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THE RIGHT LOCATION FOR CO-LOCATION

Why choosing an optimal co-location site and facility can protect your business, and how the wrong one can place your future at risk.

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ABSTRACT

According to a recent AFCOM survey[1], the greatest driving factor of expanded data storage needs is business growth. Burgeoning industries that previously fought the battle of finding facilities to store hard copies are now facing the same fight on a digital scale.

Nearly two out of three data centers surveyed (63 percent) reported a dramatic increase in usage over the past 5 years, while another 35 percent reported a slight to moderate increase. A similar amount reported that they anticipated the need to acquire additional data center space within the next 5 years.

The reality is that the cost to design, build, operate and constantly update the kind of facility needed to securely house sensitive data equipment is either out of reach or simply doesn't make economic sense for many companies. That's why 22 percent of those surveyed by AFCOM reported that co-location will be utilized to handle data storage expansion.

However finding the right data center for co-location, either as a primary storage site or a disaster recovery location, is becoming increasingly difficult. It is critical to find a facility to keep your data accessible, secure and housed in a place that attracts and retains quality employees. There are many considerations that must be taken into account when making the right decision for co-location, from the cost of storage to the cost of living. That's why companies of all sizes are opting for co-location sites in smaller U.S. cities due to cost savings, lifestyle, security and other benefits unmatched by larger metropolitan areas.

ASSESSING POTENTIAL CO-LOCATION DATA CENTER SITES

In his book "Build the Best Data Center Facility for Your Business,"[2] Douglas Alger, who has over 12 years experience in designing and operating data centers, discussed how to select the best location for building a data facility, noting that "An ideal data center location is one that offers many of the same qualities that a data center itself provides a company: protection from hazards, easy accessibility and features that accommodate future growth and change." These same considerations apply when selecting a data center appropriate for co-location.

Finding that optimal location, however, may be more difficult than it first appears—especially with compounded factors relating to costs, workforce and even lifestyle decisions.

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Potential Site Hazards

There is no place on earth that is unfailingly safe from disaster, natural or otherwise, that might occur. But there are those where such risks are significantly reduced.

Terrorism is a real threat to many U.S. cities, including the Dallas-Fort Worth area, which is now one of the top ten terrorist targets.[3] Other cities in that top tier of terrorism targets include New York City, Washington, D.C., Los Angeles, Chicago, Philadelphia and San Francisco, among others. Second tier cities include Phoenix, Seattle, Boston, Atlanta, and Denver. These cities were selected based on a variety of factors, including economic output, military bases, telecommunication centers, banking and more—all of which are believed to be of significant interest to terrorists looking to impact or disrupt commerce or communications. These factors could ultimately make data centers located there potential targets.

Terrorism isn't the only hazard that should be considered. Of equal—if not more significant concern—are the potential ill-effects of Mother Nature.

Overflowing in tech companies like Google and Yahoo!, California's Silicon Valley is also home to frequent seismic activity. Hurricanes are most frequently centered in the Gulf states and along the Atlantic seaboard, while tornados are prevalent in the great plains of Texas, Oklahoma, Kansas and Nebraska.

While these areas may be of interest to storm chasers or those for whom extreme living is a thrill, they are not ideal locations for primary or secondary data storage. Even when precautions are taken, there is no way to accurately predict or completely prevent the extensive damage that may result from these relatively predictable natural phenomena.

Other considerations are site-specific concerns of flooding, landslides, fire, pollution and even flight paths of major airports, each of which can pose a unique and significant challenge for data centers, from putting equipment at risk to negatively impacting server function. Another consideration: employee safety. Even if the building itself is well-lit and has on-site security personnel, if it is located in a remote industrial area or in an urban setting, team members may be unwilling or uncomfortable going to the site after hours or on weekends. Thus, alternative sites should be seriously evaluated before co-locating valuable data to areas likely to be exposed to such risks.

Site Accessibility

When selecting a data center for co-location, accessibility—or lack thereof—must be carefully evaluated. Are there easily navigable roadways to and from the location, and are there multiple ingress or egress points, in case a major entrance point is blocked? If an emergency were to

occur, how quickly could you get to the site? Would bumper-to-bumper or rush-hour traffic impede you getting to your servers? These are key considerations when evaluating how quickly you are able to access the site where your data is housed.

It is equally important to consider access from another perspective: how easy will It be for company employees to travel to and from the community in which the data center is housed? Is there an airport within close proximity along with other amenities that will ensure an easy transfer to and from the center? If not, more convenient sites should be at the top of your list.

Site Expansion Considerations

As your company grows and as technology continues to become an even more prevalent part of your day-to-day operations, you will ultimately require more server space to accommodate it. Thus, it is important that the data center you choose for co-location is in a place that is expandable.

Odds are, large metropolitan areas are less likely to offer opportunities for expansion into existing structures or, if space can be found, it will be at a premium price. Furthermore, it may be unrealistic to believe that the expansion building would be within immediate proximity to your current data space; therefore, it may still require moving servers and other equipment.

Especially if you anticipate expanded data storage needs in the short- or long-term, considering co-location in an area with less-dense land use is likely to be preferable to doing so in a heavily populated or over-developed location.

Site Costs

Co-location allows companies to store servers and data in a secure site without the expense of building a dedicated data center. But data center co-location pricing varies considerably by region and should be a key consideration in making your ultimate selection.

In 2006, The Boyd Company conducted a study of the annual costs required to operate a representative information assurance center in various U.S. cities, which was ultimately published by InformationWeek.[4] Those findings reflected, perhaps unsurprisingly, that costs in major metropolitan areas such as New York, San Francisco, Oakland and Boston were significantly higher—as much as 70 percent, in some cases—than smaller cities.

It follows, therefore, that co-location expenses in smaller cities will also be less as companies will not be required to bear those costs in the form of rent or usage fees.

A major part of the cost of operating a data center is its energy usage. With enterprise data needs expected to continue climbing, strains are being placed on these centers, with many coming close to "maxing out" their available power from their supplier.[5] And the more energy they use, the more expensive co-location becomes.

In energy-producing, low-population states, far more energy is produced than is ever consumed—especially in areas with wind, solar, hydro-electric or clean coal-fired power. Combine that access with modern, energy-efficient data centers, and companies will see significantly reduced costs compared with cities that lack those resources. Areas with seasonal climates, including traditional winter months, can actually reduce costs even further by using the exterior environment to provide cooling functions rather than having to constantly cool air mechanically.

Co-location in smaller, less urban areas is also frequently less expensive in terms of the cost of living for company employees who may be required to staff the co-location facility. Cheaper housing, food, taxes and transportation may attract well-educated, skilled and knowledgeable IT professionals who are not interested in living in higher-priced cities. A lower cost of living is likely to positively impact companies' bottom lines, as they may be able to hire quality employees at reduced salaries compared to those required in metropolitan settings.

Work-Life Site Considerations

If there were a data center that would guarantee work-life balance and no stress, companies and employees alike would be beating the doors down to get in. Especially over the last three years, stress levels have spiked as a result of increased workloads, economic pressures and unstable housing markets. In a 2009 Forbes study[6] Chicago was named America's most stressful city due to its cost of living, poor air quality, population density and lack of sunny days each year. Also in the top ten were tech centers like Los Angeles, New York, San Francisco/Oakland and San Jose. Seattle ranked eleventh.

Those who live in many of these areas also have lengthy commute times, which have actually been shown to impact health. High blood pressure, headaches, chest pains, orthopedic problems, rising rates of obesity and exhaustion are just some of the problems that can arise.[7] Job performance is also affected.

Finally, even in a down economy, companies are required to deal with the realities of a growing workforce of younger employees. Employees who, unlike many of their Baby Boomer counterparts, place a premium on work-life balance.[8] Well-educated and possessing desirable technical skills, they are drawn to jobs that allow them time for relaxation, volunteerism and family time.[9]

Given both a changing economic climate and a changing workforce, it is important that companies evaluating a co-location site/facility also consider those factors which will attract and retain long-term, qualified employees. A stable housing market, quality schools, recreational areas, cultural events and opportunities for local volunteer activities are some of those factors.

Small cities can oftentimes provide many of these benefits. One such location is Billings, Montana (population 108,000) which has been named by Best of Life magazine as one of the best places to raise a family over far larger cities like San Diego, New York, Minneapolis, Oklahoma City and Phoenix[10] as well as one of the best places to live in the U.S.[11] Because of its stable housing market, which was largely unaffected by the bubble seen elsewhere in the U.S., an average commute time of just 16 minutes and its small-town feel and big-city conveniences, it was also named as the best metropolitan area for small-business start-ups in November of 2009.[12]

GUIDELINES FOR CHOOSING THE RIGHT DATA CENTER FACILITY

Once you have narrowed down the geographic region(s) in which you believe co-location will be optimal, selecting the right data center facility will be your next step. And it is a decision that can ultimately make or break your company's future. If your data is compromised or lost, the devastation to you and your business is incalculable.

There will always be companies that elect to use converted warehouses or similar facilities to store data because of cost, convenience or both. However, the inherent risks far surpass the benefits in these situations.

Any company seriously considering co-location should look for a modern, well-designed center that is secure, constructed to avoid and withstand potential hazards, and allows you ready access to your data. Other key features should include:

Design and Environmental Controls

The design of a data center is key to its security and functionality. Single-story, windowless structures with large, open floors are optimal for high-capacity, scalable data centers.[13]

In order for servers and other critical components to function at optimal levels, a consistent and carefully monitored environment must be a part of any reputable data center. While some debate does exist, most industry professionals recommend that servers be kept in an environment with a temperature between 68 and 71 degrees Fahrenheit, with a relative humidity between 45 and 55 percent, or a dew point between 41.9 and 59 degrees Fahrenheit.[14]

A carefully monitored humidity level in server rooms is important to reduce the possibility that static charges are generated. Static charges may shut your servers down and result in long-term system damage. The data center you ultimately select should also incorporate other precautions against the possibility of static charge generation, including the installation of a protective static control flooring system.[15]

Other critical environmental components include dry fire protection systems, raised flooring and well-designed power distribution systems.

Redundancy

Data centers must remain fully powered and operational even in the most extreme conditions in order to protect the irreplaceable data they house. As such, it is important that the facility selected has a full contingency of power sources including multiple utility company feeds and backup generators.

But not only power systems require redundancy.

In order for a data center to be appropriate for co-location, it must also be served by multiple internet providers, and have immediate access to multiple fiber loops and connections. This not only helps to balance data loads, but will act as a double fail-safe should a cable be cut or if an internet provider has a break in service.

Reliability and Uptime

Redundancy, as described above, is key in ensuring that a quality data center is able to demonstrate the ability to achieve the stringent guidelines for system reliability and up time established by the Uptime Institute. Ideally, companies should opt to co-locate in a data center which meets the Tier III qualifications as currently defined. Those fundamental requirements, as of the date of this publication, include redundant capacity components and multiple independent distribution paths serving the computer equipment, with all IT equipment dual-powered and properly installed.[16] Together, these ensure system availability, or uptime, of 99.982 percent.[17]

Scalability

Predicting the future growth of any company with pinpoint accuracy is difficult at best. The space you need today for co-location may double, triple or explode exponentially. As such, it is important that the data center in which you place your servers be designed with scalability in mind. It should be able to operate as efficiently with two racks of servers as it would with two hundred.

Green/Energy-Efficient Features

Modern data centers should incorporate, whenever and wherever possible, energy-efficient equipment and processes that are as good for the environment as they are for business. These include, but are not limited to,

deploying energy-efficient hardware that delivers the highest performance per watt of power consumed, developing optimized long-term strategies to boost performance while reducing energy use and waste, maximizing available power, and utilizing assets most effectively, such as power-saving features like motion-activated lighting systems.

Security Features

When placing your servers in any data center, you should do so knowing that every precaution imaginable has been taken to keep them as secure as possible. Ask data center professionals what physical barriers, as well as operational protocols, are in place to prevent cyber-attacks. Question them about how your servers will be protected from unauthorized access. Learn what physical and information security measures are in place and how frequently they are updated. Evaluate the physical security of the data center itself, including any obvious or potential points of entry. And be sure to ascertain what security systems are in place should a natural or man-made disaster occur.

CONCLUSION

Co-location is a growing practice for companies worldwide, as primary and secondary storage needs increase. Before making a final determination as to where co-location should occur, those companies should carefully evaluate the type of data center facility in which their data will be housed, as well as the location of that facility.

Based on factors such as security, cost, accessibility, employee work-life balance and more, less-populated U.S. cities may provide the best option when compared with larger urban centers. Companies should therefore consider cities like Billings, Montana as they evaluate co-location sites.

ABOUT PARSEC DATA MANAGEMENT

Parsec Data Management is a full-service managed services and co-location provider specializing in organizing information technology and developing information security infrastructure. Independent audits have confirmed that Parsec meets and/or exceeds industry standards for PCI for information security and information technology.

Parsec develops customized data processing and management solutions for businesses of all industries and sizes, and offers comprehensive consultative services. For more information, or to speak with a Parsec team member, call 1-877-551-DATA.

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