WHAT'S NEXT FOR DATA CENTRES IN INDIA?

July 2021

CUSHMAN & WAKEFIELD

AGENDA

- Key global industry trends and its impact on India
- The growing Asia Pacific market and how India will emerge as a potential primary market
- The surge in demand in cities across India
- A dedicated Q&A session with our speakers

WITH YOU TODAY

GAUTAM SARAF
Managing Director, Mumbai and New Business

KEVIN IMBODEN
Senior Research Manager, Data Centre Insights, Global Research

TODD OLSON
Managing Director, Japan & Korea, Head of Asia Pacific Data Centre Practice Group

VIVEK DAHIYA
Managing Director, India Lead – Data Centres, New Initiatives

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01 KEY GLOBAL INDUSTRY TRENDS

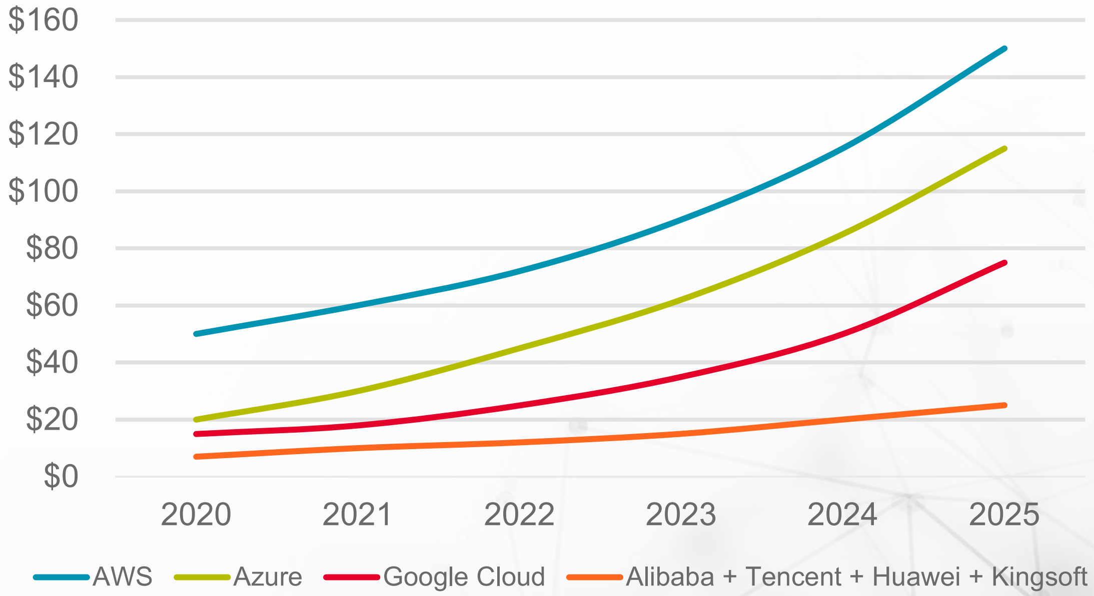
KEVIN IMBODEN
Senior Research Manager, Data Centre Insights,
Global Research

MAJOR CLOUD SERVICES LEAD THE WAY

CORPORATIONS AND GOVERNMENT AGENCIES ALIKE ARE MAKING THE MOVE

- Events of the past year accelerated certain existing trends as organizations rapidly adjusted to a more flexible and scalable IT structure. Many began or continued their move to off-premises IT and discovered both positives and negatives from doing so.
- Cloud services are often drivers of profit for their larger companies and are focal points of growth; Q1 saw AWS revenue up 32%, Azure up 50%, Google Cloud up 46%.
- Appeals for corporate and government contracts alike by these services often involve additional skilling programs and/or community benefits.

MAJOR CLOUD SERVICE REVENUE (US$B)



AWS 230% | **G Cloud 584%** | **Azure 421%** | **Others- 545%**

Source: Structure Research

M&A- PORTFOLIO SALES RED HOT

AS NEW ENTRANTS GAIN TRACTION AND CURRENT PLAYERS EXPAND

Blackstone

QTS being acquired by Blackstone
US$10B
(including debt)

digitalcolony

Digital Colony purchased Landmark Dividend
US$972M

mapletree

Mapletree acquiring former CVMCII assets
US$1.3B

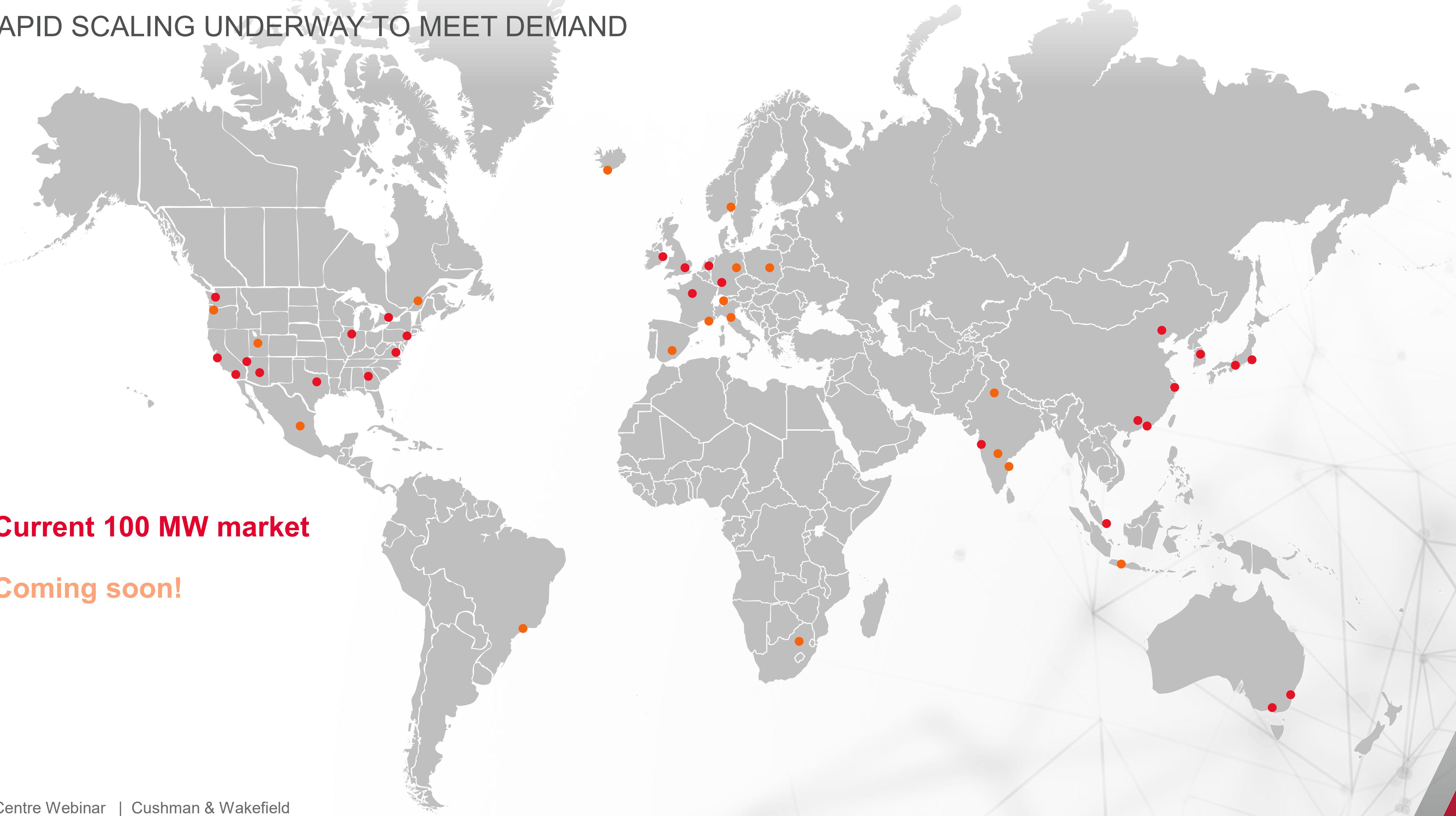
switch

Switch acquired Data Foundry
US$420M

WHO'S NEXT?

CONSTRUCTION APLENTY IN CORE MARKETS

RAPID SCALING UNDERWAY TO MEET DEMAND



- **Current 100 MW market**
- **Coming soon!**

PRIMARY MARKET CONSTRUCTION COMPARISON

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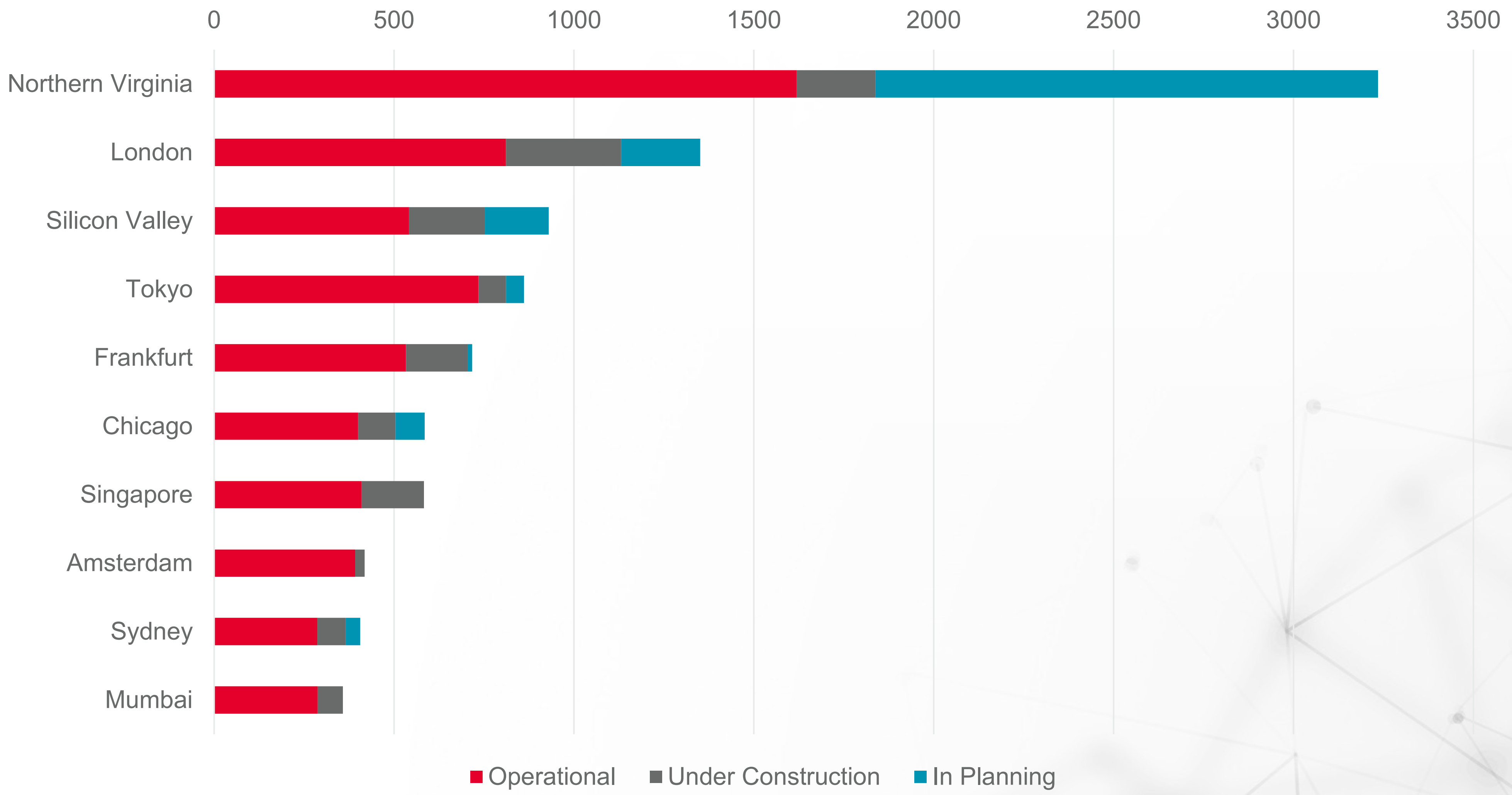
GLOBAL EXPANSION CONTINUES WITH CERTAIN MARKETS OUTPACING OTHERS



02

THE GROWING ASIA PACIFIC MARKET

TODD OLSON
Managing Director, Japan & Korea,
Head of Asia Pacific
Data Centre Practice Group

DATA CENTRE DEMAND FOLLOWS INFRASTRUCTURE

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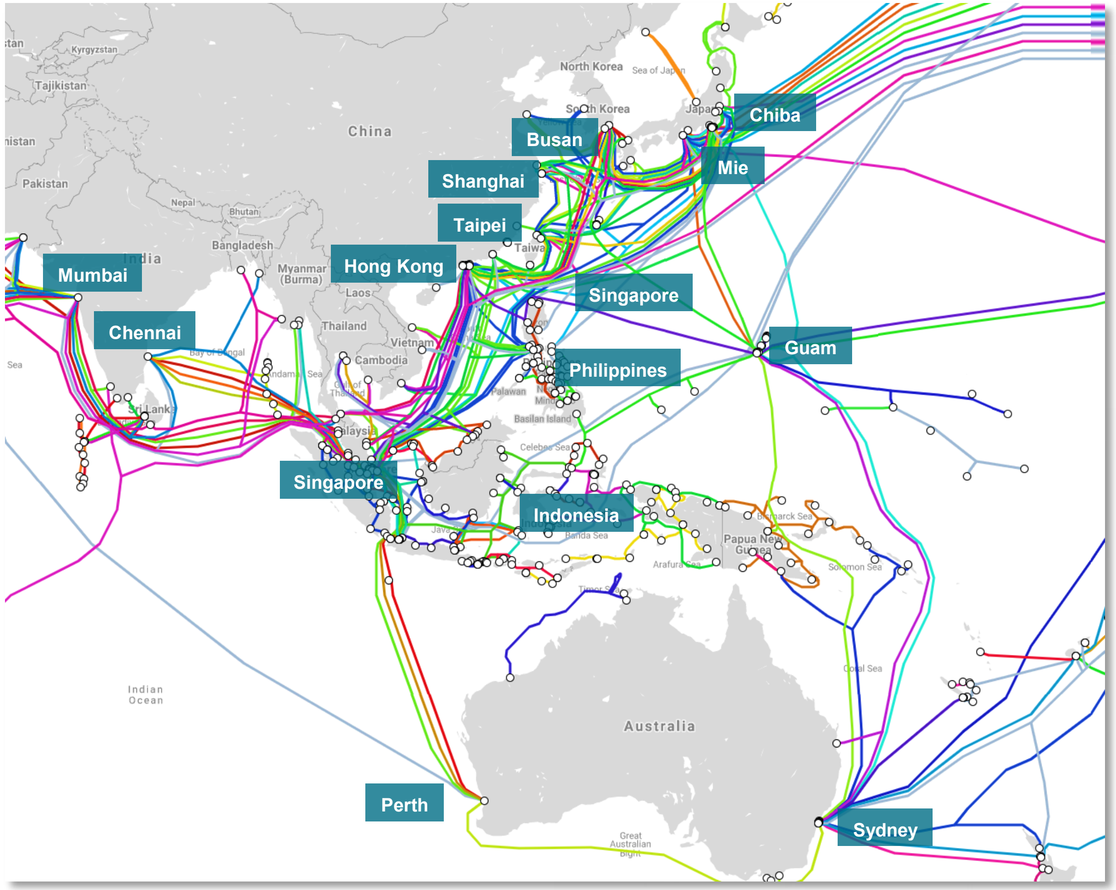
ASIA PACIFIC SUBMARINE CABLES



Source: TeleGeography, future plans included

APAC DATA CENTRE RANKING 2021

1. SYDNEY
2. SINGAPORE
3. HONG KONG
4. TOKYO
5. MUMBAI
6. SEOUL
7. MELBOURNE
8. OSAKA
9. BEIJING
10. SHANGHAI

REGIONAL CAPITAL- M&A

PRIVATE EQUITY, PENSION FUNDS, AND MUCH ELSE SEARCHES FOR DEALS

Warburg Pincus backing Princeton Digital to create a pan-Asia platform

Macquarie backed AirTrunk to expand past Australia
US$2B

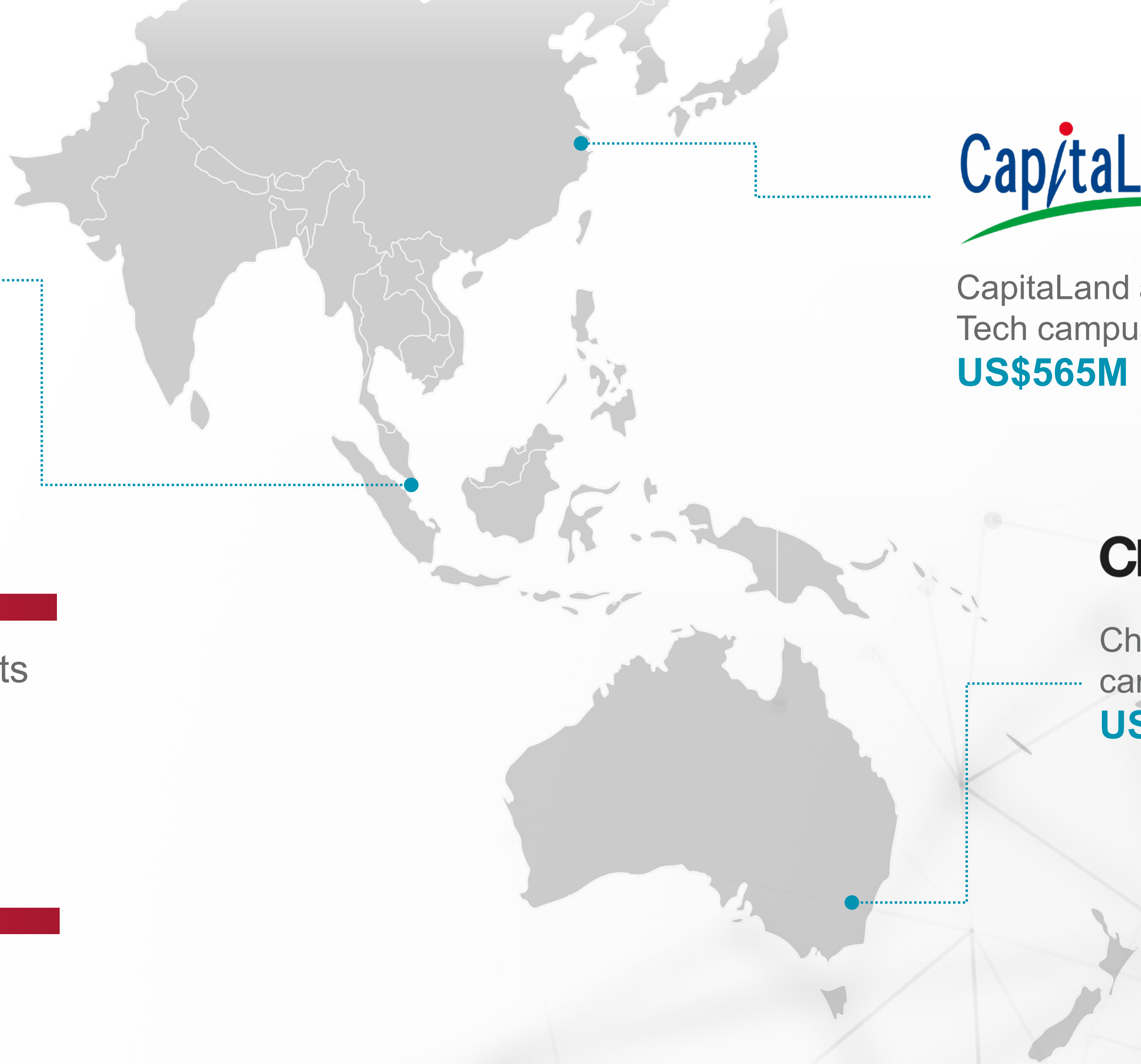
Stonepeak launched Digital Edge for a pan-Asia operator - **US$1B**

GIC backed SpaceDC to explore the hot Indonesia market

As demand continues to grow across Asia, further backing will pour into these and other ventures; PDG already in India, others reviewing

OPERATIONAL ASSET SALES

CURRENTLY OPERATING ASSETS ARE HARD TO COME BY... AND SELL BIG



EQUINIX

Equinix purchases previously leased building in Singapore
US$95M

CapitaLand

CapitaLand acquiring Daily Tech campus in Shanghai
US$565M

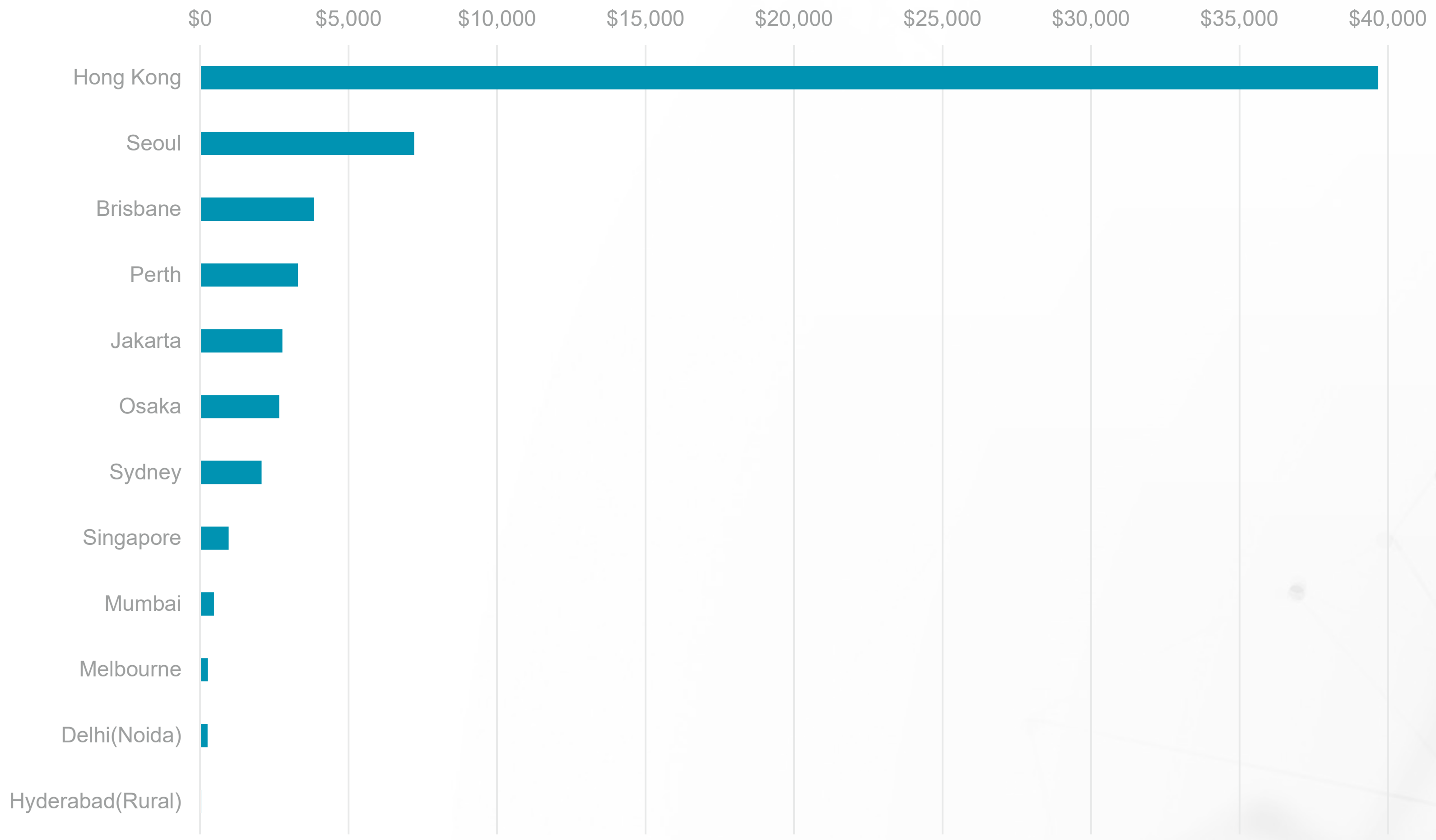
Charter Hall

Charter Hall acquired Sydney carrier hotel from Telstra
US$207M - 4.53 cap

Long leases in primary markets are trading in the 4.5-5 range; shorter leases in secondary markets are trading at 6.5-7.5 caps (if you can find them!)

LAND PRICING - SELECT MARKETS

SINCE 2018: DATA CENTRE LAND EXPENSIVE IN CERTAIN MARKETS...



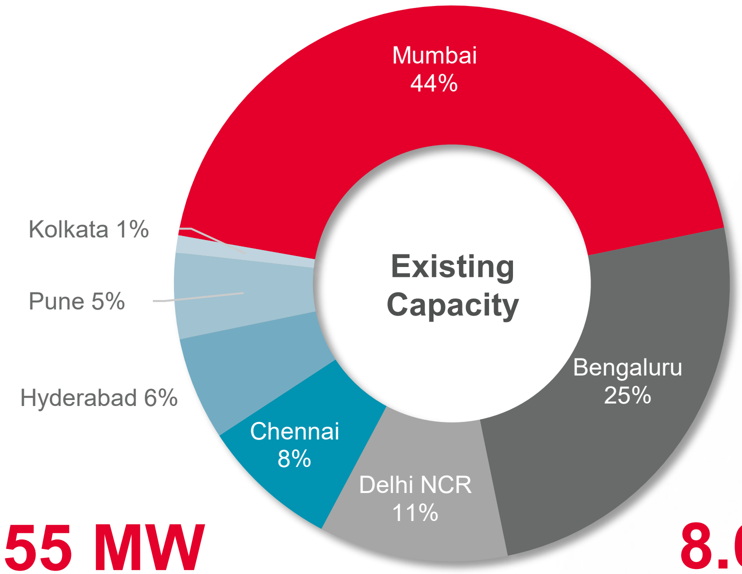
On a USD/SQM basis, markets across Asia are severely supply-constrained from an available land perspective... except in India where pricing is 1/200 that in Hong Kong and a fraction of other established areas

03

THE SURGE IN DEMAND IN INDIA

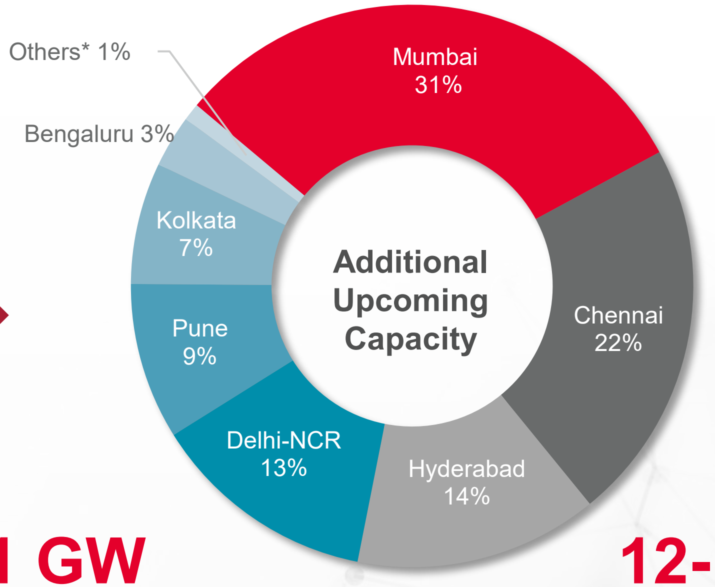
VIVEK DAHIYA
Managing Director,
India Lead – Data Centres, New Initiatives

KEY HOTSPOTS



655 MW
Existing Colocation Capacity#

8.6 msf
Total Size**



1.0-1.1 GW
Additional Capacity (~5 years)

12-13 msf
Total Size

Select Investments Announced

Investor	Investor type	Investee	Date	Type of Deal	Deal amount
Equinix	DC operator	GPX India	Aug-20	Acquisition of GPX India data centres	US$ 161 mn
Carlyle Group	PE Fund	Nxtra Data	Aug-20	Acquisition of 25% in Nxtra Data	US$ 235 mn
Iron Mountain	DC operator	Web Werks	Feb-21	Joint venture	US$ 150 mn
EdgeConneX	DC operator	Adani Enterprises	Feb-21	Joint venture	NA

Source: C&W Research
*Data for Top 7 cities (Mumbai, Bengaluru, Chennai, Hyderabad, Delhi-NCR, Pune, Kolkata) only; 86 data centres in top 7 cities. The installed capacity includes only third-party colocation data centres. It also represents the total power capacity # 655 MW = Overall load; IT load = 437 MW, ^Top 4 operators = 427MW (Overall load). The IT load has been calculated taking an average PUE of 1.5. Considering data centres in Tier 2 cities as well, we have 100+ data centres, total load = ~ 725 MW
**Total size of colocation data centres in top 7 cities represents the overall built-up area

DEMAND CHARACTERISTICS

GLOBAL CLOUD FIRMS

150-200 MW

Additional Capacity (~5 years)

2-2.5 msf

Total Size

Google Cloud   aws

**Upcoming capacity of global cloud players could go up significantly as they firm up plans for future growth and announce investments in new data centres*

DEVELOPERS/ INVESTORS

100-150 MW

Upcoming Capacity (~5 years)

1.5-2 msf

Total Size

Brookfield

INDOSPACE

ESR

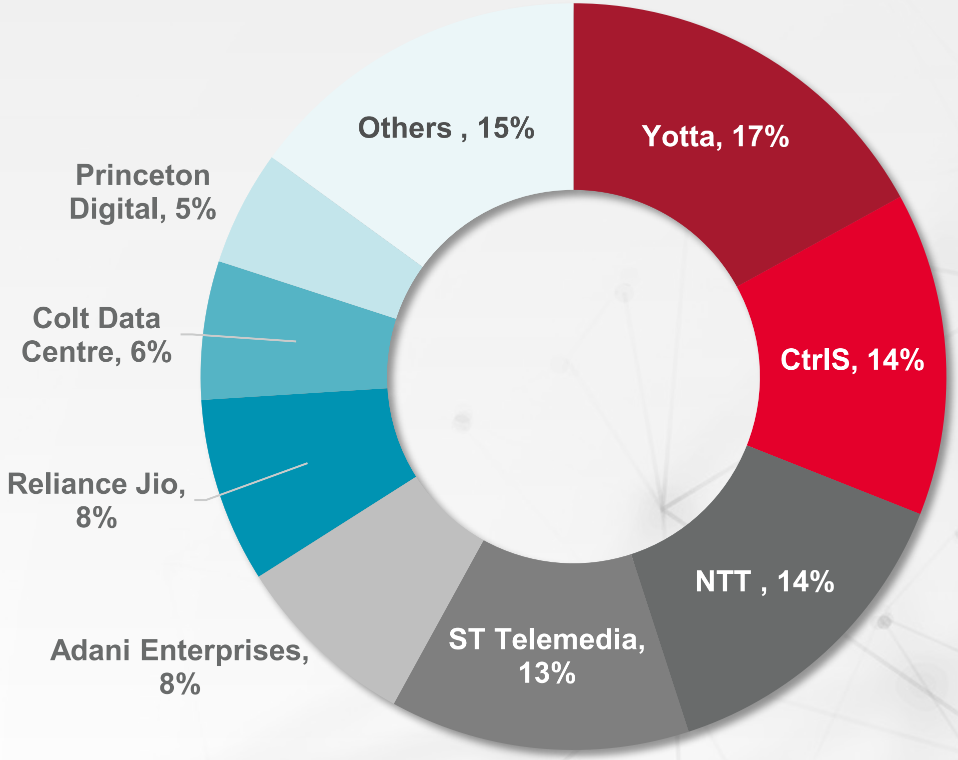
COLOCATION FIRMS

700-750 MW

Upcoming Capacity (~5 years)

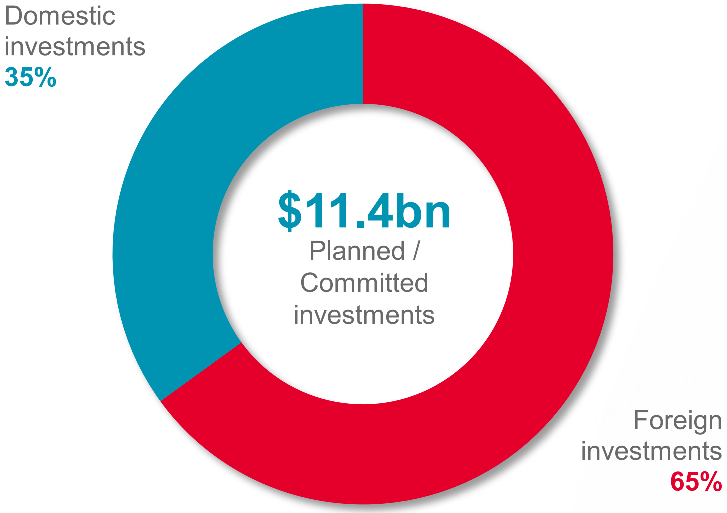
9-10 msf

Total Size



ENTRY / EXPANSION OF GLOBAL FIRMS

Major proportion of committed investments are from global firms



Government Support

National Data Centre Policy soon with a view to provide necessary clearances and infrastructure in a timebound manner

Data localization norms have also played an important role in facilitating data centre investments

State data centre policies; Telangana and Uttar Pradesh have data centre policies, Tamil Nadu and Maharashtra preparing policies

Global Data centre operator/Cloud Firm	Location	Investments (U$mn)	Investment details
STTelemedia	Chennai, Noida	$350	36 MW DC campus in Noida; Agreement with Tamil Nadu for a DC campus
ESR	Mumbai	$600	MOU with Maharashtra for a DC campus
NTT	Mumbai, Chennai, Delhi-NCR	$2,000	DC campuses in Tier I cities in next 4 years. Land parcels acquired in Mumbai and Noida
BRIDGE DATA CENTRES	Mumbai	$470	32 MW DC; total size 350,000 sf
colt	Mumbai	$600	1.1 msf with 100 MW capacity
aws	Hyderabad	$2,800	3 cloud data centres, land parcels acquired near Hyderabad
PDG	Mumbai, Chennai	$300	48 MW DC campus in Mumbai; Agreement with Tamil Nadu for a DC campus
adaniconnex DATA CENTERS	Chennai, Delhi-NCR, Mumbai	$1,100	32 MW in Chennai. MoU with Maharashtra government & applied for 9 acre land parcel in Noida.

Source: C&W Research

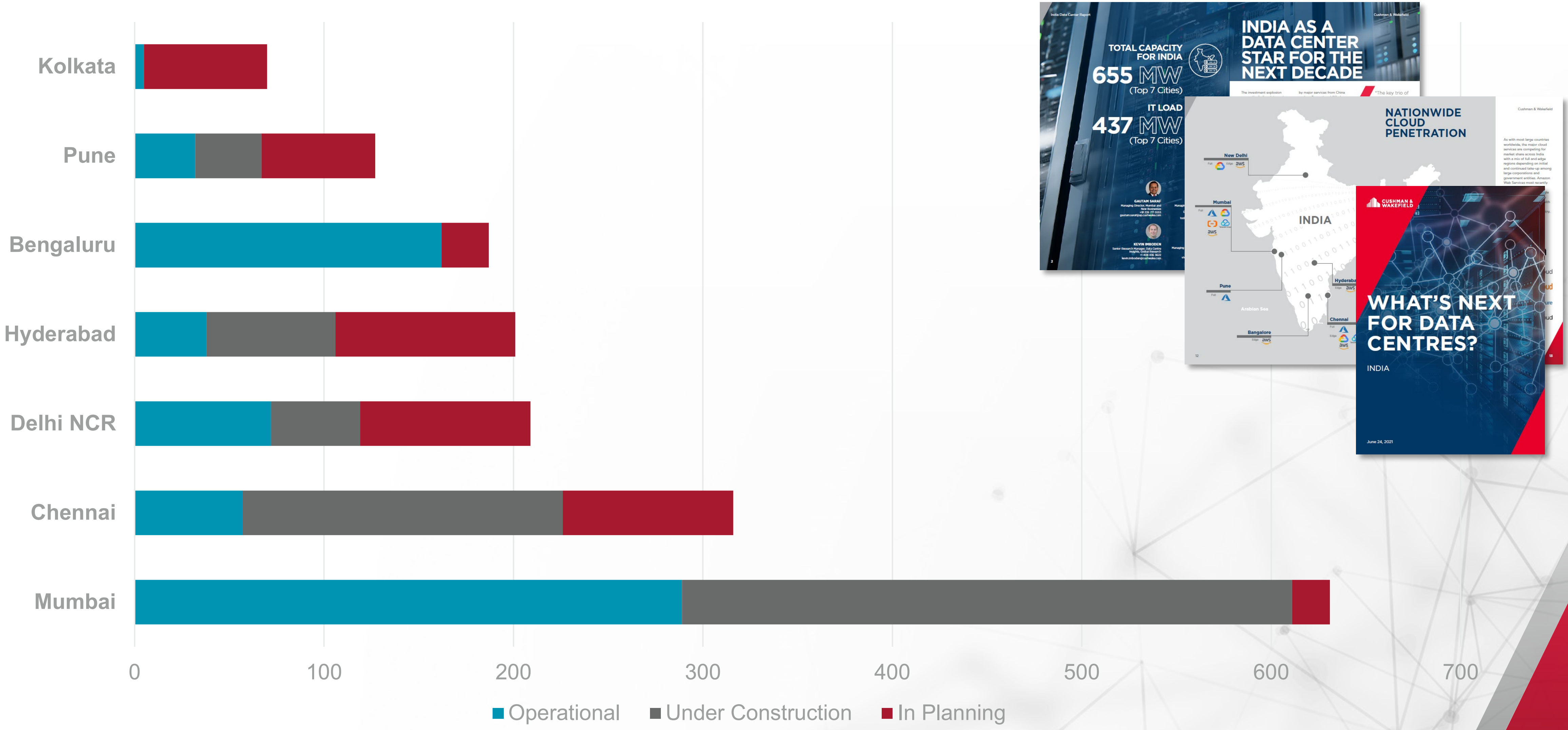
POTENTIAL FOR FURTHER GROWTH?

City	Population	MW	People/MW
Kolkata	14,617,882	5	2,923,576
Delhi-NCR	2,645,4000	72	367,417
Hyderabad	9,700,000	38	255,263
Pune	7,276,000	32	227,375
Chennai	8,917,749	57	156,452
Mumbai	20,748,395	289	71,794
Bengaluru	10,456,000	162	64,543
Beijing	21,893,095	359	60,984
Tokyo	37,468,000	735	50,977
Shanghai	24,870,895	585	42,514
Chicago	9,901,711	400	24,754
London	14,257,962	660	21,603
Dallas	7,673,305	422	18,183
Silicon Valley	9,660,000	541	17,856
Frankfurt	5,604,523	377	14,866
Singapore	5,703,600	410	13,911
Northern Virginia	9,814,928	1,619	6,062

- FLAP leaders' Frankfurt & London range between 14k-21k. Mumbai & Chennai at 71k & 156k.
- 2 largest urban centers: Delhi NCR & Mumbai comparable in size with Beijing, Shanghai & Tokyo which range from 359 MW to 735 MW.
- 10 mn+ cities range from 359 MW (Shanghai) to 735 MW (Tokyo). In 5 years only Pune would be sub 10 mn population.
- Population not the only criterion economic activity, marine cables, power availability, policies and prices also contribute,

ACTION ON THE GROUND?

RAPID GROWTH CONTINUES WITH SOME CITIES OUTPACING OTHERS



KEY DRIVERS

INDIA'S DATA CENTRE MARKET

Incentives / Policies

Data consumption

International submarine cable connectivity
(Mumbai – 8, Chennai – 4)

Big data, 5G, IoT

Data localisation

Cloud computing

10,000 Petabytes Highest mobile data traffic globally as of December 2020	**$15 Bn** India's IoT market size as of 2020 (5% of global market)	**$7.4 Bn** India's public cloud services market size by 2024	**05** Asian countries with data localisation law (China, Indonesia, Vietnam, Malaysia, Brunei). India's law pending for approval

Source: Nokia – "Mobile Broadband India Traffic Index 2021", NASSCOM, International Data Corporation (IDC), C&W Research

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Q&A

PLEASE SUBMIT YOUR QUESTIONS BY CLICKING THE ICON WITH THE QUESTION MARK ON THE TOP RIGHT HAND CORNER OF THE MICROSOFT TEAMS WINDOW

WITH YOU TODAY

GAUTAM SARAF
Managing Director,
Mumbai and New Businesses
Gautam.Saraf@ap.cushwake.com

KEVIN IMBODEN
Senior Research Manager,
Data Centre Insights, Global Research
Kevin.Imboden@cushwake.com

TODD OLSON
Managing Director, Japan & Korea,
Head of Asia Pacific Data Centre Practice Group
Todd.Olson@ap.cushwake.com

VIVEK DAHIYA
Managing Director,
India Lead – Data Centres, New Initiatives
Vivek.Dahiya@cushwake.com

THANK YOU | END

A REPLAY OF THE WEBINAR AND THE REPORT WILL BE SENT TO ALL REGISTRANTS AND PUBLISHED ON OUR WEBSITE:

www.cushmanwakefield.com/en/india/insights/whats-next-for-data-centres-in-india

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