Straight Through Processing (STP): Prospects and Challenges

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The financial services industry is in the midst of transformation. Straight Through Processing (STP) is one of the major initiatives currently under way in developed securities markets. STP strives to reduce the trade transaction settlement cycle. STP is expected to reduce transaction processing risk and cost and may offer opportunities for value-added products and services to customers.

Indian government has announced its intention to reduce the settlement cycles from (T+3) to (T+2) and eventually to (T+1) over the next few years. The Securities and Exchange Board of India (SEBI) has been asking the Indian securities industry to implement STP which is characterized by significant real time virtual processing with concurrent information exchange.

Implementation of STP has many strategic angles. The players would see STP as a project investment and would be motivated only if there are gains commensurate with risks. All players are unlikely to benefit evenly. Some players are further along the learning curve than others. There are multiple messaging standards and software making interoperability a difficult issue to resolve to everyone’s satisfaction.

Successful implementation of STP would result in a quantum jump in the way security market transactions are processed in India. But, it is a challenging task. This colloquium was arranged to discuss the main issues as seen by the market participants in the securities industry in India.

The panel members addressed the following issues:

- What is STP?
- What kinds of benefits from STP have been realized in the global markets?
- What are the challenges of implementing STP in the Indian securities market?

The salient features of the responses are as follows:

- At present, different entities in the security transaction processing work use different systems. There is no synchronization of data. In developed markets, much progress has been made in eliminating this roadblock. In India, we should address this issue quickly to realize the benefits of STP.
- STP implementation in each entity has two elements — streamlining external processes (external STP) as well as internal processes (internal STP).
- Benefits of STP arise from operational efficiencies, productivity gains, and also from improved customer satisfaction.
- The biggest challenge for STP is to ‘determine the best approach.’ This dilemma is further complicated due to the two elements of STP strategy: internal STP and external STP.

KEY WORDS
- Settlement Cycle
- Electronic Contract Note
- Financial Messaging
- Electronic Trade Confirmation
- Interoperability
G Sethu (Dean, UTI Institute of Capital Markets, Mumbai): Shall we begin with a common understanding of STP? The Securities Industry Association, USA, has defined STP as:

The processing of a trade, whose data is compliant with internal and external requirements, through systems from post-execution through settlement without manual intervention.

In other words, it means seamless integration of trades in the securities market from initiation to settlement without manual intervention. STP aims at maximum automation so as to reduce human errors, increase speed of operation, and reduce failed trades. Eliminating manual trade entry reduces the probability of trade errors. Further, automating message creation and transmission is an important step in achieving STP. This calls for automating processes within an entity and also communicating seamlessly with multiple trading partners using multiple communication standards.

In summary, STP can be seen as a way of security transaction processing system characterized by seamless automated communication among parties (as against sequential, manual exchange of information), real time processing (as against the present system of batch processing), and virtual processing (as against physical processing). I think the target audience of Vikalpa would appreciate the STP perspectives better if we could explain a typical contract note flow in the Indian securities market.

Mohan Natarajan (Chief Technology Officer, Kotak Securities Ltd., Mumbai): Globalization, increased competition, and new market opportunities are driving widespread changes in the way financial institutions use information technology. Technological changes and the move towards real time processing are creating new business opportunities and accelerating the pace of competition.

These changes in the capital market are driving the need to move towards an STP environment. The goal of STP is to achieve operational efficiency and that is continually being driven by a global push for reduced settlement periods and better management of risks.

I would define STP as a process in which the flow of information between systems and counter-parties is seamless without requiring manual intervention. STP is primarily achieved through continuous enrichment of the messages flowing through these systems. Along with these message-based systems, the core to achieving STP is managing the reference data to act upon it.

Regarding a typical contract note cycle, there are three counter-parties involved:
- broker
- fund house
- custodian.

Let us take an example to understand the contract note flow among the above three counter-parties. A fund house, say, XYZ decides to invest in 100,000 shares of Reliance and the same is conveyed to the broker for dealing. The broker, in turn, confirms the order in single or multiple trades on the NSE/BSE markets. Post execution, the broker would generate a contract note in his back office system. The same would be sent to the fund house by courier/hand delivery. The fund house verifies the contract note and then either accepts/rejects the contract note. The acknowledgment is sent to the broker for accepting/rejecting the contract note. If accepted, the fund house would generate the settlement instruction in his back office and sends the same to the custodian for clearing the trades.

The above contract note flow highlights issues involved in current physical delivery of contract note among counter-parties. One of the prevalent issues is the manual intervention involved in the complete cycle while reconciling information, verifying trades information, etc., which could lead to serious financial troubles if not handled correctly.

Regarding the benefits from STP that have been realized in the global markets, I strongly believe that the
The key to STP is that a single system is used for the entire processing. Global experience shows that a major disadvantage of using multiple systems is non-synchronization of data between different links in the processing chain. Disparate systems tend to employ different methodologies resulting in inconsistent valuations of financial positions. As discussed above, a great deal of time and effort is spent on consolidation and synchronization of data. Globally, STP has successfully eliminated this need. This has resulted in substantial manpower savings.

Multiple systems require more interfaces and interfaces between two or more systems tend to be quite complex and difficult to maintain. This can lead to problems with system upgrades. If one vendor upgrades his version, then, typically, the interface needs to be upgraded as well. This implies that either the interface must be updated very frequently (not desirable for a highly complex piece of software) or interface issues hold up new upgrades to other applications. In developed markets, STP has successfully addressed this issue by consolidating the information together under one platform.

Yet another issue pertains to the cost of maintaining multiple systems. Multiple systems imply both multiple vendors and perhaps even multiple hardware platforms. IT cost savings can be achieved by combining systems and platforms. Perhaps even larger savings can result from the ability to manage static data in only one location. Multiple systems mean redundant static data maintenance. The addition of a single counter-party or currency, which would need to be defined only once via a true STP solution, would have to be defined several times for a desk using multiple systems. This also leads to the need to reconcile static data between systems, another task eliminated via the use of a STP solution. Given the problems with multiple systems, a STP solution has shown to be effective in both reducing operational risk and costs. To be effective, a STP solution must:

- cover all products handled by an existing desk
- be a truly integrated solution not requiring additional interfaces
- price products in a consistent way in all phases of processing (front, back, ledger)
- maintain static data in a central location.

Arshad Khan (Vice President and Head — Marketing and Strategic Alliances, Financial Technologies (India) Limited, Mumbai): I would ideally define STP as the use of a single system to process or control all elements of the workflow of a financial transaction, including front, middle, back office, general ledger, and seamless flow of information in an electronic form to all external interfaces. Many firms are seeking to adopt STP solutions to manage their financial transaction processing. According to a recent Tower Group Study, the primary driver for increased IT spending post Y2K will be STP solutions. Firms seek to implement STP primarily for two reasons — the reduction of operating costs and the reduction of operational risk in processing security transactions.

As explained by Mr Natarajan, manual and physical intervention are the major areas of concern in the current contract note cycle. In the present system, the fund manager places an order with the broker who, in turn, inputs it into the screen-based trading system of the stock exchanges. After the deal is executed, the stock exchange gives the transaction data to the broker who prints contract notes for each client. Thus, electronic form of data is converted into physical form. The contract notes are also faxed to the fund managers/investors who input these into their system. At this time, physical data are again converted into electronic form at the fund manager level. A copy of the contract note is also sent to the local custodian for his record who enters the entire contract note data into his system, again resulting in re-entry of the same data.

As can be seen from the entire cycle above, there is multiple data entry at the brokers’ end, clients’ end, and custodians’ end. The exchange also has this data in its system. It is this part of manual intervention that results in delays and is also susceptible to errors and
may even lead to trade failures. Thus, to avoid trade failures, which are one of the biggest costs of trading, it is imperative that all kinds of communication issues are sorted out.

**G Sethu:** Globally, financial services industry markets are witnessing the constitution of a true STP environment that is defining the industry’s complex transaction framework. The advantages of an industry standard framework are well known but the key defining factors of this market are trading standards, settlement standards, and accounting standards. The STP service model is focused on achieving a high volume of matched trades which will be able to flow through to the various participants in a real time environment regardless of market or instrument type. The emerging STP process would comprise both internal and external process components. In India, we need to appreciate this.

Adoption of STP by institutions globally has contributed towards improved business efficiencies and streamlined operations. STP has also helped in maintaining real-time access to account information and improving customer service.

The benefits accruing to participants could be summarized as follows.²

- **Reduced settlement cycle:** Achieving seamlessness will be an enabler for shorter settlement cycles to assist both domestic and cross-border trades.
- **Transparency/Auditability:** Managing trades within a single automated process will improve the transparency of the trade status and will enable organizations to monitor the process.
- **Reduced counter-party risk:** Once a trade has been executed, there is an element of uncertainty between all parties on the status of the trade. STP will reduce such counter-party risks.
- **Reduced operational risk:** Automating the process from execution to settlement will reduce manual processes and provide a more timely and accurate processes.
- **Performance measurement:** Management of information throughout the process will be the key to determining success.
- **Improved attractiveness of Indian market:** Foreign investment in India will be determined not only on investment opportunity but also on the operational efficiency and risk profiles of the Indian market. Introducing a process with regulatory oversight will enhance India’s profile and, therefore, its attractiveness to foreign investment.

What could be the learning curve from these benefits?

**Mohan Natarajan:** Globally, financial institutions have reaped benefits out of STP deployments on a large scale. Although operational efficiency is one of the most significant benefits achieved from STP deployments, there are several others associated with the successful implementation of STP. According to Gartner G2 survey,³ respondents anticipate a 33 per cent reduction in operation cost and 39 per cent reduction in labour cost from implementing STP. I strongly believe that firms that pursue STP initiatives more aggressively would achieve a competitive advantage over laggards.

Business leaders would like to see the value from IT spend. Given this, effective STP implementation will only be achieved by demonstrating the return on investment from STP. Financial services providers should develop methods to clearly articulate the true return on investment (ROI) benefits from STP and should not merely rely on perception of return.

**Arshad Khan:** I would like to explain the importance of ROI in relation to STP. I believe that STP can help

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providers gain in terms of productivity and operational efficiency not just by process implementation but also through increased customer satisfaction. STP makes sense for the industry, not only because of cost savings, but also for the ancillary benefits of improved customer service, improved internal information flow, faster query resolution, and opportunities of cross-selling to existing customers.

Many companies are able to appreciate that STP would lead to high operational efficiency and increased trade volumes arising out of reduced risk and fewer trade failures. Besides this, I strongly recommend that the companies should also look at deploying STP to achieve the ancillary growth parameters. The benefits associated with STP deployment could lead to increased cross-border trading (FIIs) and greater transparency with clear audit trails.

G Sethu: I think we should discuss the current STP scenario (T+2) in India and how India can get ready for STP (T+1). As I understand, SEBI has endeavoured to shorten the settlement cycle and has been successful in reducing the same from T+5 to T+2. Now, the target to be achieved is a T+1. SEBI set up an STP Committee and defined a roadmap for an efficient STP framework in February 2002 with a vision to make the Indian capital market at par with global practices.

STP as a market order is a new concept in India, but it is growing rapidly. Since December 2002, when STP services were formally launched, several market participants have adopted the STP framework in their operations and are also enjoying the benefits of shorter settlement cycles. To introduce T+1 in Indian securities market, one needs a well-planned seamless flow of information and funds settlement platform. Furthermore, to introduce T+1, STP should have an interface with the clearing bank and depository for seamless flow of funds and securities.

Girish Nadkarni (Director, TAIB Securities Private Limited, Mumbai): There is a clear need for a regulator to lay down norms for uniform acceptance. Today, besides internal readiness of the firms, the critical element needed for smooth STP flow is the electronic movement of funds. What we have seen in the last few years is a smooth transition to the electronic movement of securities. This change has to percolate into the banking system to enable electronic transmission of funds. The external readiness of all counterparts for STP would then follow thereby enabling STP to happen in its true sense.

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Further, I understand that there currently exists a lack of adequate CAs in India to digitally certify contract notes. The SEBI Committee has recommended that the government grant legal recognition to electronic contract notes certified by overseas CAs as existing players related to capital markets were global and did not have an existence in India. We need to address this issue if we want true digital processing of transactions in the securities markets. The question here is: Has the Indian market accepted electronic contract notes (ECNs) as an alternate mode of contract note delivery?

Mohan Natarajan: The Information Technology Act, 2000, does recognize ECNs and digital signatures. There are digital certifying authorities legally allowed to provide digital signatures for the Indian participants. The contract note information has to be electronically transferred from the broker to the investor/sub-custo-
The SEBI committee on STP made the following recommendations in this context:

- Market participants may be permitted to use ECNs provided they carry the same details as a physical contract note.
- The new ECN may include features/fields to differentiate between the contract notes for client and the contract note for proprietary trades.
- The committee has listed the rules and regulations as well as other statutes that require amendment to achieve legal recognition to a digitally signed ECN on the same footing as a physical contract note.

**Arshad Khan:** Yet another issue relating to STP is the messaging standards used for STP in India. Various international messaging standards viz., ISO 15022, FINXML, FIX, FPML, OFX, etc. are used globally for financial messaging purposes. Although while considering a messaging standard for STP in Indian securities market, SEBI has agreed that given the universality of ISO 15022 as a common language in the financial services sector, it should be adopted as the messaging standard. Globally, ISO 15022 is one of the most popular messaging standards for STP platforms, although SWIFT standard is mostly used by the custodians globally.

**Mohan Natarajan:** I think the delay in waiving stamp duty on contracts has been a problem. The SEBI Committee on STP recommended that SEBI should consider writing to the state governments to waive the stamp duty payable on contracts as a result of conversion of the contract notes to electronic form. This is because the issuance and maintenance of contract notes in electronic form would require a considerable one-time and recurring investment. Imposition of stamp duty would further increase the transaction cost and may defeat the very purpose of introducing STP. Further, the Committee has recommended that SEBI should allow the maintenance of records in electronic form and has outlined various rules, regulations, and statutes that would require amendments to provide for the same.

**Girish Nadkarni:** I think higher transaction cost would certainly be a discouraging factor. A financial benefit to participants by way of stamp duty waiver would be a strong motivation for switching to uniform technology and making the necessary investment.

**Arshad Khan:** Regarding major challenges faced globally in deploying STP, I believe that the biggest challenge is in determining the best approach to take reflecting the mood of investment managers, custodians, and broker dealers. This dilemma is due to certain key factors, particularly, the two elements of STP strategy: internal STP and external STP. Internal STP relates to the trade and settlement processes that are internal to an industry participant. On the other hand, the external STP is about connecting seamlessly to all external partners in the trading and settlement process including the industry-matching utilities.

For several years, industry participants have made significant investments to streamline internal processes and operational infrastructure relating to trade capture and settlement. However, these investments have only resulted in pockets of internal STP in the settlement chain. Further, there is inconsistency across industry participants in streamlining trade cycle segments. For example, one segment of asset managers would have optimized pre-trade decision-making, order placement, and execution processes. Another segment would have automated and streamlined the allocation process and its communication to brokers. In either case, the remaining processes might still be manual and not streamlined.

**Mohan Natarajan:** Another issue which needs to be discussed is whether an interface with a clearing bank and depository would lead to complete STP network. SEBI has, in fact, identified the steps to be followed for successful implementation of STP. There is a suggestion about online connectivity between the depositories to permit easier settlement. This could be extended to a complete platform for settlement with a clearing bank coming into the picture for routing of funds. These entities could definitely lead to a robust STP platform in India. With this kind of architecture in place, seamless
flow of information as well as timely and accurate settlement cycles and funds transfers could be achieved.

**G Sethu:** For STP to really become an acceptable way of security processing in the Indian capital market, we need to manage a few critical elements. For example, standardization of messaging standards and interoperability among the service providers are critical.

It appears that the major issues in STP implementation are:
- multiplicity of processing systems that are unable to speak to one another seamlessly
- need to articulate the benefits net of costs
- need to determine the best approach to take.

SEBI has done commendable work in suggesting the broad contours of a roadmap for STP implementation. What we need in addition is a business case analysis to articulate the true benefits to all market participants.

**Girish Nadkarni:** I think there are two more critical factors for STP to succeed in India — regulatory changes and financial benefits — for switching to superior technologies.

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**Note** • This colloquium was conducted under the aegis of Straight Through Processing Market Advisory Group (STP MAG), an initiative of Financial Technologies (India) Limited, Mumbai. STP MAG has opened a ‘window of exchange’ between fund houses, custodians, brokers, and regulators and aims to examine a host of important functions, processes, rules, by-laws and provide holistic inputs for current and future practices.

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No agreement about books can make us look upon another man with so friendly an eye as the discovery that he belonged to our period, and shared our special enthusiasms about reading, in the years that stretched between the sixth birthday and the sixteenth.

*Edmund Lester Pearson*