



Microbursts Present Big Issues For High-Speed Traders

By Donna Kardos Yesalavich of Dow Jones Newswires

Among high-frequency traders' biggest obstacles are sudden increases in trading data that are so short-lived that some firms don't even know when they are happening.

These surges, called microbursts, can temporarily saturate a trading network to the extent that orders are delayed, or worse yet, lost altogether. That's a scary prospect for high-frequency traders, for whom the ability to react instantly to price movement is paramount, especially in periods of extremely high volumes and volatility -- precisely the times microbursts are more likely to happen.

"The killer for a lot of our trading clients in particular is they're all competing with similar strategies," said Raymond Russell, chief technology officer of Corvil, a provider of microburst-monitoring technologies. "Only one firm gets to execute at the right price. Even just being a fraction of a second later is absolutely disastrous."

Microbursts often occur just after a major economic report is released or when the Federal Reserve issues a statement on interest rates. When that happens, a large portion of the market moves to send orders at the same time, causing a brief surge not only in order flow but also in the resulting price changes being reported by the exchanges. Traders need to get that price-change information back quickly so that they can turn around with more trades in reaction to them.

However, if more messages are being sent than a network or trading system can handle, the packets containing those messages will be queued into a buffer and delayed there. If the buffer isn't big enough to handle the overflow, some of the packets of market prices and orders may be lost completely.

As a result, trading firms' ability to withstand the effects of a microburst is becoming increasingly critical.

“This microburst issue is a key issue in your overall trading performance,” said Mark Skalabrin, chief executive of Redline Trading Solutions. “You really have to look at how you do in the face of these bursts.”

Nevertheless, some traders don't even know when they are being affected by microbursts. They may notice that a trade wasn't executed as quickly as it should have, or that an order wasn't filled on the first try and had to be resent, but they must use complex technology systems from companies such as Corvil and Network Instruments to detect if and when microbursts have been the culprit.

To avoid the order delays and losses that microbursts can cause, the trading industry is arming itself with technological upgrades, including bigger buffers, extra processing capacity and the use of chips that can process data more quickly. The goal is to be able to tackle not just normal market environments but also abnormal ones, with the May 6 “flash crash” a fresh memory of just how extreme the market can get.

“The trading firms are very, very sensitive to this stuff,” said Network Instruments President Douglas Smith. “Whatever money they could spend to get closer to that data, they would. It's been a real active and growing part of our business over the last year.”

Archimedes Finance is a high-frequency trading firm that has put a lot of focus on its trading performance during statistical extremes. In addition to using buffers, the firm has done a lot of work on how its system could analyze the bursts more efficiently, according to Juny Sridhara, the firm's president. One strategy has the technology look at fewer variables when it detects that a burst is occurring to help it move through the increased data more quickly, he said.

Other strategies the firm is testing “all involve some ways of saying, how can you analyze a much greater volume and throughput of data in a much smaller amount of time,” Sridhara added.

Regardless of the how the industry is trying to tackle microbursts, the issue is likely to remain as market-data volume climbs, said Daniel Bergman, vice president of high-performance engineering at Lime Brokerage.

He added, “given that the size of the bursts grow and grow, it's kind of a never-ending problem.”

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