GSMA

GSMA 5G TRANSFORMATION HUB
The world's most innovative 5G solutions

5G

Enabling seamless connectivity at large-scale consumer events with Singtel standalone 5G network

Singtel

As smartphones advance in capability, consumers increasingly use them to watch live sports, other events, as well as produce and stream high-definition content across online platforms from anywhere.

Singtel

Media and entertainment

Enabling seamless connectivity at large-scale consumer events with Singtel standalone 5G network

⊕ CHALLENGE:

In the case of sporting events, like F1 and World Cup, hundreds of thousands of people can be there in person. As spectators try to stream footage of the event at the same time, this can put a strain on the network and leading to video buffering.

⊕ SOLUTION

Anticipating these needs, Singtel invested in 5G infrastructure and capabilities to deliver seamless connectivity to consumers, especially in high participation activities like global sporting events by leveraging network slicing which creates a logically separated, self-contained slice of the network, offering differentiated service performance with prioritised assurance on speed, latency, and reliability.

⊕ WIDER IMPLICATIONS:

Singtel sees the provisioning of network slices for streaming live events as the first step towards a 5G network that supports multiple logical networks with different configurations to suit the traffic characteristics of different applications and provide service level assurances for a wide range of industrial and government applications.

SINGTEL

Providing seamless connectivity at
large scale events

Singtel, a leading telco in Asia, has invested heavily in 5G infrastructure and in 2022, achieved 95% 5G standalone outdoor coverage, three years ahead of regulatory targets. Since the nationwide deployment, Singtel has been working on exploiting the technology for commercial use, namely in network slicing.

Network slicing enables multiple virtual networks to be created, with efficient usage and management of the network resources to provide differentiated services at scale. Each "slice" or portion of the network can be tailored to the specific needs of the application or use case.

As well as enabling operators to provide a differentiated experience, network slicing enables them to better manage the network resources and tailor the connectivity precisely to the use case.

This was successfully applied to deliver smooth mobile video streaming for two major international sporting events in the second half of 2022: the Formula 1 Singapore Grand Prix and the FIFA World Cup Qatar 2022. More than 300,000 spectators attended the Formula 1 Singapore Grand Prix in October 2022 with many simultaneously accessing their mobile network for general usage, uploading content and livestreaming the event on various digital platforms, causing network congestion and inconsistent connectivity. Broadcasters relying on mobile networks will also have to compete with the spectators for bandwidth.

It is business-critical for broadcasters to deliver every second of the event or viewers at home and around the world will have a poor viewing experience and miss out on critical moments.

But with network slicing, Singtel was able to deliver consistent seamless connectivity ensuring no one missed the action at these events.

In addition to the two major international sporting events, Singtel applied network slicing at the 2022 New Year countdown, enabling a smooth live broadcast of the event as well live streaming by the audience, so that everyone enjoyed a pleasant viewing experience.

By partitioning its 5G standalone network, Singtel was able to grant specific customers priority usage to radio resources. This ensures a lag-free mobile streaming experience in crowded areas, differentiating Singtel's offering from other broadcasters providing the same content.

Airing the show via a reliable mobile network that can guarantee high throughput and low latency performance ensures that viewers do not miss any of key moments.

Ensuring consistent high-speed connectivity for best user experience

Singtel leverages network slicing through its nationwide 5G SA coverage in Singapore. By allocating 10% of its network with radio resource partitioning for its 5G subscribers and broadcasters, users of Singtel Cast, Singtel TV Go and its other online streaming platforms enjoyed uninterrupted mobile streaming of the Formula 1 Singapore Grand Prix, even at high traffic areas of the Marina Bay Street Circuit.

The dynamic nature of radio resource partitioning also allowed the sharing of dedicated radio resources when not fully utilised by other 5G customers at the event. This means that underutilised bandwidth could be channelled to other users who may need it, such as the broadcasters, thus avoiding a waste of radio resources.

This ensures its subscribers have priority usage of radio resources anywhere on the island and can even tap into underutilised bandwidth by other 5G customers. The solution requires users to minimally have a 5G SA handset (3GPP Release-15), 5G SIM and 5G subscription to be entitled for the event slice.
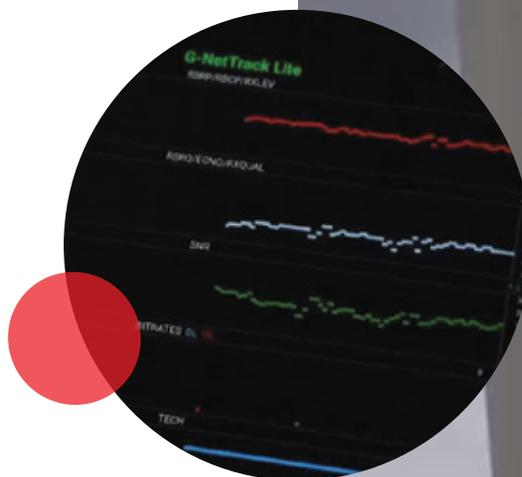
Further advantages of
5G and network slicing

With network slicing, Singtel is able to offer new innovative services to its customers in Singapore. It can be applied to diverse use cases in the consumer segment such as AR/VR, TV/media for sports event streaming and cloud gaming. It can also offer a complete end-to-end security slice, starting from the mobile device - securing the entire connectivity and application.

Singtel's 5G network with edge cloud and network slicing capabilities can also support real-time computing, data storage, data analytics and AI services at the edge – bringing to life more mission-critical enterprise applications where the need for a timely response and swift message broadcast is critical for business operations, such as automated quality inspection in factories, connected self-driving vehicles, video-assisted remote operations, smart cities, and applications for Industry 4.0.

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.

Follow the GSMA on Twitter: @GSMA.

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 and this particular Case Study are both sponsored by Qualcomm.

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About this case study