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Proceed with Caution

Turn the clock back two years and not very many people in our industry would have heard of the co-location and proximity-hosting phenomena. Even fewer would have had a thorough understanding of what exactly these services entail and why they were introduced to the financial services industry in the first place. It is fair to say that the astonishing growth in the hosting industry we have witnessed since early 2008 is here to stay—although, if this rate of change is anything to go by, the services on offer to market participants in two years' time will look very different to those available now.

As buy-side and sell-side firms' algorithmic and high-frequency trading (HFT) strategies continue to evolve, the one issue that needs to be addressed above all others is that of latency. Admittedly, latency is less of a concern for certain types of institutions—long-only asset managers with relatively distant investment horizons, for example, tend to focus more on the qualitative aspects of their business as opposed to the speed of executing their investment decisions, but for those shops that have come to rely on their HFT business as their bread and butter, speed is everything. And it is here where co-location—the practice of installing hardware within the premises of an exchange's datacenter—and proximity hosting—similar to co-location, although the hardware tends to be installed in a datacenter near a trading venue, as opposed to within a venue's four walls—have so much to offer firms intent on shrinking their latency to the absolute minimum.

With this increased demand for hosted services, so too has there been a proliferation in the number of providers offering such services. This is a good thing for end-users in terms of choice, although the expansion is a double-edged sword: Variety is all well and good as long as you are able to exercise discipline when evaluating service providers in order to discern the types of services and providers that best meet your hosting criteria. Remember, the one-size-fits-all maxim very definitely does not apply to this space as financial services firms have different requirements. It's at times like this that you need to exercise caution and check under the hood ... and while you're at it, you may as well kick the tires, too. ■

Victor Anderson, Editor-in-Chief

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Direct Edge to Offer Connectivity Hosting

Exchange operator Direct Edge has rolled out a new US equities market center connectivity service that targets mid-sized firms. The new service, Connect Edge, leverages Direct Edge's existing inter-market connections to the other major exchanges

including NYSE Euronext, Nasdaq OMX and the Bats exchanges.

"This service is not one where you have to pass through one of the exchanges to be routed," says Kevin Carrai, head of connectivity services at Direct Edge. "Clients would have connectivity to other market centers via logical ports provided by those market centers."

Connect Edge users can link to the network through three existing points-of-

presence (PoPs)—two located in Direct Edge's primary and secondary datacenters in Equinix's Secaucus, NJ, facility and the Telx facility in Clifton, NJ, as well as the Savvis datacenter in Weehawken, NJ

"This service is not one where you have to pass through one of the exchanges to be routed." Kevin Carrai, Direct Edge

customers onto the new service. To entice more clients, the exchange operator has established an a-la-carte pricing structure depending on the amount of bandwidth used. "Some configurations can be as low as \$500 a month," says Carrai. Direct Edge is also offering a 30-day commitment. "If they're not satisfied, they have 30 days to cancel," he adds. ■

Since its soft launch over the summer, Direct Edge has brought five

NYSE Completes Europe Migration

NYSE Euronext has completed the migration of matching engines for its European cash and derivatives markets to its new datacenter in Basildon, UK. The final one to migrate was the NYSE Liffe derivatives market.

In the US, the group has already moved the engines for its NYSE and NYSE Amex cash markets to a similar datacenter in Mahwah, NJ, with the NYSE Arca and Amex cash markets scheduled to migrate in the first quarter of next year.

Following the move to Basildon, UK-based data vendor Fixnetix has begun offering its low-latency connectivity, trading technology and data services to clients co-located in the facility. ■

Spread Networks to Provide Co-Location Service in Chicago, Cleveland, New Jersey

Low-latency fiber optic network operator Spread Networks is launching a co-location service that will be available in the vendor's Chicago, Cleveland and Carteret, NJ, facilities. The vendor has offered the services to existing clients for over a month, according to David Barksdale, CEO of Spread Networks.

The vendor offers a "remote

hands" service to support hosted servers within each of its datacenters, with about three technicians located at each site. Barksdale declines to reveal how much space is currently available for co-location within each datacenter.

"We don't publicly talk about our total space," adds a vendor spokesperson.

"Although we are not trying to compete with traditional hosting providers, if customers needed 10, 20 or even 30 cabinets for a project, we could easily accommodate that request."

The purpose-built datacenters in Carteret and Cleveland provide each server rack with 5.67 KW of DC power, while the Chicago facility, which

is located in the Digital Realty Trust building at 350 East Cermak, provides 6.24 KW of AC power to each rack.

Although most of the co-location interest has been in Spread Networks' Chicago and Carteret datacenters, the vendor had always planned to open a co-location facility at the network's midpoint in Cleveland. ■

Nomura Debuts Ultra-Low-Latency DMA

Global financial services group Nomura is now live with NXT Direct, an ultra-low-latency direct market access (DMA) offering that the bank claims delivers latencies of below 3 microseconds for 99.99 percent of trade messages.

NXT Direct offers connections to the five

major US cash equities exchanges: NYSE Equities, NYSE Arca Equities, Nasdaq OMX, Bats BZX Exchange and Direct Edge. Nomura plans to add connectivity to secondary markets—such as Nasdaq OMX BX and Bats' BYX markets—in the near future, according to officials.

The patent-pending DMA offering is part of a suite of electronic trading services that include the NXT Host co-location service, NXT Data market data offering and NXT Ring network connectivity service. All are integrated into Nomura's prime services offerings. ■

Verizon Halts Burgundy's CoLo Plans

Nordic multilateral trading facility (MTF) Burgundy and its technology provider Cinnober have filed a complaint with authorities in Sweden against Verizon Communications, after work to relocate Burgundy's primary matching engine to the telecoms giant's Lunda datacenter on the outskirts of Stockholm was abruptly halted by Verizon.

The complaint, which was submitted to the Swedish Competition Authority in mid-November, claims that Verizon is in breach of Swedish laws governing anti-competitive business practices.

"Verizon's behavior is misuse of their dominant position in the co-location

market," says Burgundy CEO Olof Neiglick. "In my 25 years in business, this is the first time I have come across something like this—it's absolutely shocking behavior."

Burgundy approached Verizon with plans to re-locate its primary matching engine—currently housed at a facility in central Stockholm operated by clearing service provider Euroclear—to Lunda, an industrial suburb of Stockholm, in September, with the aim of reducing latency for more than 20 of its clients currently located at Verizon's datacenter, alongside the matching engine of Burgundy's main exchange rival Nasdaq OMX.

However, after signing a contract, commencing preliminary work to support the system's relocation and announcing the move to customers and the general public on October 4, Neiglick says communication channels between Burgundy and Verizon broke down.

"Two days before we were due to go live, I received a strange piece of communication from Verizon essentially saying 'Sorry Burgundy, we have a new data policy where we will not allow you on the premises, ever,'" Neiglick says.

"Since then, Verizon haven't been answering phone calls and emails," he says. ■

Orc Software Debuts Hosted Solution

Stockholm-based Orc Software has launched Orc Hosted, which provides connectivity to cash and derivatives exchanges, multilateral trading facilities (MTFs) and brokers around the globe. According to Orc, this is its initial move into the managed services arena.

"Orc Hosted enables clients to focus solely on their trading, by letting Orc manage their technology infrastructure," says Joacim Wiklander, chief strategy officer at Orc Software, in a

statement. "Using Orc as a managed services supplier, clients benefit from our economies of scale and have 24/7 access to our expertise, which enables them to utilize their own internal resources for supporting their core business—trading."

Orc Hosted includes other Orc products such as Orc Trader, Spreader, and Liquidator. Right now the offering is available in Stockholm and London and will be brought to the Americas in 2011. ■

Options IT Signs LSE Co-Lo Client, Fixnetix Adds Bats

Managed low-latency infrastructure provider Options IT has signed its first high-frequency trading client for its Pipe Velocity managed infrastructure service, deployed within the London Stock Exchange's co-location facility, while low-latency data and trading infrastructure vendor Fixnetix is preparing its own co-location service in the center,

which the exchange opened to vendors in November.

Also, Fixnetix has also added connectivity to data from the US-based Bats Exchange, in addition to data from pan-European MTF Bats Europe, for which the vendor already offers co-located hosting services for low-latency data and trading connectivity in London. ■

Endace Launches Managed Latency Service

New Zealand-based packet capture and network monitoring technology vendor Endace is launching a hosted latency monitoring service that will provide information on the latency of clients' connections to trading venues.

Previously, firms would have needed to buy the vendor's network probe hardware appliances and build their own monitoring infrastructure.

But only a relatively small number of banks, hedge funds and trading firms are in a position to construct this in-house, compared to many more that want the same capabilities but don't have the resources to build it themselves, says Kevin Formby, vice president of business development at Endace. ■

Savvis Offers Icap Co-Lo Access

Inter-dealer broker Icap is making access points for its i-Cross co-location service available in datacenters in Weehawken, NY, and Slough, UK, run by network and hosting services provider Savvis.

The access points will provide a low-latency, direct connection to market data and trading on Icap's EBS foreign exchange (FX) platform and BrokerTec fixed-income market. According to the vendor, Icap may make access points available in a number of Savvis' 31 additional datacenters worldwide in the future. ■

The Lore of Location

Hosting and co-location services have risen to prominence as buy- and sell-side firms look to reduce the latency of their executions for not only their high-frequency strategies, but across the board. But a word of warning to those firms looking for a service provider: Focus on their core competencies and especially their track record in this space, because not all were created equal.

Q What are the key metrics firms should use when evaluating co-located and proximity hosting providers?

John Cogman, vice president, Autobahn equity sales, Deutsche Bank: The two most obvious metrics are speed and cost—these are the fundamental drivers of the decision to co-locate trading equipment. It is important to be able to accurately evaluate these factors before making a decision, but it is not always easy to do. In particular, estimates of latency savings from co-locating equipment can be exaggerated if vendor latency figures are taken at face value and your analysis is not thorough. Firms should ask detailed questions about the proposed network topology and equipment to be used in co-location. When it comes to low-latency trading, you are only as strong as your weakest link, so the benefits of co-locating equipment can be outweighed by slow or poorly configured equipment or unnecessary hops in the network.

Service levels, access and reliability are also key. The relevant cost of co-location should include the incremental resources required to deploy, test and maintain equipment in a third-party datacenter compared with the existing deployment, not just the headline figure of dollars per rack per month.

Jeff Brown, senior vice president of electronic execution solutions, Fidelity Capital Markets:

The most important metric to consider in selecting a co-location provider is each vendors' proximity to your firm's trading counterparties. This task has become increasingly complex as liquidity has migrated away from the primary exchanges into non-traditional liquidity pools, such as dark pools.

Michael Cattell, vice president of financial services, Telx:

Overall, make sure the provider's core business is co-location and interconnection, and that they can demonstrate an excellent understanding of the specific needs of financial markets. Assuming they meet this first criterion, there are three primary areas to evaluate. First, the basic requirements for any co-location provider must include all those measures that help ensure your application infrastructure and network uptime: redundant uninterruptible power supply (UPS) and generator-backed electrical power, redundant A/C systems, and 24/7 on-site technical support.

Second, the provider must have a high level of security, including SAS70-II certification along with state-of-the-art physical security capability. Third, the provider must be highly connected to network providers and geographically proximate to the venues you are looking to trade with. Just like in real estate, location is key. Find out how many network carriers are housed in each datacenter location and what financial venues they can provide access to. Providing choice, scale and the best speed possible are crucial.

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The best advice for cost-conscious firms looking to secure a good deal is to consider a co-location provider that offers a full range of network and managed services in a flexible manner. For example, if a firm can access equities, derivatives and FX markets from one facility, it is obviously more cost-effective to locate there, both in reduced infrastructure complexity and economies of scale.”

Varghese Thomas, Savvis

Varghese Thomas, global head of financial services, Savvis:

The key metric for any firm wishing to implement a co-location or proximity-hosting solution is latency to the selected liquidity venue or venues. A firm's trading strategy will dictate its latency sensitivity for specific venues—from there it's essentially a choice between providers of the required connectivity. If the lowest possible latency



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is paramount to a firm then co-location with a venue in the same physical facility, if available, is generally the answer. Another key metric, particularly as firms are implementing multi-asset-class trading strategies, is connectivity to additional venues—either at the same time or for future implementation—so a co-location provider that hosts trading infrastructures for multiple venues across different asset classes within their datacenters, such as Savvis, can offer firms the means to simplify their infrastructure and connectivity by minimizing duplication and effort. The pedigree of the service provider is another key consideration: How long have they been offering hosting services to financial services firms? Is hosting a core competency? What strategic alliances have they implemented with other financial services providers? Can they implement in a timely fashion? And will they be able to scale in future as needs dictate? Finally, firms should investigate the availability of additional IT infrastructure services—i.e., does the provider offer more than space and power? Do they provide hardware? Can you leverage managed services such as back-up and storage, security, and remote management that may be required now or in the future?

Q When should firms investigate proximity hosting instead of co-location?

Brown: If ultra-low latency is truly a critical competitive advantage, then co-location is a necessity. But as firms weigh additional considerations—in particular, the cost and complexity of their technology infrastructure—proximity hosting may be a more attractive solution.

Cogman: For any decision to co-locate, the marginal improvement in latency needs to be balanced with the cost of the deployment. In the context of locating trading equipment with exchanges and alternative trading systems (ATSs), proximity hosting becomes more attractive relative to co-location as the fragmentation of the market increases.

For example, consider the markets for the E-mini future and the SPY exchange-traded funds (ETFs). Both are very liquid instruments providing exposure to the S&P 500 index, but the E-minis are traded on just one exchange—CME in Chicago—while SPYs are traded on 12 exchanges and more than 30 dark pools and ATSs. If you have a latency-sensitive strategy trading E-minis, it makes sense to run your server from the CME co-location facility. If you have a latency sensitive strategy trading SPY, the answer is more complex. Co-locating in over 10 datacenters is very expensive and keeping all of the servers synchronized with each other is a real challenge, so different trading strategies dictate different deployments. For a lot of strategies, a single well-positioned proximity site is sufficient. More latency-sensitive strategies may benefit from co-locating with the two or three largest markets and only the most high-frequency trading strategies will require deployments at all datacenters.

Thomas: As previously mentioned, a firm's trading strategy and hence latency sensitivity will heavily influence this decision, although cost and complexity are also key drivers. Only a small number of firms have the resources to co-locate at multiple liquidity venues, so providers that can offer low-latency connectivity to multiple venues, across different asset classes, have a distinct advantage. Particularly if a number of those venues are in the same datacenter—as opposed to some proximity hosting providers whose facilities are “close to” the venues—then firms can enjoy low-latency connectivity and economies of scale.

“Make sure the provider's core business is co-location and interconnection, and that they can demonstrate an excellent understanding of the specific needs of financial markets. Just like in real estate, location is key. Find out how many network carriers are housed in each datacenter location and what financial venues they can provide access to. Providing choice, scale and the best speed possible are crucial.” **Michael Cattell, Telx**



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Cattell: Anytime you are looking to access multiple venues, it is an advantage to co-locate with a provider that is centrally located with many network and service providers housed in the same venue giving you a broader choice of networks and the fastest, most scalable access to the most venues. This is the case for firms looking to connect to customers as well. You don't want to be locked into network choices. Centrally located proximity hosting facilities tend to be more price competitive.

Q How should firms decide which trading kit needs to be co-located?

Brown: Firms should look to co-locate the most latency-sensitive elements of their trading infrastructure. In general, market data, routing, and matching products tend to be the most latency-sensitive, with algorithms, desktop applications, and post-trade reporting typically being less demanding.

Cogman: Co-locating equipment is generally costly, so it pays to start with a blank list and start adding each component that would benefit from being closer to a matching engine or a customer in co-location. There are commonly interdependencies between components, so it often makes the most sense to move all components that work closely together.

For example, when considering the co-location of an agency execution algorithm, the market data that feeds the algorithm, the smart order router and the market connectivity layer would generally need to be co-located as well to realize the latency savings.

Thomas: Again, this will be heavily influenced by the firm's latency sensitivity and resource availability, plus geographic reach depending on which liquidity venues are in scope.

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“Many market participants underestimate the time and complexity needed to execute a co-location project. Firms should look to make strategic decisions regarding co-location well in advance of any implementation deadlines, and should ensure appropriate resources are aligned to the re-location effort.” Jeff Brown, Fidelity Capital Markets

However, utilizing a provider that offers multi-asset-class connectivity, a full range of IT infrastructure and network services, and existing trading ecosystems—i.e. datacenters that already house other trading firms and third-party software and service providers—will allow firms to design solutions according to their unique and specific needs. While some firms take a do-it-yourself approach to infrastructure management, a number of others see the benefit in outsourcing the more commoditized components of their trading architecture, in order to focus resources on their core competencies and optimize and differentiate offerings to their own client base.

Cattell: There are often limitations to what services are available when co-locating with a particular venue. The infrastructure that needs to be co-located at a given venue is typically limited to the kit necessary to trade that venue while centrally locating the central- and back-office system. This distributed strategy gives you the lowest latency to the individual venues while providing a broader more cost effective choice for your central systems.

Q **Considering the nature of the service and typical lack of competition, how can firms negotiate the best deals with co-location providers?**

Thomas: On the contrary, while there are some exceptions for certain liquidity venues, in most instances there are multiple vendors in play ensuring competitive and market-driven pricing. The best advice for cost-conscious firms looking to secure a good deal is to consider a co-location provider that offers a full range of network and managed services in a flexible manner. For example, if a firm can access equities, derivatives and foreign exchange (FX) markets from one facility, it is obviously more cost-effective to locate there, both in reduced infrastructure complexity and economies of scale.

This is especially the case if the provider also offers cost-effective solutions for providing and/or managing components of your trading infrastructure, as and when needed, allowing a reduction in capital expenditure.

Brown: In recent years, a number of vendors—exchanges as well as independent third-party providers—have entered the space, and competition has improved significantly, along with cost and service levels. So the bidding for an initial co-location contract is fairly competitive. Once in a co-location facility, however, firms may be reluctant to move, so negotiating leverage tends to shift to the vendor. Firms should consider running multiple datacenters with different vendors in order to maintain negotiating leverage.



Jeff Brown
Fidelity Capital Markets

Cattell: I'm not sure there is a lack of competition. In most financial markets centers there are a number of providers, albeit with different flavors of offering. Some are carrier-neutral, some have purpose-built financial networks; others are the venues themselves. When choosing and ultimately negotiating with these providers, firms need to first understand exactly what they are trying to achieve in order to get the most effective mix of services at the right price. For instance, if the trading applications you are looking to co-locate are not ultra-low latency sensitive, then your choice of providers increases further.

Cogman: In the situation where only one hosting provider controls all the racks at one datacenter, there is a limit to how much negotiation can occur on the pricing. For these single vendor-operated datacenters, there are often resellers of space that are willing to negotiate on smaller rack space allocations, especially if you are a customer of theirs in other locations. Deals can also be struck by agreeing to commit to a longer-term contract or by pre-paying for “remote hands” services. Even if there is no alternative provider within the datacenter, there are still alternatives that limit the provider's ability to raise prices.

Proximity hosting is the obvious alternative but there are also other ways to get low-latency access to the same or similar financial product. Equities are traded on multiple locations, so even though an exchange's datacenter is controlled by one hosting company, there are many other exchanges trading the same product. Moreover, similar products—ETFs, futures, American Depositary Receipts—may be traded on other venues in different geographic regions, so a co-location provider that keeps prices

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“Estimates of latency savings from co-locating equipment can be exaggerated if vendor latency figures are taken at face value and your analysis is not thorough. Firms should ask detailed questions about the proposed network topology and equipment to be used in co-location.”

John Cogman, Deutsche Bank

very high for a sustained period may see people moving their trading systems to other exchanges or even overseas.

Q What are the common pitfalls firms make when creating a co-location or proximity hosting strategy? How can they be avoided?

Cattell: Understanding exactly what your trading strategies demand and how that relates to your infrastructure architecture is the biggest key. Financial markets firms often make the mistake of choosing to co-locate their entire infrastructure at a single venue. While this has the obvious advantage of having everything in one place, it does not take advantage of a more distributed architecture that could leverage the lowest-latency connections to venues, while at the same time centralizing core systems in a more connection-rich and cost-effective environment.

Brown: Many market participants underestimate the time and complexity needed to execute a co-location project. Firms should look to make strategic decisions regarding co-location well in advance of any implementation deadlines, and should ensure appropriate resources are aligned to the re-location effort.

Cogman: The most common pitfalls can include under- or over-ordering rack space and network bandwidth. In today's dynamic environment, it can be difficult to predict with sufficient accuracy the future demand for particular co-location space or fiber connectivity circuits. One way to mitigate the cost of this is to have a fast and efficient deployment cycle and good relationships with vendors so that changes can be accommodated without incurring significant cost.

Thomas: The most common mistake that firms make is choosing the wrong provider. Trading firms' requirements change rapidly over time—e.g. connectivity to new venues, testing and deployment of new hardware, software enhancements, and so on—so they need to choose a provider who is more of a partner, able to deliver as circumstances dictate. Choosing a partner with a strong track record in providing co-location and proximity hosting services, who has a full and flexible range of offerings that utilize cutting-edge technologies, who is committed to growing with you in size and in geographic reach, and who has strategic alliances in place with other service providers, will improve the likelihood of success. ■



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