FIX at the exchanges - A snap shot

***FIXGlobal* approached a few exchanges with the aim of illustrating the diverse approaches and states of play that exist in the growth and development of FIX in the exchange space.**

- Chicago Mercantile Exchange
- The Tokyo Commodity Exchange
- Brazilian Mercantile & Futures Exchange
- Wiener Börse

Initially we wanted to know how our group of exchanges offers the FIX protocol as an electronic access option for member firms, clients and intermediaries (e.g. vendor or service bureau networks) and if they also support a legacy protocol in parallel.

The Chicago Mercantile Exchange (CME) provides order routing access to its electronic platform known as Globex, using an interface based entirely on FIX. Any firm or trading entity that wants to connect to CME for the purpose of electronic trading must use FIX. In fact, FIX is used to route orders to the floor for execution in the pits! This singular use of FIX is part of CME's strategy to appeal to the broadest set of user's in the industry by encouraging rapid, low-cost integration onto CME's electronic trading platform.

All of CME's electronic products are traded via FIX, so there's no legacy protocol supported for electronic order routing

CME's first FIX interface was implemented as part of Globex in 1999 using FIX 2.3. In 2001, CME upgraded to FIX 4.2 which still serves as its current interface. During this period the Globex electronic trading platform has seen significant performance improvements as latencies have dropped from 1 second down to 40 milliseconds. CME receives an average of 25 million orders and quotes per day with a peak of 36 million in 2006. FIX is used for nearly 100% of the order volume with a very small amount submitted using CME's online Globex Trader application.

All of CME's electronic products are traded via FIX, so there's no legacy protocol supported for electronic order routing. CME continues to use a legacy market data format. However, current plans call for the introduction of a FIX/FAST feed at the end of 2006. This new service will significantly reduce latency and bandwidth requirements for those taking the feed and begin to lay the groundwork for a new FIX-based market data standard.

The Tokyo Commodity Exchange (TOCOM) has used the FIX protocol for trades since Dec '04 and for market information since Feb '06, with the number of orders via FIX currently standing at about 25,000 transactions per month and representing 0.6% of the total market (as of Mar '06). The exchange supports proprietary protocols for Trade and Market information, and needs to offer both the proprietary and FIX protocols as most of their member firms are still using the proprietary protocol.

The Brazilian Mercantile & Futures Exchange (BM&F) does not currently offer the FIX protocol as an option to market participants, but there are a number of ongoing projects that will shortly provide FIX connectivity to the exchange. The plan is to provide FIX Market Data, Order routing through FIX and Open connectivity to ISVs based on FIX. BM&F is also working on utilizing FIX in some of the exchange's systems, although this is due to be limited to certain functionalities in the exchange's pre-trade, trade and post-trade systems. BM&F expect to have some of these systems running in parallel to pre-existing systems by Sep '06. Currently, the only protocol made available to member firms for access and trading is a proprietary protocol, tag-value based, which is only available for mini-contracts trading. There is also another proprietary protocol used for Market Data, made available for all instruments to member firms and authorized Vendors. BM&F's simultaneous support of their proprietary protocols and FIX is envisaged to be limited to no more than one year.

Austria's only securities exchange, Wiener Börse, operates a derivatives market in addition to the traditional cash market (equities and bonds) and has a separate segment for structured products. Wiener Börse is currently in the rollout phase of using the FIX protocol, with the infrastructure up and running by Q3 2006. They are waiting to see how much of the total volume of transaction flow will be supported by FIX, as the systems come online, but their current mind set is to support the two trading platforms currently in use – VALUES API for Xetra® and OMNet API for Click, in parallel with the new FIX system.

Having established where each of the exchanges stand regarding FIX, we asked them what the advantages or disadvantages they see FIX providing to their exchange or marketplace members / clients and their own strategic plans as it relates to a growing electronic global marketplace? We were also interested to know if there were other drivers, such as regulatory changes or execution / provision of liquidity for multiple asset classes (e.g. fixed income, options, forex, commodities), which would influence the exchanges' need for FIX solutions?

TOCOM clearly see that new members and software vendors can participate in the market more easily, and that the volume of trades across the exchange will increase.

...in the current competitive environment, FIX has become a "must have" to keep up with industry peers

BM&F agrees that with FIX as the de-facto standard, client connectivity to their exchange will be easier with off-the-shelf or already-in-place solutions being offered. From an operational perspective, keeping a single, full-function, standard protocol reduces development and running costs. The richness in functionality available through the FIX Protocol is also a big advantage, in that BM&F has trading activity not only on Derivatives, but also on FX, Fixed Income and Swaps. Some areas of concern that BM&F has about FIX include the Market Data performance (although this might be resolved by FIX FAST), a lack of documented data flows for FIX messages, (which can lead to different interpretations by market participants and ISVs) and also the potential growth of FIX dialects, which could effectively lead the industry back towards the use of multiple protocols. Having said that, BM&F recognize that FIX has stepped up to help the industry meet many of the challenges raised by the new regulatory environment.

CME recognizes that FIX increases the ease with which firms can interface with CME and provides an immediate consumer base for their products and markets. The growth of FIX around the globe is an important part of CME's strategy to grow its business. Additionally, the recent introduction of FAST ensures that FIX will remain a viable solution as electronic trading volumes grow.

CME recently announced that it will move into the FX OTC market in the form of FXMarketSpace. This effort should be aided by CME's use of FIX given that major players in the FX industry are looking to FIX to provide connectivity and functionality for their FX trading platforms. CME sees themselves as being well positioned to benefit from this use of FIX.

Other than also recognizing FIX's simplification of connection to its marketplaces and lower maintenance costs in the operation of the market link for members and clients, Wiener Börse points out that many other exchanges already offer FIX connectivity and in the current competitive environment, FIX has become a "must have" to keep up with industry peers.

Regarding an exchange 'wish list' for improving FIX so it better serves exchange business, functions or workflows, TOCOM hope that the price of the best quality FIX engines software is less expensive. TOCOM also saw a value in FPL's brochure reporting on a regular basis the FIX vendor products market share, current status of Exchange/Broker's FIX capability (although summarized on country-by-country basis would be even better) and such.

Other than the challenges posed to exchanges in the market data and documented data flow arenas, (raised earlier in the article), BM&F would like to see the continued integration between FIX and FpML.

Finally, (in general terms) CME would like to see FIX optimized for exchange use. There are aspects of FIX that are artifacts of the buy-side/sell-side paradigm in which FIX was developed. The FPL organization understands that more exchanges would consider adoption of FIX if a consistent exchange model was defined that addressed a relevant set of business needs. To this end, FPL has announced the formation of an Exchange/ECN working group which will give these issues top billing. Additionally, the introduction of FAST makes huge improvements in market data and order routing efficiencies possible. Exchanges that consider their proprietary solutions to provide a competitive advantage must now reconsider whether this is still the case.

Japanese Exchanges and FIX Protocol

At present, FIX Protocol usage in equities exchanges such as Tokyo Stock Exchange (TSE), Osaka Stock Exchange (OSE) and JASDAQ is virtually non-existent. TSE does provide FIX interface as an alternative for native TSE API, but because of the significant performance advantage of their native interface, the FIX interface is pretty much unused. OSE used to have a FIX interface but in their latest interface upgrade, they decided to totally abandon the FIX interface. So, why is FIX so unpopular among Japanese equities exchanges? One of the reasons could be attributed to the way TSE's FIX interface has been implemented. TSE added a FIX interface on top of the existing system that already supports their native interface and many people who have evaluated TSE's FIX interface agree that the native interface provides much better performance edge, not necessarily because of the protocol itself but rather because of the difference in the design and quality of the infrastructure. This difference could be partly attributed to the classic chicken-versus-egg situation….TSE cannot invest heavily on FIX since nobody wants to use it, and the FIX interface cannot be popular because the TSE has not made enough commitments. Another point raised about TSE's FIX interface is numerous custom tags. However, this is not as important as the performance factor, as a new TSE member broker who is experienced with the FIX protocol should have a much easier time implementing on FIX interface despite the custom tags, rather than learning about TSE's native API from scratch. Since TSE is such a dominant liquidity source for Japanese equities, unpopularity of their FIX interface had created an impression in people's mind that FIX is "slow" and "not made for exchange interface". Another setback was the failure of Nasdaq Japan in 2002. Nasdaq Japan was supposed to be the first major exchange in Japan to fully and solely implement FIX as an electronic trading protocol and their failure to do so not only resulted in brokers dropping a FIX interface project back then, but also left an unfavorable impression about the FIX protocol itself in many people's mind. Having said all this, FIX has at least established itself as the dominant protocol for international orders in Japan. All institutional brokers who receive orders from abroad, implement FIX as also do some of the retail brokers, in order to connect with brokers in foreign countries for offering foreign equities to Japanese individual investors.

Looking at other asset classes such as Fixed Income and Commodities, the FIX interface plays a more active role on the exchange side. Some of the Fixed Income PTS (analogous to ATS in US) operators provide a FIX interface, for inter-dealer JGB trading system. Japan Bond Trading (BB) provides both a native interface and a FIX interface in parallel, and some broker participants receive to their PTS price information (market data) and executions via FIX protocol. The new JGB trading system of Central Tanshi Securities employs FIX as the only electronic communication interface, both for orders/executions and price information.

... there is no longer doubt within the Japanese trading community about global expansion of the FIX protocol as a de-facto trading language

As touched upon in the earlier section of this FIXGlobal feature, Commodity exchanges such as The Tokyo Commodity Exchange (TOCOM) were quick to offer the FIX protocol as an alternative means of electronic access to the exchange, in addition to their native TOCOM interfaces. They first implemented the FIX interface for orders and executions in 2004 and recently added FIX support for market data distributions. In recent years, the Japanese commodity industry has been going through many regulatory and structural changes, in order to re-engineer their markets to be more competitive globally and thereby attract more foreign order flows. FIX protocol is expected to play an increasingly important part in this sector's globalization scheme.

Japanese equity exchanges are currently at the planning phase for the next generation trading system (NTGS) and whether they will support FIX protocol or not is one of the decisions to be made. As mentioned earlier, there is still lingering skepticism about the effectiveness of the FIX protocol as an exchange interface in the Japanese equities space. At the same time, there is no longer doubt within the Japanese trading community about global expansion of the FIX protocol as a de-facto trading language. Therefore, the decisions exchanges have to make are not necessarily simple ones. We, as the FIX community however, still hope that they will support the FIX protocol in NTGS, in this climate of increasing global mergers, collaborations and competition amongst exchanges.

Asian Exchange panel

By Kathleen Grey, Business Analyst, HSBC

The rare opportunity to bring together representatives from the leading exchanges across Asia in open discussion was provided by the FPL organized Electronic Trading Summit held in Hong Kong in May. Exchanges from Taiwan, Shanghai, Australia, and Singapore took this opportunity to provide us with an update on their current activities, and embraced some difficult questions about the future and direction of the exchange trading environment in Asia Pacific. As we are aware, increased competition for international order flow and technological advances are driving exchanges away from their traditional focus in the market place. Pressure to further reduce transaction costs, provide greater product diversification, and establish easier access to the exchange electronic trading platform, are pressures that must be responded to. How are Exchanges in Asia responding?

> **Obviously the core reason for working with FPL is that they provided the protocol, a messaging protocol that is slowly making life easier for everybody. Over the past five years the protocol has been extended more and more into the exchange trading space**

Let's highlight some of the candid answers, when FPL Asia Pac committee member, Brook Teeter of Credit Suisse, 'stirred the pot' by posing some problematic questions to our courageous panel based on a discussion theme of "Does the potential consolidation of exchanges outside the Asia Pacific region pose a threat to international order flow?"

Brook Teeter, Discussion Moderator: "To help set the context of our discussion, what are the benefits for the Exchanges of working with industry bodies such as FPL?"

Greg Yanco, Australian Stock Exchange (ASX): ASX has joined FPL as a member. "Recently we've added a FIX adaptor to our trading gateway platform and in October we will have one for our market data as well. So it's very important for us to understand for example, which version of FIX we should be supporting while also being involved in the FPL committees and working groups so we can understand where things are heading. This is extremely important to us. We need to be involved on a day to day basis with FPL."

> **We have a different version of FIX as the Chinese market has different requirements...such as non traded messages and large volumes which you don't have in Europe and the US**

David Li, Shanghai Futures Exchange (SFE): We have a Chinese version of FIX called STEP and we have a working group who looks at the protocol, if you have any questions you are able to contact us. Historically FPL has been a big help to us when working to develop this protocol. We have a different version of FIX as the Chinese market has different requirements. Requirements such as non traded messages and large volumes which you don't have in Europe and the US. So later on if you want to gain access to the Chinese market from outside of China, we want to make sure the protocol is compatible with the current FIX protocol being used. Gaining FPL certification so that the industry outside of China knows that the protocols will work together and are not going to crash anyone's FIX engines, is important to us.

Ron Newell, Singapore Stock Exchange, (SGX): Obviously the core reason for working with FPL is that they provided the protocol, a messaging protocol that is slowly making life easier for everybody. Over the past five years the protocol has been extended more and more into the exchange trading space. FIX as a technology, as a facilitator for growth at an exchange. The ability to have both your cash market and derivatives market available to your customer base on a single protocol is just fantastic for an exchange. Developments from the continued work being done on the protocol in addressing issues like capacity, which can be somewhat improved with initiatives such as FAST FIX, are also important. So, the protocol itself is fantastic in terms of an opportunity for exchanges, and FPL as a facilitator has been very good at listening to the requirements of exchanges. It's developed beyond just a buy and sell side relationship into something more meaningful for the financial community.

Lawrence Shan, Taiwan Stock Exchange (TSE): In our case we are going to integrate the markets, so we will have a single platform for one consolidated market. I think working with FPL is a great opportunity for us to know what the technology being used at our client side is. And as this is an industry standard, we can integrate this into our new platform.

Brook Teeter: To focus on the theme of this discussion...Does the potential consolidation of exchanges outside the Asia Pacific Region pose a threat to current international order flow? Greg, there is a consolidation of the ASX and the SFE in Australia. Would you care to comment?

Greg Yanco, ASX: Our main focus at present and for the next two years will be the consolidation of the exchanges in Australia. However, we understand that the exchanges outside Australia will be looking to expand through consolidation. So our reaction to this is to make sure the Australian exchange is attractive for its liquidity pool and its market structure. We would like to think liquidity is sticky, and in the past it has proven to be, however it does move. So putting in place market structures that are attractive to the industry is important. The recent removal of broker ID's in the Australian environment was driven by our buy side customers, as they wanted a more level playing field. In order to maintain liquidity, you need to have good relationships with your listed companies. And to ensure an attractive market structure, we need to work with the buy and sell side to adapt the structure of the market. So good relationships with all your customers ensures you understand their needs. This makes the exchange stronger, however still venerable to changes in the international market place.

Brook Teeter: David have you had any discussions about bringing some of the exchanges together?

David Li, SFE: Well, as you all know, it's not really the issue for us. We are looking to join the international community, but we are not bothered by that trend at this point.

Brook Teeter: Are we likely to see one big exchange eventually in China?

David Li, SFE: Well, sometimes we do discuss this, but we usually talk about it after a few drinks.

Brook Teeter: Regulatory restrictions on foreign investors – will these restrictions need to be lifted over the next 2-5 years in order for the market to stay competitive? Lawrence, Taiwan has seen a successful transition with its foreign investor policies over the past 5 years. Are we likely to see a further loosening of these restrictions in the future?

Lawrence Shan, TSE: Absolutely, we expect this trend to continue. In the past few years Taiwan has embarked on a number of market reforms to make the market place friendlier to international institutional investors. The removal of the QFII system in 2003, launching the first ETF and the introduction of the block trading in 2005 have all been introduced with the goal of facilitating international institutional order flow. So the market structure has changed a great deal. In the 1990's over 95% of the trading volume was contributed by the small investors, last week the trading volume contributed by institutional investors was over 30%. Further structural changes include the introduction of the Omnibus trading account, allowing institutional investors to remain anonymous and the buy side will have access to the trading account to allow equal pricing. So there are a lot of changes to cater for the institutional investors. There are two perspectives that are driving these changes. Looking inside, there have been changes in the market structure made by the exchange in response to investor demand. When looking outside the exchange to the international trading environment, the government recognizes that in order to compete with the international exchanges for order flow, Taiwan needs to be in line with international standards. This has ensured easier and more flexible foreign investor access to Taiwan. This has been the trend in the past, and we expect this to be the trend going forward.

...ultimately the Right to trade directly into the market using DMA tools is going to be a key strategy and hopefully growth factor for us...

Brook Teeter: Asia is very different from the US and Europe in terms of it's local trading rules. Is there a lack of understanding of local trading rules, and if so is there an impact on DMA? Ron, Singapore has an issued a consultation paper on the derivative trading rules. Was DMA the catalyst for this paper?

Ron Newell, SGX: It really was the catalyst. DMA is part of a larger transformation that we see occurring right now. The transformation is being driven by the technology, the electronic trading platforms, the ability access these markets and liberalizations of rules that allow participants to come to the market place. A lot of fragmentation had existed even in Singapore, as originally the securities and cash markets had been separated from the derivatives markets. The merger of these markets has been an ongoing process, and in reality the merger has been successful, I know the results have showed that. However there is a lot of work that needs to be done. Standardization has been occurring in the rule books, and the regulatory regimes. It's been occurring in the membership structures and it's been occurring in the technology we deploy. All of that is an ongoing evolution, and it is a part of working towards a more harmonized way of approaching the marketplace from the customer's perspective. DMA in the derivatives space was one of the first unified ways we tried to address this. Historically we've done little things; we introduced an offshore membership vehicle by which people could trade into the derivatives market. But in this case we actually went back to the rule book and redrafted rules to try and clean up some of these disparities that existed, so that the membership structure is no longer distinguishing between an offshore membership and an onshore. Basically it's a very simplified membership structure, you are either a clearing member or a trading member. You have basically equal access to the market place under those conditions. Within the context of DMA we are not making any of the distinctions as we've seen historically, such as, 'are you a sell side institution and what is your relationship with the exchange?' Do you have certain capital deposited with the exchange? All of these rules are slowly being evolved towards a standardized position, one where we are going to be leveraging the relationship a trading member might have with a clearing member. But ultimately the Right to trade directly into the market using DMA tools is going to be a key strategy and hopefully growth factor for us...

Brook Teeter: So you think that standardization is likely to increase.

Ron Newell, SGX: It's a necessity. To the extent that fragmentation in this market place today is overly cumbersome on the user. And the more we try and harmonize into a single rule book, and try and broaden the regional understanding of rules; so we will facilitate growth for the entire region.

One of the key areas of focus for the CSRC is to ensure the exchanges are working together to have standardized contracts, so when we are ready to introduce DMA we have an environment that is standardized across the exchanges

Brook Teeter: Continuing on with DMA – there has been some ambiguity surrounding the DMA structure in Taiwan. Lawrence can you clarify things for us?

Lawrence Shan, TSE: I knew your where going to ask this question. DMA is not currently applicable in Taiwan as you know. For the past two years the Taiwan Stock exchange and the Taiwan Dealers Association has been discussing this seriously and we recently resolved the two main regulatory concerns. One issue is the transmission safety. And the other one is the electronic signature. Now these issues have been solved, we are waiting on approval from the regulatory authority. So we are expecting that DMA will be in place before the end of the year.

David Li, SFE: We are working hard to get DMA ready, to have the path open, and ensure we have the structure right across our exchanges. Before the DMA can come, we want to get the markets standardized. An example of the standardization we are working towards is in our product design. We are working to standardize our products such as options on commodity futures across the futures exchanges. Different exchanges such as CME and NYMEX have different structures, and we've all had experience in dealing with these differences. One of the key areas of focus for the CSRC is to ensure the exchanges are working together to have standardized contracts, so when we are ready to introduce DMA we have an environment that is standardized across the exchanges. So while there is no promise that DMA will be launched in the near future, we are preparing the markets for it, we want to get it right.

Ultimately, this counter pressure is going to lead to some point where those pushing to get the spread tightened will balance out against those that are trying to keep a viable business model as a liquidity provider to the market place

Brook Teeter: "Spread", there has been a great deal of discussion in the region about reduction of spreads – Hong Kong has made one adjustment and is considering a second adjustment this summer. Singapore recently issued a consultation paper on reducing spreads. Ron, are you able to comment?

Ron Newell, SGX: We did put out a consultation paper earlier this year. What's interesting is the response to the consultation paper was to tighten the spreads even further. But there is the other feedback that says we are happy with where the spread is today. So there is really two parts to this answer...

Ultimately, this counter pressure is going to lead to some point where those pushing to get the spread tightened will balance out against those that are trying to keep a viable business model as a liquidity provider to the market place. In that context, ultimately it becomes a decision for the exchange. They have to deal with their business strategy, and understand what their objectives are. If you are trying to work with the institutions and the investors are trying to get order flow, verses more of the quote driven markets, then you are going to tighten up your spreads. And encourage their participation and drive liquidity and trading volumes from that perspective.

Brook Teeter: With the reduction in spreads is there a potential issue for capacity?

Greg Yanco, ASX: Every exchange is under pressure on capacity. We actually closed early in 1997 because we could not get to 64,000 trades. Because of that experience we've been altered to capacity issues. We've mapped all the points of failure. Our technology people have intelligence from the technology teams at brokers to know what capacity they are planning on putting on.

Brook Teeter: Lawrence, with DMA on its way, have you looked at some of the issues that some of the other exchanges have had?

Lawrence Shan, TSE: No.

Brook Teeter: You are prepared then?

Lawrence Shan, TSE: All set! **FIX**

N.B. The above comments have been paraphrased and rearranged to highlight the speaker's main points during the discussion. For the complete 60 minute panel discussion please view the video at Bloomberg.

This discussion panel was the first activity of the recently re-established Exchange Working Group for FPL. We would like to thank those exchanges for their valuable contribution to the Electronic Trading Summit. And, look forward to working with them in the future. To officially commence the work being conducted by the Exchange Working Group globally, FPL will be hosting a series of conference calls in the first week of June. This call will outline the objectives of this section of the committee, and the events planned for 2006/07. All members are invited to attend. For details of the times and dates of these calls please contact FPL.

Any thoughts on this or other articles?
Please send any comments, refering to this article as Vol 1 Issue 10 GL1, direct to Edward at edward@fixglobal.com