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Edge Data Centers:
Opportunities for Northeast Real Estate
2022 Revised Report

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"Out on the edge, you see all the kinds of things you cannot see from the center"

Kurt Vonnegut

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Overview

As we become more and more dependent on technology for both our business and personal needs, cloud computing has become an increasingly essential function.

Cloud computing supports on-demand access to computer system resources, including data storage and computing functions, without the need for local or direct active management by the user. Cloud computing runs the gamut from the relatively simple storage of data on a third-party server to complex webs or nodes that support streaming services and software-as-a-service (SaaS) applications. Large clouds often have functions distributed over multiple data centers that are situated in strategically valuable geographic locations that further support end users' computing needs.

As cloud computing needs grow, the importance of data centers – including edge data centers (discussed below) – grows too. Data centers provide the essential infrastructure for cloud computing, particularly for business applications. At its core, a data center is a space (which can range from a technology park, building or space within a given building, in suburban or urban areas) used to house computer systems and associated components, including telecommunications and data storage systems. Since information technology (IT) operations are crucial for business continuity, a commercial data center includes redundancy for power supply, data communication connections (*i.e.*, "bandwidth" or "network" services), environmental controls (*e.g.*, air conditioning and fire suppression) and various security protections.

While some businesses are big enough to run their own data centers, most businesses seek out a third-party or "colocation" data center to provide this service. A colocation data center is any large data center facility that rents out rack space to customers for their servers or other network equipment. This service is used by businesses that may not have the resources needed to maintain their own data center. The data center leases out space by the room, cage, rack or cabinet, for customers' servers, for the storage of data. Minimally, the data center offers a controlled environment (*e.g.*, redundant power, HVAC, fire suppression and security); increasingly, data centers also offer various managed services to attract more customers.

In the industry, data centers are categorized by tiers, with Tier 1 being the lowest and Tier 4 being the highest level of services and fault tolerances.

An "edge data center" is a data center with a smaller footprint, that is typically utilized to deliver cached content and cloud computing resources to network devices in a local service area. An edge data center complements and supports edge computing, which is a distributed IT architecture where client data is processed as close to the originating source as possible, to minimize latency. As an example, streaming services that need to reach their subscribers over a wide geography need to supplement their main data centers with edge data centers, so that content can be delivered to the end user with minimal or no hiccups.

The consumption, use, storage and accessing of data is only going to increase. The Northeast region of the United States presents opportunities for owners and operators of data centers, including edge data centers, to capitalize on that trend.

This white paper identifies and discusses: (i) the key characteristics of edge data centers; (ii) key industry uses for edge data centers; (iii) the Northeast-specific opportunities that exist for property owners, investors and entrepreneurs, for the development and operation of edge data centers; and (iv) business law concerns and call-outs applicable to the data center industry in general.

Introduction
to Edge Data Centers

Latency[1] has always been an obstacle to the optimal computing experience, as users demand the quickest possible responses to their computing inputs. As demand for big data, wearable technologies, cloud and streaming services and other technological trends continues to grow both in number of devices, volume of transmitted data and number of users, minimizing latency becomes even more paramount. Now, more than ever, end users and devices demand faster, more reliable and more immediate access, from anywhere and at any time, to the applications, services and data housed in data centers. Edge computing and edge data centers present a unique and cost-effective solution to these increasing demands that, with the right plan, may offer interested real estate owners, investors and entrepreneurs an opportunity for enticing financial returns.

An edge data center (EDC) is a smaller data storage facility that is located close to the population that it serves and that delivers cloud computing resources and cached content to end users.[2] Typically connected to a larger, central data center or multiple EDCs, the EDC processes data as close to its users as possible, allowing organizations to minimize latency and increase user experience.[3] EDCs derive their name from the concept of edge computing. Edge computing is the "distributed computing model which takes place near the physical location where data is being collected and analyzed" and which securely processes that data in real time, on site.[4] IDC, a global market intelligence firm, estimates that by 2025, nearly half of data generated around the globe will utilize edge devices.[5] Edge computing is likely to revolutionize and transform the way organizations process and analyze data.

"...EDCs may offer an opportunity for enticing financial returns."

1 *See* PC Magazine, https://www.pcmag.com/encyclopedia/term/latency (last visited June 15, 2022) ("Latency may refer to the time between a query and the results arriving at the screen or the time between initiating a transaction that modifies one or more databases and its completion.")
2 *What is an Edge Data Center?*, Sunbird DCIM, https://www.sunbirddcim.com/edge-data-center#:~:text=Edge%20data%20centers%20are%20smaller,cached%20content%20to%20end%20users.&text=By%20processing%20data%20and%20services,and%20improve%20the%20customer%20experience (last visited May 24, 2021).
3 *Id.*
4 *What is Edge and Why is it Important,* Stratus, https://www.stratus.com/edge-computing/?Lead_Source=Search%20Engine%20Marketing&Media=Google%20Ads&Current_Campaign=20FY-AMER-Edge-PPC-Edge-Computing&utm_source=google&utm_medium=cpc&utm_campaign=20FY-AMER-Edge-PPC-Edge-Computing&gclid=CjwKCAjwtJ2FBhAuEiwAIKu19qzfeBgwSXnD5j9_HvB_w3QKAr9IShJVz4uZQGxUFP5oJk3dmnR25xoCmoUQAvD_Bw (last visited June 15, 2022).
5 *Id.*

Key Characteristics of the Edge Data Center

In achieving the goals of reduced latency and increased end user satisfaction, it is important to understand what defines an EDC. While EDCs are defined somewhat differently amongst different industries, the common characteristics of EDCs include that they are: (i) local to the population they serve; (ii) small; (iii) part of a larger, complex network; and (iv) just as "mission-critical" as their larger, centralized counterparts.[6]

Local:

EDCs are generally defined by their proximity to the population that they serve and are typically found outside of smaller metro areas. Generally, through the repurposing of underused commercial, industrial and office spaces, EDCs serve to bring cloud services and connectivity options to organizations while acting as an intermediary between local and national resources in an effort to reduce network congestion and provide quicker, less expensive and more reliable access to distantly located services.[7] For example, Netflix may deploy its own hardware by placing an edge device into an EDC in order to provide the benefits of the proximity of its services to its users, *i.e.*, a reduction in core network traffic and latency thereby giving end users a better experience while cutting its own bandwidth costs.[8] The local proximity of these EDCs effectively addresses the problem of latency by managing the flow of data more efficiently than where all users are connecting to the central core of the network in order to access the data.[9] Additionally, transmission costs may actually be reduced through the utilization of local centers, which effectively reduces the operator's bottom line costs (which can be an important consideration if operating within a region with higher energy costs).[10] Utilization of local centers by larger companies such as Netflix and Amazon is likely to expand in the years ahead.

Smaller:

EDCs are constructed to be small-to-mid-sized versions of their counterparts within the larger network. These centers maintain all of the same components as the larger, central data centers, but are packed into a much smaller footprint.[11] Given their size, EDC infrastructure is often less costly to acquire and maintain than the larger, central data centers.[12] A study conducted by Schenider-Electric found that development of an EDC represents "a 42% savings over a centralized data center."[13] EDCs can also more easily be adapted and scaled to accommodate growth in IT gear and the number of users and devices as the need for more computing arises.[14] The adaptability of these smaller data centers results in cost savings by allowing operators and organizations to utilize only those services and IT gear that are necessary. Further, building a dedicated data center for an organization's own enterprise may prove too costly for some, particularly if future growth and need cannot be predicted with certainty. EDCs allow these organizations an affordable and adaptable outlet to tap into as their IT infrastructure needs change, thereby increasing the attraction of EDCs.[15]

6 *4 Key Characteristics of Edge Data Centers,* Sunbird DCIM, https://www.sunbirddcim.com/blog/4-key-characteristics-edge-data-centers (last visited June 15, 2022).
7 David Chernicoff, *Postcards from the Edge,* Datacenterdynamics.com (Oct. 26, 2015), https://www.datacenterdynamics.com/en/analysis/postcards-from-the-edge/ (last visited June 15, 2022).
8 *Id.*
9 Simon Besteman, *Why Does 5G Need Edge Computing in a Micro Data Center, Kingston Technology,* https://www.kingston.com/unitedstates/us/solutions/servers-data-centers/the-need-for-edge-data-centers (last visited May 24, 2021).
10 Peter Judge, *Counting the Costs of the Edge, Data Center Dynamics* (Aug. 27, 2019), https://www.datacenterdynamics.com/en/analysis/counting-cost-edge/ (last visited September 12, 2022).
11 *4 Key Characteristics of Edge Data Centers, supra* note 6.
12 *Counting the Costs of the Edge,* Data Center Dynamics.
13 Victor Avelar, *Cost Benefit Analysis of Edge Micro Data Center Deployments,* Schneider-Electric, (https://download.schneider-electric.com/files?p_Doc_Ref=SPD_VAVR-9X6SVK_EN#:~:text=The%20capital%20expense%20for%20building,%244.05%20million%20or%20%244.05%2Fwatt (last visited September 12, 2022).
14 *Id.*
15 Mary K. Pratt, *Top 5 Benefits of Edge Computing for Businesses,* Tech Target (November 29, 2021), https://www.techtarget.com/iotagenda/tip/Top-5-benefits-of-edge-computing-for-businesses (last visited September 12, 2022).

Part of a Larger Deployment:

EDCs serve as a point of contact within a larger network. The weak point of centralization is that all of the data is at the core of the network and, therefore, all users must connect to the central point in order to access it.[16] This is where the problem of latency arises. As a solution, an EDC operates within a larger system composed of a central data center and multiple EDCs interconnected with one another to expand reach and connectivity to particular regions.[17] Any single EDC will typically connect back to the larger deployment that provides the cloud resources and centralized data processing. This format allows organizations to more directly serve a targeted region. Reduced latency is not the only benefit of processing this data locally; EDCs may offer organizations increased security. Since more data is being processed on local devices rather than transmitting it back to a central point, the amount of data actually at risk in a single moment is reduced. In other words, there is less data to be intercepted during transit, and even if a device is compromised, it is likely to only compromise the data that has been collected locally rather than the trove of data that could be exposed by a compromised central server.[18]

Characteristics of EDCs:

- **Local**
- **Smaller**
- **Part of a Larger Development**
- **Mission Critical**

Mission Critical:

The term “mission critical” refers to the need for an EDC to be just as reliable as its larger, central counterpart.[19] Such a characteristic is vital since many of the uses identified below require services and data to be accessible nearly 24 hours per day, with minimal latency and with security and connectivity options as sophisticated as their larger counterparts. EDCs being “mission critical” cements their position as a necessity in the processing, delivery and analysis of data.

16 Simon Besteman, *supra* note 9.
17 *4 Key Characteristics of Edge Data Centers, supra* note 6.
18 Mary K. Pratt, *supra* note 15.
19 *4 Key Characteristics of Edge Data Centers, supra* note 6.

Key Uses of the Edge Data Center

Edge computing and EDCs are generally thought of in connection with the Internet of Things (IoT), *i.e.*, the network of physical objects embedded with sensors, software and other technologies for the purposes of connecting and exchanging data with other devices and systems,[20] as well as the development, deployment and maintenance of the long-anticipated 5G mobile networking connectivity.[21] However, the opportunity for utilization of EDCs in nearly every industry is set to explode.

To appreciate the myriad opportunities that lie with the development of EDCs, it is important to understand the numbers. The value of the global edge computing market in 2021 was around 7.43 billion dollars; up from around 3.5 billion dollars in 2019 and 4.68 billion dollars in 2020.[22] North America, alone, accounted for a staggering 40% revenue share within the global edge computing market.[23] The value of this global market is expected to increase to over 145 billion dollars by 2030.[24] In the short term alone, a survey conducted by Forrester Analytics found that 57% of mobility decision makers surveyed said that they had edge computing on their roadmap for the next 12 months.[25] Further, Gartner predicts that by 2025, nearly 75% of enterprise-generated data will be created and processed at the edge and outside of a centralized data center or cloud.[26]

So, which industries and sectors will make up this explosion in the global edge computing market? Consider the following industries and some of the potential uses within them:

1 Banking/Financial Industry

Traders and asset managers may rely on EDCs to effectively assist in day-to-day operations, algorithmic trading and execution of transactions more quickly. Further, with cryptocurrencies and contactless payment options rapidly becoming more widely accepted, EDCs stand in unique position to help facilitate these types of financial transactions.[27]

2 Healthcare

Robotic surgeries depend on low latency and uninterrupted services in order to properly perform.[28] Additionally, the use of software logging actions taken by surgeons and their teams in real time and the increased use of wearable sensors to record patients' data while at home allows medical teams to concentrate focus on patient care.[29] Further, the increases in the practice and delivery of tele-health care requires the reduction of latency and provision of more immediate, uninterrupted access to healthcare data and monitoring. [30] [31] These present opportunities for EDCs.

20 *What is IoT, Oracle, https://www.oracle.com/internet-of-things/what-is-iot/ (last visited May 24, 2021).*
21 Stephanie Overby, *Edge Computing by the Numbers,* enterprisersproject.com, (April 23, 2020), https://enterprisersproject.com/article/2020/4/edge-computing-9-compelling-stats (last visited September 12, 2022).
22 *Id.*
23 *Id.*
24 Stephanie Overby, *supra* note 21.
25 Abhijit Sunil, *Predictions 2020: Edge Computing Makes the Leap* (Nov. 4, 2019), Forrester, https://go.forrester.com/blogs/predictions-2020-edge-computing/ (last visited September 12, 2022).
26 Rob van der Meulen, *What Edge Computing Means for Infrastructure and Operational Leaders* (Oct. 3, 2018), Gartner, https://www.gartner.com/smarterwithgartner/what-edge-computing-means-for-infrastructure-and-operations-leaders/ (last visited September 12, 2022).
27 *What is an Edge Data Center?, supra* note 2.
28 *Id.*
29 *How Edge Computing is Benefitting Healthcare,* LDP (March 18th, 2022), https://www.ldpassociates.com/how-edge-computing-is-benefitting-healthcare/#:~:text=Edge%20computing%20lends%20itself%20to,the%20quality%20of%20telehealth%20meetings (last visited September 12, 2022).
30 *What is an Edge Data Center?, supra* note 2.
31 Note, Frost & Sullivan predicts that the market for AI-assisted surgery will more than triple by 2024, exceeding $225 million. (See How the Edge is Reshaping Healthcare, Dan Tynan, https://www.hpe.com/us/en/insights/articles/how-the-edge-is-reshaping-healthcare-2103.html (last visited September 14, 2022).

3 Supply Chain

EDCs can support increased real-time efficiency in robotic packing and inventory management, as well as delivery fleet management and package tracking.[32]

4 Smart Cities

EDCs can support real-time gathering and analysis of data on traffic, utilities, infrastructure and crime as well as emergency services response capabilities.[33]

5 Smart Industry

EDCs can support smart factories, including machine predictive maintenance and predictive quality management to, among other things, reduce costs and injury while increasing productivity.[34]

6 Agriculture

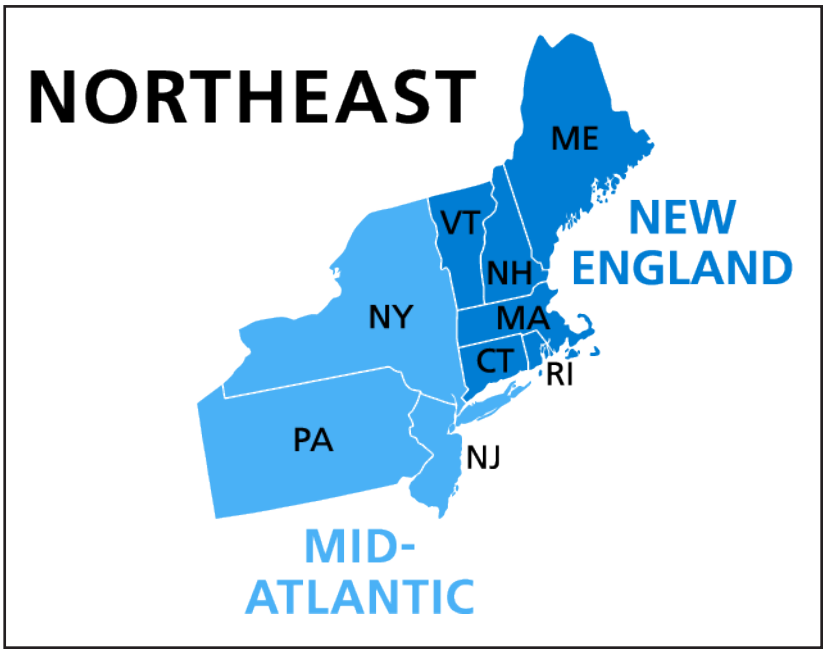
EDCs can support analytics used to track livestock movements which present an important mechanism for the monitoring of infectious disease transmissions and could highlight vulnerabilities and inform targeted surveillance, which, in turn, could assist in identifying and managing animal health-related risks earlier.[35]

7 Other Potential Uses

Augmented Reality; Virtual Assistants and other Artificial Intelligence; Education; Retail Point-of-Sale Transactions; Gaming; Video Monitoring; Autonomous Vehicles; Defense Systems; and Mining & Oil.[36]

32 *Id.*
33 *Id.*
34 *Edge Data Centers: How to Participate in the Coming Boom,* PwC, https://www.pwc.com/us/en/industries/capital-projects-infrastructure/library/edge-data-centers.html (last visited September 12, 2022).
35 *Edge Data Centers: How to Participate in the Coming Boom, supra* note 33; *See* Damien Barrett, *Potential for Big Data in Animal Disease Surveillance in Ireland* (Oct. 6, 2017) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5635564/.
36 *What is an Edge Data Center?, supra* note 2.

Northeast-specific Opportunities for Development of Edge Data Centers



The North American data center market remained robust during the first half of 2022, no doubt fueled by the continued shift to hybrid work environments occasioned by the COVID-19 pandemic and its aftermath.[37]

The Northeast presents an interesting opportunity for property developers, owners, investors and entrepreneurs. This region encompasses the first, seventh and ninth largest regional U.S. economies, includes the national and global capital of finance (*i.e.*, New York City) and is home to more than half of the world's top pharmaceutical companies, over 200 universities and some of the nation's (and world's) leading medical institutions.[38] Yet, despite the Northeast region's economic prowess, it arguably lacks the quantity and scope of data center development seen in other parts of the country, *e.g.*, Northern Virginia, Dallas and Silicon Valley.[39] While power costs in the Northeast are not cheap, with demand for data centers rising, opportunities exist in the Northeast region for EDCs to gain more traction.

37 CBRE Research, *Record Demand Fuels H1 2022 Surge in North American Data Center Development* (August 8, 2022), https://www.cbre.com/insights/briefs/record-demand-fuels-h1-2022-surge-in-north-american-data-center-development

38 Jonathan Tombes, *Why the Northeast Needs Advanced Data Centers and How it Can Get Them,* http://www.keystonenap.com/why-the-northeast-needs-advanced-data-centers/ (last visited May 24, 2021).

39 CBRE Research, *A Source of Stability: Digital Infrastructure in 2020* (March 8, 2021), http://cbre.vo.llnwd.net/grgservices/secure/North%20Amer%20Data%20Centers%20H2%202020.pdf?e=1621818323&h=6d797f28422fd42f2a3aa2649b116139

Operating Costs

Power

A key component of a data center's operating costs, which of course is billed through to customers, is power. In 2020, the most recent year for which data is available, electricity costs in Connecticut averaged about 19.3 cents per kilowatt hour, while Massachusetts and New York averaged 18.7 cents and 14.87 cents per kilowatt hour, respectively, which is a slight increase from those electricity costs seen in 2019.[40] Power costs may increase throughout the country, and could remain higher in the Northeast than other regions, but there remains a systemic need and opportunity for data centers to be located in the Northeast; therefore, the best strategic approach in the Northeast region would be to seek price stability and to lower costs through a combined strategy of on-site generation and storage, third-party procurement and tax and environmental incentives.

Incentives

Data center operators and developers are not devoid of options in lowering their operating costs. Significant state and federal incentives are available to reduce and stabilize energy costs generally and for data centers specifically. For example, as renewable energy becomes less expensive and local, state and federal governments continue to offer a variety of tax credits associated with green energy and economic development, including programs such as Property Assessed Clean Energy (PACE), cost savings can accumulate quickly.[41]

Several states, including Connecticut, have passed tax incentive laws for the owners, developers and operators of data centers. In fact, Connecticut is a national leader regarding on-site, clean power and storage as well as data center tax incentives. Connecticut's law, in particular, permits qualifying data centers to be exempted from real property taxes, sales and use taxes and financial transaction taxes. To take advantage of this incentive, the owner or operator is required to enter into a negotiated host municipality fee agreement (which may include a payment in lieu of taxes) with the municipality in which the data center is located. The Connecticut Green Bank operates a statewide incentive program (the CPACE) to help finance clean power and energy efficacy elements of a project as a long-term benefit assessment. The Connecticut Green Bank also co-administers Connecticut's battery storage

40 https://www.eia.gov/electricity/state/

41 *See* Lisa M. Zana, *Incentives for Qualified Data Centers to Locate in the State,* Shipman & Goodwin LLP, https://www.cttaxalert.com/2021/05/incentives-for-qualified-data-centers-to-locate-in-the-state/ (May 17, 2021).

incentive program which provides incentives to generators for behind-the-meter storage projects (*e.g.*, generation that is physically located on site, separate or prior to the utility meter and utility interconnection) and offers other flexible financing options. Other state incentives are also available for clean power, including those that can help alleviate the "time-of-use issue" (*i.e.*, when a data center needs to use power at a time when it is not able to generate it on demand (*e.g.*, a solar facility can only generate power during the daylight hours, but a data center may have demands during the nighttime)), including technological solutions such as fuel cells and battery storage systems that can operate 24/7 and programmatic solutions such as "net metering" and "feed-in tariffs" for non-residential energy projects. On the federal level, the recently passed Inflation Reduction Act of 2022 (a U.S. federal law that encourages investment into domestic energy production while promoting clean energy) extends, supplements and enhances the range of incentives that could be available to data centers, including direct pay options and certain sustainability incentives, including extending the solar investment tax credit, funding renewable energy and grid energy storage, and supporting fuel grants for high voltage electric power transmission.

Further, owners/developers may be able to take advantage of Connecticut's various brownfield programs (and similar programs in other states), which may offer the following benefits: (i) affording certain liability protections (*e.g.*, covenants not to sue made by the State in favor of the owner/developer); (ii) allowing clean-up of sites to be performed to less stringent/less onerous, non-residential standards; (iii) allowing the utilization of institutional controls (*e.g.*, deed restrictions) and/or engineered controls (*e.g.*, using parking lots and other structures as "caps" over "dirty dirt" allowed to be left on site); and/or (iv) enforcing a smaller remediation footprint for a contaminated sites (*i.e.*, avoid having to chase remediation beyond the site boundary). Further, the Connecticut Department of Economic Development offers low-interest, brownfield grant opportunities (*e.g.*, forgivable loans and grants) to applicants on a rolling basis throughout the year. By constructing EDCs on slabs, rather than sub-surface foundations, owners/developers can further lower costs and turn a previously undervalued, low-price property into a high-performing EDC, while managing risks through the strategic use of guaranteed fixed price remediation (GFPR) and/or aligned interest contracts (where achieved cost savings are shared with the contractor). Environmental insurance policies, where available and cost effective, can also be used by developers, site owners, investors, lenders and operators to further box in environmental risk, as appropriate.[42]

Uses

Related to the above point, mothballed manufacturing facilities, empty retail boxes, empty floors of office buildings, de-commissioned power plants, unused parcels and vacant premises could be exploited and re-purposed for EDCs.

40 https://www.eia.gov/electricity/state/

41 *See* Lisa M. Zana, *Incentives for Qualified Data Centers to Locate in the State,* Shipman & Goodwin LLP, https://www.cttaxalert.com/2021/05/incentives-for-qualified-data-centers-to-locate-in-the-state/ (May 17, 2021).
See Andrew N. Davis, Ph.D. and Aaron D. Levy, *Redeveloping Brownfields: The Need for Risk Transfer Strategies,* Shipman & Goodwin LLP, https://www.shipmangoodwin.com/insights/redeveloping-brownfields-the-need-for-risk-transfer-strategies.html (April 9, 2021); See also Brownfields in Connecticut, CT.Gov, https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Brownfields/Brownfields-in-Connecticut (last visited June 8, 2021).

Regional Assessment(s)

CBRE has researched and provided insight as to the potential future in data center development in the following metro areas:

Boston

CBRE found that major cloud providers continue to provide local cloud sources in and around Greater Boston, which make the area a dominant force in 2021 and beyond.[43] CBRE notes that prices are starting to stabilize and expected returns for investors and operators are beginning to match those of more traditional real estate sectors, which is a positive light in a market traditionally burdened by high costs.[44] There exists in the region about 81.8 megawatts of inventory with a vacancy rate of 25.5 %.[45]

New York Tri-State

CBRE found that interest from cloud providers has increased over the past six months and vacancy within the region's market remains near all-time lows.[46] There exists in the region about 160.6 megawatts of inventory with a vacancy rate of 9.4% as compared with Northern Virginia, which maintains nearly 1,687 megawatts of inventory with a 5.1 % vacancy rate.[47]

When compared with North America's hottest data center market in Northern Virginia, total inventory in the Northeast is substantially lower. However, as the need for edge computing continues to increase, major medical, educational and financial hubs such as that of Boston, New York City and their surrounding regions will require data processing and analysis closer to those utilizing it. As outlined throughout this paper, as wearable technologies, the proliferation of 5G and the demand placed on content delivery and access continues to grow, EDCs are likely to step in to fill the void in smaller metro areas. Demand, economic, medical and educational prowess and lack of inventory in the Northeast have positioned the region for a potential boom in edge development. If EDCs can increase in availability within the region, the Northeast stands a chance at becoming more cost-competitive and – as lower costs follow – so too will the organizations competing to be closer to their end users.

43 CBRE Research, *Digital Infrastructure in 2021, supra* note 38.
44 CBRE Research, *A Source of Stability: Digital Infrastructure in 2020, supra* note 37.
45 CBRE Research, *Digital Infrastructure in 2021, supra* note 38.
46 *Id.* at 31.
47 *Id.* at 31, 32.

Business Law Issues Facing Data Center Owner/Operators

The data center business presents opportunities to be an owner or an operator or both. An owner actually owns the land and structure that comprises the physical data center. An operator typically leases a facility or space within a building and uses that space, as a tenant, to operate the data center business under a lease.

An owner will likely need to retain a real estate broker to assist it in finding appropriate space, and counsel to assist it in securing any required zoning approvals, performing environmental due diligence, papering the acquisition of the subject property, financing the acquisition, and forming the entity or joint venture for the acquisition (which may include a holding company, an acquisition vehicle and/or operating company entities).

An operator of a data center who is not the owner will likely need counsel to assist it in securing an appropriate long-term lease, preferably with back-to-back renewal options of at least 5 years each. These leases are hotly negotiated and careful consideration needs to be paid to “base rent” and its escalators, the elements of “additional rent,” and what obligations the landlord and the tenant have in respect to maintenance. If the data center is in a multi-tenant space, an option on additional space in the building may be appropriate as well.

An operator of a data center – whether the owner or the operating tenant – will likely need counsel to assist it in a multitude of commercial issues that come with operating a business – commercial contracts, executive compensation and employment issues being paramount. End user contracts need to strike an appropriate balance between attracting the customer and limiting the operator’s liability. Customer facing contracts typically include master service agreements, service addendums or schedules and service level agreements, all of which need to be harmonized and drafted so as to afford market-level warranties and services to the end user while limiting the operator’s liability. The data center will likely need counsel to assist it in negotiating appropriate supporting vendor contracts, as well. As redundant power and controlled temperature are essential services provided by the data center, securing power (including through the negotiation of energy contracts with suppliers) is an important component of the business. From an operational standpoint, the data center may consider expanding its service offerings to include colocation and various network and managed services.

The data center business will also need to secure and maintain appropriate insurance, including business interruption insurance and protection against ransom and threat actors.

Concluding Thoughts

As noted above, the data center business has become and is likely to remain an essential business sector, given the needs of businesses and individuals for cloud computing solutions. As such, the data center business is likely to be an attractive industry segment for investors.

The authors of this article, together with our colleagues at the Firm, have expertise in the legal issues that a data center owner or operator is likely to confront in this growing and important industry. In particular, our cross-disciplinary team of attorneys can assist clients in navigating the many complex legal and business issues that the data center industry presents, including in the areas of commercial real estate, zoning, business law, tax law and commercial contracts.

For more information on Shipman & Goodwin LLP's Data Centers Practice, visit:
https://www.shipmangoodwin.com/services/industries/data-centers.html

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