



Solving the trading connectivity challenge

understanding the requirements of changing markets

White paper



Executive summary

Introduction

The success of financial markets participants is inextricably linked to the connections they're able to make. To increase their potential for success, trading firms are constantly connecting to more geographies, trading venues, trading partners, and service providers. For the architects of trading communications

networks, enabling those connections is both complex and challenging. There are many factors, internal and external, that influence a firm's connectivity requirements. These factors are constantly changing. This paper examines key trends that are consistent across firms and over time.

Key trends in driving financial markets

Connectivity Requirements

There are a number of industry trends that are key to understanding how the complexity of financial services markets translates into trading network connectivity considerations:

- Increasing Geographic and Asset-Class Diversification
- Expanding Trading Opportunities through Technology
- Gaining and Maintaining Competitive Advantage
- Continuing Growth of Market Data Rates
- Constantly Changing Regulatory Environment

These trends are driven by firms' search for alpha and the uncertainty of the impact of new and still-emerging regulatory regimes around the world. They are also examples of the many and ongoing changes that are constantly introduced into financial services markets in response to natural and man-made global events.

Increasing geographic and asset classes

Diversification

Only the most specialized trading firms can limit their trading activities to single markets or single asset classes these days. The majority of firms must follow a multi-market, multi-asset class trading strategy in order to maintain competitiveness and profitability, as well as to reduce the risk profile of their portfolios. Many firms that once specialized in single geography or single asset class trading are finding that such an approach no longer generates sufficient returns or carries too much risk, or both.

The search for alpha requires money managers to look across markets in multiple geographies to accommodate their trading and asset allocation strategies. Profitable geographies are constantly moving and changing, rotating among emerging, frontier and developed markets every few years. Likewise, equities, fixed income, foreign exchange and commodities rotate based on factors as varied as global and regional economic conditions, weather and geopolitical activities. Arbitraders exploit these dynamic factors to make money by accessing multiple markets to exploit small price differences on the same instruments trading in different venues.

Asset-class and geographical diversification are complementary. For example, when a trading venue develops a unique product, it prompts other venues to develop competitive products to attract and retain customers. When exchanges have competing products, trading firms are compelled to connect to both, ensuring they are trading at best prices and taking advantage of arbitrage opportunities.

Providers of trading communications connectivity must be able to offer firms fast, efficient, simultaneous access to trading venues across multiple geographies and asset classes.

Regardless of the strategy, trading firms require reliable, resilient connectivity to every market and venue in which their firms participate. This connectivity must meet the capacity and latency levels required by both existing and anticipated trading applications and strategies.

Providers of trading communications connectivity must be able to offer firms fast, efficient, simultaneous access to trading venues across multiple geographies and asset classes. Access must be scalable so that firms can quickly and easily shift capacity to individual geographies or trading venues as their mix of markets and asset classes evolves.

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Expanding trading opportunities

Through Technology

Trading desks within firms, indeed entire trading firms, appear and disappear as new opportunities present themselves. Technology is a key driver, supporting and encouraging new firms to develop and introduce their proprietary strategies and algorithms into the marketplace. From traditional long strategies to high-frequency trading to firms' focusing on big data analytics, technology has dramatically affected markets.

Crossing networks are an example of firms' – both traditional trading firms and exchanges, as well as technology firms – utilizing technology to differentiate themselves with unique competitive advantage. Crossing networks match buyers and sellers in off-exchange, non-real time trading venues. They were initially developed off-exchange to help major investors move large blocks of shares without impacting share prices on the exchange or tipping off other market participants to the firm's trading strategy.

Advancing technology has reduced the barriers to creating crossing networks, so they proliferate for various, often narrowly defined purposes. As a result of the increased number of trading venues, best execution rules have been introduced, requiring firms to execute their clients' trades at the best price available across all markets – exchanges as well as non-traditional execution venues. These rules are yet another factor driving the increase in the number of participants and execution venues.

Consequently, meeting the challenge of increasing market participants requires financial trading connectivity that is broad and deep, reaching all trading partners with which firms wish to do business.

Gaining and maintaining

Competitive Advantage

While facilitating the creation of new trading strategies and market participants, technology also creates opportunity for existing firms to gain competitive advantage – and for a firm's competitors, as well. However, technology does not provide inherent competitive advantage. Rather, it's in the way that technology is integrated into a firm's overall strategy that provides the edge.

A key factor in making a firm more attractive to customers, current and potential, is ensuring that offered services are efficiently delivered. Customer satisfaction is often a function of simplicity in ordering and implementing services, reliability in performance, and rapid resolution when problems are encountered.

For example, having low-latency capabilities is no longer a technology differentiator. Rather, it is one of a range of services expected by clients when offering trading services. From a technology perspective, not every client requires low-latency services in every situation. Technology is used to fit the offered service to the purpose of a customer's requirements, matching capacity and latency characteristics to the venue and application involved.

True competitive advantage is derived from using technology as an enabler that makes it easy for clients to connect and trade. Clients expect simplicity, reliability, error-free performance, scalability, and on-demand access to a world of liquidity venues, trading partners, and trading services.

Gaining and maintaining a

Competitive Advantage

Much of this client expectation can be met by consolidating access to markets through connectivity. This benefits customers by reducing the unnecessary complexity of multiple telecommunications lines, data center equipment, and vendor relationships. A fragmented market access infrastructure can affect system performance by adding latency and unpredictability. Further, an outage in a complex infrastructures environment will take longer to resolve due to a greater number of components involved, each representing a potential point of failure. Trading outages are a risk management issue for clients. Any outage invariably shakes customer confidence and may induce customers to investigate alternatives, severely impacting competitive advantage.

Consolidated connectivity reduces complexity and increases the overall reliability of the connectivity and trading infrastructure. It also makes the process of adding new connections, customers, and venues faster and more efficient. With a simplified connectivity environment, firms can reduce the significant financial and human resource cost of management, monitoring, and maintenance of complex infrastructures. This allows firms to move critical, expensive resources from routine tasks and focus them on providing better trade execution and securities services that add value for the customer and competitive advantage for the firm.

Continuing growth of

Market Data Rates

As it has for the past 20 years, market data continues to be generated at an increasing rate. Many factors are driving this expansion of data volume, including those discussed in this paper. As new markets and financial products develop and evolve, market data growth follows the geographies and asset classes with the heaviest activity. As investment focus rotates through geographies and asset classes, more data is generated within those markets. The data explosion, however, goes far beyond simple market data.

News and research, which have long been digitized, are critical to the vast majority of fund managers who implement long-term strategies and make trading decisions based on fundamental company and economic data. However, news and research that was once delivered as digital text files are now delivered as PDF or HTML files to accommodate visual graphics and

other information formats. Information represented by these file types can be many times larger than their plain text equivalents.

Growth in trading communications infrastructure capacity requirements will continue as portfolio managers and traders increasingly base their decision on news and other non-market data. Many of the best and fastest news sources are video-based. So infrastructure capacity, latency, and class-of-service must be capable of delivering streaming and attached video files.

Connectivity capacity requirements are also increasing because reporting requirements are growing, as a result of new regulations designed to contain risk and protect markets and investors, as described in the next section.

Regulatory changes affecting

Financial Markets Connectivity

To achieve the goal of fair and stable financial markets, regulators in the U.S. and Europe are focusing on increasing the transparency of pricing and other market information for all market participants. All market participants must be given fair and equal access to information sources and trading venues. As regulations are implemented to effect this fairness and transparency, markets and trading communications connectivity requirements are adapting.

First, there are simply more requirements for trade reporting – more data that needs to be pushed to more sources, such as that from various internal and proposed industry-wide data warehouses. As these warehouses are established for multiple asset classes, they create the opportunity for additional analysis across the various desks and businesses. This provides firms that are trading cross-assets in separate operations the ability to assess their risk profiles by asset class. None but the largest and most sophisticated firms have these aggregated in one global view. Trade warehouses will enable analysis of global risk profiles for other firms, thus bringing new applications connectivity requirements.

The new regulatory requirements are making market oversight far more wired. Previously, regulatory oversight implied auditors locked in rooms analyzing stacks of

trading data in the form of computer printouts. Now it means pushing data back-and-forth between trading firms and regulators across secure networks and storing it in warehouses – increased transparency, increased amounts of data, and increased requirements for secure, reliable connectivity.

Regulations that focus on fair and equal access to real-time information and trading venues within proximity hosting centers have sparked significant debate. Some execution venues have already implemented strategies to ensure fair and equal access. The goal is to level the playing field between high-frequency traders, who spend large sums for the fastest networks and the closest locations to the data centers, and other, more typical, firms. In the U.S., for instance, the Commodity Futures Trading Commission (CFTC) has proposed rules that aim to provide equal access to, and within those data centers.

Banks and trading firms must follow developments closely in order to ensure that their trading communication connectivity adheres to these requirements while at the same time maintains their competitive edge.

Implications for

Trading Connectivity

It is essential for banks and trading firms to know that their trading communications connectivity infrastructure can rise to meet these challenges – wherever global business drives the firm. Before selecting a provider of global trading communications solutions to enable access to a firm's trading partners and venues, the following should be considered:

- Is your connectivity partner's infrastructure exclusively focused on providing financial institutions with connectivity across the securities trade cycle – pre-trade, trade, and post-trade?
- Does your connectivity infrastructure offer dedicated connectivity with no contention?
- Is your firm's connectivity flexible enough to scale according to the changing demands of today's trading environment?
- How quickly can new connectivity be provisioned in all the markets you care about?
- Does your trading communications connectivity provider guarantee 100% uptime?
- Does your connectivity partner utilize the latest technologies and evergreen business strategies to enable access to markets that were previously too costly to address profitably?
- Can you access a broad range of market data from exchanges, inter-dealer brokers, contributors, and market data vendors?
- Does you have access to evolving liquidity and execution venues in emerging and frontier markets?
- Does your trading communications connectivity solution provide you the global market access and local support you need to effectively run your business?

IPC's

Connexus

Connexus is IPC's global connectivity infrastructure. Through a single connection, trading firms have direct access to more than 5,000 locations of market participant and their service providers in 700 cities across nearly 60 countries. Using protocols like TCP, IP, UDP, multicast, FIX and SWIFT, Connexus enables the entire trading life cycle, with optimized latency, throughput and control, as well as 24x7 multilingual support.

IPC's established community of market participants includes more than 60 liquidity venues, hundreds of sell-side firms including inter-dealer brokers, leading buy-side firms and corporate treasury departments, market data providers, clearing and settlement firms, and independent software vendors

About IPC

IPC is a technology and service leader that powers financial markets globally. We help clients anticipate change and solve problems, setting the standard with industry expertise, exceptional service and comprehensive technology. With customers first and always, we

collaborate with each to understand their individual needs to help make them secure, productive and compliant within our connected community. Through service excellence, long-developed expertise and a focus on innovation and community, we provide agile and efficient ways

for our customers to accelerate their ability to adapt to the ever-changing requirements for advanced data networks, compliance and collaboration with all counter-parties across the financial markets.

For more information, visit www.ipc.com

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