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Data centers: The tenants behind the demand

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We are living in the digital age. Society relies on digital applications—and the data creation, storage, and processing they require—for work, education, transportation, entertainment, healthcare, and just about every other aspect of our modern lives. In fact, three times as much new data was created and consumed in 2022 than 2018.[1] All that data is processed inside a data center, so it should come as no surprise that demand for data center capacity is at an all-time high and continues to rise, having grown 137% in the last year alone.[2]

At the same time, available data center space that meets the size and quality standards of the world's most demanding hyperscale and enterprise users is at an all-time low.[3] The cost and complexity of siting, powering, building, and maintaining data centers prevents many enterprise users from self-vending and creates high barriers to entry for new would-be providers. Even hyperscalers are challenged to meet all their internal needs with company-owned data centers, given the speed and scale at which demand for their services continues to rise.

Who is driving this demand? Which tenants offer the greatest opportunities for data center investors? We profile the key tenant segments in the data center industry—hyperscalers, enterprise users, and colocation providers—and examine their outlooks for growth.

At-a-glance—Data center tenants

- **Hyperscale users** are the largest and fastest growing tenant group for data centers. They are large technology companies that require vast data processing and storage requirements to provide cloud services to their enterprise and government customers. They represent top tier credit, require large amounts of capacity and expansion potential, and prefer long term leases.
- **Enterprise users** are organizations that operate their own data centers. While many organizations have turned to cloud service providers to manage a subset of their applications, such users prefer to maintain control over systems that are not well-supported in the cloud. Enterprise users credit is generally strong and they require small-to-medium amounts of capacity.
- **Colocation providers** are companies in the business of providing cloud services on a smaller scale than hyperscale users typically require. They serve as ideal partners for enterprise users pursuing a hybrid cloud approach, as well as for smaller companies seeking capacity that can be met with a single server or rack within the overall facility.

[1] IDC, 2022
[2] datacenterHawk, 4Q 2022 Data Center Market Recap
[3] datacenterHawk, 4Q 2022 Data Center Market Recap

Hyperscalers

By far, the largest and fastest-growing segment of data center users is hyperscalers—with a market size of $62 billion in 2021, forecast to grow to $593 billion by 2030. Hyperscalers are large, well-known technology companies such as Amazon, Google, Microsoft, IBM, Tencent, and Alibaba; the top three of these control two-thirds of the world's $227 billion cloud infrastructure services market.[4] They represent top tier credit, require large amounts of capacity and expansion potential, and prefer long-term leases.

Hyperscale providers use highly redundant, clustered infrastructure. This lets their customers take advantage of economies of scale to meet data/transaction loss requirements utilizing a platform that provides geographically dispersed customers fast, easy, and secure access to data storage and processing.

Hyperscale providers have a voracious appetite for internally constructed and leased data center space in key markets. In the past, they tried to meet most of their needs through the data centers they owned and maintained. But the massive uptick in demand means that hyperscale providers cannot build their own facilities fast enough. A variety of factors drive this need for aggressive growth, including the shift to working from home and significant increases in the use of:

- Cloud services (government and enterprise adoption)
- 5G technology
- Artificial intelligence (AI)
- Internet of things (IoT)

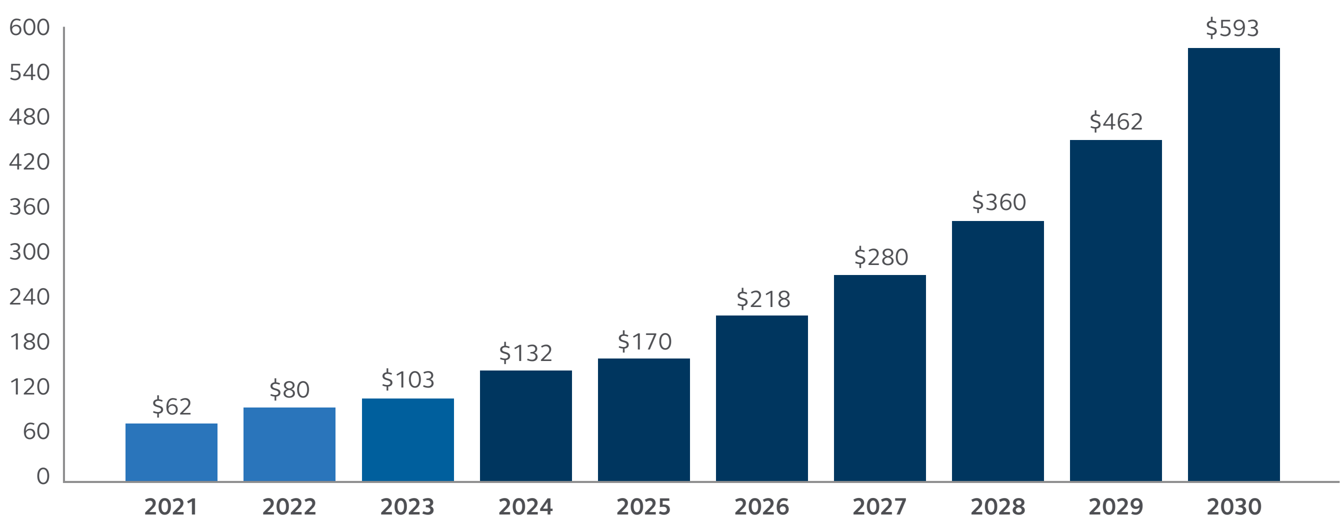
Department of Defense awards $9 billion cloud-computing contract

An example of the scope of demand faced by hyperscale users and the willingness of users to place highly critical information in the cloud is the $9 billion U.S. Department of Defense contract for cloud computing services awarded to Amazon, Google, Microsoft, and Oracle in 2022.

Source: APnews.com, December 2022

As a result, the market for hyperscale data centers worldwide is predicted to reach $593 billion by 2030. That's a compound annual growth rate (CAGR) of 28.52% from 2022 to 2030.

EXHIBIT 1: Hyperscale data center market size, 2021 – 2030 (USD billion)



Source: Precedence Research, September 2022

[4] Synergy Research Group https://www.srgresearch.com/articles/cloud-spending-growth-rate-slows-but-q4-still-up-by-10-billion-from-2021-microsoft-gains-market-share

In addition to the sheer scope of their demand, hyperscale users make attractive tenants for other reasons. As large, global corporations, they have strong credit ratings and long-term growth profiles. They have extremely stringent requirements and typically lease large amounts of capacity, further shrinking the pool of suitable data centers and competitors. But once they establish trust with a vetted, preferred data center partner, hyperscale users will typically take as much space as those partners can produce in key markets. Across the U.S., there is insufficient hyperscale-suitable turnkey capacity. As a result, hyperscale users are executing long-term, multi-facility leases—often in advance of breaking ground on those facilities, with delivery dates several years in the future. Data center providers with well-established development functions and a history of providing build-to-suit projects are outpacing the growth of smaller retail-oriented data center providers in meeting the needs of hyperscalers. By offering faster construction timelines and therefore providing hyperscalers a faster way to grow, according to CBRE[5], it is expected that the number of partnerships between data center providers and hyperscale users will continue grow in 2023.

Enterprise users

Most enterprise users are large, heavily regulated global corporations with substantial data storage and processing requirements. Historically, these users relied solely on their own on-site data centers, which housed the enterprise information technology systems and the resources needed to maintain them. Now, enterprise investment in incremental capacity within internal data centers is shrinking and investment in cloud and colocation is rising. In 2019, for the first time, enterprise users spent more annually on cloud infrastructure services than on data center hardware and software.[6] Today, 63% of businesses are "heavy cloud users," (defined as running more than 25% of their workloads in the cloud). That's up from 53% in 2020.[7] Public cloud markets are expected to grow by 10% to 30% every year between 2020 and 2027, highlighting the increasing trend that organizations are moving away from enterprise-owned IT systems and management, and evolving toward a cloud-based solution.[8]

Enterprise users' cloud adoption is driven by more than a Total Cost of Ownership (TCO) advantage. It is also driven by the unparalleled flexibility that comes from "renting" IT capacity instead of making massive, long-term commitments to internal IT service delivery (data centers, IT hardware, additional staffing, etc.). Most enterprises today take a hybrid approach, moving the workloads that can be effectively served in the cloud and maintaining owned or leased data center capacity for proprietary applications and sensitive data (especially enterprises operating in heavily regulated industries that have intense data-processing needs, such as healthcare and finance). This hybrid approach enables enterprises to maintain tight control over their most critical and/or proprietary applications and data. It also helps them to comply with security requirements and data privacy regulations, such as the European Union's General Data Protection Regulation (GDPR).

Enterprises that experience the unprecedented freedom of buying cloud services "by the drink'" also recognize the benefit of leasing data center capacity versus trying to build new facilities that will meet their projected 15 to 20-year growth requirements. When facing the decision to build more capacity internally or go to a reputable third-party data center provider, very few organizations choose new internally constructed data centers. Significantly higher TCO and decreased flexibility drive these users to buy data center capacity like they buy cloud services. No need to over-build to meet a 15 to 20-year projection when they can lease sufficient capacity to serve their sensitive and proprietary deployments in a highly predictable and scalable setting.

[5] CBRE U.S. Real Estate Market Outlook 2023, December 2022

[6] Synergy Research Group https://www.streamdatacenters.com/wp-content/uploads/2021/12/SDC_CloudBenchmarkWhitepaper_210507.pdf

[7] Flexera's State of the Cloud Report 2022

[8] JLL H1 2022

Colocation providers

Colocation service providers give their customers access to high-quality data center facilities without the need for significant capital commitments. Colocation customers include enterprises pursuing a hybrid approach and IT service providers that require fast, scalable capacity in a specific market.

Colocation providers operate under either a wholesale or retail model:

- Wholesale providers are generally in major data center markets and are typically more real estate centric than retail providers. Wholesale customers/tenants will typically be the only customer in a data hall and increasingly will lease an entire building or campus from a wholesale provider. Wholesale providers pass on the cost of power to their customers with no markup. They generally serve cloud service providers and larger companies with significant (1+ megawatt) capacity requirements.
- Retail providers are often located in secondary Tier 2 and Tier 3 markets with facilities that serve many (50+) smaller customer deployments in a single building. Retail providers are focused on providing additional services (such as network management or security services and typically sell electrical power to customers). Large organizations that require a small footprint in a specific market or small companies that require only a small amount of data center capacity are often served in retail facilities.

As companies of all sizes increasingly rely on data processing and connectivity, colocation providers globally are growing, presenting additional opportunities for data center investments. Their credit is improving as they take on new assets, diversifying their income streams and becoming less dependent on any particular site.

Significant growth opportunities across the tenant spectrum

Demand for data storage and processing by businesses of all sizes will continue to grow in the years to come. Having doubled between 2018 and 2020, data volume is predicted to triple, to 181 zettabytes, between 2020 and 2025.[9] The demand for services delivered from data centers is at an all-time high and tenant demand creates new investment opportunities. Combined, we believe these opportunities will continue to expand across the major tenant types and remain optimistic about the outlook for data center investments.

Learn more about data center investing:

- Data centers: Empowering a data-driven world
- Data centers: Mitigating risks for continued growth

[9] IDC, 2022

Risk Considerations

Investing involves risk, including possible loss of Principal. Past Performance does not guarantee future return. All financial investments involve an element of risk. Therefore, the value of the investment and the income from it will vary and the initial investment amount cannot be guaranteed. Potential investors should be aware of the risks inherent to owning and investing in real estate, including value fluctuations, capital market pricing volatility, liquidity risks, leverage, credit risk, occupancy risk and legal risk. All these risks can lead to a decline in the value of the real estate, a decline in the income produced by the real estate and declines in the value or total loss in value of securities derived from investments in real estate.

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