

How Many HFT Firms Actually Use Twitter to Trade?

Share prices plunge briefly after a phony tweet about terrorism

by

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Photo illustration by 731

Tuesday's fake tweet from the Associated Press's hacked Twitter account, reporting explosions at the White House that injured President Obama, has sparked renewed criticism of high frequency trading, specifically how some computer traders use social media as an input into their trading strategies. Though it'll be months before we know exactly what happened, the consensus is that a handful of trading algorithms responded to the fake tweet by selling a broad range of stocks, bonds, and commodities. As message traffic spiked and prices started declining, HFT firms started backing out of the market, just as they did during the May 2010 Flash Crash. As a result, liquidity dried up, as you can see here in this chart from Nanex. Since there were suddenly relatively few buy orders to match against all those sell orders flooding the market, the dip picked up speed.

"When the amount of bids and offers thins out like that, it takes very little volume to move the market in a big way," says Manoj Narang, chief executive officer and founder of Tradeworx, a Red Bank (N.J.)-based HFT firm. When he noticed the

sudden spike in messaging traffic, Narang instructed his traders to back off the number of orders they were sending into the market. “When you’re in the business of posting bids and offers and something is up that you don’t know about, you back off.”

Within two minutes, the Dow was down 140 points, the S&P 500 index had lost nearly 1 percent, and an estimated \$200 billion in U.S. stock market value had vanished. As word spread that the tweet was fake, prices quickly stabilized. A chart of the day’s trading shows a deep, narrow trench carved into the middle—a stab wound, almost.

While there are trading firms that have begun dabbling in aggregation and analysis tools to scour news feeds for useful information, most of them aren’t trading directly off that information. And fewer still are actually trading off Twitter, even though less than a month ago, social media received the blessing of regulators to be a conduit for market-moving news.

One of the most common ways financial firms plug these data streams into their models is through middleman firms such as RavenPack, which aggregates news from thousands of sources. Each day its systems put out anywhere from 20,000 to 50,000 “clean messages” culled from corporate newswires and professional news sources.

Each message is ascribed a sentiment score from zero to 100 to tell clients if it’s negative or positive news for the companies mentioned. For most firms, it’s merely one more piece of data to add to their trading model. According to CEO Armando Gonzalez, RavenPack sells this news feed to 12 of the 20 top performing quantitative hedge funds in the world.

There's a big difference, though, between taking the kind of data that RavenPack sends to clients and mainlining Twitter's "firehose" feed directly into your trading algorithm, allowing the model to place trades instantly off the information it's gleaning through some sort of text-analysis program. Clearly, that's exactly what a few firms are doing.

Gonzalez says some of his clients have told him that a handful of high-frequency trading firms forgo filtering and pour Twitter data directly into their algorithms. "There are a few HFT firms that have, I would argue, irresponsibly added raw Twitter feeds into their systems," says Gonzalez. He says he doesn't know the name of any firm that does so. Neither does Narang. "I'm sure there are a few, but I'm skeptical there are many of them, or that they're very big," says Narang.

Gnip, DataSift, and Topsy pay Twitter for access to all 400 million tweets a day from 200 million users. They take that "firehose" feed and customize it for marketers, research firms, and increasingly, trading firms. According to Seth McGuire, director of business development at Gnip, based in Boulder, Colo., quantitative hedge funds began contacting the company two years ago, asking for the Twitter feed. Today, McGuire says Gnip sends the raw Twitter feed to "over a dozen" quantitative hedge funds, each with at least \$1 billion of assets under management.

Before launching in November 2011, San Francisco-based DataSift was getting "a fair amount of calls from all kinds of hedge funds, big investment banks, even individual traders about wanting a social-media feed," says CEO Rob Bailey. Today, financial services firms are among the 150 corporate clients that pay DataSift anywhere from thousands to tens of thousands of dollars a month for custom social-media feeds, including ones from Twitter. "We cost less than some investment banks spend on pizza," says Bailey.

Bailey says he has no idea whether any of his clients traded on the fake tweet. “If there’s a lesson, it’s just how important it is to have Big Data scientists on staff and that you shouldn’t just plug Twitter into your algorithm.”

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As Narang points out, the vast amount of trading done by computers is statistical in nature, meaning algorithms look for historical patterns in the volumes of market data they sort through every day. The problem with tweets is two-fold. One, they’re super noisy, so gleaning a decent signal out of them takes a lot of analysis and is still pretty hairy. But also, even though some 400 million tweets get sent every day, there’s still not enough historical data out there. They’re still too new. “It’s simply not possible to commit lots of capital to finding patterns that appear on Twitter,” says Narang. “The reliability is in question.”

The hacked AP account is the second major security breach at Twitter this year. In February hackers gained access to e-mail addresses and passwords associated with 250,000 user accounts. Now that billions of dollars are being traded at least in part based on information gleaned from Twitter, computer trading experts think it opens a window into a new kind of financial crime. “This incident is an example where market manipulation meets terrorism,” says John Bates, chief technology officer of Progress Software, which designs trading and compliance programs. “One doomsday scenario is that al-Qaeda takes control of a hedge fund and drives the market one way to make billions in profits or crash the markets.”