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Solution Behind the Asian Games

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Assuring the Asian Games

The 2023 Asian Games held last month in Hangzhou, China were significant in a number of ways. The 16-day competition was the first Asian Games since the COVID-19 pandemic, attracting more than 12,000 athletes from 45 countries. The games were notable for both on- and off-court advancements, including the increasing proliferation of esports, the expansion of the Alipay third-party payment service to international bank cards, the use of artificial intelligence (AI) and virtual reality (VR), and the application of the latest digital technology developments.

The 80,000-capacity state-of-the-art "Big Lotus" stadium that was specially built for the games was the lynchpin of the event. Not only was it equipped with multimedia facilities to provide an immersive environment for the spectators, it was also supported by advanced assurance systems making use of AI and data assets to ensure the required user experience.

Intelligent digital twin solution

Huawei's SmartCare Intelligent Digital Twin solution was used by China Mobile subsidiary Zhejiang Mobile to assure customer experience at the event.

Because of the high 5G traffic volumes, ultra-dense networking was needed to deliver the desired user experience at Big Lotus stadium. In addition, to diagnose issues, near-real-time data (under 1 minute delay) was needed. Decision-making data to drive next best actions needed to be delivered within 3 minutes rather than the more typical 10–60 minutes.

The data required to deliver an optimal customer experience comes from disparate sources, and the quality of the data is vital to providing relevant information in a timely manner. Huawei claims that its data governance tool chain and the Smart DataCube converged data engine can process the high-quality data in the 1 minute that is required to support such a fast-moving and pressurized environment.

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The intelligent digital twins solution that was used to ensure the necessary customer experience levels at the Asian Games' Big Lotus stadium is a key part of Huawei's SmartCare family of user experience solutions—which encompass network performance management, service quality management, and customer experience management—and the multiple touchpoints and interactions involved in delivering a successful customer journey.

Huawei's SmartCare solution's data engine is used to create and align data from a wide range of data sources such as operations support systems (OSS), business support systems (BSS), customer relationship management (CRM), call history records, frequency data, road test data, and multiple engineering parameters. This data can be converged around specific entities or places of interest (POIs) such as the Big Lotus stadium, although these could as easily be schools, museums, or other locations. This converged data is used to build a digital twin based around the relevant POIs, then AI processing is added to provide support for specific business scenarios such as traffic simulation, complaint reduction, or roaming assurance.

Huawei's solution also makes use of large language models (LLMs). There are, of course, numerous vendors working with LLMs with solutions capable of handling massive datasets, but Huawei claims it can differentiate itself through its knowledge of telecoms and telecoms data, especially OSS data. Along with network behavior, this helps operators understand the behavior of particular groups or user segments such as heavy video streamers or mobile gamers and so enables the operators to design and target specific offerings at them.

A common framework coupled with a wide range of use cases

Huawei is working closely with the TM Forum and supporting it in a number of areas, including autonomous operations projects. This includes contributing to the TM Forum's Digital Twin for Decision Intelligence (DT4DI) project, which is seeking to define and develop an industry decision intelligence framework that integrates digital twin (DT), AI, and other technologies with decision intelligence (DI) and business process practices. It is seeking to develop the standards needed to support complex decision-making problems in complex scenarios where data is the foundation.

Converged data is a key factor in enabling digital operation transformation across a wide range of areas that include improving network maintenance and optimization, increasing the precision of network planning and construction, supporting better targeted marketing, and enabling data monetization. Compliance with the DT4DI architecture is an important aspect of Huawei's approach, because the combination of DT and DI can be used to improve business outcomes.

Finally, it should be stressed that Huawei's SmartCare Intelligent Digital Twin solution can be used in a wider range of situations than just the large-scale sporting events scenario illustrated by the Asian Games. It can be used in a large variety of use cases, including supporting digital service user acquisition for mobile money services, mobile network testing assurance, and over-the-top (OTT) experience assurance where the Facebook, WhatsApp, or TikTok user experience is optimized. It can also be deployed in dangerous vertical industry scenarios such as in the mining industry (named Metaworks), where Internet of Things (IoT) data needs to be refreshed in near-real time. In this scenario, the IoT data is analyzed and modeled and applied to digital twin apps, which can help manufacturers to optimize the procedure of producing, transporting, warehousing, and selling to ensure efficient, safe, and intelligent decision-making.

However, the Asian Games use case has been singled out as significant because it demonstrates what the solution is technically capable of: delivering speedy turnaround times at a high-profile international event that has demanding KPIs and service levels requirements.

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Appendix

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Omdia Commissioned Research

This piece of research was commissioned by Huawei.

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