



COLOCATION DATA CENTERS

Benefits of Buying Versus Building



INTRODUCTION

Electronic records, data analytics, and other processor-intensive requirements put a lot of stress on a data center's power, space, and cooling capacities. While the cloud might provide an outlet for some workloads, it is not the most appropriate or practical solution for others—at least not yet.

So how can you bring additional resources online when they are needed? There are two options: you can buy (that is, lease) space in a colocation facility, or you can build new processing capacity in-house.

In this paper, we review both strategies and offer guidance for selecting the approach that best fits your computing requirements, business objectives, and budget.

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WHY MORE ORGANIZATIONS ARE BUYING

If you are like most organizations, you need more processing power and storage and speedier deployments. But you also want to reduce the costs of providing those capabilities. Achieving these goals can be tough if you are saddled with a legacy data center.

Many legacy data centers are poorly designed, inefficient, and energy intensive. Sometimes they include multiple facilities and computer rooms, some of which are located in distant branch offices or subsidiaries that were loosely integrated into your infrastructure during multiple

mergers and acquisitions.

What most of these environments need is a dose of rationalization, centralization, and consolidation. If you face these types of challenges, you are probably considering a range of solutions, from building new data center, to

buying collocated spaces, to creating hybrid designs that include elements of both the build and buy approaches. To decide which approach is most appropriate for your organization, you must weigh a number of factors, including time to market, capital, power, staffing, and maintenance.

Time to Market

Colocation facilities are designed for fast implementations. With a build strategy, you are often starting your project from scratch, which slows your time to market.

If you need more resources, ask, "How much time do we have?" If your forecast allows for two to three years of lead-time, you can keep a build

strategy as an option. If you need more capacity in a hurry, however, a buy strategy likely will be a better choice for meeting your deadline.

Things to Consider:

If building, factor in significant lead-time. If buying, (1) make sure your provider can meet your timeline; (2) look for a facility that enhances flexibility, affordability, and physical

and logical security; and (3) to minimize risk, require a service level agreement (SLA) with a five nines availability guarantee.

Bottom Line:

If time is an issue, buying service in the form of an off-site data center, colocation space, or hybrid facility is hard to beat.

Capital, Operational, and Other Costs

If your time-to-market is flexible, assess your budget. Building typically involves planning, design, and commissioning services

that can cost hundreds of thousands of dollars. Add in construction, land, physical security, permits, and taxes and your project might be close to

\$400 per square foot simply to create the data center shell. On top of that, you will be responsible for fire detection and suppression systems

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(\$100,000 plus), commercial mechanical and electrical infrastructure (from \$7,000 to \$20,000 per kilowatt), and copper and fiber-optic cross-connects (up to \$10,000 per mile).

If you decide to buy instead of build, you still incur capital and operational expenses, but these costs are shared with

other data center tenants and spread over the length of the service contract.

Things to Consider:

Building an on-premise data center requires significant upfront investment. Buying is often easier to budget since many capital costs are rolled into your monthly costs. You

can also save by adding resources incrementally using either a colocation or hybrid approach.

Bottom Line:

If your capital is limited, buying colocation service lets you access state of the art infrastructure with little or no up-front cost.

Power and Reliability

Power requires special attention because electricity accounts for 70 to 80 percent of the operating costs of typical data centers. Organizations that buy service usually pay a metered rate or a flat rate for power.

While you pay for power with either strategy, data center providers offer the best rates since they consume industrial-scale wattage. Moreover, their facilities are usually located in states with the

lowest utility rates. They also invest significant resources to optimize mechanical loads and power usage efficiency (PUE) and ensure uptime, business continuity, and disaster recovery.

Things to Consider:

Power is expensive. Downtime is expensive. If your offices are in an area with high utility costs, you need to account for these expenses and look for ways to improve PUE and availability. That may mean investing in

uninterruptible power supplies, backup generators, other forms of power redundancy, and possibly even redundant data center resources.

Bottom Line:

The scale of most data center operations helps to enhance efficiency. Unless you are building a massive data center in a state or region with low utility costs, expect higher overhead costs for power and redundancy.

Staffing and Maintenance

Staffing is the second largest expense after power. If you build a data center, you will have to hire staff for 24/7 monitoring, on-site maintenance, and equipment optimization. Within three years after your data center is up and running, you need to begin spending three to five percent of the initial construction cost

on annual maintenance. If you buy data center space, you still incur staffing and maintenance costs. Many organizations choose to manage their installation using their own on-site or remote staff. As with some other costs, maintenance is shared with other tenants and rolled into your contract fee. You also

have the option of using the provider's managed services to outsource supervision of such tasks as hosting, networking, security, storage, backup, and disaster recovery.

Things to Consider:

It takes a team of experts to deliver five nines availability. If that level of performance is

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essential to your operation, you will need to make a significant investment in personnel. With managed services, you have the option of offloading routine tasks and allowing your staff to

focus on higher priorities.

Bottom Line:

Outsourcing some or most of your IT requirements is one way to reduce personnel costs

while improving operational performance. Trying to maintain the highest levels of availability with just in-house resources is expensive and, often, inefficient.

If you decide to buy resources, you will be able to select from dozens of potential providers. Here are some qualifications you can use to narrow your choices.

Expertise

Look for a provider that is dedicated to data center design and operation. A data center specialist has the experience and infrastructure to run a more efficient, controlled environment.

If you are using your own servers and storage, an optimal environment will extend the life of your hardware.

Even if you plan to manage your resources, choose a provider that has dedicated staff for maintenance, monitoring, security, and managed services. By using a provider's staff for routine tasks, you can maintain a lower headcount and allow employees to focus on your core mission.

Hybrid IT

Providers that support hybrid IT allow you to mix in-house and outsourced assets and services. You can use this type of networking to create a more flexible ecosystem that makes it easier for customers, suppliers, partners, and employees to access data and content.

Nationwide Footprint

A large footprint makes it easier for your team to access off-premise resources. Geographically dispersed locations with N+1 redundant designs also allow you to scale operations when needed and implement disaster recovery and business continuity strategies while remaining within the provider's network.

Five Nines Availability

The best facilities offer environments with 24/7 staffing, multi-factor security, redundant power and cooling capacities, on-site substations, resilient infrastructure, and integrated UPS systems. Such highly reliable infrastructure may enable a provider to earn five nines certification, which means that your projected downtime will be less than 5.26 minutes per year. These advantages provide maximum availability and establish the necessary foundation for supporting your business goals.

Premium Customer Experience

If you will continue to manage your resources, check the provider's facility in advance. Does it include comfortable office space for your workers, a secure shipping and receiving dock for your

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equipment, and well- equipped meeting space? Providers who own their facilities are more likely to provide these benefits.

Efficiency

As noted previously, energy is the single largest expense for any data center operation. While local utility rates affect this cost, the efficiency of the facility is just as important. Providers can reduce operational costs by using efficient lighting, time and motion-sensors, hot and cold aisles for airflow management, blanking panels in racks, water-side cooling economizers, Energy Star equipment, continual temperature monitoring, and similar measures. Facilities that have been designed for efficiency will carry LEED or similar certification.

Security

Data is one of your most important assets. To protect it, you need physical and logical security. A well-protected data center has perimeter fences, secure setbacks, onsite security, foot patrols, high-resolution video surveillance, entry control (biometric, card readers, keypads, and other devices), and programmable multi-level access zones. Active monitoring and layers of logical security help to prevent intrusion and unauthorized access.

Compliance

Just as important, enterprises are continuing to take steps to ensure they comply with a variety of compliance standards. Leading healthcare providers need to comply with HIPAA and follow best practices for protecting electronic medical records (EMR), electronic protected healthcare information (ePHI), and other sensitive data. If they serve government agencies, contractors, and system integrators, they also conform to the Federal Data Center Consolidation Initiative (FDCCI), Cloud First, and Shared Services requirements.

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Final Thoughts

Organizations need best-in-class data centers, infrastructure, and equipment to improve performance and drive future growth. While it is possible to create world-class capabilities using a build strategy, buying offers significant advantages. With a buy strategy, you have a range of options for speeding up implementation and scaling resources while reducing financial and operational risk.

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