



Fight for Liquidity: Centralization versus Decentralization

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Following our article on FX global liquidity structure (e-Forex October 1st 2006), we would like to give further consideration to possible developments in the FX industry structure. In an effort to provide its clients with deeper liquidity, the FX industry can adopt some changes to the current business model of FX Marketplaces in order to achieve another level of integration. The theoretical concept of a global decentralized FX Marketplace is made real through the implementation of multiple API connection technology. It is the difficulties and opportunities facing the industry in the fight for liquidity which are the subject of this article. We will also touch on the core technology and business model aspects involved in creating the global decentralized FX Marketplace network.

Why Liquidity is the key goal of the FX industry

The answer to this question would seem to be obvious. Having deep liquidity is better than not having it. But where is the reasonable limit? Why should our clients need more liquidity than a reasonable 5-20 million on both sides? Presumably this amount should be sufficient for the majority of FX market participants. It looks like they rather need tighter spreads and better execution on market figures periods.

However research indicates that higher liquidity positively affects many other factors crucial for FX traders. We demonstrated previously that a simple pooling of many non-correlated liquidity providers will have a significant effect on the spread size and also elevate the lack of liquidity problem that is evident during the market news period. How does this come about?

Spread as function of liquidity increase factor

EUR/USD				
Increase factor	1	2	3	4
Quiet market spread	1.5	1.06	0.87	0.75
Market news spread	50	35.5	29	25

GBP/USD				
Increase factor	1	2	3	4
Quiet market spread	2.5	1.77	1.45	1.25
Market news spread	75	53	43	38

Table 1

In table 1 we see the effect of increased liquidity on spread size for quiet market and market news conditions based on the EUR/USD and GBP/USD currency pairs. As a factor of liquidity increase we use a multiplication factor: by 2, by 3 and by 4. Factor 1 is considered to be the average liquidity available on the Traditional Marketplace business model. We show a statistical average decrease of spread as a function of the liquidity multiplication factor.

It can be seen from the table that by increasing liquidity 4 times we are able to cut the average spread in half. The effect is not as dramatic during quiet market conditions, but who will refuse to trade on tighter spreads? During the periods when market figures are announced this effect becomes huge. The fight for liquidity becomes the key goal of the FX industry, resulting in tighter spreads, execution stability and improvement in quality of execution itself during normal conditions and market news.

How to create a Liquidity Pool

There are two well-known business models employed in the creation of a liquidity pool. One is called Marketplace. This is when a pool of banks – liquidity providers – combines their individual bids and offers in one place (server) and delegates to this place right of execution. Examples of this business model are respected companies, such as Currenex, Lava, Hotspot and others. We will call this classical business model the Centralized Marketplace. This type of liquidity pool normally is based on a standard API connection developed and supported by the Marketplace. All bank-participants use this API for connection. This business model can be also called the Single API Marketplace.

By contrast, industry has very few examples of multiple API liquidity pools. This business model means that the FX broker uses its individual API accounts with various banks and Marketplaces, combines their data feeds in one feed and proposes it to the clients. A good example of this type of business model was Dukascopy (Suisse) SA in the period before 1 November 2006.

The main difference between those two business models is that the first is a Marketplace, and the second just a liquidity pool.

The first has a simple IT architecture and fast execution; the second has a very complex architecture and slightly slower execution. At the same time, the first has some practical limits in combining of liquidity. The reason for this is simple: it is not easy to involve too many banks just because each bank-participant should develop and support the API of the Marketplace. In fact banks are quite reluctant to support a lot of different APIs to participate in a number of Marketplaces.

In contrast, a multiple API liquidity pool has no limits in growth. The reason is that bank-participants of this liquidity pool should not develop and support special API connection, but the broker itself develops and supports at its own cost a standard API connection of each bank-participant. Under this business model there is no reluctance on the part of bank-participants to join the liquidity pool; this permits much faster organizational growth. A specific difference in comparison to the Centralized Marketplace business model is that execution proceeds in fact on the bank-participants' servers making the model decentralized. The fact that it is impossible to handle "place bid/offer" orders from clients remains a serious disadvantage of the decentralized liquidity pool business model.

How to transform a decentralized liquidity pool to a Marketplace

It would be a monumental technological achievement if a functional hybrid of the two business models could be created in such a way as to incorporate their different advantages in a single package. This is difficult, but not impossible.

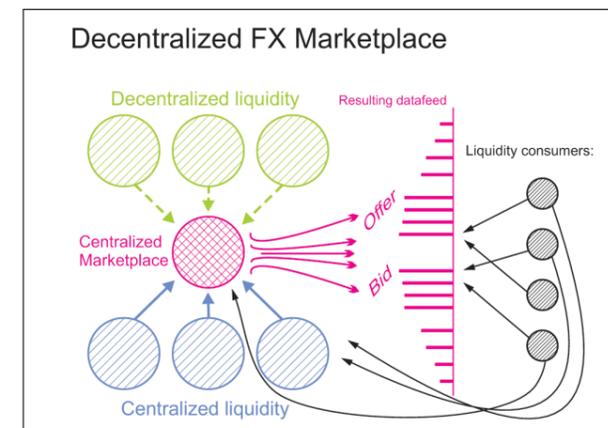


Figure 1

In figure 1, we propose a general model for such a solution. The general diagram shows the main participants of the business model. On the left are centralized (blue) and decentralized (green) liquidity providers. Combining their bid/offer orders in the resulting data feed (book), the central element (red) is in fact the liquidity pool itself, serving at the same time as a centralized Marketplace for its clients: liquidity consumers (black) and centralized liquidity providers (blue). Liquidity consumers should be able to place bid/offer orders. The execution of any order in this decentralized FX Marketplace can take place on one of the green servers – decentralized liquidity providers – or in the red centralized Marketplace itself. The green

MARKETPLACE

decentralized liquidity provider can be a single bank liquidity provider or any Marketplace server. The later is more important for our further discussion.

Let us review the difficulties facing the implementation of this new business model. In order to adjust a decentralized liquidity pool to a Marketplace business model, the following problems need to be solved:

First, every client placing a bid/offer should be able to see this bid/offer in the resulting data feed even if the order is placed with one of the (green) decentralized marketplaces; and, second, in case of decentralized execution, any bid/offer can and should be registered at the same time just with one server of the decentralized network to avoid the risk of double execution.

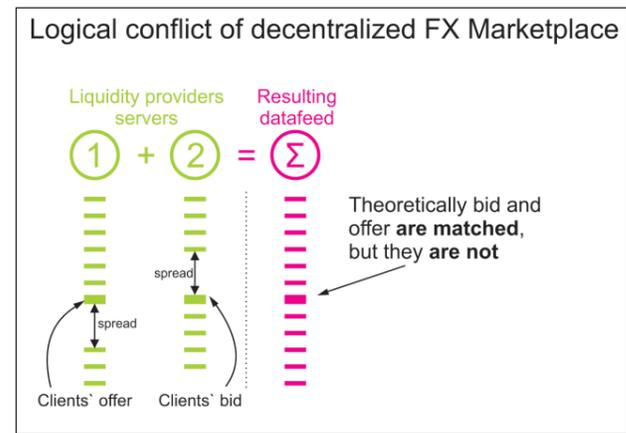


Figure 2

In Figure 2, we illustrate the existing problems. Imagine that in this decentralized model a client's offer was registered with Server 1 – a decentralized (green) Marketplace participant. At the same time, the next client's bid was placed with Server 2 – another decentralized Marketplace participant. If we look at the two servers as independent liquidity providers, these orders can only be executed on their respective servers and in fact in this situation they are not executed. However when the two liquidity providers (Server 1 and 2) participate in the resulting Σ data feed of our global network, it seems that they should be executed as soon as there is a match between them. In this case both orders must be immediately revoked from the green servers and moved for execution on the centralized red marketplace itself. And – in contrast – when there is an opportunity to execute any client's bid/offer on a partner's server at a better price it should be removed immediately from the red node of the network and shifted to an appropriate green one.

So to abide by Marketplace rules, we should be able to monitor each network partner order book so as to take any opportunity to execute our clients' orders with better prices and move them inside our decentralized network as swiftly as possible. Fluctuations of prices between network participants make activity of this type very profitable for clients, allowing them to enjoy huge reliable liquidity drawn from all over the globe and

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the smallest spreads in the industry. The technological FIGHT FOR LIQUIDITY becomes a FIGHT FOR MILLISECONDS. In the scope of this short article, we cannot cover all the details of the technological solution, and have to limit ourselves to saying that this solution is extremely complex. Dukascopy (Suisse) SA has started providing its clients with the presented technological solution from 1 November, 2006, known as SWFX – Swiss FX Marketplace. To cite a few clear examples of the practical success of this technology, we could point out that every client is able to trade 100 million GBP/USD and 200 million EUR/USD in one click with effective spreads of 4-5 pips. When trading smaller amounts one can obtain average spreads as low as 0.9 pips for EUR/USD and 1.5 pips for GBP/USD currency pairs.

To be the local gateway to a decentralized Global FX Marketplace

No business model can claim to be ideal: accordingly, to remain objective, we have to discuss not just the positive features of the decentralized FX Marketplace but also its negative, limiting factors. The selection of the point of access to the decentralized FX Marketplace by the client is very important; the client should be guided by the proximity of the particular access point to his trading terminal, as ping-time factor becomes a very important issue. United under this decentralized business model, liquidity providers should be considered as local gateways to the global network.

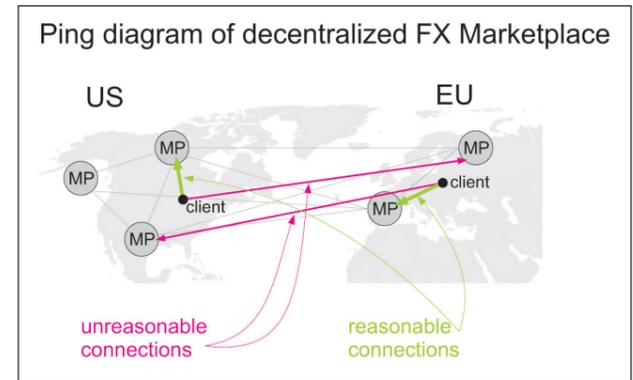


Figure 3

To illustrate this limitation we propose the ping map diagram in FIG 3. From the business perspective every local gateway of the decentralized FX marketplace is in fact an introducing broker for all liquidity providers in the Marketplace Network.

Conclusion

We can see that the fight for Liquidity has led to the creation of a global decentralized FX marketplace which has brought advantages for the consumers that go far beyond the liquidity itself. By implementing this break-through technology, the decentralized FX Marketplace is able to bring the quality of execution to a new level and is poised to reshape the FX industry landscape as we know it, as the technology continues to be improved.

Acknowledgements: The authors are grateful to the Editor for requesting this article, to colleagues for helping with preparation of the article, and to our valued business partners involved in this project.