

Singapore's data centre market at a crossroads

A favourite among DC investors in Asia-Pacific, but regional rivals are on the rise. BY LYNUS POOK

THE data centre footprint in Singapore now stands at 400 megawatts, having grown substantially over the last few years to become a hub of activity from both local and global players.

The phenomenal growth in Data Centre operations here had its roots in the early 2000s when Singapore began building its telecommunication infrastructure to support the dot.com wave. Back then, data storage capacity was put in place to support the growing volume of e-mail communications.

Since then, Singapore has become favoured by Data Centre (DC) operators for its data speeds, supported by the infrastructure around the sub-sea fibre network, which routes 99 per cent of the world's Internet traffic, provided very early on at the cusp of the DC evolution in the Asia-Pacific region.

Cushman & Wakefield's latest edition of *Winning in Growth Cities Report 2018-2019* shows that Singapore was a hot favourite among DC investors in Asia-Pacific. It drew about US\$550 million of the US\$1.37 billion investment in total real estate investment in data centres across the region, comparing Q2 2018 investment values with Q2 2017.

Over the past few months, Equinix, Digital Realty, ST Telemedia and at least two other operators have secured land plots from private landlords Jurong Town Corporation (JTC) to build data centres.

The market is expecting a pipeline of at least 100 megawatts in data storage space by Q4 2020. This is in addition

to the current 400 megawatts of power that is being utilised to power Singapore's data centres.

Singapore's DC operating landscape evolving
 Nevertheless, DC operators are coming round to the fact that operating in Singapore is beginning to be a challenge.

Given the hefty capital expenditure in fitting out an industrial space as a data centre, many operators who lease data centre space prefer premises that already have the utilities to support a fully operational data centre. Such built-to-suit spaces are limited and have prompted operators to try and seek the conversion of existing industrial properties to data centre. Operators who explore the conversion route have to consider the substantial capital expenditure incurred on a piece of real estate with a limited 20-year or 30-year tenure with no guarantee of an extension.

In some instances, DC operators may first need to secure a pre-commitment from end users that they will use the space even before they apply for conversion. As a business, end users would be very prudent about pre-committing to a space, holding out on committing as long as possible in view of the pace at which technology evolves and the high risk of technology obsolescence.

With greater uncertainty, DC operators are beginning to look at alternative locations.

Singapore's edge in interconnectivity is now being challenged as neighbouring cities play catch-up in laying subsea cables. Signs are pointing to



The merits of Singapore as a data centre hub accounts for major players like Facebook setting up in Singapore, despite the high land costs and lack of hinterland or secondary market.
 PHOTO: FACEBOOK

Construction updates

OPERATOR	LOCATION	GFA SIZE (SQM)	IT POWER (MW)	STAGE / EST. DELIVERY
STT	Defu 2	14,401	12	Completed/ Q4 2018
	Loyang	27,000	30	Under Construction / Q2 2020
Global Switch	Woodlands	25,000	18	Completed / Q4 2018
Iron Mountain	Serangoon	14,200	6	Under Construction / Q2 2019
China Mobile	Tai Seng	17,490	12	Under Construction / Q2 2019
Equinix	SG4	23,800	25 (est)	Under Construction / Q4 2019
Google	Jurong West	21,410	25 (est)	Under Construction / Q2 2020
Digital Realty	Digital Loyang II	34,000	50	Under Construction / Q3 2020
Facebook	Tanjong Kling	170,000	150	Under Construction / Q2 2022

Source: Cushman & Wakefield Research

the emergence of strong contenders in the first and second-tier cities of Indonesia and Vietnam's Hanoi and Ho Chi Minh City.

The lure of SEA countries
 Cities with large domestic consumption, young demographics and an accelerating level of industrialisation are attractive alternatives for DC operators. Indonesia and Vietnam hold tremendous potential for data storage and transactional processing against rising demand from huge content users.

DC operators are attracted to the idea that they will be bringing data and cloud storage closer to the consumers. These are the emerging economies of millennials who access voluminous data daily to watch movies, upload photos and videos, play games, make cashless payments.

These trends have caught the attention of Alibaba and Tencent, major players in fintech and cashless payment systems who are now sharpening their focus on locating data centres in second-tier cities.

Indonesia has a population of 264 million, while Vietnam has 96 million people and a large proportion of their population is young, presenting tremendous potential for exponential demand for data based on these use cases.

Vietnam's long coastline makes it a natural gateway and landing point for subsea cables to the other landlocked Asean cities. As subsea cables are developed in these markets, the second and third tier markets become more connected to the global marketplace as the DCs are now domiciled in their home country.

While DC operators have to work through the teething problems of fibre connection, incurring costs of engaging a local agent to iron out bureaucracy and powering land parcels with water and electricity, several have in fact found a workaround by entering local joint ventures.

They have gone one step further to invest in subsea cables which allows them to do away with having to pay annual usage costs to telecommunication companies who operate them. The initial set-up costs are still phenomenal but as the data centre market matures, DC operators are navigating a path to managing costs efficiently.

Will Singapore's status as a DC hub wane?

That Singapore is naturally disadvantaged is well known. It has no hinterland or secondary market, as compared to the other four data centre hotspots in Asia-Pacific, including Sydney, Shanghai, Hong Kong and Tokyo. But that has never stopped the country from leveraging its other strengths. The Asia Cloud Computing Association ranked Singapore top in Asia in 2018 for cloud infrastructure, cloud security, cloud regulation and governance.

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Market observers are working out various scenarios for Singapore's future as a Data Centre hub. Several advantages may outweigh Singapore's relatively higher real estate, build-up and operating costs compared to the rest of the regional markets.

Businesses need a stable regulatory regime where it knows the rules are not changed suddenly or arbitrarily, especially given the capital investments and enormous efforts to secure the land, get the approvals, build the site and have a ready pool of tech talent to support DC operations. In this regard, Singapore stands out.

In the future, more DC operators might choose to hub their data centres in the other Asean markets to enhance data speeds to end-user consumers in these densely populated cities, as local demand increases and in response to cross-border data flow regulations.

But for now, many DC operators favour Singapore for its superior connectivity, reliability of its power grid and pipeline of skilled personnel to build and operate data centres.

It is noteworthy that Singapore is a regional hub in terms of data centre training certifications and data centre training courses available from training providers such as EPI, DCD and even the Uptime Institute. Several training providers and polytechnics are making cloud computing courses available. SMU Academy offers a series of courses in a tie-up between SMU and Alibaba Cloud.

The Institute of Technical Education (ITE) has also introduced a work and learn technical diploma in data centre infrastructure & operation.

DC operators looking to Singapore will continue to be challenged by high real estate costs and perhaps increasing difficulties in securing approvals and fulfilling compliance regimes for new builds, but they will have to weigh that against many other factors.

New subsea cable investments in the region along with the obsolescence of old subsea cables and lowered costs and increasing bandwidth of satellite communications in the future may also change the connectivity landscape and potentially erode Singapore's competitive edge.

Nonetheless, the merits of Singapore as a data centre hub accounts for major players like Facebook setting up in Singapore. These will be fewer and farther between in time to come but does not erode Singapore's maturity, sophistication and reliability as a DC powerhouse.

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