



Collocation & Construction: Is it Right for Your Business?

December 4, 2008

By: Scott Lewis, President / CEO Winning Technologies, Inc.

I recently had the opportunity to speak to about 150 construction executives in a round table format regarding their concerns and opportunities regarding technology in the construction industry. I do a lot of technology speaking with construction companies and this was one of the most interesting round tables I have had the opportunity to lead. My goal was to make this an open forum so people could ask questions, raise concerns, and learn from each other. What I learned from this was very interesting and a little surprising. Although most of the participants had an understanding that computers and technology was important to their business, they really did not understand the overall impact that technology has on their business. Most of them still regarded technology as a cost of doing business rather than considering technology as part of their business.

Let's define technology for the purposes of this article. We are talking about in-house systems, networking, security, and hosting services. Most of these participants understood the laser guided concrete spreaders and electronic earth movers, and their importance to the number one goal of building a building. Those tools are important to building the building, but the data and information that the back office needs to run the business is as important as what the guys building the building require. This article is going to be based around the back office technology resources. Now we can't cover it all, but we can cover at least one aspect that often gets overlooked but is becoming an increasingly popular methodology of managing and deploying technology internally to back office workers. The challenge is how to get back office functionality to the project managers and field personnel that often require these resources.

In my business one of the most popular methodologies to deploying, managing, and securing back office resource is in our collocation or hosting division. The popularity of this methodology stems from the need to have construction based organizations focus on your core competency of building buildings, while transferring supporting resources to organizations whose core competency is the management of technology resources. Technology management is so important that you want and need someone who is familiar with the uniqueness of the construction industry, but can serve your technology

needs and support the technology initiatives that impact the jobs and the people in the field.

Why has the popularity of collocation or hosting become so popular? To determine this we have to examine and make a business case for why you would want or need to consider collocation or hosting for your company. Historically, as businesses have grown, we add a computer here and there. Eventually we decide to upgrade to a server, then two servers, then three servers. The next thing we know, we have gone from a couple of computers and an IT guy, to a large infrastructure with multiple servers and a complete staff of IT professionals. As this infrastructure of hardware, software, and people grows, we find ourselves managing an IT department where we can become divided between cost and performance.

The technology industry has become so fragmented that the days of having the one superstar IT professional are over. We now have security professionals, networking professionals, server professionals, and communications specialists. This trend is driven by the complexity and the demands of organizations to be competitive and reduce costs, while making workers as productive as possible. The downside is that we now have created high cost IT staffing requirements within organizations to support the entire organization. Of course our other option is to reduce costs and expect less experienced IT people to handle a complex situation which results in underperforming IT departments, lower productivity, increased long term costs, and end user dissatisfaction.

Collocation in construction has proven to be a very productive, secure, and cost effective manner to deploying technology and managing technology resources. Collocation can also relieve your organization of the burden of being a technology support company and focus on your business. When you examine some of the advantages of collocation such as: Total Cost of Ownership, Maintenance and Management, Scalability, Data Security, Reliability, Protection, and Future Proof, collocation can bring to your organization resources that you need in a bundled service.

Total cost of ownership can vary from company to company. First we need to look at factors such as facility cost, physical space, hardware costs, software costs, air conditioning, fire protection, redundant power, and the human cost of maintaining an internal IT staff. Collocation can offer your organization a methodology that can release your business from these costly burdens and provide you with better resources while reducing cost. Better yet, partnering with a Total Managed Service Company that can manage all your hardware and software assets, provide a secure collocation environment, and provide end user support would in fact increase the return on your investment and lower your total cost of ownership.

Maintenance and Management is a key operational and selection point when you are selecting a collocation hosting company. You want to insure that you are intrusting your data and systems to an organization that has a proven track record of providing technology managed services, around a collocation environment. This can be a difficult solution for many organizations to provide in a hosted environment. However from a user's perspective, this is the key. We need to balance the monitoring and management of the servers for performance, failures, updates, along with providing end users the support and direction they need to maximize the use of the hosted environment.

Scalability should be an engineering factor that is considered when you select a hosting company. What you don't want regardless if you are going to host your system or if you are going to build your system in house, is to continuously have to redesign your system as your business changes. Systems should be designed so they are easily scalable to the ever changing requirements of your business. As your business grows, the system should be able to scale to meet the new demands without having to go through an expensive redesign and implementation process. Hosting companies should be able to design and engineer systems that grow and shrink with the requirements of your business in a cost effective manner.

Data security in today's electronic world should be the highest priority. I hear all the time that employees are our biggest asset. True, but false. Yes, employees make our businesses go, and yes without them it would be impossible to build the building or bill our customers, or provide that personal service to our clients. However, when it comes to the business, what is the grease that makes our business run? It is our data and without it we are simply starting over from scratch. The dynamics of security can be very different in a collocation or hosted environment and is very important. The first layer of protection is the physical layer and the second layer of protection is the electronic security.

Does the center have limited access to the outside? Why is this important? Limiting access to the center is critical to insuring that only people who are suppose to be there have access to the data floor within the center. You don't want individuals that have no reason to be on the data center floor touring the center.

Does the center provide guards and sign in sheets? It is, from a security standpoint, critical to know who and when people are in the data center. There are many ways to extract data off a server if you have physical access to that server. I can hear you now, "people don't really do that!" Billions of dollars are lost due to computer espionage so, yes, people want your data. An example of why this is important and why collocation is better than having your systems and servers in-house is that my company performs technology audits. As part of that audit we perform a physical security breach to

determine how deep into your building we can get. There was an organization that had a front desk person with controlled doors, however their employees often entered through a side door. I was able to simply follow an employee through the door once they had it opened. All I did was hold a simple conversation as we were walking into the building. Once into the building I explained to the maintenance guy that we had replaced a server and I needed a two wheel cart to carry the old server out to my truck. The employee gladly provided me with a two wheel cart, allowed me to disconnect the server, and even helped me load it into my truck. Now this is an extreme example and many times I am not as successful, but all I needed to know was the owner's name and important players within the organization and access was easily gained.

How is access controlled, tracked, and monitored? Our center utilizes biometric hand scanners to add an additional level of security. Biometric hand scanners can detect body temperatures and pulse rates, and determine if someone who has legitimate access to the center is being forced under distress to allow unauthorized access to the server floor. This is important aspect because there is a lot of valuable hardware, software and data within the center that needs to be controlled.

Where is the data center physically located? When you talk about physical location this is important because you don't want the center in a hurricane zone or a high fire zone. You also want to insure that the center is not in a back room of an office or someone's garage. In addition you also want to make sure that there is not a sign on the outside of the building announcing what is housed within the data center. High end data centers should be non-conspicuous in nature. They don't want to draw any more attention then they have to.

Electronic security is mission critical. Within the design and engineering phases, you should specifically look for how your data is going to be isolated and protected. What kind of firewall protection is the hosting company using? Are they using industry level firewalls, core firewalls, and individual firewalls? What is the overall configuration of the initial protection from the outside?

Are they monitoring for external intrusion detection? One of the rules of security is knowing your risk. You need to know who is looking at you so you can watch and take countermeasures to insure that your data is protected. This is not simply a data center function, you should be doing this regardless if your data is hosted or collocated or if your system is internal to your business and building.

Security is an interesting subject in the round table I lead. I had more than one participant tell me "Who would want my data? If they want it, they can have it. What would they do with it anyway?" This is exactly the attitude that has created a multibillion dollar business of buying and selling stolen data. Trust me, your data is worth

something to someone and you don't want your information out in the world. There are people who buy and sell data for a living. It is a big business and we need to realize that we have to start protecting ourselves and our organizations. When you think about what your data includes; customer names, bank account information, social security numbers, employee names and addresses, pricing, marketing, project lists, it goes on and on and people are willing to pay for that information. An example of this was reported on the SC Magazine web site in October 2008. The FBI and international partners arrested 56 individuals for buying and selling data off a website. Although only 56 were arrested the site had over 2500 members.

Collocation facilities are classified by tiers and if you are considering collocation or hosting, understanding the tiers is important in selecting a data center. The differences may seem small in some cases, but the investment required by the owners of the centers in order to reach the next tier is sizeable and does have an impact on the overall performance of the center.

Tier I: Collocation or hosting centers typically have a single path for power, meaning one power feed runs off a single power grid and cooling distribution center. They are limited in their ability to provide redundant components such as air conditioning, power, fire suppression, and data feeds with availability typically around 99.5%.

Tier II: Collocation or hosting centers are typically configured with a single feed for power and a single feed for cooling distribution. They will have some components that are redundant, with availability around 99.7%.

Tier III: Collocation or hosting centers that are composed of multiple power grids feeding the building and multiple cooling distribution paths. They typically only have one path active at a time. The center will have redundant components, and those systems have the ability to be concurrently maintained with availability around 99.9%.

Tier IV: Collocation or hosting centers that are composed of multiple active power systems and power grids, multiple active cooling distribution paths and systems, have redundant components with built in fault tolerance. This allows availability to reach or exceed 99.995%.

This chart illustrates Tier similarities and differences

	TIER I	TIER II	TIER III	TIER IV
Number of delivery paths	Only 1	Only 1	1 active 1 passive	2 active
Redundant components	N	N+1	N+1	2 (N+1) or S+S
Support space to raised floor ratio	20%	30%	80-90%	100%
Initial watts/ft ²	20-30	40-50	40-60	50-80
Ultimate watts/ft ²	20-30	40-50	100-150	150+
Raised floor height	12"	18"	30-36"	30-36"
Floor loading pounds/ft ²	85	100	150	150+
Utility voltage	208, 480	208, 480	12-15kV	12-15kV
Months to implement	3	3 to 6	15 to 20	15 to 20
Year first deployed	1965	1970	1985	1995
Construction \$/ft ² raised floor*	\$450	\$600	\$900	\$1,100+
Annual IT downtime due to site	28.8 hrs	22.0 hrs	1.6 hrs	0.4 hrs
Site availability	99.671%	99.749%	99.982%	99.995%

*Excludes land and abnormal civil costs. Assumes minimum of 15,000 ft² of raised floor, architecturally plain one story building fitted out for the initial capacity, but with the backbone designed to reach the ultimate capacity with the installation of additional components. Make adjustments for NYC, Chicago, and other high cost areas.

© 2001 The Uptime Institute

Determining if Collocation or hosting is right for your business can be a difficult decision. That decision should be considered very carefully for there are many advantages, especially when you are working with a full service managed services company. Transferring the burden of support and hardware maintenance while increasing productivity due to uptime and performance increases along with security and reliability could bring a lot of bang for the buck to your business. The popularity of hosting or collocating is increasing exponentially due to the current economic conditions and the overall need to save money where ever you can. And though hosting can save you money, it can also continue to provide your organization with the necessary electronic tools to build and maintain your business.

About the author:

Scott Lewis is the President and CEO of Winning Technologies Group of Companies. The Winning Technologies Group of companies is made up of Winning Technologies, Xpress Host, Lingo Communications, and Investigative Protection Services. Scott has more than 25 years of experience in the technology industry, is a nationally recognized speaker on technology subjects such as Collocation, Security, CIO level Management, Data and Voice Communications and Best Practices related to the management of technology resources. Winning Technologies primary customer base is focused around the construction industry and Winning Technologies is the largest provider of technology services to the construction industry.