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KEYNOTE INTERVIEW

The next frontier for data centers



*Scarce power, rising AI workloads and evolving technology are reshaping where data centers get built and how they are financed, say Principal Asset Management's **Casey Miller** and **Sebastian Dooley***

As AI drives unprecedented demand for computing capacity, data center investors are focusing on access to power, location, cooling infrastructure and tenant credit, say Casey Miller, co-head of US data centers, and Sebastian Dooley, senior fund manager, at Principal Asset Management.

As a team that has been investing in the sector for almost two decades and has seen the sector evolve, they see opportunities emerging beyond the major hubs as neoclouds create a new class of AI-focused tenants and debt markets become more accommodating. But rapid advances in AI, evolving cooling requirements and community

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opposition are creating new risks for investors.

Q Which global markets offer the best opportunities for data center investors?

Casey Miller: The gating factor in the US is where access to power exists and how much power you can get. In major markets, it could be years before you get access to available power. Demand exceeds available capacity in

many markets, making development difficult for users and particularly challenging for hyperscalers given their scale, power and location requirements. Large-scale AI training firms are increasingly evaluating secondary or tertiary markets because they often offer greater access to land and power capacity. Building larger-scale campuses may be easier in those markets. If you can get access to power in major infill markets, the developments will likely be smaller.

Sebastian Dooley: Restricted access to major data center markets has been a theme for several years in Europe.

Demand for new developments is increasing significantly, and we are also seeing demand spread to the Nordics for large-scale AI. Secondary and tertiary markets are growing from a mixture of traditional cloud and AI-focused data centers.

In Europe, there is the topic of data sovereignty. European corporates and governments are increasingly focused on digital independence and want to manage and regulate the infrastructure that supports their own digital economies. To function day-to-day, many of these firms increasingly want their data centers to physically exist within European borders.

The FLAP-D markets of Frankfurt, London, Amsterdam, Paris and Dublin showcase the strongest demand and strongest connectivity. However, they are also the most difficult to build in, with new construction taking up to 10 years from planning to completion. The reason is that municipalities are reluctant to hand out permits, and many of these markets require significant power infrastructure upgrades.

Europe has higher regulation and higher costs than the US, so it is not always a logical place to position general AI model training. But because users are cognizant of their sovereign angle, a significant investment opportunity has arisen supporting those requirements.

Q How is the rapid evolution of AI reshaping the data center landscape, from emerging tenant types to evolving infrastructure needs?

CM: Neoclouds are a newer tenant class. These are AI-focused cloud providers whose business model is to rent large amounts of graphics processing unit (GPU) capacity and then provide servers and AI computing power to end users. They have only been active in the market for the last two to three years, so while they are very active in the space, many neocloud providers are newer companies. Neoclouds are

trying to do deals on the same scale as hyperscalers, but many of them are private companies without investment-grade credit ratings and have limited operating histories compared to traditional hyperscale providers. However, some have been partnering with hyperscalers, who are their main clients, to help bridge any gaps in underwriting.

SD: These do come with considerations around technical obsolescence. Data centers are the infrastructure, not the technology. The pace of change within the technology itself, though, is starting to impact the infrastructure

needs. As the chip density evolves rapidly for AI-focused workloads, cooling infrastructure requirements are having to change to keep up, which forms a large part of your total investment.

Q Are data centers keeping pace with the evolving cooling requirements of AI and hyperscalers?

CM: In some instances, older designs used evaporative cooling. Newer technology provides for closed-loop systems, which primarily recirculate water and will significantly reduce water consumption. The newest design



Q As data center investments grow in scale, how are global debt markets adapting to meet their capital needs?

CM: Asset-backed securities are a real solution. This is not a new product, but now a portfolio of data centers can carry the loan. Five years ago, it was more asset by asset, but portfolio lending is growing. There is an acceptance of underwriting, capital needs and a better understanding of the assets themselves. Lenders have become increasingly comfortable with the sector, resulting in greater capital availability and a broader range of financing solutions for high-quality assets and portfolios, with leverage rising from around 50 percent to as high as 80 percent or more.

SD: In Europe, debt requirements for data center projects, particularly hyperscale developments, can range from \$500 million to \$10 billion for new construction. The scale is so enormous that traditional lenders want the diversification of refinancing options so they can recycle capital. On capital markets in general, exit strategies are important, too. These are massive investments, so only a few firms globally can afford to buy these portfolios.

utilizes direct liquid to the chip (DLC), cooling the chip directly versus cooling the air that then cools the chip, which is much more efficient. DLC typically requires higher upfront capital costs, but given the efficiencies gained, it can provide long-term operational benefits depending on the application. Ultimately, tenants prefer flexibility in the design so they can utilize different cooling applications for various workloads, even within the same facility.

SD: The problem for existing data centers is that the new types of chips produce more heat in the same amount of space, so cooling system needs are changing. Switching to DLC means you must physically redesign how existing data centers are working. Therefore, investors and builders need to be aware of the need for flexibility in design and search for assets that can be adapted over time to changing cooling systems.

DLC systems are the most efficient cooling model, but newer technology is emerging all the time. The key question then becomes whether the location is suitable for the newest tech and can overcome obsolescence risk.

Q What are investors and lenders looking for in terms of returns and risk?

CM: Investor sentiment continues to evolve. We continue to see strong investor demand, but as data centers become more mature, we are seeing investor preference shift. Some investors still prefer the higher risk-return – often underwritten to the mid- to upper teens – involved in development, while others have now shifted to investing in core data centers that provide stable cashflow through long-term leases guaranteed by investment-grade credit. These core data centers have less risk and therefore represent a lower return profile, often in the mid-single digits.

Many of the same principles apply to the financing of data centers. Just a few years ago, securing financing on data

center development was difficult and expensive. Today, the data center debt markets have evolved and offer various products to the market. The lenders see the same benefits as the investors in long-term leases providing stable cashflow and guarantees that protect their downside. Because of this, pricing has tightened dramatically from where it was several years ago. Going forward, we would expect well-located facilities leased by investment-grade tenants with the appropriate lease structures to attract very favorable financing terms.

Q What are the biggest challenges to winning community support for new data center development?

CM: There is a real concern across the data center industry around local pushback and NIMBYism. Developers, investors and users have opportunities to do a better job communicating the value and benefits that can be gained from having a data center in the community. Not all data centers are equal, and unfortunately the public perception sometimes paints the entire industry with a broad brush. We are starting to see examples where positive stories about data centers are being told, and some of the negative perceptions are being challenged.

There are municipalities that are working effectively with owners to help ensure residents are not negatively impacted by water usage and power supply. Some developers and tenants are paying for their own power or creating power on-site. They are also paying

for local infrastructure upgrades, which benefits the community on multiple levels. There are legitimate success stories when developers, occupiers and the community work together.

Given the demand and recent growth trajectory, data center developers have not always had the time to build relationships with the community. Any time a sector grows as fast as the data center sector has, there can be instances where community engagement falls short, which can contribute to mistrust. Going forward, we expect the approach from developers to be more measured and forthright in order to help stakeholders get more comfortable and better understand the benefits of data centers in their communities.

SD: It is the same in Europe, which has seen a large amount of pushback from local communities against data center developments. But we do see examples of where working with the local communities works to your advantage. For example, we have a location in the Netherlands that just had a deal involving local government and farming communities that have agreed to new construction because data centers bring significant benefits to that local community.

Q What types of data center opportunities are likely to attract the most investment as AI demand grows?

CM: In the US, our data center platform continues to target emerging opportunities in value-add and smaller-scale ground-up development projects.

SD: We are also investing in the co-location and enterprise side of the market, where we have seen a lot of additional data center demand as firms prepare for more AI infrastructure, especially in Western Europe. We are also involved in some compelling cloud investment cases, which is where we will likely be making our next phase of investment. ■

“The gating factor in the US is where access to power exists”

CASEY MILLER