



NCREIF Virtual Fall Conference 2020

Sector Shakeout: Data Centers – Growth Just Beginning

November 12



Data centers and the pandemic

Trends that emerged quickly



1 WORKING FROM HOME
Cloud services and video conferencing are assisting workers with replicating the in-office experience, albeit only if provisions have been made for these services.



2 INTERNET TRAFFIC SPIKE
Internet traffic has hit new heights as people work, play, and stay informed at home, 24 hours a day.



3 COMPROMISED PERFORMANCE
Cloud services and video conferencing are assisting workers with replicating the in-office experience, albeit only if provisions have been made for these services.



4 DATA CENTER STAFF ARE ESSENTIAL
Mission critical means mission critical, and data center staff are absolutely required to work to keep the rest of the world online.



5 BEST PRACTICES
Constant review of IT infrastructure is imperative to avoid outages and prepare a business for disruptive events such as COVID-19.



What's driving this change?

Differing needs across the ecosystem

CORPORATE OCCUPIERS

- Modernizing IT through “**Digital Transformation**”
- Cloud first approach
- ... but not cloud everything

COLOCATION PROVIDERS

- Attract long-term corporate tenants
- New market expansion
- Following the cloud

CLOUD SERVICES

- Scalable global IT applications
- Rapid global development
- 100-200 acre greenfield acquisitions

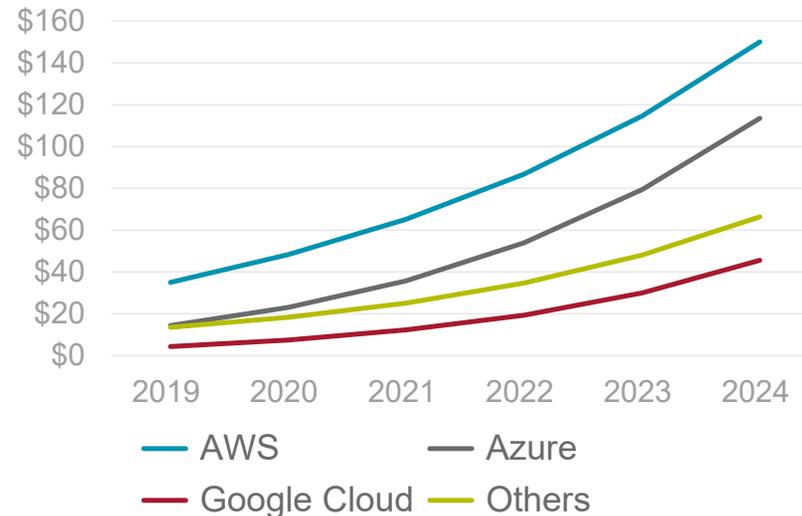
INVESTORS

- Attractive returns/long-term tenants
- Single asset and portfolio acquisitions
- JV partnerships with operators

Data Center Growth

2020 has pushed data centers to the forefront

- Medium- to large-size corporations have moved into emergency mode with their IT infrastructure to keep up with a distributed workforce, with major workloads shifting to cloud services providers. In turn, these services (Microsoft, Amazon, Google, etc.) are planning further global expansion and will be entering many **secondary markets** over the next two years.
- Revenue of major cloud services providers were mostly up in Q2: Microsoft 13% YoY (with Azure up **47%**), Amazon 40% YoY (with AWS up **29%**), Google -2% YoY (although Google Cloud was up **43%**). As people learned how to work from home those companies that planned for a scalable, distributed IT infrastructure via these or other cloud services had far less disruption to daily workflow.
- Major data center REITs remain focused on expansion to serve both large cloud services companies and corporations looking for further disaster recovery options and/or scalability. The five main US-based data center REITs are planning to spend over **\$7 billion** on current development over the next two years.



AWS- 328%	Others- 389%
Azure- 687%	G Cloud- 950%

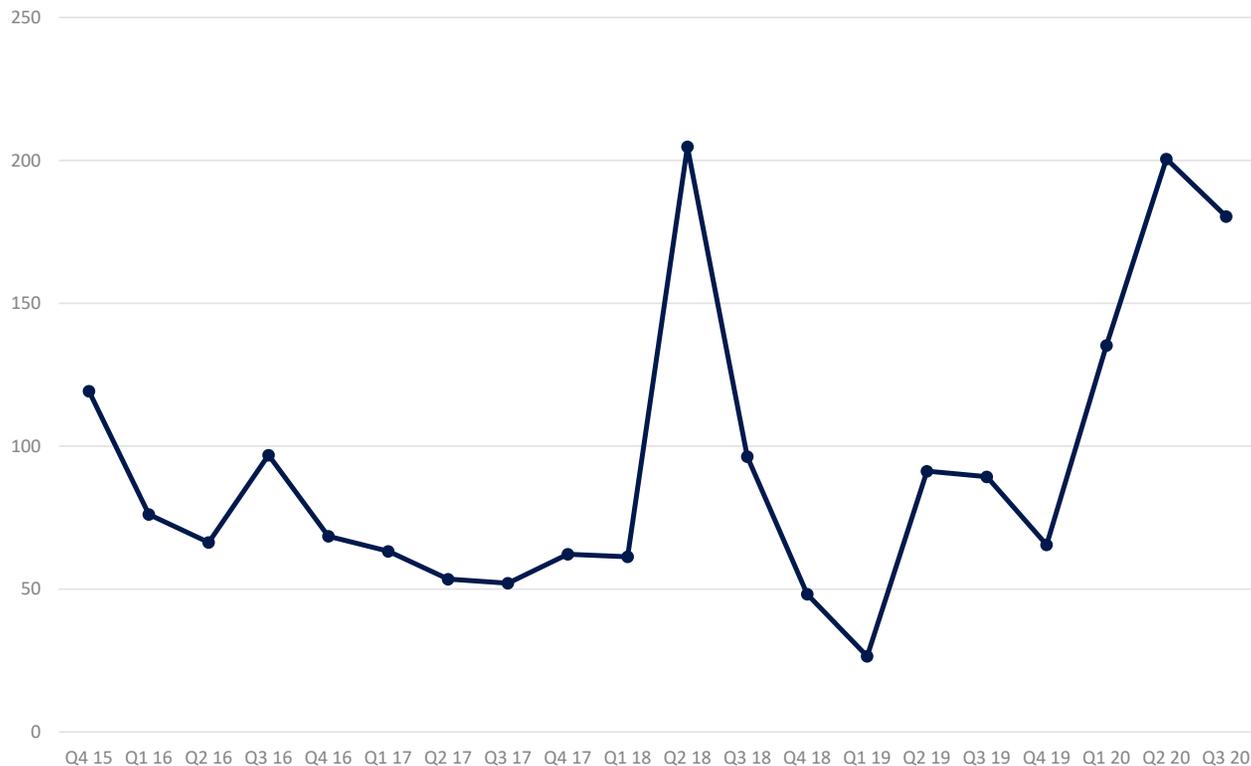
Structure Research





Record Absorption in 2020

Cloud Adoption means More Leasing



C&W Research, datacenterHawk

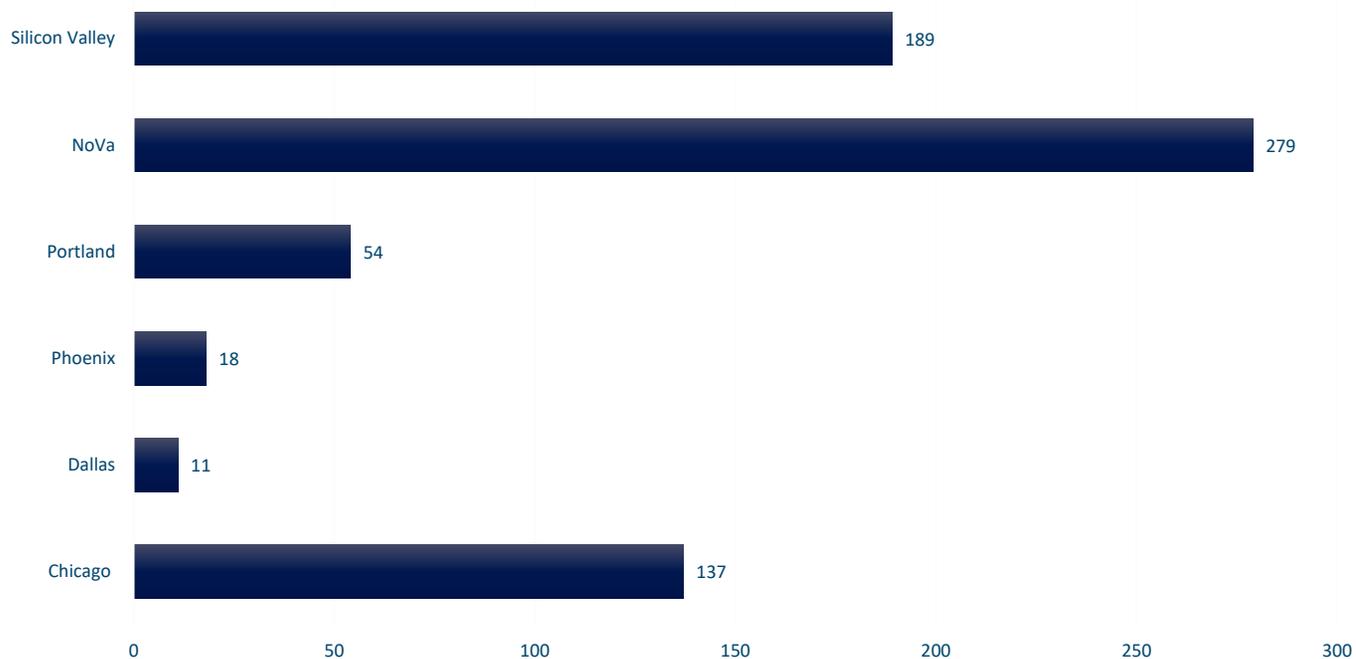
- The largest cloud services providers have used all their previously taken capacity from 2018 and require more.
- Microsoft alone rolled out 100 MW of new capacity from the end of Q1-Q2.
- Another 180 MW absorbed in Q3!

Construction- Key US Markets

Several markets growing as workloads move



Under Construction (MW)



- **NoVa demand remains insatiable, with all major players under construction**
- **Despite considerable costs in land and development, hyperscalers and colo operators alike are building in Silicon Valley**



Investment- Corporate Level

Large funds deploying capital- investors available!



- \$20-30B invested in data center sector each year over past three years, mainly on company formation, development
- Scalability is key going forward; who can enter primary/secondary markets globally?



Investment- Deal Structure

Data center deals are getting done, but for different reasons

Operator Expansion

- Acquisition of currently operational assets (often through a purchase option) for expansion
- Single buildings beget campuses; largest clients require ever-larger capacity

Sale-Leaseback

- As large corporations move to the cloud, certain facilities may no longer be required
- Investors receive credit tenant for period of migration, often in primary/secondary markets

Joint Venture

- Investors have interest in the sector, yet are uncomfortable with operating the asset
- Teaming up with an established operator provides an avenue for entry

2021- Possibilities?

More of the same... and then some



- Expect further take-up of major cloud services by large enterprises as **hybrid IT** continues to come into its own. Many colocation providers will be the recipients of additional deployments for workloads that are not headed into the cloud.
- Further consolidation of operators is expected globally, as the largest players look to gain market share across an ever-greater geographical platform. This consolidation will assist in the growth of growing markets that we would currently consider **secondary or tertiary**.
- **Billions** of dollars is looking to enter the sector but is having trouble finding a home; might 2021 bring further large buyouts as private equity funds, sovereign wealth, and pension funds continue to acquire?



Q&A

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