

**GSMA 5G TRANSFORMATION HUB**

The world's most innovative 5G solutions



# New multimedia communications for the 5G era

In China, video ring back tones (VRBT), which play a short video on the caller's handset before the call is answered, are hugely popular. Since China Mobile commercialised VRBT in 2018, these products have seen rapid adoption. By March 2024, more than 400 million China Mobile customers were using VRBT (accounting for nearly 50% of China Mobile's total subscribers), and the revenue generated by VRBT products exceeded US\$1.5 billion in 2023.

In the consumer and enterprise markets, VRBT products are widely used for personal interactions, corporate publicity and media communications, among other applications, demonstrating their commercial value. China Mobile, which has more than 70% of global patents relating to VRBT, has led the formulation of several international and industry standards, while developing core technologies and intellectual property rights. The telco has accumulated long-term practical experience in supporting and operating VRBT products, and has led the development of commercial applications.





# New multimedia communications for the 5G era




## CASE STUDY LEAD: CHINA MOBILE

### + CHALLENGE


 During the 5G era, the short video industry has seen remarkable growth, with the emergence of numerous internet-based short video applications. Individuals are progressively engaging in the visually stimulating experience provided by abundant short videos, inadvertently diminishing their dependence on conventional phone calls. This dynamic could hold back the growth of telecoms operators. To capitalise on their investments in 5G, telcos need applications that take advantage of the capabilities of their communication networks and the Internet.

### + SOLUTION

 China Mobile upgraded traditional audio ringback tones to VRBT by improv-

ing devices, ringback tone platforms and core networks through technical innovations, such as end-to-end resource reservation, rules negotiation and signaling flow. In so doing, the telco has acquired over 200 technical patents. Over time, China Mobile has rolled out different versions of VRBT, such as Caller VRBT, HD VRBT, Business VRBT, and AI VRBT, to cater to the varied requirements of customers.

### + IMPACT & STATISTICS

 China Mobile users generate four billion calls per day, with 700 million calls playing VRBT content. Of the more than 400 million VRBT users, there are more than 150 million daily active users across all scenarios. Each day,

more than 15 million short video clips are played as VRBTs. With an annual playback volume of more than 200 billion, VRBT products are generating more than US\$1.5 billion in revenues annually: VRBT has become a major value-added service for telecommunications operators. China now accounts for 70% of the global VRBT industry, establishing itself as the leader in this field.

### + NEXT STEPS

 China Mobile plans to upgrade VRBT to encompass pre-call, in-call and post-call scenarios through technological integration, media integration and scenario integration. The goal is to meet various needs of users during the call process, further boosting the reach rate, the connection rate and the conversion rate. At the same time, the 5G+VRBT Alliance, which includes content

producers, platform providers and device makers in China and overseas, is also growing and expanding. New scenarios, applications and connections continue to emerge, driving the development and transformation of telecom operators in the 5G era.

### + STAKEHOLDERS

 China Mobile.

### SOURCES & FURTHER INFORMATION



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# New multimedia communications for the 5G era

In China, video ring back tones (VRBT), which play a short video on the caller's mobile phone before the call is answered, are widely used by both consumers and businesses. As of March 2024, more than 400 million China Mobile's customers were using VRBT (accounting for nearly 50% of China Mobile's total subscribers).

Each day, more than 150 million China Mobile subscribers use VRBT, generating more than 700 million VRBT calls between them. That equates to 17.5% of the four billion calls China Mobile handles each day. China Mobile provides VRBT services for individuals, enterprises and media. In each case, the individual or the organisation pays the telecoms operator to show designated VRBT content to callers, either via a monthly subscription or they can pay for each VRBT. In 2023, the revenue generated by VRBT products exceeded US\$1.5 billion, helping the telco to generate a return on its investment in 5G infrastructure, which provides the necessary capacity to transmit high quality video.

In the consumer market, VRBT can be enhanced with filters, stickers and other features to enable users to create personalised communications and media. This functionality, which is particularly popular with fans of celebrities and brands, selfie enthusiasts and dynamic trendsetters, is designed to satisfy individuals' desire to demonstrate their originality and creativity. By enticing users to purchase value added services, VRBT products also help operators realise greater commercial value.

In the household market, VRBT supports functions based on family groups, such as "one person pays, whole family shares" and "one person sets up, the whole family uses". Employing innovative content processing services, such as video templates and AI audio-video matching, families can create a new experience that enables each member to effectively express their emotions and deepen their bonds.

In the business market, companies are using VRBT to create advertising videos promoting their products for specific target audiences, thereby raising their profile and boosting product sales. As it goes beyond traditional advertising channels, VRBT has opened up a new unique space for telecom operators.



Over the past six years, China Mobile has upgraded traditional audio ringback tones to VRBT through various technical innovations, such as end-to-end resource reservation, rules negotiation and signaling flow. As it developed the core technologies, the telco has acquired more than 200 patents relating to VRBT, which is 70% of the total worldwide. Over time, China Mobile has rolled out different versions of VRBT, such as Caller VRBT, HD VRBT, Business VRBT, and AI VRBT, to cater to the different requirements of customers.

“China Mobile’s VRBT has initially achieved technological, scene and media integration, realising full-scene coverage before, during, and after calls based on 5G network, achieving high-frequency touchpoints and network

effects on a large scale, greatly enhancing the user experience, and creating a new format of mobile synergy media business,” says Yan Zhongwei, Deputy General Manager of Migu Co., China Mobile’s digital content subsidiary. “With four billion daily massive touchpoints like a single drop of ‘tap water’ service, in the future, Migu will further refine business scenarios, enhance user experience, and promote value closed-loop, truly realizing the transformation from ‘tap water’ to ‘water tap.’” (tap water refers to the traffic; water tap refers to ARPU increase)

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**Yan Zhongwei** - Deputy General Manager of Migu Co., China Mobile’s digital content subsidiary



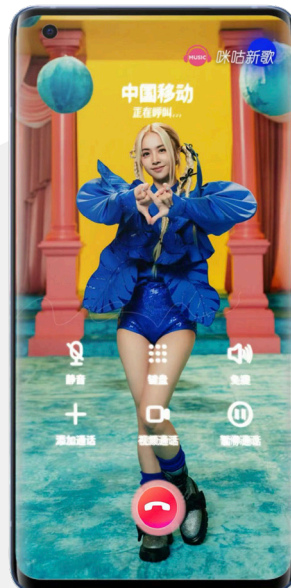


## Applying VRBT at major sports events

During the 2022 Qatar World Cup, VRBT introduced new media communication methods. China Mobile says users could create VRBT content related to the World Cup and popular topics at any time and place using DIY VRBT and other customised tools.

“By providing a comprehensive and immediate stream of World Cup goals, highlights, match reviews, and more, VRBT enhanced users’ viewing experience and delivered enjoyable entertainment effects,” says Yan Zhongwei. Simultaneously, China Mobile integrated

glasses-free 3D technology into VRBT enabling the service to tap the benefits of 3D scene modeling, real-time rendering, an HDR environment, simulated light sources and ray tracing technologies. As a result, users could enjoy immersive glasses-free 3D effects on their mobile screens while using VRBT. Glasses-free 3D VRBT were viewed more than 400 million times during the World Cup.



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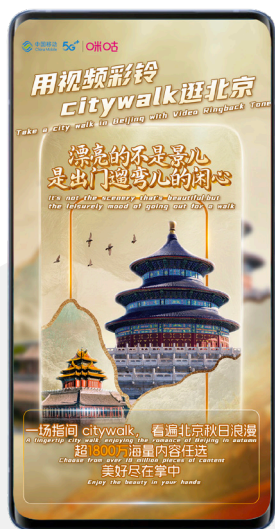
# Harnessing AI to make everyone efficient content creators

With the recent advances in generative artificial intelligence (AI), China Mobile Migu has utilized the telco's computational power and fast networks to develop a new service, branded "Tongzhou", that focuses on AI capabilities. The operator has developed an AI-generated content production pipeline, while offering technical capabilities for AI content production tools across different applications. It also provides AI-generated songs and videos for VRBT applications.

Whereas creators used to require extensive professional expertise and experience to produce short videos or compose songs, they can now generate AI-created music and video for VRBT through the Tongzhou generative AI platform by inputting text. These tools are designed to streamline the production process, while ensuring that the themes and styles of the content closely match the creativity and ideas of users, thereby greatly enhancing the efficiency of content production. China Mobile believes "AI+VRBT" will emerge as a cutting-edge technology that enhances gameplay, reduces barriers to creativity and facilitates the social sharing of content,

thereby providing users with a more immersive and engaging experience.

"China Mobile Migu, through self research and ecological cooperation, collaborates with innovative AI to empower and



upgrade VRBT applications, providing video creation, publishing, and dissemination services to over 400 million users. " concludes Wang Gang, Deputy General Manager of Migu Co., "AI VRBT includes two major functions: AI-created video and AI-created music. AI-created video integrates the leading domestic text-to-video Large Model in the field of AIGC,

allowing every user to have a new experience of independent and intelligent creation of VRBT content. AI-created music supports inputting natural language to complete high-quality music creation of lyric, melody, and singing, enabling any beginner to achieve his or her dream as a musician."

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**Wang Gang** - Deputy General Manager of Migu Co., Ltd  
China Mobile's digital content subsidiary



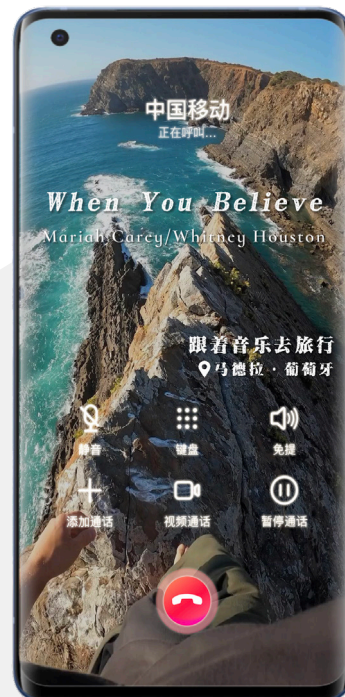




The telco is coordinating the development of new VRBT technologies through the growing 5G+VRBT Alliance, which also includes content producers, platform providers and device makers in China and overseas.

“VRBT, with its unique product form and user attributes, has broad prospects in demonstrating user personality expression, spreading positive value forces, and opening up a completely new industry landscape,” concludes Sun Shiwei, Chairman of the CMCC 5G+VRBT Alliance and Deputy General Manager of the Marketing Department of China Mobile Group. “China Mobile will work together with alliance

members in three aspects to create the future. First, create new capabilities to promote the continuous evolution of VRBT product functions; second, build new media to shape a national-level integrated media brand; and third, construct a new ecosystem to expand the industry’s new value space.”



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## About the GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

For more information, please visit the GSMA corporate website at [www.gsma.com](http://www.gsma.com).

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## GSMA 5G Transformation Hub

The GSMA 5G Transformation Hub is a source of information on some of the most innovative 5G solutions in the world. This portal contains case studies detailing design, benefits, key players, measured value and the future impact of scaling up these 5G solutions worldwide. The 5G Era is now firmly established and this family of standardised GSM technologies, including mmWave, are being rolled out successfully across the globe. The GSMA 5G Transformation Hub, launched at MWC Barcelona in 2022, provides details of how 5G is best placed to deliver real value for a range of key sectors including manufacturing, energy, transportation, media and live entertainment, smart cities and construction. Many more case studies will be added, in the coming months, covering even more industries and the GSMA is asking Members to nominate innovative 5G case studies to add to this global digital showcase. The 5G Transformation Hub is sponsored by Qualcomm.

[www.gsma.com/5GHub](http://www.gsma.com/5GHub)

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## About this case study

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