

FLASH BOYS

A Wall Street Revolt

MICHAEL LEWIS

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1. Spread Networks

In the summer of 2009, Dan Spivey started a secret construction project to connect a data center in Chicago to a stock exchange in northern New Jersey by fiber optic cable. Spivey, an ex-options trader and market maker, didn't just want this fiber optic connection to go the standard cross-country route which by-and-large followed the railway tracks. Spivey's cable had to be laid in the most direct route possible, even if that meant boring a hole through the Allegheny Mountains.

Dan Spivey had persuaded Jim Barksdale, the former CEO of Netscape Communications, to fund this secret construction project to the tune of \$300 million. They named the company Spread Networks and they kept its construction secret until March 2010 – about three months before it was due to be completed – when they started offering access to this line to Wall Street traders. Their selling price: \$14 million for a five year lease. The capacity of the line was 200 users so once fully sold, Spread Networks stood to generate \$2.8 billion in revenue.

What Spread Networks offered was a fiber optic cable which would allow a signal to achieve a Chicago to New Jersey round-trip travel time of 13 milliseconds. That was significantly faster than it currently took for a signal to be sent through the fiber cables offered by all of the existing telecom carriers like Verizon, AT&T, Level 3 and so on. Their round-trip time was slower and inconsistent. Sometimes it took 16 milliseconds or even longer for the round trip. Using the Spread Networks cable, a trader would get the jump on everyone else who wasn't using it – and that was precisely the pitch Spivey used to sell access to Spread Networks.

So why were Wall Street traders and the banks scrambling to pay \$14 million to lease a high-speed fiber optic cable which merely shave a few milliseconds off the time others offered at no premium whatsoever? It all came down to the very simple concept of arbitrage – being able to buy something in one market at one price and then turn around and immediately sell it in another market for a higher price.

“Like every other trader on the Chicago exchanges, Spivey saw how much money could be made trading

futures contracts in Chicago against the present prices of the individual stocks trading in New York and New Jersey. Every day there were thousands of moments when the prices were out of whack—when, for instance you could sell the futures contract for more than the price of the stocks that comprised it. To capture the profits, you had to be fast to both markets at once. What was meant by “fast” was changing rapidly. In the old days—before, say, 2007—the speed with which a trader could execute had human limits. Human beings worked on the floors of the exchanges, and if you wanted to buy or sell anything you had to pass through them. The exchanges, by 2007, were simply stacks of computers in data centers. The speed with which trades occurred on them was no longer constrained by people. The only constraint was how fast an electronic signal could travel between Chicago and New York—or, more precisely, between the data center in Chicago that housed the Chicago Mercantile Exchange and a data center beside the NASDAQ's stock exchange in Carteret, New Jersey.”

– Michael Lewis

The scramble for access to this new high-speed fiber optic line made clear the financial markets were changing rapidly themselves. A new class of traders were coming to prominence and it was clear a lot of players were using new strategies to make money. Those strategies may vary in some details but the common factor was almost all of them depended on reacting faster than the rest of the stock market. Spread Networks was a genuine game changer and to keep using these new strategies, the traders had no choice but to pay the \$14 million Spread Networks was asking.

“Even then, none of the line's creators knew for sure how the line would be used. The biggest question about the line—Why?—remained imperfectly explored. All its creators knew was that the Wall Street people who wanted it wanted it very badly—and also wanted to find ways for others not to have it. In one of his first meetings with a big Wall Street firm, Spivey had told the firm's boss the price of his line: \$10.6 million plus costs if he paid up front, \$20 million or so if he paid in installments. The boss said he'd like to go away and think about it. He returned with a single question: “Can you double the price?”

– Michael Lewis

2. The Royal Bank of Canada

Way back in 2002, the Royal Bank of Canada (the ninth largest bank in the world) decided they wanted to make a "big push" to become a major player on Wall Street. They opened an office in New York and staffed it with Canadians. One of these employees was Brad Katsuyama, a 24-year-old trader, who moved to New York to trade U.S. tech and energy stocks. A few years later, he was promoted to run RBC's equity trading department which consisted of about twenty traders.

When RBC acquired Carlin Financial (an electronic stock market trading firm) for \$100 million at the end of 2006, the bank's stock trading department was merged with Carlin's electronic traders. There was quite a clash of cultures which made for some interesting times but that was completely overshadowed by some odd behavior in the financial markets which Katsuyama started to notice.

“By June 2007 the problem had grown too big to ignore. An electronics company in Singapore called Flextronics announced its intention to buy a smaller rival, Solectron, for a bit less than \$4 a share. A big investor called Brad and said he wanted to sell 5 million shares of Solectron. The public stock markets—the NYSE and NASDAQ—showed the current market. Say it was 3.70–3.75, which is to say you could sell Solectron for \$3.70 a share or buy it for \$3.75. The problem was that, at those prices, only a million shares were bid for and offered. The big investor who wished to sell 5 million shares of Solectron called Brad because he wanted Brad to take the risk on the other 4 million shares. And so Brad bought the shares at \$3.65, slightly below the price quoted in the public markets. But when he turned to the public markets—the markets on his trading screens—the share price instantly moved. Almost as if the market had read his mind. Instead of selling a million shares at \$3.70, as he'd assumed he could do, he sold a few hundred thousand and triggered a minicollapse in the price of Solectron. It was as if someone knew what he was trying to do and was reacting to his desire to sell before he had fully expressed it. By the time he was done selling all 5 million shares, at prices far below \$3.70, he had lost a small fortune.”

– Michael Lewis

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