



**WHITE PAPER: Proximity Hosting**

# Cutting Through the Noise: The Real Deal on Reducing Latency in Financial Trading

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### Introduction

Reducing latency by getting physically closer to the source of trading capabilities and data feeds remains a top priority for liquidity providers, liquidity seekers, execution venues, and market data providers. A number of market drivers are converging that make this more of an imperative than ever. Market data volume, on average, doubles every year. There's the acceleration in algorithmic trading. According to market research firms, electronic trading already accounts for between 65 percent and 73 percent of total U.S. trading volume — a figure that is increasing every year. Add to that the proliferation of dark pools of liquidity and other emerging alternative trading venues. And the U.S. Securities and Exchange Commission (SEC) Regulation for National Market System (Reg NMS) coupled with the Markets in Financial Instruments Directive (MiFID) in Europe now require most financial services firms to proactively implement best trade execution for clients.

But although proximity hosting services are universally acknowledged to be the best strategy for achieving this, not all hosting providers are created equal.

Attracted by the opportunities in the financial sector a number of new entrants to the proximity hosting market have recently hung up shingles. Although offering basic colocation or proximity hosting services at extremely attractive price points, many are undercapitalized and are still in the process of building out their infrastructures. As such, whether they can be trusted to reliably provide the facilities you need — including sufficient space, power, and cooling capabilities — as well as premium managed services such as hosting, network, and security that your most mission-critical trading applications require, is an open question.

Additionally, as hosting “generalists” they lack specific industry experience and expertise. Either hosting is just one of many business segments they participate in, or they have moved from hosting retail, manufacturing, or even small and medium-sized businesses (SMBs) and don't have a strong sense of what matters to sophisticated financial services firms like yours.

One side effect of these two things — newness to the market coupled with a lack of financial industry-specific know-how — is that their data centers aren't necessarily where you need them: in the world's leading financial markets. Neither have they the requisite geographic reach a global firm needs, or the advanced managed services that relieve other infrastructure-related burdens from your IT staff's shoulders.

### Savvis Helps Major Financial Services Firm Achieve Ultra Low Latency Trading

One of the world's most prominent global financial services companies' U.S.-based algorithmic trading division offers award-winning and market-leading advanced algorithmic market trading applications to high frequency traders looking for a competitive edge. Traders are continuously searching for ways to stay electronically ahead of other buyers and sellers. It's a business where success is built on speed and confidentiality. Being even a millisecond ahead of a competitor on a deal can be the difference between significant profit or loss. Any lag or latency could be a deal-breaker.

By leveraging Savvis' Proximity Hosting solution and associated infrastructure, the firm was able to achieve its ultimate goal, attaining low latency trading ability. The solution offered additional benefits in the form of lower latency for the firm's clients that resided in the same data center. Ultimately, the Savvis solution provided cost efficiencies, technical enhancements, operational efficiencies and speed to market. By utilizing resources not available to the customer in house, Savvis was able to exceed the customer's high expectations.

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Finally, it's not enough for a hosting vendor to simply offer low-latency trading options. To compete in today's volatile and risk-laden markets, today's algorithmic and high-frequency traders, brokers, hedge funds, exchanges, multilateral trading facilities (MTFs), market data providers, clearing houses, and trading network providers must leverage technology to keep costs to an absolute minimum. They also need their proximity hosting vendor to help them be flexible and agile enough to change direction at a moment's notice. Commodity services in an increasingly commoditized market do little to help them differentiate themselves in today's volatile — even hostile — business climate.

At the same time that technology is increasingly important for achieving these goals, you need to be focusing on your core business, not on basic technological infrastructure. A proximity hosting vendor should, ideally, offer additional managed infrastructure services to support your business in a holistic way.

### The Seven-Point Quiz: How Does Your Proximity Hosting Provider Stack Up?

Reducing latency continues to be a top priority for a large number of financial services firms. It's a never-ending challenge. Whether slashing the time it takes for a packet of data to travel from one network location to another, or minimizing the delay between two sequential processes in a computer trading system, financial services firms need to be constantly vigilant or otherwise risk losing liquidity, fail to capture transactions, or experience high customer abandonment rates.

Added to these market realities is the fact that no financial firm can ever rest on its laurels. Any competitive advantage achieved through cutting latency is fleeting as competitors quickly play catch up. What's considered ultra low latency today will be table stakes tomorrow.

For many financial firms, proximity hosting is the answer. With proximity hosting financial firms' trading applications co-reside with execution venues' trading systems, with one or both sets of infrastructure often managed by a third-party services provider. The top draw of proximity hosting is that financial firms don't have to worry about traversing a network to carry data or execute transactions, dramatically reducing latency.

An increasing number of proximity hosting vendors vying for your business claim to offer the lowest latency. But you need to read between the lines of such claims. Here's a list of seven questions you should ask before committing to a proximity hosting provider.

### Investment Bank Cashes in by Hiring Savvis for Complete IT Solution

In 2005, a major international bank with a rich 90-year history decided to spin off its major investment arm through an initial public offering (IPO). The new publicly owned company was scheduled to be launched within a year as a complete standalone unit with 600 employees. But the new enterprise had no IT infrastructure to support its business. The firm hired Savvis to provide managed hosting and colocation services delivered at two data centers — a primary one and a failover one — that together housed more than 100 servers. Savvis also provided more than 14 terabytes of storage area network (SAN)/Utility backup and restore services. In addition Savvis manages the company's 13 network sites around the globe, providing security services such as firewalls complemented by program and project management services.

By selecting Savvis to manage its entire IT infrastructure, including managed hosting, managed network and mail, and managed security services, the newly established firm was able to hit the ground running, delivering reliable and secure online services to its corporate clients. Over time, the Savvis solution has delivered significant cost savings, technical excellence, operational efficiencies, and the ability to speed new products and services to market.

### 1. How long has your vendor been in the financial services proximity hosting business?

The financial services industry is not like retail. It bears small resemblance to manufacturing or healthcare. It possesses its own very specific challenges and needs. For starters, there's the pace of change. Events of the last year have shown us with what startling speed the very foundation of the worldwide financial system can be altered, perhaps forever. Then there's the fact that the technology underlying trading activities — both the hardware and the software — is increasingly complex. Even so, it can barely keep up with the fragmented nature and rapid evolution of today's markets. Your hosting vendor needs to understand the nuances of the industry. There's also the issue of having a sufficient track record of supporting the needs of trading firms with the absolute reliability they require. Downtime is utterly unacceptable. What kind of track record does your vendor have in providing upwards of 99.99 percent reliability? Can you measure this track record in years rather than months? Let the numbers speak for themselves.



#### Wall Street Systems Boosts SaaS Success with Help from Savvis

Wall Street Systems is a leading provider of corporate and bank treasury, central banking, trade processing, and global cross-asset back-office software. In 2006, Wall Street Systems made a strategic shift in direction. Previously, it had sold its products under a standard licensing model, with customers installing, managing, and maintaining the software at their own premises.

Recognizing that the software industry as a whole was rapidly moving to the new Software-as-a-Service (SaaS) delivery model, Wall Street Systems decided to offer SaaS versions of its award-winning solutions. Wall Street Systems had two choices: it could attempt to build and maintain an IT infrastructure capable of supporting the SaaS model itself, or it could outsource its infrastructure to a managed hosting services provider.

Today, Wall Street Systems subscribes to a broad range of Savvis services, including managed hosting; managed network; and managed security, including firewalls, network intrusion, and other services to keep Wall Street Systems' applications and data safe. As a direct result of outsourcing its infrastructure to Savvis, Wall Street Systems is able to offer its customers more stable and reliable solutions than typical in-house deployments, which significantly boosts its competitiveness in the SaaS marketplace. The fact that Savvis runs Class A data centers that have been SAS 70 Type II audited, and that it provides customers full transparency and control over operational controls through its SavvisStation Portal helps Wall Street Systems meet its compliance mandates such as Sarbanes-Oxley.

### 2. Are your vendor's facilities located where you absolutely need them to be?

In today's increasingly fragmented financial markets, you have to make difficult strategic choices. Which venues will you participate in? In addition to traditional exchanges, are you leveraging the opportunities offered by electronic communications networks (ECNs) and dark pools? What systems do you implement to leverage those venues to the utmost strategic advantage? And, of course, what vendor do you choose to minimize latency at and between the venues you choose?

Although it is common for proximity hosting vendors to aggressively promote the total number of data centers they manage, the fact remains that the largest network of data centers in the world won't help you if the execution venues and data sources you require access to aren't located in, or extremely close to, these facilities.

Although this probably includes the major global exchanges in markets such as New York, Chicago, London, Tokyo and Singapore, access to emerging and secondary execution venues — which as we have seen have been taking market share from traditional exchanges — may also be important to your business, either now or in the future. Before choosing a proximity hosting vendor, you first need to perform an internal analysis to identify and prioritize the specific liquidity venues that are the most strategically important to you. Then you have to investigate which managed hosting providers have data centers within or close to those specific locales.

### 3. Can your vendor offer a full suite of managed services spanning virtualization, utility compute, backup and storage, and security?

Most proximity hosting providers do basic colocation and nothing else. You get the server space, the power, and the cooling capabilities you need, but beyond that you're on your own. You either have to build and support your own infrastructure, or patch together outsourced managed application, network, and security solutions from a variety of vendors. By choosing a proximity hosting provider that transcends this increasingly commoditized market to offer a full suite of managed services, you not only simplify and streamline IT management throughout your organization, but have the flexibility to expand and contract your infrastructure as business needs dictate. After all, with trading volumes doubling every year, and the cost of space and power at record levels, you need a vendor that offers solutions — including virtualization — that minimize your space and power requirements. You can start with basic colocation. Move to solutions that provide the servers and operating systems for hosting your applications. Add outsourced network, managed security, or backup and storage solutions. Or take things to a whole new level by moving to a virtualized cloud compute environment.

#### International Trading Leader Gains Competitive Edge with Savvis

One of the world's most prominent global financial services companies, with more than 150 years of tradition, faced a key IT business decision for one of its most successful trading divisions. The parent company's investment banking division is comprised of more than 20,000 employees operating in 50+ locations across 25 countries. It has a presence in all major financial centers as well as emerging markets throughout the world. Industry competition is high and a seamless connection from trading desk to market application and exchange is essential. So in late 2007, when the division decided for the first time to outsource part of its IT business, it understood that the selection of a vendor would shape the firm's long-term business success. The firm chose Savvis' Proximity Hosting solution, which enabled it to achieve ultra low-latency in markets around the world, allowing it to aggressively compete in an extraordinarily tough industry.

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To get a sense of why it's important to have a full-service hosting vendor, think of the costs — not to mention the expertise required — of doing it yourself. Few financial services firms can scale their internal IT infrastructure sufficiently to meet increasing transaction volume, or the operational resources they need to handle growing transaction volumes. Liquidity providers need sophisticated distribution capabilities to attract liquidity suppliers. Firms that currently seek liquidity might eventually want to provide it — and need the infrastructure to enable that new business model. And both buy- and sell-side firms need to build a community that includes third-party vendors of applications and services.

Due to the economies of scale achieved by an industry-leading hosting vendor with thousands of customers around the globe, you can achieve all this at a fraction of the total cost of ownership (TCO) of doing it yourself. With the burden of routine infrastructure management taken off your hands, you can focus on your core business — and on implementing the technologies that will differentiate you from the pack and provide a real competitive advantage.

Even if a vendor offers more than mere commodity colocation services, you have to ask whether they are truly neutral about the technologies you can deploy. Some managed services providers are business units of larger systems or software vendors that have a vested interest in pushing particular hardware or software. Choose a vendor that allows you to go with the products or platforms you deem best.

#### 4. Does your vendor allow you to leverage an ecosystem of market feeds and third-party services?

In addition to the proprietary applications you have designed and built internally, it's highly likely you also leverage applications and data services from a range of liquidity venues and third-party vendors. These applications and services should support all the different trade lifecycle stages — for example, connectivity to execution venues for price discovery; to brokers and execution venues for orders/trades; and to trading partners and applications vendors for post-trade processing. With most proximity hosting providers, you would need to build a separate private network to each third-party site, or route trades to a hub on a common network that charged costly transaction fees. Although there are advantages to each of these approaches — private networks offer high performance, reliability and security whereas trading hubs are flexible and cost effective — the fact is that once you expand your reach beyond your organization your hosting needs become much more complex

#### **Savvis Proximity Hosting Helps Firm Win the Race to the Trade on a Daily Basis**

A privately held trading firm company — one of the largest privately held financial institutions in the World — distinguishes itself through its global market presence, capital commitment, and its grasp of trading dynamics. It excels at decision theory and implementing sophisticated pricing probability models — activities that demand a sophisticated yet flexible technology platform. The firm turned to Savvis' Proximity Hosting solution to cut latency, save milliseconds per trade, and give it a distinct competitive edge. It also now has the choice of accessing more than 200 data feeds from various exchanges, multi-lateral trading facilities (MTFs), and electronic communications networks (ECNs). By leveraging Savvis' data centers and financial services infrastructure, the company has been able to win the race to the trade on a daily basis fueled by increased speed to market, reduced latency, and the assurance of security and anonymity.

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and costly. You need a simpler way to deliver transaction messages and streamline straight-through processing applications for all clients, business partners, and processes regardless of location. You need a vendor that has brought together and nurtured a complete ecosystem of financial markets service providers, easily accessible from where you choose to locate your own trading infrastructure. Do an inventory of the software and service providers you currently or intend to leverage. Then ask vendors which of these providers are available inside their data centers or across their networks before committing to a hosting contract.

### **5. Will your vendor support your efforts to deliver an application and/or service via the Software-as-a-Service (SaaS) model?**

Increasingly, financial firms, in addition to being users of third-party applications and services, make their own internally-developed systems and services available to others. For example, sell-side firms often provide buy-side traders with algorithms and applications to facilitate profitable, faster trading; prime brokers provide clearing and custody services for their buy-side clients; and certain sell-side firms have monetized their own software development in areas of position-keeping and risk management applications. Leveraging the Software-as-a-Service (SaaS) model to deliver software functionality via the Web is an accelerating trend. You need a hosting provider that gives you the reliability, scalability, security, and flexibility that SaaS applications require. Because of the relative newness and complexity of developing SaaS applications — whether transforming existing legacy applications into SaaS services or building new SaaS offerings from scratch — you should seek a vendor that has experience and expertise in SaaS and can provide tools and services to help you through the entire SaaS lifecycle.

### **6. Does your vendor provide access to the networks you need?**

Don't be misled by hosting providers' claims of "network neutrality," and of possessing connections to dozens of networks in their data centers. It's not the total number of networks that matter, but the reach and quality of the networks themselves. In reality, only a handful of network vendors are relevant. The real questions to ask yourself are: is my network vendor of choice supported in this vendor's data centers? And, is the vendor "network agnostic" in the sense that you will not be charged an extra fee or penalized from choosing the vendor you prefer. That said, there are advantages to going with a hosting vendor that, in addition to being network agnostic, also owns its own network infrastructure. Not only will it be easier to acquire the network services you need, but the total cost of your hosting solution will be significantly lower. And in such cases the hosting provider's network will also probably offer the lower latency SLA's compared to your other options.

### **7. Does your vendor keep up with emerging technologies?**

New technologies that can boost your productivity and time to market are emerging all the time. In addition to enabling you to meet your current goals, deploying the latest innovations positions you for future success. You need a proximity hosting vendor that stays abreast of these new technologies, and which continually incorporates the most promising and proven ones into its products and services.

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Take virtualization and cloud computing. Together these technologies address one of the key challenges you face: speeding time to market. You can't afford to wait weeks or months for a new server to be provisioned to deliver a new service or expand capacity to accommodate increased transaction volumes, data, or clients. When you need additional storage or transaction capabilities, you usually need them yesterday. If your vendor offers services "in the cloud," it is virtualizing the underlying hardware and making it accessible over the Internet or a private network. Precisely because you are dealing with virtualized rather than actual compute resources, you can add or reduce transaction or storage capacity as your needs change. This not only speeds time to market of new capabilities, but reduces costs. For example, you can develop, test, or refine new algorithms without having to scale up your data center for what will only be a limited time. Or you can get rapid access to the massive - and continuously growing - volume of historical trading data your business owns by dialing up storage capacity as you need it.

For these reasons and others, you should always ask for your hosting vendor's plans to incorporate these or other emerging technologies into its service offerings.

### Understand Where You Are — And Where You Need to Go

All financial firms seek low latency, but your pursuit of it needs to be considered within a larger context. Cut through the noise of vendor talk about number of sites, network neutrality, and other factors, and choose a proximity hosting vendor that can provide low latency within the context of a holistic managed services solution.

Cost — as always — is a consideration. Financial firms need to calculate the current costs of connecting to market data — both in-region and geographically dispersed. And any cost calculation should include the total cost of ownership (TCO) of running your trading applications in your own data center compared to the cost of outsourcing in general. Then there's the greater security and flexibility that outsourcing to a managed services provider with a full portfolio of offerings delivers.

Finally, financial firms need to look ahead. Given the volatility and unpredictability of today's markets, it's not enough to master current challenges. The ability to adapt quickly and seamlessly to shifting scenarios is essential. The right hosting vendor will not only meet your needs today, but support you in whatever tomorrow brings.

### About Savvis

Savvis, Inc. (NASDAQ:SVVS) is an outsourcing provider of managed computing and network infrastructure for IT applications. By outsourcing to Savvis, enterprises can focus on their core business while Savvis ensures the quality of their IT infrastructure. Leading IT organizations around the world have selected Savvis to help them improve their service levels, reduce capital expense, and deal with the rising costs of bandwidth, energy, real estate, staff, and expertise. As a pioneer in utility computing, Savvis understands and harnesses the latest advances in technology like virtualization, cloud computing, and support process automation.

**For more information  
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