



# The Future of High-Frequency Trading

The popularity of high-frequency trading is growing by leaps and bounds within the financial services industry, despite the growing political pressure to further regulate it. High-frequency trading adds liquidity to the market, tightens spreads while generating respectable commission and fee revenues for the sell side and exchanges. *DWT* sits down with Doug Kittelsen, CTO of trading infrastructure provider FTEN...to discuss the next phase in high-frequency trading's evolution.



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## **Is the number of high-frequency trading firms on the rise, or are the barriers of entry still too high for many of them?**

Doug Kittelsen, FTEN: The number of firms participating in high-frequency trading is increasing and the barriers to entry are falling—fast. The adoption of sponsored access programs, the expansion of prime brokerage, low priced clearing services, new liquidity-rebate structures, accessibility of co-location at the exchanges, and the availability of scalable, low latency execution platforms have enabled start-up funds to enter the market. In the past, only the largest sell-side firms could engage in high-frequency trading. But now, many smaller entrants are able to participate.

## **What will the high-frequency trading landscape look like in the next three to five years?**

Today the industry is very focused on “mechanical alpha,” where traders deploy algorithms that are looking for instantaneous pricing anomalies in the market. It is essentially a race between black boxes and it is measured in microseconds.

As this race progresses, spreads will tighten and the competition for those spreads will increase.

This is driving high-frequency strategies to move across multiple market centers and asset classes to seize new profit opportunities. Synchronizing market data, calculating cross asset positions, and controlling distributed risk presents a significant engineering challenge for participants in the coming years.

### **What do you see as the greatest hurdle for firms improving the performance of their high-frequency trading infrastructure? How can this be addressed?**

First, it is not just about speed; it is also about the consistency of the platform's performance.

Second, it is nearly impossible to compare speeds that are published by different groups, vendors or exchanges. Each group calculates its speed differently: Some use real customer order flow, others use sanitized test beds, some report performance averages, while others report the 95th percentile performance.

Third, many firms take a "component approach" and focus on those elements that are the easiest to measure— or are under their control. From our standpoint, the most successful firms take a holistic view of latency. They understand that there are many components in the trading process that must work together to offer the best overall performance.

The challenge is that the performance of some of the components is not easy to measure. A great example of this is with market data. We have seen customers struggle to shave 10 microseconds from the round trip to the exchanges on their net work while they are receiving market data that is delayed by 500 milliseconds. They were focused on the wrong problem and trading on an old market. Once they began working with FTEN, we shared tools to help them compare market data sources and after they switched sources, their alpha jumped significantly.

### **Are the advancements in risk management systems keeping pace with the advancements in high-frequency trading?**

Some firms have the "illusion of risk control." They think that as long as they have any risk controls in place they are protected. Many times the risk controls are siloed. They may use an exchange-based risk management system to filter aberrant orders—for example, fat-finger controls—but it does not monitor the overall capital in use, position exposure and profit or loss of a strategy that operates across multiple venues and asset classes. Others rely on end-of-day balances to measure their clients' trading activity, but that does not give them visibility into intra-day exposure, and therefore, they will only learn of issues after the market close when corrective trading actions may not be possible.

Risk management systems should monitor a trader's activity in real-time, trade by-trade—even if it is a high-frequency algorithm generating thousands of messages per second. Only in this way can risk management support high-frequency trading.

At FTEN, we monitor the trader's activity across all market centers and asset classes to offer a real-time comprehensive view of trading activity no matter how the orders were sent to the market or where the trade was executed. In addition, we can automatically cancel open orders if

an account exceeds risk boundaries to eliminate open order exposure. Risk management solutions that offer less simply generate the illusion of control.

### **Will risk management act as governor for the growth of high-frequency trading?**

Actually, risk management will be a requirement to allow high-frequency trading to reach its full potential. No one wants to report to their partners, investors or shareholders that they were unable to stop a high-frequency strategy that resulted in a multimillion-dollar loss.

The first money lost by a trading group is that group's own money. From the trader's perspective, the designers of algorithms are constantly looking for opportunities in the market and are constantly adjusting their algorithms. The most successful firms leverage a rapid and agile development approach so the cycle between the idea and deployment is abridged.

With an active pre-trade risk control system in place, the algorithm designer knows that there are pre-trade controls to monitor the algorithm and protect them from losses caused by a runaway algorithm.