"You can never stand still because no matter how many thousands or millions of dollars you spend creating the infrastructure needed to compete with speed, ultimately, there will be newer, more modern and better equipment that will be developed"

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The rise of the high frequency trader

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High-frequency trading (HFT) may be capturing the headlines, but there is a great deal of misunderstanding about how these strategies work and the technologies involved. These traders not only inject extra liquidity into markets, but they also push exchanges and MTFs to be more efficient and vendors to keep pace with the latest cutting edge technology.

Latency and HFT, of course, go hand in hand. In general, HFT strategies use computer automated trading strategies that take advantage of low latency market data that can deliver hundreds and thousands of orders to the markets per second. It is used to profit from inefficiencies in a particular market, as well as arbitrage across multiple asset classes such as futures index and cash equities. By contrast, algorithms that produce orders several times per minute do not qualify as high frequency trading.

According to a recent report from consultancy TABB Group, high-frequency trading accounts for about two-thirds of US equities volume and generates about $8bn per year in trading profits. In addition, annual aggregate profits of low latency arbitrage strategies currently exceed $21bn, mostly spread out among the few hundred firms who can afford the technology. The study also noted that the financial services industry spends $1.8bn for co-location and private facilities to support fast direct access to market centres. Broker-dealers account for half while exchanges represent 23%. Proprietary trading firms are 13%, asset managers, 10% and hedge funds, 4%.

Regulators on both sides of the Atlantic are looking into the practice because there is a perception that by using powerful computers, fast networks and sophisticated quantitative models, HFTs achieve an unfair advantage over the rest of the market participants. This is to the same degree or reasoning as a car has an unfair advantage over the horse in logistical competition, and a computer has an unfair advantage over the telephone as far as trading goes.

There has also been criticism over so called naked access as well as flash orders, which is when exchanges and alternative equity trading platforms

offer information about a customer's order to buy or sell shares to a select group of traders for a half a second before revealing it publicly. Critics of the practice say that a split second is enough to give the select group sufficient secret data about the likely direction of a share price for their computers to generate a profit.

In general, though, there needs to be a better understanding of the strategies and the participants. High frequency traders differ from long only institutions in that they are not buy and hold investors. They trade off the news and take advantage of short windows of opportunities. They are looking to capture the moment and they need to react in milliseconds. This may be a momentary move in a particular financial instrument, whether it be an equity, currency or commodity, or a signal that the market is in for a short term move based on an interest rate hike or cut. Traders also look to benefit from the different on the subtle idiosyncrasies in the infrastructure of trading as well as filling the market making role and providing securities on each side of a buy and sell order.

As a result the focus has been on whittling down latency, which has been steadily decreasing as hardware, software and networking have improved and the inefficiencies in circuits and cabling have been lessened. Overall, in order to reduce latency and increase throughput, one needs to consider proximity hosting, adequate network equipment, use of faster network protocols and fine tuning protocols to provide optimal performance.

There are many participants and solutions in the marketplace including co-location services that help reduce network latency between exchange or alternative platforms and trading engines as well as low latency market data providers and high frequency event processing. There are also accelerated hardware and network equipment solutions that help increase the speed of calculation and decrease network latency and solutions.

Often, though, firms underestimate the cost of getting into the HFT game. It is an expensive proposition that requires sizeable investments in technology and resources to both maintain and upgrade hardware and software. You can never stand still because no matter how many thousands or millions of dollars you spend creating the infrastructure needed to compete with speed, ultimately, there will be newer, more modern and better equipment that will be developed.

Companies also have to be careful about developing the applications and solutions in-house versus buying them from the range of available products. The risks as well as costs associated with this approach can quickly overshadow a few milliseconds of reduced latency. Add all these factors together and it makes it difficult for smaller companies to compete with the larger firms who have deeper pockets.

In the end, though, it is important to note that technology is only one part of the equation. Many companies just focus on the speed of the systems without taking into account the other factors that make a strategy successful. The speed of decision-making, of accessing updated market data and of the networks and equipment all play a key part in whether an organisation will achieve its objectives. This is why companies must have a long term business strategy in place and not just focus on short term gains.