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Telco Cloud Services (Asia)

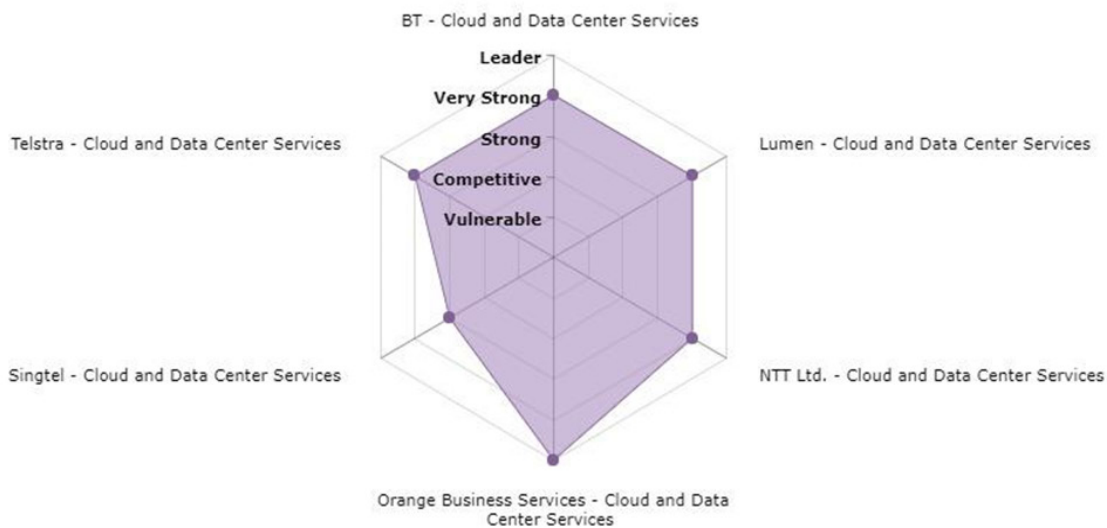
May 25, 2021

COMPETITIVE LANDSCAPE ASSESSMENT - TELCO CLOUD SERVICES (ASIA)

REPORT SUMMARY

Carriers are expanding their capabilities in edge computing and leverage their network assets to differentiate in the market.

PRODUCT CLASS SCORECARD



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MARKET OVERVIEW

Product Class

Telco Cloud Services (Asia)

Market Definition

This report covers the cloud services offered by major global and/or regional carriers in the Asia-Pacific region. This assessment includes service portfolios, capabilities, delivery, and partner ecosystems.

Rated Competitors

- BT
- Lumen
- NTT Ltd.
- Orange Business Services
- Singtel
- Telstra

Additional Competitors

- T-Systems
- PCCW
- Tata Communications
- Vodafone Business

Changes Since Last Update

- **April 2021:** NTT integrated its ControlPanelGRC with SAP's Ariba, Concur, and SuccessFactors cloud solutions that allow organizations to automate risk analysis and compliance within both SAP's on-premises and cloud environments.
- **March 2021:** NTT established its Bangkok data center as an international network exchange hub through partnerships with Japan Network Access Point (JPNAP) and Bangkok Neutral Internet Exchange (BKNIX) and launched its fifth data center in Malaysia for hyperscalers and high-end enterprises.
- **March 2021:** Lumen integrated IBM's Cloud Satellite with its edge platform to offer hybrid cloud services across any environment- cloud, on-premises or at the edge. It also expanded its partnership with VMware to fast-track the design, development, and delivery of edge computing and 'work-from-anywhere' solutions.
- **March 2021:** Singtel and Optus expanded their 5G ecosystems with AWS and Azure for 5G edge computing that helps enterprises to develop low latency 5G solutions on their Multi-access Edge Compute (MEC) infrastructures.
- **December 2020:** Lumen launched Lumen Edge Compute, a solution that promises low-latency and scalability delivered via bare metal-as-a-service. It also launched Data Access Accelerator, a managed service, which runs on the Lumen Platform, allows for unstructured, file-based data to be acquired and processed from different locations. It is near real-time file access regardless of location.
- **November 2020:** Singtel launched Liquid-X: a next generation software-defined cloud-based networking platform to simplify cloud networking management by integrating multi-cloud access, analytics and security.
- **November 2020:** Orange Business Services announced a global strategic partnership with AWS to support enterprises in achieving their multi-cloud deployment goals.

Changes Since Last Update

- **November 2020:** Telstra acquired Epicon, a specialist in IT service management and IT operations. Epicon has more than 100 technical specialists across Australia with some capabilities around cloud management. It also announced collaboration with Ericsson and AWS (January 2021) to develop an enterprise edge cloud solution that helps Telstra to create new services across its network.

MARKET ASSESSMENT

The cloud market in Asia-Pacific is expected to grow from US\$128 billion in 2019 to US\$279 billion in 2024 at a CAGR of 16.8% (source: GlobalData Global IT Market Analyzer). Despite the economic slowdown due to the COVID-19 crisis, cloud remains an important technology and has become a key enabler for enterprises to continue their operations during the pandemic. This includes offering enhanced application experience for remote workers and driving productivity through cloud-based collaboration tools. The growth is largely driven by the low cloud adoption, especially in the emerging parts of the APAC region (e.g., Southeast Asia, India). This is also driving cloud providers to enhance their offerings (e.g., multi-cloud, container and network and security integration) to address the new market demands and capture the high-growth opportunity. Regional and global carriers have been offering comprehensive cloud services to MNCs and large enterprises. Their offerings range from cloud (public, private, and hybrid), management platforms, and network integration to professional services. As the competition increases, carriers are leveraging their assets to offer cloud-network integration to gain a competitive advantage especially against non-telco providers.

As adoption increases, there is a growing demand in the application layer and value-added services, on top of the infrastructure solutions (e.g., IaaS, PaaS, SaaS, and private cloud). Increasingly, carriers are offering a single managed services wrap for cloud and network services to gain an edge in the market and expanding their interconnect partners to offer wider options to enterprises and managed multi-cloud services. This integrated offering provides customers with greater visibility across multiple domains, cost management, and alignment to ITIL processes. Examples include BT SD-Fabric, the Vodafone and IBM partnership, Orange Next Gen Hub, Telstra Purple for managed services and Singtel's launch of Liquid-X: a next-generation software-defined cloud-based networking platform to simplify cloud networking management.

Besides, as 5G is being rolled out across the region, carriers are expanding their capabilities in edge computing through partnerships with hyperscalers and other tech vendors (e.g., AWS Wavelength, Azure Edge Zones, Google Mobile Edge Cloud [GMEC]). With their network assets, carriers are co-developing various edge applications with enterprises to address the early demand for ultra-low latency applications (e.g., autonomous vehicles and factory automation). For example, Telstra's partnerships with AWS and Ericsson, Singtel's collaboration with Azure and AWS and Lumen's launch of Lumen Edge Compute solution, Lumen Edge Bare Metal that delivers 5ms latency, and its partnership with VMware and IBM. There is also a GSMA-supported initiative by several leading European and APAC telcos (e.g., Orange, Singtel and Telstra) to develop interoperable edge computing platforms.

MARKET DRIVERS

- **Agile Infrastructure:** Cloud is no longer an option; it has become a necessity for enterprises to have agile infrastructure and save costs in addressing the changing business needs driven by digital transformation. There are also cases where cloud is the only available delivery option.
- **Existing Relationships:** Enterprises already have years of relationships with carriers for connectivity and managed services. These long engagements and continuous initiatives to enhance service management are an advantage for carriers when dealing with enterprises which are looking for new cloud services.
- **Integrated Offerings:** While cloud services by webscale players may be more price-competitive, the integrated solutions offered by carriers often provide higher values such as better control and management, higher reliability, and security. Network services can also be integrated with other cloud-based solutions such as UC, security, and IoT. Some carriers also offer consultancy services (e.g., around the AWS environment) to overcome complexity in implementation.
- **Multi-Cloud:** Workload orchestration and automation are getting more complicated due to the multiple cloud services by different providers across mixed environments (private/public). The advancements of cloud management platforms (e.g., with software-defined analytics and automation capabilities) enable enterprises to implement new cloud services or migrate existing workloads from on-premises seamlessly while minimizing the business impact.
- **Edge Computing:** The demand for cloud computing at the edge is growing, driven by ultra-low latency applications such as autonomous vehicles. 5G will be one of the key enablers in edge computing through multi-access edge computing (MEC), network slicing, and private network. The ecosystem is still fragmented, but hyperscalers are already making an early move by extending their partnerships with carriers to offer their cloud services from telcos' infrastructure (e.g., AWS Wavelength/Outposts, Azure Edge Zones/Azure for Operators, Google Anthos/Mobile Edge Cloud).
- **COVID-19:** COVID-19 has driven many enterprises to accelerate their workload migration from on-premises to cloud facilities to enable remote workplace, enhance collaboration during the pandemic, and strengthen their business continuity plan (BCP). Businesses are now moving faster to cope with COVID-related challenges, including customer engagement, internal process, digital commerce, and supply chain.

BUYING CRITERIA

- **Cloud Portfolio:** Enterprises are looking for cloud providers with extensive cloud portfolios- not just the infrastructure and application (e.g., private cloud, IaaS, PaaS, and SaaS), but also the platform to manage multiple clouds and automate workload across private and public environments. Cloud-based IT services such as IoT platforms, UCaaS, security, and marketplace are also crucial for providers to offer horizontal and vertical applications.
- **Data Center Services:** Data center footprints are important, especially in private or hybrid cloud deployments. While the global cloud providers have presence mainly in developed markets (e.g., Australia, Japan, Hong Kong, and Singapore), the Asian-based carriers differentiate themselves by having wider footprints in the region, including in emerging markets such as the Southeast Asian countries to address the data residency and edge computing requirements.
- **Software-Defined Infrastructure:** Carriers are expanding their network coverage and adding new technologies such as SDN and NFV into their network services (e.g. SD-WAN, SD-interconnect, and SD-platform). Some carriers are also expanding their interconnect access through third-party providers such as Equinix Fabric. This enables them to provide integrated cloud and network services and offer higher reliability through their interconnected data centers and greater efficiency with workload orchestration across multiple clouds. This gives an edge to the carriers over other cloud providers in the market, especially in the private/hybrid cloud.

- **Supplemental Services:** Cloud is not just a technical solution, but a key enabler in enterprise digital transformation that maps to various business outcomes. Professional services are becoming an imperative part of the ICT solution to ensure seamless service migration, system integration, delivery, and ongoing management. Enterprises look to the service provider as the ‘trusted advisor’ to support in areas such as technology transfer and/or supporting multi-vendor environments. Other add-on services such as AI/analytics, security, compliance/governance, self-service, and cost management are also becoming more important for enterprises to gain additional operational efficiency. A wide range of ecosystem partners (e.g., interchange to major cloud and data center providers) is also crucial for service providers to address the diverse demands in the market.

VENDOR RECOMMENDATIONS

- **Differentiate with Network:** The cloud market is quite saturated with many providers, including webscale players, IT vendors, and system integrators. Carriers could position their network advantage such as integrated cloud and network services or software-defined capabilities to differentiate in the market. This can be offered through an open/interoperable cloud management platform that supports advanced features such as automation, security, SDN, and cost management.
- **U.S. and European Carriers:** The U.S. and European carriers could highlight their strong presence in their home regions to address the outbound Asian MNCs. Besides cloud and network, the carriers could also offer professional services to help these enterprises to meet the regulations in the (U.S. and/or Europe) regions.
- **Edge Computing:** Carriers should expand their initiatives in co-creating solutions across multiple verticals with enterprises to gain a better understanding of the market needs and strengthen industry-cloud capabilities (e.g., cloud services designed to meet different industry requirements such as government, BFSI and healthcare). Carriers could also leverage their wide ICT capabilities such as IoT, cloud, and cybersecurity to offer end-to-end vertical MEC solutions. This will drive their brand share and hence enable them to capture the early opportunities.

BUYER RECOMMENDATIONS

- **Professional Services:** As carriers are strengthening their professional service capabilities, enterprises could expect stronger consulting/advisory, migration, deployment, management, and support services to help them with digital transformation as well as expanding beyond the Asia-Pacific region.
- **Templates:** Enterprises should look for a combination of self-service tools that promote both application and infrastructure management, especially across the network and cloud domain, through a template-based approach from configuration to lifecycle management. Admin tools should also support a good balance of monitoring to governance.
- **Vertical Capabilities:** Enterprises should consider providers with strong industry practices and wide customer references. While cloud is more of a horizontal solution, there are vertical-specific requirements (e.g., compliance, data protection, and governance) that need to be addressed for enterprises to make the shift.

RATED COMPETITORS

Product Name	BT - Cloud and Data Center Services
Current Perspective	<p>BT has comprehensive cloud offerings from infrastructure (e.g., private, hybrid, public cloud) to cloud-based applications (e.g., contact center, collaboration tools) and value-added services (e.g., cloud management, cloud security, industry cloud). Besides providing the service from its infrastructure, BT partners with leading vendors such as Azure, AWS, and VMware to offer wider options in the market. It also has very strong software-defined infrastructure capabilities through its multi-vendor SD-WAN approach, cloud-network convergence (e.g., DC-LAN) and partnership with Equinix. Furthermore, BT has established professional service capabilities that focus on service delivery and business outcomes. It has 2,000 consulting and professional services headcount under the BT Consulting brand and over 7,700 people dedicated to support services. It has four global service hubs across seven regional locations, as well as 13 satellite service centers across the globe. Support is offered in 25 languages. However, despite its extensive global presence, BT has a limited footprint in APAC compared to its competitors.</p>
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Very Strong • Data Center Footprint: Competitive • Software-Defined Infrastructure: Very Strong • Supplemental Services: Very Strong
Product Scores	Very Strong
Strengths	<ul style="list-style-type: none"> • BT's new business unit 'Digital', focuses on the development and delivery of innovative products, platforms and services. • BT offers end-to-end cloud and data center portfolios in the market. • 'Cloud of Clouds' focuses on service integration across solutions. • BT has strong system integration and professional services capability. It added Cloud Security as part of its recently launched Security Advisory Services. • It operates one of the largest global networks with strong presence in Asia-Pacific. • The provider offers Nuage Network, Cisco, and VMware SD-WAN services to its global customers.
Limitations	<ul style="list-style-type: none"> • BT has limited SaaS capabilities outside the UK and the U.S. • It has a limited on-net data center footprint across Asia-Pacific.

Product Name	Lumen - Cloud and Data Center Services
Current Perspective	<p>Lumen has a wide range of cloud portfolio offerings Bare Metal, Cloud Application Manager, Cloud Connect, Cloud Compute, and Private Cloud. It is also strengthening its edge computing capabilities, offering Lumen Edge Bare Metal that delivers 5ms latency from its data centers through a partnership with VMware and integrated IBM's Cloud Satellite with its edge platform. It also offers enhanced application performance and flexibility through its 'dynamic connections' to over 2,200 public and private data centers globally. On service and support, Lumen offers a range of managed and IT consulting services, supporting its core portfolio as well as helping clients in areas such as design/transition, security, and strategy/systems/technology. Customer support is available in 25 languages. However, while Lumen is well established especially in the American and European regions, its presence is limited in APAC. It has a presence in six countries and on-net data centers across five countries in the region.</p>
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Very Strong • Data Center Footprint: Competitive • Software-Defined Infrastructure: Very Strong • Supplemental Services: Very Strong
Product Scores	Very Strong
Strengths	<ul style="list-style-type: none"> • Lumen is strengthening its global operations (including Asia-Pacific). • The Level 3 acquisition enables the customer to leverage Cloud Application Managed and Cloud Connect Solutions. • The provider has an extensive interconnect footprint with more than 350 data centers globally and over 2,200 on-net third-party data centers. • The provider has a strong presence in the U.S. and on-net coverage globally. • Strong edge computing play (Lumen Edge Compute Solutions) with a wide partner ecosystem, including VMware, IBM and T-Mobile. Through its partnership with VMware, Lumen offers edge computing to 150 nodes globally (excluding 100 in the U.S.) and offers 5ms latency from their data centers through Lumen Edge Bare Metal. • It is actively expanding its partner ecosystem (including IBM, SAP, VMware, Microsoft, and Google). It also has Channel Partner Program and joined the Networking Managed Service Provider Program for Microsoft Azure. • It also has its own IP and platform for hybrid cloud orchestration.
Limitations	<ul style="list-style-type: none"> • It has lower mind share in the region. • While the global portfolio is expanding, core capabilities are concentrated in the U.S. market. • Lumen has a sales presence in only key Asia-Pacific countries (e.g., Australia, China, Hong Kong, India, Japan, and Singapore).

Product Name	NTT Ltd. - Cloud and Data Center Services
Current Perspective	Besides comprehensive cloud offerings and wide partner ecosystem, NTT differentiates in the market with its global data center footprints (over 500,000m2 floor space across over 20 countries while cloud services are hosted in more than 15 countries) and strong professional service capabilities (through the merger with Dimension Data). It is also strong in technology innovation through its R&D division. NTT is one of the early providers to offer SDN/NFV in the market and has developed its own SD-WAN solution. NTT has also a strong global presence. This includes around 70 offices across over 15 countries in APAC. However, there are still some inconsistencies in the brand and portfolio. While NTT Ltd brand is used in most countries, Dimension Data is still retained in some markets such as in the Middle East and Africa. There are also some variations in its products, partnerships and go-to-market across different countries.
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Strong • Data Center Footprint: Leader • Software-Defined Infrastructure: Very Strong • Supplemental Services: Very Strong
Product Scores	Very Strong
Strengths	<ul style="list-style-type: none"> • It has over 140 data centers in the region, including 29 outside of Japan. • It continuously expands its portfolio and partner ecosystem, as well as its presence in the region. • Cloud services are delivered from over seven countries in the region, addressing the data residency requirements. • NTT Ltd. is one of the earliest providers in the market to offer an SD-based platform, with its SDx+M. • NTT Ltd. has a strong internal R&D team to develop its own solutions. • The integration of 28 NTT subsidiaries strengthens its product portfolios (e.g., security and service deliveries). • It has high-capacity and-redundancy network within the region and between Japan and the U.S.
Limitations	<ul style="list-style-type: none"> • The branding and GTM initiatives of NTT Ltd. remain fragmented across its footprints; Dimension Data is still used in some countries. • Domestic businesses (e.g., vendor support, solution availability) are not consistent in some countries.

Product Name	Orange Business Services - Cloud and Data Center Services
Current Perspective	<p>Orange is the leader in the telco cloud market in APAC. It is seeing significant growth in the business with customer references across different verticals and countries. With a focus on multi-cloud, Orange offers a full range of cloud services from managed applications to managed infrastructure. Through a strong ecosystem with global players such as AWS, Azure, Google, and VMware combined with its Flexible Engine, Orange offers wide service options to address the diverse market demand in the region. The provider is also expanding its Next Gen Hub footprint to enhance its multi-cloud play and integration with other technology domains such as network and security. Orange also stands out in professional service. It has 2,400 cloud experts including from its acquisitions of basefarm and The unbelievable Machine Company. Furthermore, Orange has a comprehensive professional service framework from consulting, strategy, transition, security to support. Orange multisourcing service integration provides a single pane of glass across multiple services and vendors.</p>
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Leader • Data Center Footprint: Strong • Software-Defined Infrastructure: Very Strong • Supplemental Services: Leader
Product Scores	Leader
Strengths	<ul style="list-style-type: none"> • Orange has strong professional and managed services capabilities through its heavy investment in the area. • Its Flexible IT and Flexible Computing provide a range of public, hybrid, and private IaaS/PaaS offers across multiple cloud management environments including AWS, Azure, Google, VMware, and OpenStack. • It has expanded its focus in hybrid and multi-cloud environments, e.g., in areas including intelligent automation, AIOps, and professional development in support of third-party partner clouds. • Within the past year, Orange has dramatically increased its partnerships across APAC and globally. • Orange's Next Gen Hub is available in 20 locations including nine in APAC. It enhances multi-cloud solutions through interconnection to global cloud providers and provides service orchestration across different technology domains (e.g., network and security). • It offers Visibility-as-a-Service for end-to-end application performance measurement for SD-WAN and cloud migrations.
Limitations	<ul style="list-style-type: none"> • The cloud service infrastructure is limited in the region and highly concentrated in Singapore. • Orange made a commitment to public cloud a few years ago with Huawei's OpenStack solution, but with its new focus on multi-cloud, it is unlikely to build further on that investment.

Product Name	Singtel - Cloud and Data Center Services
Current Perspective	<p>Under the umbrella of Singtel's cloud, the provider offers private and public cloud, hybrid cloud management, SaaS marketplace, application modernization, cloud security, cloud connectivity and a number of cloud-based solutions (e.g., workspace and contact center). It has over 4,000 IT professionals including from NCS (Singtel's IT arm). Its cloud professional services focus on advisory, transformation and operation. It has also enhanced its software-defined capabilities in recent years and offers Liquid Infrastructure. Liquid Infrastructure is a cloud-centric, SDN automation platform that provides management, on-demand bandwidth, service addition/removal, branch edge SDN/NFV, single pane of glass visibility, and integration with a range of other services (e.g., cybersecurity, IoT, and UC). However, while Singtel owns 10 data centers across Singapore, Hong Kong, and Australia and has facilities in seven other countries in the region through partners, its limited footprints outside APAC make it less compelling to some MNCs.</p>
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Strong • Data Center Footprint: Competitive • Software-Defined Infrastructure: Very Strong • Supplemental Services: Competitive
Product Scores	Strong
Strengths	<ul style="list-style-type: none"> • Singtel is an incumbent carrier in an Asia-Pacific hub, which offers the carrier an advantage with thousands of MNCs based in Singapore. • Singtel is building out its edge computing capabilities through partnerships with AWS and Azure as well as various industry initiatives. • Singtel's Liquid-X enhances cloud networking management by integrating multi-cloud access, analytics and security. • It actively drives the ecosystem by bringing vendors and enterprises to co-develop solutions through various initiatives. • Singtel owns ten data centers across Singapore, Hong Kong, and Australia and has facilities in seven other countries in the region through partners. • Singtel has one of the largest IP VPN networks in Asia-Pacific.
Limitations	<ul style="list-style-type: none"> • It has NCS as its IT services arm, but the capabilities are focused in Singapore and Australia. • There are gaps between its offering in Singapore and outside the country. • It has limited facilities outside Asia to cater for outbound MNCs.

Product Name	Telstra - Cloud and Data Center Services
Current Perspective	Telstra offers various cloud services (e.g., public/private/hybrid, cloud connectivity, cloud management). Its cloud services are underpinned by its global network and data center infrastructure, SDN/NFV capabilities, cloud platforms, and professional services (Telstra Purple). Telstra offers Telstra Programmable Network that integrates network and cloud across over 170 cloud service providers and 35 data centers. Its Cloud Sight enables multi-cloud management including procurement, connection, cost, security, and compliance. Telstra is expanding its edge computing capabilities through partnerships with Microsoft, AWS, and Ericsson. The provider offers professional services through Telstra Purple which has over 1,500 certified experts through past acquisitions such as VMTech, Kloud, Readify, and Epicon. However, Telstra has limited presence and mindshare outside of APAC.
Buying Criteria Rating	<ul style="list-style-type: none"> • Cloud Portfolio: Strong • Data Center Footprint: Strong • Software-Defined Infrastructure: Very Strong • Supplemental Services: Strong
Product Scores	Very Strong
Strengths	<ul style="list-style-type: none"> • Telstra programmable network offers agile network services and integration with various NFV capabilities. • Telstra has a strong professional service practice (Telstra Purple) through past acquisitions such as Epicon, VMTech, Kloud, and Readify. • Telstra is expanding its edge computing capabilities through partnerships with Microsoft, AWS, and Ericsson. • Its partnership with Equinix provides its customers direct API access to hundreds of data centers and clouds around the world. • The provider also offers CloudSight, software-defined platforms for workload orchestration and automation across networks, data centers, and clouds. • Telstra has a strong incubation program. It has commercialized a number of solutions from the startups it has investments in.
Limitations	<ul style="list-style-type: none"> • While it has strong professional services in Australia, the capability is limited outside the country. • The partner ecosystem is smaller than competitors. Salesforce and Alibaba are among the missing partners. • Its brand and mind share outside Asia is still limited.