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New Applications Showcased at the Beijing PT Expo

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The 31st Beijing Posts and Telecommunications (PT) Expo was held from June 4-6. The week is also the fourth anniversary of China's regulator issuing 5G commercial service licenses. Chinese operators took this opportunity to showcase their innovations in 5G applications. Omdia analysts visited the expo, some of our observations are summarized below.

New applications to consume bandwidth

The development of mobile broadband networks is happening parallel to the evolution of video resolution. With the evolution from SD to HD, UHD, and 3D, increasing video quality is providing consumers with premium video experiences while placing higher and higher demands on the networks. Therefore, video applications have been central to the mobile content ecosystem. Mobile operators always hope to develop higher-quality video applications to handle consumer bandwidth and increase customer stickiness.

In recent years, glasses-free 3D video applications have emerged on telecom operators' horizons, expected to bring innovative experiences and higher demand for network bandwidth. Glasses-free 3D was previously attempted but failed to take off. However, new glasses-free 3D applications are resurgent with enhanced technologies, such as light field holographic 3D displays or AI-assisted cameras tracking the user's eyes and adjusting the picture accordingly. Operators and leading vendors demonstrated glasses-free 3D applications at the Beijing PT Expo. Some of the applications can already provide a clear, jump-free, 100-degree 3D view, and the depth of the screen-out effect is up to one meter.

Multi-view glasses-free 3D applications often require an ultra-large bandwidth. According to Imagetru3D, a Shenzhen-based light field holographic 3D display vendor, the original data rate of an 8-channel 4K collection video can be up to 35.5 Gbps — that can significantly consume 5G bandwidth. However, enhanced connectivity technology, such as 5G-Advanced, can considerably improve user experience by lowering the video compression rate.

Chinese operators and their industry partners are actively investing in glasses-free 3D applications. They hope the new applications can stimulate 5G consumption. During the expo, Chinese industry players, including Huawei, Xiaomi, and Honor, launched the glasses-free 3D industry promotion initiative to accelerate the maturity of the glasses-free 3D industry chain (e.g., to extend glasses-free 3D display from laptops and tablets to smartphones and to promote the production of 3D video contents). It is expected that more glasses-free 3D applications will emerge soon. We may see them in industry events next year, such as Mobile World Congress 2024.

New experience with traditional services

Voice communication is the most traditional service of mobile networks. It has been available since the very early days of cellular systems and the user experience has not changed much since the digital voice was introduced in the 2G era. Now Chinese operators want to change this with the "new-calling" application.

Based on Voice over New Radio (VoNR) and the IMS data channel, the new calling application can combine data transmission with voice communications and enable new user experiences. China Mobile demonstrated some new calling use cases during the expo, such as automatic subtitles, real-time translation, and screen sharing during a call. The new-calling application could provide users with an intelligent and interactive experience, comparable with popular OTTs, without installing any third-party applications.

The new calling application will not only work for the consumer market but also can support business applications, such as new types of customer service hotlines and real-time assistance for remote workers. The application could help mobile operators to extend service scenarios and create new business opportunities.

During the Beijing PT Expo, four Chinese operators joined forces with industry partners, including Huawei, Xiaomi, and Unisoc, to launch the 5G New-calling Industry Development and Collaboration Initiative to promote the commercial development of the new calling application. China Mobile also announced it had performed friendly user trials for the new calling application in some advanced provincial markets, including Zhejiang, Jiangsu, and Guangdong, and will launch commercial new calling services across China at the end of this year. Chinese operators' active promotion, particularly China Mobile's commercial deployment, must accelerate the maturity of the new-calling ecosystem.

New business models in the consumer market

Chinese operators have explored new business models for the consumer market. Some of these were shown at the expo.

China Mobile has worked with operators of famous tourist attractions to produce VR and AR content for these attractions. With this, China Mobile can develop scenario-based consumer services, such as VR-based virtual tourist applications or AR-based digital guide applications. China Mobile also collaborates with attraction operators to build a B2B2C model, for example, China Mobile provides the attraction operator a package bundling on-site 5G coverage, a cloud platform, and VR/AR content. Then, the attraction operator resells (or freely provides) the content to tourists.

Even though VR services are still struggling in general, China Mobile and MiGu — China Mobile's subsidiary for online video services — are still exploring a two-sided business model for VR services. MiGu provides its customers with live VR broadcasting of pop concerts or sports games in a virtual venue. Some high-end customers can even own virtual box seats. On the other side, China Mobile can

sell the space of the virtual venue or virtual boxes to advertisers. A China Mobile employee in the booth told me that virtual advertisements perform pretty well.

Besides these new applications and models discussed above, there were also many other interesting showcases at the Beijing PT Expo. For example, cloud phones and PCs can provide consumers and enterprises with a cost-effective alternative for general smartphones or PCs. These innovative applications demonstrate Chinese operators' efforts to develop 5G applications. Hopefully, we can see the result of these efforts in 2H23 or 2024. Experiences and lessons from these explorations will be valuable for operators in the rest of the world and are worth continuous attention.

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