

Predictive Straight-Through Processing



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Straight-through processing (STP) is a much-beleaguered term in the securities industry, because it has been used as a catchall for a wide range of technologies, products, and business objectives. Despite this, the concept behind STP is critical to the long-term success of securities firms. To compete in today's increasingly electronic and automated marketplace, securities firms must dramatically increase the speed and efficiency with which they process and settle trades and reduce the risks and costs associated with trade processing.

Predictive STP enables organizations to monitor exceptions events in real time; automatically resolves exceptions prior to their occurrence based on knowledge gained resolving similar exceptions in the past, or triggers workflows for manual resolutions; applies rules to identify and resolve data inconsistencies; and provides business and IT users with end-to-end process visibility and comprehensive audit logs. In doing this, predictive STP streamlines exception management processes from detection to resolution and reduces costs and fees associated with trade exceptions.

This whitepaper looks at the problems the securities industry faces in trade processing, details the benefits predictive STP can offer, and describes how TIBCO's solution is helping securities companies increase speed and efficiency and reduce the risks and costs associated with trade processing.

1. Introduction

The securities industry has a long history of attempting to increase the efficiency of trade processing to better service customers, cut costs, and increase profits. But inefficiencies can still be found at every stage from order initiation to settlement, despite significant IT investments to effectively manage and reduce exceptions. Data is spread across several applications and databases. Processes are frequently manual, inconsistent, or incorrect. And, as new products are introduced, firms have limited visibility into the valuable information that exists in processes.

Competitive pressures have led firms to turn to straight-through processing (STP) to increase the speed and efficiency with which trades are processed and settled and to reduce risks and costs associated with trade processing. But firms still spend about 80% of the costs associated with trade processing in exception management.

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TIBCO improves on traditional STP with predictive STP, enabling financial institutions to integrate the applications that touch the trade execution process and automate the process for faster execution and fewer exceptions. Predictive STP streamlines processes, eliminates bottlenecks, and reduces trade exceptions from order initiation to settlement, while effectively managing risks. Predictive STP monitors exceptions events in real time; automatically resolves exceptions prior to their occurrence, based on knowledge gained by resolving similar exceptions, or triggers workflows for manual resolutions; applies rules to identify and resolve data inconsistencies; and provides business and IT users with end-to-end process visibility and comprehensive audit logs. In doing this, predictive STP streamlines the exception management processes from detection to resolution and reduces the costs and fees associated with trade exceptions.

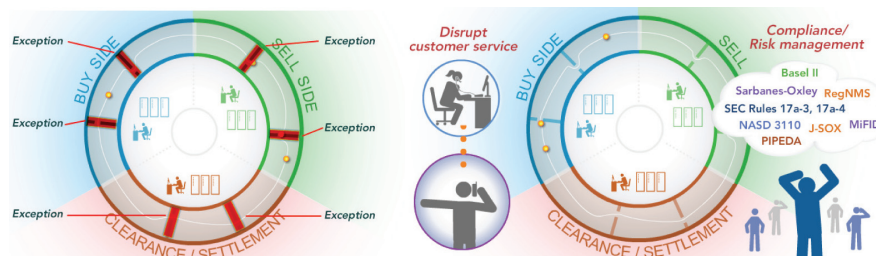
PROBLEMS THE SECURITIES INDUSTRY FACES IN END-TO-END STP

The securities industry has long attempted to cut the costs and increase the efficiency of trade processing. Despite decades of IT investment, however, efficient automation still lags. There continue to be many manual, disconnected processes; according to Tower Group, Gartner Group, and SIA surveys, 42% of all buy and sell transactions are paper-based. Business processes are owned by IT, rather than by the business staff, and nearly 40% of all trades are manually entered at least twice. Data is spread across many applications and databases, and vital information is too often inconsistent or incorrect.

A variety of market factors contribute to these problems. To gain or maintain competitive advantage, firms have to continuously introduce new products. Trade volume is increasing, while lot sizes are decreasing. In addition, spreads are decreasing, which further thins profit margins. Operationally, there are far too many touchpoints in the order initiation, execution, and settlements process, increasing the chances for errors and the cost of manual intervention. A proliferation of new products, order management systems, and reference data providers means that, increasingly, data is inconsistent between initiation and settlement, or there are conflicts between different sets of data.

New compliance and regulatory requirements, combined with a firm's surveillance practices, force companies to spend more time and money meeting new regulations when handling trades. There are competitive pressures as well, notably customers demanding speedier resolution of trade execution and any associated exceptions. Also spurring the need for increasing the efficiency of the exception management is risk mitigation. Beyond that, the fast-moving and complex environment of national and global markets requires a new way of doing business.

Figure 1. Challenges with end-to-end straight through processing



Not surprisingly, those in charge of handling trades are feeling the pain. Comments like these speak to the cost of process inefficiencies:

- “The error rates and staff cost of data re-entry is hurting my operational efficiency and cost structure.”
- “Failed trades are extremely costly. Over 10% of my transactions need to be repaired in a timely manner to avoid settlement failure.”
- “My counter-parties are demanding I stop using my fax machines, but to do so we have to support a myriad of electronic messaging protocols.”

Exception handling is costly, disrupts customer service, and creates compliance and risk management issues.

WHY STP AND EXCEPTION MANAGEMENT FAIL

The securities industry has turned to STP as a way to solve these problems. STP is the seamless, electronic, end-to-end processing that encompasses the entire life of a transaction or a business support process, from execution through settlement and reconciliation, across the entire financial markets value chain. Ideally, with STP, once a trade is entered in the system, it never needs to be touched or manually administered again.

STP is a much-beleaguered term in the securities industry, because it has been used as a catchall for a wide range of technologies, products, and business objectives. Despite this, the concept behind STP is critical to the long-term success of securities firms. To compete in today’s increasingly electronic and automated marketplace, securities firms must dramatically increase the speed and efficiency with which they process and settle trades and reduce the risks and costs associated with trade processing.

STP aims at solving a set of problems that has arisen over time for processing trades. Over the years, manual functions have been combined with automated processes, but this automation did not bridge operational, transactional, and analytical gaps. To help solve that problem, disparate systems were augmented by

human intervention. Over time, these disparate systems were linked to one another via programming interfaces, which improved efficiency, but also led to increases in maintenance costs because of the programming required. Standard transactional formats were non-existent, and transactional volumes rose substantially, exacerbating the problem. Trade exceptions – errors caused by incorrect or missing information – remain a major source of inefficiency and cost.

The securities industry has made strides with STP, but a number of problems remain because of increasing volume, globalization, high volume of trade exceptions, incorrect reference data, disconnected IT processes, and large volumes of data spread across several applications and databases. The result is that there are too many resolution procedures and not all exception resolutions can be automated. Exception handling is costly, disrupts customer service, and creates compliance and risk management issues.

The financial effects of all this are substantial: Fulcrum Research surveyed financial services firms and estimated that a typical failed U.S. domestic transaction costs an average of \$175 and more than twice that amount for cross-border transactions. Trade processing costs remain high because much of it is still manual and disconnected – over 40% of all buy and sell transactions remain paper-based, according to the Gartner Group and SIA.

As a result, securities firms struggle to deal effectively with trade exceptions and questions like these:

Over 40% of all buy and sell transactions remain paper-based.

- What happens if settlement instructions are incorrect?
- What happens if the front office system, which can be a separate upstream system, enters a trade with a counterparty that does not exist in the back office?
- What if a project is in implementation for instruction of a new product/instrument, i.e. an exotic derivative?
- What if the reference data (securities data, client/counterparty data) is not updated in real time?

2. The Benefits of Solving the STP Problem

Fixing STP and exception management can pay significant financial dividends for the securities industry. Consider these facts:

- 20% of transactions account for 80% of processing costs.
- 59% of instructions need repair, at a \$6 average cost per trade.
- 10% of confirmations result in mismatches, requiring an average cost of \$16 per trade.
- 15% of all trades fail to settle on time, for an average cost of \$50 per trade.

Assuming 10,000 trades a day, the annual cost of these problems is \$4.8 million.

An efficient STP platform can reduce clearing and settlement costs by automating manual processes. In addition, it can grow businesses without increasing business costs or causing them to assume undue risk. STP can also help securities firms solve an increasingly difficult problem – the need for 24x7 operations, caused by the advent of Electronic Communications Networks (ECNs) and alternative trading systems. STP can also manage portfolios and control credit and operational risk by offering access to vital information on a near real-time basis.

Predictive STP automates the trade lifecycle from deal capture to settlement; reduces errors by eliminating multiple data entry; streamlines the trade reconciliation processes from detection to resolution; and reduces costs and fees associated with trade exceptions.

3. How Can TIBCO Help?

TIBCO provides a comprehensive set of products that supports predictive STP, enabling financial institutions to integrate the various applications that touch the trade execution process and automate the process for faster execution and fewer exceptions. TIBCO's software can also be used to monitor and report trade exceptions, alert operations personnel when exceptions occur, route exceptions to designated personnel for repair, reintroduce repaired trades into the business process and, if needed, automatically escalate exceptions. It provides visibility into exceptions and helps resolve them faster, and even avoid them.

Predictive STP automates the trade lifecycle from deal capture to settlement; reduces errors – and risks – by eliminating multiple data entry; streamlines the

trade reconciliation processes from detection to resolution; and reduces costs and fees associated with trade exceptions. In addition, TIBCO's master data management software provides a repository of rich, harmonized reference information that maintains the integrity of data. For predictive STP, TIBCO non-intrusively deploys with existing infrastructures and, by using real-time tracking and monitoring, enables rapid resolution of trade breaks, SLA breaks, and process bottlenecks.

TIBCO's platform helps securities companies improve the efficiency and profitability of securities firms' trade processing activities in several important ways:

- **Reduces the number of failed trades** by dramatically accelerating execution through the elimination of time-consuming manual processing, review, and data entry.
- **Speeds trade reconciliation** by detecting trade exceptions and routing the trades to authorized personnel for repair and reintroduction.
- **Reduces operational risks** by reducing the amount of human intervention along the trade lifecycle and by implementing more auditable business processes, resulting in greater data integrity.

Whether a securities firm uses STP extensively or only to a limited extent, TIBCO's predictive STP can add value by providing:

- **Enablement:** The platform offers connectivity and integration between processes and systems. Large securities environments run complex environments with several areas where transaction and transformation failures may occur. Connecting these applications and systems via industry leading adapters/feeds and a low latency bus provides the foundation for cost-effective, manageable, and flexible SOA architectures. This helps firms quickly integrate and expose critical functions, which, in turn, helps them create and maintain a competitive advantage.
- **Optimization:** The platform provides additional leverage on top of existing systems for management of trades, for example, reporting at market close how many trades were completed, how many are awaiting confirmation, how many are awaiting allocations, and how many are in exception processing. On a daily basis, it can provide reports on what SLAs have not been met, how processing

TIBCO provides sophisticated enterprise backbone, business integration, and business optimization software that enables securities firms to coordinate business activities across incompatible and distributed systems, measure the efficiency of those activities, and optimize them over time.

metrics are improving, how processing is improving in terms of quality improvement and adherence to Six Sigma methodology, and so on.

- **Enlightenment:** The platform provides data and metrics regarding operational risk management, compliance, and surveillance. It also has the capability to recognize the implications of a cluster or pattern of events, and predict or remediate future activity accordingly.

4. How TIBCO's Solution Works

With TIBCO's solution, securities firms do not need to replace their existing applications to improve the efficiency of their back-office operations. With TIBCO's solution, they can more effectively coordinate their business activities while utilizing the applications they already use to perform trade processing activities. TIBCO makes this possible by providing sophisticated enterprise backbone, business integration, and business optimization software that enables securities firms to coordinate business activities across incompatible and distributed systems, measure the efficiency of those activities, and optimize them over time.

TIBCO's Predictive Straight-Through Processing solution helps to streamline processes and reduce trade exceptions, from order initiation through settlement. Each step in the trade processing lifecycle generates events. An SOA backbone exposes services to complex event processing (CEP) software, which can be followed on an operational dashboard. Thousands of events every second form an "event cloud." TIBCO CEP software analyzes the events according to user-defined rules, identifying potential trade breaks and automatically resolving them or triggering workflows for exception management. For example, a rule could cause TIBCO's master data management software to resolve reference-data mismatches, while another rule could be set to automatically resolve future mismatches of this type.

Where exceptions need manual resolution, TIBCO's BPM software initiates and tracks manual processes. Real-time views into processes include a complete history of exceptions. By using this exception resolution history, TIBCO can predict where future breaks might occur and automatically resolve them. All this results in fewer exceptions and improved STP rates. Whatever the level of a firm's STP maturity, TIBCO's predictive STP solution can help enable, optimize, and leverage the environment.

TIBCO software can help organizations predict where future breaks might occur and automatically resolve them.

TIBCO's software follows a four-step model for initial configuration, implementation, and use over time:

Model

TIBCO's solution enables business managers and IT staff to collaborate on the creation and modification of the sequences of tasks and flow of information that make up the trade lifecycle. Using different views of the same coordinated activity, analysts can focus on highlevel process definitions while IT validates and adds implementation details.

Design

TIBCO's solution gives IT staff and business people the ability to construct the applications and coordinate the personnel required to perform the tasks that comprise a business activity without any coding. TIBCO's software features a graphical user interface that makes it easy to model process flows by "dragging and dropping" resources and tasks from a palette of available resources. This enables securities firms to speed the introduction of new products, such as derivatives, ensuring that the processing of these derivatives is also automated.

Deploy

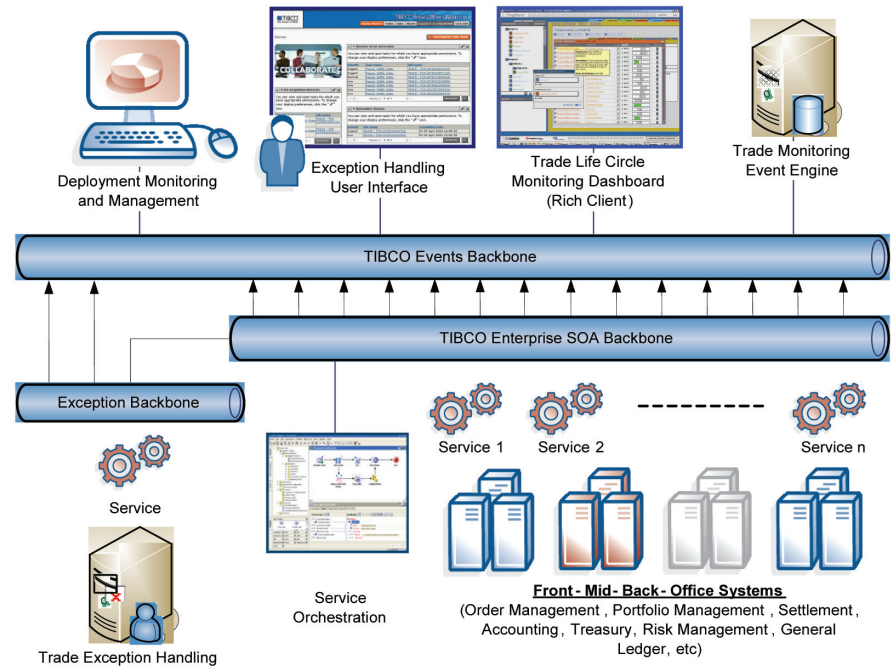
TIBCO's solution reduces the time and complexity of implementing new or modified process rules by automating the process by which configuration information and process rules are propagated to the appropriate servers and applications.

Manage

Because TIBCO's software stores and tracks all process data, business and IT managers can access and analyze a rich set of process metrics that enable them to measure key performance indicators such as cycle times, resource utilization, and performance relative to objectives. Armed with a holistic, real-time view of the state of trades anywhere in their lifecycle, securities firms can achieve a higher level of control over their operations.

Figure 2. Logical view of the predictive STP platform

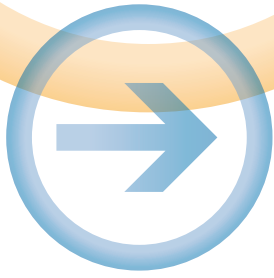
AN ILLUSTRATED LOOK AT THE TIBCO SOLUTION



5. Summary

Securities firms have turned to STP to increase the speed and efficiency with which trades are processed and settled, and reduce the risks and costs associated with transactional processing. TIBCO improves on traditional STP with a predictive STP solution that helps firms more effectively coordinate their business activities with the applications they already use to perform trade processing activities. TIBCO's sophisticated enterprise backbone, business integration, and business optimization software enables securities firms to coordinate business activities across incompatible and distributed systems, measure the efficiency of those activities, and optimize them over time.

The solution monitors and reports exceptions, alerts staff when exceptions occur, routes exceptions to designated personnel, reintroduces repaired trades into the business process, and can automatically escalate exceptions. The result: Faster execution, fewer exceptions, reduced costs, and increased efficiency.



6. About TIBCO

TIBCO Software Inc. (NASDAQ: TIBX) is a provider of infrastructure software for companies to use on-premise or as part of cloud computing environments. Whether it's optimizing claims, processing trades, cross-selling products based on real-time customer behavior, or averting a crisis before it happens, TIBCO provides companies the two-second advantage™ – the ability to capture the right information at the right time and act on it preemptively for a competitive advantage. More than 4,000 customers worldwide rely on TIBCO to manage information, decisions, processes and applications in real time. Learn more at www.tibco.com



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