Social-media analytics emerging as surveillance tool for exchanges, banks to find market manipulation

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The growing influence of social media platforms such as Twitter and Reddit in moving stock prices has led major exchanges around the world to apply machine learning and other technologies that seek to identify potential market manipulation. These tools, say experts, are also prompting interest among banks in their risk management and trade surveillance functions, and might prompt regulators to take a closer look.

While the technologies themselves may not be new, the interest from exchanges and banks is. To date, the tech companies leading development of the software have largely served hedge funds, who are seeking a competitive market edge. But with social media having grown in influence across the investment landscape, major exchanges have jumped onboard.

"We are getting a lot of requests from more stock exchanges around the world," said Stefan Nann, co-founder and CEO of StockPulse, a German data analytics company specializing in mining emotional data intelligence. Among its customers are Nasdaq and Deutsche Borse.

The interest has only intensified in recent weeks after a band of retail investors earlier this month, mobilized through Reddit, an online messaging platform, executed massive buy orders for GameStop through the Robinhood Financial trading platform, a relative newcomer to the world of securities trading. The buying frenzy upended some established hedge funds, prompting Congress to launch an investigation.

Wall Street hedge fund managers, the chief executives of Robinhood and Reddit, and a YouTube streamer known as Roaring Kitty faced a grilling on Thursday afternoon from U.S. lawmakers over the market turbulence in GameStop.

All of this has led major U.S. and foreign exchanges to deploy so-called social or emotional data software to detect links between online chatter and messaging to specific stock price volatility.

"With what happened with GameStop, the exchanges know they have to monitor and observe the whole social media landscape," Nann said.

Scouring Unstructured Text for Clues, Signals

Companies like StockPulse collect and analyze data from social media sources including Twitter and Reddit, seeking to find patterns or outliers that might be causing unusual activity in the stock price of companies. Their "web crawlers" scan thousands of different internet sources for relevant financial topics and communication, collecting millions of tweets, chat messages, message board posts, news articles, and comments to news articles each day.

These "unstructured text" documents are then processed using natural language processing (NLP) and more advanced sentiment analysis methods to extract topics and investigate the hidden semantic structure within large amounts of text.

"I have not had as much inbound traffic in my career than since GameStop," said Joe Gits, CEO and co-founder of Chicago-based Social Market Analytics, which uses NLP and other technologies to scour unstructured data platforms such as Twitter.

"Our primary business is selling aggregated feeds to hedge funds," said Gits. "But in the last two years we have had a lot of risk (management) departments show an interest," adding that investment banks were using the company's technology to monitor public chatter about firms that are on the bank's internal "watch" or "restricted trading" lists.

"We can track anything, any topic," Gits said. "What they want to see is if there is abnormal activity in anything they are interested in."

Uncovering "Pump and Dump" Schemes

While many market and legal experts argue that the dizzying heights in GameStop's share price cannot be necessarily classified as market manipulation, what exchanges are looking for are clear cases of fraud or manipulation.

One of the more common forms of manipulation is so-called "pump and dump" schemes, where social media users boost the price of a stock through recommendations based on false, misleading, or greatly exaggerated statements. The perpetrators of this scheme already have an established position in the company's stock and sell their positions after the hype has led to a higher share price.

The technologies used by Nasdaq and other exchanges can help them identify platform users who may be behind such schemes.

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"We don't know anything about the person but there are metrics with probability scores where you can identify if a person is more important than another person," said Nann of StockPulse.

Since most users on platforms such as Twitter or Reddit have anonymized their true identity, it is up to the exchange if they want to further investigate the user, which will ultimately bring in law enforcement.

Can Regulators Be Far Behind?

With the growth of social media's presence in financial markets, it's perhaps only a matter of time before regulators themselves employ NLP and other tools in their market surveillance. Some legal experts said they wouldn't be surprised if they already have.

"When you look at the strides made by some regulators, such as SEC, in using advanced technology to monitor stock price movements, I wouldn't be surprised if they are also now analyzing social media platforms," said one partner at a Washington, D.C. law firm who requested anonymity.

(Henry Engler, Regulatory Intelligence)

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