

5G-A Innovation at China Mobile Shanghai

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China Mobile Shanghai is making effective use of 5G-A technology to target high-level customers

China is an innovative test bed for 5G-Advanced (5G-A). All the Chinese vendors are active in this space, but what is of particular interest, and what we focus on here, is how China Mobile Shanghai is currently monetizing its 5G-A network from a consumer perspective.

China Mobile had already deployed 5G-A in over 300 cities at the end of last year. With that scale of network investment, it clearly has an incentive to vigorously promote 5G-A commercialization, and China Mobile Shanghai is a particularly interesting case study in this respect.

China Mobile Shanghai launched its 5G-A network in March 2024, focusing initially on central areas of Shanghai, including key landmarks, major roads, and the metro system. By the end of December 2024, China Mobile Shanghai had over 180,000 subscribers.

Technology upgrades that deliver dramatic improvements to network efficiency, including reduced latency and increased speeds, are obviously of value in their own right, but China Mobile Shanghai is also delivering some imaginative 5G-A commercial use cases.

Innovative consumer strategies

Following the launch of its 5G-A network, China Mobile Shanghai has been experimenting by adopting a variety of value- and experience-based consumer packages with differing SLA levels related to uplink, downlink, and customer prioritization. These packages are intended to both upsell new tariffs and lock in premium customers.

Specifically, in June 2024, China Mobile Shanghai launched three 5G-A packages based on user scenarios, targeted at live streamers, gaming enthusiasts, and high-end business travelers. Then, in

September 2024, the operator announced two additional tariffs. The first is a 5G-A Metro package offering dedicated data prioritization and peak speeds at specific Shanghai metro stations. The second package is targeted at high-end users who receive one of the three streaming, gaming, or business traveler 5G-A packages for free if they already have a high minimum monthly spend. The operator has since added further service benefits to its plans to increase usage and encourage upsell.

As a result of China Mobile Shanghai's 5G-A initiatives, the average monthly data usage (DOU) for 5G-A package users is 20% higher than that of the average user, and ARPU has also increased by 11%.

In addition to consumer innovation, there are also opportunities surrounding new enterprise and industry applications, which will ramp up during 2025. However, this piece focuses on China Mobile Shanghai's consumer-focused innovation.

The impact of 5G-A technologies, including 3CC aggregation

The innovative 5G-A packages are supported by a wide array of supporting solutions, including three component carrier (3CC) aggregation, 5G core network and wireless slicing technologies, network data analytics function (NWDAF)-enabled network analytics and automation, and customer experience management.

3CC aggregation is worth highlighting in this context because it supports differentiated packages. 3CC aggregation combines three frequency bands to boost network performance by improving network efficiency, reducing latency, and enabling much faster downlink speeds compared to a single band, making it particularly useful for supporting applications like HD video streaming and cloud gaming.

China Mobile Shanghai's 3CC deployment has been rapid. The initial demonstration area was set up at end-2023, but by end-September 2024, there were a total of over 5,000 3CC sites within the outer ring of the city, and rollout also continues in areas beyond the outer ring to boost indoor coverage.

China Mobile Shanghai is leveraging the 2.6GHz, 4.9GHz, and 700MHz bands with 3CC to address multi-frequency coordination issues and support device-network synergies. During peak periods, resource can be allocated to prioritize users of particular packages by ensuring that traffic with a high 5G QoS Identifier (5QI priority) is guaranteed—that is to say, QoS is set based on characteristics such as priority level or packet error rates.

The Shanghai Marathon

Any operator seeking to encourage increased usage needs to be able to handle high-capacity demand, whether in specific locations or at special events.

From this perspective, the 5G-A network was used to good effect to support live streaming during the recent Shanghai Marathon, which was held in December and involved 38,000 participants. The entire 42km race was broadcast in HD, with the coverage providing multiple perspectives, making use of 5G-A transmission equipment to provide views of the race from a runner's outlook, as well as drones providing a high-altitude view.

In the past in such crowded scenarios, traffic volume has been so high that it has led to network congestion and made it difficult to transmit video. This time, the 5G-A network enabled considerably higher uplink bandwidth, ultra-low latency, and a high level of stability for live broadcasters and users.

In addition to those directly involved in or covering the race, those subscribing to 5G-A packages also benefited from higher priority.

Using Huawei SmartCare for experience assurance

Huawei's SmartCare customer experience management solution is also being used for user experience assurance, providing location and experience-based analysis to improve the 5G-A service experience. The SmartCare platform's analysis is not just location-focused; it also assesses how apps are behaving, allowing it to identify whether customer experience issues stem from the network or the app itself. Therefore, it helps to support faster video downloads and smoother playback for 5G-A package users or better delivery of latency-sensitive instant messaging services.

China Mobile Shanghai is also using SmartCare to support market insights and precision marketing, with device and network-based data being used to precisely profile user behavior and identify potential new users of 5G-A services.

Marketing activities to improve user perception of 5G-A

As 5G-A is still unfamiliar to many consumers, it is proving necessary to educate users and raise awareness of the technology. For example, at an early stage in the rollout, in August 2024, China Mobile Shanghai made a point of targeting universities to help educate students about the benefits of 5G-A. The operator is engaged in extensive marketing activities, including AI-enabled direct marketing campaigns. The marketing includes handset-related promotions, marketing targeted at high-end users, and the promotion of scenario-based packages. As you would expect with 5G-A-based packages, there is a big focus on how fast the service is. In addition, subscribers to the 5G-A package see a Chinese Mobile VIP service logo in the upper left-hand corner of their phone.

What makes this China Mobile Shanghai example particularly noteworthy is the way in which the network technology implementation, the service package design, and the associated marketing are all cleverly aligned with each other.

Appendix

Further reading

[*5G in China – 2024*](#) (January 2025)

[*5G-Advanced Consumer Monetization—China Mobile Shanghai goes on the Offensive and Defensive*](#) (January 2025)

[*Digital Profile – China Mobile – 2024*](#) (August 2024)

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