How a phony tweet and computer trades sank stocks (Update)

April 24 2013, by Bernard Condon

Trader Christopher Lotito, center, works on the floor of the New York Stock Exchange Wednesday, April 24, 2013. No sooner did a phony Associated Press report of explosions at the White House appear on Twitter on Tuesday than investors started dumping stocks, eventually unloading $134 billion worth. Turns out, some investors are not only gullible, they're impossibly fast stock traders. (AP Photo/Richard Drew)

For a few surreal minutes, a mere 12 words on Twitter caused the world's mightiest stock market to tremble.

No sooner did hackers send a false Associated Press tweet reporting explosions at the White House on Tuesday than investors started dumping stocks—eventually unloading $134 billion worth.

Except most of the investors weren't human. They were computers, selling on autopilot beyond the control of humans, like a scene from a sci-fi horror film.

"Before you could blink, it was over," said Joe Saluzzi, co-founder of Themis Trading and an outspoken critic of high-speed computerized trading. "With people, you wouldn't have this type of reaction."

For decades, computers have been sorting through data and news to help investment funds decide whether to buy or sell. But that's old school. Now "algorithmic" trading programs sift through data, news, even tweets, and execute trades by themselves in fractions of a second, without slowpoke humans getting in the way. More than half of stock trading every day is done this way.

Markets quickly recovered after Tuesday's plunge. But the incident rattled traders and highlighted the danger of handing control to the machines. It also raised questions about whether regulators should be doing more to monitor the relationship between social media and the markets.

Irene Aldridge, a consultant to hedge funds on algorithmic programs, said many of the trading systems just count the number of positive and negative words, without any filter. She wants regulators to do more but believes that glitches and plunges may be inevitable.

"You can't ban Twitter," said Aldridge, author of "High-Frequency Trading," a guide to algorithmic trading.

Just how exactly the trading unfolded Tuesday is still a bit of a mystery.

Some experts say the computers took their cue from humans, picking up on a pause in buying as traders read the phony tweet. In Wall Street's insanely fast trading world, humans holding back for even a second could have signaled to computers that buyers were drying up and that prices could fall, and so the computers should sell fast.

Others, like Saluzzi, think computers may have sold on the tweet itself. That's possible because computer trading programs are increasingly written to read, and react to, news from social media outlets like Twitter.

Experts say the fake tweet seemed designed to catch a computer's attention.

Rich Brown, head of Elektron Analytics, a Thomson-Reuters unit that sells news feeds that computers can read, said that the words "explosions" or "Obama" alone wouldn't have triggered selling. But add "White House," and it's a combination even the slowest computer couldn't miss.

Brown said his service doesn't include Twitter in its feeds because there's too much useless "noise" in the deluge of tweets and, given the 140-character limit to tweets, often too little context.

Before the fake tweet appeared on Tuesday, it looked like any other good day on Wall Street. Unexpectedly strong earnings reports sent stocks in the Dow Jones industrial average up 1 percent to 14,697 with three hours to go in the trading day.

Then, at 1:08 p.m. EDT, a tweet appeared on the hacked AP Twitter account stating that two explosions at the White House had injured President Barack Obama. Stocks immediately started falling and tumbled for two minutes.

The Dow dropped from 14,697 to 14,554, losing 143 points, or 1 percent. In the frenzied selling, oil prices dropped, gold rose, the dollar rallied and the price of Treasury notes, seen by many investors as a hiding spot, shot higher, briefly knocking yields to their lowest level of the year.

The AP quickly announced that its account had been hijacked and the report was false. The Dow began to climb again, recovering all its losses by 1:18 p.m. That was 10 minutes after the fake tweet, according to FactSet, a financial data provider.

A group called the Syrian Electronic Army said it was responsible for the hack. But the claim has not been corroborated. The FBI and the Securities and Exchange Commission said they had opened investigations into the incident.

Some Wall Street pros were surprised that a single tweet could move markets so much.

Julian Brigden, managing partner of Macro Intelligence 2 Partners, an investment consultancy, said the drop suggested an "unstable" trading environment dominated by investors too quick to buy or sell without any thought.

"To me, it's indicative of a very dangerous market," he said.

Though stocks eventually recovered for the day, investors have been on edge recently.

"People are looking for a reason to sell, and (Tuesday) it was a fake tweet," said Adam Sussman, head of research at Tabb Group, a research firm. "Of course, once they realized it was fake, they bought back in, or they stopped selling."

But he thinks humans played only a minor role in the stock plunge. He said most professional investors are too savvy to sell on a tweet.

"They'd get a tweet from AP and then say, 'Oh, was there a corroborating tweet from Bloomberg? A corroborating tweet from Thomson Reuters?' and so forth," he said. "So I don't believe that anyone selling substantial money saw that tweet and just began selling off billions of dollars."

Joe Fox, founder of online brokerage Ditto Trade, said the selling was too fast for humans to have pulled off, and computers were to blame.

"Whoever this jerk (who wrote the tweet) is probably cost some people millions of dollars in a matter of minutes," he said.

Computer programs have come to dominate stock-market trading over the past 20 years. The goal is speed, and it's led to an arms race as companies develop ever-faster programs. High-speed trading came under public scrutiny following the "flash crash" of May 6, 2010, when a glitch erased 600 points from the Dow in five minutes.

One of the latest weapons in the arms race is machine-readable news. The Thomson Reuters service, one of the more popular offerings, scans 50,000 news sources and 4 million social media sites for stories.

Brown says his programs take news articles and announcements and automatically flag answers to the essential questions—who, what, where, when and why. The answers are translated into a code that an investment firm's trading program can understand and then sent to clients. All of that takes less than one-thousandth of a second.

It's up to the investment fund to place a value on each word and rank established news outlets over other sources like blogs or social media websites, Brown said.

Tapping into the stream of comments on Twitter has become increasingly popular. Earlier this month, the SEC cleared companies to release key announcements on Twitter, Facebook and other social-media venues. Bloomberg also added Twitter to its terminals, a fixture on every big bank's trading floor.

Regulators have been studying the problems posed by automatic computer trading for years. Last month, the SEC proposed tighter oversight of automatic trading. Stock exchanges would be required to test their trading systems routinely, and report to the SEC about problems that could damage trading, like hacking.

"The exchanges love speed," said Bart Chilton, a member of the Commodity Futures Trading Commission, a regulator that has been reviewing high-speed programs. "I'm not so sure that fast is always better."

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