AN EXECUTIVE SUMMARY OF

FLASH BOYS
A WALL STREET REVOLT by Michael Lewis

Who is Michael Lewis
Michael Lewis is an American writer who has published several non-fiction bestsellers. As a financial journalist, Michael has successfully uncovered the truth of Wall Street and though his books are a joy to read, the truth can sometimes be very frightening. In this book, Michael takes the reader through a journey that explains the flaws in the stock market. Most importantly, Michael is famous for his bold and unconventional way of writing where he refuses to hold anything back. This is our summary of Michael’s book, Flash Boys — A Wall Street Revolt

Preston and Stig’s General Thoughts on the Book

Preface
Michael began writing this book after the FBI arrested the Russian programmer, Sergey Aleynikov. As a Goldman Sachs employee, Aleynikov was charged by the United States government for stealing lines of computer code after he had quit the job. Michael began to search for answers behind this mysterious incident and he found shocking answers that prodded him to write this book. Wall Street has always been a target for thieves and scammers who plan to game and beat the system. According to Michael, the prime examples of thieves are the High Frequency Traders, also known as HFTs who scam investors using their highly advanced technology. Through servers and fiber optic cables, HFTs have found a way that places them ahead of everyone else by milliseconds, thereby giving them an unfair edge over investors.

Chapter 1: Hidden in Plain Sight
During the summer of 2009, 205 crews that consisted of 8 workers each were assigned to dig trenches and holes through mountains and riverbeds to build a line that was supposed to lessen a few milliseconds in the trading network. Dan Spivey, the man behind this collective effort had come up with this insane idea of digging a line that could produce billions of dollars to firms who were crazy about speed. He was backed by millionaire Jim Barskdale, and they named their company ‘Spread Networks’. The difference in these milliseconds allowed the traders to discover discrepancies in the prices between New York and Chicago and Dan Spivey saw this as an incredible opportunity to make money.

Most Wall Street firms, including Goldman Sachs were mighty interested to foot the bill ($10.6 million if it was paid up front and $20 million if paid in installments) and lay their hands on this new invention that reduced travelling time from 17 to 13 milliseconds! It was noted as one of the biggest moments in the history of Wall Street and everybody who was in awe of this incredible success wanted a piece of it.
Chapter 2: Brad’s Problem

Brad Katsuyama, a man working for the Royal Bank of Canada (RBC), was sent by the bank to New York as part of a big push – an incident that went unnoticed although RBC was the 9th biggest bank in the world. Brad, who realized that there were major differences between Canada and the USA, had a hard time adjusting with the traders he met in New York. However, as a man who was naturally meant to trade, he was confident that his analytical abilities would be rewarded. After a few years of trading, he began to make major headway and was also known as the ‘Golden Child’ – a man who could end up running the bank himself. Totally comfortable in his shoes by then, Brad liked and trusted the system; however, he was in for a rude shock when the system didn’t return the same favor.

Brad’s troubles began when RBC bought a trading firm named Carlin Financial for $100 million in 2006. Jeremy Frommer, Carlin’s CEO, was totally opposite the culture at RBC – a company that gained a reputation of being a ‘nice’ company. It became increasingly difficult for Brad and his colleagues to adjust with the high and mighty attitude of Carlin’s employees and at that moment in time, Brad also noticed that the market was behaving oddly. In addition, Brad realized that he could no longer trust his own screen since there was something odd going on. For instance, when Brad’s company wanted to buy 100,000 shares at $20 per share, and the information on his terminal said, 100,000 shares were available for purchase at that price, they would typically be able to process this request easily. But for some reason, things were behaving differently. Now, only a small portion of the order would be processed, for instance, maybe only 20,000 shares would get purchased at $20, and the other 80,000 shares moved higher. It was almost like someone was reading his mind, and changing their position as soon as he would hit a button! After thorough research, he realized that there was something sinister occurring below the surface and that the system was rigged. Since large market orders are rarely exercised in just one exchange (like the New York Stock Exchange), trades are typically sent to other markets to complete the total volume of the order. As a result, HFT companies would recognize the initial order, let’s say at the NYSE, and they would front run the remaining orders at the other exchanges. This way, they could buy up the inventory of stock that was for sale, and then resell it at a higher price – In a matter of milliseconds.

With the help of Allen and Rob Park, computer programmers at RBC, Brad came up with a tool known as ‘Thor’. This was a program designed to counteract the power of the HFT companies by placing time delays into the orders so the purchase requests would arrive at all exchanges at the same exact time. This rendered the HFTs helpless.

Chapter 3: Ronan’s Problem

Ronan Ryan, a man who had travelled from Ireland to America with his father when he was very young, was determined to work in a Wall Street firm. Thanks to his accomplishments in increasing trading speed, he was hired by RBC and he took up the job because he wanted to work in a Wall Street firm.

High Frequency Trading is unbelievably unfair for the investor since he had no clue about the sinister incidents that occurred every day. The broker would be paid by the investor to buy some shares, but HFT companies would also pay the brokers so the information could be exploited. However, after the flash crash occurred, investors were more than willing to share secretive information gleaned from brokers to help Brad understand even more about the murky waters of Wall Street.

As things became clearer, Brad realized that the more he understood about the dealings of the stock market, the better he could help investors, thereby forcing the system to be fair and transparent.
Chapter 4: Tracking the Predator
As time progressed, Wall Street looked like it was in the midst of chaos and turmoil that helped Brad employ people who previously would have never even considered working for RBC. After interviewing several candidates, he hired John Schwall who had lost his faith in the system due to his employer. When they tried to understand how it was even legal for these firms to steal from the investors, they realized that there were no rules against HFT traders setting and building faster computers in their exchanges.

At that point in time, where prices would move crazily for anyone who cared to notice, a team of several researches from the University of California in Berkley published a paper. The paper clearly showed discrepancies in Apple’s stock price where the prices shown by the typical market processor and the ones shown in faster trading channels differed by 55,000 times a day!

Brad was jubilant when RBC asked him to present a report at the SEC because he had a lot to say that would expose the system, but as RBC, being the ‘nice’ bank didn’t want to ruffle any feathers, he wasn’t encouraged to present all his findings. During the SEC report, Brad had people challenging him while they leaned in favor of HFT companies, thus making it clear that the problem was deeper than it appeared. Their illogical argument about liquidity as the reason to allow HFT companies on the exchange proved that it wasn’t easy to change the nefarious system. (As a side note, the liquidity argument that many HFT companies make, with respect to the value they create, is false. Since HFT companies don’t actually execute a majority of the buy and sell orders they place, – they simply use them as bait – liquidity is only a guise for their company homepages)

Chapter 5: Putting a face on HFT
Sergey Aleynikov, a man who migrated from Russia to America, had changed several jobs until he was hired by Goldman Sachs once the firm realized that they had to focus on speed. Sergey’s job was to build a system to help Goldman’s proprietary traders place orders in the stock market faster than anyone else. As he progressed with his job, he became aware that the people in Goldman didn’t really understand the deep causes of what he did.

Once he became well known on Wall-Street for his brilliant methods of increasing speed, he began receiving many offers and though he rejected several of them, he accepted a position in Misha Malyshev, a company that wanted him to create a new trading platform afresh. Plus, he was offered a whopping $1 million dollars a year! Sergey stayed back in Goldman Sachs for 6 weeks to teach his replacements what they needed to know. As a common practice, he mailed himself the codes he worked on; code that was open source information.

On the last day of his job at Goldman, he sent the files to a repository and deleted the bash history – something he used to do ever since he started programming. However, this act changed his life as he was arrested as soon as he landed in Chicago. After a series of events that were bewildering to him, he was accused of stealing lines of code from Goldman Sachs. He was sentenced to 8 years in a federal prison for something that made no sense.

Chapter 6: How to take Billions from Wall Street
Frustrated with the dealings of a shady, rigged market, Brad quit his $2 million dollar salary job at RBC much to everyone’s shock, and decided to open his own stock exchange that claimed to be a fair and transparent stock market. Though he faced issues related to funding the enormous endeavor, many of his former colleagues followed him to the start-up. Brad was able to collect $15 million in start-up capital to create his new stock market. By 2013, he put all his savings on the line and set out to hire people who had a deep understanding of the stock market and HFT.
He hired Don Bollerman and Francis, a man who had won the National Puzzle competition. Francis was obsessed with making the system extremely simple to avoid manipulation. The new exchange, named *The Investor’s Exchange* and later shortened to IEX, had a strategy of creating a fair system that wouldn’t pay any kickbacks to banks or brokers. Instead, they would charge both sides the same amount and deal with just 3 order types – limit, market and Mid-point Peg. In the other exchanges, HFT companies were taking advantage of an ever-growing number of market orders that made the transaction so confusing that it was hard to understand and combat.

**Chapter 7: An Army of One**

Zoran Perkov, was a person who had moved to USA with his folks when he was a child. He worked for NASDAQ and handled several of their exchanges as the ‘Head of Global operations’. He had realized very early that he was a person who could handle extreme circumstances. For example, he emerged as a leader when the World Trade Center’s collapse.

During the time he was hired by IEX, there was a severe crisis in the market with several companies masking their mistakes as ‘technical glitches’. While NASDAQ bungled the IPO of Facebook Inc’s shares, the NYSE treaded in dark waters when they were forced to stop trading in about 216 stocks. In addition, it seemed like several Wall Street banks were uniting together by spreading rumors against IEX so that nobody would participate in their venue. IEX opened in 2013. However, it quickly became apparent that the banks weren’t even abiding by their customers’ orders to send orders to IEX, stating that their service was too slow.

To cover their costs, IEX had to trade at least 50 million shares every day and it was obvious that they wouldn’t last once they ran out of money. Then, out of nowhere, Goldman Sachs and a few other big banks tried to send HFT orders to the IEX. On December 18, they managed to trade 11,827,232 shares and the next day, Goldman Sachs began sending honest orders that rose up to 30 million. Allegedly, Goldman suddenly felt that the stock market needed to change, which was the reason for the honest orders. However, the truth was rather, they couldn’t compete with the smaller HFT companies. In any case IEX had proved a point, the market didn’t need to be complicated and rigged to make money.

**Chapter 8: The Spider and the Fly**

Sergey Aleynikov’s trial confused people since they just couldn’t grasp the concept of HFT. It was Sergey’s battle against the bigwigs from Goldman who made it impossible for people to understand HFT, but Malyshhev testified as a witness stating that Goldman’s code was useless to them since it was built in a different language. An important point raised during the trial proved that if Sergey wanted to steal the code, he would have done so long ago without anyone noticing because he was granted the ‘Super-user’ status in Goldman. Also if the code was so important, why haven’t he even bothered to open the files? However, even this point failed to convince the jury although they all agreed that Sergey’s actions weren’t suspicious.

The jurors were also mystified about why Goldman had chosen to batter this man by calling the FBI. In effect, Goldman was exploiting the ignorance of the legal system as well as the people who had no clue about HFT. Ultimately, Sergey was sent to prison.

The Second Circuit of Appeals heard Sergey’s appeal about a year after he was sentenced to prison and they dispensed swift judgment in favor of Sergey. On February 17, 2012, Sergey’s lawyer, Marino, emailed him to say that...
he was going to be freed. Though one might think that his trial and his hopelessness could have destroyed him, Sergey chose to think positive and also wrote a memoir that explained what really had transpired.

Chapter 9: Riding the Wall Street Trail
When the people in Goldman Sachs were questioned as to why they chose to accuse Sergey of stealing code and on the other hand help IEX with its new agenda of creating a fair market, they replied that they were in a state of ‘transition’. In fact, their code would be obviously useless if they supported Brad who was against HFT. Simply put, Goldman’s actions can be understood if you saw the connection between Sergey and Goldman’s supportive behavior towards IEX. A lot of people had begun to question the activities of HFT trading and Goldman was continuously in the spotlight. They too, had to finally grasp the fact that they couldn’t compete with other companies when it came to speed. In other words, the people in Goldman realized that Sergey hadn’t stolen anything; the speed was the secret sauce.