



EVERYTHING YOU EVER WANTED TO KNOW ABOUT ELECTRONIC TRADING, BUT WERE AFRAID TO ASK

By Linda Bradford Raschke

Electronic trading has fulfilled its promise of leveling the playing field for traders. Everyone now has identical access; the floor traders no longer have the edge from watching order flow in the pit; cost structures have come way down; and computing power, functionality of trade execution platforms and improvements in connectivity continue to increase.

Despite the way technology has changed the landscape, few traders understand the order process and the ways it can affect their bottom line. There is a lot of information on technical analysis, but very little attention is given to trade execution skills. I challenge you to add up the number of trades that you made last year and then calculate the impact to your bottom line had you been able to get just one tick better in price 25 percent of the time. Imagine that extra money in your pocket now. It might be worth focusing a bit more attention on the trade execution side of the equation. But first, let's take a look at the technology behind electronic order execution and how an order travels.

THE TECHNOLOGY PATH

Let's follow the steps that an order goes through when it is placed. The execution platform from which you place an order is called the "front end." This is the software program that resides on your CPU and transmits your orders. Every software program has an

API, or application program interface. Black box programs write directly to the API while a discretionary trader enters orders manually. The more sophisticated traders or larger firms write their trade management and execution strategies directly to the API. All black box or automated trading programs are written directly to an API. Black box trading strategies now account for up to 35 – 40 percent of the total S&P E-mini volume.

The API sends the order to the “back end,” which includes the hardware involved in processing the order. If you do not have direct exchange access, the order first goes to an Internet server maintained by your clearing firm. Routers and switches direct the orders through blades (part of the networking equipment) that then pass the order to another server. This server routes the order to the proper exchange. The exchange servers, also known as matching engines, pair up the orders and route the fills back to the proper clearing firm.

Five hundred milliseconds (1/2 second) is considered a respectable speed at which you should be executing without a direct connection to an exchange. It takes 50 milliseconds for my order to go over the T1 line (direct access would reduce this from five to twenty milliseconds), then another twenty milliseconds for my order to get routed properly, and two to four milliseconds for the backend software to get the order to the exchange (at least in the case of the Chicago Mercantile Exchange). Every time one software application has to talk to another software application, it takes time. The less layering in the entire process, the faster the execution and the fewer links to break down along the way.

HOW MUCH DOES SPEED MATTER?

How often is it, though, that this type of speed really makes a difference? To give you an idea, fast market conditions in the S&P E-minis can occur after morning economic numbers, Federal Open Market Committee (FOMC) meetings, at key support or resistance levels, or any time there is a disruptive news event. In a fast market, there can be up to 250 price changes per minute. This means that the market can move four ticks in one second. When you consider that eight ticks in two seconds = \$100 per contract, you may want to investigate how your particular orders are being handled. Another potential problem is that when clearing firms have too many clients on one server, the server usage may spike too high when markets are most active. This causes delays in quotes at critical times.

One more variable as to why price may seem to have slight delays is that not all execution platforms use a direct feed from the exchange for quotes (also called streaming data). Direct feeds from the exchanges are expensive, so some applications use a secondary data feed to supply price quotes. Unfortunately, traders often get what they pay for – most plat-

forms that use the direct feed also have a small fee to help cover the cost. If you are not an active trader, it should not make much of a difference if you do not have a direct feed. However, if you are trading for a living on a daily basis, you are giving up a significant edge if you are not looking at a direct feed transmitting quotes from the exchange when you are executing an order.

Execution speed makes a difference in another way as well. There is an edge to being first in the queue. The sooner a trader places an order, the more likely the order will be filled when the market touches that level. The importance of understanding location in the queue is most significant in markets like the E-minis or ten-year notes where there can often be 3,000 contracts on the bid or offer.

You should also ask, are your stop orders being held on the exchange’s servers or are they “synthetic” stops? A synthetic stop means that the order is either held on your own computer or an intermediary computer, and when price touches that level, the trade is then fired off to the exchange’s server for execution. Active traders will want their stops to be held at the exchange level. That way, if there is any compromise to your own Internet connection, your order is already resting on the exchange’s server and thus its execution, as well as its place in the queue, is protected.

Some traders like to use complex trade management strategies such as trailing stop techniques. Applications such as Ninja Trader, Trade Maven, Strategy Runner and TradeStation offer additional functionality. Newer traders have found these extra features to be worth the additional cost and added layer of connections. Keep in mind that each additional layer takes more processing time and adds one more link to the entire order execution process. Know where your orders will be resting if there are Internet connectivity problems. Some of these add-on applications keep the trade management orders on your own PC, which is a problem if you have computer or Internet issues. Keep the number of your firm’s order desk handy so they can check on the status of your order if there is a breach of integrity in any of the links. They can also execute trades for you.

BUT ARE THE TRADES REAL?

Now that some of the technology behind the scenes has been exposed, let’s get back to the *real* challenge of improving trade execution. Unfortunately, the ability to execute at the click of a mouse is the downfall of the many traders experiencing challenges in their bottom line. The ease of execution leads to overtrading as well as a tendency to be overreactive to market noise.

Electronic trading allows all players to see the “book,” or size of the market bids and offers. What many traders do not understand is that often bids or offers may not be real. For example, a black box system, which works the spread between

the bid and offer, might be bidding for 1,000 contracts. But if 200 are filled, the other 800 on the bid are instantly cancelled. Some programs monitor the speed with which bids or offers are filled and this allows them to cancel or adjust the size they are working on the bid or offer. In the case of auto-spreaders, which work bids and offers on correlated markets simultaneously; orders are constantly being adjusted as one side in the other market is filled. Lastly, there are firms that use automated entry algorithms that send orders to buy or sell 300 contracts every few seconds. Thus it is impossible to tell the real size or offer being worked.

Four years ago, a number of traders made a living scalping off the bid and offer. Proprietary trading shops were started, which trained young, aggressive traders to take advantage of short-term market inefficiencies. With the increase in black box systems, which execute trades faster than any human can, this game has all but disappeared.

Jeff Quinto, who was president of Rand Financial (Monroe Trout's firm), has been in the business for more than 30 years. He too started up a proprietary trading firm or "prop shop." These have dwindled in number and have been replaced by trading "arcades." Quinto now manages the Photon Trading Room, a state-of-the-art arcade. The difference between a prop shop and an arcade is that at a prop shop, a trader uses the firm's capital and receives a percentage of the profits. At an arcade, traders put up their own money and keep 100 percent of their profits, but pay a monthly fee to have access to state-of-the-art technology and connectivity. A trader can start up at an arcade with as little as \$15,000. In Quinto's opinion, arcade traders are far more consistent and profitable nowadays than prop shop traders because they tend to be more careful, as they are trading their own money.

Quinto also noted that upstairs professional traders must trade on a longer time frame than they used to, due to the increased presence of automated trading systems. Quinto's traders have an average holding time per trade of about three to seven minutes. These traders have fast execution platforms and top connectivity. The point is, there are very few traders who make a consistently profitable living trading on a shorter time frame than this. Many upstairs traders do best by stepping out to the 5- and 15-minute time frames (always keeping the longer time frames in mind as well)! If a trader steps out on too long a time frame, he often finds out that he cannot ride out the "noise" –the inevitable retracements or reactions that will occur in a trend.

Quinto commented on the importance of a professional trader's ability to evolve as electronic trading changes. Traders often find one strategy that works for two to three years but are unable to adapt when the game changes. For example, a few years ago, many professional traders were able

to trade interest rate market spreads. Traders were making a lucrative living scalping tens and bonds against the cash market as well. This game has now disappeared. One thing remains true in this business: As soon as you find the key to the lock, they change the lock!

AVOID BEING "REACTIVE"

Here's some advice for traders new to using electronic platforms: Do not stare at the book! It encourages you to be reactive or exit your trades too soon if they are winners. Keep your eyes on the chart and think about the reason why you made the trade in the first place. If the markets are slow, watching the book will encourage you to take mediocre trades. Have you ever known someone who has gone to an auction, gotten caught up in the bidding process, and ended up coming home with something he did not intend to buy? Watching the book too closely has the same effect on traders as going to an auction and getting caught up in the noise of the moment.

If you stare at the book when you are uncertain in a trade, you are more likely to exit in a reactive manner. Instead, place an order to exit a long trade a few ticks above where the market is trading, while placing a resting stop order just underneath support. You are more likely to exit your trade at a better price on a jiggle up in the noise, and worst-case scenario, the stop takes you out.

If I am looking to enter a long position, I try working a bid *first*. If the market comes down and trades at my price, but I am not filled, I click the execute button on my platform and my order is executed at the market. If I am looking to exit, in the case of a long trade, I place a resting order to exit. If the price falls short of my level, I hit the execute button which immediately fills my offer at the market. Each time I enter at the market, it costs me an extra \$12.50 in the case of the E-minis. Think of this analogy: the market pays you to provide liquidity (placing bids and offers), but you pay the market when you want it to provide the liquidity.

The majority of traders overestimate their reflex time. Most traders will have a level at which they know their trade will be wrong. They tell themselves that they will exit their trade when the price gets to that level. However, by the time they place their order, the price has moved beyond their initial "mental stop" price by a good amount.

It is best to place an initial stop *resting* in the market but well outside of the noise (meaning, not so tight that it is likely to get tagged on jiggles). Once a safety net resting stop order is placed, you can tighten the stop as the market moves in your favor or the price action stalls out. You can change the stop price with just one mouse click. You can also take a resting stop order to the market with just one mouse click. You can see how important functionality is in a platform.

THE BELLS AND WHISTLES THAT YOU NEED

Functionality features that traders need on their execution platforms include the ability to modify orders with one mouse click, to join the bid or offer with one mouse click, to customize their own trade modules, to easily place stop orders, to change the price of a stop order with one mouse click, and to see multiple resting orders simultaneously. Some traders like executing off a "ladder," while others like a simple trade module that allows them to join the bid or join the offer. All platforms have developed their specialty niches. Traders should investigate which platforms offer the features they like best, keeping in mind that in addition to functionality and ease of use, reliability is critical. And traders should make sure they do business with a firm that has a 24-hour number where the phone will be answered in two to three rings.

Because most markets now trade 24 hours a day, a market will often test a price high or low that was made in the night session during the U.S. trading day. Just as the S&P E-minis tend to test the Globex high or low, watch the night session highs and lows for bonds, currencies, gold and crude. There is better liquidity in these markets than ever before.

I like to use "equitick" bars for most of the 24-hour traded markets. This means that each bar on the chart might be composed of 20 – 500 transactions. This is preferable to a 5-minute bar chart when looking at a market like bonds, which might not have much trading activity around midnight.

EXPERIENCE IS THE BEST TEACHER

Timing and trade execution skills improve with practice. Traders who are new to the game should always start out trading the smallest size, and learn first to fight for every tick.

Also, it is important to do regular computer maintenance. (Readers can find a list of items on our website, www.lbrgroup.com, that will help increase the performance of the CPU they use for execution of trades.)

Electronic trading has indeed leveled the playing field for upstairs traders. Traders who take advantage of the technology in their own trading can achieve greater profitability. And, as always, how well traders manage their own conduct and emotional states will always have the greatest impact. ■

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