

Executive Report

Federal Data Centers: The Build vs. Buy Decision

How system integrators supporting government agencies should approach IT infrastructure solutions.



Why third-party IT infrastructure providers are the solution for system integrators supporting federal agencies and their missions.



The Federal Data Center

Government agencies are experiencing a significant increase in demand for data center space due to the explosion of data, the number of new applications and expanding IT support platforms.

For decades, government data centers were in-house operations managed by federal agencies and their employees. These data centers cost hundreds of millions of dollars to construct, operate and maintain. But more federal agencies have begun seeking partnerships with advanced system integrators and third-party data center providers as a way to ensure their IT infrastructure requirements are efficient, scalable and up-to-date. System integrators can play a vital role in supporting a federal agency's mission and identify data center providers to house an appropriate IT infrastructure.



Building a Data Center

There are many factors to consider when building a data center. These include:

- Availability and cost of land for the facility.
- Availability and cost of electric power.
- Potential for natural disasters and weather events in the area.
- Property tax rates.
- Labor availability.
- Telecommunications infrastructure availability.
- Economic development incentives.
- Physical security and compliance.

In addition to the physical environment, federal agencies should consider development and expected future costs such as:

- What are the space and power capacities needed at the start, middle and end of the project?
- How much will it cost to build, maintain and operate?
- At what power density will the facility operate?

Other technical decisions in the design and build process can make or break an agency's mission later in the facility's life. For example, building a data center to a lower power density than ultimately needed can effectively cap the available power and cooling in a given space., severely limiting future flexibility. A misstep in capacity planning can result in the need for expensive, unplanned upgrades, which could then impact the outcome of the mission.



Conversely, if a data center is built to accommodate a higher density than what is ultimately deployed, capital dollars are stranded and initial projected operating efficiencies will fall short. This could become a drain on the mission budget, since operating costs will be higher than planned.

Additional items to consider include the level of the facility’s infrastructure redundancy, maintenance schedules for the infrastructure, security (24/7 year-round) and staffing costs. Equipment ordering and delivery lead times factor into construction planning as well.

The Hidden Costs of Building a Data Center

Build cost is typically expressed as cost per megawatt. Private company data center builds can range from \$10 million to \$25 million per megawatt, depending on system redundancies, facility scale, design- and engineering-team expertise, vendor leverage, and construction efficiencies.

There are many details to consider when building a data center, and these items just scratch the surface; however, the items listed above are the most critical decision points. Federal system integrators (FSIs) and agencies should consider the net present value (NPV) of a construction project and the total overall spend to maintain, run and upgrade the facility – and to future-proof it for years to come.

Leasing Data Center Space – The Other Option

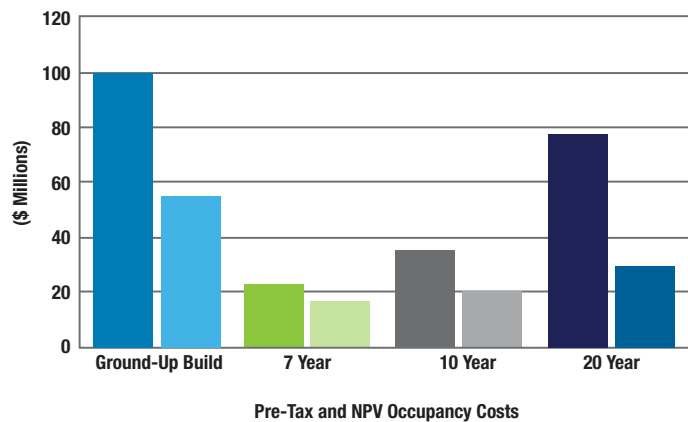
Compared to building a data center, the outsourced leasing model is more straight forward. There are three major components to an outsourcing agreement:

- Base rent – charges for data center space and power.
- Utilization – metered vs. nonmetered power models.
- Services – bandwidth, cross-connections, office space and smart hands.

The chart below shows ground-up build versus multi-year comparisons. Both Pre-Tax (left) and NPV (right) occupancy costs are lower for colocation, as compared to ground-up construction scenarios.



Ground-Up Build and Colocation Total Cost of Occupancy (TCO)*



Companies can significantly minimize upfront capital costs of building a data center and turn those costs into a predictable monthly operation spend.

*Source: CyrusOne Estimates, 2015. Build cost includes basic 2N power delivery for electrical and N+1 mechanical. Fiber trenching and power-utility feed-acquisition costs not included.



Benefits of Buying or Leasing

Mitigating risk

Mitigating risk is a primary benefit of outsourcing colocation. With outsourced leasing, there is no commitment to long-term operating costs or the need for a large capital investment to enjoy access to best-in-class data center facilities.

Lower build and operating costs

Colocation providers have expert construction teams focused on driving supply-chain efficiencies throughout the design, engineering and building phases, without sacrificing technology, system redundancies or maintenance standards.

2N redundancy for mechanical and electrical systems

2N redundancy virtually eliminates downtime and provides a resilient environment with no single point of failure, along with industry-leading 100 percent uptime service-level agreements (SLAs). Metered and nonmetered power models are available.

Physical security and compliance

The right colocation provider will ensure ongoing standards compliance while maintaining multiple layers of physical security, without distractions for the FSI or client agency. Different federal agencies require varying levels of certification or compliance, which must be matched to the appropriate data center provider. These may include the Federal Information Security Management Act (FISMA) and others.

Talent retention

The right outsourced data center provider has an operations team to keep servers and applications powered, connected and always on, so their clients can focus on their priorities.

Scalability for future growth

A colocation provider with capacity can quickly enable future expansion by opening up additional space or building out new data halls at little or no upfront cost to the tenant. An expert colocation provider offers inherent services such as mapping capacity needs with a migration plan and data hall customization.

Speed to market

Experienced data center operators can design and construct a facility to specifications and meet all industry and government requirements in much shorter build times than the average contractor. This is due to pre-existing contracts with suppliers, modular engineering designs and unparalleled access to a qualified workforce.

Although there are benefits to building a data center (such as control, access and independence), any thoughtful comparison of “build vs. buy” decisions will lead most readers to a leasing decision. More and more FSIs and agencies are moving in this direction given the inherent benefits (lower costs, scalability and expertise) and the ability to free up resources for more mission-critical endeavors.

Through highly aligned partnerships, federal agencies can avoid exorbitant construction costs, unknown technical dependencies, and ongoing operational expenses for staffing and facilities management. Today, FSIs and agencies are actively embracing the colocation model as an efficient and flexible way to meet mission-critical data center needs.



About the Author

Fred Holloway, vice president of sales and government programs at CyrusOne, is responsible for the development and general management of CyrusOne's federal data center solutions business. With over 25 years of experience managing global sales teams at the enterprise level, Fred brings rigor to programs that leverage more than 120 partners to provide services across various disciplines, enabling federal system integrators to deliver IT services without hefty capital infrastructure investments.

Why CyrusOne

CyrusOne (NASDAQ: CONE) specializes in highly reliable enterprise-class, carrier-neutral data center properties. The company provides mission-critical data center facilities that protect and ensure the continued operation of IT infrastructure for hundreds of customers, including many Fortune 20 to Fortune 1000 companies.

CyrusOne's data center offerings provide the flexibility, reliability and security that enterprise customers require, delivered through a tailored, customer-service focused platform designed to foster long-term relationships. CyrusOne's National Exchange (IX) platform provides robust connectivity options to drive revenue; reduce expenses; and improve service quality for enterprises, content and telecommunications companies. CyrusOne is committed to full transparency in communication, management and service delivery throughout its large portfolio of data centers worldwide.

Learn more at cyrusone.com/federal.

