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2023 STATE OF THE DATA CENTER:

Colocation Emerges as the Preferred Option for Interconnection, Security, and Accelerating Revenue Growth

IT and business leaders must closely scrutinize the business value of their technology investments — "proof" that their decisions will deliver on enterprise objectives. To win in the marketplace, businesses need to gain competitive advantage, retain employees, build customer loyalty, protect company data and privacy, drive innovation, and much more. All these goals depend in one way or another on digital transformation.

The good news: The *2023 State of the Data Center Report* reveals that colocation can check all the boxes for technology requirements to help accelerate digital transformation and drive revenue growth. How? By providing the connectivity, security, infrastructure, and cost savings needed to effectively compete in a digital business environment, which is increasingly dependent on interconnection with cloud services and digital ecosystems. IT decision-makers are progressively leveraging colocation to deploy critical workloads such as artificial intelligence (AI) and machine learning (ML), internet of things (IoT), and business intelligence (BI). Moreover, concerns around physical security and a focus on driving new revenue have led a larger number of 2023 respondents to consider colocation versus 2022. (See Figure 1).

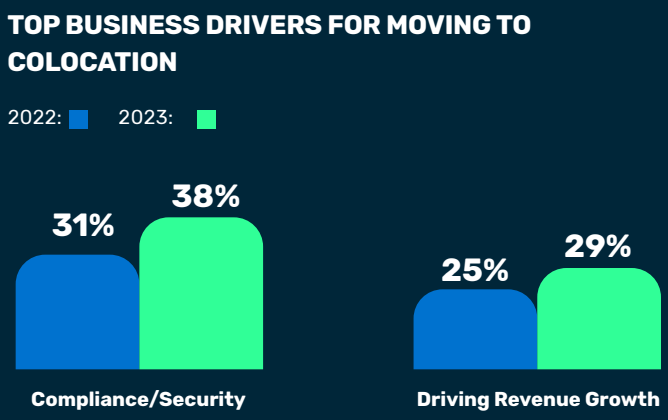

FIGURE 1: 2023 State of the Data Center Report, Foundry

This report examines these and other findings, compiled from an annual quantitative survey of 300 IT executives as well as in-depth interviews with seven IT/business leaders. The survey results and respondent insights illustrate the value of colocation data centers in three key areas:

- Improved connectivity
- Increased physical security
- Accelerated revenue growth through digital transformation

Colocation: The nexus for interconnected cloud services

Customers of colocation services want to limit or eliminate their roles in running data centers. That's why many have replaced or supplemented their on-premises data centers with colocation and public cloud services. Public cloud provides a pay-as-you-go operational expense alternative to building, maintaining, and managing complex infrastructure that generally requires expertise in data center operations, long-term capital expenditures (CapEx), and limits flexibility.

Colocation providers build and operate data centers that they manage and maintain with dedicated, highly trained staff. Businesses can house their purchased or

> *"As we move off legacy, it's going to be a colocation or cloud story. The business drivers are the same for each of these areas. We are going to be moving to colocation, private cloud, or public cloud because hospitals either don't want or can't afford to have this stuff on premises anymore. That's the driver."*
>
> **— Survey respondent, *Healthcare company***

leased computing hardware in the colocation facility, and contract with the provider for power, cooling, and security services. By partnering with colocation providers, organizations can greatly reduce their CapEx burden, allowing them to free up resources for investment in innovation and business growth. And just as important, when an organization's data center needs increase, it can contract for additional space and resources without having to invest in expanding or building a new data center of its own.

"With colocation, we get a company that's expert in data centers," says a survey respondent with a healthcare company. "If we need to increase our space, we just buy another cage. We can expand as needed. If you build your own data center, you must estimate what you're going to need over a three- or five-year plan, and then you're paying for it all upfront. It's just not financially feasible to do that today."

Some colocation providers also offer native onramps; that is, dedicated interconnection via high-speed, low-latency connectivity to public cloud services and an ecosystem of other services providers. It's a symbiotic relationship. According to IDC's *Colocation Segment Trends: M&A Drives Datacenter Investment* report, "Hyperscale cloud providers and network operators look to colocation providers as a cost-effective, scalable solution to complement their own assets."[1]

Hybrid IT models are the norm: 97% of respondents already have implemented or plan to implement a hybrid cloud model. Amidst this reality, colocation data centers provide a critical interconnection function with major cloud providers and digital ecosystem solution providers. That's important for IT decision-makers, who are eager to take advantage of public cloud benefits but wary of potential cost and performance disadvantages.

"You want to have the ability to directly connect into your public cloud provider's ecosystem for performance and scalability," says the senior IT director for a multi-billion-dollar industrial products distributor who agreed to an interview after participating in the survey. "These are important things in comparison to just setting up a tunnel into the cloud provider. There's a unique competitive advantage because the data can move so quickly between your colocation and the public cloud that, in a lot of instances, especially low-latency transactions, databases, data warehouses, direct connection makes a huge difference in performance."

of respondents already have implemented or plan to implement a hybrid cloud model

of respondents say direct connectivity between colocation data centers and major cloud providers is essential

Colocation providers that have direct cloud interconnection can offer their customers more options when it comes to determining where to host workloads. They also offer greater flexibility in moving those workloads from one environment to another, depending on workload requirements. Hybrid cloud connectivity is one reason direct connectivity between colocation data centers and major cloud providers is viewed as important by 94% of surveyed respondents. What's more, 70% of 2023 respondents view a native, direct connection to cloud providers as very important versus 68% in 2022. (See Figure 2).

PUBLIC CLOUD INTERCONNECTION A "MUST HAVE"

Importance that colocation provider offers native, direct connection to the major cloud providers

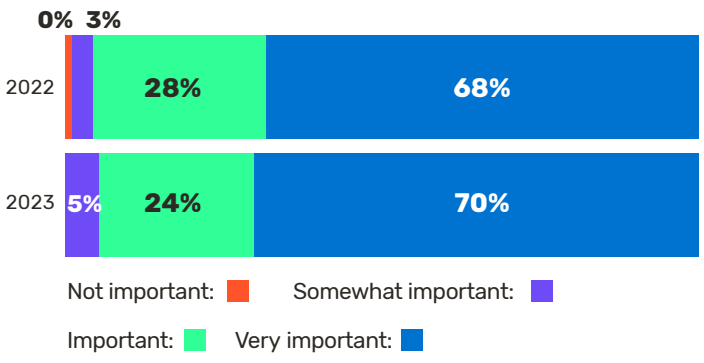

FIGURE 2: 2023 State of the Data Center Report, Foundry

"We have hybrid cloud apps, so we need very low-latency interconnects, and obviously direct connect is the fastest interconnect available."

— Survey respondent, *Financial services organization*

Organizations can leverage a colocation provider's interconnections to expand beyond the capabilities of their private clouds more readily through *cloud bursting*, which "allows firms to take advantage of the cloud's almost limitless scale and capacity on a temporary basis, but without the need to move workloads permanently to the public cloud."[2] Cloud bursting can provide a vital relief valve to meet seasonal needs or unanticipated demand without having to permanently expand public cloud use.

Colocation providers often lease space to various tenants — including network providers, cloud providers, and enterprises. These tenants can then interconnect to one another within the colocation data center. This multi-vendor interconnection can ease some of the management issues in using multiple public cloud services, including Amazon Web Services (AWS), Google Cloud, Microsoft Azure, Oracle Cloud, and IBM Cloud, for different needs, with or without private cloud.

"The way that businesses connect with each other is constantly evolving, and they require more efficient and automated ways to make today's digital supply chain work," says Matt Senderhauf, vice president of interconnection strategy at CoreSite. "Similarly, public cloud providers want to deliver their services to customers in a more efficient manner. Direct cloud connections deployed in secure colocation data centers provide the perfect ecosystem for cloud providers to reach the most end users and for those end users to connect to the public clouds securely, with the highest performance and lowest cost."

Colocation data centers provide additional advantages including expert operations teams, uptime service level agreements, security, compliance, and scalability.

The survey indicates organizations are clearly open to shifting all manner of workloads to colocation. They identify cloud interconnection and access to managed services as the top-ranked reasons to use colocation.

Physical security and colocation

The need for improved cybersecurity is the #1 reason that IT budgets will increase this year, according to Foundry's *2023 State of the CIO Report*.[3]

While cybersecurity is always a top-of-mind concern for organizations, there is also substantial risk involved regarding the physical security of data centers. Many organizations lack sufficient resources to address the risks they face in both physical and virtual realms, both of which are often critical components of compliance regimes. In fact, respondents say security is the #1 attribute they seek in a colocation provider.

Security is the #1 attribute survey respondents seek in a colocation provider.

Colocation data center physical security that is rigorously examined and continuously monitored provides critical reassurance to decision-makers. Colocation providers build their reputations on providing hardened physical security and redundant facilities, all essential for business continuity, data protection, and resiliency. Many data centers are also designed and certified to meet strict compliance requirements, such as HIPAA, PCI-DSS, and SOC 2. Meeting industry standard compliance requirements can be particularly important for businesses that handle sensitive data and is imperative to highly regulated organizations, such as governmental agencies or those in the financial services sector.

"[Colocation] buildings are very secure. They have 24/7 security."

— Survey respondent, *Banking enterprise*

At CoreSite," says Senderhauf, "we prioritize physical and virtual security at all our facilities. Biometric screening and man trap entry points are utilized to enter all data centers. We also restrict access to specific computer rooms, while our network operations center (NOC) monitors our assets with video surveillance, 24/7. This stringent security infrastructure ensures many regulatory compliance requirements are met, which is much more difficult and costly to achieve in an on-premises environment."

Some colocation providers also offer access to an ecosystem of partners who can provide additional layers of defense and expertise that can be integrated to protect a hybrid IT deployment. Examples include high-performance, low-latency interconnectivity options with leading cybersecurity solutions providers such as Cloudflare, Seceon, and ColorTokens.

Customers of public cloud services cannot always determine where their data and workloads are being physically stored and processed. However, when customers own or lease servers within a colocation data center, they always know where those assets are located and how those assets are being used.

Passing compliance certifications and achieving attestation standards year after year is one signal that a data center is adhering to complex and evolving regulatory requirements. Independent auditors conduct annual examinations of colocation data centers to assess areas such as processes, employee training, technical operations, incident management, use of best practices, and security controls.

> *"If it were up to me, everything would be colocation! Our backup data center is a colocation facility. For organizations of our size, it really doesn't make sense to own a data center. The capital requirements, the skill set requirements and multiple other reasons just make it a poor fit. We needed a disaster recovery site and the quickest way to get that was through colocation."*
>
> **— Survey respondent,**
> ***Banking enterprise***

Driving business and revenue growth

Colocation data centers can provide scalability, support for high-performance computing, improved connectivity, cost savings, and access to expertise. All these drivers are essential to capitalizing on digital transformation and meeting the seemingly unquenchable thirst for IT resources to propel new revenue opportunities.

IT leaders are under intense pressure to devote their resources to critical business needs. Many CIOs – 85% according to Foundry's *2023 State of the CIO Report* – have seen their roles grow into that of changemakers, increasingly leading business and technology initiatives.[4] Furthermore, 68% say they are either part of or managing a team tasked with creating new revenue-generating initiatives.

> *"We don't feel in the long term that we should be a data center provider… It costs way too much to have a high-quality data center for us to do it on our own anymore."*
>
> **— Survey respondent,**
> ***Healthcare company***

Rather than expending resources to build new data centers or modernize and expand existing data centers, IT leaders can take advantage of the cost-effective scalability and flexibility of their colocation partners to divert those financial resources into new initiatives and revenue-generating streams.

Public cloud is often the first consideration for certain workloads that can most benefit from limitless and almost instant scalability. But costs for those services can sometimes exceed expectations. What's more, organizations often lack sufficient visibility into how their workloads are being managed.

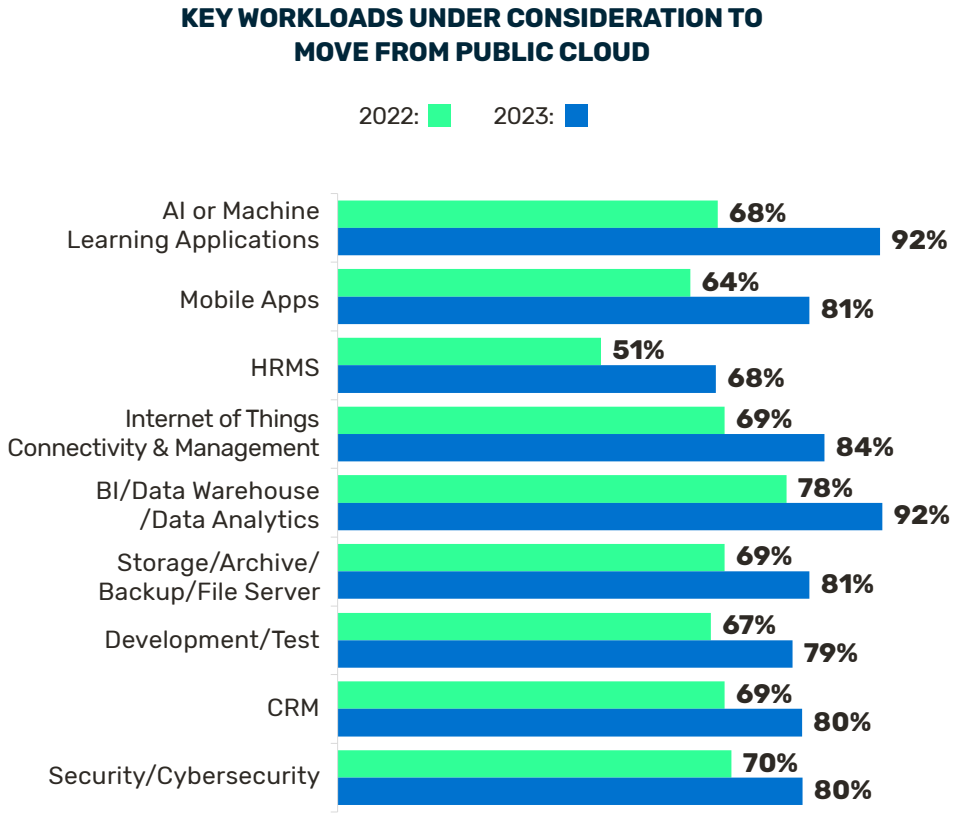

FIGURE 3: 2023 State of the Data Center Report, Foundry

"Some enterprises now rely on myriad public cloud services and on-premises platforms supporting many generations of bare metal, virtualized, and cloud native computing and storage," writes Mary Johnston-Turner of market intelligence firm IDC.[5] "Many developers have built dependencies around specific public cloud APIs or service offerings, and organizations often suffer from sticker shock related to the cost of public cloud storage, maintaining high-availability service levels, and/or data egress fees."

IT leaders are continually evaluating the best and most operationally efficient environments to meet business objectives with different workloads. The *2023 Data Center Report* survey finds that private cloud colocation and on-premises private cloud far exceed the use of workloads in the public cloud.

Colocation houses a larger percentage of workloads than public cloud in all application areas, and is particularly strong for BI, data warehouse, and analytics; disaster recovery and high availability; storage, archive, and backup; and mobile apps. Colocation is the preferred choice for more workloads than on-premises databases in most areas, but on-premises leads for AI/ML, and development and testing.

The *2023 Data Center Report* illustrates that decision-makers are more open than ever to moving critical workloads from public cloud to colocation, with AI/ML, IoT, and BI topping the list (see Figure 3). In fact:

are considering moving AI/ML applications (up from 68% in 2022)

are considering moving IoT connectivity and management applications (up from 69% in 2022)

are considering moving BI/data warehouse/data analytics (up from 78% in 2022).

With the sudden uptick in interest for generative AI applications, like ChatGPT, many organizations are scrambling to determine if and how to invest, so they do not fall behind competitors. "Businesses aren't yet prepared for successful implementation: 65% of senior IT leaders can't justify the implementation of generative AI at the moment," according to a Salesforce survey report.[6]

Generative AI is based on large language models that involve massive amounts of data. "Such large natural language processing models require significant computational power and memory, which is often the leading cause of high infrastructure costs," according to Neptune.ai.[7] Organizations may find readily scalable colocation services a less risky option to step up generative AI efforts, rather than building out new facilities themselves or incurring public cloud storage and infrastructure costs for a commercially embryonic technology.

Some organizations may also find colocation a preferred option for implementing edge strategies. According to research firm GigaOM, "By moving data processing closer to the end user, edge colocation lowers jitter and latency and reduces traffic congestion, increasing the opportunity for dynamic personalization and providing a better [quality of experience]."

"Leveraging private networks (including 5G), software-defined networking, and network function virtualization, edge colocation data centers are generally smaller, decentralized facilities that provide compute and storage closer to where the data is generated and/or processed rather than backhauling it to regional colocation facilities or cloud data centers," GigaOM explains.[8]

CoreSite's Senderhauf says that colocation services are increasingly reaching a larger audience. "Colocation has always been one of the key strategies for larger, forward-thinking companies, but now more small- and medium-sized businesses are seeing the advantages of colocation that these larger enterprises and networks have benefited from over the past couple of decades."

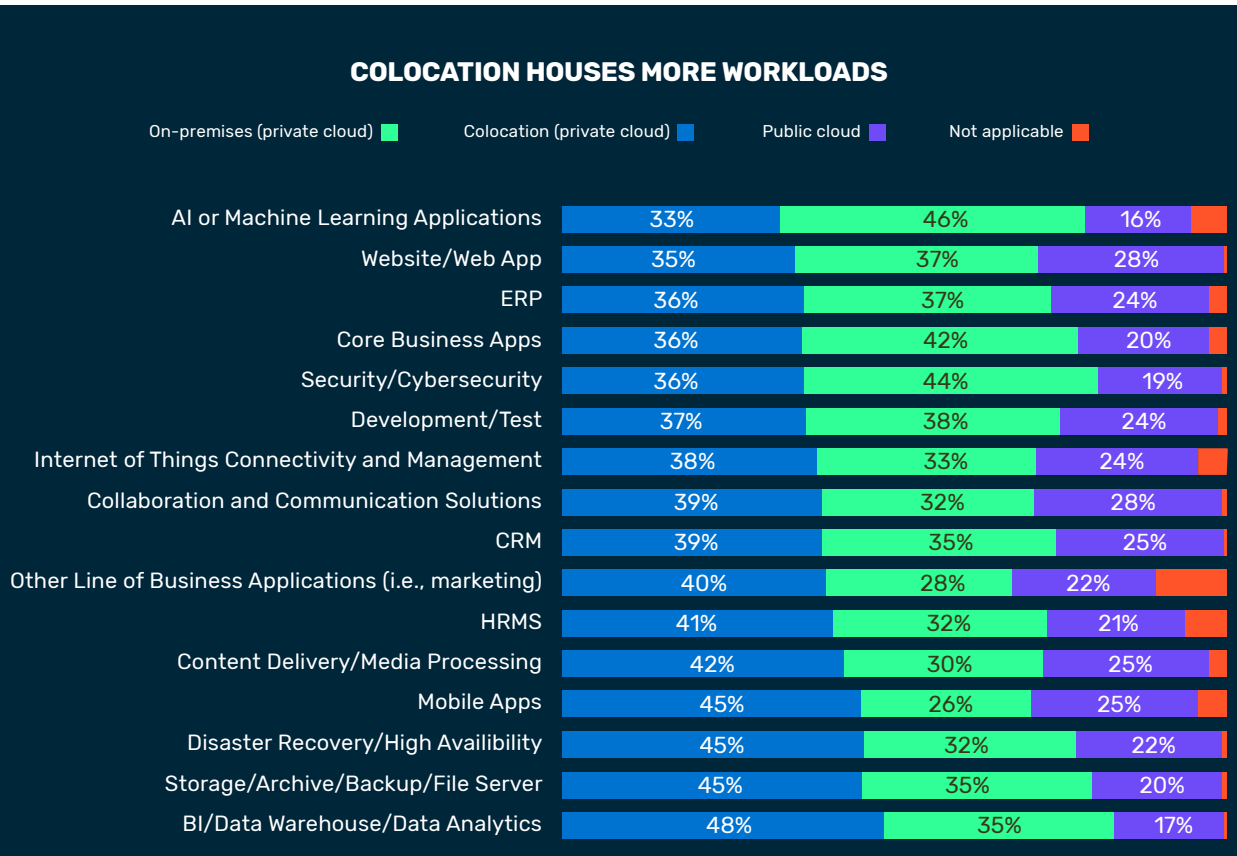

FIGURE 4: 2023 State of the Data Center Report, Foundry

Accelerating digital transformation with colocation

The high-performance, low-latency connectivity options that colocation data centers typically offer can help workloads operate more efficiently and effectively and accelerate market expansion and growth as companies pursue their digital transformation journey.

According to IDC, "Making the right decisions about where to invest in digital infrastructure modernization and integration will fundamentally impact an organization's ability to execute its digital business agenda.

Globally, many organizations have invested in hybrid and multi-cloud strategies to replace or augment traditional on-premises data centers. In general, the motivation for the move to hybrid and multi-cloud approaches has been to better align IT spending with business priorities and empower developers with on-demand access to highly scalable infrastructure and advanced IT services."[9]

HOW COLOCATION HELPS ACCELERATE DIGITAL TRANSFORMATION

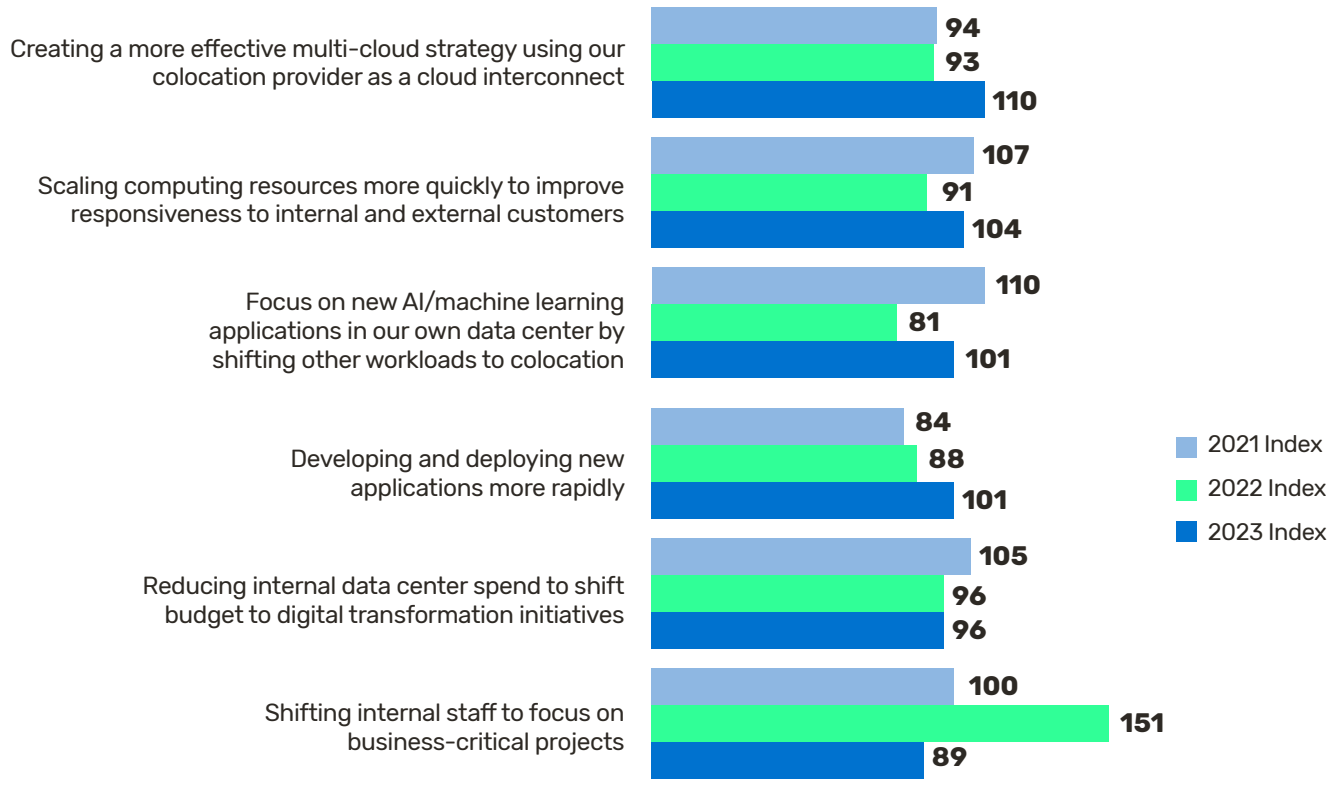

FIGURE 5: 2023 State of the Data Center Report, Foundry

What to look for in a colocation provider

Colocation provides scalability, access to high-performance computing resources, improved connectivity, cost savings, and access to expertise, all of which are essential in the shift to digitalization of business.

"Colocation for us is like getting a condo," says a banking IT executive in a follow-up interview discussing his responses to the survey. "I'm not responsible for the property, for the building, but inside my condo I'm responsible. We're not like Facebook where we would take 80,000 square feet of the colocation facility. However, we get all the benefits of resiliency, power, security, and [we] have a 'data center.'"

Choosing the best-aligned colocation provider for your organization requires a rigorous evaluation process. Security is the most important attribute that 2023 survey respondents look for in a colocation provider, followed by performance, both of which leapfrogged their standing in the prior year survey. (See Figure 6.)

CoreSite's Senderhauf says organizations can look at the historical uptime performance of facilities and providers as a measure for comparison. As companies develop their edge strategies, they can evaluate the current and planned geographic footprints of potential colocation partners to determine which will best be able to grow and expand with their needs.

With many organizations increasingly relying on managed services, knowing the digital ecosystem of partners that a colocation provider can provide ready access to is a key selection criterion. Flexibility to adjust the equipment and deployments within colocation facilities is another critical issue for organizations that want to avoid being locked into equipment commitments that may not meet their future needs.

"It's important that you do your research to ensure that you're deploying with a company with a proven operational record and trusted reputation," advises Senderhauf. "Find a provider that is well-funded and able to grow with you, so your growth is not stalled, and you can meet your business objectives."

WHAT IT LEADERS WANT FROM COLOCATION

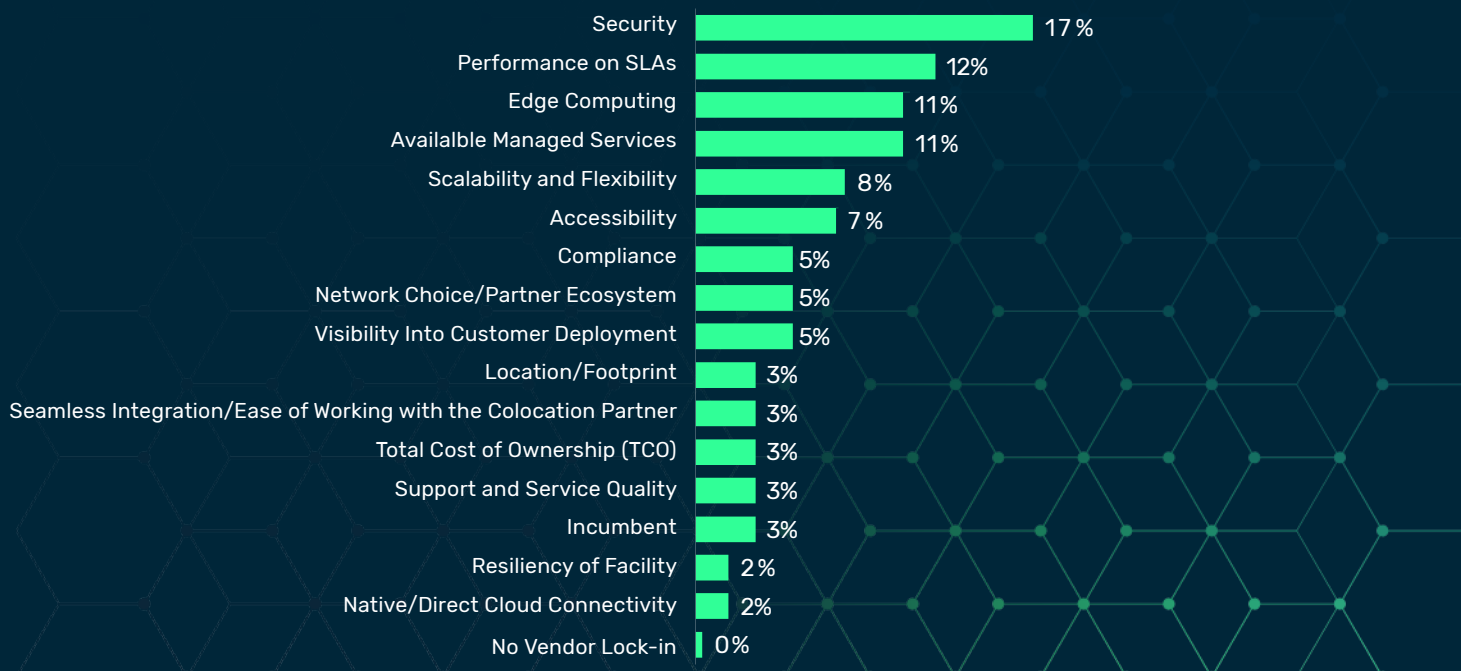

FIGURE 6: 2023 State of the Data Center Report, Foundry

CoreSite, the intersection of interconnection

CoreSite provides an IT nexus where all major cloud providers, service integrators, networks, and fellow enterprises interoperate in a digital ecosystem that can foster collaboration and accelerate business initiatives. Customers can take advantage of options ranging from single cabinets to large cages, to dedicated computer rooms – while achieving high performance with access to 23 direct cloud connections.

As an American Tower Company, CoreSite operates 28 highly interconnected data centers, totaling more than 4.7 million square feet, in 10 strategic markets across the U.S. The network-rich, cloud-enabled data center campuses are tethered by high-count dark fiber, enabling scalable growth within and access between markets. Additionally, the financial backing of Fortune 373 American Tower, together with Stonepeak, means CoreSite has the wherewithal to grow with customers to anticipate and deliver future-ready solutions.

The Open Cloud Exchange® (OCX) is CoreSite's virtual routing and software-defined network solution to enable interconnection to multiple clouds, between clouds, markets, and sites. With robust cloud and network connectivity options, customers can connect geographically diverse deployments or improve multi-region cloud architecture. OCX enables simple, reliable, and cost-effective connections to third parties. And its real-time provisioning, and month-to-month licensing structure, increases your operational flexibility and agility.

Learn more about CoreSite's colocation services that enable enterprises, cloud, network providers, and digital platforms to build and deploy custom hybrid IT strategies at **CoreSite.com.**

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