Collocation: More Than Just a Real Estate Play

Introduction

The impact of the Internet’s explosive growth over the past several years has extended far beyond the traditional communications industry. We have seen a paradigm shift in the industry away from a focus on voice and data convergence and toward the provision of a scalable, layered infrastructure that supports e-business applications, content, and commerce.

The boom of the late 1990s and early 2000 drove many companies onto the Internet and created opportunities for service providers looking to capitalize on the growth of e-commerce. While we have seen a slowdown in the e-commerce engine, enterprises are still integrating the Internet with their core business functions. Companies in every industry are leveraging the Internet and Web-based technologies: to implement e-commerce across their extended enterprise; to migrate their enterprise applications to intranets; to electronically bond to their suppliers; to market their products and services; and to enhance customer interaction. And as these companies become more reliant on Web-based applications, they become increasingly intolerant of latency, packet loss, downtime, and so forth. This leaves enterprises and non-facilities-based service providers struggling with the question of how to ensure that they have the very best infrastructure and connectivity.

Given what has happened with the economy, enterprises and service providers alike are more frugal than ever when it comes to capital expenditures, creating opportunities for companies that have already made those investments. Collocation providers are well positioned to take advantage of this downturn in the economy as service providers and large enterprises look for ways to reduce overhead and concentrate on their core competencies. In this paper, we explore the universe of collocation services, providers, and end users; we examine the various business models in the collocation market and analyze their strengths and weaknesses.
Collocation Demystified

So what is collocation? Essentially, collocation providers address the need for carrier-grade building infrastructure, transport, and network interconnection. However, the term has taken on a number of different meanings in recent years. Collocation can refer to traditional telecommunications collocation that facilitates interconnection between the incumbent local exchange carriers (ILECs) and the competitive local exchange carriers (CLECs), as required by the Telecommunications Act of 1996. It can also refer to collocation for the purpose of exchanging traffic (peering) between and among service providers including Internet service providers (ISPs). The term collocation also includes basic enterprise collocation, which is essentially the outsourcing of the enterprise data center space requirements to a secure, environmentally hardened facility owned by a service provider that offers transport and connectivity in addition to real estate.

While these basic services are becoming commoditized, there are many ways collocation providers are adding value to their offerings. In this economy, an outsourced model can be very attractive to companies that need a data center space or connectivity services, but are unwilling or unable to expend the capital to build a company-owned facility. Collocation centers are also attractive as back-up facilities for mirroring or disaster recovery. Finally, collocation services allow enterprises to accelerate the time-to-market.

Collocation services are offered by many providers: from traditional telcos operating basic network access points, to managed hosting providers that lease rack space, to collocation pure-plays. These different business models appeal to a number of different customer segments.

The collocation market as we know it is only about five years old. In spite of the market’s relative youth, basic collocation services are becoming commoditized. Many providers that entered this market with a core collocation offering are moving toward higher-margin value-added services. While this migration may seem to signal the death of collocation, we believe the opposite to be true. Collocation services do offer unique value propositions to certain end-user populations. We believe the economic downturn will lead enterprises and service providers alike to look for alternatives to building their own facilities.

Providers

So who are the collocation providers? The Yankee Group segments the market into the following categories: NAP/Peering/Internet Transit Solutions; Network Providers; Internet Data Centers; and Network-Neutral Exchanges. Below we delve into the value proposition that each of these segments brings to the collocation market.
NAP/Peering/Internet Transit Solutions

Network access points (NAPs) are generally carrier-neutral but are operated by a telco. The four original NAPs were commissioned by the National Science Foundation to give carriers access to NSFNet (the Internet backbone). They are located in the Bay Area of California, Chicago, Ill., New York, N.Y., and Washington, D.C., and are operated by Pacific Bell, Ameritech, Sprint, and WorldCom, respectively. In addition to the original NAPs, there are numerous public and private NAP facilities around the country that are focused on facilitating connectivity among ISPs and between content providers’ Web sites and ISPs. Today, ISP connectivity takes place via one or more of the following peering, or traffic exchange, methods:

• Public. Traffic exchange at a public, typically carrier-operated NAP or Metropolitan Area Exchange (MAE). ISPs and other network providers pay about $5,000 monthly for access to other providers through public exchanges.

• Private. Relatively equal traffic exchange between two or more ISPs at a mutually agreed-upon, private interconnection point. This arrangement is considered reciprocal, and no fees are charged by either party.

• Transit. Relatively unequal traffic exchange between two ISPs, whereby one ISP pays another ISP for carriage of traffic via its network.

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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<td>• Access to numerous ISPs and network providers</td>
<td>• Increasingly crowded, with less robust connectivity than private locations</td>
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<td>• Strategic geographic location</td>
<td>• Appeals only to carrier-type service providers (ISPs, ILECs, CLECs, IXCs)</td>
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Network Providers

As bandwidth prices continue to decline at a rapid pace, network providers are looking to provide additional value for their customers and create additional revenue streams. Offering collocation services is one way to add value and revenue to the network. The value proposition that these providers bring is essentially access to the network. Network providers have built their collocation facilities directly on their networks, providing a direct on-ramp to robust bandwidth. Further, these providers argue that this direct access to the network enables more substantial service-level agreements (SLAs) and reduces overall downtime. The drawback to this solution is a lack of carrier choice. Many application service providers (ASPs), managed service providers (MSPs), and Internet service providers, as well as large enterprises, are looking for multiple network solutions and demand carrier choice for redundancy and survivability. In fact, many traditional telecommunications providers are offering collocation and Web-hosting services specifically to drive more revenue onto the networks.
**Strengths**
- Robust physical environment
- Access to managed services (either from collocation provider itself or MSP tenant)
- Bundled collocation and transport services, due to location on network backbone

**Weaknesses**
- Lack of carrier choice
- No options for redundancy and multihoming
- Potentially anticompetitive with other carriers and ISPs

**Example**
Companies like Level 3, Williams, and Sprint are all network-based players that have entered the collocation market to drive traffic and revenues on their networks. While Level 3 and Williams appear to be more focused on offering traditional collocation services, Sprint has developed a suite of managed hosting products in addition to its collocation offering. All of these providers believe that an integral piece of their value proposition is the strength of their networks and the position of their collocation facilities on those networks. Other differentiators include the ability to bundle communications services with a collocation offering. These value propositions will, no doubt, appeal to certain segments of the end-user population, but many prospective customers will want the availability of network choice for redundancy and backup. And, in the case of telcos looking to play in this space, some customers may be wary of the potential for competition. Furthermore, other carriers and ISPs will be loath to locate their POPs or equipment in a competitor’s facility.

**Internet Data Centers**

Another collocation option for enterprises and managed service providers is the Internet data center (IDC). These facilities are built specifically to house mission-critical hardware and applications and, therefore, have robust power and physical security. The IDCs offer both collocation and managed hosting solutions. Generally, the IDC providers use a minimum of two carriers to provide a redundant bandwidth solution.

The fortunes of many IDC providers initially skyrocketed with the explosive rise of the dot-coms and subsequently plummeted with the dot-com crash. While some were unable to recover from the downturn, others shifted their business models to capitalize on the growing legacy enterprise opportunity.

But strategic change is risky. In the looming shadow of the economic downturn, many of the original collocation providers became IDC companies by expanding their service offerings to include high-value, managed solutions. The transition has created new opportunities and challenges for these providers. The new opportunities are clearly new revenue streams with higher margins. The challenges, though, are that many of their customers were service providers themselves, and by adding value-added managed services, the new IDC providers began competing directly against their own customers. Now many of these service-provider customers are seeking more neutral facilities from which to offer their services.

Further, IDC providers have found that most traditional collocation customers are not interested in a fully managed solution, and most are taking only one or two managed offerings such as managed firewall services. The upsell opportunity proved to be fairly limited and as a result, IDC providers are pursuing a new target market for their managed service offerings. This,
coupled with the dot-com slowdown, has led to a renewed focus on the enterprise end user and a move away from dot-coms.

| Strengths       | • Robust physical environment  
|                | • Often have at least two backbone providers for redundancy  
| Weaknesses      | • Limited carrier choice for connectivity  
|                | • Potentially anticompetitive with managed service providers  
| Example         | Exodus originally entered the market as a collocation provider, offering a hardened environment and connectivity. Exodus is currently the largest player in the collocation/managed hosting market and recently acquired GlobalCenter from Global Crossing, further expanding its market presence. Being first to market has created numerous advantages for Exodus, not the least of which was building a strong reputation and customer mass among dot-coms, enterprises, and service providers. In the past year or so, the company has become much more focused on building its managed service offerings and has been moving away from collocation as a core service offering. This strategic shift has not been without challenges. While the move toward a managed hosting environment will clearly create additional revenue opportunities for Exodus, it has meant the loss of several service-provider customers. We believe that Exodus's strategic shift really highlights the differences between the collocation and managed hosting markets. Service offerings that were once viewed as part of a simple service continuum are now seen as distinct markets.  

Network-Neutral Exchanges

Many network-neutral collocation exchanges (NNEs) were originally designed to facilitate connectivity between multiple providers. NNEs offer an alternative to the increasingly crowded public peering points. Validating Metcalfe's Law, which states, “the usefulness, or utility, of a network equals the square of the number of users,” carriers were willing to build out to facilities that provide access to other major backbone providers. Clearly, the more carriers within a facility, the greater the value to all collocated in that facility. In addition to direct interconnection, another value-add that NNEs sometimes offer is a central switching fabric. An ISP can connect to that fabric and much more easily connect with other network providers in the facility. This type of service enhances the speed and reliability of network traffic exchange for better performance and reduced cost, as well as dramatically reduced provisioning time.

NNEs appeal not only to network providers such as carriers, ISPs, and content distribution networks, but also to many different service providers such as ASPs and MSPs. Furthermore, some network-neutral facilities are developing enterprise-focused offerings in order to create a more compelling value proposition for all tenants in their facilities. In addition to offering robust bandwidth options, these providers boast hardened environments for the location of servers and equipment.

The presence of multiple carriers, network service providers, and enterprises within a given facility can encourage a marketplace environment for all concerned to sell to one another. This value proposition is compelling for all tenants, as it means they have access not only to a market of potential service providers and suppliers, but also easy access to a potential customer base. Of course, in order to create this marketplace environment, NNEs must carefully manage the space allocation in their centers.
**Strengths**

- Multiple backbone providers for carrier choice and redundancy
- Robust physical environment
- Presence of multiple network and infrastructure service providers for marketplace environment
- Strategic geographic location

**Weaknesses**

- Potential for competition should the provider move into the managed services space

**Example**

Equinix was started in 1998 with the mission of creating open marketplaces for networks, Internet infrastructure companies, enterprises, and content providers to more efficiently interconnect with one another. The company aims to provide Internet exchange services and the highest degree of choice for its customers to allow for efficiency, scalability, and speed-to-market. Equinix acknowledges the importance of creating the right balance of customers and, as such, takes great care to ensure that it has the right mix of customers in its centers.

By having their important business partners in close proximity, Equinix customers can exercise greater control over their network and Internet operations in order to increase performance, expand their business offerings, and enter new markets, while lowering costs. Equinix will continue to develop products and relationship-building opportunities for the companies that choose to collocate in its facilities. These opportunities can help Equinix customers to increase performance and expand their products and services, all while lowering cost.

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**If You Build It, Who Will Come?**

Demand for collocation space will be driven by four customer segments: carriers and ISPs; other service providers; content providers; and enterprises.

**Carriers/ISPs**

Tier 1 and Tier 2 ISPs have typically depended on facilities-based carriers for access, transport, and interconnection. Many are now purchasing their own dark fiber and building their own networks. These ISPs require access to collocation space for the purpose of network interconnection with ILECs and CLECs and for establishing dial POPs. Likewise, major network providers need to connect to one another in a secure facility in order to ensure that they can offer their customers the most robust connectivity possible. Collocation providers enable effective interconnection to public and private networks and can also offer enhanced network performance. Further, if smaller ISPs have direct access to one another via a central switching fabric, it allows them to avoid paying transit to a Tier 1 network. This can significantly extend the reach of these smaller players, providing far greater scale and scope.

**Service Providers**

In an effort to expand into new geographic regions quickly, other service providers including content delivery service providers (CDSPs), managed service providers, and applications service providers require an outsourced solution to their collocation and transport requirements.
As these companies further establish their Web presence, their requirements for content replication at geographically diverse locations will also increase their demand.

Content delivery service providers require multiple, geographically diverse collocation facilities for the purpose of establishing content distribution centers. These locations house servers and other hardware required to support caching and storage. Likewise, ASPs require physically hardened facilities and robust bandwidth options from which to offer their application services. These companies understand that their core competencies lie with the application itself and are relying on collocation providers to supply the infrastructure and connectivity. Storage outsourcers allow enterprises and other service providers to offload the storage of information for real-time and back-up usage. Some of these storage providers are utilizing collocation facilities as the platform from which to offer their services. Further, many collocation tenants are in need of a storage solution, so collocation facilities can represent a potential customer base. Already, companies such as Storage Networks have begun to collocate in facilities operated by collocation specialists as well as managed hosting providers.

Finally, the emergence of the universe of managed service providers has driven the need for robust connectivity and infrastructure, particularly given the economic downturn. Many of these companies do not have the capital, nor do they have the core competencies, to build out robust facilities from which to run their services. Instead, they prefer to contract with collocation providers for their facilities and concentrate their resources on providing managed services. These services can range from managed security to a fully managed hosting solution.

Content Providers

Content providers are today faced with the challenge of pushing rich content to end users as quickly and effectively as possible. As such, they require robust bandwidth options to deliver content over as few hops as possible. These providers, including portals such as Yahoo!, utilize collocation facilities to gain access to network providers. Clearly, collocation facilities housing multiple networks can offer a more compelling value proposition to content providers simply because of the breadth of choice available. A network-neutral facility enhances the ease and speed of interconnecting with multiple network providers. Further, the presence of additional service providers can be of added value for content providers looking for caching or content delivery services, for example.

Enterprises

Colocation providers are experiencing demand from large enterprise customers, particularly in key vertical markets such as financial services and media/production. Many of these companies operate private networks and are looking for collocation space to house their equipment—primarily for the purpose of redundancy, disaster recovery, storage, and interconnection with partners. As the Web infrastructure of these companies expands, the need for additional facilities becomes even more pronounced. When faced with the decision of build or buy, many enterprises are going with an outsourced infrastructure solution in order to gain access to robust connectivity and space. Over 40% of financial services firms currently use external facilities to house some portion of their Web functionality. Further, in this economy, we expect that enterprise demand for collocation services will likely accelerate as businesses look to concentrate their capital resources on their core business functions. While many large enterprises run their own data centers, the cost to upgrade and expand these facilities as their
Web presence grows may well be prohibitive, making collocation facilities even more attractive. Finally, collocation enables these large enterprises to contract with multiple network providers.

**Overall Customer Requirements**

While there are certainly opportunities for collocation providers in each segment of the market, we believe there are certain fundamental success criteria required for most demand segments:

- **Network Neutrality.** Most network-based collocation providers require customers to establish revenue commitments for network services. With bandwidth becoming a commodity, these providers view collocation services as a means to drive additional traffic on their networks and ultimately increase network revenue. Collocation customers require the flexibility to choose from among many competitors’ offerings rather than being restricted to any one network for their bandwidth. Network-neutral facilities with a number of different network providers can create opportunities for end users to aggressively negotiate contracts—allowing for better pricing and service levels than a single network facility.

- **Provider Choice.** For virtually every segment of the end-user population, choice is an important consideration when evaluating a collocation vendor. With respect to connectivity, the presence of multiple backbone providers creates the opportunity to ensure that all back-up, redundancy, and survivability needs are met. Further, the choice of multiple carriers allows end users to multihome with much greater ease than with a single- or double-network facility. End users can choose a primary ISP and then choose multiple back-up ISPs, all from the same facility. And these connections need not involve lengthy provisioning times, which can reach up to six months or more. In a single facility, additional connections can be provisioned in as little as 24 hours and, via a simple cross-connect, can significantly reduce the cost to the end user. Moreover, in an environment with many providers, end users have the ability to more effectively negotiate pricing and service-level agreements. And the opportunity extends beyond connectivity choice. Service providers can partner with one another and can appeal to enterprises located in the collocation facility. As an example, a major financial institution chose to locate in an Equinix IBX, not only to have access to multiple network providers, but also to have direct cross-connect access to their natural-language search application.

- **Noncompetitive.** End users of collocation services, be they service providers, network providers, or enterprises, demand that their collocation provider be an enabler of their services as opposed to a competitor. As independent collocation providers begin to layer additional managed services onto their core offerings, service-provider customers and backbone providers will avoid these companies. This has been a particular problem for Internet data center providers that entered the market offering collocation services and later chose to pursue a managed hosting strategy. Many of the service-provider customers that bought collocation
services from these IDC vendors were uncomfortable housing their operations within a competitor’s facility. Pure-play collocation providers can add value to their offerings, but they must be sure to do so in a way that does not compete with their customers.

- **Access to additional revenue or service opportunities.** While perhaps less important than the preceding requirements, collocation can provide the opportunity to capture additional customers and revenue streams from other tenants in the collocation facility. This opportunity can add value to a collocation offering for certain customer segments and position collocation far above the basic “ping, power, and pipe.” The presence of potential customers or partners within a given facility can be a huge advantage from the perspective of a collocation tenant. Not only does the collocation provider offer an infrastructure platform, it can also be a facilitator of partnerships and additional revenue streams.

**Conclusion**

As collocation services become increasingly commoditized, the successful collocation provider will concentrate on adding value to its facilities by offering more than just basic infrastructure, but without directly competing against its customers. Certainly a hardened physical environment is crucial to a collocation offering, but it will be the differentiation via service offerings that enhance a customer’s business offerings and accelerate its speed-to-market that will determine the true winners in this space.