

MARKET OPPORTUNITY BRIEF

## Software Defined Interconnect (SD-IX) for Colocation Providers

### Key SD-IX Use Cases

#### Hyperscale Cloud Interconnect

Add software-defined management to direct connects, network provider links and existing high-bandwidth Internet links to connect tenants directly to hyperscalers.

#### Data Center Interconnect

Securely connect on- or off-network data centers without deploying individual VPN and routing appliances for each tenant at each facility.

#### Virtual Cross Connects

Fully automate and orchestrate the connectivity from tenant cages to meet-me rooms to deliver an automated connectivity experience from end-to-end.

With the rise of hyperscale public clouds, the emergence of multi, hybrid-cloud deployment strategies and the simultaneous migration of applications and data to the network edge, traditional data center connectivity has become more complicated and more critical than ever.

As a result of this complexity, colocation providers, which have long benefited from selling cross-connects, IP service and Layer 2 WAN connectivity, are at risk of falling behind emerging demands for more integrated, more secure and more automated network solutions.

Most data center providers are dependent on physical cross-connects as the key component of tenant connectivity. As workloads are migrating across colocation, SaaS, managed hosting and public clouds, the accelerating movement of data has created near-term management and operational challenges for colocation providers. Further, colocation providers are now being asked to enable, provide and support a diverse portfolio of connectivity solutions, including:

- Multi-cloud connectivity
- Direct to SaaS connectivity
- Advanced network solutions in support of continuously evolving SaaS, Cloud and Enterprise tenants
- Layer 3 routing and security services from cage to cloud and across multiple facilities
- A cross-connect environment that is moving from “install and forget” to continuous change

As data centers are in the process of prioritizing emerging network demands, third-party connectivity solutions are seeking to fill the void. SD-WAN, high count fiber and cloud specific networks continue to experience strong growth. Some of these solutions have the possibility of negatively impacting the cross-connect and network services business lines of data center providers.

The introduction of these competitive options, if not met with

updated data center provider solutions, will result in revenue compression and churn for providers.

A single cross-connect could now enable external multi-cloud access, network access arbitrage in nearby meet-me rooms, cloud to cloud routing without a local cross connect and reduced utilization of IP services. The intense focus on “data center solutions” by all network providers can enable the enhancement of data center assets; it can also set the stage for the consolidation and churn of high-count, profitable cross-connect and network connectivity products.

These shifts threaten the fundamentals underlying the colocation business model with potential second order impacts on revenue growth, customer retention and pricing power.

## Finding Opportunity Amidst Change

What then are the steps for new colocation networks to overcome these fundamental shifts?

Colocation firms should consider six key items for near-term prioritization to ensure long-term business model viability.

**1. Gain and maintain Layer 2 and Layer 3 networking capabilities inside of and between data centers.** Every provider will be at Layer 3; providers need to skate to the network “puck” that hyperscale and edge solutions are quickly advancing.

**2. Be able to connect to public clouds directly and provide this as a service to tenants, just as internet service is delivered today.** Though there is a learning and implementation curve, delivering this connectivity is required for long-term viability and asset optimization.

**3. Automate network delivery and management.** Not only is this key for internal efficiency, customers are requiring automated process to enable their DevOps execution.

**4. Be able to deliver key network and security applications.** BGP, NAT, Packet Filtering and IDS are capabilities that are now required at the data center infrastructure level. It is impossible to effectively extend connections and automate delivery without implementing these services in a customer-facing environment.

**5. Plan for a virtual cross-connect from your meet-me room to every key customer.** With 100G connectivity now an affordable local area networking option, it is possible to deliver near instantaneous connections over large, aggregated pipes to each colocation cage and suite.

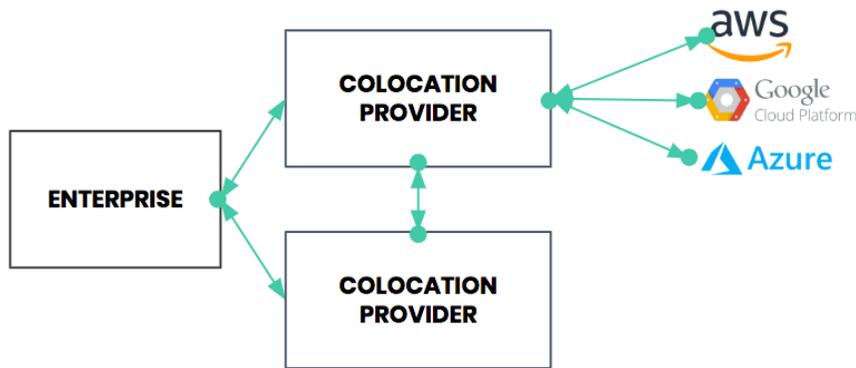
**6. Think out of the “box.”** Centralize networks and think about scale-out clusters that can be deployed in N+1 architectures instead of buying dual appliances for every customer. Plan for high-scale, highly available, concurrently maintainable and auto-scaling services.

## SD-IX is the answer for implementing these priorities to achieve colocation network growth.

**SD-IX enables colocation network provider growth by dynamically deliver routing, security and automation services to network interconnection points through software.**

SD-IX was created to bridge the gap between colocation providers’ business capabilities and the rapidly changing operating environment.

## SOFTWARE DEFINED INTERCONNECT (SD-IX)



This allows colocation providers to extend their connectivity products and control well outside the four walls of a single data center to maintain the long-term viability of their business models.

In deploying SD-IX, providers are able to add valuable functionality to existing networking connectivity assets so they can truly control every endpoint.

This not only protects existing interconnect revenue, but provides an avenue for extending the endpoint control outside of the physical data center including hyperscale clouds, tenant sites and other portfolio data centers.

Colocation providers are looking to leverage SD-IX in three key use cases.

### Use Case 1: Hyperscale Cloud Interconnect

According to 451 research, enterprises today are using an average of 4.7 clouds, including public hyperscale clouds and cloud-based platforms like CRM. This new consumption model has introduced an entirely new set of management challenges and risks for colocation providers.

Many providers are finding that they do not have the development skills to route and manage these deployments dynamically. Others are not

sure how to optimize existing direct connect links, network provider links or high-bandwidth Internet.

SD-IX gives colocation providers the ability to dynamically manage tenant traffic to hyperscalers over existing links while providing valuable Layer 3+ intelligence, security and automation so providers can deliver a

more robust offering to tenants.

### Use Case 2: Data Center Interconnect

Colocation providers understand the challenges of connecting both on-network and off-network data centers. Not only can challenges connecting facilities lead to stranded inventory with data centers at low utilization, they can also lead to hurdles in the sales process.

SD-IX allows colocation providers to create highly secure, automated and intelligent connectivity between data centers, without deploying individual network appliances at each location or for each tenant. Instead, providers deploy a single solution that can connect all sites through a natively-multitenant system.

In doing so, providers can sell multi-site bundles and increase footprint revenue of historically difficult to market sites.

### Use Case 3: Virtual Cross-Connects

While many colocation providers are comfortable running physical cross-connects from tenant cages to meet-me rooms. As traffic becomes more dynamic and dispersed, the complexity for managing these connections at scale is becoming an operational burden.

SD-IX allows for the deployment and management of these connections to be fully virtualized and automated. In doing so, providers can increase speed of delivery while decreasing the management overhead required.

Further, these connections can gain new levels of intelligence – opening up new monitoring, troubleshooting and revenue capabilities for providers.

### **Implementing SD-IX in your Infrastructure**

In order to truly realize the benefits of SD-IX, any platform must be built on core fundamentals at the heart of the colocation provider business model including:

- Multi-tenancy
- High-availability
- Self-Service
- Concurrent maintainability
- Full automation
- High-scale throughput
- Non-disruptive scale out and scale in
- Ability to add new customized and advanced network services instantly.
- User-first interface displaying full interconnect topology

By fully embracing SD-IX, colocation providers will be able to meet changing market dynamics while ensuring future business mode viability. Providers will be able to optimize their network assets for new use cases and ensure long-term growth.

### **About Stateless**

Stateless is re-inventing network connectivity. We are dedicated to relentlessly solving the network challenges others deem impossible. We are building solutions that give users the power to optimize existing network assets to control and connect every endpoint. Stateless is proudly based in Boulder, Colorado. Learn more at [www.bestateless.com](http://www.bestateless.com).