

DATA CENTERS PREPARE FOR THE SHIFT TO THE EDGE

The question dominating data center conversations right now, is this a bubble, is the wrong question. The more consequential shift is already underway, and it will determine how billions of dollars in construction and technology investment get deployed for the rest of this decade.

That narrative runs like this: Many client conversations we have, and much financial & business media, extensively discuss the data center boom, and the corollary concern about the possible data center “bubble”. AI investments are driving rapid hyperscale data center construction, yet those investments have yet to yield great value for companies. This raises the concern of an AI “bubble”, which would potentially lead to a data center “bubble”.

Ducker Carlisle has conducted extensive market analysis in the AI and data center space and spoken with or interviewed many leaders and decision makers in the AI and data center ecosystem. Our view is that while there may be an AI “bubble” in its current state, use cases for and value from AI will shift as companies better determine how to use AI to create significant value. This use case and value shift will necessitate different data center infrastructure needs from today’s hyperscale-dominated landscape; data center processing and computing will shift to the edge to align with specific fit-for-purpose AI solutions which solve companies’ specific business problems.

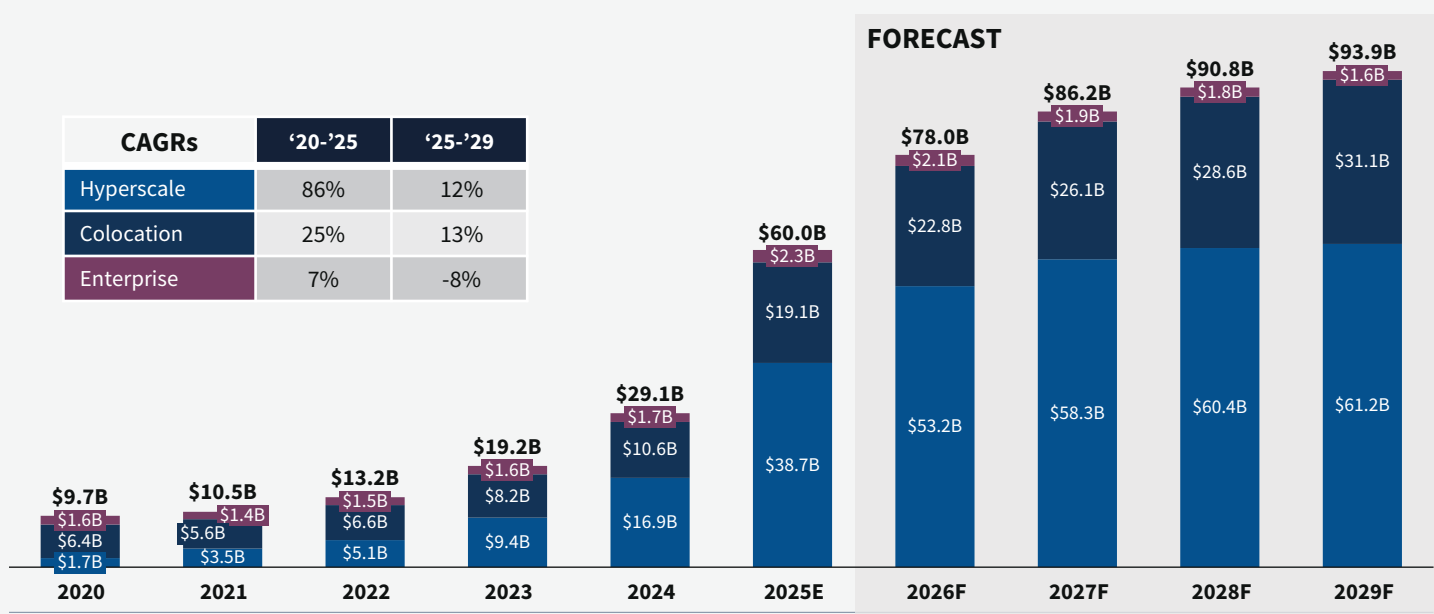
In this white paper, we will discuss...

- › The current data center landscape in the US
- › How and why the current hyperscale-dominated landscape will shift to the “edge”
- › How companies serving this space must prepare for this shift to capitalize

CURRENT LANDSCAPE

Ducker Carlisle’s analysis and forecasts, based on hundreds of conversations with industry leaders and extensive proprietary data, suggest no signs of a data center bubble (see Figure 1). That said, the data center construction growth rate will slow, certainly for hyperscale data centers. At the same time, “edge” data centers (co-location, enterprise, etc.) become a larger share of construction spend.

DATA CENTER CONSTRUCTION FORECAST BY TYPE



Geographically, hyperscale data center construction demand is concentrated in a few states, especially Virginia, Texas, and Ohio, among others. This geographic concentration will shift along with the shift to the edge. As data center construction shifts to the edge, Georgia, Illinois, and California will be among the leading locations.¹

WHY THERE WILL BE A SHIFT TO THE EDGE

We have yet to see any of our building, construction, or industrial clients realize step-change value from AI. Companies are still exploring, figuring out use cases, or even deploying tools that optimize select processes, but do not yet create durable, meaningful value. As use cases become more refined, and specific needs in business processes are addressed, more customized tools for local decision making will be required to improve processes and realize value.

Today, AI is used mostly for productivity and pattern recognition. It augments human activities and functions as a partner to or as a force multiplier for human activities. In the future, AI will move towards autonomous decision making and physical-world control. It will act as an agent that better automates processes and quickly processes data gathered from IoT connected systems to respond quickly.

The most important advantages “edge” data centers provide for these future use cases are:

› Low-latency

- Many industrial, financial, or autonomous systems require very low latency (less than 10ms, if not almost zero latency) to make effectively real time decisions and responses. Large, hyperscale data centers are often 100ms+ away.²
- AI inference workloads must be close to the decision point as they require low-latency and real-time processing and decisions.

› IoT and Machine Data

- Industrial, security, healthcare, and energy management systems, among others, now generate massive amounts of data to be organized, processed, and responded to. It is inefficient to send these massive amounts of data many miles through fiber to a hyperscale data center; local network processing is more efficient, and results again in faster response with lower latency.

¹ Sources: CBRE, JLL, Construct Connect
² Automation World, Yodaplus

› Data Security, Sovereignty, and Resilience

- Proprietary data from unique manufacturing, industrial, or other automated processes will need to be very secure, and maintaining this information on a local, highly-secure, less-vulnerable network will be critical.
- Resilience to failures, either from weather, disasters, or malicious attacks (physical or cyber) is extremely important for critical systems and processes where failures either cost many millions of dollars (financial, industrial, data processing, etc.) and/or cause serious safety and welfare challenges (wastewater treatment, critical healthcare, etc.)
- Sensitive data, especially in finance, healthcare, and security applications, will require a highly secure network and must align with regulations that prohibit this data from being sent outside of specific facilities or geographies.

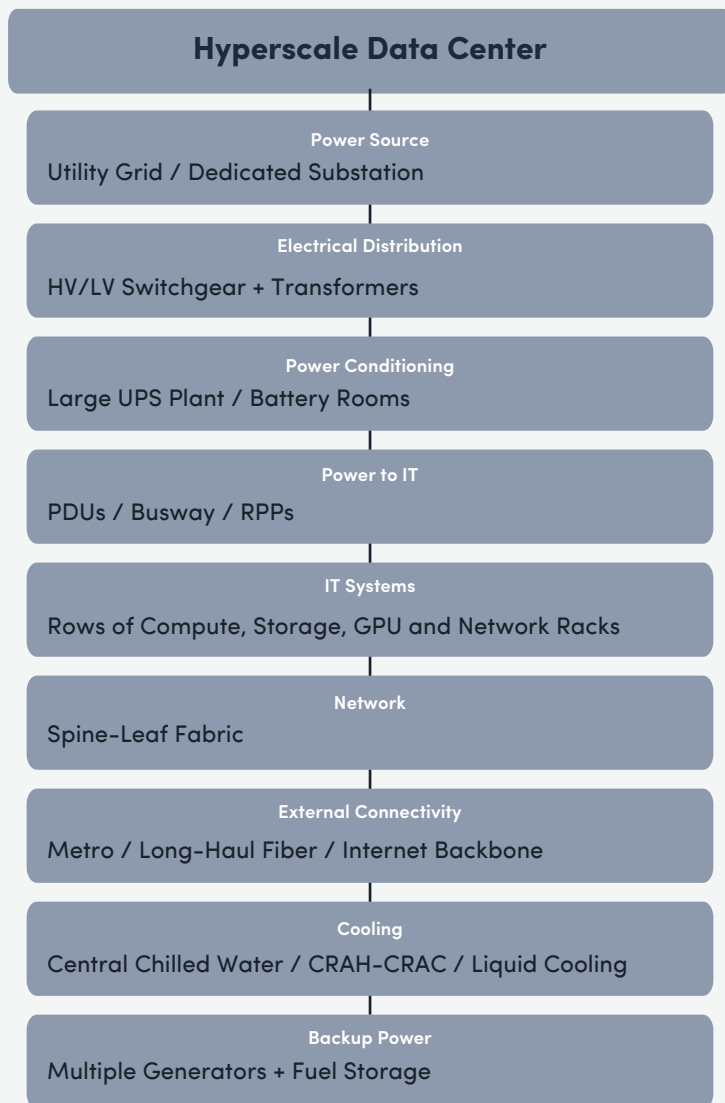
› Bandwidth

- Moving huge volumes of data across longer distances is very expensive and creates a lot of cloud traffic to be processed by hyperscale data centers, creating bandwidth challenges.
- Local processing of these large amounts of data within a fit-for-purpose local network ensures sufficient bandwidth for critical AI-enabled processes and avoids the risk of bandwidth constraints leaving AI-driven systems lagging.

As such, as real, significant value is derived from AI, a shift to the “edge” for data center infrastructure will be required.

And there may be one additional driver for the shift to the edge; smaller-scale edge data centers do not have the environmental footprint that raises major objections from local citizens and governments. Depending on how efficiently deployed, in the aggregate the edge ecosystem may consume more energy and water resources, but at an individual level the impact is significantly less and likely will not raise the ire of local citizens and regulators. All that said, hyperscalers do have more negotiating leverage and resources to overcome these restrictions, but in general local restrictions will favor edge data centers.



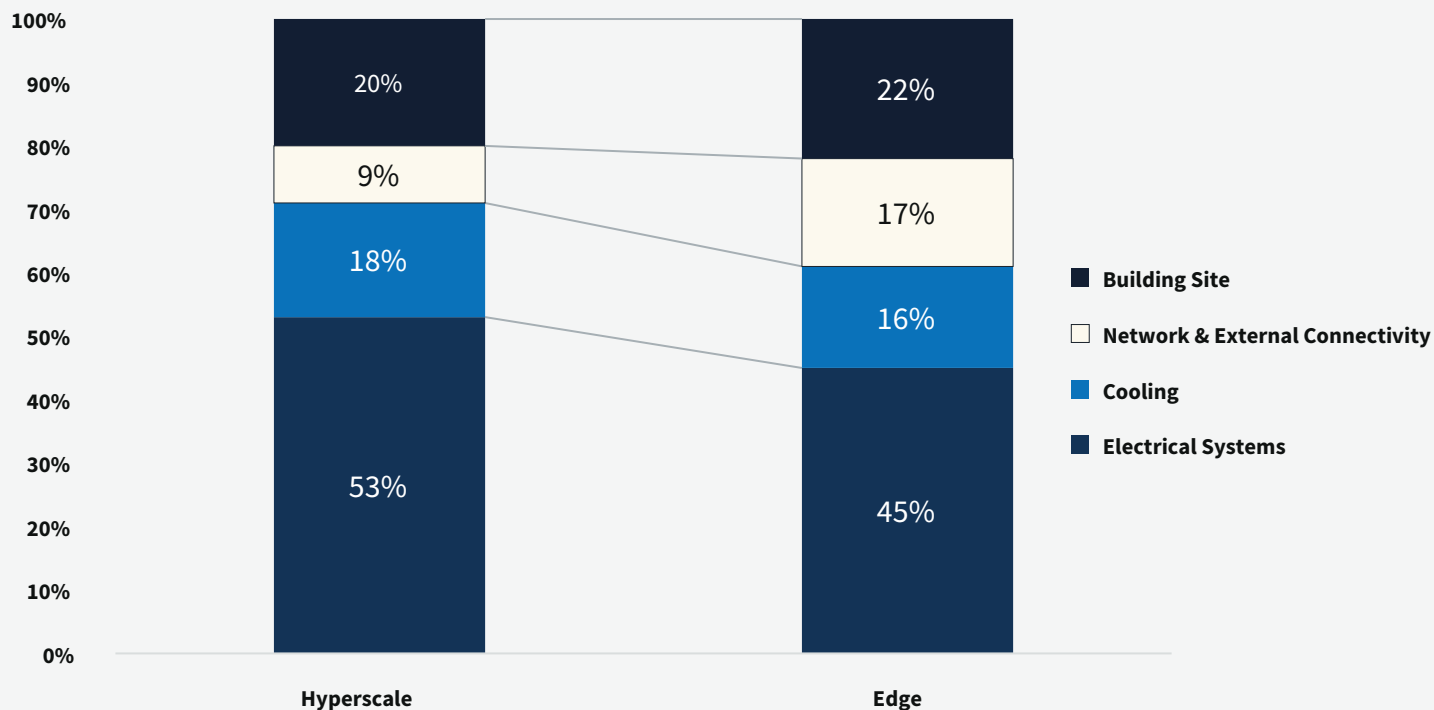


Sources: CBRE, JLL, Dell'Oro, Ducker Carlisle Analysis

Given the different ecosystems, construction project spending varies. In Figure 3 below, note the significant differences in spending by category between hyperscale and edge data centers.

DATA CENTER CONSTRUCTION PROJECT SPEND BY PRODUCT CATEGORY – HYPERSCALE VS. EDGE

Spend by Category - Hyperscale vs Edge Data Centers



Sources: CBRE, JLL, Dell'Oro, Ducker Carlisle Analysis

As the shift to the edge happens, demand for Network & External Connectivity products and solutions will grow at the expense of Electrical Systems products and solutions.

START BY CHOOSING YOUR TARGETS

As you examine this evolving data center landscape, choose target segments to focus your resources and commercial activities. Determine where your product, solution, and broader capabilities (including service) are a strong fit and/or may need to be enhanced to win. Determine where greatest opportunity and economic value can be created by your company's offering. See Figure 4 for an overview of key segments and leading developers.

DATA CENTER LANDSCAPE SEGMENTATION AND KEY PLAYERS

Participant	Description	Leading Developers	
Hyperscaler / Cloud Provider (The Big Four)	Massive, owner-led global operators focused on AI/cloud scale; high-volume, standardized builds	AWS Azure	Google Cloud Meta AI
Tier 2 Hyperscaler/ Hybrid Cloud	Emerging AI/cloud specialists; rapid scaling with neocloud/integrator models	Oracle Cloud OpenAI Anthropic	xAI CoreWeave IBM
Colo AI Infrastructure Builders	AI/GPU-focused multi-tenant campuses; high-density, modular builds	QTS T5 Aligned	Compass PowerHouse Stack Vantage
Edge	Micro-DCs, inference, CDN providers; regional, modular, latency-focused	Cloudflare EdgeConneX	Akamai Fastly
Enterprise	Traditional corporate on-prem/hybrid users; customized, integrator-led	Walmart JP Morgan Disney	ExxonMobil Pfizer Tesla
Traditional REIT Colos	Multi-tenant wholesale providers; mix of owner + integrator-led fit-outs	Digital Realty Equinix	CyrusOne CoreSite
Government/ Education	HPC/research/sovereign AI users; compliance-driven, specialized builds	DoE/NNSA UC System	MIT

“HYPERSCALE” SEGMENTS

“EDGE” SEGMENTS

KEY PLAYERS AND IMPLICATIONS

Today’s hyperscale ecosystem is dominated by a small number of asset owners and developers who run programmatic, multi-site build programs with a short list of preferred EPCs and general contractors. These relationships are typically national in scope, high volume, and difficult for a new supplier or distributor to enter directly. Figure 4 outlines the segments and leading developers active in this ecosystem today.

As construction shifts to the edge, this dynamic changes. Edge projects are smaller, more numerous, and more geographically dispersed, and edge developers typically run leaner internal teams with fewer dedicated procurement and technical resources than hyperscale asset owners. This creates real entry points for suppliers and distributors who do not have an existing relationship with a hyperscale asset owner or EPC. The clearest paths in are channel and distribution partnerships that can serve many smaller developers across a region rather than one large developer at national

scale, and design and engineering support services that edge developers will need to source externally. Suppliers and distributors that build these capabilities now will be positioned to serve a market that today’s hyperscale relationships do not reach.



NEXT, DETERMINE YOUR “WINNING” OFFERING

At the edge, in a more fragmented ecosystem compared to today’s hyperscale dominated ecosystem, developers will require more service and support to deliver projects and accelerate “go-live” timing. While leading manufacturers and suppliers for data comm, electrical, cooling, and other systems often work directly with developers and EPCs/contractors for hyperscale builds, they will be unable to work directly in a more fragmented ecosystem with greater geographic dispersion. Hence, channel fulfillment support, inventory management, and integration services will be in greater demand to deliver “Edge” projects. Further, edge developers will often require more support in design and engineering as in general they will have fewer technical resources than do hyperscale developers.

Given this, design your total offering package including products and various services. Determine what unique value you can create along the value chain that solves key issues in this ecosystem, namely efficient and fast project delivery and delays in “go-live”. A 1-day “go-live” delay amounts to a loss of at least \$1MM for hyperscale data centers and around \$50k for edge data centers. Developers will pay a premium to ensure faster project delivery and to “go-live” quickly. What capabilities can you bring and services can you provide to accelerate delivery and results? What partners must you leverage to provide this offering?



COMPANIES POSITIONED TO WIN

A handful of developers are already demonstrating this approach. American Tower has built its edge strategy around real estate it already owns: following its 2021 acquisition of CoreSite, it is placing compact data centers at the base of existing communications tower sites rather than pursuing ground-up builds, with roughly ten additional sites moving to construction-ready status in the first half of 2026. Digital Edge has taken a similar approach through standardization: its modular design model uses standardized components to deploy facilities faster while maintaining consistent performance, backed by a stated \$4.5 billion investment in one campus alone. Both are instructive examples of the same underlying strategy: treat speed to go-live as the core competitive advantage, and build or partner accordingly.

CONCLUSION

The data center landscape will change and shift through the rest of this decade. Key shifts will include:

- › Relatively more “edge” data centers to be built and fit out.
- › Geographic centers for construction and investment will shift.
- › Types of systems and products will shift to be fit-for-purpose for the edge data centers
Customer needs, and therefore opportunities to create value, across the customer chain will evolve, as construction and investment becomes more fragmented, smaller scale, and has more and different technical and service requirements for suppliers.

There is no data center bubble to fear. Prepare your business now to build differentiated value as this shift to the edge accelerates.



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About Ducker Carlisle

Named one of America's Top Management Consulting Firms 2026 by Business Insider, Ducker Carlisle is a global market research, strategy consulting and M&A advisory firm that helps the world's largest companies and private equity firms optimize business performance and accelerate growth. Founded in 1961 with offices across the US, Germany, France, UK, India and China, the firm leverages proprietary data, deep industry knowledge and proven methodologies to deliver tailored, industry-specific insights and recommendations across the automotive, heavy truck & equipment, general industrial, building and construction, and private equity sectors.

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