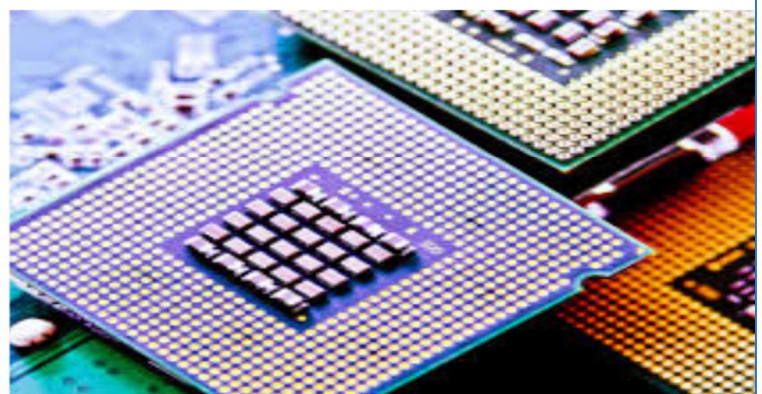




FIN₂RESEARCH
Investment Advisor Pvt. Ltd.

Data Centers: The Mega Multibagger Theme for the Future



Cummins India - ₹4978

Bharti Airtel - ₹1703

Exide Industries - ₹707

Blue Star - ₹1983

Tata Communications - ₹2230

**Techno Electric & Engineering Company Ltd -
₹1995**

**Our Top Picks For
The Data Centre Industry**

Date : 28/06/2024

Data Centers on the Rise: Growth, Components, and Market Impact

Data is frequently described as the new gold, underscoring its crucial role in the digital economy. The efficient functioning of this economy heavily relies on data, which is organized, stored, managed, and processed in specialized facilities known as data centers. These centers house networked computers, storage systems, and other IT equipment, enabling businesses, organizations, and online entities to effectively manage and distribute large volumes of data. These facilities are widespread and not confined by geographic boundaries.

DRIVING FORCES

Data Localization Efforts: The Indian government's data localization policy aims to protect citizens' personal and financial information from foreign surveillance and empower domestic authorities with legal access to data.

Rising Demand for Cloud Services: The demand for cloud services has surged due to accelerated digital transformation, driven by the COVID-19 pandemic, making the internet essential for both work and leisure.

Adoption of Advanced Digital Technologies :Technologies like cloud computing, IoT, machine learning, AI, and big data analytics generate vast amounts of data, necessitating secure and scalable data center infrastructure.

Expansion of Data Center Infrastructure :India's growing digital population and economy require rapid expansion of data centers. The country's high and rising mobile data consumption further fuels this demand.

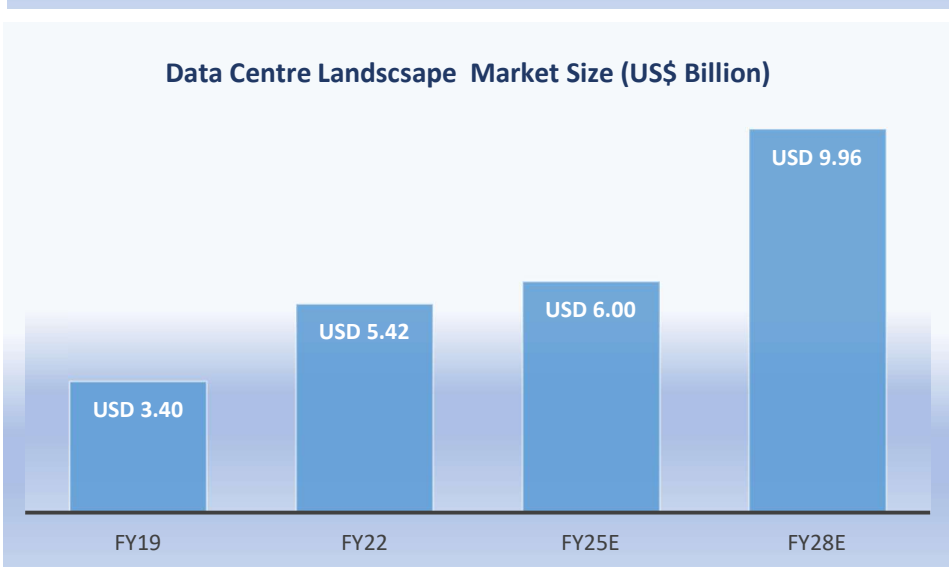
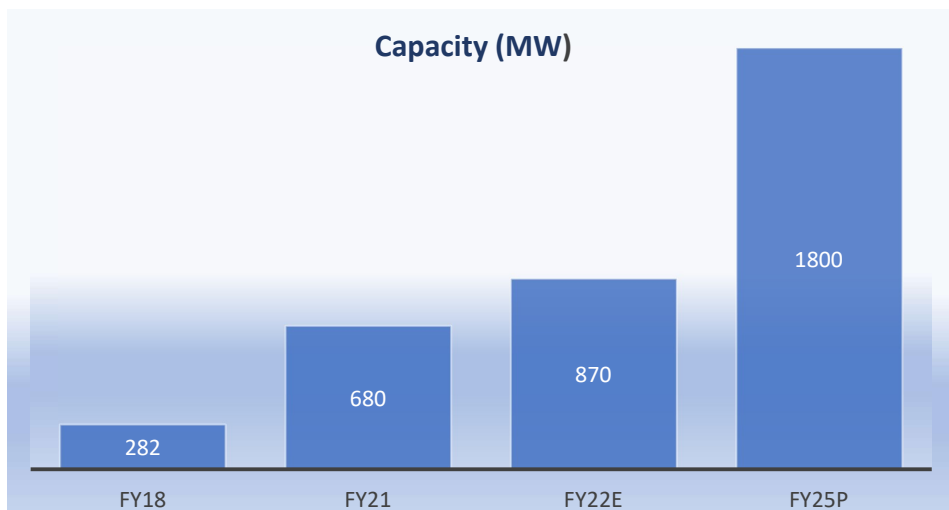
Personal Data Protection Bill (PDPB): The Personal Data Protection Bill, passed in August 2023, drives demand for local data center infrastructure by addressing concerns over offshore data transfers related to economic and national interests.

➤ India's digital explosion can be attributed to several key factors: the government's emphasis on e-governance and the Digital India initiative, the adoption of new technologies such as cloud computing, IoT, and 5G, as well as the increasing user base for social media, gaming, e-commerce, and over-the-top (OTT) platforms.

➤ India's data center industry is experiencing robust growth, essential for national security, internet infrastructure, and economic efficiency. As of 2024, India's data center capacity is 950 MW, expected to reach 1800 MW by 2026, making it the leading country in data center capacity in the Asia-Pacific region. Projections indicate an increase of 850 MW between 2024 and 2026, drawing significant investments from global operators, real estate developers, and private equity firms.

➤ This growth will require around US\$6 billion (Rs. 50,000 crore) in capital expenditure from 2023 to 2026. Although contributing 20% of global data, India's data center capacity share is just 3%, despite leading the world in mobile data usage.

➤ A report by Oliver Wyman and NASSCOM predicts cloud technology will constitute 8% of India's GDP by 2026, potentially boosting GDP by US\$310-380 billion and generating 14 million jobs. While a blog by the Times of India states that AI is expected to contribute around US\$ 967 billion to the Indian economy by 2035, it is also projected that AI will add between US\$ 450-500 billion to India's GDP by 2025, comprising nearly 10% of the nation's anticipated GDP of US\$ 5 trillion.



- A report forecasts that India will add 4,900-5,000 megawatts (MW) of capacity with a US\$ 18 billion (Rs. 1.5 trillion) investment over the next six years starting from 2023. This growth is expected to drive industry revenues, which are projected to increase at a compounded annual growth rate (CAGR) of 17-19% during FY23-FY25, according to the Investment Information and Credit Rating Agency of India Limited (ICRA).
- The pandemic has significantly accelerated digital transformation across sectors, boosting the demand for cloud services globally and making the Internet essential for both work and entertainment. Consequently, this shift has led to hyper-scale data center investments, with global investments anticipated to exceed US\$ 200 billion annually by 2025.
- In this context, India's data center market is expected to grow from US\$ 5.42 billion in 2022 to US\$ 9.96 billion by 2028, at a CAGR of 10.69%. Furthermore, cumulative investments in data centers in India are estimated to reach US\$ 28 billion between 2019 and 2025, growing at a CAGR of 5%, which is twice the global average.

INVESTMENTS

- Notable investments in the Indian cloud computing landscape have been significant in recent years. In November 2022, Amazon Web Services announced the launch of its second AWS infrastructure region in India, the AWS Asia Pacific (Hyderabad) Region. This region is projected to support more than 48,000 full-time jobs annually by 2030, driven by investments exceeding US\$ 4.4 billion in India.
- Simultaneously, Google established a partnership with local gaming startup SuperGaming through its Google Cloud division. This collaboration allows game developers using Google Cloud to access SuperGaming's SuperPlatform game engine for creating, hosting, and distributing their games.
- In July 2021, Ascendas Property Fund Trustee Pte. Ltd, the trustee-manager of Ascendas India Trust (a-iTrust), announced plans to build data centers in India, investing Rs. 1,200 crore (US\$ 160.67 million) to develop phase one of its first data center campus in the country.
- Additionally, Amazon has partnered with Airtel to sell Amazon Web Services (AWS) to its customers, planning to invest US\$ 1.6 billion in two upcoming data centers in Hyderabad.
- Indian corporations such as the Hiranandani Group and the Adani Group (in a joint venture with EdgeConnex), along with the Reliance Group, and foreign investors like Blackstone, CapitaLand, Princeton Digital Group (PDG), and tech giants like Amazon and Microsoft, are heavily investing in data centers in India to meet the growing demand.



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CLOUDING ECOSYSTEM

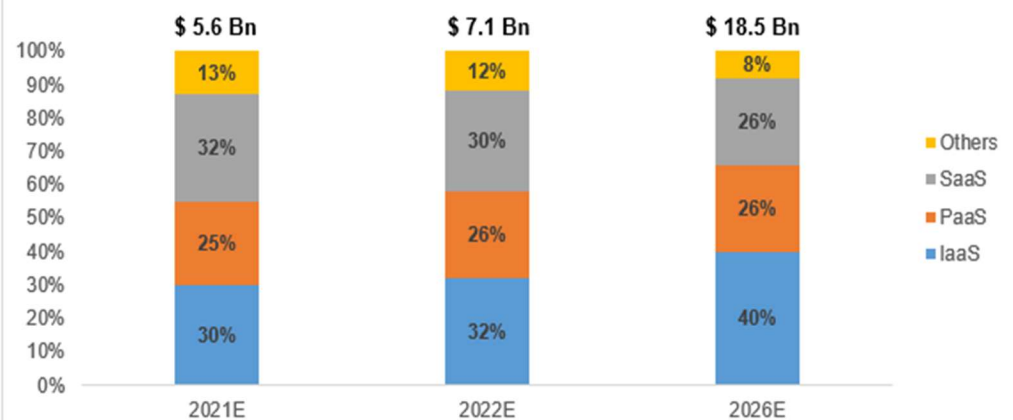
Cloud computing encompasses three primary types: public cloud, private cloud, and hybrid cloud, each designed to cater to specific business needs. These models facilitate essential services crucial for modern enterprises, including:

- **Infrastructure as a Service (IaaS):** Provides virtualized computing resources over the internet. It includes servers, storage, and networking components that can be scaled up or down based on demand.
- **Platform as a Service (PaaS):** Offers a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the underlying infrastructure. It typically includes tools for application development, testing, and deployment.
- **Software as a Service (SaaS):** Delivers software applications over the internet on a subscription basis. Users can access these applications via web browsers without needing to install or maintain software locally.
- **Serverless Computing:** A cloud computing execution model where the cloud provider dynamically manages the allocation and provisioning of servers. It allows developers to focus on writing code without worrying about infrastructure management.

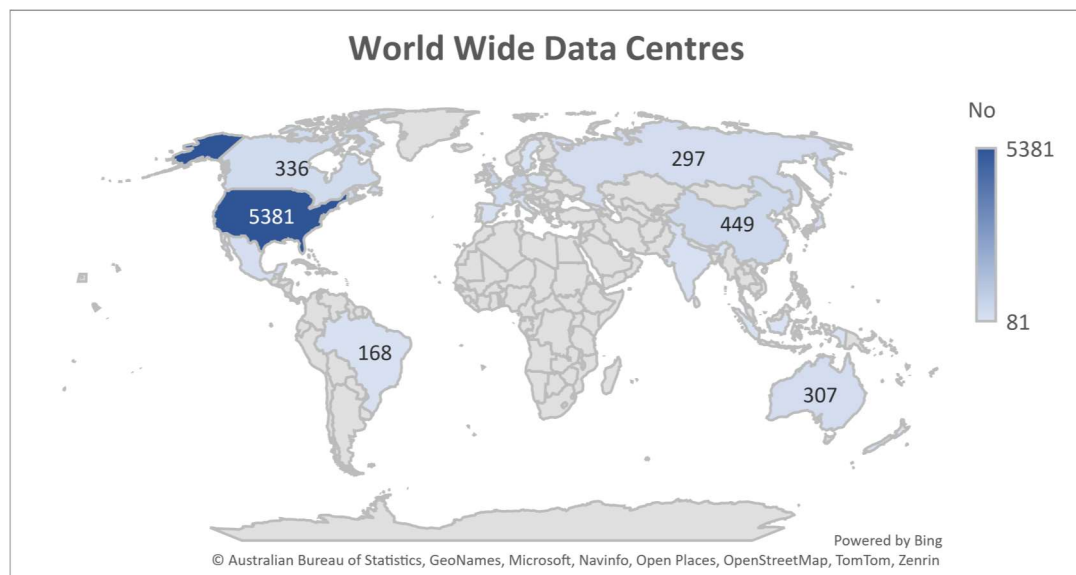
Cloud service providers operate across several categories:

- **Hyperscalers:** These large-scale providers, including Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP), offer extensive computational and storage capabilities tailored for enterprise-scale operations.
- **System Integrators:** Specializing in planning, implementing, and optimizing IT systems, firms like Deloitte, IBM, Accenture, and TCS play crucial roles in integrating cloud solutions into business operations.
- **Infrastructure Providers (Data Centers):** Companies such as AdaniConneX, CapitaLand, and CtrlS provide essential physical infrastructure for businesses requiring robust data center facilities.
- **Pure Play SaaS Providers:** These providers offer Software as a Service (SaaS) solutions via subscription models, delivering comprehensive application stacks managed entirely by the provider.

Public cloud end-user spending in India by delivery models (US\$ billion)

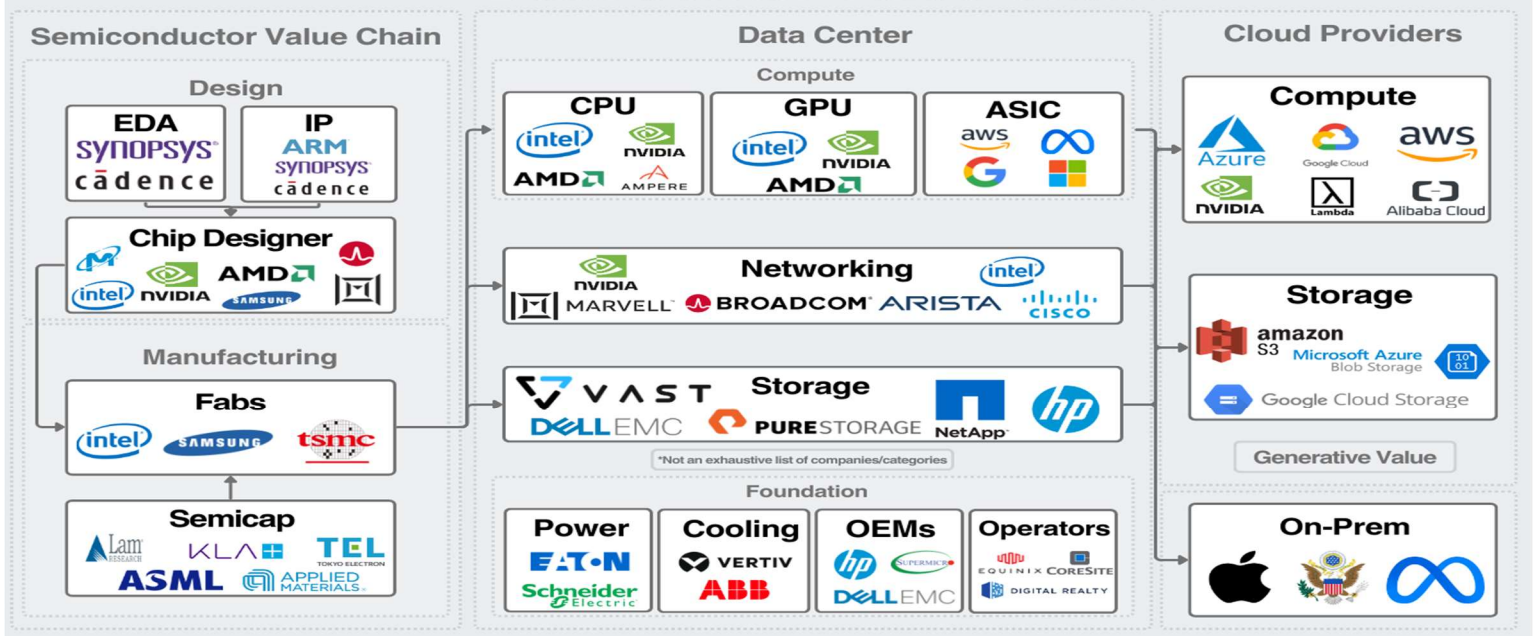


World Wide Data Centres



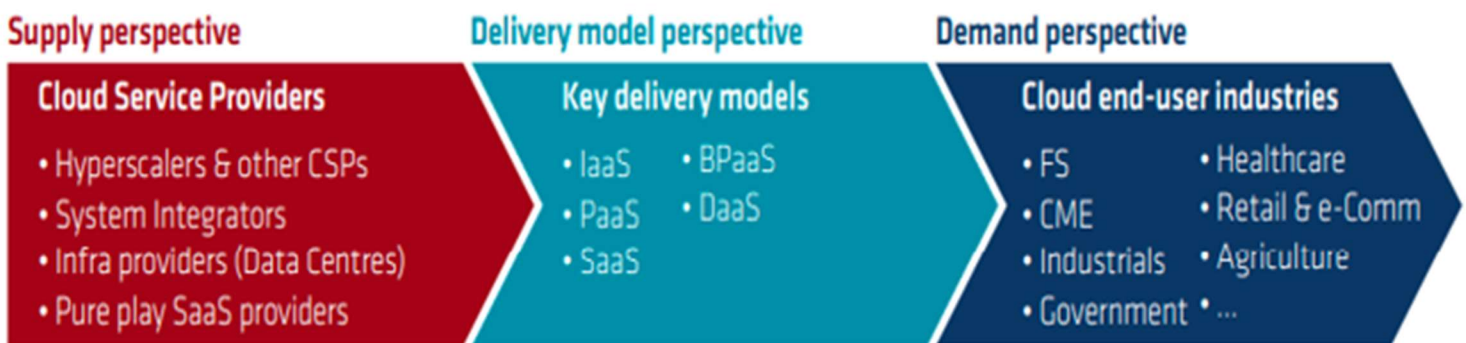
- The data processing and storage market is expected to grow from US\$ 56 billion in 2020 to US\$ 90 billion by 2025. As daily data collection increases in our interconnected digital society, organizations rely more on robust and scalable data centers to meet their expanding needs.
- According to projections by the International Data Corporation (IDC), India's public cloud services market is expected to reach US\$ 17.8 billion by 2027, growing at a CAGR of 23.4% from 2022. In 2022, SaaS led the market, followed by IaaS and PaaS, with the top two providers holding over 40% market share.

Data Center Value Chain



- Data centers are specialized, secure facilities strategically located to house and manage computing and networking equipment. They play a critical role in storing, processing, distributing, and providing access to vast volumes of data. According to a report by Oliver Wyman and NASSCOM, India's investment in public cloud services, particularly in IaaS and PaaS, is expected to grow at a compound annual growth rate (CAGR) of 27% from 2022 onwards, reflecting global market trends.
- The data center investment landscape can be divided into three main categories. At the foundational level, semiconductors power most of the data center technology. In the middle tier, the data center itself encompasses compute, networking, and storage, all housed in servers. This tier also includes essential technology for operating data centers, such as power and cooling systems, and third-party operators. At the top layer, the cloud provides the abstraction layer for developing technology.

CSP Value Chain



- The Cloud value chain consists of two essential stakeholders: cloud end-user industries and cloud service providers. These stakeholders engage through various delivery models, including Platform as a Service (**PaaS**), Software as a Service (**SaaS**), Business Process as a Service (**BPaaS**), Desktop as a Service (**DaaS**), and Infrastructure as a Service (**IaaS**).
- **BPaaS** involves delivering business process outsourcing (**BPO**) services via cloud computing. It leverages cloud services to streamline and optimize business operations.
- **DaaS** is a cloud computing service where a provider delivers virtual desktops to end-users via the Internet, typically on a subscription basis per user. This model allows organizations to access desktop environments remotely, enhancing flexibility and scalability in managing desktop infrastructure.

GOVERNMENT POLICIES

Data Centre Policy

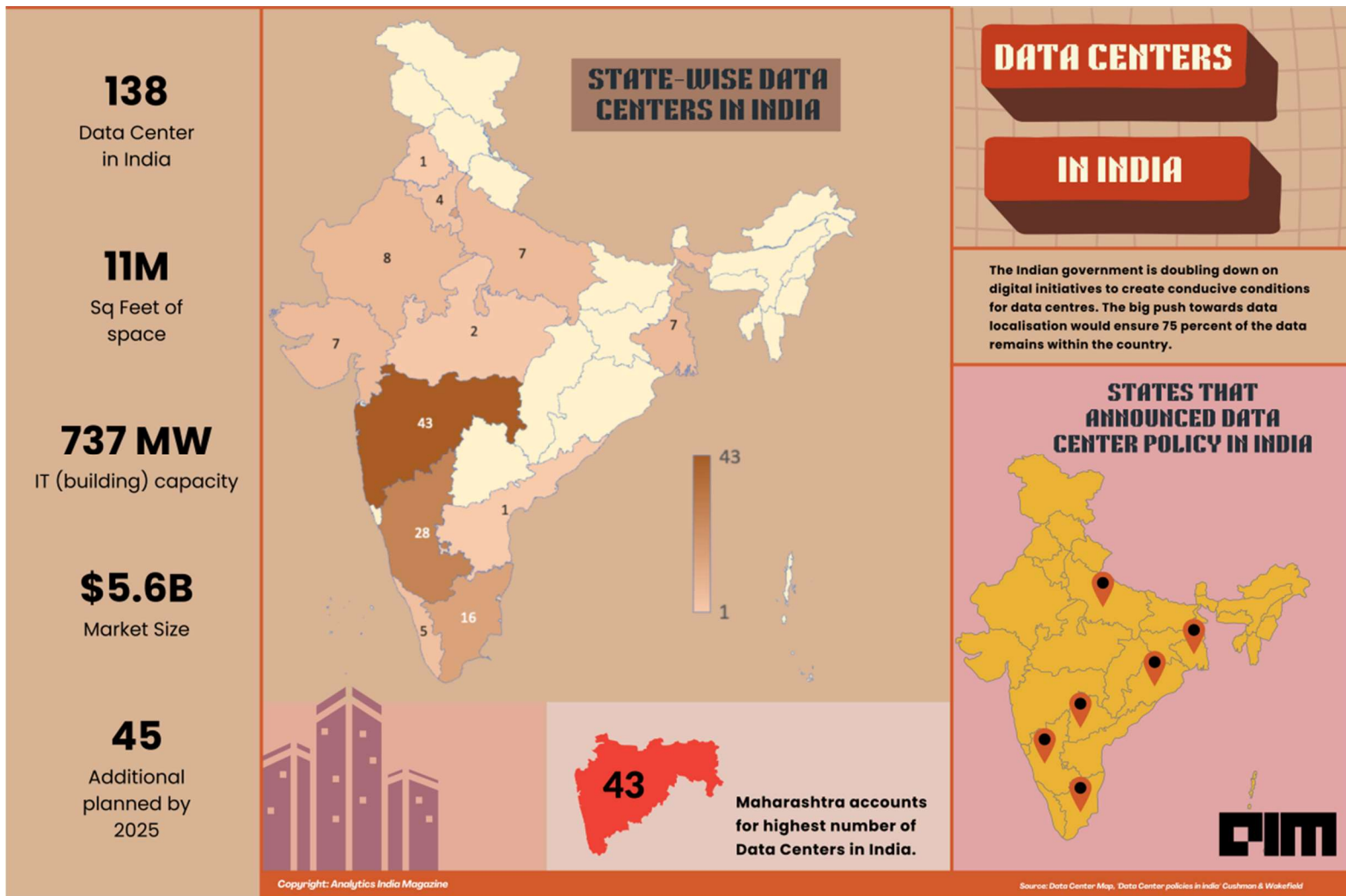
The Data Centre Policy 2020 outlines critical areas such as ensuring reliable electricity supply, cost-effective connectivity through collaboration between MeitY and the Department of Telecommunications (DoT), and designating data centres as essential services under the Essential Services Maintenance Act, 1968 (ESMA). It proposes recognizing data centres as a distinct category under the National Building Code, establishing economic zones dedicated to data centres, promoting indigenous technology development, and enhancing research and capacity building.

TRAI's Regulatory Framework

TRAI introduced the Regulatory Framework for Promoting Data Economy through initiatives like the Data Centre Incentivization Scheme (DCIS) to foster Data Centres (DCs) and Data Centre Parks (DC Parks). It includes measures such as creating a dedicated portal on the National Single Window System (NSWS), implementing a Data Centre Readiness Index (DCRI), establishing Data Centre Economic Zones (DCEZs), setting green certification standards for data centres, and recommending educational courses related to data centres. Additionally, it proposes the establishment of a statutory body, the Data Digitization and Monetization Council (DDMC), and frameworks for data-sharing, consent management, and ethical data use.

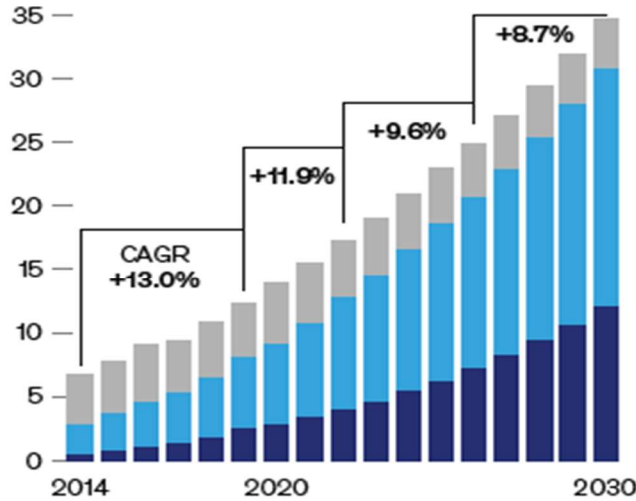
National Informatics Centre

Established in 1976 under the Ministry of Electronics and Information Technology (MeitY), the National Informatics Centre (NIC) operates advanced National Data Centres in Delhi, Pune, Hyderabad, and Bhubaneswar, alongside 37 minor centres across State Capitals. These facilities support round-the-clock operations, providing critical e-Governance solutions to government programs nationwide. NIC launched the GI Cloud initiative (Meghraj) in 2014, deploying over 18,000 virtual servers to more than 1,100 Ministries and Departments. This initiative offers computing, containerization, software as a service (SaaS), and artificial intelligence (AI) capabilities, bolstering the Digital India

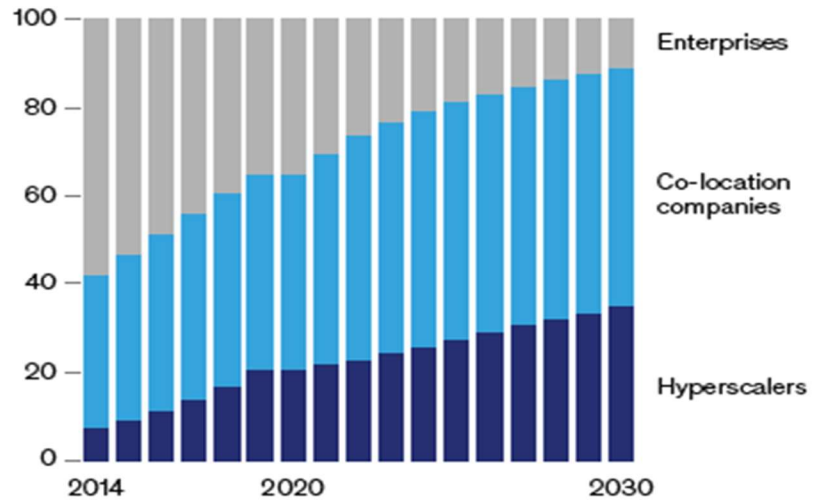


US data center demand is forecast to grow by some 10 percent a year until 2030.

Data center power consumption, by providers/enterprises,¹ gigawatts



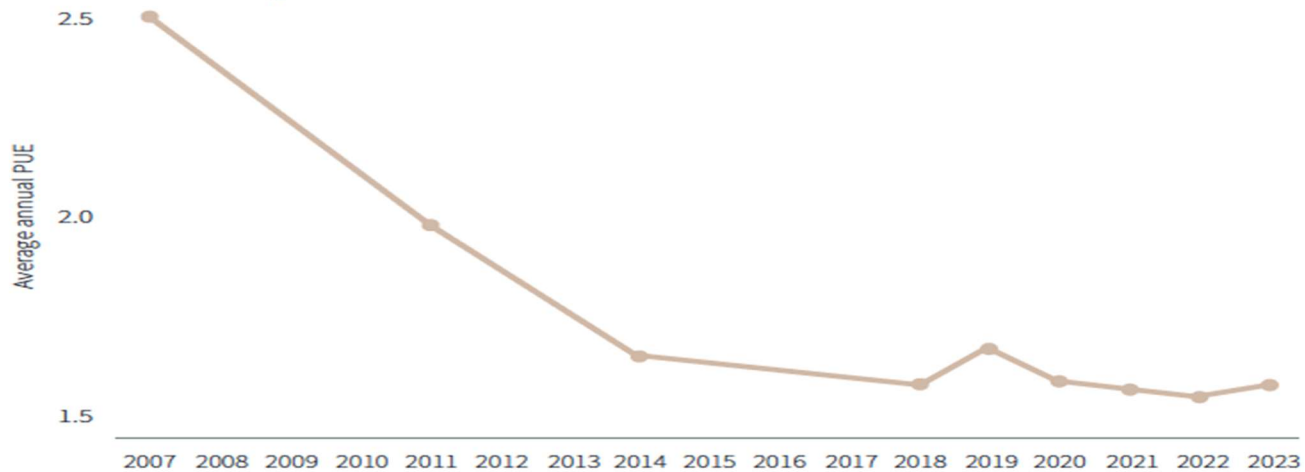
Data center power consumption, by providers/enterprises,¹ % share



Source: Synergy Research Group McKinsey & Company

In the US market, demand for data centers, measured by power consumption, is expected to reach 35 gigawatts (GW) by 2030, up from 17 GW in 2022. As the US represents about 40% of the global market, this growth highlights the substantial energy requirements of data centers. Hyperscale data centers, in particular, are significant energy consumers, using as much power as 80,000 households. Consequently, there is increased pressure to enhance sustainability, leading regulators to impose stringent standards on new data centers.

Data center average PUE worldwide 2007-2023



Note: Worldwide; 2007 to 2022; 669 respondents; IT and data center managers.
Source: Uptime Institute; ID 1229367

Additionally, cooling systems, which account for about 40% of a data center’s energy use, face growing demands due to higher computing power and innovative chip designs. As a result, the power density of equipment stored in racks has increased, with energy consumption per rack reaching 20 to 30 kilowatts in high-performance environments. Data centers are striving to enhance energy efficiency, focusing on improving Power Usage Effectiveness (PUE). Innovations such as immersion cooling, AI, ML, Liquid cooling or rear-door heat exchangers and waste heat utilization are being pursued. Liquid cooling offers up to 90% power reduction and improves computational capabilities and space efficiency. In addition to hardware advancements like renewable energy and immersion cooling, data center operators are optimizing efficiency by maximizing computational yield from CPU cycles.

GLOBAL OUTLOOK

The data center market is booming, driven by strong demand for cloud services, artificial intelligence (AI), Internet of Things (IoT), and other digital innovations. Hyperscalers and edge computing are leading this growth, with projections indicating a rise from US\$ 328.10 billion in 2023 to US\$ 792.29 billion by 2032, growing at a CAGR of 10.64% during 2024–2032. The surge in demand for cloud services further emphasizes the pivotal role of data centers in supporting global digital infrastructure and advancing technological solutions. As of 2024, there are approximately 8,000 data center locations worldwide, with \$260 billion in capital expenditure recorded in 2023.

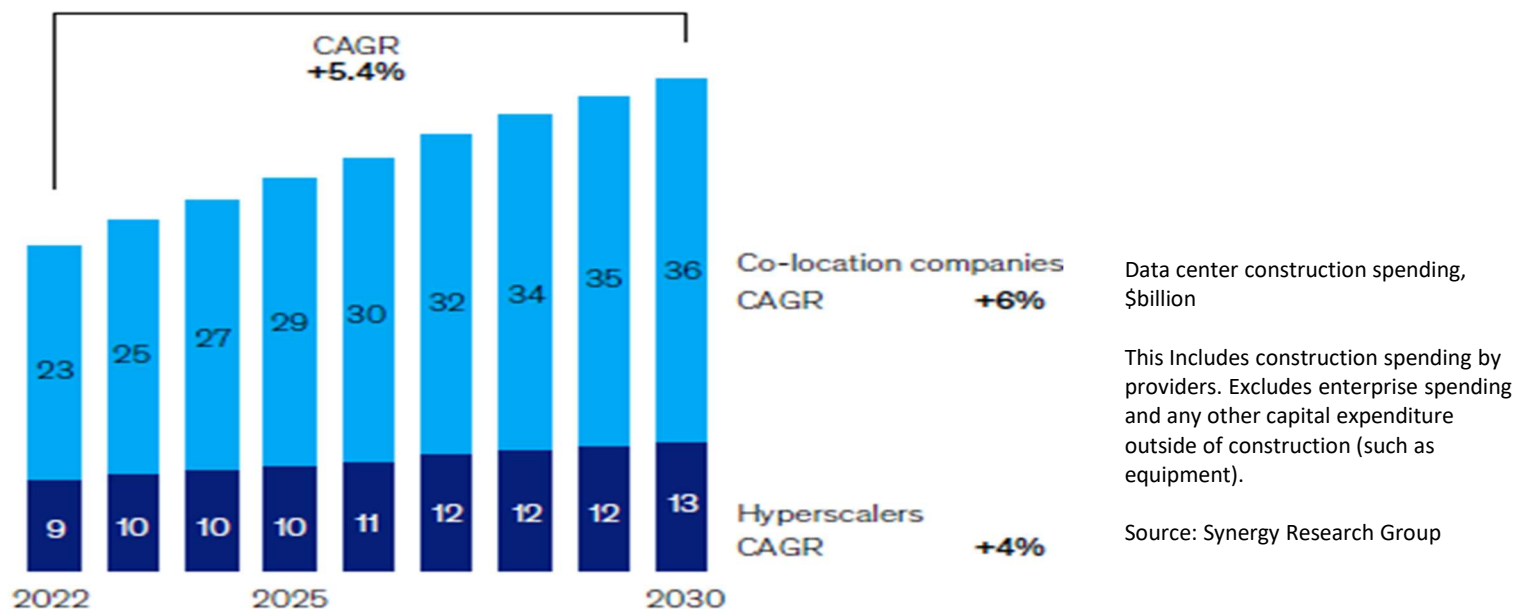
In 2024, significant growth in data centers is fueled by robust spending on cloud services, which is expected to rise by 20.4% due to price adjustments by cloud providers and increased usage. Cybersecurity investments also play a crucial role, with about 80% of CIOs planning to boost spending on cyber and information security. Additionally, advancements in accelerated computing for AI applications, including Nvidia's delivery of 100,000 AI server platforms this year, and expansions in data center facilities further contribute to driving market growth. Despite economic uncertainties, with a forecasted slowdown in overall IT spending growth to 6.8% in 2024, business spending on data centers remains strong.

In 2023, data center operators experienced a temporary dip in demand growth due to economic headwinds, leading to longer sales cycles. However, overall demand for data center space remained robust and continued to outpace supply. Experts predicted that while near-term growth slowed, they remained bullish on the longer-term outlook. From a vendor perspective, Schneider Electric, Vertiv, and Eaton were the top three data center physical infrastructure providers in 2023, all experiencing double-digit revenue growth.

The solution segment currently dominates the global data center market, holding over 65% of the revenue share. Meanwhile, the services segment is experiencing rapid growth, with an expected CAGR of 11.29%, reflecting the rising demand for cloud-based services. Major cloud providers like Amazon, Microsoft, and Google are among the biggest clients for data center operators. In 2022, hyperscalers alone made up over 50% of global data center leasing activity. The ICT industry is projected to command over 33.49% of the market share, driven by the rapid expansion of cloud computing, 5G networks, IoT, and AI.

As of 2022, over 700 hyperscale data centers were operational globally, managed by more than 30 companies. These facilities reduce total cost of ownership by up to 40% compared to traditional data centers. The top investors were Amazon (\$18.6B), Google (\$13.1B), Microsoft (\$12.4B), Facebook (\$11.7B), and Apple (\$7.5B). Hyperscale centers have an average power usage effectiveness (PUE) of 1.2 versus 1.8 for traditional centers and could consume up to 8% of global electricity by 2030 without efficiency improvements. The edge data center market is expected to reach \$33.9 billion by 2028, with a CAGR of 23.1% since 2021. Edge computing capacity is projected to grow at 50% CAGR from 2020 to 2024, with 51% of data to be processed at the edge by 2024. Edge centers reduce latency by 50% and can cut data transmission costs by 50%. In manufacturing, Edge AI is anticipated to improve operational efficiency by 45%.

The edge data center ecosystem is predicted to grow 4x by 2028, encompassing data centers, nodes, and a vast array of edge devices. Colocation providers are anticipated to play an increasing role, operating 50% of edge data centers by 2028, a dramatic increase from the 10% share in 2020.



INFRASTRUCTURE EQUIPMENT

- **IT Infrastructure** - Servers, Storage Systems (SAN, NAS), Networking Equipment (Routers, Switches, Firewalls, Load Balancers), Cabling (Fiber Optic Cables, Ethernet Cables), Racks and Enclosures.
- **Electrical Infrastructure**- Uninterruptible Power Supplies (UPS), Power Distribution Units (PDU), Backup Generators, Transformers, Circuit Breakers, Switchgear.
- **Mechanical Infrastructure**- Cooling Systems (CRAC Units, CRAH Units, Chillers, Cooling Towers), HVAC Systems, Airflow Management (Containment Systems, Raised Floors), Fire Suppression Systems (Sprinklers, Gas-based Systems).
- **Support Infrastructure**- Monitoring and Management Systems (DCIM Software, Environmental Monitoring Sensors, BMS), Physical Security (Biometric Access Controls, Surveillance Cameras, Security Personnel), Cabling and Pathways (Cable Trays, Fiber Trays).
- **Others**- Environmental Controls (Humidity Sensors, Temperature Sensors), Lighting, Grounding Systems, Shielding and EMI Protection, Documentation and Labeling Systems.

DATA CENTRES SEGMENTATION

Data centers are essential infrastructure managed by various operators to meet specific needs. These operators include cloud vendors, financial institutions, telecommunications companies, and specialized providers, each managing different types of data centers:

Cloud Vendors (CSPs) like AWS, Google Cloud, and Microsoft Azure operate **hyperscale data centers** that efficiently scale to support global cloud service demands, offering extensive compute and storage capabilities for IaaS, PaaS, and SaaS. They also run **cloud data centers** providing flexible solutions for diverse workloads.

Financial Institutions such as JP Morgan Chase and Bank of America run **enterprise data centers** tailored for high customization, security, compliance, and optimized performance, ensuring the integrity and availability of critical financial data.

Telecommunications Companies (Telcos), including AT&T and Verizon, operate both **edge data centers** and **enterprise data centers**. Edge data centers are decentralized facilities close to end-users to reduce latency for real-time applications like IoT and 5G. Their enterprise data centers support internal operations and core network services with high availability.

Colocation Providers like Equinix, Digital Realty, and CyrusOne manage **colocation data centers** that lease space, power, cooling, and network capacity to multiple tenants. These centers offer cost efficiency, scalability, and reliable infrastructure, making them attractive for businesses seeking advanced facilities without large capital investments.

Enterprise Operators run **enterprise data centers** to meet specific operational needs with high customization, security, and compliance. These are used by large organizations across various sectors.

Micro Data Center Operators manage **micro data centers**, which are small-scale facilities providing localized computing resources in environments with limited space and power. These centers offer flexibility and rapid deployment for specific applications.

Data centers can also be classified by type:

Core Data Centers are centralized facilities supporting a wide range of IT functions and services, handling large-scale processing, data storage, and enterprise applications. These are typically run by hyperscalers, large enterprises, banks, telcos, and colocation providers.

Edge Data Centers are smaller, decentralized facilities located closer to end-users to reduce latency and improve performance for real-time data processing applications. They complement core data centers by handling localized workloads and are often operated by telcos, cloud vendors, and micro data center providers.

TOP PICKS

COMPANY	CMP(In ₹)	TARGET PRICE (In ₹)	UPSIDE (In %)	ROE	P/E	MARKET CAP (₹ Crore)
BHARTI AIRTEL	₹ 1,460	₹ 1,703	16.64	14.9	74.4	886,577
EXIDE INDUSTRIES	₹ 569	₹ 707	24.25	7.3	55	48,131
BLUESTAR	₹ 1,640	₹ 1,983	20.91	21	81.7	33,854
TATA COMMUNICATIONS	₹ 1,850	₹ 2,230	20.54	65.2	49.3	53,010
TECHNO ELECTRIC	₹ 1,530	₹ 1,995	30.39	13.2	59.5	16,129
CUMMINS INDIA	₹ 4,020	₹ 4,978	23.83	28.8	68	113,055

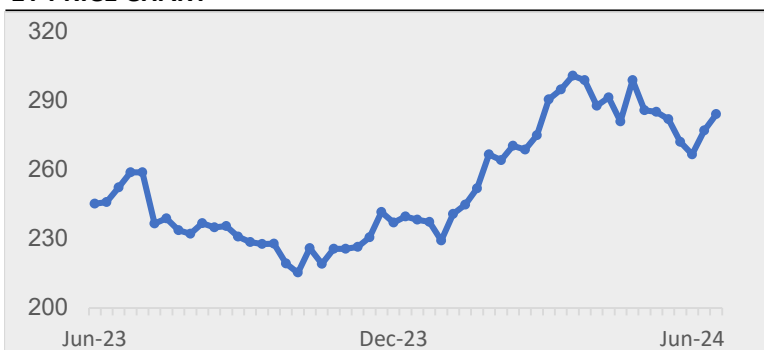
CUMMINS INDIA LTD

CMP: 4020

TARGET: 4978



1Y PRICE CHART



KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	88,599.9	76,414.0	60,569.7
Net Profit (₹ million)	17,206	12,282	9,337
EPS (Basic)	62.07	44.31	33.68
OPM	18%	14%	12%
ROE (%)	27.82%	22.53%	19.06%
ROCE(%)	34.49%	28.21%	23.87%
P/E	48.46	36.77	33.37

Cummins India Ltd, a subsidiary of Cummins Inc. USA, designs, manufactures, distributes, and services diesel and alternative fuel engines ranging from 2.8 to 100 liters, as well as power generator sets up to 3000 kW, and related components and technology. The company's operations are divided into two main business divisions.

The **Engines Business Division** comprises four units. The **Engine Business Unit** designs and manufactures diesel and natural gas engines and parts. The **Power Systems Business Unit** offers standby and distributed power systems for sectors such as infrastructure, IT, data centers, realty, and healthcare. The **Components Business Unit** includes Cummins Filtration, Cummins Turbo Technology, Cummins Emission Solutions, and Fuel Systems. The **Distribution Business Unit** operates through a network of Generator Original Equipment Manufacturers (GOEMs), dealerships, and branches across India, Nepal, and Bhutan, supporting over 575,000 engines for 225,000+ customers.

The **Lubes Business Division** involves a joint venture with Valvoline Cummins Pvt Ltd, in which Cummins holds a 50% stake. This division sells Valvoline branded lubricants.

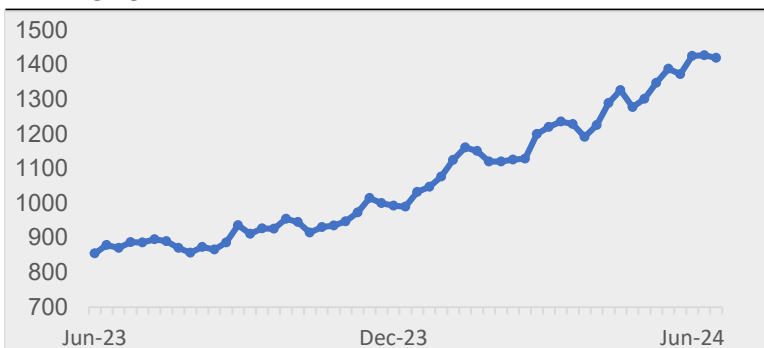
BHARTI AIRTEL

CMP: 1460

TARGET: 1703



1Y PRICE CHART



KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	1,499,824	1,391,448	1,165,469
Net Profit (₹ million)	74,670	83,459	42,549
EPS (Basic)	13.09	14.8	7.67
OPM	26%	25%	21%
ROE (%)	9.36%	11.58%	6.78%
ROCE(%)	11.21%	12.49%	10.63%
P/E	95.98	51.41	98.94

Bharti Airtel Limited, a prominent telecommunications company headquartered in New Delhi, India, operates across 18 countries in Asia and Africa. Globally, it ranks among the top three mobile service providers by subscriber count. In India, the company provides a range of services including wireless, mobile commerce, fixed-line, high-speed home broadband, DTH, and enterprise solutions such as national and international long-distance services. In other regions, Bharti Airtel offers wireless services and mobile commerce.

Nxtra by Airtel, a subsidiary, manages a comprehensive network of secure, scalable, and sustainable data centers in India, catering to enterprises, hyperscalers, startups, SMEs, and government entities.

The CEO of Airtel Nxtra announced plans to double their data center capacity from 200MW to 400MW by 2025 with the addition of seven new facilities in key Indian cities. The company aims to invest 50 billion Indian rupees (US\$600 million) to expand its infrastructure by 2025.

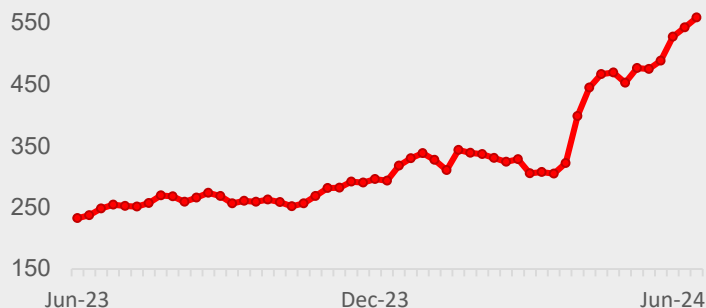
EXIDE INDUSTRIES

CMP: 569

TARGET: 707



1Y PRICE CHART



KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	167,697	150,782	127,128
Net Profit (₹ million)	8,767	8,227	43,669
EPS (Basic)	10.31	9.68	51.38
OPM	7%	7%	8%
ROE (%)	7.30%	7.58%	48.91%
ROCE(%)	10.59%	10.61%	5.84%
P/E	29.53	18.39	2.94

Exide Industries Ltd, a prominent manufacturer based in India, specializes in producing storage batteries and related products. The company caters extensively to the automotive sector, manufacturing batteries for two-wheelers, four-wheelers, three-wheelers, E-rickshaws, and home UPS systems.

Exide Industries is a leading player in the Indian market, dominating across Automotive, Industrial, and submarine battery categories.

In recent ventures, Exide Industries has expanded its footprint in the sector through subsidiaries like Exide Energy Private Limited, established in 2018, focusing on pack and module businesses.

Additionally, the company launched Exide Energy Solutions Limited in FY23 as a wholly owned subsidiary for the manufacturing of lithium-ion cells. This ambitious project boasts a total capacity of 12 GWh and entails a project cost of Rs.6,000 crore, to be completed in two phases.

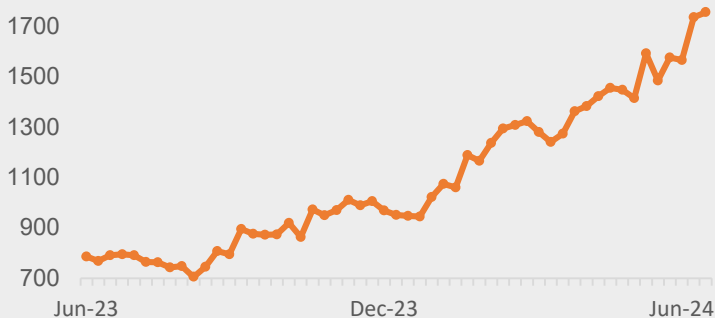
BLUESTAR CO

CMP: 1640

TARGET: 1983



1Y PRICE CHART



KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	96,854	79,773	59,995
Net Profit (₹ million)	4,150	4,005	1,677
EPS (Basic)	20.77	20.8	8.71
OPM	6%	5%	4%
ROE (%)	21.06%	34.11%	17.63%
ROCE(%)	28.26%	41.24%	22.13%
P/E	61.32	33.15	60.42

Blue Star manufactures a range of products including air purifiers, air coolers, water purifiers, cold storage units, and specialty items. The company provides comprehensive turnkey solutions in Mechanical, Electrical, Plumbing, and Fire-fighting (MEP) projects. It holds the distinction of being the largest after-sales service provider for air conditioning and commercial refrigeration products in India.

Blue Star's main segments include Electro-Mechanical Projects, where it handles large-scale central air conditioning and ventilation projects, fire-fighting projects, water and plumbing projects, electrical projects, and railway electrification.

In the Commercial Air Conditioning segment, the company leads the market in conventional and inverter ducted air conditioning systems and scroll chillers, and ranks second in variable refrigerant flow (VRF) systems and screw chillers.

The Unitary Products segment comprises air conditioners, air coolers, water purifiers, and commercial refrigeration products, available in 8,800 outlets across 650+ locations.

Additionally, the Professional Electronics and Industrial Systems (PE&IS) segment offers specialized technology solutions, engineered turnkey projects, value-enhancing services, MedTech solutions, data security solutions, and industrial solutions.

TATA COMMUNICATION

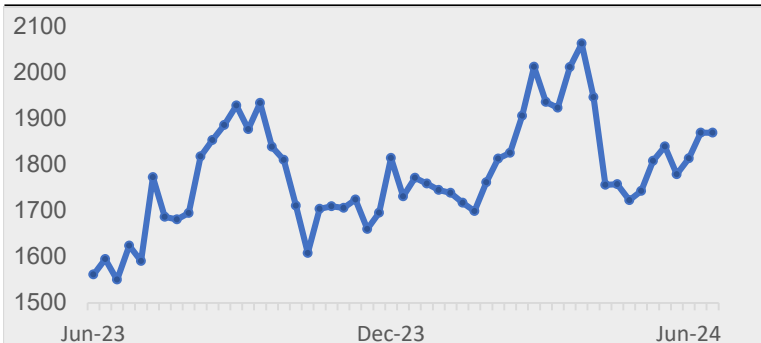
CMP: 1850

TARGET: 2230



TATA COMMUNICATIONS

1Y PRICE CHART



KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	209,688	178,383	167,247
Net Profit (₹ million)	9,683	17,960	14,818
EPS (Basic)	33.98	63.02	51.99
OPM	8%	12%	12%
ROE (%)	58.60%	146.86%	284.12%
ROCE(%)	16.69%	22.69%	19.03%
P/E	59.21	19.76	23.62

Tata Communications, a global leader in digital ecosystems, excels in emerging markets and provides managed solutions to multinational companies and service providers. Partnering with 300 Fortune 500 companies, it offers advanced communication, collaboration, cloud, mobility, connected solutions, network, and data center services.

With a 26% stake in ST Telemedia GDC, Tata Communications supports 300 MW of data centers, including 100 MW under construction. ST Telemedia Global Data Centres (India) Pvt Ltd (STT GDC India), a subsidiary of Singapore-based STT GDC, plans to invest \$1 billion over the next 3-4 years to expand its data centers in India, according to CEO Sumit Mukhija.

The company owns and operates a unique global fiber optic sub-sea network ring and holds the position as the largest provider of wholesale voice services globally. Its offerings include international and national voice and data transmission, bandwidth sales and leasing on undersea cable systems, internet dial-up, broadband services, and a range of value-added services such as mobile global roaming, signaling, transponder lease, telex, telegraph, and television uplinking. The company's business segments are structured into Data Management Services (DMS), Voice Services (VS), transformation services, payment solutions, and real estate.

TECHNO ELECTRIC & ENG

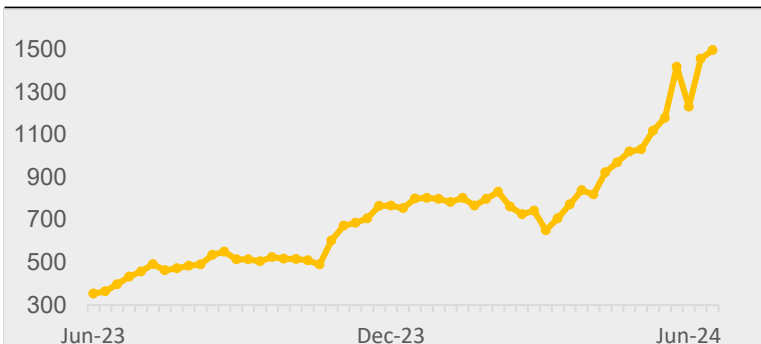
CMP: 1530

TARGET: 1995



TECHNO ELECTRIC & ENGINEERING CO. LTD.

1Y PRICE CHART



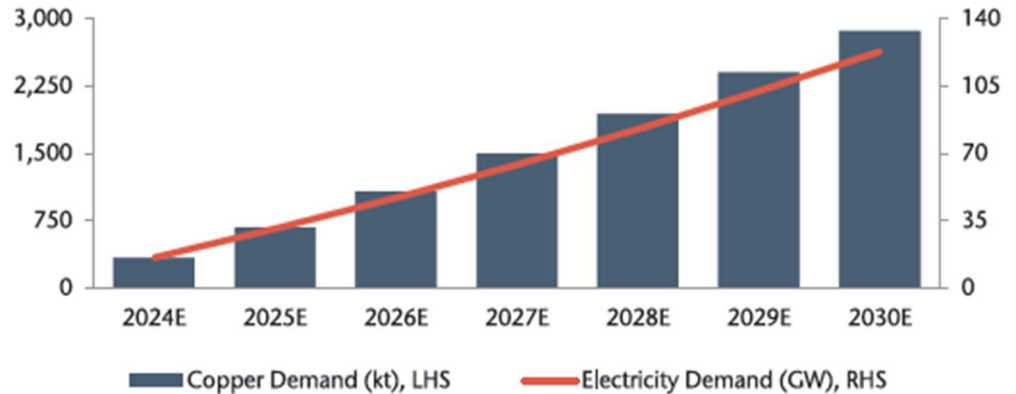
KEY FINANCIALS

Particulars	FY24	FY23	FY22
Net Sales (₹ million)	15,023.8	8,295	9,897
Net Profit (₹ million)	2,685	1,869	2,639
EPS (Basic)	24.94	17.1	23.99
OPM	13%	10%	15%
ROE (%)	13.12%	9.92%	15.29%
ROCE(%)	15.16%	7.19%	15.51%
P/E	30.92	19.72	10.31

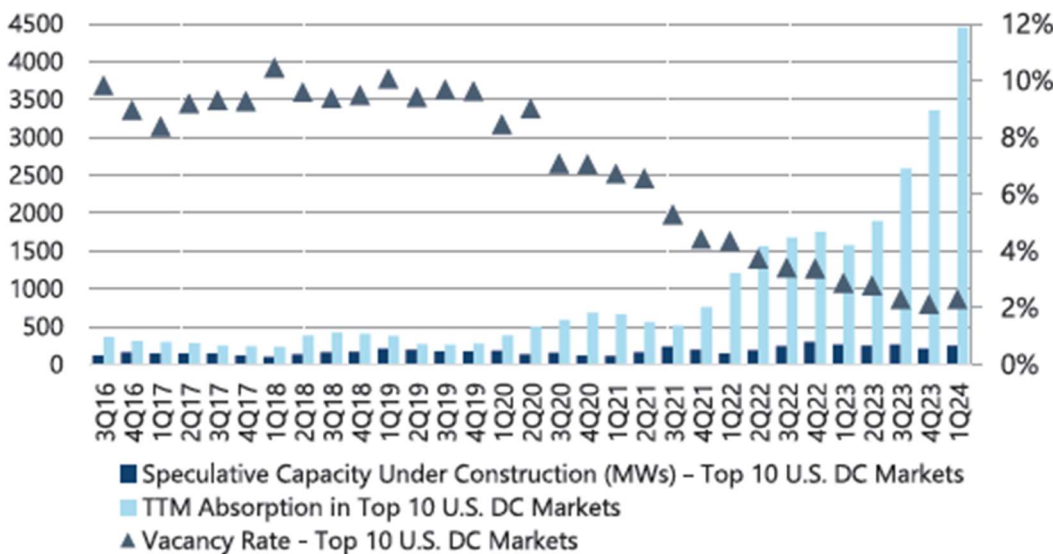
Techno Electric & Engineering Company Ltd (TEECL) specializes in providing comprehensive Engineering, Procurement, and Construction (EPC) services, as well as asset ownership and operations and maintenance services, within the power infrastructure industry. The company's operations encompass three primary segments: generation, transmission, and distribution. TEECL offers an extensive range of integrated services, from plant design to commissioning, and from handover to ongoing maintenance. With its in-depth knowledge of the industry, consistent timeliness, efficient financial management, and adoption of cutting-edge technologies, TEECL has established itself as a preferred partner within the sector.

India is progressing towards a data centre capacity of 1 GW by 2025, with the industry projected to generate revenues of approximately US\$4-5 billion. Leveraging over two decades of experience in Mechanical, Electrical, and Power (MEP) services, Techno Electric & Engineering Company Ltd (TEECL) is poised to enter this burgeoning sector. The company aims to establish data centres with a combined capacity of 250 MW across India by FY 2025-26.

The **copper content** in data centers is estimated to range from 20 kt/GW to 60 kt/GW of applied power, with some estimates up to 100 kt/GW. Global data center electricity demand projections indicate that incremental copper demand will rise from 241 kt (0.9% of global demand) in 2023 to at least 463 kt (1.4% of global demand) by 2030. This figure excludes copper needed for power grid expansions.

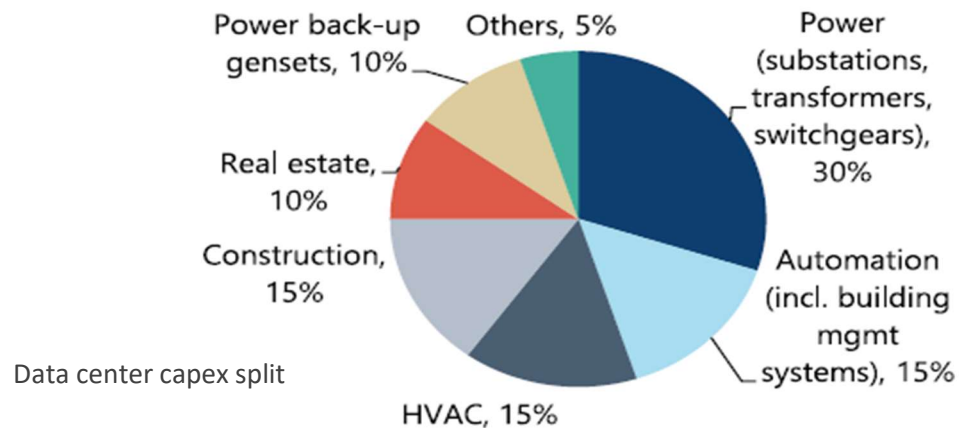


Source: Copper Development Association, IEA, McKinsey, Datacenter Hawk, Jefferies' estimates



Typical Data Center Construction Cost Breakdown
 Building Fit-Out 15-20%
 Electrical Systems 40-50%
 Land & Shell 20-25%
 HVAC/Mechanical 15-20%

Between 50 and 60 percent of data center expenses are attributed to computation, networking, and storage. Power, cooling, security, operations, building, and real estate are covered by the remaining 40–50%. Within this latter category, power management—which includes uninterruptible power systems, generators, and power distribution—represents the most expense. HVAC systems, chillers, and computer room air handlers (CRAH) are all associated with cooling costs.



Source: Company data, Jefferies estimates

DISCLAIMER

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