

FROST & SULLIVAN



2022 CUSTOMER VALUE LEADER

*ASIA-PACIFIC
5G ENTERPRISE INDUSTRY*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Singtel excels in many of the criteria in the Asia-Pacific 5G enterprise space.

AWARD CRITERIA	
<i>Business Impact</i>	<i>Customer Impact</i>
Financial Performance	Price/Performance Value
Customer Acquisition	Customer Purchase Experience
Operational Efficiency	Customer Ownership Experience
Growth Potential	Customer Service Experience
Human Capital	Brand Equity

Customer Acquisition

With Singapore as its stronghold, Singapore Telecommunications Limited (Singtel) serves a growing number of businesses across 21 countries, providing businesses with solutions for workforce mobility, data hosting, cloud, network infrastructure, analytics, and cyber-security. Singtel is recognized as the enterprise partner of choice among Singapore’s 291,600 enterprises; therefore, its strong capabilities in cloud and multi-access edge computing (MEC) need little introduction and form a solid foundation in its push to monetize 5G innovation in the enterprise segment. Paragon, Singtel’s all-in-one orchestration platform, leverages this track record to take customer relationships further by helping enterprises manage the challenges of rapid digitalization cost effectively. The platform, accessible through a single touchpoint, supports enterprises with the necessary resources, including connectivity, edge computing applications, artificial intelligence (AI), and security capabilities, that are cloud enabled but can be deployed as a hybrid solution on a preferred public cloud provider if required. These activities remove the need for complex designs and lengthy deployment timelines and make go-to-market easier and with less friction.

In addition, Singtel provides access to Paragon Marketplace, where ready applications are accessible through an application programming interface (API) and add value by consulting on solutioning, from business case to service offer and go-to-market strategy. Singtel’s growing track record of offering available solutions includes real-time fleet management, mixed reality and metaverse-based simulations, and smart warehouse management; therefore, customers derive more value by partnering with Singtel.

Operational Efficiency

Delivering a 5G standalone network with more than 95% nationwide coverage three years ahead of schedule, along with an all-in-one orchestration platform, is an industry-acknowledged achievement that far surpasses industry benchmarks. Singtel has successfully pinned down coverage as a differentiator ahead of its competitors and is spearheading the way forward for enterprises to integrate 5G and MEC into their business operations and develop new innovative solutions to transform and grow their

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businesses. The tight timeline and timeframe during the COVID-19 pandemic from 2020 to 2022 highlight Singtel’s passion and determination to perform assigned tasks productively, quickly, and to a high-quality standard. In an industry that is used to taking months or even years to roll out new sites, Singtel’s stretch target is possible because of its dedicated and trained talent that have a track record in meeting past stretch targets to achieve the high standards set by the Singaporean government.

Singtel constantly strives to deepen its expertise and help organizations build out the rapidly expanding 5G ecosystem in Singapore. In 2021, the company partnered with Infocomm Media Development Authority (IMDA), National University of Singapore (NUS), and Singapore Polytechnic (SP) to ensure the continued supply of trained talent that can support future initiatives in 5G network engineering, digital services, 5G product and platform development, application development, and advanced analytics.

Growth Potential

As the adoption of 5G connectivity becomes more complex, in terms of solution development, Singtel’s past commitment to invest in core Intellectual Property (IP) and regional capabilities will pay off because these investments have laid the groundwork needed to tap into opportunities in the 5G enterprise space. The intelligent edge, enabled by AI and MEC, will bring together end-to-end (E2E) services that can support real-time, location-based services; contextualized marketing; and network analytics capabilities. With network slicing, mission-critical enterprise applications will start to grow in number and thrive, powered by real-time computing, data storage, data analytics, and AI services at the edge.

The launch of the 5G@Sentosa testbed in 2021, in partnership with multiple government agencies, including Government Technology Agency and Sentosa Development Corporation, is an indication of things to come. Starting with 15 live trials, with plans to increase to 30 by H1 2023 and with the Singaporean government advocating the use of the technology, Singapore, through Singtel’s solutions, looks set to benefit from the progress in the construction, transportation, and tourism industries. Singtel’s Paragon platform is primed to be at the center of this development.

With solution development underway in Singapore, Singtel is well positioned to leverage its track record, know-how, and expertise and replicate success stories in other regional markets so that 5G can scale faster and more rapidly transform the industry.

Customer Purchase and Ownership Experience

With the launch of Paragon in 2022, Singtel effectively puts the control of launching 5G solutions in the hands of its customers, including government agencies and enterprises of all sizes. The single touchpoint within Paragon consolidates all the necessary resources and facilitates easy access through API connections so that enterprises can tap into Singtel's 5G resources and partner solutions on Paragon Marketplace (e.g., fleet management, augmented reality, mixed reality, metaverse-based simulations, and smart warehouse management) by activating network slices on demand while only paying for what they use. This feature lowers the barriers to 5G adoption and integration for enterprises and is useful when launching additional innovative solutions faster because traditional product roadmaps have a 12-to-15 month horizon. For example, a fleet management application powered by Solace, an event streaming platform, can be deployed instantly through the Paragon dashboard after paying for Solace. With lower operational and overhead costs, the risks are lower for companies experimenting with innovative ideas and concepts. With Singtel's Paragon, these product development bottlenecks can be reduced to days at a minimal cost.

Singtel's experience assures customers that they are buying the optimal solution to address their unique needs and constraints. Drone operators, such as those working within the construction industry, can now

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deploy drones into customers' operations within minutes instead of weeks, allowing customers to pay only when using the drones and to experience better performance with 5G, such as faster reaction times. Moreover, Singtel's partners, comprising companies in related areas, including chipset manufacturers, Internet of Things (IoT) device companies, apps and software developers, content producers, system integrators, and solution providers, will benefit from the increased number of customers on Paragon.

Brand Equity

With an immense following among enterprises, Singtel is viewed positively as an agile and innovative company. By offering critical infrastructure and essential services to customers in Singapore over the years, Singtel has garnered a high level of brand loyalty among government agencies and enterprises of all sizes. Slowly and one by one, these enterprises are expanding contracts with Singtel as a company that empowers industries and businesses with greater productivity, operational efficiency, and innovation to include 5G solutions.

Having built a world-class 5G network and an industry-acknowledged, all-in-one orchestration platform to support 5G solutions, Singtel is enabling Singapore's next phase of growth as a global smart city, with results starting to show in the company's financial and network performance. In 2021, Singtel experienced greater than 100% year-on-year (YoY) revenue growth from 5G, and in H2 2021, Ookla® Speedtest declared Singtel, with its 5G network, as the "Fastest 5G mobile operator in Singapore."¹ Furthermore,

¹ Ookla Speedtest; Speedtest Awards Singapore: Q3-Q4 2021; "[Fastest 5G Mobile Network: Singtel](#)"

successful strategic partnerships, including with Micron and Hyundai, are a testament to Singtel's ability to help transform Singapore by using 5G technology. With Micron Technology, Singtel's Paragon will enable real-time performance monitoring and feedback from devices on both the networks and the devices. With Hyundai, Paragon will enable the real-time status and performance of batteries that power Hyundai's electric vehicles (EVs) in Singapore.

Conclusion

Having laid the groundwork through past investments in core IP and regional capabilities and through years of cultivating beneficial relationships with customers, Singtel is now benefiting from the growth opportunity that 5G and edge computing brings to Singapore and the APAC region. Singtel's hard work and determination are starting to pay off as 5G growth starts to show in the company's financial and network performance. As the adoption of 5G connectivity becomes more complex, in terms of solution development, Singtel's one-stop solution that offers tremendous value will become indispensable because it helps enterprises overcome their digitalization challenges and move quickly toward renewed growth. Leading companies, such as Micron and Hyundai, are already well on their way to a digital future with Singtel's partnership.

With its strong overall performance, Singapore Telecommunications Limited earns Frost & Sullivan's 2022 Asia-Pacific Customer Value Leadership Award in the 5G enterprise industry.

What You Need to Know about the Customer Value Leadership Recognition

Frost & Sullivan's Customer Value Leadership Award recognizes the company that offers products or services customers find superior for the overall price, performance, and quality.

Best Practices Award Analysis

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

