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Evolving Onwards: Data Centers in 2021 and Beyond

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2020 has been a momentous year. A global health crisis has fundamentally shifted the way we live, work and communicate — perhaps forever. In the wake of social-distancing protocols, digital tools have become a day-to-day mainstay, driving our reliance on networks, data centers and the data that flows through them to an unprecedented level. In just the first few weeks of March 2020, reports [observed](#) an 18 percent increase in U.S. in-home data usage compared to the same period in 2019. Average daily data usage rates exceeded 16.6 GB, all by virtue of people connecting to business frameworks, online schooling, streaming applications, and more.



Technology and communications providers have rushed to pivot in recent months, becoming more agile and more capable in order to better serve the rising demands of enterprises and communities. However, the impacts of 2020 are far from over. The developments we're seeing now are only the initial indications of what is sure to be an accelerated move toward more remote workplaces, online application use and complex IT infrastructures. This begs the question, how are we preparing for ongoing change?

The hybrid data center

Hybrid data centers have continued to gain traction as data mobility, dynamic application usage and distributed IT frameworks demand greater agility, geographic reach, optimized performance and more. Hybrid facilities are data centers that employ virtualization, software-defined networking and cloud connectivity to help distribute enterprise workloads across a variety of physical and cloud-based environments. Because the advantages of private or public clouds and

data centers each suit unique use cases, a hybrid facility allows businesses to allocate their workloads flexibly to suit individualized application needs. This has become imperative for business success in recent months as workplace models change.

Now more than ever, companies are granular. As more demands need to be met, more partners, digital platforms and web-based services are being integrated. IT is now far from a one-stop-shop situation. Still, as businesses are being pressured to adapt and remain ahead of change, they're looking to shift control to maintain simplicity where possible. This means outsourcing. As digital diversification remains strong in the face of new requirements, the hybrid data center is likely to continue gaining popularity for its ability to cost-effectively meet a variety of needs across an array of technological destinations.

Colocation: the golden goose?

Increasingly complex enterprise requirements are also directing data center decisions in a much more fundamental way. Today, we see that for many businesses, the choice between managing and maintaining an on-premises data center or outsourcing to a colocation provider is becoming more clear-cut. Data centers must now be able to reliably accomplish more than what many in-house teams can reasonably achieve, and as complexity rises, so does the cost of maintenance. These are just a couple of the factors tipping the scales from a cost-benefit perspective. Overall, in an age when the stakes are higher than ever and a misstep in the data center can spell disaster, more enterprises are looking to leave behind the data center operator role.

Many organizations are finding that housing their privately owned IT in a third-party, Tier III data center, which is maintained by expert teams as a core competency, is an ideal solution. Colocation does more than help enterprises achieve optimized security, reliability and agility when compared to on-premises facilities; it also reduces cost and complexity and allows internal resources to be trained on strategic growth. It's been [predicted](#) that the global colocation market will reach \$62.3 billion by 2022 at a compound annual growth rate of 14.6 percent, and we're likely to see market share continue to exceed these marks.

Keeping it simple

With digital transformations being accelerated, it's becoming clear that time is a luxury. Today, speed seems to practically rival efficacy when it comes to integrating new IT, which means that simplified plug-and-play data center solutions are in demand. Enterprises can't afford to deal with 15 network companies and eight data centers in order to figure out what they need. They require a consumer environment that is navigable and accessible so they can get a solution now.

We're seeing the traditional data center service and site selection process undergoing a shift. Many potential tenants are seeking out third-party technology consultants that broker and streamline the decision-making process, changing the way data center services are sold and consumed. Now, distance is being created between the provider and the tenant, saving the buyer time by allowing them to bypass the process of establishing and selecting from a pool of many

prospective operator partners. This means that we may be seeing a departure from high-touch, service-oriented customer approaches, at least when it comes to attracting tenants. While this is a change that may make some data center providers feel ill at ease, it's all-in service of agility — an indispensable asset in a rapidly evolving world.

Adjusting agreements

Technology consultants aren't the only new entities we can expect to see more of in data center service transactions. If we continue at the rate of technology development exhibited recently across the Internet of Things (IoT), Artificial Intelligence (AI), 5G and edge computing, distribution agreements may be the new frontier of data center consumption. This doesn't mean that data centers will be selling to giant telcos, but it will mean that we'll see more managed service provider (MSP) partnerships with data centers. This arrangement allows the MSP to serve thousands of customers from inside the data center through on-demand space, power and connectivity. Again, this shift stems from the need for data center services to remain highly accessible so businesses can easily and quickly make mission-critical decisions.

If we think about why this is happening from the perspective of business costs on the customer side, it's clear why an MSP-driven model is beneficial. The most expensive elements of running a company often come down to people with salaries and benefits. With colocation services through an MSP, the enterprise can shed the costs of an internal IT team while still achieving their goals. From the data center provider angle, this is yet another driver for the customer-focused, traditional colocation models being phased out. With finances experiencing ongoing strain in 2020, this is a tradeoff that we're likely to see grow in popularity.

Supporting a distributed future

Cutting-edge technologies like AI, IoT and 5G — and the many next-generation use cases they bring with them — are altering technology's operational and delivery mechanisms from the ground up. Reliant on ultra-low latency and the highest levels of data mobility, things like self-driving cars, intelligent sensors, connected healthcare wearables and more are creating a new focus on the edge. This means that data centers are now part of an evolving distributed infrastructure topology aimed at helping storage and processing remain closer to the information's point of origin to ensure the highest levels of performance. This paradigm shift has been compounded by the recent focus on the individual users at the edge of the network. As remote workers conduct business from the home with video conferencing or collaborative platforms and services like streaming achieve record usage levels, this new edge is where data centers are going to allocate more of their attention.

Initial edge computing developments have seen containerized data solutions springing up everywhere, and machine learning and orchestration techniques are being used to operate them. Still, AI needs a lot of space and investment to thrive at a level that meets continually evolving demands. While deployments at the edge are not a new concept, these locations are now being recognized as prime territory that can be used to position both operators and users for long-term

success. Infrastructure developments that build on these edge solutions are sure to help shape the future of the data center landscape.

An evolution in review

The pace at which our global economy is digitizing has been ramping up for some time, but 2020's widespread disruption and subsequent digital acceleration has catalyzed an era all its own. Characterized by heightened demand for all things virtual, 2020 has accelerated the diversification of requirements as everyone seeks to achieve the proverbial 'new normal.' Yet we also see these changes following some common threads.

At the core of this era of adaptation is a ubiquitous demand for more: more geographic reach, connectivity, storage, security, bandwidth and beyond. Still, these business enhancements, regardless of their end goal, are built on speed and simplicity. These two factors underscore the new digital transformation, driving an evolution in the way IT and communications are being sought and integrated. As the need for simplicity grows, enterprises are turning to colocation and hybrid models, and as the need for these quick infrastructure deployments becomes established, new buyer and seller relationships are built to serve these timelines.

Our amplified and collective reliance on technology must find its niche in the data center industry, and it has already begun to carve a space for itself, perhaps at the expense of traditional models. 2020 has cemented the idea that technology seems to continually reiterate: the only constant is change. Nevertheless, the future holds greater opportunity for it, delivering more resilient systems and stronger models that will serve us well as we look toward tomorrow.