Standardizing the Standard:

The Future of FIX

the Futures Industry Association has been very involved in encouraging standardization across the financial markets. The FIA Standards Working Group's work has centered on including derivatives in FIX for order routing and developing FIXML for post-trade processing. Since the signing of the memorandum of understanding between the FIA and FIX Protocol Ltd. in 2003, the two organizations have made considerable progress in championing standardization. Despite this progress and the popular notion that FIX is the de facto standard for derivatives order routing, a common standard is far from a reality. How far have we come and what is being done to expand the role and increase the value of FIX as the basis for a full trading cycle messaging standard for listed derivatives markets?

A FIX Report Card

The listed futures and options markets have standardized around the use of the tag=value based FIX 4.2 version of FIX for order routing. Internationally, the past year has seen some very encouraging news in terms of FIX adoption. Eurex released its Xentric FIX Gateway. Meff released its FIX 4.4 Gateway, which is arguably the most comprehensive and standard implementation of FIX for derivatives markets released to date. Even with the additional FIX adoptions, however, there are still several marketplaces that do not support a FIX interface. And even among the marketplaces that have adopted FIX, there is significant disparity in how the standard has been implemented, greatly minimizing, though not eliminating, the value that can be achieved via FIX adoption. Order routing applications are increasingly being required to be intelligent enough to make routing decisions based upon market data. Even overlooking the lack of standardization in the use of FIX, the greater problem is that every market has a different proprietary market data interface, which further lessens the value of FIX to the user.

With regard to market making, technological issues arise in terms of being able to use FIX for ultra high volume applications that are required to consume market data events and then automatically generate market quotations in response. The sheer volume and rate required to quote listed option series pushes the tag=value version of FIX to its limits. For order-only markets, the necessity to perform order chaining when canceling orders to refresh markets creates considerable overhead. Order-only markets must look to the FIX quoting models as provided in FIX 4.3 and FIX 4.4 as a means to provide a common market making model across markets. Until FIX can provide a clear solution for high volume market making, the dominant market making APIs will continue to be proprietary.

The good news in standardization is clearly found in the clearing/back office space for listed derivatives markets. There has been an incredible degree of cooperation between the U.S. listed markets, clearing organizations, vendors and FCMs in developing the FIA Extensions to FIXML 4.4 for Listed Derivatives Clearing. This initiative

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started by Chicago Mercantile Exchange and the FIA Standards Working Group is now paying off with production applications being implemented and released by the major exchanges and vendors.

Where is FIX Going?

Several initiatives are underway to improve the adoption and standardization of FIX. The first is the FIX Global Derivatives Business Practices Subcommittee headed by Ryan Andrews of Trading Technologies and Paul Kern of Fimat. Within the past few months, the order routing subcommittee of the FIA Information Technology Division has agreed to join forces with the FIX Global Derivatives Business Practices Subcommittee to focus on standardizing business practices in the use of FIX 4.2 for the futures markets.

The FIX Global Technical Committee, the FIX Global Derivatives Technical Subcommittee, the Financial Information Forum, and the FIA are working with CME in developing an optimized market making/market data protocol for derivatives market making that will complement existing FIX tag=value protocol to support extreme high volumes of market data. This area was identified by firms as an important area for standardization. At this point, firms can likely use FIX to route orders to existing markets, however, they usually end up having to write to a different market data application programming interface for each marketplace. One firm reported that it has to support 13 different market data APIs. A common high performance market data format that does not compromise on message size and throughput would be a real boon for users of multiple markets.

Beyond the FIX tag=value Message Format

The other major area of innovation continues in the use of FIXML. As the FIA Standards Working Group finalizes its FIA Extensions 1.1 to FIXML 4.4, which defines a standard clearinghouse to clearing firm interface, a vendor and FCM-led initiative to further expand the usage of FIXML to the end-client is beginning. This will hopefully lead to a common interface across vendor platforms and will encourage other clearing organizations to adopt FIXML as defined by the FIA Extensions. The exchanges working with the vendors established the initial round of leadership in this initiative. It is now up to end-users and vendors to extend FIXML to other parts of the clearing cycle.

OTC Derivative Support

The FIX Global Derivatives Committee, FIX Global Technical Committee, and International Swaps & Derivatives Association are currently sponsoring a FIX-FpML Interoperability Working Group. The group is defining how FpML product specifications can be referenced within FIXML (for example vanilla interest rate swaps or FX options that could be exchange-traded or cleared) and
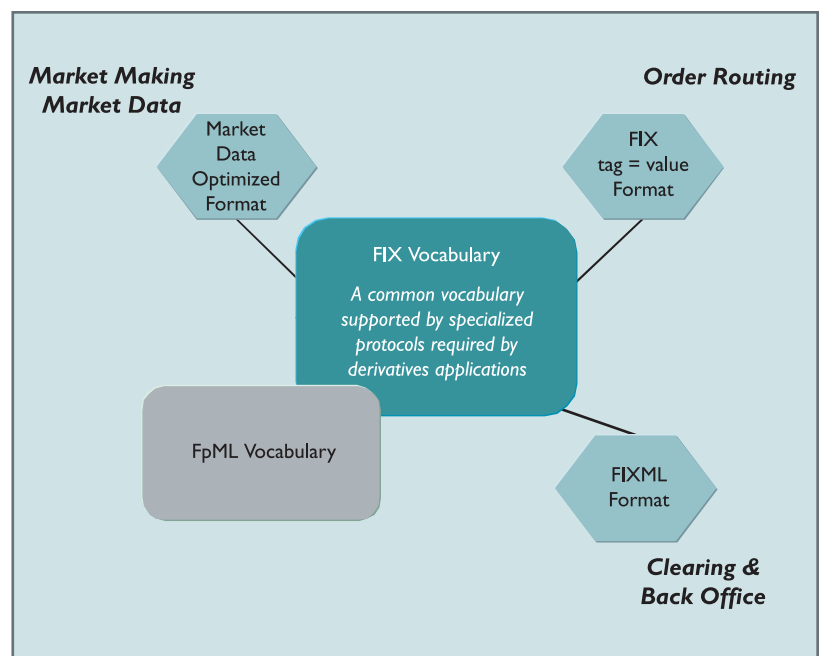
how FIX instruments can be referenced from within FpML (for OTC equity derivatives that contain listed components requiring automated execution via firm order management systems).

One Vocabulary Multiple Formats

Derivatives trading imposes strenuous requirements at different points in the trading cycle. A general purpose order routing protocol is not optimized to the demands required by high volume market data applications. Likewise, the complexity of allocation messages in post-trade applications benefits greatly from the inherent tree-like structure provided by XML. One messaging protocol is not suited for all these disparate applications. The key component in supporting these applications is a common vocabulary and message semantics that can be shared across the entire trading cycle from the distribution of product information, through market making, order entry, trading, and post-trade processing. FIX, because of its install base and its current usage across the cycle, provides this vocabulary. These specialized message formats are used to further extend the reach of FIX by meeting the specialized requirements at different points in the trading life cycle.

Is the Glass Half Full or Half Empty?

While we have much more to do in order to realize the full potential of FIX as a common protocol for listed derivatives markets, much has been accomplished and FIX provides a solid foundation by which we can extend standardized access to markets across the entire trading cycle. The role that the FIA plays in making this happen continues to be critical to the success of FIX. ✺

Market Making Market Data — Market Data Optimized Format

Order Routing — FIX tag = value Format

FIX Vocabulary — *A common vocabulary supported by specialized protocols required by derivatives applications*

FpML Vocabulary

FIXML Format

Clearing & Back Office

A FIX Report Card

Area of Usage	Comments
Order Routing	Overall—lack of standardization and market adoption is limiting user value in adopting FIX
U.S. futures markets	Focus is on FIX 4.2. Newly automated markets have yet to provide order routing interfaces, preferring to use proprietary APIs instead. Lack of consistent usage of the standard impacts adoption.
U.S. listed options markets	Focus is on FIX 4.2. Inconsistent product offerings—lingering problems with CMS-style order handling. Semantics make integration more difficult. An A+ goes to the U.S. listed options markets for using FIX 4.2 to implement the Options Linkage Authority.
International futures and options markets	Euronext.liffe was an early pioneer that provided an interface loosely based upon FIX 4.2. With the exception of Meff, which gets an "A+" for its FIX 4.4 implementation, the international marketplace is in a similar state as the U.S. markets. The Eurex release of the Xentric FIX Gateway is indicative of the growing demand for FIX access to markets and really helped raise the overall influence and availability of FIX.
Market Making	In general market making for derivatives requires later versions of FIX, such as FIX 4.3 and FIX 4.4 for successful implementation. Technical challenges due to the tag=value format of FIX preclude wider adoption.
U.S. futures markets	The CME proves FIX can do the job—the issue becomes one of standardization. With the exception of public commitments from NYMEX, the other markets have adopted proprietary protocols.
U.S. listed options markets	Overall issues with bandwidth consumption of FIX tag=value make using FIX problematic for most options markets. The CBOE has pushed the envelope by demonstrating what can be done with FIX in terms of market making. Unless technology changes are introduced, it is unlikely that FIX will be able to meet the demands of the ever-expanding listed options volumes in the U.S. for options market makers.
International futures and options markets	With the exception of Meff and its FIX 4.4 implementation, FIX is non-existent in this space.
Brokerage/FCM to Customer	FIX connectivity increases nearly daily in the space between brokerage/order execution firms and customers. Lack of standardization in the use of FIX continues to lower the potential value.
U.S. futures markets	Excellent coverage—although standardization has not been achieved.
U.S. listed options markets	Excellent coverage—although standardization has not been achieved.
International futures and option markets	Reasonable coverage—primarily by vendors that provide FIX gateway products to international markets.
Clearing House to FCM Clearing Members	Overall, this is one of the most exciting standards efforts in progress.
U.S. futures markets	Excellent start. Excellent cooperation. Initial efforts starting to pay off.
U.S. listed options markets	Excellent start. Excellent cooperation. Initial efforts starting to pay off.
International futures and options markets	Due to different business requirements, the international markets have yet to prioritize the adoption of FIXML for back office processing.
Clearing System to End Users	This is a new effort that shows some initial promise, following the successful cooperation of the U.S.- based futures exchanges.