DATA CENTERS AND THE USA

*TRENDS BY GEOGRAPHY*

By: Brian Oley, Michael Siteman, and Sumner Putnam

Across the US and around the world, data centers have made significant strides in public appeal. It was no more than 5 years ago, that if the word “data center” was mentioned, it was commonly either confused with call or contact centers or simply an element of the unknown. This circumstance exists no more, and the data center world is no longer a sole target of the IT sector. Data centers have flourished by impeding on conventional wisdom officially transforming the concept and its relative subject matter into a topic in the mainstream.

There are many reports, publications and articles out there that focus on the industry’s technical side or investment side. We look to open a door to those who are simply curious about the industry and its most recent behavior. Our intent is to divide the continental United States geographically into 3 sections, and explain (1) what type of data center user is attracted to said area and (2) provide a general explanation as to the reason they are locating to these respective areas. The geographic areas under review are (1) the Central US, (2) the Eastern US, and (3) the Western US.



When thinking data centers and site selection, it is important to distinguish between the types of data center users. For simplicity’s sake, we’ll divide these types of users (or those looking for data center space) into two main categories: (1) **the** **smaller data center user**, looking for under 150 kilowatts (“kW”) of critical power in the data center market (*note: data center users cannot be gauged by looking for “space” (or square footage) any longer – the new trend for data center users is now based on the amount of power they consume, not by the footprint they occupy*) and (2) **the larger data center user** (or the enterprise user), looking for 150 kW and above.

Similarly, specific trends in the industry must be understood that distinguish a primary data center market from a secondary market. The smaller data center user will commonly drift to certain major (primary) metros, where connectivity is highly favorable primarily because that is where the supply exists. Those who build data centers and lease to these smaller data center clientele know that these types of users typically need to be in an area where there are lots of people. This is usually a function of needing to be where their customers are, thereby procuring a demand centered in areas of dense population.

**CENTRAL US**

**Market: Dallas, Texas**

**Type of Data Center Market:** **Primary** Data Center Market

**Size of User in Market:**  **Small** and **Large** Users

**Reason for Site Selection:** Dallas has a desirable central proximity from west coast to east coast and is also a “peering point” location - or area where fiber connectivity is highly favorable. Colocation and wholesale providers, developers, and enterprise users are currently investing in the area to add more data center space and available supply than practically any major metro in the US. Dallas proper has been a long time target for colocation providers while the areas immediately surround the metro, such as Richardson and Plano, have been a favored location for developers and enterprise users.

**Market: Denver, Colorado**

**Type of Data Center Market:** **Secondary** Data Center Market

**Size of User in Market:**  **Small** Users

**Reason for Site Selection:** Virtually no current supply exists in this market (with the exception of one alternative from a single tenant, enterprise perspective), and the users who choose Denver have typically lease smaller footprints from a colocation provider in or immediately surrounding the downtown area. Given the favorable fiber connectivity and central proximity, Denver sees a lot of interest and activity, but few enterprise users choose Denver due to the lack of economic incentives available. Periodically, interest in the suburbs north of Denver is sparked driven by the cheap cost of power at +/- $0.04 / kWh. Colorado Springs is also an area that receives a great deal of attention and is actually underway with enterprise users and projects deploying the wholesale model.

**Market: Chicago, Illinois**

**Type of Data Center Market:** **Primary** Data Center Market

**Size of User in Market:**  **Small** and **Large** Users

**Reason for Site Selection:** Chicago is a major fiber hub and is one of the nation’s “peering points” (see Dallas comments for definition). The many existing downtown colocation providers in major facilities provide a great deal of appeal to the smaller data center user by offering respectively low power rates for a major metro through ComEd (power company). Suburbs such as Northlake have also attracted major tenants like Microsoft while simultaneously bringing in developers and major third party providers who are building out space, commonly deploying the wholesale concept.

**Market: Kansas City, Missouri**

**Type of Data Center Market: Secondary** Data Center Market

**Size of User in Market:**  **Large** Users

**Reason for Site Selection:** The area and immediately surrounding areas (such as Kansas City, Kansas) maintains legislated data center incentives targeted at enterprise users. The area boasts a business friendly environment with a regulated utility (with good rates but mainly attractive for price stability). Kansas City is a data center sophisticated community that has attracted many enterprise users such as Bank of America.

**Market: Omaha, Nebraska**

**Type of Data Center Market:** **Secondary** Data Center Market

**Size of User in Market:**  **Large** Users

**Reason for Site Selection:** Omaha is an aggressive data center community with legislated data center incentives targeted at enterprise users. It is a business friendly environment with some of the nation’s lowest power rates at or just under $0.04 / kWh. The data center sophisticated community has attracted major companies like Yahoo!, and the area continues to push to attract the enterprise user.

**Market: (West) Des Moines, Iowa**

**Type of Data Center Market:** **Secondary** Data Center Market

**Size of User in Market: Large** Users

**Reason for Site Selection:** Like most secondary markets that tend to attract large data center users, Des Moines has legislated data center incentives that are targeted at the enterprise user. It is a business friendly environment with some of the nation’s lowest power rates right at $0.04 / kWh. This data center sophisticated community has attracted the mega data center from Microsoft and has continually seen much interest from the enterprise data center user. The area continues to aggressively push to attract the enterprise users.

**EAST COAST**

**Market: New Jersey area / Manhattan, New York**

**Type of Data Center Market:** **Primary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** New Jersey with its proximity to Manhattan and robust fiber availability ranks it in the top echelon of global data center markets. The financial service industry continues to be the corner stone of the market, with other industry sectors such as pharmaceutical, medical and media growing steadily. The colocation offering continues to thrive with both wholesale and retail offerings. The trend for corporate data center growth has shifted greatly to the outsource colocation offering. Proximity and connectivity of data centers to the financial exchanges seeking low latency has extremely important to the site selection process. The Manhattan market is in the process of reinventing itself, as most large corporate data centers have migrated to the suburbs; meanwhile the colocation offering continued to expand. Currently there is limited supply, but planned expansion from colocation operators will bring new inventory online over the next 24 months.

**Market: Ashburn, Virginia / Northern Virginia**

**Type of Data Center Market:** **Primary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** Ashburn, Virginia / Northern Virginia (located approximately 25 miles west of Washington, DC) continues its historically trend as a top tier data center market in the US and around the world.  Northern Virginia appreciably benefits as a premier market of choice by small and large data center users given that the foundation of the Internet was developed by the US Federal Government in Washington, DC (ARPANET).  Being the home of the Internet backbone offers enterprise users numerous fiber connectivity peering points as well as low latency throughput for today’s demanding global users (cloud computing, e-commerce, enterprise applications, network storage, etc).  Enterprise users also benefit in that Northern Virginia has limited exposure to natural hazards, while offering favorable costs of power (in terms of $/kW).

**Market: Boston, Massachusetts**

**Type of Data Center Market:** **Secondary** Data Center Market

**Size of User in Market: Small** Users

**Reason for Site Selection:** The Boston metropolitan area is a maturing data center location with interest stemming from the most sophisticated financial, educational, healthcare, technology and biotech users.  Notwithstanding the high price (in $/kW) for electricity in New England, Boston maintains a unique position as a leading innovative economy.  New designs have recently hit the market to include air side economizers and co-generation which offset high power costs. The Boston data center market is seeing historic levels of investment by colocation and wholesale providers, and is steadily importing new entrants into the available data center space.

**Market: Atlanta, Georgia**

**Type of Data Center Market:** **Secondary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** Often designated the “Capital of the South”, Atlanta is the hub of data center activity and growth for the southern east coast. It is one of our nation’s “peering points” for major U.S. NAP’s, and has excellent fiber connectivity and low latency services. Colocation providers offering both wholesale and retail offerings have continued to invest and expand in the region, with growing inventory in the works. With competitive utility rates and highly reliable networks, Atlanta is suited to continue to grow as a data center hub.

**WEST COAST**

**Market: Southern California**

**Type of Data Center Market: Primary** Data Center Market

**Size of User in Market: Small** (and **Medium**) Users

**Reason for Site Selection:** There are several distinct markets that make up the Southern California region: Los Angeles, El Segundo, Orange County, and San Diego. Though the area is home to a diverse group of verticals and many of those enterprises may host their own data centers as part of corporate facilities, or regional facilities, generally speaking, there are more small- to medium-sized data center users than large. Most enterprises leverage their IT infrastructures by taking advantage of colocation facilities that dominate the landscape. Furthermore, though Los Angeles (and Southern California, in general) is home to a variety of different businesses, certainly, the entertainment industry and the gaming sector are impacting the supply and usage of data centers in the region. With a few notable exceptions, utility charges from the primary providers (Los Angeles Department of Water & Power; Southern California Edison) range between $0.09 to $0.14 / kWh. Rates can be reduced if a substation is built and a sub transmission rate is negotiated. Downtown Los Angeles’s most notable building, One Wilshire, is the main peering and network access point. Seismic activity associated with the Southern California region typically disqualifies the market for large enterprise operations even though most still perceive the need to have their servers proximate to business operations. The state of California does not offer incentives to data center users or operators though certain municipalities have enacted programs to exempt data center users from local sales taxes.

**Market: Northern California**

**Type of Data Center Market: Primary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** The San Francisco Bay Area and Silicon Valley are the primary data center activity areas in this region, though Sacramento is becoming a market force. There is no doubt that of the three sub-markets, the Silicon Valley is experiencing the most dramatic growth in supply and sustained demand. The principal drivers for this demand are based on the continued growth of Internet application hosting, E-commerce and technology innovators. Furthermore, the electricity rates from Silicon Valley Power being the lowest in the Bay Area have fueled this growth as well. As Santa Clara does not levy a utility tax users and operators are able to yield significant savings over other proximate locations. Over the past year delivery of space in Santa Clara from a variety of operators has been brisk with the available inventory rising to well over 200,000 square feet of conditioned and wholesale space. Though not nearly as robust as the Bay Area, Sacramento is experiencing increased construction activity. New developments in the region boast low-cost power ($0.08 / kWh) and no seismic activity. As absorption continues in the Bay Area, opportunities in Sacramento will certainly attract new users.

**Market: Seattle, Washington**

**Type of Data Center Market: Secondary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** Based on sheer market size alone, Seattle is considered a Tier1 data center location it has more than 30 data centers comprising more than a million square feet. The area is hub for four of the top ten national colocation providers. Market growth has been stimulated by providers as much as the saturation of enterprise users, especially in the technology sector. However, the market is home to very diverse verticals including Aerospace, gaming, healthcare, biotech and retail. With two major carrier hotels in the city and the existence of APAC POPs of many carriers, connectivity is abundant. This combination of forces has also spawned the proliferation of colocation and managed service providers.

**Market: Central & Eastern Washington**

**Type of Data Center Market: Secondary** Data Center Market

**Size of User in Market: Large** Users

**Reason for Site Selection:** The landscape in Central and Eastern Washington is focused much more on enterprise level wholesale space and developers that provide such opportunities. Known for its hydro-power with pricing lower than every other major market in the US ($0.02 / kWh) as well as for reduced risk from natural disasters, the area has gained popularity and sparked the enterprise users’ interest over the past several years.

**Market: Phoenix, Arizona**

**Type of Data Center Market: Primary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** Historically, Phoenix has been considered a prime location for disaster recovery solutions, which has benefitted enterprise users and colocation / managed services providers. Adding to that the relatively favorable cost of power (compared to other primary data center markets) and reduced exposure to natural disasters, the area has gained greater appeal and extending its consideration as a primary data center market. Marquis retail and wholesale providers as well as Fortune 500 companies have developed facilities and are continuing an aggressive expansion strategy.

**Market: Las Vegas, Nevada**

**Type of Data Center Market: Secondary** Data Center Market

**Size of User in Market: Small** Users

**Reason for Site Selection:** Las Vegas is considered a secondary market, but is expeditiously becoming a beneficiary of disaster recovery and business continuity strategies for those smaller users who are looking to get export their smaller data center footprint out of California. The market is home to some prominent colocation and managed service providers that appear to be pulling a lot of the data center interest typically reserved for the Phoenix market.

**Market: Salt Lake City, Utah**

**Type of Data Center Market: Secondary** Data Center Market

**Size of User in Market: Small** and **Large** Users

**Reason for Site Selection:** Recently, there has been a great deal of press dedicated to this market, which is attracting large enterprises including the public sector. Prior to this activity, the prominent players n the area were a number of colocation and managed service providers that populated a number of smaller data centers. With the proliferation of the enterprise market, growth in the colocation sector has subsequently developed a stronger presence over the past three quarters.