

# THE CASE FOR COLOCATION

By Kurt Marko



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# ABOUT THE AUTHOR



**KURT MARKO** is an IT industry analyst, consultant and regular contributor to a number of technology publications, pursuing his passion for communications after a varied career that has spanned virtually the entire high-tech food chain from chips to systems. Upon graduating from Stanford University with bachelor's and master's degrees in electrical engineering, Marko spent several years as a semiconductor device physicist, doing process design, modeling and testing. He then joined AT&T Bell Laboratories as a memory chip designer and CAD and simulation developer. Moving to Hewlett-Packard, he started in the laser printer R&D lab doing electrophotography development, for which he earned a patent, but his love of computers eventually led him to join HP's nascent technical IT group. Marko spent 15 years as an IT engineer and was a lead architect for several enterprisewide infrastructure projects at HP, including the Windows domain infrastructure, remote access service, Exchange email infrastructure and managed web services.

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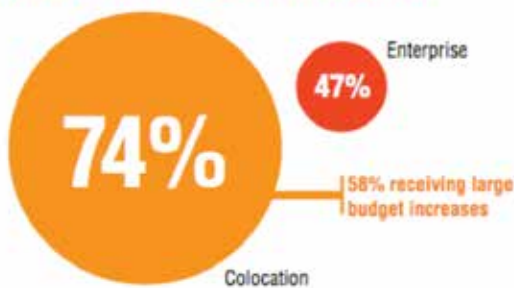
## COLOCATION SERVICES ARE GAINING POPULARITY, AND SPENDING IS ON THE RISE. TAKE A RECENT DATA CENTER

trends survey of 1,344 members of the 451 Global Digital Infrastructure Alliance focused on spending, capacity issues and priorities. Among users of colocation providers, 79 percent also have their own facilities, and 26 percent say spending on colocation will increase over the next 90 days versus just 9 percent predicting cuts.

Supply is rising to meet that demand. In the 2015 Uptime Institute data center survey, 45 percent of respondents at third-party providers say they expanded their colocation offerings in the past year. In fact, 74 percent of third-party data center respondents reported receiving budget increases. In its Q1 2016 financial report, Equinix, one of the world's largest data center operators and a data center operators and a data center partner for Comcast and other connectivity suppliers, showed a revenue increase of 16 percent over the prior quarter and 31 percent annually, with the vast majority organic growth from recurring customers.

## TOP 5 COLO PROVIDER SELECTION CRITERIA

### DATA CENTER BUDGET INCREASES 2014 TO 2015

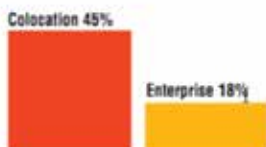


Respondents to the 451 Global Digital Infrastructure Alliance data center survey were asked to rate which criteria are most importance when selecting a colo provider:

1. Security capabilities are ranked as the most important criteria by 8.7
2. Redundancy of the facility (8.5)
3. Quality of service level agreements (8.4)
4. Latency of network connectivity to/from the data center (8.4)
5. 24/7 on-site technical staff (7.2)

### NEW DATA CENTER CONSTRUCTION

Built a data center in the last 12 months?



Will your organization build a new data center in the next 12 months?



Source: Uptime Institute Data Center Industry Survey 2015

What's driving colo growth? Cloud services, massive WAN backbone capacity, more use of smartphones and mobile apps by employees and an explosion in video. And these haven't just altered data center business models — they've dramatically changed network traffic patterns. For example, there's much more external traffic to end customers and employees as a result of new digital business services, mobile customers and remote workers. Video content results in even more data flowing to edge devices, with greater need for local or regional delivery via distributed CDNs. Increased use of IaaS and SaaS for enterprise apps and data put added load on WAN connections, which are already bursting at the seams.

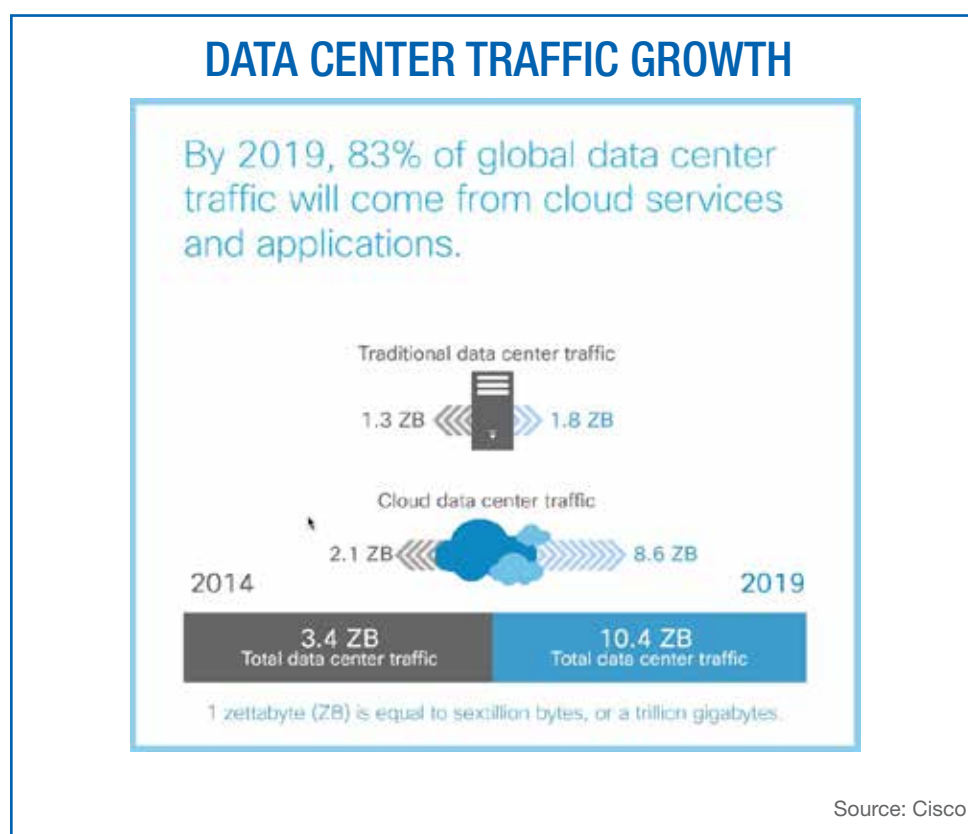
In some cases, they also expose the inefficiency of customers' legacy data centers.

A trusted adviser armed with know-how about advances in the colocation market, understanding of connectivity options and the ability to weigh the cost of hosting a given service in an owned data center vs. colo facility can capture revenue from multiple sources. Here's how to make the sale.

## TRAFFIC JAMS OF EPIC PROPORTIONS

An impending crisis of network capacity means colocation is one of those services that will soon sell itself.

What crisis? [The Cisco Global Cloud Index](#) shows that data center traffic traversing the internet will triple over the next five years. By 2019, Cisco estimates that 83 percent of global data center traffic will come from cloud services and applications, dwarfing the amount from traditional on-premises data centers. And, more and more of that traffic is being generated by, or destined for, mobile devices, not enterprise servers and storage systems.





Source: Cisco

This necessitates a dramatic rethinking of both WAN and LAN network design and data center placement. Let's face it: Most enterprise facilities were designed for client-server applications run on low-density hardware, with most network traffic remaining within the confines of private LANs.

Those days are long gone for some customers, going fast for others.

The solution: state-of-the-art data centers operating tens of thousands of systems with dramatic economies of scale. When servers are treated like cattle, not pampered like pets, the unit cost of providing a square foot of floor space, kilowatt of power or gigabit per second of bandwidth is much, much lower. And, the bigger the operation, the more it pays to wring out every scrap of inefficiency. No wonder the Uptime report found that 68 percent of colocation operators have formal energy management plans versus just 39 percent of enterprise facilities. That's an important point when even a midsize data center can draw a megawatt.

This commitment to cost control shows up in the efficiency metrics hyperscale operators like [Facebook](#), [Google](#) and [Microsoft](#) are able to achieve. Their PUEs (a ratio of total energy used versus that actually delivered to systems) are generally close to a perfect 1. In even a well-run enterprise facility with a PUE of 2, half the energy

customers pay for is wasted. Uptime Institute regularly puts average CPU utilization rates below 20 percent in enterprise facilities, despite increased adoption of server virtualization. Some 20 percent of server hardware sits idle.

Customers with old data centers, or a rack stuck in a random closet, usually do worse.

In contrast, [according to Amazon](#), its AWS Cloud customers use on average 77 percent fewer servers and 84 percent less power, for a total reduction in carbon emissions of 88 percent versus operating their own data centers. Azure, Equinix, CoreSite and other mega-facilities have similar stats.

The [green factor](#) is a decision point for more and more companies, so partners should make efficiency part of their colo sales pitch.

## CONNECTING FOR CASH

As customers increase their use of cloud services, colo facilities offer another strategic advantage: private connectivity, and for partners, the provisioning thereof.

As we discussed in a [recent report](#) on private cloud network circuits, the public internet isn't suited for mission-critical traffic. Partners can bypass noise and delays by linking customers [directly to cloud services via direct circuits](#). With dedicated fiber links within a few milliseconds of major cloud operators like AWS and Azure, cloud-connect circuits are able to deliver up to

10 Gbps of low-latency capacity to a colo customer. Carriers offer similar private connectivity via MPLS services, though they're often more expensive, not universally available and may be limited by the speed and latency of existing WAN connections.

Other colo selling points include automation, security and redundancy, and offerings tailored for specific verticals.

Their massive scale demands that colocation operators reduce human error. They do this by automating routine deployment, admin and monitoring tasks using orchestration software, like Chef or Puppet, and advanced system monitoring and log analytics software, such as Splunk or Sumo Logic. Together, these minimize manual processes, automatically baseline normal system behavior, detect anomalies and identify areas for improvement.

Large colo operators also, by definition, hold a lot of mission-critical IT eggs in one basket, which makes them necessarily vigilant about protecting information assets, starting with military-grade physical security that includes armed guards, man traps, motion sensors and multilayered access controls. They provide multiple redundant power sources and backup systems, often with generator and fuel capacity to last days without grid power. Colo operators also typically have dedicated network operations, security and forensics teams monitoring both their own infrastructures and, as a service, those of their customers.

If you serve health care, financial services or other demanding verticals, some colocation providers, like [CoreSite](#), have tailored offerings.

## Waste Not?

Why are customer data centers so wasteful? There's little incentive to be efficient. The Uptime report found that less than one-third of enterprise organizations have IT chargeback models in place, meaning there's no price mechanism to encourage thrift. In contrast, cloud-scale colo providers compete on price, with razor-thin margins.

## COLO BUSINESS MODELS: DIVERSITY IN ACTION

Although we've been discussing colo operations as a monolithic business, it's not. Offerings may be roughly categorized as wholesale versus retail. The former is akin to a commercial real estate developer that procures a site and builds a facility but has no operational role in the data center internals or operations. Geared towards large companies needing a megawatt or more and willing to sign multiyear leases, wholesale space is not something most partners will address.

In contrast, retail colocation is more like a shopping mall, where the provider owns and operates the facility and rents out space. It used to be that colos provided just the basics: climate-controlled space; physical security; clean, uninterrupted power; WAN connections with external network monitoring; and a smart pair of hands for basic physical tasks, like replacing a hard drive.

Lately, however, retail operators have added extensive menus of managed services that are ideal for agents looking to supplement connectivity sales. Rackspace is an example of a company that started selling what its name implies but expanded into a wide range of hosting, infrastructure and software services, even including SaaS offerings like hosted Exchange, SharePoint and databases. As we'll discuss, diversity and granularity of colo services allow partners to plug gaps in their own portfolios without creating service overlap and potential competition.

### Big Colo Means Big WAN

Warehouse-scale facilities serving thousands of customers generating petabytes of data need the WAN capacity and diversity to reliably transmit information to millions of users. This drives some truly impressive network scale. For example, [SUPERNAP in Las Vegas](#) is connected to more than 50 carriers via more than 4,000 fibers delivering tens of terabits per second in aggregate throughput.

## TAPPING THE CLOUD VIA COLOCATION

You can help customers gain cloud-scale efficiencies by selling public IaaS and SaaS. However, these aren't necessarily the best options for legacy workloads or organizations worried about performance or security. For those customers, colo facilities offer a way to deliver cloud operational efficiencies with the benefits of privately owned infrastructure. Existing hardware can even be forklift-migrated in many cases.

Other selling points for renting data center space versus owning and upgrading a legacy facility include:

- **Capital budget efficiency:** Shuttering a legacy data center eliminates spending on one of IT's biggest capital items, an expense that only grows with increasing demands for server and storage capacity, and IT services must get more sophisticated. And by helping customers trade capex for opex, partners gain a recurring revenue stream.
- **Advanced network capabilities:** Colos are strategically connected to multiple backbone carriers and cloud services and are often able to provide multi-Gbps private links. Major operators have facilities in every global region, allowing workloads and content to be placed closer to users or end customers, not to mention the disaster recovery benefits.



- **Technical expertise and advanced services:** Colo operators have the scale and budgets to dedicate experts to key operational functions, including system and network management and monitoring, WAN provisioning and configuration and physical and network security. Although sophisticated users can be entirely self-managed, SMBs and partners can optionally add various managed services to colo floor and rack space. For example, Equinix offers vertical-specific solutions and a [variety of managed services](#) through partners.

## PARTNER BENEFITS AND OPPORTUNITIES

Adding colo services to your portfolio is a great way to provide even SMB customers with expertise and capabilities that were once the domain of hyperscale cloud operators and multinational corporations — while increasing sales of private Ethernet and other WAN services. You may also provide a competitive advantage to clients that are migrating to the public cloud, building a hybrid cloud or expanding online services to a global customer base.

Most colo operators have partner programs of their own; the likes of [Digital Realty](#), [Internap](#) and [NaviSite](#) provide pre- and post-sales technical consulting, support, training and design services.

By adding colo services to your portfolio, you can also:

- Offer advanced hosting services without capital investment
- Expand your physical footprint outside traditional operating regions
- Provide leading-edge network connectivity and tighter integration with cloud services (both IaaS and SaaS) through high-speed private connections
- Eliminate the need to find and hire technical specialists by using the colo provider as a subcontractor

Although we've mentioned some pure-play data center operators, don't forget colo offerings from connectivity providers you already do business with.

As part of your research, consider the following:

- Identify value-added hosting and network services that you already provide and that would be more efficient if outsourced, or that you don't offer but would like to and that could be delivered via the colocation provider. Look for colo services that can be bundled as value-adds to your service portfolio.
- Investigate the provider's network services, including private cloud connections (see our recent [report for details](#)) to find the best fit for your customers' needs. Consider IaaS and SaaS use, proximity to facilities and existing carrier relationships for ease of WAN connectivity.
- Build a cost model that uplifts colo charges into bundled services. Work with channel managers at colo and connectivity providers to develop TCO analysis calculators that compare their services with typical on-premises costs. In our experience, you'll find it fairly simple to make the financial case.
- Ask about referral, commission and discount programs and make providers sharpen their pencils — you may get favorable pricing and access to their customers for your services.

Before making any significant commitments, do some trial runs with your finalists, first internally, then with a low-risk customer project. Better to break off an ill-suited engagement than have a messy divorce.