

Overview of Issues Impacting Data Centers in 2021

- Overall Multi-Tenant Data Center (MTDC) leasing activity during 2021 was as strong as 2020. Multi-market leasing activity by Meta (Facebook) contributed to the success of 2021 and this will continue during 2022.
- New products from the hyper-scalers, such as Amazon (burrows), and artificial intelligence contributed to this new activity.
- Developers with built-out data centers are able to fill in the gaps to meet the short-term needs of these companies that otherwise do not have time to build on their own campuses.
- While overall the activity continues to favor Northern Virginia, Hillsboro was second strongest market in the country during 2021 with strong leasing by Facebook, Twitter, Nvidia and Intel.
- In addition, Phoenix and Dallas each had record years for leasing and Chicago rounded out the top five.
- Microsoft had a marked decrease in its leasing activity in 2021, but it is still building several properties on their own that were purchased in 2020.
- Good leasing activity in 2021 driven by strong demand, limited existing supply and over-negotiating by tenants provided landlords with a seller's advantage opting for better terms or stronger credit tenants.
- Hyperscale and larger enterprise users are demanding longer ramp times of space, power and land reservations and it will provide a dichotomy between developers who allow versus pay to play.
- 2021 saw an uptick in demand from enterprises but leasing activity remained sluggish. Some companies are adding smaller suburban disbursements (under 30 racks) to accommodate employees working from home instead of at regional offices.
- Metaverse is under construction on over 7MM square feet on their owned campuses in the U.S. expanding in Altoona, IA, Sarpy, NE, New Albany, OH, Gallatin, TN, Henrico, VA, Mesa, AZ, and Eagle Mountain, UT.
- During the past 10 years, enterprises building their own data centers has been limited. Cybersecurity concerns have seen an increase of financial firms contemplating building their own data centers or creating a "building within a building" as an alternative to using the cloud or colocation.
- Columbus continues to emerge as a strong tertiary market with its power base buildings leased by Amazon. Overall limited third party offerings and leasing.
- The Los Angeles area had a resurgence led by Serverfarm's success after acquiring T5's El Segundo property.
- Overall, the supply chain has experienced minor issues, but strong demand has led to increased labor costs. One potential concern that has arisen is the 24–36 months lead times on transformers used at utility substations.
- Overall investment activity in 2021 has topped all other years, driven by investors fleeing the hospitality, retail, and office sectors; the number of bidders including both U.S. and foreign investors reached a peak in 2021.
- A marked compression of cap rates on single- and multi-tenant assets was seen in 2021 (more than 100 bps in some cases); Two large portfolio sales accounted for 38 of the assets.
- Sale-leasebacks of corporate data centers increased in 2021, and there should be a significant uptick during 2022.
- Cap rates in data center sales are still not materially impacted by shorter-term leases.
- After eight years, edge data centers are still seeing only a fraction of the overall leasing activity.
- Cyxtera, Lumen, INAP, Cologix, Tierpoint, and their colocation peer group are expected to contribute to overall leasing activity during 2022.
- In 2017, there were 6 wholesale leases at least 10MW and none over 25MW; in 2020 there were 6 wholesale leases over 40MW and 17 that were 10MW or over. In 2021, there were 11 leases over 30MW.
- To accommodate these mega-leases, developments need to be much larger in the future. Winners will be those developers that build speculatively and can provide immediate plug and play solutions.
- These larger leases will drive larger investment transactions and we could see single properties fetching over \$1BN.
- Environmental, social, and governance (ESG) concerns continue to dominate developers' and tenants' thought related to building and leasing properties.

Largest Wholesale Turn-Key Leases in 2021

TENANT	MARKET	PROVIDER	MW
Meta	Manassas, VA	Cloud HQ	80
Twitter	Hillsboro, OR	DLR	48
Meta	Houston, TX	CONE	36
Meta	Phoenix, AZ	CONE	36
Meta	Hillsboro, OR	QTS	35
Tik Tok	Leesburg, VA	Compass	32
Meta	Aurora, IL	CONE	36
Tik Tok	Ashburn, VA	DLR	30
Tik Tok	Ashburn, VA	Aligned	30
Meta	Ashburn, VA	Cloud HQ	30
Meta	Dallas, TX	Compass	30
Apple	Ashburn, VA	DLR	15
Apple	Elk Grove Village, IL	DLR	15
Microsoft	Phoenix, AZ	Edgecore	15
MSFT	Elk Grove Village, IL	Stack	12
Oracle	Chandler, AZ		10
Google	El Segundo, CA	Serverfarm	10

TENANT	MARKET	PROVIDER	MW
Nvidia	Hillsboro, OR	Flexential	9
Intel	Phoenix, AZ		9
wb3	Dallas, TX	NTT	6
AWS	Itasca, IL	NTT	6
Nvidia	Reno, NV	SWCH	5
Uber	Goodyear, AZ	Compass	5
AWS	Chicago, IL	QTS	4.5
Intel	Hillsboro, OR	Flexential	4.5
Schwab	Phoenix, AZ	Stream	4.5
Schwab	Dallas, TX	NTT	4
Dell	Las Vegas, NV	SWCH	3
Dell	Atlanta, GA	SWCH	3
Apple	Austin, TX	SWCH	3
Sony	Dallas, TX	Carrier-1	3
Hunington Bank	Grand Rapids, MI	SWCH	2
Google	Las Vegas, NV	SWCH	2

Companies That Sold During 2021

Seller	Acquirer	Total Price	2021E EV/EBITDA	Offer Per Share	Number of Properties	Sq. Ft.	Occupancy Rate	Closing Date	Avg. Remaining Lease Term
Data Foundry	Switch	\$415.6 MM	19	N/A	4	650,000	Undisclosed	6/7/21	undisclosed
QTS	Blackstone	\$10 BN	29.5	\$78	21	7.8 MM	92.8%	8/31/21	39 months
Coresite	American Tower	\$10.1 BN	29	\$170	25	4.6 MM	83.8	12/28/21	50 Months (10 largest tenants as of 12/31/20)
CyrusOne	KKR/Global Infrastructure Partners	\$11.5 BN	25.5	\$90.50	50	8.6MM	86%	Q2 2022*	51 months (9/30/21)

Capitalization rates and EBITDA multiples are provided from sources deemed reliable.

For the largest wholesale transactions, the numbers set forth represent what is believed to be the total

Big Red Wines We Really Enjoyed in 2021

**Joseph Phelps Napa
Cabernet Sauvignon 2017 (N+1)**

**Trefethen Napa
Cabernet Sauvignon 2017 (N+1)**

**Robert Mondavi To Kalon The Reserve
Cabernet Sauvignon (N+1)**

**Chappellet Sonoma
Mountain Cuvee 2019 (N)**

**Coho Napa
Cabernet Sauvignon 2016 (N)**

**Celani Family
Tenacious Red Wine 2017 (N+1)**



Investment Activity 2021

Buyer	Seller	Date	Size SF	Market	Sales Price	Comments
Stack Infrastructure	Hackman Capital	1/21	55,189	San Jose, CA	\$15MM	
Vantage Data Centers	DR Stephens	2/21	133,631	Santa Clara, CA	\$40MM	
Mapletree	8011 Villa Park LLC	2/21	701,321	Richmond, VA	\$208MM	
Equinix	GI Partners	3/21	216,114	Montreal, CN	\$50MM	
Menlo Equities	GI Partners	3/21	107,000	Chicago, IL	\$37.25MM	10 year Tierpoint NNN - 6% cap rate
Blackstone	Vadata	3/21	115,000	Manassas	\$18.9MM	
Serverfarm	T5/IPI	3/21	116,737	El Segundo, CA	\$71MM	
Starwood Capital	Digital Realty	4/21	132,280	Ashburn, VA	\$88.13MM	
Element Critical	Skybox	4/21	96,129	Katy, TX		5.65% cap rate
Cologix	Stephens Group/ vXchnge	4/21	83,020	Santa Clara, CA	\$58.10MM	This sale included business operations
Divco West Services, LLC	Jamestown & Netrality	5/21	223,000	New York, NY	\$135MM	Carrier Hotel managed by H5
Blackstone/COPT JV	COPT	6/21	432,000	Sterling, VA	\$119MM	(2) Powered Shells
Databank	Woodspear	6/21	107,900	Centennial, CO	\$15MM	
CBRE Global Investors	Von Karman	6/21	395,673	Orange County, CA	\$180.7MM	Cyxtera & AWS are tenants
USPP Sunrise	Lincoln Property	6/21	33,560	Sunrise, FL	\$26MM	18 years remain on 20 year lease
TBD	Lincoln Property	6/21	74,000	Nottingham, MD	\$14.85MM	Comcast recently renewed
VADATA	Truist	6/21	406,920	Sterling, VA	\$179MM	(2) Powered Shells
Mapletree	Sila (formerly Landmark Dividend)	8/21	3.3MM	Various	\$1.3BN	29 Building Portfolio sale, est 5.2 cap rate
Exeter 1890-1900	Digital Realty	6/21	241,676	Chandler, AZ	\$19.225MM	Office Campus including 123,688sf Data Center
Legacy Investing/Invesco	Viawest	8/21	101,324	Plano, TX		Sale Leaseback by Flexential
Novva Data Centers	Progressive Insurance	8/21	178,000	Colorado Springs, CO	\$38.5MM	Partial Sale leaseback by Progressive
Databank	SKAE Group	9/21	225,000	Orangeburg, NY	\$23MM	
DLR/Prudential	Menlo Equities	9/21	1.06MM	Various	\$581MM	9 Building Portfolio, est 5.7 cap rate
Expedient	BCBS of Arizona	10/21	45,000	Phoenix, AZ	\$11MM	2.4 MW
Hana Fund	H&R Reit	10/21	79,682	Lithia Springs, GA	\$101MM	Approximately 8 years remaining on PWC lease
WSP Burnham, LLC	KCMJ Investments	10/21	66,685	Milwaukee, WI	\$4.66MM	Tenants include Tiepoint, Graff, Meridian
Vantage SDC (JV DBRG & VDC)	Vantage Data Centers	10/21	175,000	Santa Clara, CA	\$539MM	24MW with Microsoft & Nvidia as anchors
1547/Harrison Street	1547/CIM	10/21	35,000	Cheyenne, WY		
1547/Harrison Street	1547/CIM	10/21	66,204	Chicago, IL	\$27.4MM	5.68 cap rate
1547/Harrison Street	1547/CIM	10/21	232,000	Orangeburg, NY	\$132.5MM	5.68 cap Rate
Five 9s Digital	Landmark Dividend	12/21	49,720	Kannapolis, NC	\$11.4MM	NorthState Technology- 5.7% cap rate
The Hines Group	Digital Realty	12/21	179,800	San Jose, CA	\$59.6MM	Rackspace leases 5.4MW
AP Wireless	Immedion	12/21	84,000	Columbus, IN	\$8.3MM	Dartpoints leases entire property

Sources: Cordry Appraisal, NADC Research

