

Pandemic Impact: COVID-19 Evolves the Data Center



COVID-19 & Data Center Overview

Cloud services and data center demand were already on the rise prior to the COVID-19 pandemic.

Lockdowns understandably accelerated this growth even as the economics of other industries shifted

significantly. The Cloud has long been touted as the future – allowing for scalable, on-demand resources to suit the needs of clients and users. It soon became clear that the world would not be the same again; the need for computing and remote access reached all new heights. Organizations adjusted their budgets and forecasts accordingly, especially due to increased pressure on IT, with cloud and data center providers looking for ways to expand or consolidate their assets where necessary.

Data Center Growth During COVID-19

Prior to the outbreak of COVID-19, multiple industry estimates had data center growth pegged at a compound annual growth rate (CAGR) of between 3-5% from 2019 to 2023, according to a publication by Deloitte. The pandemic led to this rate being surpassed significantly in 2020-2021 for a variety of reasons. The rapid growth and updating of data center services to meet consumer and organizational needs led to a sudden surge of additional servers. Companies around the globe readjusted their IT strategies and budgets with a particular focus on cloud security. To meet a wide geographical need, data centers were also set up locally as needed.

Cloud and data center providers – especially the big names, from Google Cloud to Microsoft Azure to Amazon AWS – reaped immediate benefits. In the period through 2021, it's estimated that up to 80% of their revenue was due to COVID-related boosts. These companies also saw an aggregate 15% increase in year-over-year (YoY) revenue, both results according to the Synergy Research Group. The already optimistic estimates were far out-stripped in response to unprecedented demand. Of course, this sudden and prolonged surge in data center utilization also brought with it new challenges.

Data Center COVID-19 Challenges

Rapid growth in demand also meant growth in budgeting – and with a greater budget, more scrutiny was placed on IT departments. Due to usage patterns, there was also a change in payment models for these services. Of primary concern, though, was cybersecurity, as firewalls were only a partial solution. This

includes Unified Threat Management (UTM, see our other blogs on the topic) as a multi-pronged approach with singular control. UTM was particularly useful as during the pandemic there was a massive increase in spam, online fraud, malware, spoofing, and more.

Clients and users need a wide variety of cloud services and solutions. There's no one-size-fits-all solution, so the versatility of the cloud has been stretched to the limit. Getting the best return on investment after stabilization of demand is critical – services must be adapted while remaining competitive. As such, enterprises have focused on the effective use of data center infrastructure, especially organizations that were forced to modernize more rapidly than previously expected. The data center, cloud, and hybrid cloud, have thus become the IT backbone, due to increasing reliance on such services.

COVID-19 Requirements

The overall paradigm shift also means that there are additional concerns for the data center and proper use of these increased resources. For example, there is a need for enhanced health and safety provisions. This is especially true for on-site staff as it may be difficult to replace or substitute labor if there is an organizational outbreak. Under this heading is also cybersecurity as mentioned above, but it is extra important to secure data within the new framework. Improvements to security, both physical and digital, are a foremost concern.

Data centers must also emphasize support for mobile or remote employment – people are working from home or from outside the place of business at a much higher rate. This has driven growth in virtual desktop infrastructure (VDI, see our blog for more information) as one example. Other business processes must be automated, which could be as simple as self-checkout in a grocery store; this further increases the pressure on data centers. In fact, the overall diversification of cloud services has become its own challenge. This has led to the migration to a pay-per-use model, for example, reflecting the changing needs of clients.

COVID-19 Questions

These new requirements have brought a lot of questions to those trying to deploy data center solutions. For example, how can the data center be used safely and securely, including with on-site staff? New customers and their evolving needs means that existing models have to be reconfigured. Part of this is a physical change, for example with a shift to colocation in the data center. The other part has to do with purchasing habits, as different companies now have new challenges or opportunities due to the pandemic.

The need for flexibility has led to the pay-per-use model but also data center construction or consolidation – this of course involves the traditional trade-off of space. Organizations that had already taped out years in advance, including their capital expenditures (CapEx), have found themselves having to adapt their contracts. How does this impact future data center orientation? In many cases this can mean partnering for co-development, or simply outsourcing. Many organizations instead have chosen to change their paths all-together, adapting to labor shortages and increased cloud opportunities.

Storage & Summary

Underlying all of this unexpected growth lies the secret ingredient: storage. As demand for cloud services has soared, so has data center usage and expansion. This of course means more storage for client and consumer data. Further, the growing number of interactions online increases the need for storage performance. Therefore, both SATA and NVMe™ drives are in demand even as supply chain woes appear on the horizon.

Rapid data center growth has brought new challenges, especially in the arena of security; see our blogs covering the storage side of this, with things like Secure Boot and Self-Encrypting Drives (SED). Increasingly there is a need for both online transaction processing (OLTP) and Online Analytical Processing (OLAP) both of which require SSDs in order to be effective and efficient. Flexibility is

paramount, which not only means convenient form factors but also the ability to scale within a physical space. SSDs are ideal here, especially from a total cost of ownership (TCO) perspective due to the prolonged pandemic. Regardless if you're a small organization implementing your first hybrid cloud, or a larger provider of cloud services, you need reliable storage. Here at SSSTC, we have you covered.

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