



## Managing multiple messages



**“It is not the going out of port, but the coming in, that determines the success of a voyage”. Henry Ward Beecher**

*By Steve Wilkinson, Director, SolutionForge*

**While it is unlikely that Henry Ward Beecher was referring to his order management system when he made this remark, his words undoubtedly have meaning to businesses in today's securities industry. With the array of different messaging protocols in the market and the complexity of managing disparate systems for processing them, an organisation's ability to effectively process all of the messages 'coming in' does indeed determine the efficiency of the trade.**

Financial institutions, in particular, are forced to maintain a number of disparate systems to handle the variety of messaging standards and applications required for daily operations. Similarly, since their customers and partners are often using different technologies and protocols the situation becomes still more complex.

Where the solution may once have been to adopt a new enterprise-wide IT platform with the latest whiz bang technology to effectively meet all of a bank's business needs, today's IT budgets are far too restricted and the associated risk of such large-scale projects is too great to make that type of investment. So, what more cost-effective

opportunities are there for firms to consolidate their use of messaging standards and technologies, and how do firms avoid the inevitable pitfalls of consolidation?

### Need for consolidation

Although there are a wide range of protocols in use in today's Equities markets, the predominant standards are SWIFT & OMGEO for post-trade and FIX for pre-trade and trade execution. Whilst the centralised nature of SWIFT has allowed it to mandate and police a common message format, ISO 15022, FIX's market-driven evolution means that there are many versions of the protocol in common use, and even within those versions, there are many local variations and customisations between trading counterparties.

Some firms have tried to reduce this complexity by mandating a single standard of the protocol, historically FIX Version 4.0 or 4.2. Whilst this approach has considerable appeal, the restrictions that it places on connectivity with prospective trading partners quickly become a barrier to new business opportunities. A similar strategy is to mandate the use of the latest version of the protocol, an approach FIX Protocol Limited has understandably encouraged, but the gradual implementation of new releases of the protocol amongst vendors and trading partners makes this unworkable too.

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However, standardisation within the FIX component of a firm's order management system is highly desirable. Reducing the number of protocol versions and the corresponding number of implementation variations inevitably reduces the cost of deploying and operating an OMS. Further, the level of customisation within many order management systems is limited. How then do firms avoid over-complicating the OMS without sacrificing business opportunities? Recognising this gap in the market, FIX

engine vendors have begun to offer FIX gateway solutions that sit in between the OMS and a firm's trading partners.

Kevin Lee, Sales Director at SolutionForge, comments, "Many institutions want a 'one-stop shop' in terms of their FIX connectivity, but all too often that can limit trading opportunities. There are now 'gateway' products in the market to give firms much greater flexibility in configuring their FIX connections." A useful side effect of this approach is that it reduces the likelihood of vendor lock-in; firms can look to change OMS vendors without a wholesale reconfiguration of their FIX connectivity.

Another weapon in the armoury against standards divergence is the now ubiquitous Extensible Mark-up Language (XML). Until recently, implementation of XML-based solutions for FIX messaging have been cumbersome and inefficient, due to the fact that the XML flavour of FIX, FIXML, was based on old technology known as the Document Type Definition or DTD. Support for the DTD format within modern development tools was generally poor and the inability of DTDs to describe messages efficiently resulted in substantial message size bloat. However, with the release of the XML Schema version of FIXML earlier this year, these issues have been overcome and there are now opportunities to consolidate FIX message formats around the new standard. Initially these opportunities are likely to be restricted for internal use; Lee notes, "We've seen many firms adopt FIXML for in-house use, to take advantage of the wide range of off-the-shelf XML-enabled tools, whilst continuing to use raw FIX 'on the wire'. In this way, they get the best of both worlds."

### Taking advantage of XML

As noted, a key advantage of adopting an XML-oriented approach to message integration is the wide range of powerful technologies for processing and manipulating XML messages.

One example of this is Microsoft's BizTalk Server, which lets business analysts use a flowchart-style tool to capture the steps, inputs and outputs of a business process, such as confirming a trade. Rules engines can be included, as well as the facility to call routines written in programming languages to deal with more complex decision processes. With this kind of architecture as a base, software and solution providers can develop different "adapters" to deal

with different messaging formats and protocols, so that a library of "off-the-shelf" adapters is built up to meet the different messaging needs of a broad range of industry participants. FIX and FIXML adapters are already available for this type of solution, as well as adapters for using SWIFT, MQ Series and some forty other messaging formats/protocols. Key advantages to users of such architectures are that they typically cost less than custom-built solutions, are quick to deliver, and can be integrated easily as building blocks within large-scale, user-specific messaging solutions.

### Future direction

With the growing popularity of XML-based messaging solutions, it is perhaps surprising that FIX, which began life in the days of leased-line communications, continues to be so popular. It seems that the inertia within the sector is so great that adoption of an XML version may take a very long time; the financial markets are like an oil tanker that cannot be turned on a sixpence. In fact, on a global basis, some have estimated the increase in the number of FIX connections is in the high double figures. There seems little sign of this trend abating in the short to medium term, which is good news for vendors of FIX engines and FIX-based solutions, and is reassuring for institutions that have made a heavy commitment to their FIX-based trading infrastructures.

However, the current level of investment in XML messaging solutions, a.k.a. 'web services', within the mainstream platform vendors is huge. This investment has been supported by the industry's relatively successful interoperability initiatives, the most notable being the Web Service Interoperability Organisation, WS-I, which publishes the Basic Profile which all of the major web service vendors are committed to support.

It seems likely that more readily available web service technology will drive the uptake of XML messaging in the long term. Microsoft's Indigo initiative, the XML-based messaging framework for its next generation of Windows, "Longhorn", looks set to usher in a world of 'XML Everywhere', at which time, FIX in its non-XML form is likely to come under pressure for certain applications where it no longer makes sense in terms of the infrastructure it requires. Fortunately for FIX users there is a clear migration path in the shape of FIXML, which forward-looking market participants are already actively investigating.

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### Conclusions

Although there has been a certain amount of standards divergence rather than convergence over the past few years, firms can help to isolate themselves from this state of affairs through evaluating and adopting new technologies. This does not necessarily mean wholesale, expensive technology migrations. Rather, where it makes sense, it means enhancing existing legacy platforms by introducing support for newer technologies at the relevant point in the value chain, taking advantage of the productivity and flexibility on offer from the latest crop of messaging solutions. **FIX**

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