

NAVIGATING AI'S IMPACT ON DATA CENTER INFRASTRUCTURE

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STRATEGIC PLANNING FOR THE NEXT ERA OF COMPUTE

Artificial intelligence has fundamentally changed data center requirements. Organizations implementing AI strategies need infrastructure that can support dramatically different power, density, and scale requirements than traditional workloads demand.

Global technology firms have accelerated AI adoption, and the infrastructure requirements are substantive. As a leading data center developer, CyrusOne works directly with organizations deploying AI at scale. Based on our experience designing and delivering these deployments, the shift is permanent and requires strategic planning across your entire organization.

AI is becoming embedded throughout the technology stack—hardware, software, communications, and applications. Early adopters are integrating AI to enhance data access, improve software efficiency, and optimize workflows. Tech leaders see AI moving beyond its current role as a cloud-based tool to become foundational infrastructure.

This integration demands different data center designs: advanced architecture, higher densities, reliable energy delivery, and budgets scaled accordingly.

The infrastructure world is evolving rapidly. Major cloud service providers and technology companies are making significant investments that demonstrate AI's ongoing influence on data center development. Competition for capacity has intensified as organizations work to secure the infrastructure necessary for production revenue and AI solution development.

Data center requirements are scaling dramatically. AI deployments require greater power densities and larger footprints than traditional hyperscale facilities. Organizations that plan, design, build, and operate data centers are adapting their approach to meet these requirements.

SIX STRATEGIC QUESTIONS FOR AI INFRASTRUCTURE PLANNING

Required Resilience: Colocation data centers promise uptime to customers through redundant systems, comprehensive maintenance, and business continuity planning. While in-house data center operators might strategically allow some of their data halls to go offline during outages, that is not an option for some companies. For this reason, backup power generation is required. Data centers continue to explore and evaluate alternative technologies to provide the same power resilience with fewer carbon emissions.

1 How should our organization approach the current data center market?

The data center development landscape has evolved substantially:

- **20 years ago:** A 5 MW data center was a major project
- **10 years ago:** CyrusOne was among the first operators building and filling 25 MW facilities
- **Today:** Hyperscalers and technology companies are developing giga-scale campuses—600 MW to 1.2 GW projects with multiple data centers per site

These organizations have proven track records and full budget approval. The scale is real, and CyrusOne is designing for it.

Your entire supply chain—land procurement, energy sourcing, equipment vendors, contractors, and labor—is receiving opportunities from the most successful technology companies in the market. Every part of the data center ecosystem is under increased demand.

Finance, IT, and Operations teams need to understand that securing new data center capacity requires coordinated effort. Whether you're generating production revenue or developing AI solutions, obtaining the right infrastructure at the right time depends on early planning and organizational alignment.

2 How do we approach land acquisition when prices have increased significantly in key markets?

Land prices have increased approximately 5x in core data center markets over recent years, largely driven by post-COVID consumer behavior and demand for both data centers and logistics facilities near population centers. Outside of Northern Virginia, prices have now stabilized, though securing power in core markets has become significantly more expensive.

You have two options: accept current market pricing in strategic locations or expand your site selection criteria.

If you need presence in a core market—Texas, Northern Virginia, Illinois, Phoenix, Ohio—understand that land costs remain a small portion of overall data center infrastructure expenses. Most organizations are accepting higher land prices rather than changing their strategy.

However, evaluate how critical specific market proximity is to your business requirements. If your use case allows flexibility, less competitive markets offer lower-cost alternatives.

For AI deployments, site selection prioritizes power availability. Power-first strategy drives our approach, though proximity to population centers remains necessary for access to labor, maintenance, and supply networks to support the facility throughout its operational life.

> **Just a couple of years ago we would pursue land for data centers based on where our customers wanted to be. Now we have taken the lead and our market strategy team is advising customers on site selection based on power-adjacent land and purchase availability.**
>
> —MICHAEL NUDELMAN, SVP, LOCATION & POWER STRATEGY

3 What is the current state of energy availability in major data center markets?

Energy access is the most critical factor for AI data centers, which require significantly greater scale and power densities than traditional facilities.

Power delivery timelines across core markets have extended from 3± years to 5± years in most cases. Utility capacity constraints and permitting processes contribute to these timelines. New AI chipsets require power densities 10-20x greater than traditional data centers, demanding substantially more energy than many markets can readily provide.

As a result, the data center industry is developing alternative power supply solutions to support business growth. These alternatives include developing new generation capacity and electrical resources to provide power directly to campuses.

Some utilities have more capacity and are more accommodating to data center development. For AI deployments without strict proximity requirements, expanding your search beyond traditional Tier 1 markets provides more options and often faster timelines.

Embracing workable solutions for energy needs is more realistic than adhering to rigid site requirements.

4 When will supply chain timelines return to previous norms?

The procurement model has evolved. Hyperscalers building large-scale campuses are planning 2-5 years out. At CyrusOne, we are working with customers on site selections for facilities that won't come online until the 2030s.

Major power and cooling infrastructure—generators, chillers, switchgear, transformers—currently requires lead times under 18 months from order to delivery. This is an improvement from the two-year timelines seen during peak supply chain stress, but still demands advance planning.

CyrusOne's Owner Furnished-Contractor Installed (OFCI) program ensures we have equipment available to support customer needs despite supply chain dynamics. We've more than doubled our supply chain management staff since 2022 and implemented new initiatives including serial number tracking upon equipment commitment, unannounced manufacturer inspections, and enhanced vendor coordination.

Leveraging your organization's procurement history and financial strength, combined with enhanced communication with OEMs and developers, helps navigate the competitive supply chain.

> **Achieving just-in-time data center delivery has become a significant challenge. Our OFCI program has us procuring equipment, accelerating the speed-to-market for our customers who would be unable to obtain it on their own.**
>
> —ANDY ISAACS, SVP, PROCUREMENT

> **The processing on a GPU versus a CPU results in dramatic FLOPS performance increases, which has accelerated Moore's law for compute capacity. There is now significantly more compute power per MW, which has made AI data centers realistic and greatly enhanced end-user demand for size and scale. Given that demand, buyers need to be flexible and opportunistic to ensure the data center deployments they desire.**
>
> —JOHN HATEM, PRESIDENT

5 Does our team have the expertise to support high-density AI deployments?

AI infrastructure is relatively new across the industry, from hyperscalers to enterprises. Experience with deployments at 120-150 kW per rack is limited in the marketplace. Architecting solutions at these power densities requires specialized knowledge, and planning for even greater future densities demands experienced partners.

CyrusOne has grown our in-house expertise through strategic hiring and real-world deployment experience. All current designs assume greater than 50 kW racks, with capability to support significantly higher densities.

You need experienced partners who can support and cool these densities for optimal performance, hardware protection, team safety, and environmental efficiency. Align your hardware and data center vendors on goals, strategies, and execution before purchasing hardware to ensure infrastructure is ready for Day One deployment at required scale.

Involving your team in AI implementation is valuable. Emphasize safety, education, and best practices—these power densities can be dangerous to both people and multimillion-dollar AI infrastructure.

6 How do we ensure we're not falling behind in securing necessary capacity?

Organizations are approaching the AI infrastructure shift in two ways. One group is adapting their planning cycles, staffing up, adopting new procurement strategies, and aligning closely with vendors and suppliers. Others are concerned about whether they've committed to sufficient capacity for future needs.

The difference comes down to planning horizons. A couple of years ago, committing to 10 MW of data center capacity with a six-month delivery timeline was standard. Now, companies are securing capacity 2 years out for turn-key delivery, with longer horizons typically structured as rights of first offer or powered shell arrangements.

Proactive customers are adjusting their technology acquisition approach, pre-leasing capacity before finalizing hardware decisions. They understand that waiting for hardware readiness means falling behind, and have adapted their business planning accordingly.

Every organization in the data center ecosystem needs stronger communication with stakeholders. Supplier and purchaser relationships are evolving into true partnerships with integrated planning and proactive procurement strategies.

Keeping partners, vendors, and customers engaged is essential. Continuously involve your ecosystem of OEMs, service providers, contractors, consultants, and vendors. Being out of sight means being out of mind.

The key lesson: communication drives success. Securing the data center capacity for your AI requirements and expanding your footprint depends on early communication and thorough planning. Proactive engagement with partners and suppliers ensures you have the resources necessary to meet your goals.

ABOUT CYRUSONE

CyrusOne is a leading global data center owner, developer and operator, delivering sophisticated digital infrastructure solutions worldwide. Headquartered in Dallas, Texas, the company operates over 55 data centers across the United States, Europe, and Japan. Specializing in comprehensive solutions for hyperscale and enterprise companies, CyrusOne enables customers to align with their unique business and sustainability goals, catering to the complex needs of AI-driven applications and services workloads. CyrusOne's data centers offer unparalleled flexibility, enabling customers to modernize, simplify, and rapidly respond to changing demands. CyrusOne delivers tailored build-to-suit, colocation, and interconnection solutions that meet the evolving digital needs of its customers.

For more information, please visit **cyrusone.com.**

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