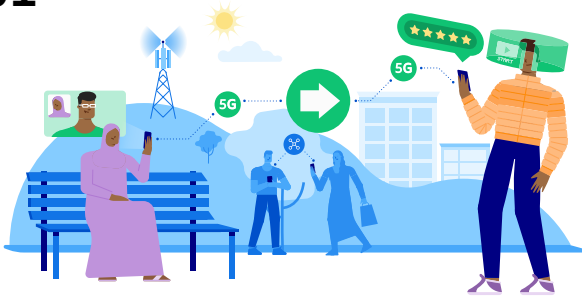
Active 5G users
were interviewed

1.5bn

Consumer opinions
represented

Key findings

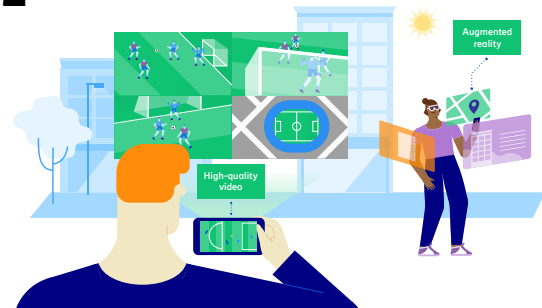
01



5G network satisfaction drivers are evolving beyond coverage

5G network satisfaction among consumers has experienced a consistent year-on-year improvement of 10 percent in most markets. New 5G users value 5G outdoor coverage and speed, but, in markets where 5G population coverage exceeds 80 percent, long-time users prioritize video quality and upload speeds for the apps they use, reflecting evolving expectations.

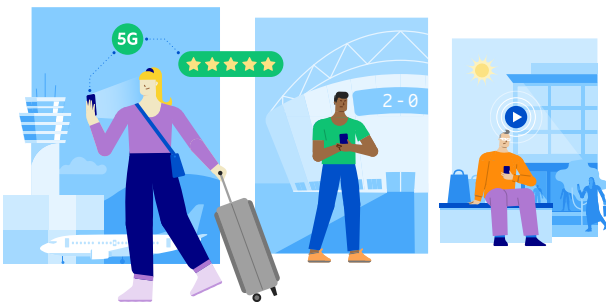
02



5G is reshaping video streaming and AR usage

Emerging formats such as 4K, 360-degree experiences, and multi-view videos are increasingly driving usage and 5G data consumption as service providers bundle such rich media content into their 5G plans. On average, 5G users have reported a 47 percent increase in time spent on these enhanced video formats over the past 2 years and the share of daily users of augmented reality (AR) apps has doubled compared to the end of 2020.

03



5G performance at key locations influences consumer loyalty

A total of 17 percent of consumers across 28 markets have switched their service providers since the launch of 5G, driven primarily by issues with 5G network performance. A significant influence in the decision to switch is the 5G experience in critical locations, such as arenas and airports. Smartphone users encountering issues at these locations are three times more likely to churn.

04



5G consumers are willing to pay a premium for differentiated connectivity

While 37 percent of smartphone users value increased data allowances in their 5G plans, a significant 20 percent expect differentiated 5G connectivity, seeking elevated and consistent network performance linked to demanding apps or key locations. These individuals value premium connectivity and are willing to pay a premium of up to 11 percent for a 5G plan that ensures elevated network performance.

5G network satisfaction drivers are evolving beyond coverage

As 5G technology continues its global rollout, it is vital to understand user expectations and satisfaction trends, especially in advanced markets with extensive 5G coverage and high market penetration.

5G network satisfaction is improving

Overall satisfaction among users with 5G has shown promising growth, with a notable 10 percent year-on-year increase across the 28 markets surveyed. This positive trend underscores that 5G is indeed meeting user expectations. Over half of all 5G users in early markets – US, Mainland China, UAE, Qatar and the Kingdom of Saudi Arabia (KSA) – report very high satisfaction with 5G. However, in South Korea, Japan, Taiwan and Singapore, on average just 20 percent of 5G users report being highly satisfied, despite having great 5G network performance. This indicates heightened expectations, especially among those who have been on 5G for some time. Once consumers have been using 5G for over a year, the share of satisfied users seems to decline.

This decline is particularly pronounced in markets where 5G has reached 80 percent population coverage and 40 percent market penetration. These include the United States, Qatar, UAE, South Korea, Mainland China and Taiwan.

One way to understand of the reasons behind this is by examining how expectations around 5G performance are evolving with tenure on the network.

5G newcomers versus experienced 5G users

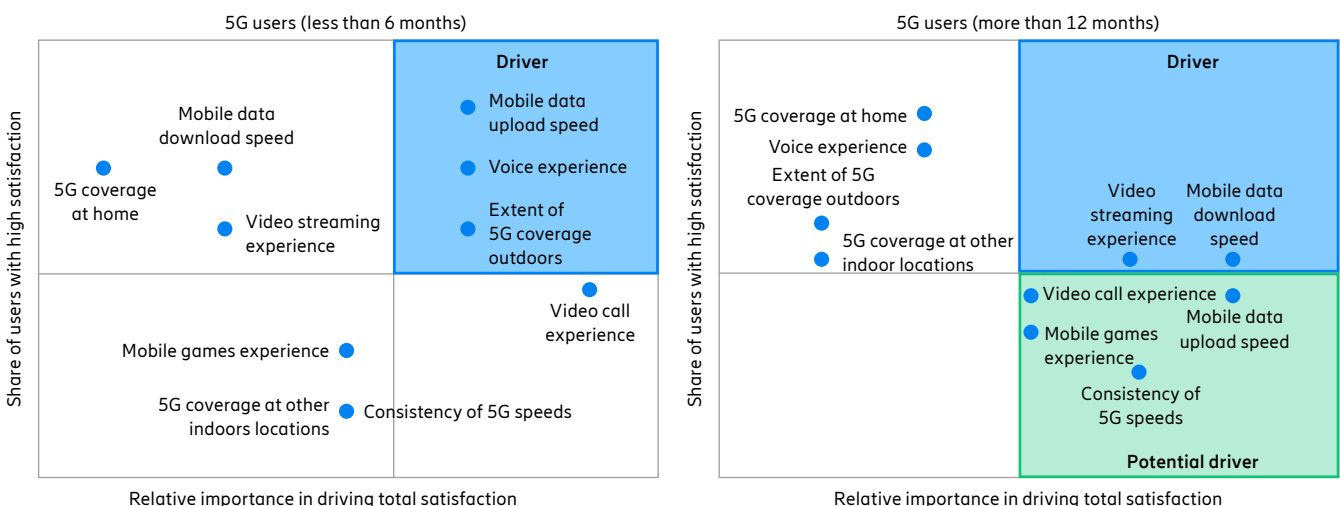
Crucially, we’ve observed that the factors driving total 5G network satisfaction differ between two distinct groups in those markets: 5G newcomers and experienced 5G users.

For 5G newcomers, who can be characterized as more mainstream users who have used 5G for less than 6 months, key factors influencing their overall 5G network satisfaction include mobile data upload speeds, the extent of 5G outdoor coverage and voice experience. Since 5G coverage is already built out in these markets, and improving, most users seem satisfied with these aspects. In contrast, experienced 5G users, those who have been using 5G for over a year, have different priorities driving their satisfaction. These include mobile upload and download speeds, app

experience KPIs like video streaming quality, mobile gaming and video calling experience, together with the consistency of 5G speed. Notably, for experienced 5G users, the importance of video streaming experience in driving satisfaction is 20 percent higher than for 5G newcomers since these users are power users and were the first to adopt 5G as opposed to mainstream users.

Significantly, experienced 5G users currently express lower levels of satisfaction with mobile upload speeds, consistency of 5G speeds and app experience indicators like mobile gaming and video calling quality. These areas present both critical challenges and valuable opportunities for service providers to enhance satisfaction levels among these user segments. Service providers must prioritize and demonstrate tangible improvements in key application experience KPIs such as video streaming, gaming, and video calling quality. Furthermore, they should actively explore and promote novel use cases and apps that can best highlight the unique advantages and potential of 5G technology.

Figure 1: Share of satisfied users and the importance of KPIs in driving total satisfaction



Base: 5G users in markets where 5G penetration is more than 40 percent and 5G population coverage is more than 80 percent (US, Qatar, UAE, South Korea, Mainland China, Taiwan)
 Source: Ericsson ConsumerLab, 5G value, 2023

5G is reshaping video streaming and AR usage

Over the last three years, there has been a significant upsurge in mobile data consumption among 5G users globally, with subscribers, on average consuming two to three times more data than 4G subscribers, which begs the question: What’s driving mobile data traffic over 5G networks?

Surge in 5G user engagement: enhanced video and AR

One recurring question pertains to the driving factor behind the surge in data traffic on 5G networks. Our analysis highlights a significant contribution from video content to this trend. Importantly, this influence extends beyond traditional standard-definition videos and encompasses enhanced video formats as well. The shift to more advanced video formats is the main driver of the higher consumption of 5G users.

Within the realm of users adopting 5G technology, a notable increase in the frequency of streaming high-definition 4K videos can be observed. The percentage

of daily users engaging in this activity has risen from 44 percent to 52 percent over the course of the past 3 years. Additionally, the adoption of advanced video formats has seen considerable growth. Examples include 360-degree videos and multi-view streaming, which allow users to pick and choose multiple camera feeds, control the angle on any stream, and zoom in and out at any time during the stream. On average, 25 percent of daily users are now engaging with these formats, signifying their rising popularity. Notably, the number of daily users of AR apps has doubled compared to the end of 2020.

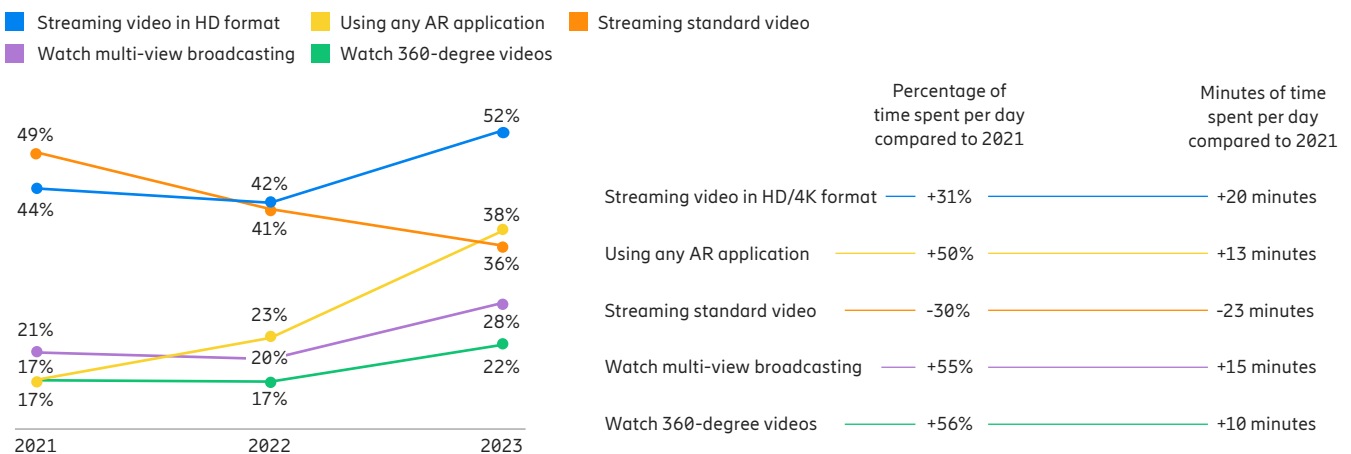
Among 5G users, not only is the number of daily users on the rise, but these users are also dedicating more time to engaging with enhanced video content compared to previous years. This is evidenced by an increase of 10 minutes per day spent on new video formats like 360-degree videos and 15 minutes on multi-view streaming, while the amount of time spent on streaming videos in standard resolution reduced by 23 minutes per day.

Enhanced video formats such as multi-view streaming with interactive features could drive as much as five times more data usage when compared to regular video streaming.¹ This shift underscores how video usage is evolving over 5G with the introduction of new formats.

Service bundling facilitates market transition to more advanced apps

The importance of service bundling in driving a market shift toward more advanced apps should not be underestimated. Our study underscores that users who have access to innovative service bundles allocate over one-third of their total video streaming time to enhanced video content. In contrast, users without service bundles spend only one-quarter of their time on immersive content. The availability of innovative service bundles plays a pivotal role in incentivizing a substantial transition toward exploring and adopting more advanced apps, especially in markets where these services are readily available.

Figure 2: Daily share of services by 5G users: 2020/2021-2023



Base: Smartphone users in Australia, Canada, Mainland China, Germany, Ireland, Italy, KSA, Qatar, Singapore, South Korea, Sweden, Taiwan, Thailand, UAE, UK and US
 Source: Ericsson ConsumerLab, 5G value, 2023

¹ TSN 5G View

5G performance at key locations influences consumer loyalty

Based on previous research,² it is evident that the perception of 5G availability is a crucial measure of consumer sentiment concerning network coverage, and significantly influences upgrade intentions and overall network satisfaction. This metric remains crucial for service providers to monitor. Furthermore, of increasing concern are scenarios where optimal performance was assured.

Can 5G performance become a protector against churn?

Since the global launch of 5G across all 28 markets that we have studied, 17 percent of 5G users have switched providers. The main reasons behind these switches are predominantly network-related rather than pricing considerations. Roughly one in two users made the switch in order to obtain an improved 5G network experience, highlighting how 5G performance is becoming a pivotal factor in terms of influencing consumer decisions to switch providers.

Despite the current 5G population coverage being 1.5 times that of 2021, the perception of 5G availability has only increased by 7 percent. An essential determinant of switching decisions is 5G performance in critical usage locations. Frequent network connectivity issues in places like arenas, concert venues and airports have a significant negative impact on consumers' perceptions and memories. Among 5G users who frequently encounter problems in various locations, 13 percent fewer of them perceive themselves as being connected to 5G compared to those who do not experience such issues frequently.

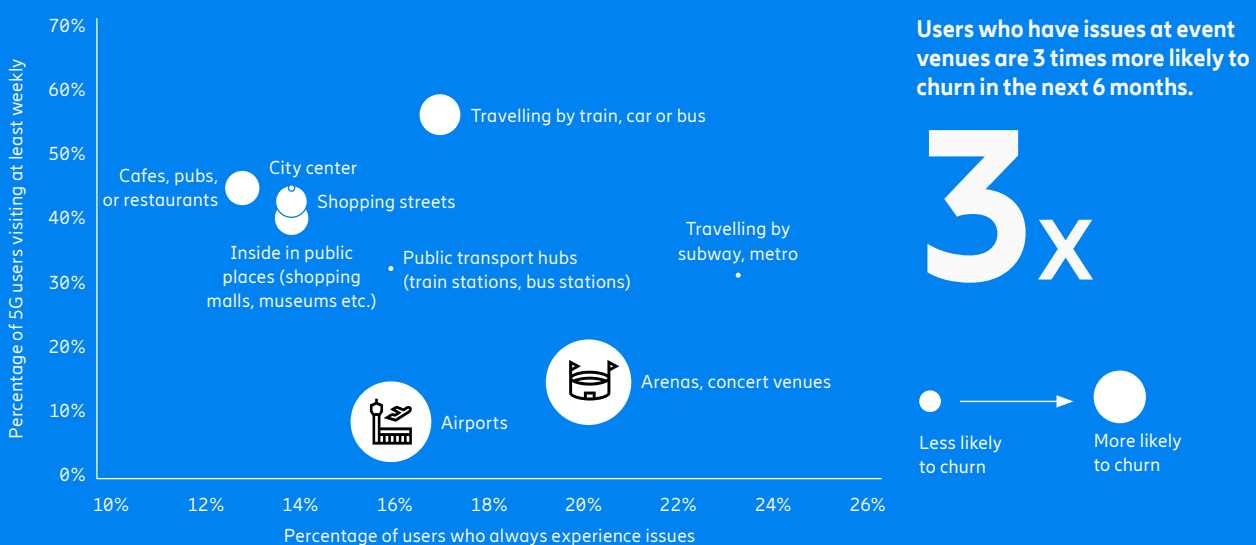
Figure 3 displays the correlation between users experiencing connectivity issues at events or venues and an increased likelihood of them switching mobile service providers.

Interestingly, users who encounter connectivity problems at event venues and at airports are three times more likely to churn. This chart underscores that the expectation for 5G to function

seamlessly in crucial locations, such as congested areas like airports and concert venues, has not consistently matched reality. This discrepancy, particularly in locations where 5G was marketed as offering increased capacity, also highlights the paramount importance of robust indoor coverage. Failing to optimize 5G in these locations not only exacerbates user issues but can also amplify churn rates.

This shift in focus highlights that while macro coverage is crucial, deployment in significant locations significantly influences switching decisions and churn rates. As 5G matures, attention should shift from providing wide area 5G coverage toward ensuring strong performance and indoor coverage in these vital locations, aligning with the initial promise of enhanced performance and high capacity.

Figure 3: Frequency of visiting different locations versus frequency of experiencing issues



Base: 5G users

Source: Ericsson ConsumerLab, 5G value, 2023

² 5G: The next wave

5G consumers are willing to pay a premium for differentiated connectivity

Our analysis has examined various monetization models that are either being implemented today or could be explored in the future by service providers. These include different benefits such as increased data allowances or unlimited data, plans tiered by specific speeds, bundled content-rich apps, and the possibility of network elevation or on-demand performance enhancement, known as quality of service (QoS) offerings. These QoS offerings can be generic, applied to any type of data usage, or linked to specific apps, such as gaming, video calling or live streaming.

What next beyond unlimited data plans?

The introduction of 5G naturally leads to an increase in data consumption, as mobile service providers incorporate larger data allowance into their 5G plans. This raises an important question: What lies beyond the realm of flat-rate unlimited plans in the era of 5G? We asked consumers what factors they felt would justify paying a premium for 5G plans. The responses varied based on market conditions. Globally, 37 percent of users still consider getting more data to be a justifiable reason to pay a premium, which is particularly significant in markets where 5G pricing is centered around data bucket plans such as the Philippines, Mexico and

South Africa. Additionally, about 20 percent of smartphone users globally value QoS offerings.

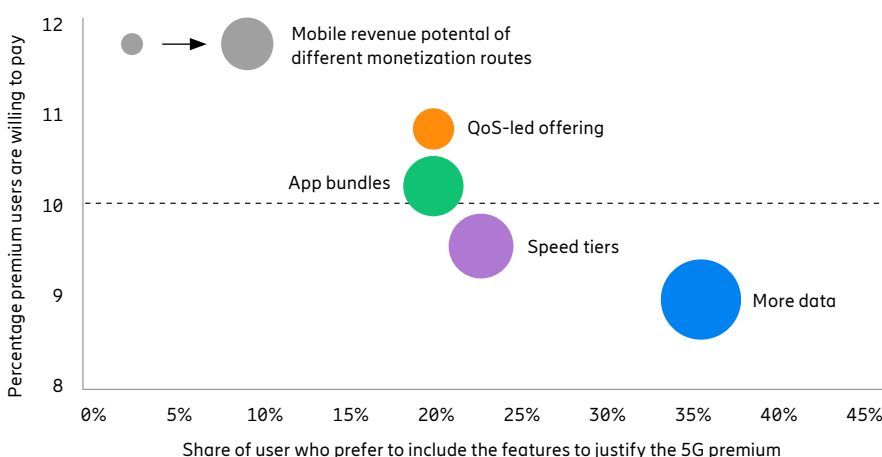
Figure 4 illustrates the diversity in monetization approaches, with user preferences for 5G plan features and their willingness to pay extra for 5G premium offerings. On the vertical axis, the premium level is represented, while the horizontal axis quantifies the percentage of users who want this to justify paying a premium for 5G. This chart underscores the existence of consumer potential beyond the provision of data buckets alone. It reveals that not only do QoS offerings hold a higher consumer potential in driving 5G premium, but other paths to monetization also present significant mobile revenue opportunities.

We also conducted an analysis of 5G plans and packages across 105 service providers in 30 different markets. Among these, about 13 percent have begun implementing QoS-based offerings. Some examples include offerings like 5G Stock Pro from 3 Hong Kong,³ which allocates more network resources and prioritized network usage to enhance experience of a stock trading application; China Unicom offering Super Live Streaming package with uplink prioritization;⁴ and the ProPing service by Ooredoo Kuwait⁵ that offers a premium plan with low lag for mobile gaming over 5G. These offerings indicate an emerging

trend in the industry, with more service providers exploring this avenue. These QoS offerings also seem to be more commonly commercialized by service providers who have rolled out a 5G standalone (SA) network. Service providers can employ multiple strategies for delivering QoS-based offerings, including techniques like network slicing or providing quality-on-demand APIs to developers such as the recent example of Deutsche Telekom commercial launch of network APIs.⁶ However, it is essential to note the complexity of this area, particularly due to net neutrality regulations. While some countries can roll out strategies like app prioritization with more flexibility, others have a more stringent regulatory landscape, making the introduction of QoS-related offerings a complex endeavor. This often necessitates discussions around the country's net neutrality stance and the regulator's views.

Hence, distinct strategies must be pursued based on market needs and conditions. Service providers have the flexibility to choose their path to evolve their monetization strategy, moving from data centric to speed tiers, content bundling, and eventually QoS-based pricing. Each step, or a combination of different tiering approaches, could bring an incremental premium, reflecting the evolving landscape on the journey ahead.

Figure 4: User preference for 5G plan features and willingness to pay extra for 5G premium



Smartphone users are willing to pay an average premium of 11 percent for QoS-led offerings.

11%

Base: Smartphone users aged 15–69

Source: Ericsson ConsumerLab, 5G value, 2023

³ [Hong Kong | '5G Stock Pro' Monthly Plan](#)

⁵ [ProPing](#)

⁴ [China Unicom Super Live Streaming package](#) ⁶ [Telekom commercially launches network APIs | Deutsche Telekom](#)

5G pulse of India: A dive into experiences and expectations

India has emerged as one of the rapidly advancing markets for 5G technology, achieving a significant milestone of 100 million 5G smartphone sales in May 2023, surpassing 4G smartphone shipments per month for the first time. As part of this report, we delve deeper into India's 5G landscape, seeking to understand how early 5G adopters perceive the performance of this cutting-edge technology.

The 5G opportunity: Another 30 million 5G phone owners ready and waiting to be connected

Our survey involved interviews with a sample size of 3,000 Indian smartphone users, all aged between 15 and 69 years old from Tier 1-3 towns and cities. This sample included over 1,800 individuals who have embraced 5G technology. Given the scale of our sample, our data provides statistically significant insights into the opinions of 250 million urban consumers within the Indian population, encompassing 50 million 5G users. Based on our survey, it is evident that

27 percent of users in India possess both a 5G-compatible smartphone and access to a 5G network. Meanwhile, 13 percent of respondents who self-reported owning a 5G-capable phone currently lack access to a 5G network. There could be multiple reasons behind this, ranging from lack of 5G coverage, to no commercial 5G service from their provider, to compatibility issues with devices. This implies, however, that an additional 30 million users in India could potentially transition to 5G when comprehensive coverage becomes available or other issues are overcome.

In India, nearly 50 percent plan to buy new handsets in the next 6 months. We assess consumer intent, affordability, household income, and current phone age. As a result, 18 percent favor 5G phones. We estimate about 31 million users will upgrade to 5G in 2023.

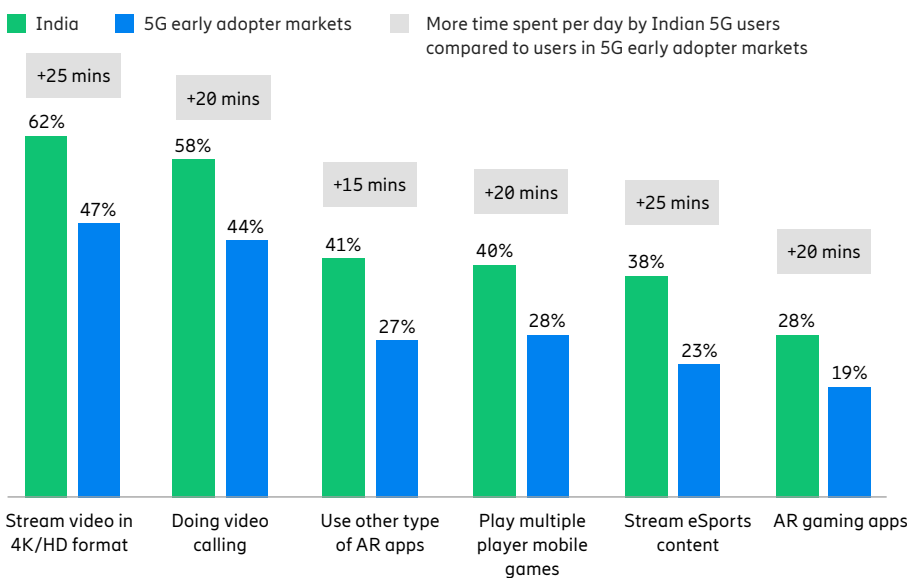
5G early adopters in India outpace their counterparts in forerunner 5G markets

The early adopters of 5G technology in India excel compared to their counterparts in forerunner 5G markets

in terms of active engagement with digital apps and services, including streaming, gaming, and AR. Notably, 3 in 10 5G users in our survey emerged from major urban centers like Delhi, Mumbai and Bangalore. When it comes to usage patterns, if we consider various categories of apps such as streaming video, high-definition video calling, gaming, esports, AR and more, India today stands out. It has a larger share of 5G users actively engaging in these activities daily and spending significant time on them.

Specifically, 5G users in India engage in enhanced video streaming, video calling, multiple player mobile gaming, and AR services to a significantly higher degree than users in markets where 5G has been deployed for the past few years. Indian 5G users who engage with all these services could spend on average 2 hours more per day than 5G users in those markets. This usage significantly impacts mobile data consumption, leading to increased data traffic on the 5G network.

Figure 5: The percentage of daily 5G users using specific services

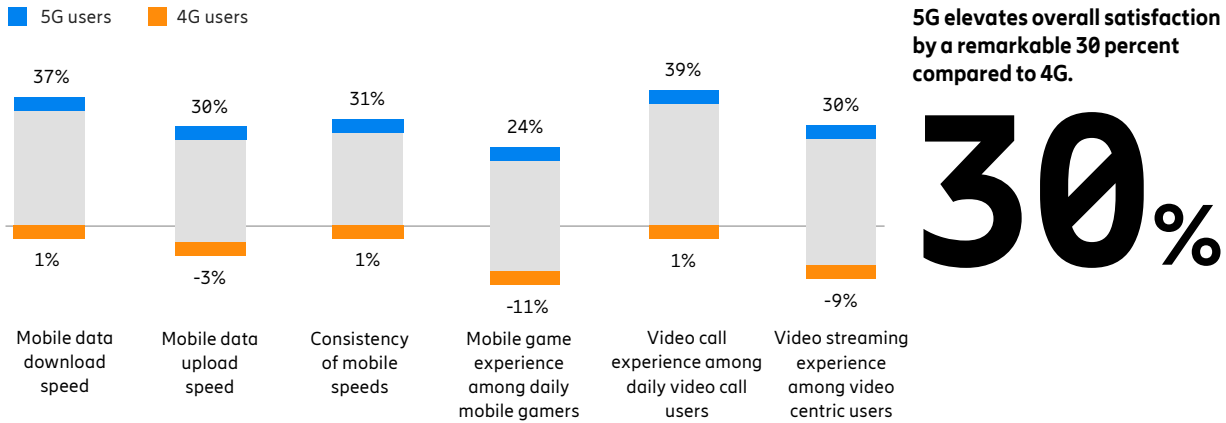


Base: 5G users in Australia, Canada, Mainland China, Denmark, Germany, Japan, India, Qatar, Singapore, South Korea, Taiwan, UAE, UK and US
Source: Ericsson ConsumerLab, 5G value, 2023

5G users in India using all these services could spend on average 2 hours more per day than users in the 5G early adopter markets.

2 hrs

Figure 6: 4G versus 5G network satisfaction score among smartphone owners in India



Base: Smartphone users in India aged 15–69
 Source: Ericsson ConsumerLab, 5G value, 2023

India’s 5G satisfaction levels rival or surpass 5G early adopter markets

We conducted an analysis of satisfaction levels, and the results indicate that 5G surpasses 4G in various aspects. Notably, a significant number of users in India express very high satisfaction with 5G, even when compared to early adopter markets. Additionally, the perception of 5G availability, which reflects how consumers perceive their frequent connection to 5G, is on a par with or even exceeds that of many early adopter markets.

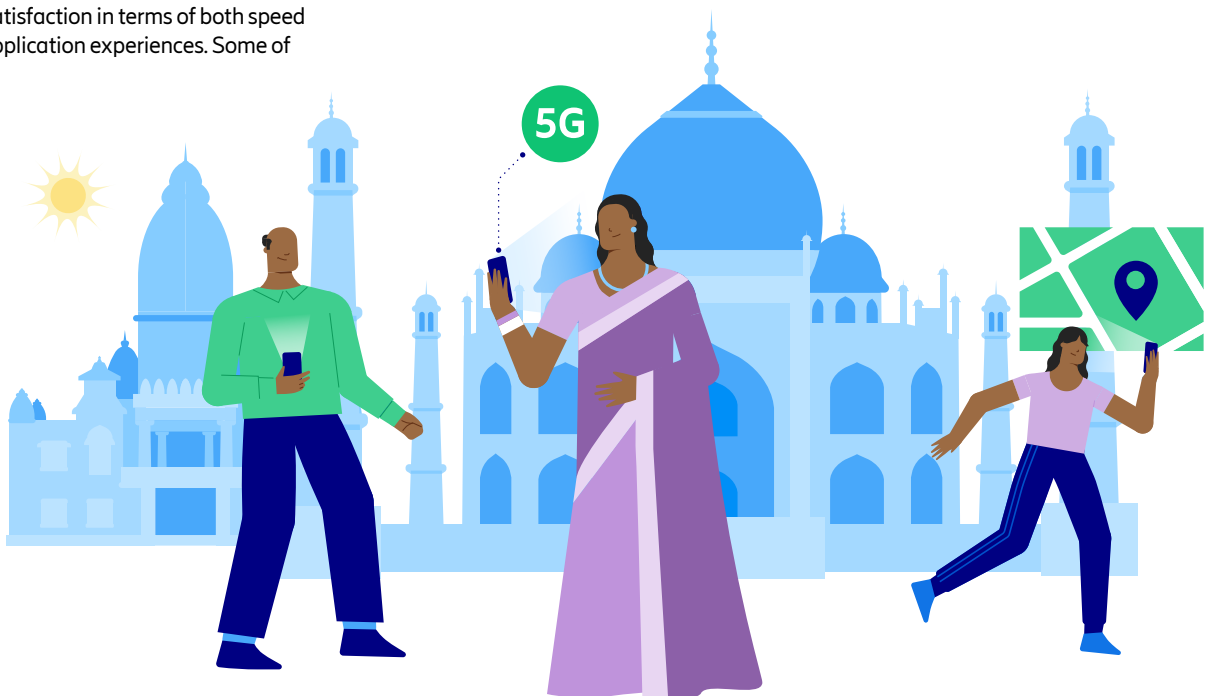
In a comparison between consumer satisfaction with 4G versus 5G network performance across different parameters such as mobile gaming, video streaming, download speeds and video calling, we found that 5G consumers in India consistently report significantly higher levels of satisfaction, with a nearly 30-point increase compared to 4G users. This indicates that 5G is effectively addressing the shortcomings of 4G and elevating user satisfaction in terms of both speed and application experiences. Some of

these differences can also be attributed to ownership of premium 5G smartphone among early adopters. Around 30 percent of 5G users in our survey own a smartphone priced higher than USD 500.

Solving the 5G monetization challenge: consumer appetite and willingness to pay for novel use cases

A total of 15 percent of Indian consumers are interested in adding application bundles, including video on demand, gaming and music, to their 5G plans, even at a higher cost. They are prepared to pay a 14 percent premium for these services. However, when introduced to 8 innovative 5G use cases, user interest jumps to 44 percent. These vary from live streaming plans for content creators offering faster upload speeds, to AI-optimized mobile gaming to reduce lag, to 5G-powered AR tools that offer immersive reading of children’s books.

While demand for larger data buckets remains the most prominent expectation among consumers for 5G plans, it is noteworthy that 31 percent of 5G users tend to deplete their data allocations by the end of the month. However, an even larger portion, 58 percent of 5G users find themselves with more than 30 GB of unused data by the month’s end. This suggests a clear need for service providers to explore more innovative approaches in crafting their 5G monetization strategy beyond just offering higher data allowances to better align with consumer preferences and usage patterns. As 5G coverage expands in India, there is a significant opportunity to unlock greater value. By offering segmented 5G propositions using QoS offerings, providers can tap into the 22 percent of smartphone users who express interest and are willing to pay a 13 percent premium for such enhanced experiences.



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