WHITE PAPER

Six Important Considerations
When Choosing a
Colocation Provider

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Colocation services may seem like nothing more than a commodity; a data center is a data center. However, what appear as just minor differences between providers can have a major impact on the overall performance of your business.

With applications supporting your key customer interactions and business functions, all aspects of your IT infrastructure, including your colocation provider, need to be scrutinized. Whether it is an improved customer experience, 100 percent uptime for your critical applications or better alignment of IT with your business priorities, careful consideration of your colocation services provider will impact your ability to achieve these goals.

From physical location to network integration, there are important elements to consider when placing your hardware with a colocation company. Asking the right questions can ensure an optimal deployment. Any latencies or points of failure need to be eliminated or minimized to secure the performance of your business applications. Redundant systems help protect your business and keep it operating to serve your customers, no matter what unforeseen events may arise. Also, having a secure environment protects your business from intrusions that can have a devastating impact on your business.

Each business's needs are slightly different, and you should bear in mind the operational dynamics that make your business unique. That said, the six considerations discussed in this paper are relevant to all colocation environments that clients deploy. They are the essential building blocks of a colocation program, and it is critical to select a provider that can deliver on all these attributes.

Operational Practices
- Planning, Coordination and Management
- Staffing and Organization
- Training
- Operating Conditions
- Maintenance

Data Center Location
- Proximity
- Global Footprint
- Available Capacity

Connectivity & Service Options
- Tier 1 Internet Access
- Private Data Networking
- Carrier Diversity
- Access to Managed & Cloud Services

Security & Compliance
- Physical Security
- Network Security
- Layered Security Services
- Compliance

Support Services
- Remote Hands
- Migration
- Design & Installation
- Structured Cabling

Power & Cooling
- Reliability of Power Systems
- Cooling Technologies

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Does My Colocation Provider Have the Necessary Practices and Methods to Assure Maximum Uptime?

The Uptime Institute reports that 70 percent of all data center outages are the result of human error. No matter how resilient a data center's design and construction, you can still have outages if the operations team does not manage and operate the facility with an eye toward operational excellence. One way of accessing the operational practices of a data center is to look for the Uptime Institute Management and Operations Stamp of Approval. The Uptime Institute M&O Stamp of Approval provides a means to conduct risk analysis by examining five key behaviors:

Together these behaviors assess the operational practices of a data center with focus on the areas most often cited as the root cause of the human errors that adversely impact data center operation. The M&O Stamp of Approval validates the rigor and effectiveness of the facility management and operations and gives stakeholders the assurance they need that effective risk mitigation is in place.

Planning, Coordination and Management
- Site Policies
- Financial Process
- Reference Library
- Capacity Management

Staffing and Organization
- Staffing
- Qualifications
- Organization

Training
- Data Center Staff
- Vendors

Operating Conditions
- Load Management
- Operating Set Points

Maintenance
- PM Program
- Housekeeping
- MMS
- Vendor Support
- Deferred Maintenance
- Predictive Maintenance
- Life-Cycle Planning
- Failure Analysis Program

How Close is My Colocation Provider's Data Center?

A data center that is close to your company's offices is a common requirement for companies shopping for colocation services. However, the advantages go well beyond providing easy access for your staff. Proximity to your location can help improve the performance of your IT infrastructure. If you are sending large volumes of data from your primary site to your colocation environment, distance matters. A site that is physically close reduces data replication issues. Minimizing latency delays has always been important for application performance. As chatty applications — meaning those that wait for server acknowledgment or perform a number of

small transactions — continue to become widespread, any latency issues become exacerbated and can severely impact performance. Proximity can help reduce the effect these latencies have on your applications.

In addition to having a center close by, the ability to tap into a network of other centers can help make your IT more resilient. Look for a provider that has a data center near you and also has multiple options to provide locations that are as far away as required from your primary site. When you can deploy colocation environments across geographies to back up data, run additional

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instances of applications and circumvent local weather or power disruptions, you have a solid foundation for business continuity planning. If you need to deploy colocation environments in other locations, a provider with a global footprint will more likely be present in the major markets you need to serve.

When it comes to the availability of physical space, make sure the provider has additional capacity in case you need to build out your environment. Having the option to expand your space in the future can save you significant time and costs compared with deploying with a different provider or moving to another data center. Look for providers that are well funded to invest in additional build-outs for the data center. Providers that do their builds on a modular basis keep a tighter control on costs but are ready to expand to meet client needs.

How Can I Connect My IT Infrastructure to Users, Business Partners and Cloud or Managed Service Providers?

Colocation is more than just racking and stacking your equipment in a data center and adding a network connection. Without highly reliable and redundant network connectivity, your IT performance will suffer. A provider with a full range of connectivity options can ensure all your locations, customers and business partners get the access to the applications and resources they need in your colocation environment.

It also is critical that your provider has carrier diversity at their data centers if you are running applications that have this requirement to ensure reliable and redundant network connectivity. Make sure your colocation provider can offer you advanced networking capabilities so you can meet your application performance and uptime requirements. Connectivity increasingly goes beyond networking connections to the user community and to connectivity between IT platforms, including leading cloud providers. For most companies, colocation is only one part of a bigger IT picture — you shouldn't think of it in isolation. Consider your selection of a colocation provider in the context of how your entire IT infrastructure impacts your business. In addition to colocation services, many companies require capabilities like managed hosting and are developing cloud solutions. A partner that can offer access to all these services, one with expertise across the entire portfolio, can help you achieve a flexible, better-performing infrastructure.

Cloud services will continue to grow as part of the IT solution set, but many organizations will continue to have a need for colocation as part of their infrastructure. The future will likely see many side-by-side colocation and cloud environments. Your colocation provider should understand the capabilities of a cloud-based system and be able to help you work across multiple environments.

How Does My Colocation Provider Ensure Security and Compliance?

As you design your environment to be secure, don't forget the importance of physical security measures in the data center. Your provider should use current technologies like biometric scanners, card readers and video monitors as well as mantraps to prevent unauthorized access. Installing your own cameras with the ability to remotely monitor the activity in your colocation cage not only enhances security but also is an efficient way to better control your environment — and that should be something your provider can enable. People add a layer of security, too; providers that staff their centers 24/7 with trained security personnel instead of relying solely on automated systems offer an important extra level of protection.

Beyond the physical security of the center, look for providers than can augment your security with services like DDoS protection, network security and threat detection. Professional services that can test, evaluate and remediate security vulnerabilities can help you increase your ability to withstand intrusions.

Your provider also should be compliant with any regulatory requirements for your industry and know the ins and outs in a

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continually shifting regulatory environment. The data centers should be compliant with SSAE 16 service controls. Publically traded companies should seek providers that meet SOX, and any company providing ecommerce needs to meet PCI security standards. If you are in an industry that requires specific compliance credentials such as FISMA in financial services or HIPAA for healthcare providers, make sure your provider can meet these stringent requirements.

If you need colocation services in a geographic location that has high risk factors, make sure your provider has addressed them. For example, if you are locating resources in an area prone to earthquake activity, the data center you select should use seismic-compliant construction techniques.

What Kind of Support Resources are Available?

Providers that simply give you space and an electrical hook-up may seem, at first glance, to provide a lower cost structure, but they will require you to staff up or pay for services that full colocation service providers include in their offering. Make sure you examine the Total Cost of Ownership (TCO) of each of your alternatives. In a true colocation services environment, the provider should address security, provide power and cooling, perform facility management and be able to deliver these services with a Service Level Agreement (SLA). An SLA imposes financial penalties on the provider if they fail to meet agreed-upon service metrics.

On-site support that is available 24/7 provides quick response for emergency re-boots or other issues when your staff is not in the center and can help prevent minor incidents from escalating into larger issues. The availability of such services can help you meet your response time requirements while effectively managing your IT budget.

Many, if not most, companies find it takes time to stand up their environment and migrate applications. Providers with modular growth plans give you the flexibility you need to grow your environment as you migrate. Look for a contract that gives you the option to fill space over a period of time. This can reduce costs and allow you to adapt to changing business conditions so you can increase or decrease the speed at which you deploy into the center.

Providers that offer services to help you move in and can assist with hardware racking and stacking or cabling can help make your deployment go smoothly and reduce migration time. Structured cabling programs provide installations that meet standards for design and testing, ensure better performance of your infrastructure and enable future changes to be made quickly.

If you are a mid-sized or large company, you know that "one size fits all" does not apply to your IT needs. Find a provider that understands the complex relationships of your specific business processes, IT governance model, application stack and security needs. Your provider should operate in a way that is consistent with your internal controls, the processes you utilize for change management and how you respond to incidents. How closely these processes are aligned can make a big difference in how well a provider will meet your colocation needs on a day-to-day basis.

The experience of the on-site data center staff will have a significant impact on the level of support you receive when you need it. Data center management is a complex task that requires specialized skills across a wide number of domains such as security, power distribution, networking and hardware and software management. Make sure your provider has the skilled staff for all the key data center capabilities, and they do not simply manage vendors that come in to service the data center systems. Engineers and technicians who are highly trained and certified with extensive experience in data center management will provide you with dependable service that improves your uptime. Providers that offer managed hosting and cloud services are often better suited to help with your colocation needs as their data center staff is trained and experienced to support complex environments. Make sure your provider has standard, documented processes and practices in place for all their activities like maintenance and change management. Such standardization drives better performance and uptime.

A provider with a portal that supports trouble ticketing and reporting can help you better manage your environment. Remote management increases your IT staff's efficiency and enables you to be proactive and resolve incidents before they affect the performance and availability of your applications.

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Setting up a new environment is a complex undertaking, and missteps can reverberate for years. Providers that have the expertise to assist you in the design of your new environment and can customize an installation based on your needs ease the installation process and simplify future maintenance. Details matter: having a cooling expert involved in the initial design can greatly improve cooling efficiency by using optimal rack design and other techniques. A provider can help you reduce power consumption by suggesting ways to move to configurations driven by green IT principles such as improving server density during the design phase of your environment.

Given that your staff may be spending significant time at the data center, look for a provider that offers workspace, lounges and conference rooms where they can connect laptops or take a conference call. These amenities provide a comfortable work environment and help keep your staff productive.

What are the Power and Cooling Capabilities of the Center that will House My Equipment?

Power is a critical data center element, so look for a provider that has a 100 percent uptime SLA for power and redundant power systems. Providers that can offer this assurance have engineered their N+1 or better systems with concurrently maintainable power resources, so they provide uninterrupted power during both routine maintenance and when any power source is brought offline. The provider should be able to not only deliver the power you need today but also meet your future needs. Providers that cannot adequately power their space will limit your options as you seek to grow your colocation installation or migrate to new servers with higher power requirements.

Your provider should offer transparency and detail in its billing. Providers that offer options for billing your power based upon distribution of power circuits, or metered power, can help reduce your costs depending on your configuration and power requirements.

Server power demands are increasing and so is the power consumption in today's high-density server environments. It is important that the center includes efficient cooling systems, and the provider continues to invest in new cooling technologies to protect your hardware. Look for cooling techniques like hot and cold aisles that provide a front-to-back cooling profile with blanking plates. Proper air containment designs and cooling walls promote cooling and can help avoid hot-spots in your cage. Improved cooling also can extend the life of your equipment and improve performance by reducing hardware failures. Make sure the center meets your required standard ranges for temperature and humidity. A provider that can participate with you to integrate cooling techniques into the design, operation or upgrading of your environment can help you promote the green initiatives of your company.

Summary

As described in each of the six considerations, there are significant differences in colocation service providers — from staffing to connectivity to geography. With the availability and performance of your business applications riding on the selection of a provider, make sure you select one that can help you meet your goal of 100 percent uptime. Colocation is a long-term commitment, and the cost and business disruption that comes from moving installations makes the right selection critical.

CenturyLink has been providing colocation services to large clients for 20 years and has deep expertise and a strong track record of delivering high performance IT environments. As a full-service provider, CenturyLink brings the flexibility required to deliver the solutions you need today and the vision to help get you where you need to be in the future.

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Our assets include over 60 global data centers, a global network that delivers high levels of security and availability and a seasoned team of professionals who deliver IT solutions that improve business performance. Our commitment to

Operational Excellence can give you the peace of mind that your IT infrastructure is up and running so you can focus on your business.

About CenturyLink Business

CenturyLink, Inc. is the third largest telecommunications company in the United States. Headquartered in Monroe, LA, CenturyLink is an S&P 500 company and is included among the Fortune 500 list of America's largest corporations. CenturyLink Business delivers innovative private and public networking and managed services for global businesses on virtual, dedicated and colocation platforms. It is a global leader in data and voice networks, cloud infrastructure and hosted IT solutions for enterprise business customers.

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