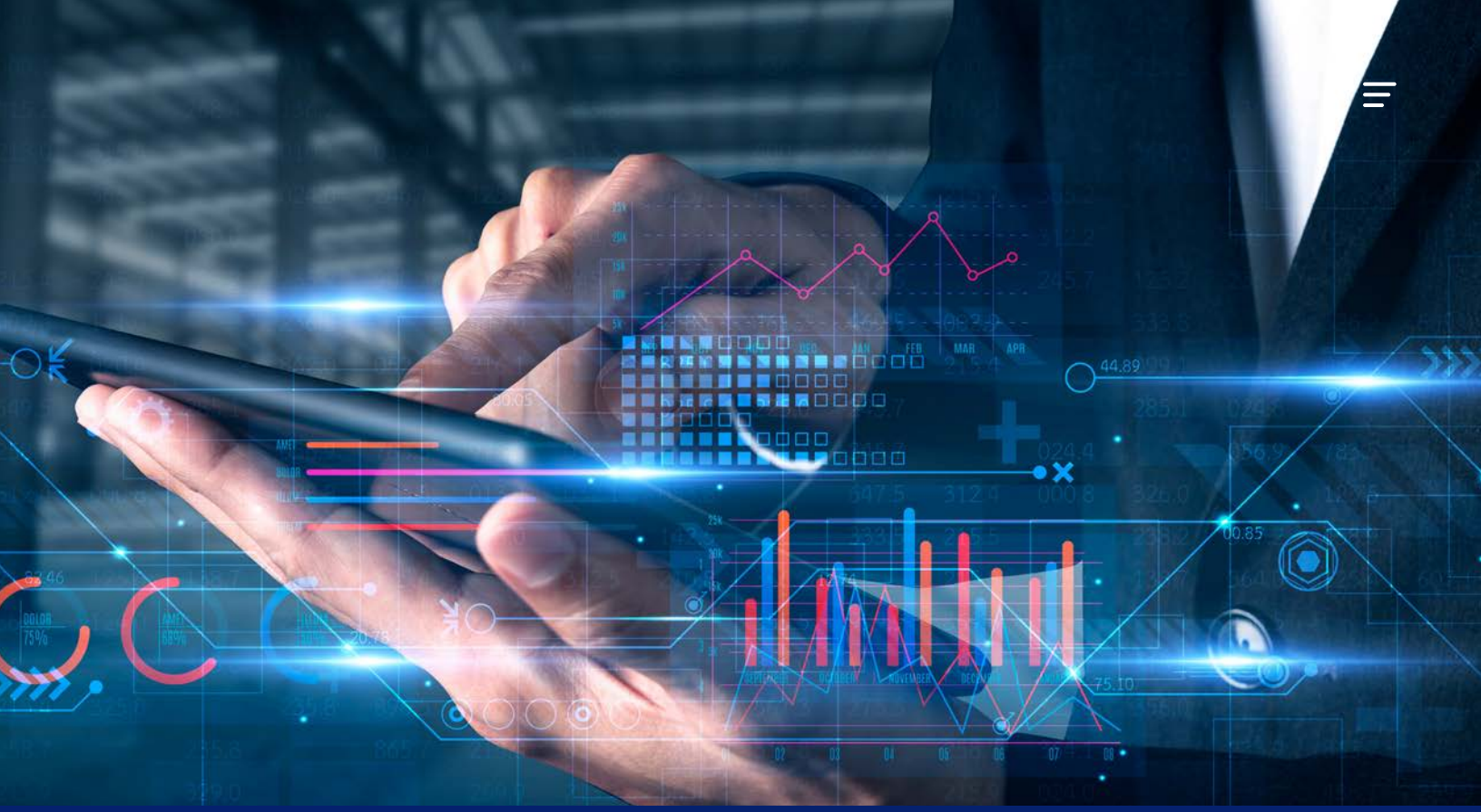
PCX®

The Complete Guide to **Modular Colocation Data Centers**

Table of Contents

PCX



Introduction

The data center industry is booming in the wake of COVID-19. This data explosion has been driven by accelerated digital transformation at the enterprise level and historically high internet usage.

The increased compute and data storage requirements of digitalization initiatives and the global shift to remote work environments are prompting many enterprises to move away from on-premises data centers in favor of colocation facilities.

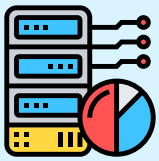
With colocation providers expanding their facilities and delivering new services, the data center and real estate markets have both become extremely competitive. With this in mind, colocation data center owners are looking for more effective and efficient ways to build and deploy new facilities faster.

Modular colocation data centers provide the capacity owners require with rapid time to value, making them a key differentiator in the market. Modular data center construction provides all of the usual cooling, IT infrastructure and power components that colocation providers need to deliver that capacity. Plus, these solutions come in a premanufactured, tested, easily scalable and ready-to-deploy unit.

The flexibility and customization of modular construction make it an ideal solution for colocation facilities looking to establish a presence in new markets and keep up with ever-growing capacity demands.

There are many reasons why organizations choose a particular data center strategy, whether it be an on-premises data center, a colocation facility or a centralized public cloud. However, the most important consideration is where their workload and applications run the most reliably and efficiently.

Organizations considering moving workloads to the public cloud do not have to worry about managing the servers, storage and networks, which reduces both capital expenses (CapEx) and operating expenses (OpEx). This means they only pay for what they use. Conversely, the traditional colocation model involves tenants running their own IT infrastructure in a colocation facility in which they are renting space, power and cooling.



4 Trends Driving Colocation Organizations to Modular Solutions

Speed of deployment, supply chain disruptions and limited availability of skilled IT workers are three of the more commonly cited reasons to adopt modular data center solutions. However, colocation facility owners are also influenced by four specific industry trends:

1 Edge Computing

Gartner predicts that by 2025, 75 percent of enterprise data will be processed at the edge. For colocation facilities, this means that now is the time to establish a presence in up-and-coming edge markets.

Along with latency limitations for performance at the edge, the price of real estate in Tier 1 regions has priced many owners out of expansions in Tier 2 and 3 regions. However, the increased demand for edge access drives colocation owners to provide clients additional capacity at the edge, where users are located.

Modular data centers are easily deployed in almost any environment, making them suitable for any location in Tier 2 and 3 regions. And because units are delivered fully wired and cabled for easy integration, it minimizes the skilled labor required to install them in these more remote markets.

Scalability is also an integral benefit of modular data center construction. Although edge computing is in its early growth stage, facilities can choose to deploy only the required capacity, with the option to ramp up when requirements change.

2 Expanding Remote Workforce

The post-pandemic workforce is increasingly remote and distributed, and many organizations plan to keep it that way. In fact, business giants such as Twitter and Spotify have opted to allow employees to work entirely remote. This allows businesses to reduce their utility and data storage costs, especially when outsourcing to a cloud service or relocating storage infrastructure to a colocation.

But with more and more companies adopting hybrid and remote work strategies, more pressure is applied to colocation facilities preparing to handle the influx of new data to store and process. Modular colocation data centers, used to build out facilities, can help IT teams support remote and hybrid workers by adding footprints in smaller-tier markets for employees who relocate outside of metro areas.

3 Reducing CapEx and OpEx

Moving from an on-premises data center to a colocation facility drastically lowers CapEx and OpEx costs by taking advantage of scale and transferring data center equipment, technology and overhead from on-premises to off-site.

Colocation tenants enjoy economies of scale by sharing infrastructure, power and cooling costs with other tenants, instead of shouldering all of these expenses alone. Tenants also have access to a skilled IT workforce and expertise that they may not be able to source or afford otherwise.

4 Increasing Sustainability and Eco-Friendliness

Data centers are infamous for the amount of electricity they draw to cool and power facilities. Modular data center construction helps mitigate many of these environmental impacts.

The manufacturing process generates fewer carbon emissions than traditional construction methods. Additionally, many materials and components are reused or recycled, and eliminating stranded capacity reduces wasted electricity and maintains unused space.

Modular colocation facility managers can leverage their sustainability efforts to increase retention and attract new tenants by offering renewable energy initiatives and voluntary carbon credit assistance. This offsets tenants' carbon emissions and gets them closer to net zero.

Advantages of Modular Construction over Stick-Built for Colocation Facilities

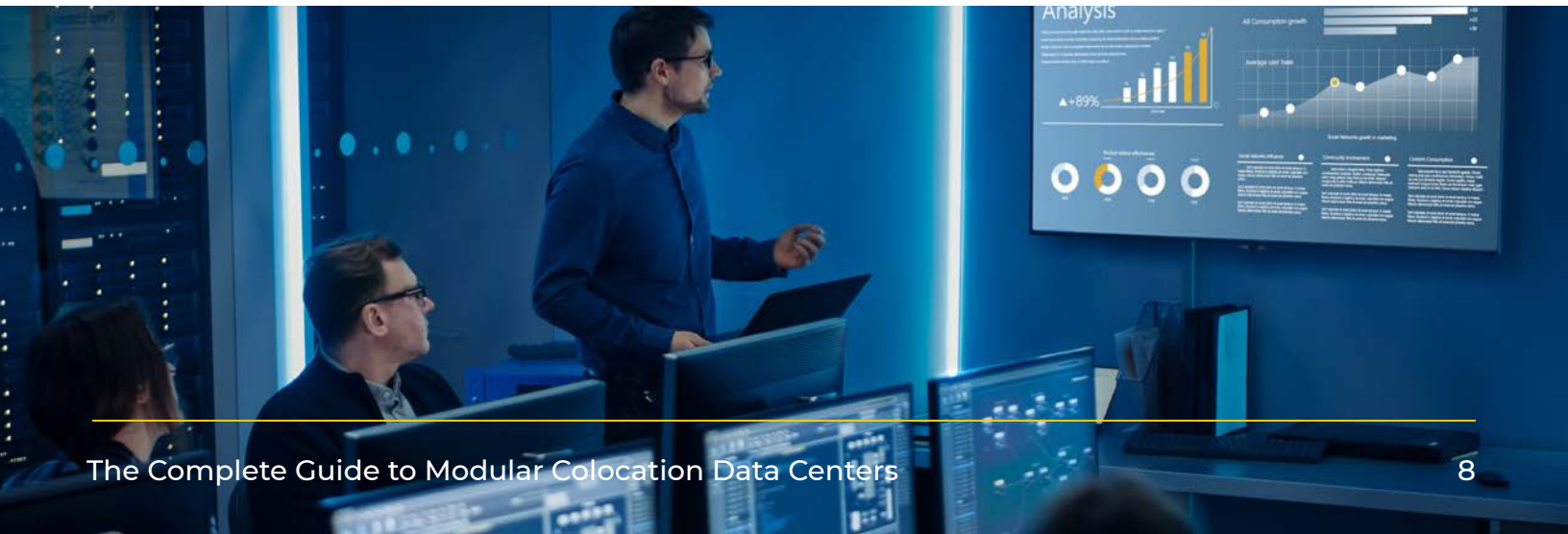
Modular construction has seven distinct advantages over traditional data center construction that help colocation facilities maximize and leverage their scalability, flexibility and efficiency.

Speed to Deploy

Even with our current supply chain disruptions and skilled labor shortage, modular data center facilities can be built and deployed in a fraction of the time it takes using traditional construction methods. On average, modular colocation data centers are built 30 percent faster than their stick-built counterparts.

Because the modules are produced in an off-site factory, many common construction delays—such as inclement weather, equipment failure and staffing issues—are mitigated.

Working with a vendor-agnostic data center manufacturer also provides additional time to value by maximizing design flexibility. This is achieved by seeking out the most cost-effective components and materials required and ensuring all systems integrate efficiently.



Operational Efficiency and Performance

Operational efficiency and enhanced performance are critical benefits of modular colocation data centers.

When modular colocation facilities are deployed at the edge, tenants—and their customers—experience reduced downtime and fewer latency issues, which is critical for everyone's business.

Colocation tenants can also increase performance by outsourcing some of their data-center-related IT functions to a team of highly trained IT experts.

Scalable Growth

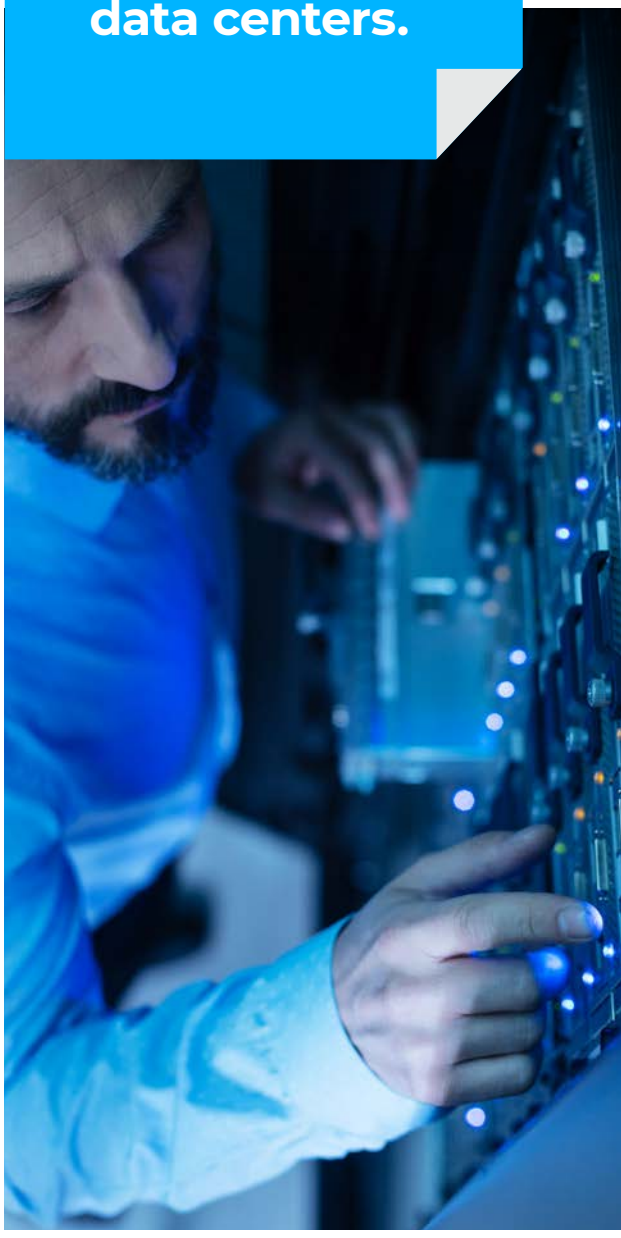
Scalability is a key differentiator for modular colocation data centers.

Traditional construction methods typically force owners to build out 100 percent capacity on day one. But if you don't have enough tenants to fill the facility, this leads to stranded capacity, forcing your organization to assume the expense of maintaining underutilized space and equipment.

Modular colocation facilities, on the other hand, can build and grow capacity incrementally, meaning you can match infrastructure directly to demand.

This helps facilities keep capital costs low and allows them to deploy pre-built infrastructure later on. These lower costs can also be passed to the tenants, giving your facility a critical competitive advantage.

Scalability is a key differentiator for modular colocation data centers.



Location-Independent

Modular data center manufacturers do not face the limitations of working predominantly on-site for customer projects that traditional builders face.

Infrastructure is pre-built in a controlled factory environment, meaning it can be transported and deployed quickly to almost any location. Modular data center solution providers can also keep vendor-managed inventory on hand to be sent to client sites as needed.

Quality-Controlled Manufacturing Environment

Modular colocation data centers are of higher quality design and construction. Each module is built to the client's specifications in a controlled factory environment with a comprehensive quality management system based on ISO 9001 standards.

Compared with on-site construction, the manufacturing process for off-site construction creates less raw material waste. This is because parts are cut to size, and leftover materials and components are reused.

Testing throughout the build process—including final acceptance or factory witness testing before shipping the modular facility to its location—ensures the data center is ready to deploy on arrival.

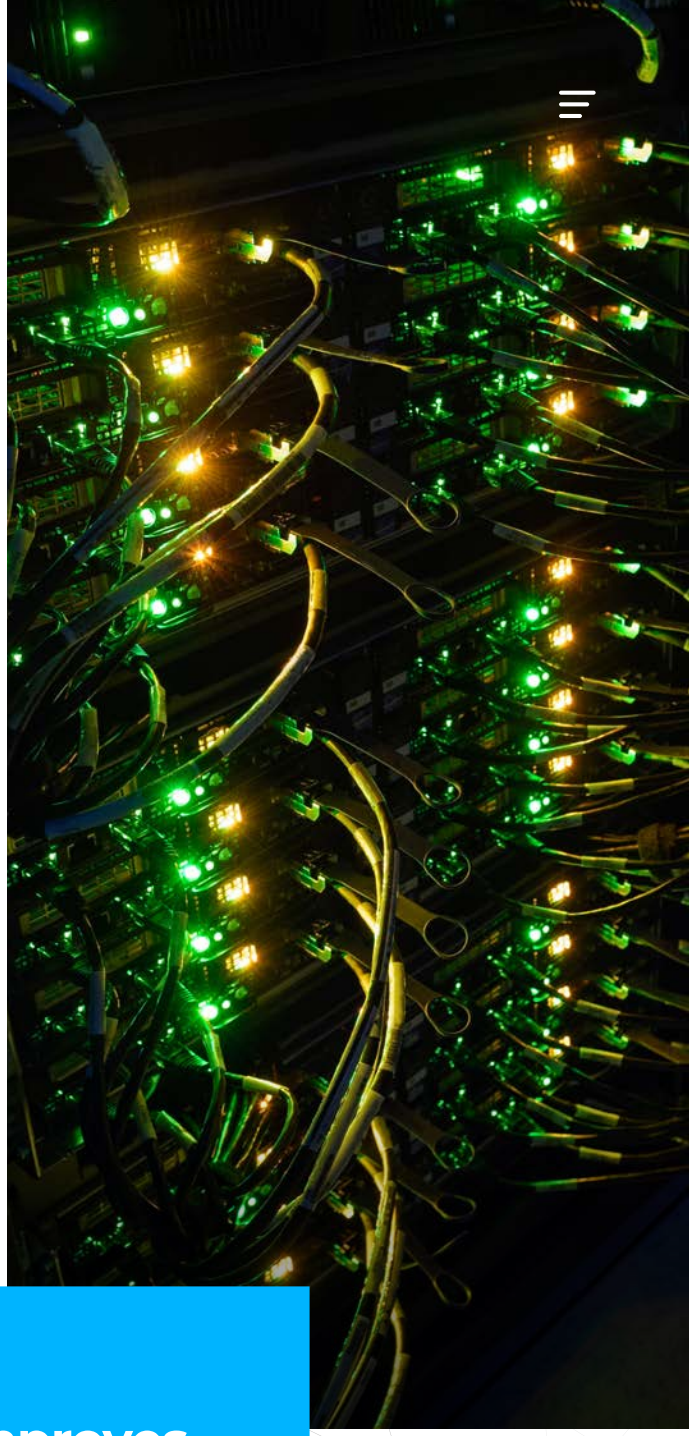
Less Complex Installation

Not only is there a minimal amount of on-site testing required to make a modular data center operational, but the overall installation process is also far less complex than a traditional, stick-built colocation data center.

Most of the work is completed before shipping, so when a modular data center is delivered, there is little on-site trade to coordinate, reducing the need for skilled workers during the current national skilled labor shortage.

Modular data centers are built with ease of transport in mind, so they are optimized for placement in heavy edge-use geographies or remote regions that would be difficult for heavy construction machinery to access.

Modular data centers are built with ease of transport in mind, so they are optimized for placement in heavy edge-use geographies or remote regions.



Reduced Risk

Owners incur less risk when they opt for modular instead of traditional data center construction.

From a protection standpoint, modular data centers can withstand extreme environmental exposure and the elements—even earthquakes—so they can be deployed in rugged regions that are unsuitable for less sturdy constructions.

Because the facility is delivered pre-built, there is no need for on-site wiring, assembly and other tasks that would otherwise introduce liability to the project. Consistency in the modules reduces human error and improves connectivity, promoting a safer and secure job site.

Consistency in the modules reduces human error and improves connectivity, promoting a safer and secure job site.

How Modular Colocation Ensures Success in an Evolving Industry

There are currently massive investments being made in the colocation space. Existing facilities cannot be built fast enough to keep up with compute and capacity demand driven by widespread digital transformation and a global surge in remote network usage.

Modular colocation data centers will play an essential role in keeping enterprises up to date and competitive thanks to five core capabilities:

- Increased time to value (i.e., speed to deploy)
- Scalability for changing market conditions and organizational needs
- Higher quality and lower costs
- Reduced need for skilled labor
- Increased access to hard-to-find space in a booming market

Modular colocation data centers will play an essential role in keeping enterprises up to date and competitive.

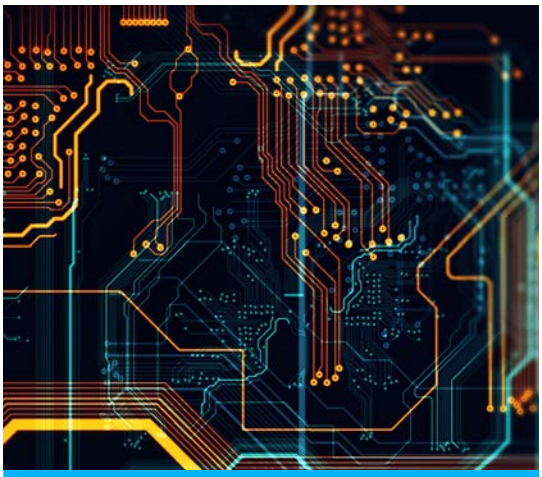
Why Partner with PCX for Your Modular Colocation Data Center Needs?

PCX is a leading solutions provider in the modular data center industry, with prefabricated systems that integrate electrical and mechanical components into custom enclosures and skid-based systems.

By following a proven manufacturing process and stringent quality control protocols, PCX delivers unparalleled production efficiency and the highest-quality end products. PCX's collaborative design process ensures every unit is built to the client's exact specifications, which is part of what makes modular construction ideal for today's data center market.

All PCX projects are designed and built to comply with National Electrical Code and UL classifications. Every modular electrical and mechanical system PCX builds and deploys is certified to ISO 9001 standards.

To learn more about the benefits of modular data centers and how PCX can facilitate your colocation expansion strategies, contact us today.



PCX delivers unparalleled production efficiency and the highest-quality end products.

Contact Us

33 Pony Farm Road
Clayton, NC 27520

919.550.2800