A CUSHMAN & WAKEFIELD
RESEARCH PUBLICATION

DATA CENTER INVESTMENT

A RARE OPPORTUNITY FOR THE RIGHT INVESTOR



OCTOBER 2017

INSIGHTS INTO ACTION

CUSHMAN & WAKEFIELD

CELEBRATING 100 YEARS

IS THE DATA CENTER THE NEXT BEST INVESTMENT ASSET CLASS? YES, BUT NOT FOR EVERYONE

Despite a large amount of supply coming through 2015–2016, the data center market in Singapore continues to lead some of its large neighbors in the Asia-Pacific (APAC) region in a race to the top of data center location rankings.

According to Cushman & Wakefield's Data Center Risk Index, Singapore is the most robust market out of 10 Asian countries in terms of business operations for data centers. Out of 10 Asian countries included in the index, Singapore scored 84.50 out of 100, ahead of Korea (83.23), Hong Kong (78.73) and Japan (76.48).

The Data Center Risk Index identifies the top risks likely to affect data center business operations. It considers such criteria as energy, internet bandwidth, ease of doing business, political stability, natural disaster and energy stability. Singapore ranks strongly for network infrastructure, diverse connectivity to major APAC markets, its pro-business environment and political stability.

Asian Data Center Location Ranking

1	2	3	4	5
SINGAPORE	SOUTH KOREA	HONG KONG	JAPAN	AUSTRALIA
84.50	83.23	78.73	76.48	68.18

6	7	8	9	10
MALAYSIA	THAILAND	INDONESIA	CHINA	INDIA
66.86	59.55	51.81	50.22	47.84

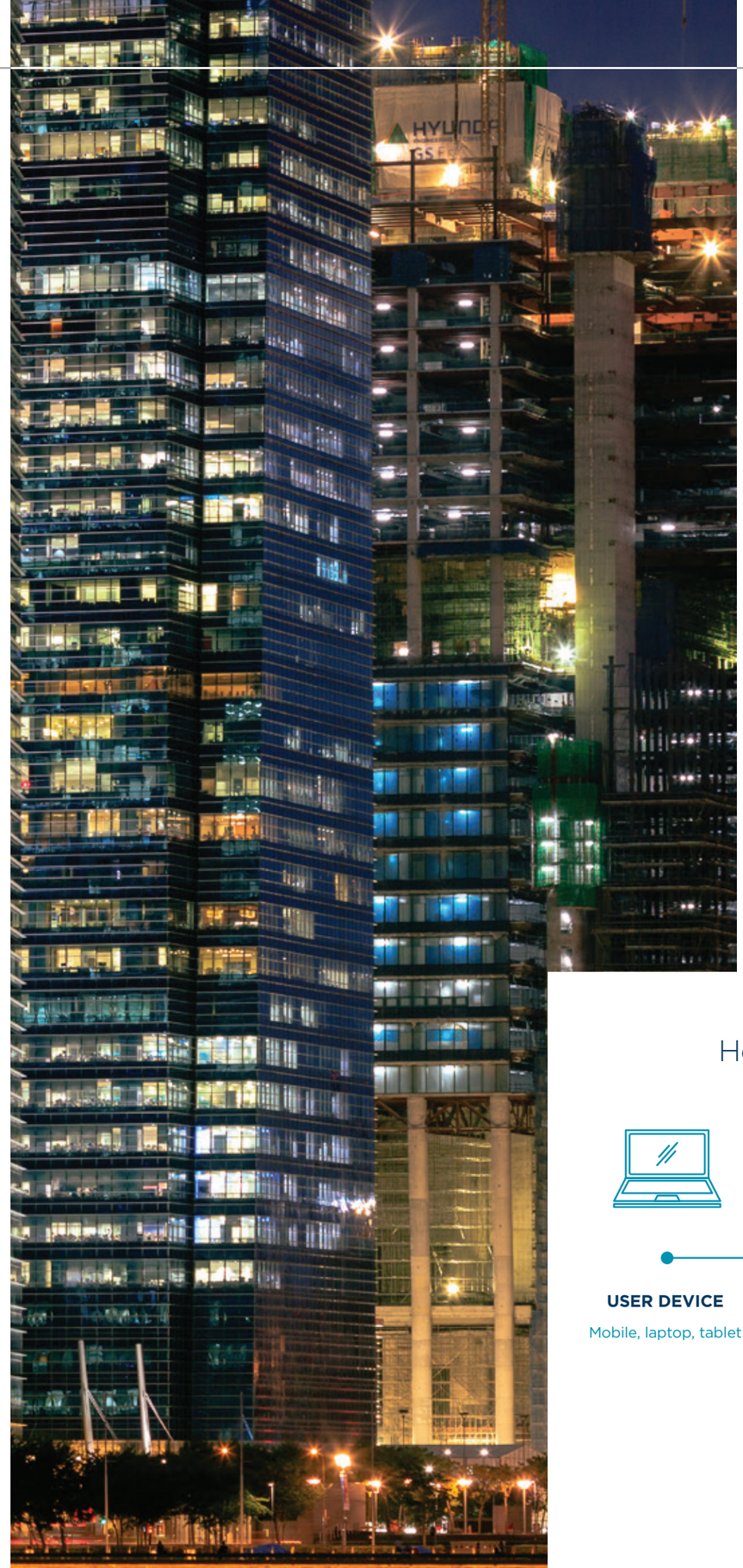
Singapore is the most robust market out of 10 Asian countries in terms of business operations for data centers.

Explosive Growth in Data Creation and Storage

More than 2.5 exabytes – that is, 2.5 billion gigabytes (GB) – of data are generated each day worldwide in the form of emails, documents, presentations, images, videos and voice recordings. Data centers serve as the backbone of systems that facilitate the swift transmission of this data 24/7 – a necessity in the digital age.

90%

of the world's data was created in the last two years





Explosive growth in data creation and data storage is set to continue in the foreseeable future. Recent reports show that Asia Pacific's data center market will increase significantly and even surpass the European market by 2021. Driving this increase is a surge in data consumption in the region. Mobile data usage, in particular, has increased in Asia Pacific in recent years. In 2016 alone, the region reached 3,109,117 terabytes in mobile data consumption per month. And it is expected to reach 22,845,908 terabytes per month in 2021.

Singapore currently sits at the top of the APAC data center market in terms of capacity, with a current total supply of 370 megawatt (MW) of IT power supply among co-location operators. Around 59 MW of IT power is readily available for data center use, and 103 MW can be converted into IT power within three to six months should demand keep pace.

Singapore data center capacity expanded by 130MW in the last two years

Singapore has seen an influx of new data center capacity in the last two years, with an additional 130 MW on top of the existing capacity of 240 MW at the beginning of 2015.

How Data Centers are Connected with Users



USER DEVICE
Mobile, laptop, tablet

ROUTER
Networking device that forwards data packets from one router to another through networks until they reach destination nodes

INTERNET SERVICE PROVIDER (ISP)
Connects users to internet backbones, which are the largest connections on the internet

INTERNET BACKBONE
Data routes that exchange Internet traffic between the countries and continents, and across oceans

SERVERS
Where all content or data is stored. Data centers are large-scale storage facilities for servers



SINGAPORE DATA CENTER CAPACITY

370 *megawatts*

Maximum data center capacity in Singapore today

100 *megawatts*

Future expansion of capacity over the medium term

There has been some price and vacancy pressure, particularly among smaller data center players.

However, over the medium to long term, Singapore should be able to expand its capacity by another 100 MW on the back of the Smart Nation initiative, as the government pushes for a national digital transformation program. Local data center providers such as Singtel, Keppel Data Centres and ST Telemedia stand to be the primary beneficiaries of this, while the international data center providers will continue to focus on winning international deals from medium to large enterprises coming into Singapore.

Investment in Data Center Set to Leapfrog

Increasingly, investors are looking beyond the traditional real estate asset class. Data centers present a fast-growing and appealing investment asset class, that is attracting huge interest in the US and in Europe, the Middle East, and Africa (EMEA), particularly from institutional investors. ICONIQ Capital, the wealth manager to Silicon Valley billionaires such as Facebook CEO Mark Zuckerberg, LinkedIn chairman Reid Hoffman and Napster co-founder Sean Parker, has moved quickly in its entrance into data center investing. According to Data Center Frontier, a growing number of lenders and equity investors are focused on the performance of data center developers, who are being boosted by demand for server space from major cloud computing platforms. Safanad, a global private equity firm based in London and Dubai, has recently made an equity investment in Central Colo.

Closer to home, tycoon Oei Hong Leong is investing US$5 billion (S$6.73 billion) to set up a new company, named One Belt One Net, that will build data centers, procure equipment and machinery, develop software, and recruit and train employees. Oei expects the data storage business in Singapore to benefit from China's Belt and Road Initiative, led by Chinese President Xi Jinping to promote infrastructure development spanning Asia, the Middle East and Europe.

There has also been an interesting shift in demand for data centers since 2016. Cloud operators have since overtaken banking clients to be the largest occupiers of data centers. While the healthcare, banking and financial services sectors tend to treat data centers as a cost function, cloud operators view data centers as revenue-generating. Hence, the expansion of the cloud operators

Global internet companies and third-party providers are driving data center deployment

Sources: *IDC; BroadGroup; Cisco; BCG analysis.*
Note: *Only includes white space. Numbers have been rounded.*



Cap Rate Comparison across Different Asset Classes



Source: *Cushman & Wakefield Research*

tends to be more aggressive compared to traditional data center users, as businesses ramp up efforts to transition to cloud by 2020. A report by International Data Corporation (IDC) forecasts that spending on IT infrastructure products such as servers and enterprise storage will increase by 18% this year, reaching US$44.2 billion. Of this, majority (61%) will come from public cloud data centers while private cloud will contribute 15% of the spending. In fact, everything stored in the cloud is backed by a data center. The exponential growth of cloud computing is expected to drive demand for data centers over the medium term.

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In addition, due to the huge upfront investment required to establish data centers, occupiers tend to be stickier than those in the traditional asset classes. On the supply front, data center supply in Singapore will grow by 15 - 18% in the next year. Cushman & Wakefield estimates that data center occupancy rates will reach 70% by the end of 2018. As operators are not required to fit out data centers immediately upon building completion, it allows them the flexibility to ramp up their supply to accommodate new orders.

Data centers typically have higher capitalization rates (cap rates) than traditional asset classes such office, retail, hospitality and residential. In the current low interest rate environment, the spread between the interest rate and the cap rate is large enough to continue to attract investors into the data center business. In the US, data center cap rates have experienced compression in view of increased investor interest, the low interest rate environment and the superior quality of data center assets. The cap rates for data centers in US have come down from 7.5% in 2014 to 5.5–6% in 2017.

Data center investment is not for everyone, however. The construction costs for new data center can run from US$100 million for a multi-tenanted facility to as much as US$1.5 billion for a cloud campus housing several buildings. This certainly sets a fairly high barrier to entry. While it is a niche market for investors, in which a limited pool of buyers is expected. The high barrier to entry also helps to keep competitors at bay.

Investment opportunities also encompass building new facilities and sale-and-leaseback of existing premises, as well as buying operating businesses. However, as end-users are also becoming savvier, differentiation in data center offerings and locational attributes have become increasingly important for co-location users. The entry of multinational companies, the establishment of their own data centers and their network presence within third-party data centers will certainly create an ecosystem and boost interconnectivity.

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