Case Study Playbook- Data Center Colo Services in Manufacturing, Retail, and Distribution

Sify Data Center- Overview

The Data Center Colo Services establishes the foundation of digital transformation for enterprises. Sify has **14** state-of-the-art PAN India data centers with **227+ MW** IT power, **231 MW** Green power and a roadmap to add **407+ MW** IT Power by 2025. The campuses are scalable to **970+** MW with BTS capabilities. Sify data centers are AI-ready with hybrid liquid cooling, hyperscale, hyperconnected, green with AI-driven operational excellence.

As India's first commercial Tier 3 data center provider, we ensure resilience and business continuity for over 600 premier enterprises across industries including top manufacturing companies, leading banks, digital wallets, global OTTs, social media, and hyperscalers.

Sify data centers are designed on Reliability, Availability, and Serviceability (RAS) methodology. **Reliability** represents the ability of equipment to prevent or correct errors, **Availability** represents the probability of a system operating normally and indicates the continuity of services, and **Serviceability** represents the ability of the data center to maintain operations without failure and repair itself without intervention.

Reliability, Availability, and Serviceability (RAS) are the key factors in the operation and management of data centers. Together, they ensure the continuous, efficient and reliable operation of critical infrastructure, with minimal downtime and quick recovery in case of issues.

1. Reliability

Reliability refers to the ability of a data center to function without failure. In a reliable data center- Systems are resilient to failures and are designed to prevent faults from causing outages. Redundancy (like electrical line-ups, cooling systems, monitoring system, security and network paths) is built into the infrastructure to handle component failures without affecting operations. Regular testing and maintenance ensure that systems can handle both anticipated and unanticipated loads.

Examples of Reliability Strategies:

- Fault-tolerant design with backup power (UPS systems, generators)
- Redundant network connections (multi-homed)

2. Availability

Availability is a measure of the data center's ability to remain operational and accessible to users. High availability means that services provided by the data center are always up and running with minimal downtime. It is typically expressed in terms of uptime percentages; Sify data centers are certified for RATED 3 topology with "Five Nines" (99.999% uptime) being a common goal.

Factors Contributing to High Availability:

- **Redundant Systems:** Multiple instances of critical systems (power, cooling, network, security systems etc.) ensure that if one fails, another takes over.
- **Geographic Redundancy:** Data centers are mirrored in geographically distant locations across PAN INDIA to ensure availability through DC and DR set-up in case of a regional disaster.

3. Serviceability

Serviceability refers to how easily and quickly issues in the data center can be diagnosed, repaired, and returned to full operation. Efficient serviceability means minimizing the Mean Time to Repair (MTTR), which in turn minimizes downtime.

Key Aspects of Serviceability:

- **Hot-Swappable Components:** Critical parts like power supplies, or network switches can be replaced without shutting down systems.
- **Monitoring and Alerts:** Proactive monitoring systems can detect and alert operators to potential issues before they cause failures.
- **Modular Design:** Components can be replaced or upgraded easily, reducing the time spent on maintenance and repair.
- **Remote Management:** Enables operators to diagnose and solve problems without needing to be physically present.
- **Automation:** AI / ML based automation for analytical approach towards predictive maintenance, uptime management, etc.

Importance of RAS in Data Center Operations

Reliability ensures minimal faults and uninterrupted performance. Availability guarantees that the services are accessible to users when needed. Serviceability enables quick recovery from any faults or outages, reducing downtime and maintaining operational efficiency.

By focusing on these three pillars, data centers can provide continuous service, meet service level agreements (SLAs), and reduce the risks of financial loss or reputational damage due to downtime.

Key locations and Capabilities

Mumbai: In 2000, Sify launched the first commercial Tier 3 data center in India- Mumbai 01 at Vashi. Expanded to Mumbai 02 at Airoli, and in 2014, launched our largest hyperscale data campus- Mumbai 03 at Rabale. **Mumbai 03** is designed for 12 towers, 5 towers are operational, 4 are in development, and 3 are in the planning phase. The campus offers **377+ MW IT** power.

Noida: In 2013, Sify launched Noida 01- the first commercial hyperscale data center in the region. Today, it hosts over 100 mission critical customers and has ensured 100 % uptime since inception. **Noida 02** our largest hyperscale, AI-ready campus in North India is designed for 3 towers, 1 tower is operational and 2 towers are in the planning phase. Currently, the campus powers **130+ MW** IT power.

Chennai: In 2001, Sify launched- Chennai 01 to serve incoming demand from the Southern region. **Chennai 02-** our largest hyperscale, AI-ready campus, is designed for 3 towers, 1 tower is operational and 2 towers are in the planning phase. Currently, the campus offers **130+ MW** IT power.

Bengaluru: In 2006, Sify launched- Bengaluru 01 to empower the IT/ITeS sector to take advantage of a professionally managed data center. **Bengaluru 02** campus is designed for 2 towers, 1 tower is in development with a go-live date of December 2025 and 1 tower in the planning phase. Currently, the campus powers **40+ MW** IT power.

Hyderabad: In 2019, Sify launched- Hyderabad 01 located in the financial district with **14.4 MW** IT power, the presence of hyperscale cloud nodes and is the first Nvidia DGX AI-ready data center in India. The Hyderabad 02 campus is in the planning stage.

Kolkata: In 2019, Sify launched- Kolkata 01, a major network node for OTT players and telco providers, strategically positioned to serve BFSI, Manufacturing, Government, PSU, and IT/ITeS sectors.

Edge Data Centers: Sify plans to establish edge data centers in tier 2 cities that will enable low latency, easy access, and faster content delivery at edge locations, ensuring seamless data processing and superior customer experience.

We are driving innovation across 5 key pillars:

1. Scalable Infrastructure & Building:

Discovering the best of reliability, availability, and serviceability (RAS) to maximize uptime, ensure business continuity, hyperconnectivity, security, sustainability, and streamline IT management with AI/ML-powered operations.

- Multi-tower campuses to meet all scalability requirements, both in terms of vertical and horizontal expansion.
- Campuses scalable to 970+ MW with BTS capabilities to support future growth- with years of experience in designing, building, and operating hyperscale data centers, we are equipped to deliver bespoke AI/ML-enabled data centers.
- Infrastructure designed to host AI-workloads with hybrid liquid cooling
- Global Command Control Center powered by AI/ML to monitor critical DC parameters

2. DC Network:

Bringing digital infrastructure closer to users by revolutionizing DC networks for secure, anytime access, and a rich end user experience. Sify's integrated DC architecture is optimized for AI deployments and supports all types and capacities of network.

- High performance Network fabric connecting factories, campuses, and remote locations.
- Hyperconnected, carrier-neutral, and rich interconnect ecosystem with 66+ Data centers, 4 Hyperscalers, 5 Internet Exchanges, 3 Cable Landing Stations, and 8 International PoPs.
- Ensuring business continuity with seamless deployment to DR, NDR, and Far DR sites.

- Multiple Fiber paths to the campuses/building with MMRs at each tower of the DCs to ensure network stability.
- Multi-tier Fiber and Copper Cross Connects, cluster-based rack placement, high capacity intra rack & inter rack network, and access via high capacity 200 Gbps.

3. Automation-AI/ML:

Sify data centers are powered by automation through AI/ML, enabling enterprises to gain insights into their critical operations, measure performance, metrics with precision, predict future trends with accuracy, and maximize efficiency across capacity utilization, service, and support.

- Real time Visibility into Operations, Assets, People and Process. Better resource utilization across Rack space, renewable power utilization, Cooling, Security, and Cross-connects.
- Measurability in Operations on the basis of predefined conditions or SOPs. Resource capacity utilization and trend analysis. KPI based service contract renewals. Usage based Infra resource planning.
- Predictability in Failure and Downtime. Preventive Maintenance of assets, AMC Contract realization. Demand forecasting and capacity planning.
- Enhanced Efficiency in rack and power Capacity Utilization, improvement in Power Utilization Effectiveness, Water Utilization Effectiveness, DC Carbon footprint.

4. Sustainability:

We are making formidable strides in sustainability through the integration of RE sources like solar and wind power. Our advanced power management technologies ensure efficient energy consumption tracking and optimization. We prioritize eco-friendly products and processes in our design phase, minimizing environmental impact and delivering a greener future for all.

- **DC Equipment:** Achieving peak efficiency with high-performance equipment, energy-saving selections, and optimal redundancy levels.
- **Sustainable Processes:** We adhere to ASHRAE and ISO 14001. With a robust carbon abatement policy and a focus on low PUE and WUE, we prioritize environmental sustainability at every level.
- Contracted 231 MW of green power through Power Purchase Agreements, commissioned 99 MW in Mumbai with plans to expand to **500 MW** nationwide.
- **Roadmap** to become RE 100/Carbon Neutral by 2030. 29% reduction in GHG emissions by 2025. Significant RE penetration by 2025.

5. Operational Excellence:

Ensuring accountability and excellence through our comprehensive and innovative design frameworks. By blending automation strategies with rigorous audits, Sify ensures consistent performance that surpasses industry standards while setting new benchmarks for eco-conscious practices.

- **Safety:** Incorporating EHS policy, training, and rigorous safety audits into our daily operations fosters a culture of safety and accountability.
- **Security:** Enhanced 10 layered security, K8 rated boundary wall, Electro-Magnetic Interference Protection, policy enforcement, robust physical and electronic security protocols, bolstered by AI led continuous assessment.
- **Availability:** Committed to the proverbial five 9s (99.999%), we have been ensuring SOP, EOP, and BCP for over 25 years. Utilizing Rated 3 designs, ITIL framework, and centralized operations for reliability and efficiency.
- **Excellence:** Continuous improvement, leveraging automation, AI/ML, proactive measures, and rigorous performance tracking to set and surpass benchmarks.
- **Sustainability**: Incorporating environmental protection into core operations with cost-efficiency, reduced PUE/WUE, RE procurement, and sustainable water practices, including recycling and zero discharge.
- **Compliance & Certifications:** Adherence to global and national regulatory requirements. MeitY empanelled, NVIDIA DGX AI Ready, ISO certifications for (DC, Cloud, Managed Services, IT service mgmt.), PCI DSS, SOC 1, SOC 2, Business Continuity and Environmental Management System, IGBC Green Building certified.

Top Competitors

NTT: A major player in the global data center market offering high-density, carrier-neutral data center solutions across India. As the country's leading managed hosting and multi-cloud hybrid IT solution provider, NTT has operated data centers in India for over 20 years. Headquartered in Mumbai, the organization supports the demanding ICT requirements of hyperscalers, enterprises, and more.

DC location: Mumbai, Bengaluru, Chennai, Noida

No. of DCs: 18 DCs**, Live Capacity:** 268 MW, **Planned:** 80 MW

Website: https://services.global.ntt/en-us/services-and-products/global-data-centers/global-locations/india

ST Telemedia Global Data Centers: One of the fastest-growing data center providers. Their end-to-end data center solutions are designed to help enterprises respond dynamically to change and adapt to ever-growing business needs. With global reach and local expertise, the company builds the strongest foundation you can trust in today's digital economy.

DC location: Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Mumbai, Noida, Pune, Jaipur

No. of DCs: 28 DCs, **Live Capacity:** 200 MW, **Planned:** 100+ MW

Website: https://www.sttelemediagdc.com/

Nxtra by Airtel Business: The company offers India's largest network of secure, scalable, and sustainable data centers in India to leading enterprises, hyperscalers, startups, SMEs, and

governments. It provides a platform of hyperscale, core, and edge data centers across 120+ locations, and enables businesses to accelerate their digital journey.

DC location: Noida, Manesar, Pune, Bengaluru, Chennai, Hyderabad, Kolkata, Bhubaneswar

No. of DCs:12 DCs, **Live Capacity:** 140 MW, **Planned:** 200+ MW

Website: https://www.nxtra.in/

CtrlS: One of the world's fastest growing networks of Rated-4 data centers. By offering access to a robust, secure environment to store, manage, and protect valuable data, CtrlS empowers enterprises' digital journey with best-in-class expertise and enables them to stay ahead in their industry.

DC location: Mumbai, Chennai, Hyderabad, Noida, Bengaluru, Kolkata

No. of DCs:15 DCs, **Live Capacity:** 234 MW, **Planned:** 350 MW

Website: https://www.ctrls.in/

Yotta: Powered by Hiranandini group, Yotta designs, builds and operates infinitely scalable data center parks. Yotta offers a gamut of cutting-edge solutions for every enterprise need for today or the future including hyperscale DC, Cloud, IT Managed services, global connectivity, security, and more.

DC location: Mumbai, Delhi, Gujarat

No. of DCs: 3 DCs, **Live Capacity:** 61.2 MW, **Planned:** 150.8 MW

Website: https://yotta.com/

Equinix: Leading world's digital infrastructure company interconnecting industry-leading organizations across finance, manufacturing, retail, transportation, government, healthcare, and more across a digital-first world. The company connects places, partners, and possibilities to power innovation for today and tomorrow.

DC Location: Mumbai, Global-55 locations

No. of DCs: 2 DCs, **Live capacity:** 8 MW, **Planned**: 4.2 MW (Mumbai)

Website: https://www.equinix.com/data-centers

Adani Connex: Adani group, India's largest private Infra and energy provider along with EdgeConneX's global expertise in DC solutions together enables businesses and consumers with cloud, content, and data through a resilient, scalable, sustainable, and automated infrastructure platform. They offer end-to-end data center solutions to unlock digital potential and empower a digital India.

DC Location: Chennai, Hyderabad, Mumbai, Noida, Pune, Vizag

No. of DCs: 1 DC, **Live capacity:** 17 MW, **Planned:** 486 MW

Website: https://www.adaniconnex.com/

Growing Hyperscale Data Centers in India

Princeton Digital Group (PDG): A leading digital infrastructure provider, develops and operates data centers in six key and dynamic digital economies of Asia, including China, Singapore, India, Indonesia, Malaysia, and Japan. With 20+ data centers globally, PDG accelerates the growth of cloud and AI for global hyperscalers and enterprises.

In India, PDG has strategically chosen Mumbai for its flagship AI-ready campus in India. The facility is located within a planned 50-acre IT/ITES park in Airoli, Navi Mumbai. The Mumbai MU1 data center in India offers a total of **125 MW** across 4 buildings. PDG plans to expand to Bengaluru, Chennai, Delhi, Hyderabad, and Pune with **48 MW** capacity each.

Lumina Cloud Infra:

Blackstone-backed Lumina Cloud Infra with a collective experience of 175+ years focuses on disrupting India's current CloudInfra standards for the long haul. Lumina aims to build data centers in five key cities with a total capacity of 600 MW by 2030.

Their first data center campus in Airoli, Navi Mumbai, India is set to launch in 2025. Spanning across 6.3 acres, the campus will have a **60 MW** capacity in two phases. Lumina plans to expand to other cities including Pune, Mumbai(Mahape), Hyderabad, and Chennai.

BAM Digital Realty:

A joint venture between Brookfield Infrastructure and Digital Realty, aims to deliver innovative, reliable and sustainable data center solutions that meet the evolving needs of local and global customers. Recently, BAM Digital Realty partnered with Reliance Industries Limited (RIL) and formed a new venture- **Digital Connexion**, aimed at developing high-quality, scalable data centers in India.

The first flagship data center **MAA10** in Chennai is a greenfield development and offers **20** MW capacity. The Chennai campus is built on a 10-acre land which will comprise 4 buildings with a total capacity of **100** MW. Addition to it, the company has purchased 2.15 acres of land in Mumbai to develop a **40** MW facility.

Digital Edge DC:

Digital Edge (Singapore) Holding Pte Ltd. (Digital Edge), National Investment and Infrastructure Fund (NIIF) and AGP DC InvestCo (AGP) have entered a partnership to create a pan-India portfolio of hyperscale data centers. The facilities will operate under the brand name Digital Edge DC. The partnership's first project is a Greenfield **300 MW** hyperscale data center facility built on a 47-acre site in Navi Mumbai with an investment of $2 billion.

Sify-   Tried.   Tested.   Trusted
Your Digital Infrastructure partner for over 25 years

Sify Technologies, leading digital ICT service providers has been delivering transformative business value to enterprises across the globe for over 2 decades. As the digital bridge for enterprise transformation, Sify empowers industries with AI powered digital platforms and infrastructure encompassing Network Infra, Network Digital Managed Services, Data Center Colo, CloudInfinit – AI Cloud Infra, IT Managed Services, Security Managed Services, Digital and Industry Apps Managed Services.

Sify is committed to innovating and investing to ensure their customers' competitiveness in an ever-changing landscape. Over 10,000 enterprises including India's top 5 banks, Top 4 manufacturing companies, 3 major hyperscalers, global social media, and OTT players trust Sify.

To know more, visit: https://sifytechnologies.com/

DC Locations: Mumbai, Noida, Hyderabad, Chennai, Bengaluru, Kolkata

No. of DCs: 14 DCs, **Capacity Live:** 227+ MW, **Planned:** 407+ MW

Website: https://sifytechnologies.com/

Summary   Table
Table 1:

Section	SIFY	NTT	STT	Nxtra
Years Exp.	25+	20+	20+	20+
DC Locations	Mumbai, Noida, Hyderabad, Bengaluru, Kolkata	Mumbai, Bengaluru, Chennai, Noida	Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Mumbai, Noida, Pune, Jaipur	Noida, Manesar, Pune, Bengaluru, Hyderabad, Chennai, Kolkata, Bhubaneshwar
Capacity Live	227+ MW	268 MW	200 MW	140 MW
No. of DCs	14 DCs	18 DCs	28 DCs	12 DC
Planned Capacity	407+ MW	80+ MW	100+ MW	200+ MW
Key Differentiators	**Infra:** RAS design Host AI/ML apps, Alternate cooling BTS- up to 970+ MW	**Infra:** Rated 3, TIA 942 NAVI 1A: 1st DC in India to deploy Liquid Immersion Cooling, Direct Contact Liquid Cooling First in India to deploy seismic dampers-Noida DC	**Infra:** Rated 3/4 design Rest Standard	**Infra:** Rated 3 Planning on Liquid Cooling & to host AI apps
	Network: 66 Interconnected DCs, CLS- 3, Pan India NW Hyperconnected, Hyperscale, Edge DCs.	**Network:** Interconnection btw all DCs globally via submarine fiber. In India- Chennai (MIST)	**Network:** CLS available at Mumbai Cross Connect, Campus Connect, Cloud Connect	**Network:** 120+ edge DCs 200+ India & Global POPs. 65 Cities. 3 Lk RKMs fiber NW & 2.5 Lk RKMs for submarine
	Sustainability: Contracted 231 MW Commissioned 99 MW	**Sustainability:** Net-zero emissions across operations by	**Sustainability:** IGBC, LEED Gold	**Sustainability:** IGBC. LEED certified Net Zero by 2031

	100% RE by 2030	2030, and across value chain by 2040	60% carbon-free energy by 2026 & 100% carbon-free by 2030	58% increase in RE use in FY23 vs FY22
	Automation, AI/ML: 8-10% savings on PUE 20% improvement in equipment uptime	**Automation AI/ML:** Automation for better monitoring in Ops, PUE, WUE	**Automation AI/ML:** NA	**Automation, AI/ML:** NA
	Operational Efficiency: Safety, Security, Availability Excellence, Sustainability	**Operational Efficiency:** Standard	**Operational Efficiency:** 18% reduction in WUE since 2020 7% reduction in PUE	**Operational Efficiency:** <1.5 designed PUE
	Other Key Services: Hybrid/Multi Cloud, FSO, NOC, SDWAN, MSS, SOC	**Other Key Services:** Cloud and IT Managed Services Edge as a service: Edge compute, Private 5G, IoT	**Other Key Services:** Bare Metal as a Service	**Other Key Services:** NA

Table 2:

Section	SIFY	CTRLS	Yotta	Equinix	Adani
Years Exp	25+	17+	5	25 Years- Global, India 3+ yrs	1+ yr
DC location	Mumbai, Noida, Hyderabad, Bengaluru, Kolkata	Mumbai, Bengaluru, Kolkata, Noida, Hyderabad, Chennai	Mumbai, Noida, Gujarat	Mumbai, Global- 55 locations	Chennai, Hyderabad, Mumbai, Noida, Pune, Vizag
Capacity live	227+ MW	234 MW	61 MW	8 MW	17 MW
No. Of DCs	14 DCs	15 DCs	3 DCs	2 DCs- India.	1 DC
Planned capacity	407+ MW	350 MW	150 MW	4.2 MW	486 MW
Key Differentiators	**Infra:** RAS design Host AI/ML apps, Alternate cooling BTS- up to 970+ MW	**Infra:** Tier 4 Modern Cooling Tech	**Infra:** Tier 4, fault tolerant Hyper density green power–50 MW IT power with 48 hour back up	**Infra:** 99.9999% uptime Liquid, geothermal cooling	**Infra:** TIA 942B Rated 3 & 4 compliant design BTS
	Network: 66 Interconnected DCs, CLS- 3, Pan India NW Hyperconnected, Hyperscale, Edge DCs	**Network:** Metro Connect Campus Connect SDWAN Cloud Connect	**Network:** Internet leased line, Cross Connects, Global Cloud Konnect, DCI	**Network:** Equinix Fabric, Internet Exchange, Internet Access Only one in India with the presence of 8 CSPs 6 on-ramps to major CSPs Only one in India to host 5 IEs	**Network:** Dedicated NOC
	Sustainability: Contracted 231 MW Commissioned 99 MW 100% RE by 2030	**Sustainability:** 100% RE by 2030 152 MWp in solar across MH, KA, UP By 2025- 250 MW LEED Platinum	**Sustainability:** Captive Solar Plant Captive Gas based power (planned)	**Sustainability:** 96% Renewable Coverage Committed to 100% renewable coverage by 2030	**Sustainability:** RE power from day 1. Water resource management. Green Hydrogen as backup power. IGBC LEED - Platinum standard
	Automation, AI/ML: 8-10% savings on PUE 20% improvement in equipment uptime	**Automation, AI/ML:** AI enabled surveillance in future deploy AI/ML, RPA for sustainability	**Automation, AI/ML:** NA	**Automation, AI/ML:** Real time monitoring of infra online Monitoring and automation to optimize distribution of power across DCs	**Automation, AI/ML:** Propriety Edge OS DCIM platform that monitors 1.5 Mn datapoints every 15 to deliver smarter operations

	Operational Efficiency: Safety, Security, Availability Excellence, Sustainability	Operational Efficiency: 1.38 PUE EHS RPA driven Operation efficiency	Operational Efficiency: 1.40 design PUE	Operational Efficiency: Excellence across Power, cooling, redundancy, interconnection, security, certifications	Operational Efficiency: <1.5 designed PUE. Focus on HSE
	Other Key Services Hybrid/Multi Cloud, FSO, NOC, SDWAN, MSS, SOC	Other Key Services: DRaaS, BaaS, IT MS Cloud services-Cloud4C	Other Key services: Shakti Cloud-NVIDIAYotta Power Cloud-IBM Security, OTT platform as a services etc	Other Key Services: Equinix Bare Metal, Equinix Fabric, Equnix Network Edge, Multi/Hybrid Cloud	Other Key Services: Bare Metal as a Service

*The data presented is current as of 8th August 2024. It may be subject to change until the document's completion.

Manufacturing Business Priorities

Transitioning from Manufacturing 4.0 to 5.0

The transformation from manufacturing 4.0 to 5.0 marks a significant evolution in the industry, shifting from automation and data exchange to a more human-centric approach. Manufacturing 5.0 emphasizes collaboration between humans and advanced technologies to improve uptime, product quality, and safety. Manufacturers are converging to secure, end-to-end data centers, cloud, network to balance efficiency with human-centric value, sustainability, and adaptability.

➢ **Cultivation of 'Digital Threads'**

Integration of production workflows, data-driven strategies, technology, and customer experience to optimize production processes with facets of sales and deliveries to reduce distribution loss, enhance precision, productivity, and cost efficiency.

➢ **Quality Control**

Insights driven quality production to minimize loss, stringent quality assurance processes and standards, automated inspection systems, and ensuring traceability of materials and products throughout the supply chain ecosystem.

➢ **Smart shop floor**

Smart, connected technology throughout the facility to improve decision making processes, enhance worker safety & productivity, and stay prepared for unplanned downtime.

➢ **Intellectual Property Protection**

Safeguarding the innovations, brands, and propriety processes that drive competitive advantage and market differentiation. The focus is on protecting patents, trademarks, trade secrets, and copyrights to prevent unauthorized usage and open gateways for research & development.

➢ **Sustainability and Green Manufacturing**

The key focus areas include reducing energy consumption, incorporating renewable energy sources, minimizing waste through recycling and efficient resource use, sustainable sourcing practices, and developing eco-friendly products and packaging.

➢ **Business Continuity Planning**

Manufacturing industries need to safeguard against unseen disruptions that can halt production and lead to significant financial losses. Businesses must implement comprehensive risk assessments & mitigation strategies and establishing DR plans.

➢ **Supply Chain Resilience**

Robust and adaptable supply chain ecosystem for maintaining production and distribution continuity. Diversifying suppliers to avoid dependencies, increasing inventory buffers for critical components, ensuring real-time visibility, and adopting flexible logistics to respond swiftly to disruptions.

➢ **Change management and workforce skills**

Foster a culture of innovation and adaptability by upskilling the workforce through continuous training and development programs.

Manufacturing Business Priorities Translating to Technology Demands

➢ **Quality Production workflows**

Implementing lean manufacturing techniques to eliminate waste, adopting automation & robotics to enhance precision and productivity. Digital twins to simulate, analyze, and optimize operations, collaboration for real-time insights across departments, AI enabled predictive maintenance to prevent equipment failures & downtime, and integrating advanced manufacturing technologies (3D printing, AR/VR, IIoT).

➢ **Plant Modernization**

Integration of legacy systems with API driven approaches for seamless exchange of data with modern applications and platforms. By adopting edge computing and secure networking, manufacturers can enhance performance, improve response times, and support the increasing demand of modern, data-intensive manufacturing processes.

➢ **Digital Supply Chain Platforms**

Ensuring smart manufacturing with IoT-enabled digital supply chain platforms that enable real-time tracking of materials/products, predictive analytics to forecast demands, and advanced platforms to improve visibility between suppliers, distributors, and retailers.

➢ **Resilient Network Architecture**

Resilient network infrastructure integration to connect multiple plants, head offices to data centers. Ensure redundancy and failover capabilities for critical systems, monitoring network performance to proactively address issues, and collaborate with reliable service providers to minimize downtime.

➢ **Business Continuity Planning**

Business continuity planning with robust IT infrastructure including disaster recovery hosting and virtualization technologies. The comprehensive risk management software and automated systems to switch operations to backup sites (DR) seamlessly in case of emergencies.

➢ **Hosting critical IP data**

Protecting intellectual property (IP) data involves the use of advanced cybersecurity solutions, including encryption, multi-factor authentication, intrusion detection systems, and secure access controls. Dedicated secured data centers designed for high-security needs, and regular security audits to safeguard sensitive information.

➢ **Compliance-ready Infra**

Managing data sovereignty and cross border flows requires secure and compliant IT infrastructure solutions. The data centers must meet local residency and cyber security requirements to protect data privacy. Data governance frameworks and automated compliance management tools are critical to ensure adherence to compliance.

➢ **Sustainability and Green Manufacturing**

Using environmental monitoring software and energy management systems. IT infrastructure solutions with real-time tracking of energy consumption, PUE, WUE, waste generation, and carbon emissions are essential. Data analytical tools can help identify areas of improvement and optimize resource usage.

➢ **Learning Management Systems**

Digital training platforms facilitate remote learning through virtual simulations with AR/VR/XR solutions enabling faster onboarding and orientation. Learning Management Systems (LMS) ensures continuous skill development and stay adept with latest technologies. These systems help track progress, manage transitions, and engage employees effectively.

7 Top Reasons for a Manufacturing Company to Choose Sify Data Center

Manufacturing operations generate vast amounts of data from sensors, machines, supply chains, and other sources. Less efficient data centers often lack the **scalability** and flexibility required to handle the increasing volume and complexity of data generated by modern manufacturing processes.

Here is how Sify AI-ready Data Centers are well-positioned to meet the evolving needs of manufacturing enterprises:

1. **Data Centers designed for AI-workloads**
   To enable seamless manufacturing processes, continuous operations, and support AI-readiness, Sify offers RAS based designed AI-ready data centers featuring scalable, robust power systems with dynamic load tolerance and redundancy, versatile cooling solutions for various water temperatures, a high-capacity fiber and copper network with multiple paths, and purpose-built server halls meeting local codes and seismic ratings.

2. **Cloud adjacency:**

To enhance the efficiency, reliability, and scalability of manufacturing operations, Sify offers Cloud Adjacent data centers by virtue of hosting major hyperscalers. Sify can deploy cloud edge POD anywhere bringing resources closer to the production environment while ensuring low latency connectivity, high performance, and enabling real-time decision-making.

3. **Scalable infrastructure:** To accommodate growth and quick adaptation to changing business requirements, Sify offers 14 data centers with 190+ MW IT power, expanding to 300+ MW by 2025, scalable to 750+ MW with built-to-suit capabilities. The multi-tower campuses are strategically positioned across the nation to meet all scalability requirements, both in terms of vertical and horizontal expansion.

4. **Robust security across data centers:** To protect critical business data and intellectual property, Sify offers secured data centers with stringent physical and electronic security measures including 10 layered advance security, K8 rated boundary walls, electromagnetic interference protection, policy enforcement, robust security protocols, bolstered by AI-led continuous assessment.

5. **Reliable multi-site connectivity:** To augment reach and interconnectivity to extensively distributed geographical locations, Sify offers a PAN India DC-Network footprint with hyperconnected, carrier-neutral, and a rich interconnected ecosystem. High capacity intra rack, inter data center, and inter-city network connectivity with low latency connecting all facilities and remote locations to our data centers.

6. **Sustainable practices:** Manufacturing production facilities consume high power for their operations. To ensure efficient energy consumption and meet industry standards, Sify runs on renewable energy sources- Solar and wind power and implements advanced power management across their data centers.

7. **Ensured business continuity:** To ensure seamless continuous operations without fail and data availability in case of disruption, Sify PAN India DC footprint enables manufacturing businesses to host their DR, Far DR, and NDR in different seismic zones.

CASE STUDIES

The customers highlighted in blue are the accounts for which we are going to create DC specific case studies in all formats- 1 slider, 2 sliders, and a PDF version.

Columns marked in green are ready for consumption.

Segment	Customer	SA	Format- 1 Slider	Format- 2 Slider	Format- PDF
Manufacturing					
	Tata Motors-	Gautam Bakhru	No	No	No
	SANMAR	Gautam Bakhru	No	No	No

	Godfrey Phillips India Ltd.	Gautam Bakhru	No	No	No
	Kellogg India Pvt. Ltd.	Dheeraj Shrivastava	No	No	No
	United Breweries Ltd.	Rajesh Rao / Harshit Jain	No	No	No
	Sun Pharma	Dheeraj / Harshit	No	Yes	No
Retail					
	Shoppers Stop	Gautam Bakhru	No	No	No
	Avenue Supermarts ltd.	Dheeraj / Akash R Sinha	No	No	No
Logistics & Distribution					
	Redington Ltd.	Swaminathan K	No	No	No
Travel, Transportation, and Hospitality					
	EIH Limited	Yoginder Pal Taneja	No	No	No
Petroleum, Gas, and Power					
	Tata Power Company Ltd.	Gautam Bakhru	No	No	No
	Nayara Energy Ltd	Dheeraj Shrivastava	No	No	No

*Appendix

Data Center capacity Build up - September 2024

Sr #	Location	Operational	Development	Planning
1	Mumbai 01	0.9		
2	Mumbai 02	5.4		
3	Mumbai 03	96.4	160	120
4	Bangalore	7.6		

5	Bangalore 02		20	20
6	Chennai 01	3.6		
7	NOIDA 01	10.8		
8	Hyderabad 01	14.4		
9	Hyderabad 02			250
10	Kolkata	2.2		
11	NOIDA 02	43.2		86.4
12	Chennai 02	43.2		86.4
		227.7	**180**	**562.8**

Capacity by 2025--->	**407.7**
Total expansion--->	**970.5**

Operational- as is ready: 227.7 rounded to 227 (included tower B Noida, Chen 02)
Expanding: operational + development: 407.7 rounded to 407 MW
Scalable to: expanding to, operational + development+ planning: 970.5, 970 MW

*In case of any data discrepancy or updates, please reach out to marketing@sifycorp.com