

MetaTrader 4 to ECN: The next leap

By Chris Mercer,
Director of MBT University

In some markets, the technology of user interfaces and execution move forward together. In the case of the Forex market however, the evolution of the market has separated the most popular client software solution from the evolving execution process of the industry. While one side of the equation has moved forward, the other side has not been fully integrated with those leaps, until now. The MB Trading/3DForex Forex ECN integration with MetaTrader 4 (MT4) represents a key milestone in the Forex world.

MetaTrader 4 is a popular and commonly-integrated software client for traders in Forex. It offers a lot of customization, good charting, tons of indicators, and the ability to write scripted automated trading solutions with almost limitless flexibility. Robust communities of traders have popped up internationally, working together to create tools that can be used on the system.

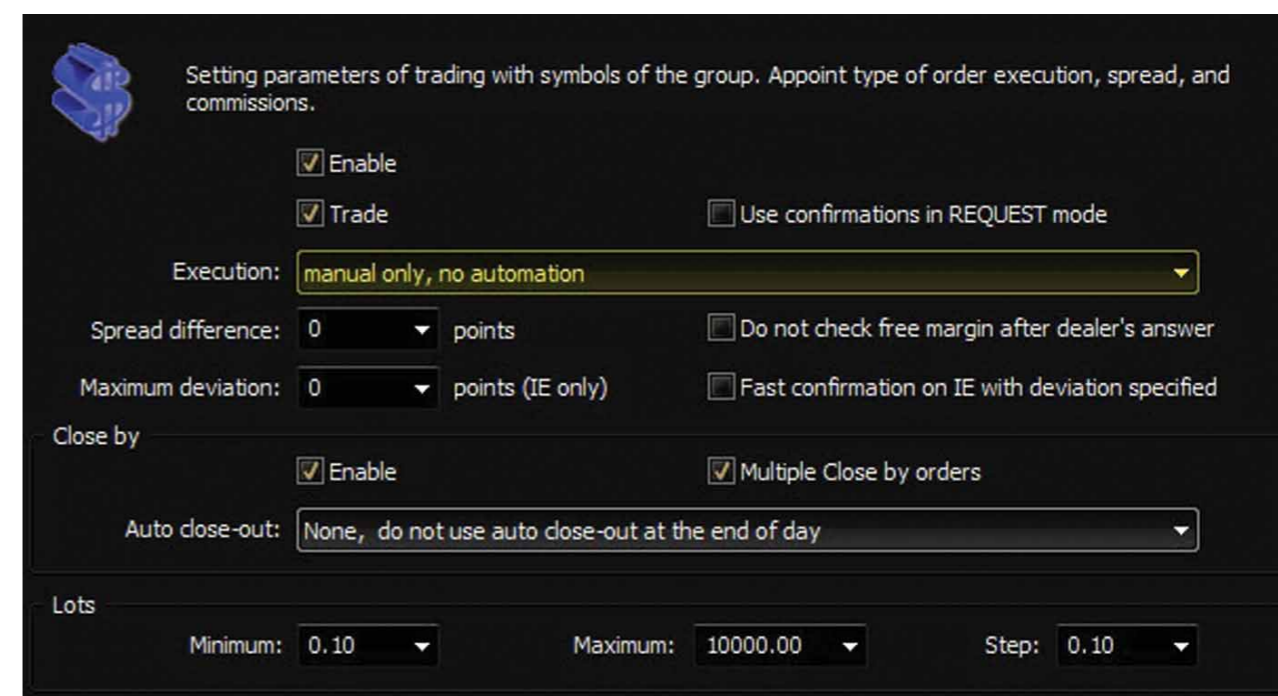
Unlike NYSE or NASDAQ or CME, Forex is not a centralized marketplace. Up until the last couple of years, Forex was traded over the phone by some of the largest banks in the world. They called each other and agreed on transaction prices while

moving hundreds of millions of volume in various currencies around the globe. Long after the stock market became electronic and transparent, Forex was not. The market that traded the largest daily dollar volume of any market in the world was the least electronic, the least centralized, and with limited regulation compared to the major security and commodity exchanges.

Evolving e-FX

The evolution of Forex becoming an electronic marketplace occurred over several steps. The first involved “deal desks,” which were created to allow customers to electronically transact in the marketplace. Since there was no centralized pricing, individual firms took it upon themselves to provide quotes and give their customers liquidity. Without a common link, but with the intent of creating a marketplace for customers, firms set out to be the “market maker” for their individual clients. They posted a bid and offer at all times. When their customers wanted to buy a currency pair, their broker sold directly to them. When they wanted to sell, their broker bought from them. Thus, the retail brokers and banks maintained positions in-house.

Forex growth over the last several years was due in large part to two great catalysts. The first was margin leverage and the second was fixed spreads on currency pairs. On a purely cash basis,



This image shows the Forex admin screen setup with manual executions and deal desk functions turned off.

currency exchange rates don't move enough daily to make them interesting to a trader. With 100-to-1 leverage, the price movement becomes much more substantial. At the same time, a truly free market can't have a constantly set difference between the best buyer's and the best seller's prices. By “fixing” spreads, the firms were able to make their money between the bid and ask, against their customers, while calling the market “commission-free.”

MetaTrader 4 was created when the deal desks were at their peak of importance. The MT4 functionality offers strong features on the user side: great charts, almost limitless indicators, and EA functionality. The MetaTrader Query Language is known for its depth and flexibility in allowing programmers to create automated trading scripts that watch for a set of circumstances or criteria and then automatically places buy and sell orders to open and close positions accordingly. This is critical in a volatile, 24-hour market such as Forex.

A bank or brokerage is able to license the MT4 software and servers, plug it in, provide it to its customers, and tweak various settings for more or less “control” of execution. Spreads and swap rates could be set for each pair. Whether trades were executed automatically or only with manual desk permission

could be controlled at the account, symbol, or group level. All of these sorts of parameters exist only if a “desk” is involved.

Alternatives to deal desks

Over the last several years, alternatives to deal desks have emerged. As banks and various liquidity sources have upgraded their technology and linked themselves together, the process of executing Forex has changed dramatically. MB Trading is an example of such a broker leveraging emerging Forex technologies. MB Trading utilizes 3DForex as its execution destination. 3DForex is a true Forex ECN system providing completely anonymous order interaction.

The quotes on the market depth of 3DForex represent buyers and sellers at the retail, institutional, and bank levels combined. Other benefits of this new technology include a wide variety of order types and order handling parameters. Customer orders can now be passed seamlessly into the pools of liquidity to get “best price execution” in fractions of a second. A firm such as MB Trading no longer uses the deal desk model no makes money on spreads, but instead charges a commission for handling the transaction. The benefits to the client include full transparency, order types that give more control of execution, and

the ability to see the true market depth for each currency pair, including the customer's own orders.

Though FX execution services have evolved, large numbers of Forex traders continue to prefer the MT4 platform over most others for several reasons, including familiarity, community, and the amount of features. Thus, integrating MT4 into a non-deal desk environment has been something that traders have heavily desired.

Connecting MT4 to an ECN

At MB Trading, we set about to connect as much of the feature set and functionality of MT4 as we could to a true, direct access, ECN execution venue. The ECN had been established for years, but integrating it with MT4 was no simple task. The process was highly involved and some key examples along the way demonstrate the balance that had to be made in the decision-making process to make the end result possible.

An example of an integration challenge was that MT4 has three types of execution parameters, known as automatic, instant, and manual. Understanding the evolution of the market provides a lot of explanation into what this means. We realized that there was not going to be a way to keep every part of the functionality of MT4 available in the integration process. For example, MT4 only allows a customer to enter stop loss and/or take profit parameters with a trade at the time of execution on Instant Executions.

There is logic to this. An Instant Execution is basically a request sent to the deal desk that says "I want to get in (long or short) at this price right now, and if you won't, then just cancel." It's a manual decision on the part of the desk as to whether they want to let the customer get filled. This is not to be confused with a Market Execution, where the desk can decide if they want to fill the customer at the current price, or if the market is moving too fast, back away or fill at a different price.

In the world of MT4, a Market Execution could mean that while a customer is trying to buy the EUR/USD at 1.2000, he/she might not actually get filled near that price. An example is that the execution comes back at 1.2020, 20 pips higher. If the customer's intent was to place a "take profit" at 1.2015, the entry execution was higher than the Take Profit goal. Thus, MT4 does not allow Take Profits and/or Stop Losses to be attached to Market orders, as

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the price of the entry execution could exceed either of the other parameters. On the other hand, an Instant Execution can have a take profit and/or stop loss attached because the Instant Execution must come through or be rejected specifically at the entry price that the trader inputs.

Since real-world executions without deal desk intervention cannot be guaranteed at a specific price, we were forced to disable the entire Instant Execution functionality. There was no desk to ask for an Instant fill or kill from. Our system handles all orders equally and puts them out into the market. Essentially, they are either stop, limit, or market orders that are routed to various banks and pools of liquidity by the ECN. So, without Instant Executions, customers cannot attach either a Take Profit and/or Stop Loss to a market entry at the time of the trade. After much consideration, we realized that in a true marketplace, there was no way to provide this function.

The lack of certain deal desk functions means that many styles of trading and Expert Advisors written in the MT4 Query Language need to be adjusted, but the alternatives were not viable if our intent remained to bring ECN execution to MT4. There were other issues that made the process challenging. The MB Trading/3DForex system allows traders to place Limit orders between the bid and ask which are immediately reflected in the quotes for everyone else to see and execute against.

One of the mechanisms for doing this is that our system quotes trades down to the tenth of a pip, effectively adding an additional decimal place to any price quote. Meanwhile, some of the functions within MT4 are based on "points" and not "pips." For example, the trailing stop functionality of MT4 allows a trader to enter a number of "points" by which a stop should trail the position. In the MT4 client, 20 points means that each time the pair moves 20 pips in the direction of the trade, the stop is moved up 20 pips.



This image shows a customer Buy Limit at 137.855 on the GBP/JPY reflected in the quotes as the bid.

However, with the fifth decimal place, 20 "points" means 2 "pips." Again, without the ability to change how MT4 operates internally, we were faced with the need to allow for this adjustment and make sure that the public became educated on the difference. Instead of 20, a trader would need to enter a 200 point trailing stop for the system to recognize it as 20 pips.

A 5-decimal place market

The fifth decimal place also became a point of contention in the MT4 Query Language when scripts were written based on "points." Again, while this doesn't prohibit any form of trading, it requires many EAs to be modified to account for the extra decimal place. In the end, however, there wasn't an option, short of eliminating the extra decimal place, which had become such a key component of how our traders, particularly scalpers, approached the market.

Looking forward, Forex is going to become a 5-decimal place market across the board, just like stocks became a decimal market in the late 1990's. Traders want to compete at the smallest integrals possible. The MT4 Client is fully capable of handling this at the quotes and charting level, but it requires some adjustment at the order entry and Expert Advisor level.

MB Trading Futures offers execution and settlement services for futures-based products and off-exchange foreign currency (Forex) products through MB Trading.

Another challenge with integrating MT4 on a non-deal desk environment was the function of charging commissions. MetaTrader 4 allows for a commission to be charged only as a net transaction, which is not applicable to an ECN environment. To adjust the MetaTrader software to account for a commission on the entry and exit sides of the trade required changing how the account-level reporting in MetaTrader occurred, and the only realistic way to handle this on the exit transaction (the system

already accepted commissions on the entry part of the trade) was to have the closing commission only show in reports after the fact on refreshes of the reporting window.

There are many firms that claim to offer MT4 as a non-deal desk. The reality is that unless they have turned off the Instant Executions, adjusted for an extra decimal place, reflect customer Limit orders directly into their quotes feeds, charge a commission both ways and have explained properly how all of these differences effect the Query Language that is at the heart of the Expert Advisors that make MT4 so popular, then a firm isn't really a non-deal desk technology.

More than likely that firm simply adjusts the existing server settings of MT4 to make it look like they are a non-deal desk model. MB Trading applied 18 months of programming and testing to determine what could and could not be done to merge the latest execution side of the Forex world with the favored software/client side of the Forex world. We believe that the MT4 offering by MB Trading is unique and industry changing. We expect like other innovations of MB Trading before, that this new technology will change the face of the Forex market for many years to come.