Data Centres - Setting the Foundation for Limitless Possibilities

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Foreword

CapitaLand's Think Tank serves as a leadership platform to construct the roadmap of data centre advancements and assist India in becoming the next data centre hub, by having though provoking discussions around engineering, scalability, and sustainability.

Think Tank's specific goal is to help India transition into a technological superpower in the coming ten years by discussing and evaluating the issues and demands of data centres in the future. It's a way to bring in industry pioneers who can assist pave the way for new developments and suggest new approaches for the Indian data centre industry.

The Data Centre industry will appear completely different in ten years due to the convergence of various digital trends. We're all attempting to plan ahead and put ourselves in the best possible position to lead the way in the direction the industry is headed. One such trend is the Built-To-Suit Data Center, which allows businesses to avoid infrastructure quicksand, control data centre maintenance expenses, and create a safe, dependable, scalable, and affordable data centre that meets needs both today and in the future.

Overall, the think tank will contribute to the comprehension of a strategic business plan for India's data centre sector.

Surajit Chatterjee

CapitaLand India
MD, Data CentreGroup

Introduction
to the Think Tank

In the wake of massive data uptake, cloud adoption, digitalization, and 5G services coupled with local data storage mandates, the data centre has emerged as a favoured infrastructure asset class. As demand for data shot through the roof, India is on the cusp of a data centre boom.

According to research, India's data centre capacity is expected to grow more than two folds during 2021-2024. All stakeholders including regulators, policymakers, investors and operators are showing heightened interest. The government is also targeting an investment of INR 3 lakh crore in the next five years as part of the hyperscale data centre scheme.

The fracture point is that the way data centre market has changed over the last decade, it presents some thought-provokng questions. What are the top trends changing the data centre industry? why does India need to ramp up its data centre capacity? More than ever, is India well-poised to become the next data centre hub?

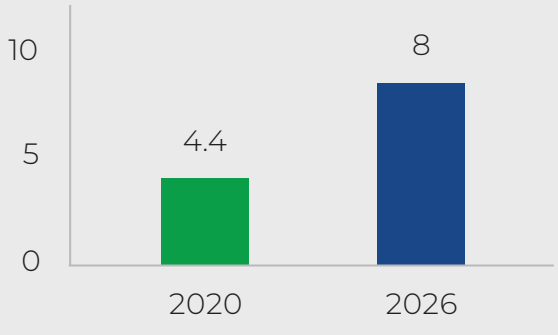
With above questions in mind, a Think Tank has been constituted that included representation from the industry and service providers. The aim of this Think Tank is to explore the future needs and challenges of data centres, uncover new grounds, and provide new directions, to shape the future of data centres in India.

Data centre market in India continues on the growth trajectory

Data centre market in India has been growing at a very fast pace. The market features a mix of large players that have been operating for decades, and relatively smaller new entrants with global technology, scalability and engineering capabilities. The market is driven by growth in digital content, digital-first and digital-native organizations, increasing proliferation of cloud computing, and supportive government policies and digital initiatives.

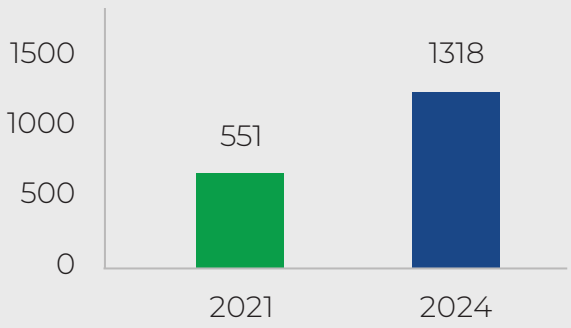
According to industry experts, the market shows no signs of slowing down in the near future.

Data Centre Market in India ($ Billion)



However, key stakeholders have raised concerns that the pace at which the demand for datacentres is growing, the current infrastructure will not be able to meet the traffic requirements in five years down the line. This is where organizations such as CapitaLand come into play as it is well placed to meet the increasing need for data centres. CapitaLand's DC Navi Mumbai 1 will be one of the largest data centre campuses in Airoli, a growing data centre hub in Navi Mumbai with a total potential built-up area of up to 575,000 square feet and 90 megawatts of power"

Data Centre Capacity in India (MW)



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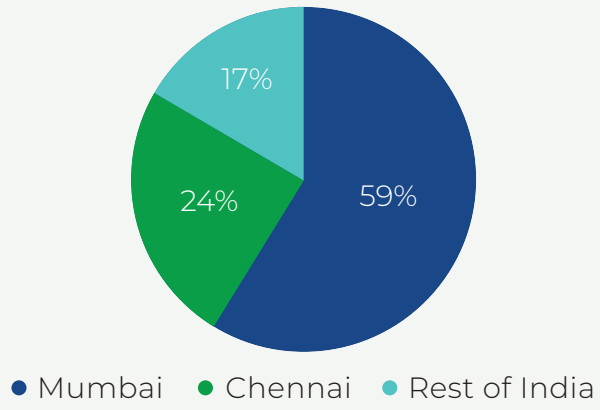
Changing market dynamics hold the key

While costal metros cities such as Mumbai and Chennai are the preferred locations to set-up data centres due to availability of undersea cable landing stations, there is an increasing trend of data centres moving beyond Tier 1 cities to destinations such as Jaipur, Noida, etc.

DC Real Estate Demand by 2024
(100% = 7.8 mn sq. ft.)

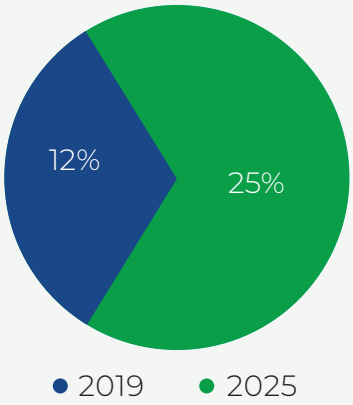


"India will surpass any other country on Edge and 5G... In India, the data centres are always in Tier I cities. However, Tier I isn't an ideal option, as we no longer need a data centre close to the organization. Tier II and Tier III cities are perfect choices today. As a result, we need to shift our focus."
- Mandar Kulkarni

New use cases are leading to exponential growth of data due to the amount of digital content that is being consumed, and more importantly content created by enterprises and end users

By 2025, data consumption in India is expected to reach 25 GB per month per user, up from 12 GB in 2019, driven by affordable mobile broadband services and changing video viewing habits

Data Consumption



Increasing demand for tailor-made solutions from enterprise customers is leading to a shift from plug-and-play solutions to customized solutions that could be developed in a matter of time.

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"We have to keep it very modular. This is because there is so much customization. The traditional approach of plug-and-play doesn't suffice anymore. Go-live has now completely changed to customization. As a result, we can't build anything. We need to keep everything ready. Once the requirement comes in, we need to alter it as per needs and go live" - Surajit Chatterjee

Demand dynamics are shaping the landscape of edge data centre market, thus giving rise to segments such as Telco edge, End-customer edge, and Enterprise Customer edge

Prominent Edge use cases:

- Telco Edge: Content Delivery, 5G
- Enterprise Edge: Factory / Industrial automation, Smart manufacturing
- End-customer Edge: Gaming, AR / VR, Video streaming and content creation

Increasing acceptance of data centres as a business enabler by regulators, and policymakers is leading to introduction of data centre specific policies by various states, and data centres are gaining infrastructure status

1. Haryana government exempted state GST, stamp duty, electricity duty, and had announced to declare data centre d as a separate infrastructure industry and energy intensive industry
2. Karnataka government announced exemption of land conversion fee, stamp duty and electricity duty. In addition, it also offered concessional power tariff and green power tariff reimbursement
3. Uttar Pradesh government has announced capital, interest and land subsidies. In addition, it has offered stamp duty and electricity duty exemptions

"We are looking forward to implementing separate block infra for enterprises to cater to tvhem in terms of scalability and the next phase of growth." - Surajit Chatterjee

While multi-tenant edge data centre will continue to be large-sized, demand for smaller edge data centres is on the rise, primarily enterprise edge data centre, ranging from 5-6 MW (25-40 ft container, 16-24 racks)

Service provider's dilemma: Trade-off between managing demand and investment

Building a datacentre has always been a capital-intensive process, and most of the service providers have limited holding power when it comes to factors such as occupancy, power, etc. Moreover, service providers are always in a catch twenty-two situation when it comes to managing the demand and supply of datacentres, due to unpredictable demand from the customers, especially enterprises. While the customers always demand scalability, for service providers there is always a dilemma when to build and when to invest to meet the growing demands for scalability.

New entrants and smaller players find themselves in a market where even large players with decades of experience and market presence find it difficult to scale up. While data parks seem to be a possible option to overcome the challenge of scalability, service providers are still not willing to experiment as they operate in a highly competitive market and the move could lead to loss of customers and revenue.

"One of the factors to scale exponentially is to witness-your engagement and demands are also scaling up...The challenge today is-do we build it now or hold it for some time and proceed?" - Surajit Chatterjee

Demand fluidity of enterprise customers

While enterprise customers understand the dilemma of the service providers, it becomes hard for them to commit any capacities as they themselves operate in a fast changing and unpredictable environment, resulting in hard to predict demand trends and scale-up exponentially. Moreover, enterprises now prefer customized, end-to-end services which service providers are unable to offer at the moment.

On top of this there is a push from enterprise customers to scale-up to offer Edge and build-to-suit capabilities, which is very nascent for service providers. This further leads to an unanswered question of consumption of existing capacity and how soon could service providers get the return on investment that has already been made.

"The last two years have pressed a giant fast-forward button. Customer expectations are changing. Technology is changing. What we don't think of yesterday is readily available today. But the ask is—how can we scale exponentially?" - Kirti Patil

Prominent Edge use cases:

- Focused on large enterprises
- Separate block infrastructure for enterprises
- Well placed in terms of holding occupancy

Government playing an active role- Infrastructure Status to Data center!

Data centre providers have dependency on Telecom operators for network related requirements, as regulations do not allow service providers to own the network. In addition, there is usually a long gestation period when it comes to government approvals for things such as acquiring land, which could even take as long as up to one year. However, in the recent times push by both central and state governments around supportive data centre policies is expected to provide positive impetus to overall market.

"According to the recommendations of one of the committees, the government should incentivize data centres on the usage of green. The government wants to increase these green data centres."
- Mandar Kulkarni

"The government wants this asset class to grow. The government is looking at the future outlook: challenges vs. opportunities. The next step is to look at the growth of this asset class maturely for the next 10-15 and determine how to scale up." - Surajit Chatterjee

CapitaLand is in advanced discussion with various government bodies on how and when to create more data centre capacities to meet the traffic requirements of not only present situation by also 5- 7 years down the line.

Companies can build data parks in Tier III cities and Edge DC in Tier I. It implies that government campaigns such as The Digital India and Startup India have accelerated the urban transformation in Tier 2 and 3 cities. Government has further taken initiatives to attract IT firms and provide them with a conducive ecosystem by establishing industrial clusters, SEZ and various skill development initiatives."
- Surendra S

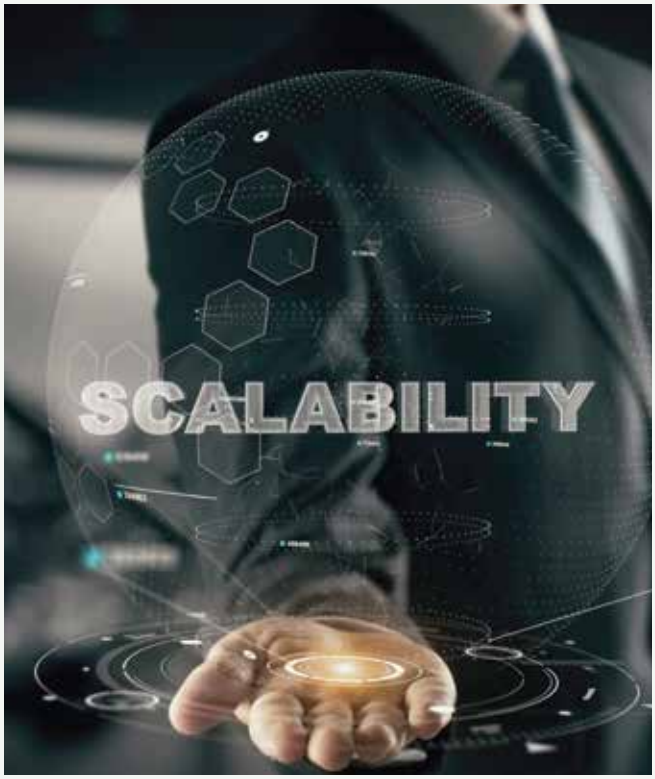
Roadmap to achieve scalability for the next phase of growth

While data centres are here to stay and thrive, edge data centre could be the next big thing in India. India is expected to surpass every other nation across the globe when it comes to Edge Data Centre adoption and 5G roll-out, primarily due to growth of content creation and consumption. This would give rise to use cases beyond prototypes across domains such as AR/VR, Healthcare, Self-driven cars, on-the-go sentiment analytics, etc.

However, for all this to happen, Edge needs to expand, and this can only happen if there are more data centres beyond tier-1 cities.
As data centres would continue to move beyond tier-1 cities, they would pave way for further proliferation of edge data centres in areas that would drive the demand of these services. To meet this growing demand, the industry must chalk-out an action plan for scalability for the next phase of growth.

"To shape the market and not just be another player, the player needs to focus on Edge. The build-to-suit is the moment of the truth." - Mandar Kulkar-

"Edge is paving the way for IT-OT convergence as digital capabilities are becoming more strategic and managing the operations more effectively." - Sukanta Biswas



1. Data centre providers should take their footprints into consideration and should rely of green energy, especially for larger data centres and Data parks. Moreover, it also needs attention of the regulators and policy makers, that should offer incentives to service providers based on performance on green and ESG initiatives

2. Concerns around data regulation and data sovereignty must be addresses with active participation of all the stakeholders including government

3. Hyperscalers should expand their offerings and come up with an option of smaller data centres for enterprise customers

4. Service providers should offer services such as colocation, customized hybrid models and data infrastructure-as-a-service

5. Have robust SLAs in place around network latency

6. Prepare for modular and scalable Edge rollout and offer edge-ready solutions and Edge-as-a-service

7. Keep competition aside and explore option of building data parks as a way to scale up over next 10-15 years

"The need of an hour is data centre. For India to become an international hub, we need to look at connectivity and understand what we are doing with the data centre network." - Kirti Patil

The data players today need to have a cutting-edge Edge strategy. The big opportunity, today, is to develop data centre in Tier II and Tier III cities but be ready to do Edge as a service."
- Mandar Kulkarni

About CapitaLand

CapitaLand Group (CapitaLand) is one of Asia's largest diversified real estate groups. Headquartered in Singapore, CapitaLand's portfolio focuses on real estate investment management and real estate development, and spans across more than 260 cities in over 40 countries.

CapitaLand places sustainability at the core of what it does. As a responsible real estate company, CapitaLand contributes to the environmental and social well-being of the communities where it operates, as it delivers long-term economic value to its stakeholders.

Within its ecosystem, CapitaLand has developed an integrated suite of investment management and operating capabilities that supports its real estate businesses and platforms in building core competencies across the real estate value chain. With this full stack of capabilities, CapitaLand can optimise the strategies of its listed real estate investment management business CapitaLand Investment, and its privately held property development arm CapitaLand Development; to drive competitive advantage for its businesses.

Insights