

The Expanding Framework of Front-office Systems and Market Data under Straight-through Processing and T+1

a report by

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Even in today's traditional view of information used by the front office, market data encompasses many kinds of information from a multitude of sources. Market data is trade and quote price on foreign and domestic equities, options, futures, fixed income instruments, funds, derivatives, foreign currencies exchange and treasuries. Included is exchange-generated data and contributed data, prices coming from electronic communications networks (ECNs) and other purely electronic trading platforms and auction-based exchanges. This market data may be realtime, delayed, end-of-day, session-specific, streaming, snapshot, consolidated, primary, proprietary or historical. In addition to price, market data comfortably encompasses fundamental data such as earnings and dividend history, security identification numbers and symbols, corporate actions, news, descriptions, research and analytics.

In the process of researching this article, the authors drew on the expertise of market data processors/consolidators, realtime and end-of-day market data vendors, corporate action information vendors, market data management professionals, mutual fund experts, service bureaux and other order management system vendors and those engaged in work on standards and protocols. They spoke to people responsible for their firm's order systems, security master databases and operations, and investigated emerging exchange market data and trading products.

Everywhere, the initial response was the same – that, strictly speaking, market data is not impacted by the move to trade date plus one day (T+1). This is true when looking at market data in a traditional view. After all, T+1 relates to effecting settlement and issues that arise after the trade is made, while market data is information used to direct and support decisions prior to making the trade.

The Front Office on the Front Line of Straight-through Processing (STP)

Over the next couple of years, the functions and responsibilities of the front office will grow because of new T+1/straight-through processing (STP) requirements and because of parallel events in market data and regulation. Front-office market information

needs will expand from realtime market data requirements to include static reference data required to complete a transaction, and the trading process will necessarily blend several functions to meet the new requirements.

T+1 introduces new information requirements to allow trades to be 'locked-in' upon submission to The Depository Trust & Clearing Corporation (DTCC) for clearance and settlement. Certain reference data, such as international security identification numbers and CUSIPS (numbers used to identify domestic securities) should be accessible by the front office on making the trade, or even at the point of order entry. The front office may require access to bank identifier codes for indicating counterparties, settlement instructions and other detail supplied by the back office or outside source, in order to expedite the trade for matching or continuous net settlement.

Where STP and T+1 require that additional data be available at the point of order entry and trade execution, vendors will be among those in a position to supply access to standard reference data, security identifiers, cross-reference services and other types of descriptive information.

At the same time as preparations are made for T+1, trading venues are proliferating, regulation requirements are ramping up and fragmentation is occurring in sources and systems. Securities and Exchange Commission (SEC) *Rule 11Ac1-5* and *Rule 11Ac1-6* stipulate that firms and market centres must provide detailed reports containing information on order routing practices and execution quality on a continuing basis. Unprecedented quantities of market data continue to flow downstream. In this complex realtime environment, many firms are looking to outside vendors to provide intelligent order routing and management tools to satisfy the increasing needs of the front-office systems.

Conclusions

- Front-office function and responsibility will expand to include all the information required to decide on and execute a trade in T+1.



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- Regulatory requirements are contributing to the need for front-office systems with integrated functionality for order capture, routing, trade management and market data.
- As market data and other front-office functions merge, vendors will offer hybrid services and products such as intelligent order routing.
- Market data will no longer be treated as an isolated component of the front office.

Information Consistency, Standards and STP

The ability to exchange information across platforms in a way that provides consistency and supports harmonisation is required to achieve STP. Counterparty risk management, compliance and surveillance systems, updated and accessible in realtime, will become a more integral part of the front office. All efforts to improve consistency will result in more effective use of data from the front to the back office.

Data is purchased from multiple data vendors, derived using alternative calculation methods, and defined in different ways. Vendors' proprietary data and symbology formats, as well as their value-added offerings, allow competitive differentiation and accommodate the specific needs of clients. However, integrating multiple feeds can be a challenge for firms. It is not likely that vendors will abandon proprietary formats or symbology, but, driven by industry needs to streamline processes and promote higher data integrity, vendors appear to be open to the adoption of alternative standards.

The symbology in use by exchanges is pushing its limits in the ability to represent the expanding array of exchange-traded instruments, particularly in the options area. While the Options Price Reporting Authority (OPRA) is taking steps to expand the options symbol, the change will be a significant development effort for vendors and direct OPRA feed users over several years. Changes will also be required on order systems, security masters and other non-market systems. The introduction of hybrid securities such as single stock futures will further exacerbate the symbology problem. Considering the workload leading up to 2004, it may be unrealistic to suggest that the industry tries to resolve the overall symbology problem now, but, as interoperability becomes a greater issue under T+1, and current symbols are inadequate to describe every instrument traded, an overhaul, now or later, will be needed.

Conclusions

- STP demands for consistency will spur efforts on

both in-house and external data reconciliation, and will incorporate the use of emerging standards as well as continued support of some legacy and proprietary formats.

- Legacy symbology syntax is outgrowing the ability to adequately represent domestic instruments including new introductions like single stock futures.

End-of-day Pricing and Extended Hours – Hidden Risks for T+1

Benchmark prices, whether end-of-day or another definable standard, will continue to provide consistency from which to measure change and/or make a decision to take action and most vendors and users of this data see a continuation of their use under T+1. That said, the continuing utility of end-of-day prices hinges on several factors, including whether or not the exchanges and vendors can manage the timeframes. At this time, it is necessary to wait until after 18:30 hours to obtain a consolidated price with exchange corrections applied. This is already too late for funds, which need prices immediately after 16:00 hours in order to calculate net asset values (NAVs) to comply with media deadlines of 17:55 hours Eastern Standard Time to receive NAVs. Add to that some amount of turnaround time from vendors and a trend towards extending 'regular hours' at market centres (as evidenced by the Pacific Stock Exchange announcement of their plans to extend their day to 20:00 hours), and end-of-day prices may become a problem. Firms know that, with the shrinking timeframe presented by T+1, the days on which they require final pricing and corporate action data at the earliest are the days when the information is most likely to arrive late – that is, on days with the greatest volumes.

With decimalisation, the closing, or 16:00 hours, price on an exchange may be one with very few shares behind it. For this reason and others, it could be that some other price, along the order of a 'settlement price', may be needed to better represent the market of a security. The New York Stock Exchange (NYSE) recently introduced a specialist-driven 'depth condition', an example of this new way of thinking.

Difficulties in determining when a day begins and ends, as well as capacity and batch processing issues, will be exacerbated if (and when) extended trading takes off. Any significant turnaround in the market between now and 2004 could bring a surge in extended hours trading that might include the entrance of NYSE and the National Association of Securities Dealers Automated Quotation (NASDAQ). No one is thinking much about extended hours now, but they could become a real factor in T+1 in terms of timing and resources.

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Conclusions

- Market centres and vendors should intensify efforts to tighten times for the delivery of final (corrected) closing prices.
- An alternative to end-of-day pricing may be needed if market centres continue to expand their 'regular session' and if decimalisation and other transparency considerations diminish the value of a 'last price'.
- As volumes increase and timeframes decrease, turnaround times for end-of-day pricing information are likely to get worse, not better, approaching T+1.
- Significant turnarounds in the market could spur a surge in extended hours trading, which would impact T+1 on many levels, and require significant planning and implementation changes.

Capacity, Market Structure, Regulatory Changes and Parallel Events

Some of the contributing causes of significant transformations now occurring in the markets include the following:

- the rise of ECNs and alternative trading systems;
- privatisation of market centres;
- record volumes and message traffic;
- explosion of market data availability and accessibility; and
- expanding regulatory and reporting requirements, and accelerated schedules of concurrent events, including
 - price transparency,
 - options linkages,
 - multiple strategic inflection points (SIPS),
 - order handling disclosure requirements and
 - bond trade reporting.

Following on the heels of Y2K and decimalisation, all of the above conspire to squeeze resources into an unprecedented 'pressure cooker' of events and deadlines. The emerging scene, while not specifically related to T+1, will nonetheless have an important impact on the same technology and resources.

Transparency and fragmentation issues, along with the products emerging to address them, illustrate some of the significant ways in which market data is changing in the next few years. Consider the

expanded quantities and sources of realtime data that may result from order handling and execution regulation and the demand for limit order book information. Capacity requirements for market data will be pushed even further by realtime limit order books from multiple market centres and front-office applications for order routing and management will consume additional capacity as they process more and more information to satisfy reporting obligations.

As market centres and exchanges make the move to publicly owned for profit status, the entrepreneurial spirit leads them beyond their traditional roles and into those now occupied by vendors. Explicit plans have emerged to make market data a part of an expanding array of products offered directly to the customer by the market centres, often blending market data with execution capabilities.

The potential for NYSE's withdrawal from the Intermarket Trading System (ITS) and the Consolidated Tape Association (CTA), combined with core market data dissemination structure changes and display requirements under discussion, could lead to projects of sufficient breadth to challenge on-time completion of any parallel industry efforts, such as T+1. Regardless of how market access and information issues are resolved, any new structure raises difficult questions about the development of standard data formats for information collection, dissemination and display, the consolidation and management of the process, information ownership-data source issues, data costs, tracking and, especially, capacity.

Conclusions

- Capacity and message traffic expansion, already great concerns, will increase as vendor services evolve to meet industry requirements for the front office and an increasing amount of information is disseminated by market centres.
- Expanded product offerings coming directly from market centres will impact market data dissemination, pricing, administration, regulation and technology leading up to T+1.
- Efficiencies in securities processing under STP and T+1, and the accommodation of higher volumes, could add to the capacity problems on the front end.
- Possible display rule modifications would present significant capacity, administration, technology, cost and display challenges to the market data industry, as well as to the rest of the financial services industry and investing public. ■

The full report may be found at <http://www.jandj.com/t1.asp>



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