IRON MOUNTAIN®
DATA CENTERS

Infrastructure planning report

India

Contents

The latest trends, opportunities and challenges for digital businesses colocating in India

The Indian infrastructure market

14% of the world's Internet users live in India, but the country has only 6% of global data center capacity. However, after many years of low investment, the Indian data center market is taking off. Data center capacity has grown by over 50% in the last three years and now exceeds 600 MW. This is forecast to more than double by end 2025, with total capacity of between 1500 and 1700 MW. Reliability has been an issue in the past, but the current growth spurt will deliver a new generation of larger and more sophisticated facilities with world-class uptime.

Mass Movement

Ten years ago, India was the 10th largest economy in the world, with a GDP of $1.9 trillion at current market prices. Today, it is the 5th largest with a forecast 2024 GDP of $3.7 trillion. Recent reports forecast that India is on track to be the third largest global economy by 2027 and GDP could grow to US$10 trillion by 2030. India is also one of the fastest growing digital markets in the world with over 800 million Internet users and a rapidly growing number of businesses moving workloads to the cloud. The rise in the data center market is being driven by an extremely strong business services sector including 111 unicorns (the world's third largest unicorn hub) and a dynamic e-commerce sector which is forecast to quadruple in size to $350 billion by 2030.

Cloud Coverage

The clouds are growing fast in India, with the cloud market increasing at an average CAGR of 44%. According to Structure Research, the market for the leading clouds is set to grow from $6.5BN in 2023 to $25.5BN in 2028. There are already a dozen cloud regions up and running, and the top CSPs are all launching new zones. Three Availability Zones have been launched recently by AWS in Hyderabad along with local zones Chennai and Bangalore. Microsoft has also purchased property in Hyderabad for a new cloud region and three availability zones, and Mumbai and Delhi-NCR are becoming Google cloud computing hubs.

World's 5th largest GDP

>7% GDP growth

1.4 billion people

Strong government focus on digitisation

2022 to 2028

colocation capacity

CAGR >20%

SQFT of new space = 10M+

Forecast cloud growth x4 2023-2028

Opportunities

With a growing economy, a government that has committed to digital transformation and the world's leading software and tech workforce, India is a land of digital opportunity that is proving extremely attractive to global investors and business partners.

Digital India

'Digital India' is the Indian Government's high-profile program to turn the country into a 'digitally empowered society and knowledge economy'. It includes plans to digitize public services, many of which (health, education, public finance) are already generating major savings and increases in state revenue. This build-out requires reliable large-scale data centers and support services including IoT and big data analytics, promoting new capacity which can also be leveraged by enterprises.

Data Protection

India's 2023 Digital Personal Data Protection Act (DPDP) was modelled on the EU's GDPR. Although data sovereignty/localisation proposals were reversed, financial data is required to remain within the country and social media measures are yet to be defined. The new levels of data accountability demanded by the Act are expected to have a positive influence on broader data centre service level agreements. The Act also includes a provision to establish a Data Protection Board of India to adjudicate and enforce it.

Government Support

Government measures aimed at driving digital growth include a number of state-level data center policies such as classification of data centers as infrastructure assets as part of the 2022-23 Budget. Data center construction is encouraged by a range of financial incentives such as stamp duty exemptions, land cost subsidies, and Goods & Services Tax refunds. This regulatory support further reduces development costs, which are already significantly lower than in mature data center markets.

World-Class Connectivity

India has 17 major subsea connections with more on the way. Most land in Mumbai and Chennai. The Indian government is also investing heavily in connectivity infrastructure. In mid-2023, they announced plans to invest an additional $13 billion to expand the county's fiber-optic grid, over and above the $8.3 billion already invested. This will improve what are already excellent latencies between key hubs like Mumbai, Delhi, Hyderabad, and Chennai.

Top Tech Workforce

India's well-known IT service sector has created a highly skilled and affordable tech-literate workforce. According to some estimates this even includes 20% of the global chip-design workforce. The IT and business process management industry employs over 5 million people and has a phenomenal 55% share of the global market for IT services. Tech and engineering production are also increasing their proportion of exports year on year as India climbs higher up the value chain.

Issues

India is aiming high; environmental investment and speed and consistency of development are all significant challenges.

Power & Emissions

The Indian power grid is not the most reliable, although it is significantly better in key hubs; investment in and fuelling of efficient UPS and backup systems is a necessity. Considering the demands which AI will make on the grid massive investment is required, particularly to accelerate regional digital economies.

India's GHG emissions are the third highest in the world and the country is suffering regular extreme weather events due to climate change. At COP26 India committed to reach net-zero emissions by 2070 and to generate 500 GW of carbon-free energy by 2030, the world's largest national renewables expansion plan. This is a hugely ambitious target considering the various regulations and limitations in different regions.

India's current total installed renewable energy capacity is just over 180 GW, with plans to achieve 500 GW by 2030. Solar power leads, followed by large-scale hydro and wind, and renewables capacity growth is accelerating fast. States are encouraging renewable power purchase by providing open access power purchase agreements (PPAs).

Construction Standards

At the data center level, new infrastructure will need to be efficient, low impact, and renewable-powered, with advanced on-site renewable and water conservation design. The Indian Green Building Council (IGBC) data center guidelines as well as international standards such as LEED and BREEAM, will be critical in reducing embodied carbon and encouraging operational efficiency. Construction quality and embodied impact need to improve. Currently just over 20% of data centers are LEED-certified.

Planning & Partnership

Despite the recent digitisation drive, bureaucracy can make it hard to do business efficiently in India, and this slows business start-ups and registrations. India's regulatory environment is also extremely complex, requiring compliance at a national, state, and local level, which can be a challenging process. Thorough planning and good quality long-term partnerships between global and national providers help to make the Indian business world easier to navigate, the approach taken by IMDC with Indian partner Web Werks when we set our joint venture in 2021.

Key hubs

In India, Tier 2 data center locations often lack adequate infrastructure for development, so their growth is still relatively slow. The vast majority of data centers are in and around India's hugely populous leading cities.

Whatever business you are in, there is an up and coming Indian hub that will be a good fit for landing and expanding. Most of the digital hubs here are already established specialists, with sectoral strengths which appeal to global partners in the same business.

Here are the key hubs, starting with the most digitally-developed in terms of a mix of data center, connectivity and cloud availability.

Mumbai

With a population of 26 million, Mumbai on the west coast is the financial and business capital, generating $280 billion of GDP. It is also the largest and most established data center market, with the most advanced and diverse power and fiber infrastructure in the country including multiple submarine cable links to the Middle East, Europe and South East Asia. Mumbai currently provides almost half of all Indian data center capacity, with a lot of the most recent developments in the modern and fast-growing Navi Mumbai district.

Bengaluru

Further south from Hyderabad, Bengaluru (formerly Bangalore) has a population of 13.5 million and a GDP of $110 billion and boasts one of the world's top technology clusters. The city has been described as the 'Silicon Valley of India' as well as 'The Outsourcing Capital of the World'. In addition to software-related industries it is home to high-tech defence, aeronautics, and biotechnology clusters.

Chennai

Formerly known as Madras, Chennai on the south east coast is the second largest industrial and commercial center in South India, behind Bengaluru. The city has a population of 12 million and contributes $80 billion of the country's GDP. Known as 'The Detroit of Asia' Chennai has a large automotive manufacturing base, and Chennai is one of India's largest hardware manufacturing and exporting hubs.

Hyderabad

Located inland in the central south east, Hyderabad is a major pharmaceutical, biotech and technology hub, and is an important and fast-growing IT and data center hub with an $80 billion GDP. It has a population of 11 million and a proactive regional government, which has set up and promoted an exclusive 'hi-tech city' which attracted significant investment from global IT brands.

Delhi-NCR

Delhi National Capital Region (NCR) includes the cities of Delhi, Faridabad, Ghaziabad, Gurgaon, Noida, Greater Noida, Meerut, and Yeida. The Delhi 'urban agglomeration' is the largest population center in the country (and the second largest city in the world), home to 32 million people, and contributes over $280 billion to India's GDP. The region originally specialised in manufacturing, but IT industries have grown fast, particularly in Gurgaon to the south west and Noida to the south east.

Kolkata

Kolkata (formerly Calcutta) looks down across the Bay of Bengal on the north east coast and has a population of over 15 million. The city was the traditional manufacturing hub of the country, developing an IT sector more recently and has a GDP of $170 billion. While it has excellent technical education institutions, manufacturing has declined in recent years, slowing its growth as a mixed technology hub.

Pune

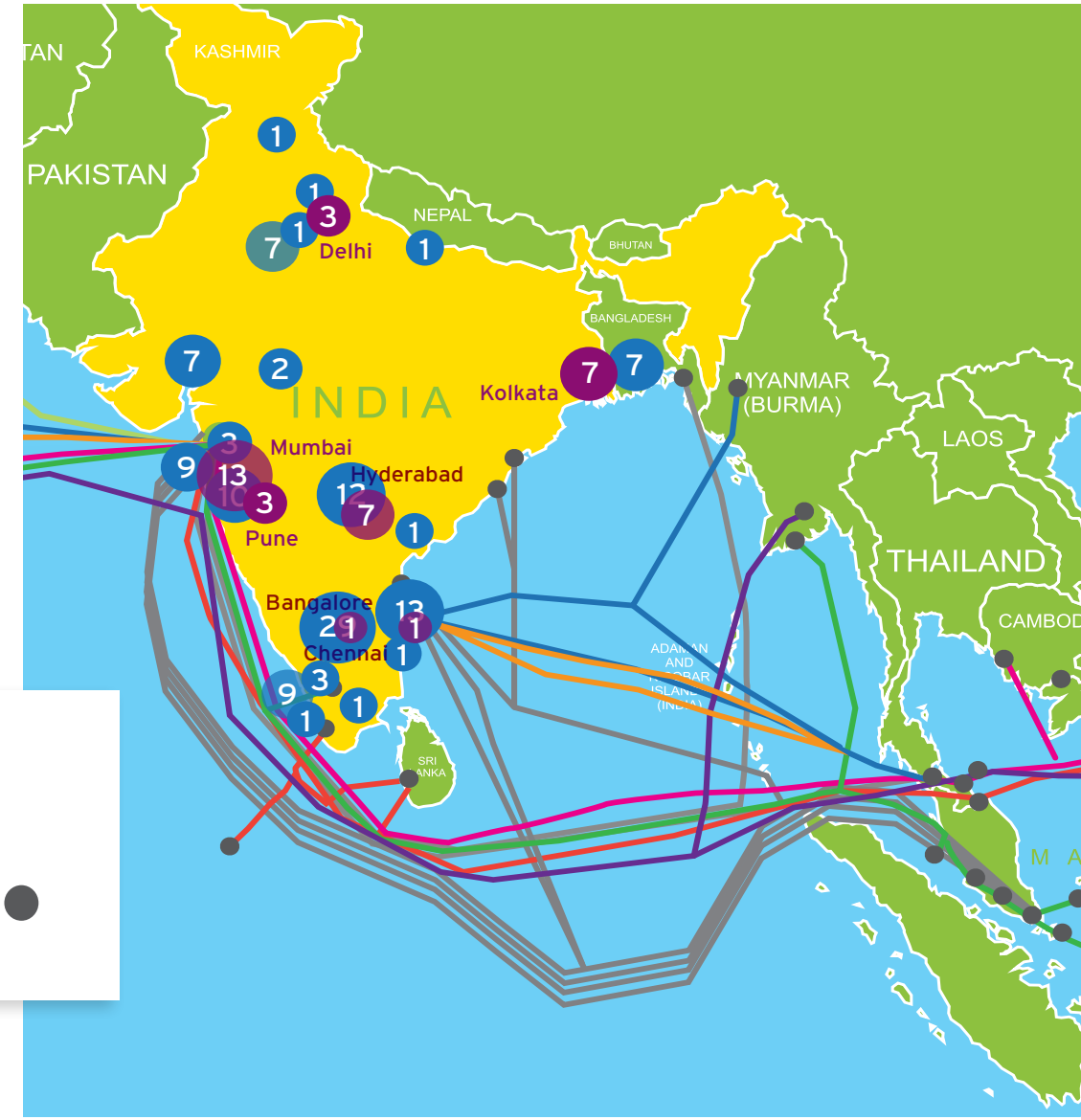
The emergence of Pune (formerly Poona) as an IT hub is more recent and was originally driven by domestic digital businesses. Situated to the south of Mumbai with a population of 7 million, Pune contributes over $90 billion in GDP and specialises in embedded software, chip design and biotech research.

Key hubs

Data Center Densities: DataCenterMap lists 56 data centers from 18 colocation providers in India with the biggest clusters in Mumbai, Navi Mumbai, Pune, Bangalore, Hyderabad and Chennai, followed by New Delhi/Noida and Kolkata.

Cloud Cover: The market for the top 6 clouds is set to grow from $6.5BN in 2023 to $25.5BN in 2028. There are already a dozen cloud regions up and running, and every hyperscale provider is launching new zones. Mumbai and Hyderabad are the most cloud-rich regions currently.

Continental Connections: The majority of India's 17 subsea cable connections land in Mumbai and Chennai, but new cables are planned for different coastal locations like Digha (in West Bengal) and Mahuva (in Gujarat). A recent report by the Telecom Regulatory Authority of India (TRAI) forecast that India's international bandwidth demand will multiply tenfold by 2028, with CAGR of 38%.



Outlook

While not experiencing the same exceptional levels of growth over the last decade as China and Korea, India has performed exceptionally well economically, and has a cohesive and impressive strategy for growth which is founded on a shared digital vision and openness to global clouds and customers. The outlook for the Indian digital economy is bright.

The sheer scale of the domestic market, tech skills levels, manufacturing and export potential, and high levels of interest from both Europe and America in diversifying supply chains make India a compelling prospect for investment.

For businesses interested in colocating in India, the data infrastructure is in place and growing fast, at least in the Tier 1 hubs, and the business environment is becoming more efficient through digitisation.

While the country's renewable targets are extremely ambitious, and investment in regional infrastructure is required, well-coordinated and funded progress is being made in renewables. The cloud landscape is maturing and global firms that have committed to their Indian operations are enjoying excellent returns.

IMDC & Web Werks: A Partnership for Growth

In April 2021 IMDC set up a joint venture with Web Werks, one of India's top colocation service providers. Web Werks already operated three carrier-neutral data centers in Mumbai, Pune and Delhi NCR, and owned land for a greenfield data center in Navi Mumbai.

Our joint objective was to become one of the few global data center providers to offer a pan-Indian footprint backed by the interconnected, compliant and scalable infrastructure needed to support growing demand from multinationals, hyperscale cloud providers and ambitious Indian digital businesses.

Within two years we added new sites and grew potential customer data center space from 158,000 sqft (14,700 m2) to 484,000 sqft (44,700 m2) and negotiated a huge amount of potential space and power capacity, ramping up total availability to 150 MW on completion of our new phased builds.

Rabale, Navi Mumbai

Noida, India

Telangana, Hyderabad, India

Hinjewadi, Pune, India

Iron Mountain Data Centers in India

Mumbai: MUM-1, 2 & 3

Located in Navi Mumbai, MUM-1 is one of India's busiest and most successful data centers, and has been significantly upgraded and expanded. This 4,600 m2/ 50,000 ft2 facility offers 4 MW of total power and houses an 850-strong customer ecosystem. Customers enjoy in-house access to 9 carriers, 160+ ISPs and four major Internet Exchanges (AMS-IX, De-CIX, Extreme IX and NIXI) with cloud connects to AWS, Microsoft Azure, Oracle and Google. Opened in February 2023, MUM-2 is a 9,300 m2/100,000 ft2 facility with 10.5 MW of total power and redundant fiber links to the MUM-1 facility for no-latency ecosystem access. Our third Mumbai facility has 70 MW of capacity and is scheduled to complete in 2025.

Bengaluru: BLR-1

Our BLR-1 facility is located at the interconnected heart of the Bengaluru technology cluster. The data center is an 80,000 ft2 4MW facility situated in Pattandur Agrahara in the Whitefield district to the East of Bangalore, also known as the 'Silicon Valley of India'. Whitefield is the densest data center cluster in the whole of Karnataka state, which is home to over 5,500 IT companies including many global cloud and internet leaders.

Delhi-NCR: NCR-1

Our NCR-1 data center is located in Noida in Uttar Pradesh, half an hour south east of central New Delhi. The 69,735 ft2 /200 KW carrier-neutral data center interconnects with our Mumbai operations, offering a rich connectivity and service provider ecosystem to customers, and now has the potential to scale up to 12 MW.

Hyderabad: HYD-1

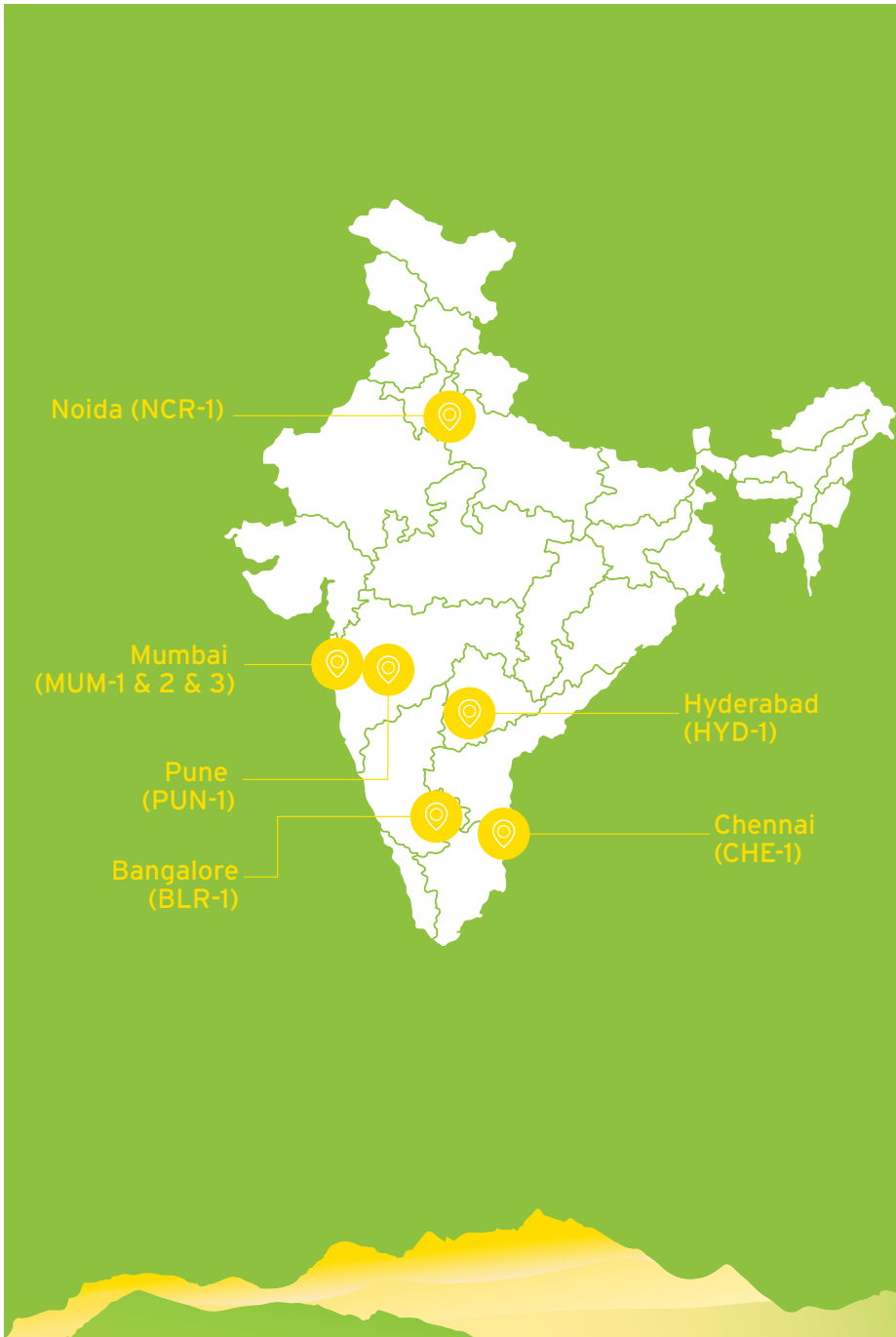
Located in the Kondapur region in Hyderabad, our HYD-1 data center provides 120,000 ft2 (11,100 m2) of highly compliant Tier III space with a 5.5MW IT load covering its first build-out phase. It offers local and international customers the highest global security and redundancy with efficient operations, easy cloud and carrier access and advanced interconnection services.

Pune: PUN-1

Our PUN-1 facility is located in Hinjewadi, a tech-rich suburb to the southwest of the city, just 18 km from Pune International Airport in the heart of India's Maharashtra data center belt. The 50,186 ft2/2 MW carrier-neutral data center interconnects with our Mumbai campus, ensuring a rich ready-made ecosystem for customers.

Chennai: CHE-1

Our new data center is located in the Ambattur area of Chennai, formerly known as Madras. Work started on the 50 MW Capacity Data Center planned in Q4 2023.



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About Iron Mountain Data Centers

Iron Mountain Data Centers operates a global colocation platform that enables customers to build tailored, sustainable, carrier and cloud-neutral data solutions. As a proud part of Iron Mountain Inc., a world leader in the secure management of data and assets trusted by 95% of the Fortune 1000, we are uniquely positioned to protect, connect and activate high-value customer data. We lead the data center industry in highly regulated compliance, environmental sustainability, physical security and business continuity. We collaborate with our 1,300+ customers in order to build and support their long-term digital transformations across our global footprint, which spans three continents.
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