Securities Industry Association

SIA STP Buy-Side Committee

Buy-Side Straight-Through Processing White Paper

December 2003

Final Version

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1. Letter from the Chairperson

1.1. Purpose of This White Paper

The SIA Buy-Side Committee (BSC) mandate is to increase the buy-side representation and participation in the Straight-Through Processing (STP) industry initiative through the union of representatives of the buy-side trade associations and national STP leadership from buy-side firms. The Buy-Side Committee works on STP issues with the SIA and other trade associations such as The Bond Market Association. The current committee membership includes participants from over 20 buy-side firms, trade associations and consultants.

In late 2002, the BSC decided to undertake the formidable task of producing this white paper to determine the buy-side's views of the SIA's STP initiatives. As such, this endeavor was conducted with the following key goals in mind:

1. Assess the buy-side's understanding of the STP initiative and associated projects.
2. Understand the level of support for the initiatives from the various buy-side segments.
3. Gain an understanding of the other competing priorities and issues buy-side firms are currently facing.
4. Publicize these results in a clear and concise manner, making recommendations for improving the level of buy-side acceptance of the STP initiatives.

In order to gather the information required to meet these goals, a survey was created to provide the kind of buy-side insights sought for accurate and representative results. As such, the committee conducted an interview-based survey allowing us to gather more detailed and comprehensive information.

The BSC worked diligently in reaching its established goals for this white paper and arriving at the recommendations proposed herein. The BSC looks forward to working with the SIA STP committees and members to address the recommendations made and continue along the path towards STP.

Finally, I would like to give special thanks to those firms that participated in our survey, as well as the individuals that worked so hard over the last few months to produce this paper: Barry Chester of Barry Chester & Company L.L.C., Anne Suprenant of Cutter Associates, Wini Anandan of Capco, and David Tittsworth of the ICAA. The interviews and follow-ups required a significant time commitment by the participating firms, and the BSC acknowledges that commitment and extends its appreciation to those firms.

Christopher Blume

Chairman, SIA STP Buy-Side Committee

2. Executive Summary

The key objectives of this paper have been to identify the reasons the buy-side appears disengaged from the SIA's STP program initiative, to recommend ways to engage the buy-side, and to determine the needed incentives for buy-side support.

The results have shown one clear and underlying reason in determining buy-side support for the STP Initiative: Return on Investment. Those firms that have found an acceptable ROI for their firm are progressing; those that have not found an acceptable ROI are not interested. Across the board buy-side firms use ROI as a key component in prioritizing their investment dollars, so even if a firm is in favor of the STP Initiative without the ROI, the initiative takes a much lower priority.

As such the BSC identified the following trends among investment managers:

- Most investment managers have an understanding of the term "straight-through processing" that is more broad (in terms of scope) and inclusive (in terms of methods) than the SIA's STP program definitions (see Section 4). In short, investment managers roughly equate "STP" with "automation," without the underlying assumption that centralized matching need be involved.
- STP (using the broader investment manager definition) is uniformly a high priority in buy-side firms of all types and sizes.
- Investment managers can be broadly separated into three groups:
    1. ***Those in favor of STP (including the concept of centralized matching)***. These firms have already been convinced of the value of STP and centralized matching to their operations, and are on a path toward implementing it.
    2. ***Those unsure or skeptical of STP***. These firms see the value of STP to the industry overall, but not necessarily to themselves.
    3. ***Those against STP (with centralized matching)***. This group generally includes firms with an installed set of solutions for transaction automation (not using centralized matching), and sees the reengineering of this to include centralized matching as an unnecessary burden, achieving no better than marginal improvement in automation rates.

Clearly, the first group of firms is not an issue for the purposes of this white paper. The second and third groups need to see an improved ROI before they will move ahead. Improved ROI can only be achieved by reducing costs or increasing the benefits.

1. ***Reduced Costs.*** More solutions with low implementation costs as well as maintenance costs need to be developed in order to address the cost side of the equation. This will only occur in an environment driven by market forces; new regulation supported by some will only stifle this innovation.

2. ***Increased Benefits.*** In order for firms to find an increase in the benefits the scope of the solutions will need to include additional markets and security classes.

All of the recommendations currently in Section 6.2 expand upon this core theme.

The recommendations arising from the interviews with the firms are detailed in Section 6.1. The high-level recommendation is to improve the ROI to the buy-side through the following ways: 1) the SIA revisit the concept of centralized matching to determine if it is essential in order to achieve the underlying industry STP goals, 2) Allow market forces not new regulations drive the move to STP and the innovation in solutions that will drive costs down and improve benefits, and 3) the SIA consider adjusting the scope of the STP program to include international securities, since the SIA has focused on domestic securities due to the de-emphasis of T+1 settlement.

2.1. Methods Used to Collect and Organize Data

An interview-based methodology was used to collect the data for this paper. The interview questions used to guide the discussions are reproduced in Appendix IV. Prior to the interviews, the questions were sent to each participant. Each interview lasted approximately one hour, with a follow up e-mail sent to each participant to verify quantitative data gathered during the interviews.

The specific intent of using this methodology was to seek out firms to represent the diversity of the buy-side of the securities market in terms of segment and size. Eighteen firms of various sizes and levels of complexity were interviewed. While it was impossible to cover *every* type of specialization, the firms that participated were a reasonable proxy for the buy-side as a whole. These participant firms were identified through several means:

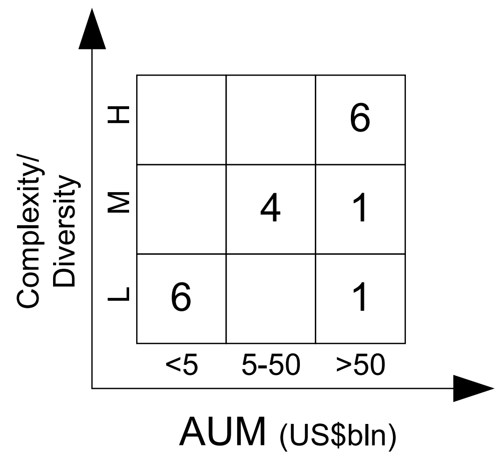
Volunteers from among the BSC
Referrals from the Investment Counsel Association of America (ICAA), especially for smaller firms
Volunteers from among members of the Investment Company Institute (ICI) and the International Securities Association for Institutional Trade Communication-International Operations Association (ISITC-IOA)

The following three axes were used to categorize firms, each with a high, medium, or low rating:

1. Assets Under Management (AUM): The level of assets under management by the firm. Values up to US $5 billion were considered low; $5-50 billion were medium; and over $50 billion were high.
2. Complexity: A subjective measure comprising the number of customers, organizational structure, geographical dispersion, and level of outsourcing employed.
3. Diversity: A subjective measure comprising the number of different asset classes managed, number of delivery vehicles, and number of products.

The chart below shows the distribution of firms that participated in the study. (In order to illustrate this in two dimensions, complexity and diversity have been collapsed into one axis, as they were closely correlated among the firms).

Distribution of respondent firms



3. Current Buy-Side Definition and Profile

The following sections provide an overview of the buy-side and a current profile of that segment of the financial services industry.

3.1. What is the Buy-Side?

Investment advisory/management firms constitute a significant and critical part of the U.S. financial services industry. Such firms sometimes are collectively referred to as the "buy-side," a term that is used to distinguish investment advisory/management firms from brokerage firms (which are referred to as the "sell-side"). In basic terms, buy-side firms render investment advice to their clients, while sell-side firms execute securities transactions (including trades initiated by buy-side firms). Alternately, buy-side firms generally buy securities on behalf of their advisory clients while sell-side firms sell securities for issuers.

Unfortunately, the true nature, role, and scope of the buy-side is often misunderstood, many only include institutional investors who manage mutual funds and pension funds in the buy-side classification.

However, it is very important to recognize that this limited definition ignores the fact that most buy-side firms advise *individual* investors.[1] For purposes of this paper, we will use the term "buy-side" to describe all Securities and Exchange Commission (SEC) registered investment advisory firms, including all advisers to registered investment companies (mutual funds).[2] Firms in this category are, by definition, "investment advisers" under the Investment Advisers Act of 1940 and primarily consist of firms that have more than $25 million in assets under management.[3]

3.2. Profile of the Investment Advisory Profession

Registered investment advisers and investment companies are subject to the jurisdiction of the SEC and, as such, are subject to a strict legal and regulatory regime. All investment advisers are required to register with the SEC by completing and filing Form ADV. Since 2001, the SEC has required advisers to file Form ADV, Part 1, electronically on a system called the Investment Adviser Registration Depository (IARD). Information contained on Form ADV, Part 1, is now publicly available on the Investment Adviser Public Disclosure web site, located at www.adviserinfo.sec.gov.

The profile of the buy-side community, based on information filed on the IAPD as of April 2003, portrays an extremely diverse and fragmented industry:

A total of 7,852 entities are currently registered as investment advisers with the SEC by filing Form ADV via the IARD.

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1 As of April 2003, more than 5,000 of all SEC-registered advisers reported to the SEC that they provide investment advisory services to individuals or small businesses.

2 Section 202(11) of the Investment Advisers Act defines an investment adviser as "any person, who, for compensation, engages in the business of advising others . . . as to the value of securities or as to the advisability of investing in, purchasing, or selling securities." This section also sets forth several exceptions to the definition.

3 Investment advisers that manage less than $25 million in client assets are subject to regulation by the respective states. While no precise figure is available, the number of state registered investment advisers is estimated to be in the neighborhood of 12,000-15,000 entities.

These entities collectively reported that they manage in excess of $20.6 trillion for a wide variety of individual and institutional clients.[4] Of this total, about $18.1 trillion represents discretionary AUM and $2.5 trillion represents non-discretionary AUM.

Only 48 firms reported that they manage in excess of $100 billion total AUM and only 39 firms reported that they manage between $50 - $100 billion total AUM. These 87 firms, representing only 1.1% of all SEC-registered advisers, collectively manage over $10.5 trillion AUM, or more than 50% of all AUM reported by all advisers. By comparison 5,494 firms reported that they manage between $25 million and $1 billion total AUM. These firms – representing nearly 70% of all SEC-registered advisers – collectively manage about $1.2 trillion, or less than 6%, of all AUM reported. Similarly, only 98 firms reported that they have more than 1,000 employees,[5] while 5,299 firms reported that they have from one to 10 employees.

It is clear that a relatively few large firms dominate the buy-side in terms of AUM. However, it is also very clear that the buy-side is dominated by small firms in terms of the sheer number of registered entities. This robust small business component is perhaps the most distinctive, and most misunderstood, feature of the U.S. buy-side community. To our knowledge, no other country can claim a comparable level of small business participation in buy-side activities. We believe that recognizing and addressing this aspect of the buy-side industry must be a significant consideration in any serious policy debate.

In addition to the wide disparity in the *size* of buy-side firms, there is enormous variation in their business practices, operations, clients, and other characteristics. Some firms offer a wide variety of products and services while some firms offer very limited, specialty or niche services. Therefore, no representative generalizations can be made about buy-side firms.

Unlike sell-side firms, there is no interconnectivity between buy-side firms. The vast majority of buy-side firms operate independently of each other. This fact contributes to the enormous diversity that permeates the buy-side community.

4 This figure probably overstates actual assets under management (AUM) to some extent because of the fact that more than one adviser may report the same client AUM. For example, an investment adviser that allocates client assets among mutual funds on a discretionary basis will report a subset of the same assets that advisers to such mutual funds report.

5 The term "employee," as used in Form ADV, Part 1, includes full and part-time employees, but excludes any clerical workers.

4. Results by Segment: STP Priorities and Non-STP Initiatives

The following sections present the results of the interview-based survey of buy-side firms regarding the overall STP program and each firm's respective efforts. In particular, the interview results are presented by buy-side segment (i.e., based on AUM, complexity, diversity, etc.).

4.1. Introduction

Throughout this section, the information collected from the respondents is presented in two formats: 1) in tables and 2) in accompanying narrative. It is the intention that the tabular results can be augmented by the narrative results. The information presented reflects the different answers received to the interview questions and the number and percentage of respondents who specifically included those answers during the interviews. Each section also illustrates the "overall" results without regard to the classification of the responding firms. These sections show:

a) Answers that were provided by at least one firm in each AUM category,
b) Answers that were provided only by "smaller" firms, and
c) Answers that were provided only by "larger" firms.

Through this method of results classification, the following was noted:

1. Three criteria were used in classifying each firm-- AUM, complexity, diversity -- however, it became apparent that complexity and diversity, for all practical purposes, could be collapsed into a single "complexity/diversity" rating because the two were very highly correlated.

Similarly, there was a high correlation between this complexity/diversity rating and the AUM rating.

The number of firms participating was not quite large enough to make generalizations based on individual rating groups, but by combining small with medium, or medium with large, patterns became somewhat more apparent and useful.

As a result, the size of the firm, as measured by AUM, was used as a proxy for all three criteria. To this end, small and medium AUM firms were grouped and classified as "smaller" firms, and medium and large AUM firms were combined and identified as "larger" firms.

4.2. Differing Definitions of STP by Segment

4.2.1. How Investment Managers View STP

The buy-side firms interviewed for this paper were provided with a concise definition of the SIA's STP program definition:

> "*…the seamless integration of systems and processes to automate the trade process from end-to-end--trade execution, confirmation and settlement--without the need for manual intervention or the re-keying of data.*"

The current SIA definition is as follows (see the Glossary for the comprehensive current SIA definition of STP):

> "*The STP scope for the industry is from Notice of Execution (NOE) through to settlement for institutional trading. For retail and corporate actions, the STP scope is broader. For individual firms, STP is also defined more broadly, and encompasses the streamlining of the operational infrastructure--front-, middle-, and back-office--of all industry participants (broker/dealers, investment managers, custodians, and clearance/settlement utilities).*"

The SIA's STP definition, as stated, was not debated by the buy-side firms– and as the results show, all eighteen firms interviewed agree that it is the central component of STP. However, almost every firm interviewed had a more expansive definition of STP, relative to its business type.

Underlying the formal definition is the concept of centralized matching: the SIA recommends centralized matching as an important component and end goal for the STP program. On this point, some difference of opinion was encountered from buy-side firms. By and large, buy-side firms roughly equate "straight-through processing" with "automation," and do not necessarily assume centralized matching is the way to achieve their STP goals. Indeed, as is discussed in section 4.5, many firms have achieved the underlying goals set forth by the Institutional Oversight Committee. While some of these firms are in the process of implementing a centralized matching solution, others are only examining the implications of moving to a central matching utility. This difference in the way firms are pursuing their STP goals forms a key part of the findings presented in this paper.

4.2.2. Overall Results

The core SIA definition of STP incorporates the automated flow of transaction data from execution through settlement, and this aspect of STP was incorporated in all the participants' definitions. Several firms indicated that they had a more expansive definition, which included the elements listed in the table below. However, it must be noted that the numbers and percentages indicated represent firms that specifically mentioned the item in response to an open-ended question. As a result, these figures may understate the true values.

Additional STP Definition Elements	**#**	**%**
Trades: reconciliation*	5	28%
Client management / account maintenance	5	28%
Asset data: corporate actions*	5	28%
Trades: investment decision through execution	4	22%
Asset data: security master	3	17%
Trades: client reporting	1	6%
Securities lending*	1	6%

**Note: These STP definition elements are also under the focus of the current SIA STP program initiative.*

4.2.3. Definition Elements Common Across All Segments

In addition to the core definition of STP, the following elements were mentioned by some firms in all three AUM categories:

- Trades: reconciliation
- Client management/account maintenance
- Trades: investment decision through execution

4.2.4. Definition Elements Included by Smaller Firms

There were no STP definition elements that were mentioned only by smaller firms.

4.2.5. Definition Elements Included by Larger Firms

The larger firms often had more expansive definitions of STP. As such, the following elements were mentioned by medium and high AUM firms, in addition to the core definition of STP:

- Asset data: corporate actions
- Asset data: security master

The following elements were specifically mentioned by the high AUM firms:

- Trades: client reporting
- Securities lending

4.3. Internal STP Projects Underway at Firms

4.3.1. Overall Results

Following is a list of the internal projects that firms mentioned they currently have underway to support their STP initiative. The percentages listed are based on the full eighteen-firm sample. The numbers and percentages indicated represent firms that specifically mentioned the project in response to an open-ended question. As a result, these figures may understate the true values.

A discussion of industry segmentation follows this table.

STP Initiatives	#	%
Implementing data hub / middleware	7	39%
Implementing or upgrading 3rd-party OMS	6	33%
Implementing corporate actions automation	3	17%
Implementing new accounts processing	3	17%
Speeding up communications with brokers/custodians	3	17%
Implementing or upgrading in-house OMS	2	11%
Implementing 3rd-party reconciliation tool	2	11%
Implementing derivatives automation	2	11%
Implementing standards (ISO) compliance	2	11%
Reducing number of custodians	1	6%
Implementing 3rd-party matching solution (non-central)	1	6%
Implementing in-house reconciliation tool	1	6%
Implementing direct placements automation	1	6%
Automating proxy voting	1	6%
Consolidating accounting and/or trading platforms	1	6%
Implementing trade monitoring hub	1	6%
Outsourcing data management or back office	1	6%

4.3.2. Projects Common Across All Segments

The following two projects were mentioned by firms in all three AUM categories:

- Implementing or upgrading 3rd-party order management system (OMS)
- Implementing new accounts processing

4.3.3. Projects Focused on by Smaller Firms

A few firms with low and medium AUM included these projects in the STP initiatives:

- Speeding up communications with brokers/custodians
- Implementing 3rd-party reconciliation tool

4.3.4. Projects Focused on by Larger Firms

The larger firms had more projects underway than smaller firms. Medium and high AUM firms specifically mentioned the following projects:

- Implementing data hub/middleware
- Implementing or upgrading in-house OMS
- Implementing derivatives automation
- Implementing direct placements automation
- Automating proxy voting

The following projects were specifically mentioned by some high AUM firms:

- Implementing corporate actions automation
- Implementing standards (e.g., International Organization for Standardization-ISO) compliance
- Reducing the number of custodians
- Implementing 3rd-party (non-centralized) matching solution
- Implementing in-house reconciliation tool
- Consolidating accounting and/or trading platforms
- Implementing trade monitoring hub
- Outsourcing data management or back office

4.4. How STP Fits into Firms' Priorities

4.4.1. Overall Results

Nearly every firm indicated that STP currently is one of its topmost priorities. The table below presents other priorities firms have that compete with STP for attention and resources. The numbers and percentages indicated represent firms that specifically mentioned the priority in response to an open-ended question. As a result, we perceive these figures may understate the true values.

Non-STP Priorities	#	%
Compliance - regulatory and accounting	6	33%
Top-line / market share / distribution growth	6	33%
Cost reduction	5	28%
Business continuity	4	22%
Compliance - investment guidelines	4	22%
Improving portfolio management analytics/process/alpha	4	22%
Strategic account management	2	11%
Document imaging	2	11%
Improving performance measurement/attribution	2	11%
Improving technology infrastructure	2	11%
Create middle office organization	1	6%
Improving internal communications across affiliated companies	1	6%
Global systems and operations process integration	1	6%

4.4.2. Priorities Common Across All Segments

The following priorities were mentioned by some firms in all three AUM categories:

- Top-line / market share / distribution growth
- Cost reduction
- Business continuity
- Compliance - investment guidelines
- Improving portfolio management analytics/process/alpha

4.4.3. Priorities Mentioned by Smaller Firms

The following priorities were mentioned by some smaller firms:

- Document imaging
- Improving performance measurement/attribution

4.4.4. Priorities Mentioned by Larger Firms

The following priorities were mentioned by some larger firms:

- Compliance - regulatory and accounting
- Strategic account management
- Middle office organization
- Internal communications improvements across affiliated companies
- Global systems and operations process integration

4.5. Institutional Oversight Committee (IOC) Goals and Current Rates of STP

4.5.1. Institutional Transaction Processing Goals

While the SIA STP program realizes that the buy-side firms have STP priorities beyond institutional processing, much of the core focus of the SIA is on improving institutional transaction processing. To that end, the SIA STP IOC has developed the following goals:

On trade date, provide all parties to each transaction with the agreed upon information required for automated settlement without any additional intervention. This implies that:

1. ***100% of trades would be matched or affirmed on trade date. Ultimately, the goals will be to replace the confirm/affirm process with matching***
2. ***All communications between participants would be asynchronous (non-sequential) and electronic, including:***
   - ***Notices of execution***
   - ***Allocations***
   - ***Match status/affirmations***
   - ***Settlement instructions***
3. ***Assure the adoption of an industry standard electronic format for message communications***
4. ***Manual processing should be exception-based***

The above goals were endorsed by various industry participants, including the buy-side. In developing the white paper, these goals were used as benchmarks to evaluate or measure the STP readiness of investment managers.

4.5.2. Current STP Rates in Buy-Side Firms

The BSC conducted interviews with 18 asset management firms. These firms were asked to provide their affirmation and allocations rates on trade date in order to gauge the level of STP readiness among these firms. The interview results by segment are categorized by size of the assets under management (AUM), by asset class and by domestic trades vs. international trades.

While the IOC goals are 100% electronic allocations and affirmations by trade date, very few participants adhere to this stringent standard. Therefore, we use a "hurdle rate" of 85% to ascertain how well the survey participants are faring in their steps to achieving the SIA

STP goals. The following tables describe the numbers obtained from the buy-side firms by asset class:

Domestic (U.S) Equities Electronic Affirmation and Allocation Rates

I.	Electronic Affirmation Rates				
	Trade Date Affirmations*			T+1 Affirmations**	
Size of Firm	< 85%	> 85%	Total	< 85%	> 85%
Low AUM	5 (83%)	1 (17%)	6	3 (50%)	3 (50%)
Medium AUM	2 (50%)	2 (50%)	4	0 (0%)	4 (100%)
High AUM	6 (75%)	2 (25%)	8	3 (38%)	5 (62%)
Total	13 (72%)	5 (28%)	18	6 (33%)	12 (67%)

* 72% of the firms interviewed are not able to accomplish 85% of electronic affirmations by trade date.

** However, only 33% of the firms are not able to electronically affirm by T+1, which shows that these firms' affirmation rates double by T+1.

II.	Electronic Allocation Rates				
	Trade Date Allocations*			T+1 Allocations**	
Size of Firm	< 85%	> 85%	Total	< 85%	> 85%
Low AUM	5 (83%)	1 (17%)	6	5 (83%)	1 (17%)
Medium AUM	2 (50%)	2 (50%)	4	1 (25%)	3 (75%)
High AUM	5 (62	3 (38%)	8	5 (62%)	3 (38%)
Total	12 (67%)	6 (33%)	18	11 (61%)	7 (39%)

* 67% of the firms are not able to accomplish 85% of electronic allocations by trade date.

** 61% of the firms are still not able to accomplish 85% of allocations by T+1, which does not show an increase in allocations by T+1.

International Equities Electronic Affirmation and Allocation Rates

I.	Electronic Affirmation Rates				
	Trade Date Affirmations*			T+1 Affirmations**	
Size of Firm	< 85%	> 85%	Total	< 85%	>85%
Low AUM	6 (100%)	0 (0%)	6	5 (83%)	1 (17%)
Medium AUM	3 (75%)	1 (25%)	4	2 (50%)	2 (50%)
High AUM	7 (87%)	1 (13%)	8	7 (87%)	1 (13%)
Total	16 (89%)	2 (11%)	18	14 (78%)	4 (22%)

* 89% of the firms interviewed are unable to electronically affirm the hurdle rate of 85% of their international equities trades by trade date.

** 78% of the firms are still unable to affirm 85% of the trades by T+1, representing 4 out of 18 firms affirming 100% of their international equity trades by T+1.

II.	Electronic Allocation Rates				
	Trade Date Allocations*			T+1 Allocations**	
Size of Firm	**< 85%**	**> 85%**	**Total**	**< 85%**	**> 85%**
Low AUM	5 (83%)	1 (17%)	6	5 (83%)	1 (17%)
Medium AUM	4 (100%)	0 (0%)	4	3 (75%)	1 (25%)
High AUM	7 (87%)	1 (13%)	8	7 (87%)	1 (13%)
Total	16 (89%)	2 (11%)	18	15 (83%)	3 (17%)

* Similarly, 89% of the firms are not able to electronically allocate the hurdle rate for their international equities trades by trade date.

** The firms that are unable to allocate 85% of the trades only decrease slightly to 83% by T+1

<u>Domestic (U.S.) Fixed Income Electronic Affirmation and Allocation Rates</u>

I.	Electronic Affirmation Rates				
	Trade Date Affirmations*			T+1 Affirmations**	
Size of Firm	**< 85%**	**> 85%**	**Total**	**< 85%**	**> 85%**
Low AUM	6 (100%)	0 (0%)	6	5 (83%)	1 (17%)
Medium AUM	3 (75%)	1 (25%)	4	2 (50%)	2 (50%)
High AUM	7 (87%)	1 (13%)	8	6 (75%)	2 (25%)
Total	16 (89%)	2 (11%)	18	13 (72%)	5 (28%)

* 89% of the firms interviewed are not able to achieve the hurdle rate of 85% electronic affirmations and allocations on domestic fixed income trades by trade date.

** The firms that are unable to affirm by T+1 only slightly decreases to 72%

II.	Electronic Allocation Rates				
	Trade Date Allocations*			T+1 Allocations*	
Size of Firm	**< 85%**	**> 85%**	**Total**	**< 85%**	**>85%**
Low AUM	6 (100%)	0 (0%)	6	6 (100%)	0 (0%)
Medium AUM	3 (75%)	1 (25%)	4	3 (75%)	1 (25%)
High AUM	8 (100)%	0 (0%)	8	8 (100)%	0 (0%)
Total	17 (94%)	1 (6%)	18	17 (94%)	1 (6%)

* 94% of the firms are not able to achieve 85% or higher electronic allocations rate by trade date or by T+1.

International Fixed Income Electronic Affirmation and Allocation Rates

I.	Electronic Affirmation Rates				
	Trade Date Affirmations*			T+1 Affirmations**	
Size of Firm	< 85%	> 85%	Total	< 85%	>85%
Low AUM	6 (100%)	0 (0%)	6	6 (100%)	0 (0%)
Medium AUM	3 (75%)	1 (25%)	4	3 (75%)	1 (25%)
High AUM	8 (100%)	0 (0%)	8	7 (87%)	1 (13%)
Total	17 (94%)	1 (6%)	18	16 (89%)	2 (11%)

* For international fixed income trades, out of 18 firms, only 1 firm is able to achieve 85% of electronic affirmations by trade date.

** The affirmation rates are slightly higher on T+1 since 2 out of 18 firms are able to achieve the hurdle rate.

II.	Electronic Allocation Rates				
	Trade Date Allocations*			T+1 Allocations**	
Size of Firm	< 85%	> 85%	Total	< 85%	>85%
Low AUM	6 (100%)	0 (0%)	6	6 (100%)	0 (0%)
Medium AUM	3 (75%)	1 (25%)	4	3 (75%)	1 (25%)
High AUM	8 (100%)	0 (0%)	8	8 (100%)	0 (0%)
Total	17 (94%)	1 (6%)	18	17 (94%)	1 (6%)

* For international fixed income trades, out of 18 firms, only 1 firm is able to achieve electronic allocations by trade date.

** The allocations rates remain the same for T+1; with only one firm achieve electronic allocations by T+1.

The data obtained in the above tables indicate that the Buy-side firms interviewed are achieving higher rates of electronic affirmation and allocation for equities trades in the U.S. marketplace than for fixed income and international trades. However, in terms of the IOC goals of electronic allocations or matching and affirming trades on trade date, the current rates for the buy-side firms interviewed, range anywhere from 6% to 33%. The firms provided the following enhancements, which would help improve their affirmation and allocations rates as follows:

1. Obtaining broker confirms on trade date. Receiving NOE electronically on trade date.
2. Improving interfaces between firm's internal systems or vendor systems and Omgeo.
3. Establishing a standard format for allocations (e.g., FIX for allocations).
4. Providing timely information to brokers (due to manual allocations process via phone for fixed income).

5. Obtaining greater consistency between custody banks in ”standard” message definition and usage.
6. Partnering with a vendor service that will automate affirmations and allocations on trade date for equities and fixed income.
7. Changing internal processing (e.g., send trade notices earlier than on a nightly cycle to brokers, etc.)
8. Re-allocation of firm’s resources (e.g., personnel, systems, etc.)
9. Changing the degree of automation with custodians.
10. Encouraging the industry to use uniform standards.
11. Providing electronic broker confirmation processing where the brokers would send the Depository Trust Company (DTC)-eligible trades into DTC on trade date, or allocations sent directly to Omgeo/DTC for matching purposes on trade date.
12. Enforcing stringent deadlines on those trades outsourced to brokers for matching and affirmation.

4.6. Results Analysis and Discussion

Overall, the interview results show that participants endorsed the central component of the STP definition and the underlying IOC goals of achieving 100% affirmation and allocation on trade date for all trades. Participants agreed that the key benefit derived from this would be to reduce risks and loss in the system by enabling firms to identify problems earlier in the cycle. The other major benefit cited was the ability to reduce costs by moving from current environment of transaction-based processes to an exceptions-based environment, thereby enabling a reduction in staff and additional cost savings. The BSC concludes that most buy-side firms are pursuing the STP goals at various levels and that this process continues to be a phased approach, with firms focusing mainly on internal solutions for STP. Many firms have already established “point-to-point” connectivity with their main counterparties. Of the 18 participants in this study, six specifically mentioned that fully centralized matching is integrated with their plans and strategy.

Specifically, the survey results indicate that there is a relatively high degree of automation for six out of 18 firms interviewed. In addition, these same firms are making progress towards satisfying the SIA STP goals by achieving a better than 85% rate of affirmations and allocations by trade date. This represents approximately 33% of the buy-side firms in the survey. However, there are a total of 7,852[6] buy-side firms in the industry. This implies that a potentially greater number of buy-side firms within the industry may be achieving above the hurdle rate for their trade date affirmations and allocations. Based on the responses gathered on improving the affirmation and allocation rates on trade date, it can be deduced that this is feasible and potentially profitable for the firms surveyed (i.e., streamlining of processes, reduction in feeds and interfaces to systems and reduction in resources).

As a result, individual firms may choose to perform cost benefit studies on accomplishing the SIA STP goals, which will be covered further under the education section.

A key finding was the difference between how the SIA has defined STP and how investment management firms view it. While, in general, investment managers equate straight-through processing with “point-to-point automation,” the SIA program specifies automation alongside a centralized matching solution as the long-term method of achieving STP. Buy-side firms have not

6 ICAA/NRS 3rd annual joint report, *Evolution/Revolution* May 28, 2003

considered this a requirement to satisfy their need for automation. This difference in definition influenced much of the other answers and concerns. It is instructive to see that the "larger" firms already experience substantial levels of automated trade processing (considered STP by investment managers), by using SWIFT, FIX, and various proprietary links. This is especially true for U.S. equities, a key element of the SIA's program scope, while most firms experienced low levels of automation in international securities and fixed income instruments.

The high-AUM firms already have a high degree of automation. Their core trade processing for basic securities transactions (especially U.S. equities) is already highly automated. Their lists of STP-related projects seek to expand the benefits from *extending* the automation to other parts of the transaction chain (such as implementing data hubs and reconciliation tools), *expanding* automation to include inputs to the accounting process (such as automating corporate actions), or *consolidating* platforms.

Smaller-AUM firms generally had fewer automation projects underway, and those projects were of smaller scale. In part, this was due to the fact that the manual processing burden on firms with lower AUM makes for a less-compelling argument to automate. But perhaps the most important factor behind this is the difference between large and small firms in the contention for resources and management attention. The large firms consistently view STP as a high priority, as concerns about scalability and cost were the main motivators; smaller firms, especially those engaged mainly in the high net worth market, are largely motivated by client acquisition and retention. We found that smaller firms, more frequently than larger firms, mention top-line growth and client acquisition/retention as key firm-wide priorities. Our sense is that this was due to two factors: the situation of the smallest high-net-worth firms necessitates focusing on these client issues; but also the representatives interviewed from those firms tended to have broader responsibilities within their firms than their counterparts at the large firms, so such matters were every day concerns for them.

5. The ITPC Model and Its Impact on Investment Managers

In the current environment, the institutional transaction process is fraught with repetitive, manual steps, which contributes to increased trade settlement risk. The process of trade enrichment between the investment managers, broker/dealers, and the custodians, is sequential and often lacking in the use of standards and automation. Due to the anticipated increasing volumes in the U.S. institutional trade processing environment, the SIA STP Institutional Transaction Processing Committee (ITPC) developed the ITPC Model, which is intended to handle these anticipated increased volumes and "…eliminate system and process redundancies and reduce the number of manual steps required for transaction processing." [7] The following section provides a detailed description of the ITPC Model and its impact on investment managers.

5.1. Explanation of the Model

The ITPC Model[8] was designed to replace today's sequential confirm-affirm process. The charter of the ITPC was to propose a process to replace the DTC ID System. Subsequently, after several iterations over more than two years, the ITPC produced the Institutional Transaction Processing Model, which is intended for use by both U.S. and non-U.S. investors settling U.S. Receive/Delivery versus Payment (RVP/DVP) transactions (in particular equities, corporate, and municipal bonds), including fixed income securities and is not explicitly intended to cover international (non-U.S.) securities.

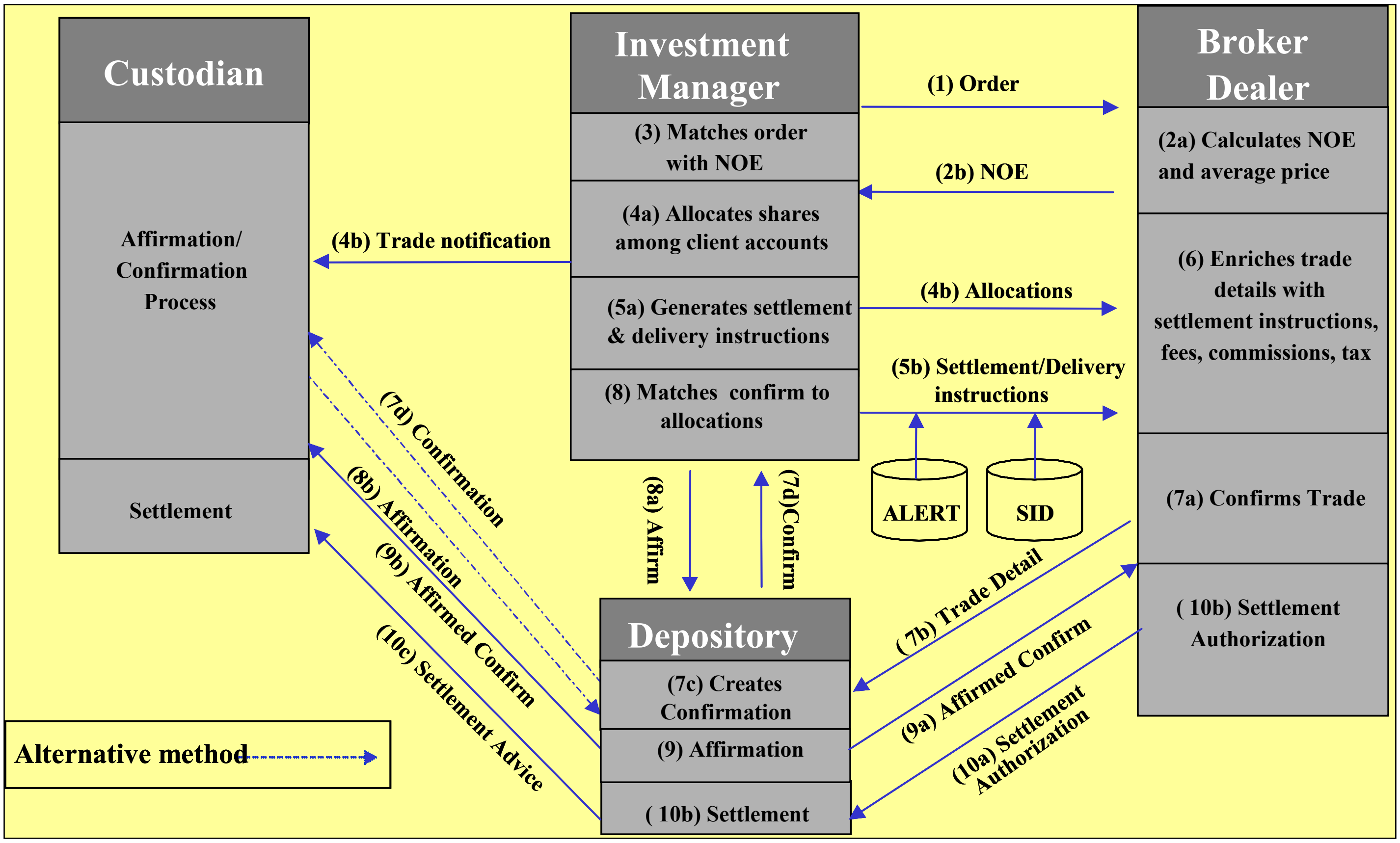
The Model is comprised of what is termed as "Level 2" and "Level 1 (relevant only to T+1)" matching. Level 2 matching entails the broker/dealer (B/D) submitting a final notice of execution (NOE) to the utility, which forwards this to the investment manager (IM). The IM then sends in allocations (net) with the B/D then sending a net proceeds message. The matching utility would match at both the block (final NOE to total of allocations) and at the trade detail (allocations to net proceeds) levels. In Level 1 matching the B/D has only one submission – a final fully figured NOE. This is then matched to the summed up allocations submitted by the IM. If any allocations within the block require commission enrichment (e.g., a step out trade) then that portion of the trade would require a level 2 match (i.e., the B/D would need to send in net proceeds corresponding to that particular allocation). This is more fully described in the ITPC White Paper in the Commission enrichment scenarios section.

It has been determined by the industry that the Level 2 matching functionality is beneficial in a T+3 settlement environment. As a result, Level 1 is considered optional and relevant only in a T+1 settlement cycle.

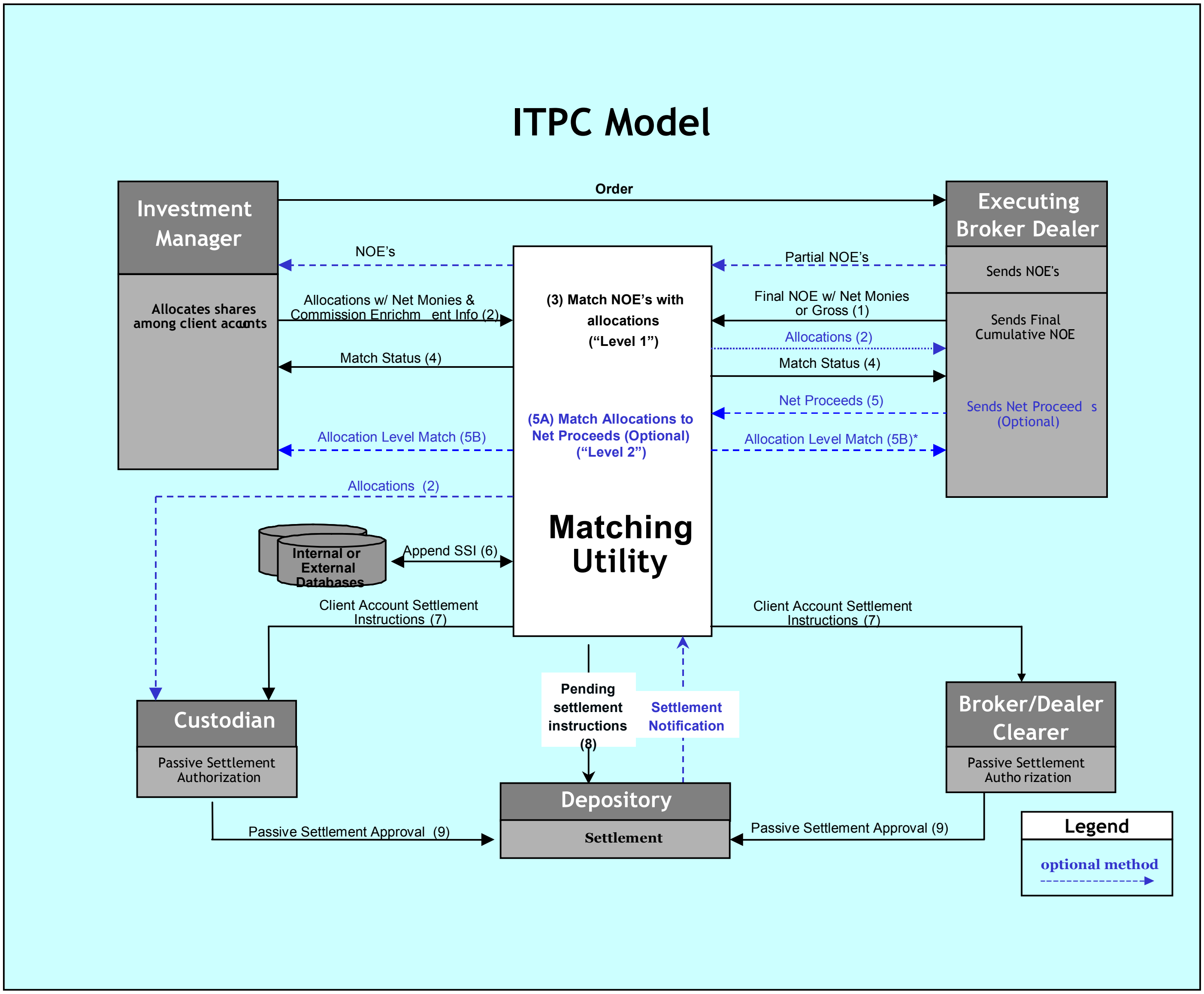
[7] http://www.sia.com/stp/pdf/FinalITPCModelasofMay2002.pdf

[8] ibid.

The following diagram depicts the current institutional DVP transaction process:



The following diagram depicts the ITPC Model as endorsed by the industry:



There are three main phases to the ITPC Model, namely Trade Agreement, Settlement Agreement and Settlement. These phases are described in terms of the activities and the participants involved.

1. ***Trade Agreement Phase***: This phase includes the NOE, allocation, matching of trade details and status information. The result of the trade agreement phase is a fully agreed trade, at a net amount level. The Trade Agreement phase requires active involvement by the trading parties, i.e., the investment manager and the broker/dealer. This allows for any issues or errors to be caught early in the process, which will help minimize market risk and increase efficiency[9].

2. ***Settlement Agreement Phase***: This phase covers the determination of settlement means and the creation and distribution by the matching utility of instructions-to-settle on behalf of the investment manager and executing broker. The Settlement Agreement phase requires the active involvement of executing brokers, clearing brokers and custodian banks. The matching utility provides the interface between the broker/dealers, clearing brokers and custodians, previously the role of investment managers.

3. ***Settlement Phase***: This phase includes the production of pending settlement instructions by the matching utility and settlement authorization.

The overall ITPC Model objectives are to encourage participants to perform electronic allocations, and replace the current ID system:

- Replace the confirm/affirm process
- Use a centralized matching utility
- Lock-in customer trades via matching as close to execution as possible to reduce risk
- Use centralized repositories for account linkages/profiles
- Use settlement instruction enrichment methods such as just-in-time (JIT) or standard settlement instructions (SSI) database and link matched trades to settlement (what matches settles).

Since the publication of the ITPC White Paper[10] a number of alternative matching-like services have been introduced. For example, TradeWeb and the FIX Protocol are among these alternative services. Currently, Omgeo (the DTCC-Thomson joint venture) is the only matching utility approved by the SEC. The other services would require the use of the "ID system" for confirmation generation (i.e., 10b-10 confirmation requirements). In the centralized matching model (ITPC Model) the match status information would serve to fulfill the 10b-10 confirmation requirements.

9 For further details on the various activities that fall under each phase, refer to the full ITPC model description. http://www.sia.com/stp/pdf/FinalITPCModelasofMay2002.pdf

10 http://www.sia.com/stp/pdf/FinalITPCModelasofMay2002.pdf

5.2. Views and Reactions from Buy-Side Firms

Six of the 18 firms in the survey indicated that they are on a path toward centralized matching. Some firms are only at the initial stage of preparing their respective internal firm business case for STP, while others are already implementing functionality to support central matching.

The firms that are moving toward centralized matching feel that this is the answer to "getting away from the assembly line mentality and providing for a much more real time, interactive environment."

Other firms interviewed indicated that they are in agreement with the SIA IOC's interim STP goals of achieving 100% affirmations and electronic allocations on trade date. Although these firms have not implemented central matching, 33% have close to 100% electronic affirmations on trade date and 22% have close to 100% electronic allocations on trade date. The firms (33%) specifically mentioned that they could easily achieve better rates on trade date if they did not have to rely on brokers and custodians for matching, which these firms believed created bottlenecks for achieving these timely STP goals.

Finally, of the firms interviewed, 78% agreed that SIA STP goals benefited in improving efficiency, minimizing errors/cost and improving scalability.

As with firms in every sector, buy-side firms are operating in a challenging economic environment, and reducing costs is a common priority. Return on investment is becoming much more important as a justifying criterion to undertake projects, and the payback period required by management is becoming shorter.

For firms with moderate to high levels of automation today, investment in *changing* the method of existing straight-through processing is difficult to prioritize ahead of *establishing* straight-through processing for those asset classes that have no automation. This led to the comments from firms that recommended either expanding the STP program scope to include these highly manual asset classes, or to refocus the effort on them instead of those where "the problem has already been solved."

Of the firms interviewed, 28% specifically noted the requirement for a true solution to fixed income standards for them to be able to justify changing their STP plans to include central matching, and 22% mentioned the requirement for accommodating global assets. Seventeen percent said that the STP program would make sense for them only if its scope were broadened to be a global effort, rather than only involving firms in the U.S. market.

Alternatively, the firms with little or no automation of trade processing, not surprisingly, tended to be the smaller firms. Such firms commonly had two reasons for not investing heavily in STP:

1. Low trade volumes did not necessitate it
2. Overall priorities tended to reflect the importance of securing and obtaining assets -- so-called "survival issues."

With respect to the low trading volumes of the smaller firms, some of these firms commented that despite their largely manual processes, they could communicate allocations and perform matching by the end of trade date, if required. 22% stated that STP has little applicability or benefit to their current business. These were firms with few holdings and/or low turnover—one was a high-AUM firm with almost all fixed income assets and a "hold-to-maturity" philosophy. Automation of the allocation and affirmation processes, which they would otherwise find unnecessary, therefore constitutes efforts they would not otherwise undertake. Though the interview sample size consisted of 18 firms, according to the ICAA this situation is quite common among the smallest of firms, which easily make up the majority of investment advisors.

The nature of staffing in small investment management firms is such that few, if any, people are wholly dedicated to technology or operations issues. This means any investment of resources away from business development priorities represents a distraction of attention and resources, which could negatively impact their operations.

5.3. Overview of the Allocation Process

The following section is an analysis of the allocation process among investment managers. Although this section was not specifically covered in the interview questions, it is included to highlight and understand the issues encountered during this process.

Automating the allocations process has been the central focus in the industry's STP initiatives, according to the Financial Information Forum (FIF) white paper published recently. This is also one of the critical goals of the SIA STP IOC as previously stated in this paper. According to DTCC statistics, only 1,250 of the 7,500+ investment managers in the industry are using automated allocations, either via vendors or via their own internal systems. This represents approximately 60% of the investment managers who do not currently use automated allocations, according to the SIA/FIF STP Front office survey conducted in September 2003.

The current process involves investment managers manually allocating trades via fax or phone to the broker/dealers. This manual allocations delay the transaction processing, causing inefficiencies, which result in added risks. Until complete allocations are obtained at the broker/dealer, the block executions for the investment managers are marked with "pending allocations," accordingly described in the FIF white paper. Consequently, the timing of when these allocations are provided to the broker/dealers is also a factor in potentially contributing to a reduced hurdle rates (85% or better affirmation/matching & allocation rates on trade date).

The investment managers do not typically provide allocations to the broker/dealers until the end of trade date or the next day. At which point, the broker/dealers cross-reference each allocation to their internal accounts to verify the settlement & delivery instructions. If there are new accounts that are not established in the broker/dealer's systems, then there are further delays in achieving higher allocations rate by trade date. This also contributes to risk of proper settlement of the trade.

As has been demonstrated in this paper, the finding of the FIF paper also alludes to the fact that cost is the major factor for delayed allocations. Due to the expense incurred by adopting electronic allocations, many investment managers are manually performing allocations instead of using automated order management systems. This is especially true for small investment managers who may not have high volumes. They find it is cheaper to manually fax in their trades to the broker/dealers than it is to invest in order management systems and potentially build or lease interfaces with vendors to automate their allocations process.

One of the reasons given by the investment managers for delaying allocations is liquidity. Liquidity is a concern for the investment managers because prorating an execution for various accounts would cause very small individual lots, which may not be available. So they choose to execute block orders and take their time in deciding the breakdown into individual accounts accordingly. The available cash on client accounts also dictates the investor allocation times. Since clients may make cash withdrawals from their accounts on short notice or no notice at all, the investment managers must be prepared to amend or cancel asset allocations based on the pre-withdrawal cash projections.

Finally, acting on behalf of their clients, the investment managers are reluctant to send the allocations information immediately after execution since this may reveal their clients' trading strategies to the street pre-maturely.

It is key to note that the issues concerning the allocations process have been critical to the investment managers and their industry counterparts in either enabling or hindering the ability to achieve 85% or higher rates for allocations on trade date. As a result, the enhancements mentioned above by the investment managers interviewed, along with industry education on the alternatives to manual allocations processing is recommended by the BSC.

6. Conclusions and Recommendations

The motivation for this white paper was to answer the questions:

- "Why has it been so difficult to involve the buy-side in the STP program?"
- "How can we motivate the buy-side to become more involved?"

The following sections provide the BSC's findings in answering these questions.

6.1. Scope and Definition

Conclusion

These results have clearly shown one clear and underlying reason determining for Buy-side Support for the STP Initiative: Return on Investment. Those firms that have found an acceptable ROI for their firm are progressing; those that have not found an acceptable ROI are not interested. As such, the firms interviewed can be grouped into three categories with respect to the SIA STP program:

Those in favor:	These are firms, which have been convinced that the underlying STP goals as articulated in Section 4.5, as well as the centralized matching model, are beneficial to their operations and are along a path to implementing STP in that form.
Those unsure:	These are firms that, in general, can see that the underlying STP goals are a good thing for the industry, but do not see a favorable cost-benefit ratio for their own firm. This is due to the low-volume nature of their business; concerns about monopoly; or lack of education.
Those against:	By and large these are firms with a sizable investment in straight-through-processing systems and processes (i.e., they are already achieving the underlying STP goals via point to point automation), which would need to be reengineered to conform to the centralized matching model. These firms believe that the existing STP centralized matching solution set addresses problems already solved (e.g., U.S. listed equities) but does not address areas where they need automation today (e.g., fixed income, international securities).

Recommendations

Improved ROI can only be achieved by reducing costs or increasing the benefits.

1. Reduced Costs. More solutions with low implementation costs as well as maintenance costs need to be developed in order to address the cost side of the equation.

- Market forces drive innovation. Innovative new solutions catering to the Buy-side are required to reduce the implementation and maintenance costs to Buy-Side Firms. This innovation can only occur in an environment driven by market forces; new regulation supported by some will only stifle this innovation.
- Review Central Matching - Consideration should be given to revisiting the concept of centralized matching to determine if it is essential in order to achieve the underlying industry goals of 100% affirmation and matching on trade date. If these goals can be achieved using the solution set currently favored by investment managers, the SIA should consider allowing these solutions as part of the definition.

2.Increased Benefits: In order for firms to find an increase in the benefits the scope of the solutions will need to include additional markets and security classes. The SIA should continue to work closely with The Bond Market Association for STP fixed income requirements and work on establishing STP goals for international asset classes as the potential next steps in the overall STP program. As a result, the SIA could expand the STP program to other marketplaces.

6.2. Available Solutions

Conclusion

Buy-side firms perceive that feasible (i.e., those that can be fully implemented) central matching solutions in the marketplace are few, not fully defined, may require high implementation costs, and that monopolistic behavior could be a possibility if only one vendor provides the central matching solution.

Recommendations

Continue to Refine and Standardize Matching Utility User Requirements. Currently, three to four vendors have stated a goal of providing central matching for the financial services industry, but only one has received the required regulatory approvals. If the others are able to gain regulatory approval, the monopoly concerns should be mitigated. As a result, the BSC recommends that the industry must continue to refine and standardize the matching utility user requirements document so that it facilitates standard entrance requirements, provides fair competition and interoperability to all players potentially providing the central matching solution.[11]

Address Cost-Effective Alternate Solutions for Low-AUM Firms. In addition, the cost concerns, especially in many small AUM buy-side firms, need to be addressed through the various cost effective STP solutions that are currently available or planned. Some are specifically vendor solutions like low cost implementation solutions (currently provided by Omgeo), which includes allocation costs. Others include vendor solutions that enable an investment manager's order management system to connect to a central matching utility with no additional cost to the investment manager. Other solutions include ROI tools offered by some vendors to measure efficient implementation of STP goals, outsourcing options offered by several vendors for the investment management allocations processes and web portals offered by matching utilities to investment managers. The BSC suggests that these solutions should be considered by buy-side firms in their study for a cost effective implementation of their STP goals.

[11] http://www.sia.com/stp/pdf/MatchingUtilityUserReq.pdf

6.3. Education

Conclusion

Buy-side firms are not fully aware of the breadth of activities currently underway regarding STP. Better education programs could mitigate many of these concerns.

Recommendations

Education Plan Needed. The SIA, via the BSC, and perhaps other involved industry bodies, needs to better educate buy-side firms of the various projects related to STP that are currently in progress, and how they will impact the buy-side. A comprehensive and integrated education plan should be created and implemented.

Buy-Side Firms Need to Perform Matching Utility Due Diligence. Due to potential misinformation among industry participants with regards to the individual matching utilities' specifications, migration plans related to legacy systems, cost, and pricing implications, participants should understand and evaluate the information provided by matching utilities prior to satisfying their STP needs. In addition, firms that eventually plan on matching through a utility as recommended by the ITPC Model should clarify specific activities in the Model and the potential behavioral change that is required due to the resulting trading strategies adopted.

Buy-Side Needs to Share STP Information. One of the key impediments to improving institutional STP has been a lack of awareness of the various STP initiatives and confusion over service offerings and the latest developments such as new standards. While many of the larger buy-side firms have been involved in the industry initiative efforts, many of the medium and smaller sized investment managers have not been involved. The BSC recommends that these industry players share their information on common initiatives among other industry associations, participants and vendors. Increased awareness among industry participants on the available solutions and their potential benefits will also aid in accomplishing industry-wide initiatives like the STP program. Therefore, a comprehensive education program is needed in order to educate, obtain feedback and build momentum on the various STP initiatives. The following venues may provide a forum for increasing awareness among buy-side firms:

1. Publication of the Buy-Side White Paper to the industry
2. Presenting the Buy-Side White Paper to the various buy-side industry associations
3. Elevating the buy-side panel discussions to general session topics at SIA and other STP-related conferences (preferred over the smaller "breakout" sessions).
4. Education panels with vendors are encouraged to clearly distinguish information on "what's real vs. what's not."
5. At industry conferences, sharing publicity such as "firms moving to electronic allocations and matched affirmed confirmations saw same day affirmation rates increase from 12% to 95%." This includes informing participants of the early adopters and their progress, which will prove beneficial to attendees.

7. Appendix I: Additional Resources

In terms of educational and other tools available, the following list provides additional resources that may provide additional answers to some of the specific concerns expressed during the interviews.

One Global Standard

SIA STP Code of Practice Guidelines and recommendations (published in July 2003):
The purpose of this document is to outline the institutional goals, describe the benefits and differences of the various scenarios enabling the goals, demonstrate how implementation will be an evolutionary approach, and provide recommendations for industry participants. The Code of Practice guidelines are focused on regular-way institutional equity DVP trades. Additionally, this document contains matrices outlining the activities, proposed timing, standards and market practices (as outlined by the Securities Market Practices Group) for:

- Today's confirm/affirm process
- An optimized confirm/affirm process using matched affirmed confirmations and electronic communications
- A future state T+3 matching process as defined by the Institutional Transaction Processing Committee (ITPC) Model (including additional activities associated with correspondent clearing, pre-allocated trades and prime broker processing).

There are also efforts underway by various organizations and associations (e.g., REDAC - Reference Data Coalition; RDUG - Reference Data Users Group; ISO TC68/SC4/WG8 - International Organization for Standardization Working Group 8) to analyze and address the issues of reference data (both client and security). The SIA is in the process of collating currently available information on this subject. Broadly speaking, the goals are to develop unique instrument identifiers, unique fund identifiers and unique legal entity - subsidiary linkages for all issuers.

Corporate Actions Processing Efficiency

SIA STP Corporate Actions Liability Hub Implementation (targeted for completion in Q2 2004):
The proposed liability hub will be a web-based application that will transform a manual, paper-intensive process into an online electronic process. By automating the process both the sender and receiver will have a central location to transmit and receive notices of liability and can be assured their counterparty is in receipt of the notice. This hub will also "guarantee" accuracy of outstanding transactions and delivery to all parties. DTCC is currently reviewing the business specifications.

SIA STP Standardization of Corporate Actions industry practices (rules and processes). This project is aimed towards establishing consistency of corporate actions rules among the SROs and will standardize the corporate actions processing across the industry.

SIA STP Corporate Actions Announcements Repository is proposed to act as the central location for all corporate actions announcements information which will enable all concerned parties to be notified electronically at the same time and will expedite the notification process.

Fixed Income Solution for Investment Managers

The Bond Market Association's (TBMA) STP efforts on a standard fixed income solution:
TBMA has commenced the project of building a communications hub or "the common message hub" for all industry participants, which is expected to be completed in Q4 2004.

> This is an industry solution to facilitate market participants' access to multiple providers of trade automation and matching services through a single communication link that supports intelligent message routing and data mapping capabilities. The goal is to eliminate expenses associated with establishing point-to-point connectivity, implementing program changes, managing multiple message formats, as well as need to back up multiple links for BCP. The hub will also remove technical barriers that inhibit participation of buy and sell-side firms in automated trade processing.

Vendor STP Solutions

While Omgeo currently offers central matching via its TradeMatch product, it is not an "ITPC compliant" Model. Omgeo has received SEC approval for its ITPC compliant model (Central Trade Manager--CTM); however, it is not known when CTM will be available for U.S. domestic securities. Omgeo, along with other vendors such as SunGard, FIX, TradeWeb (although not limited to these vendors) do have services which target some of the ITPC model goals such as electronic allocations but still require the use of an ID confirm. These services (e.g., Oasys-TradeMatch) also allow the investment manager to auto affirm trades. Thus, the IM would only have one submission for allocations. Omgeo has stated that once an allocation comes in electronically (via Oasys) the eventual transition from confirm/affirm to matching will be transparent to the investment manager. Some within the industry have identified the move toward electronic allocations and auto-affirmation as an "interim step" and centralized matching as the eventual "end state."

8. Appendix II: Buy-Side Committee Members

8.1. Buy-Side Committee Co-Chairs

Christopher Blume, Deutsche Asset Management

Thomas Tierney, Securities Industry Association

8.2. White Paper Authorship

The BSC recognizes the following members of the white paper working group for the documentation of this paper:

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8.3. Buy-Side Committee Members

Last Name	First Name	Company
Adams	Denise	Munder Capital Management
Amsden	Barbara	Canadian Capital Markets Association (CCMA)
Boteler	Don	Investment Company Institution (ICI)
Butler	Diane	Investment Company Institute
Cambeiro	Anthony	Downtown Associates
Chester	Barry	Barry Chester & Company, L.L.C
Combs	Jim	Manning & Napier
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Felix	Michael	Capital Group/ICI
Frech	Steve	Morgan Stanley Dean Witter
Hintz	Jim	Strong Capital Management
Hourican	Kelly	Fisher Francis Trees & Watts
Huffman	Cherie	Principal Capital Management
Ilaria	Lisa	Prudential Securities
Jensen	Joanne	Calpers
Juster	Ken	Asset Managers Forum
Kassman	Larry	Brandywine Asset Management
Katayama	Ken	Research Institute
Kilmurray	Christine	Wellington Management Co.
Kroll	Thomas	Fidelity Brokerage Technology Company
Lamb	Deborah	Investment Industry Consulting
LeCompte	Paul	Roger Engemann & Associates
Mann	Fred	Globalt Investments
McAlear	Earl	Schwab Institutional, Charles Schwab
Millet	Maureen	TIAA-CREF
Opferman	Robert	Lincoln Capital Management
Paige	Heather	Pacific Life Insurance Company
Rittenhouse	Linda	Association for Investment Management and Research
Smith	Gregory	Investment Company Institute (ICI)
Sumner	Christine	Pacific Life Insurance Company
Sobol	Daniel	Gofen and Glossberg, LLC
Suprenant	Ann	Cutter Associates
Tittsworth	David	Investment Counsel Association of America (ICAA)
Valdes	Erick	Deutsche Asset Management
Walter	Ralph	Kayne Anderson Rudnick
Weaver	Judson	Deutsche Bank
Wyne	Mike	Fisher Francis Trees & Watts
Yerger	Ann	Council Institutional Investors

9. Appendix III: Glossary of Terms and Acronyms

Term	Acronym	Definition
Allocation	--	The decomposition of a block trade by the investment manager into its component parts by account.
Alternative Trading System (ATS)	ATS	Alternative Trading System. In general, refers to any non-traditional electronic trading system. The SEC permits experimentation in new forms of trading systems but requires the proprietors of each system to elect whether to be classified as a broker dealer, broker/dealer (ECN) or an exchange (SRO) for regulatory purposes. For SEC definition see SEC Act Release No. 40760 (Dec 8, 1998)
Asset Managers Forum (AMF)	AMF	The AMF was formed in 1998 to serve the interests of buy-side professionals. The AMF operates as an independent trade group and is affiliated with The Bond Market Association (TBMA). The primary mission of the AMF is to give the buy-side a unified voice in addressing major securities processing initiatives like T+1 settlement.
Assets Under Management (AUM)	AUM	Assets under management
Association for Investment Management and Research (AIMR)	AIMR	AIMR is a global, nonprofit organization of 49,000 investment professionals and educators, and also awards the Chartered Financial Analyst (CFA) designation. AIMR's mission is to advance the interests of the global investment community and thus their clients by establishing and maintaining the highest standards of professional excellence and integrity.
Buy-Side	--	An institution that buys services from a broker/dealer, i.e. pays a commission on the execution of an order. In this paper, buy-side describes all SEC-registered investment advisory firms, including all advisors to registered investment companies (mutual funds). Firms in this category are, by definition, "investment advisors" under the Investment Advisors Act of 1940 and primarily consist of firms that have more than $25 million in assets under management.
Canadian Capital Markets Association (CCMA)	CCMA	The Canadian Capital Markets Association (CCMA) is a federally incorporated, not-for-profit organization launched to identify, analyze and recommend ways to meet the challenges and opportunities facing Canadian and international capital markets. Its mission is to enhance the competitiveness of Canada's capital markets through a forum of industry experts who provide leadership and direction to the investment community. Its core purpose is to promote straight-through

Term	Acronym	Definition
		processing strategies to reduce ongoing errors and processing costs; lower operational, market, settlement and systemic risks; and maintain the competitiveness of Canadian capital markets.
Central Matching	--	Central matching refers to the matching or comparison of two items by a centralized 3rd party vendor, as opposed to participants matching items internally. For example, an investment manager may submit allocations to a central facility and a broker/dealer may send confirmations to central utility. The central utility then matches the allocations and confirmations and sends back a matched status message to the participants. This allows participants to only focus on the exceptions (those items that did not match) and removes the step of having to match internally.
Confirmation	--	The written statement acknowledging a securities transaction. More generally, any formal communication which reiterates or verifies an agreement.
Corporate Action	--	A corporate action is any pending or completed action taken by an issuer of a security, which affects the financial and/or physical status of that security issue. Some Corporate Actions may affect only one security issued by that issuer; others may affect many or all of the securities issued. Corporate Actions can pertain to either equity or debt securities, although there are some differences in the action types that apply to each. Some corporate actions are mandatory others are voluntary. A mandatory action is one in which the holder of the security has no choice regarding the change in status of his or her shares. Most mandatory actions happen automatically, with no action required on the part of the holder. A stock split is an example of a mandatory action. A voluntary action is one in which the holder has a choice to make about how the action will affect the status of his or her shares. Usually, there is some action required on the part of the holder in order to participate in the action.
Council of Institutional Investors (CII)	CII	Founded in 1985, the CII is an organization of large pension funds that addresses investment issues affecting the size or security of plan assets. The Council provides the following services: research, legal, legislative/regulatory, data collection, publication and administrative.
Counterparty	--	Party to a trade
Cross-Border Trade	--	A securities trade in which one of the trading parties is located in the U.S. and the other is located outside of the U.S.
Custodian	--	Person or company that holds and administers securities and financial instruments on behalf of others.
Custodian Bank	--	Bank or other financial institution that keeps custody of stock

Term	Acronym	Definition
		certificates and other assets of a mutual fund, individual, or corporate client.
Delivery-versus Payment (DVP)	DVP	A securities settlement system that provides a mechanism that ensures delivery occurs if and only if payment occurs; inverse of RVP receive versus payment
Depository Trust & Clearing Corporation	DTCC	The Depository Trust & Clearing Corporation (DTCC), through its subsidiaries, provides clearance, settlement and information services for equities, corporate and municipal bonds, government and mortgage-backed securities, over-the-counter credit derivatives and emerging market debt trades. DTCC's depository also provides custody and asset servicing for more than two million securities issues from the United States and 100 other countries and territories. In addition, DTCC is a leading processor of mutual funds and insurance transactions, linking funds and carriers with their distribution networks. DTCC has operating facilities in multiple locations in the United States and overseas.
Depository Trust Company	DTC	DTC is a member of the U.S. Federal Reserve System, a limited-purpose trust company under New York State banking law and a registered clearing agency with the Securities and Exchange Commission. The depository brings efficiency to the securities industry by retaining custody of some 2 million securities issues, effectively “dematerializing” most of them so that they exist only as electronic files rather than as countless pieces of paper. The depository also provides the services necessary for the maintenance of the securities it has in custody.
Financial Information Exchange (FIX)	FIX	The Financial Information eXchange (FIX) protocol is a messaging standard developed specifically for the real-time electronic exchange of securities transactions.
Financial Information ExchangeFIXML Extensible Mark-up Language	FIXML	XML version of FIX (For XML, see definition for Extensible Mark-Up Language in this glossary. For FIX, see definition for Financial Information Exchange in this glossary.)
Financial Information Forum	FIF	The Financial Information Forum (FIF) was founded in 1996 to address the issues that impact financial information systems management in light of rapid changes occurring in technology, federal regulation and the competitive environment among financial service organizations. Subscriber organizations include exchanges, broker/dealers; buy-side, buy-side firms, service bureaus, and market data vendors.
FIX Allocations	--	FIX is a protocol typically used by investment manager - broker/dealer communications. FIX is often used for communicating order flow and is used for other message traffic, such as an allocation message. (e.g., an investment

Term	Acronym	Definition
		manager may submit their allocations to the broker/dealer via FIX).
Great Lakes Investment Managers Operations Group (GLIMOG)	GLIMOG	GLIMOG members represent a diverse group of operational professionals who support the Great Lakes area investment community. The association's mission is to provide a forum to identify and address common IM settlement and operational issues; assist in identifying relevant and effective educational programs and provide networking opportunities for IM operations professionals.
Institutional Delivery System (ID)	ID	Institutional Delivery System is a DTC system used for processing institutional customer transactions. ID is available through PTS, PC Dial In, TradeSuite, CCF and MDH.
Institutional Investor's Fixed Income Forum/Financial Technology Forum (IIFIF/FTF)	IIFIF/FTF	These Forums are special interest groups designed for executives to meet and exchange ideas on the issues faced by their sector of the financial services industry. The Fixed Income Forum is designed for the heads of fixed income at leading investment organizations. The Financial Technology Forum is designed as a meeting place for CIOs from leading financial institutions.
Institutional Oversight Committee	IOC	SIA STP committee mandated to analyze and resolve ITPC Model-related issues, develop matching utility user requirements, and provide industry input for development of a code of practice.
International Securities Association for Institutional Trade Communications – International Operations Association (ISITC-IOA)	ISITIC-IOA	ISITC-IOA is a global working committee of securities operations professionals representing custodian banks, investment managers, brokers and vendors. The group's mission is to foster alliances and advocate standards that promote Straight Through Processing (STP) of securities transactions.
Investment Adviser Registration Depository	IARD	System that electronically tracks submission of Form ADV to register with the SEC as an investment adviser.
Investment Advisers Act of 1940	--	SEC rule requiring investment advisers that manage >$25 million AUM to register with the SEC
Investment Company Institute (ICI)	ICI	ICI is the national association of the American investment company industry. Its membership includes more than 8,000 mutual funds, closed-end investment companies and UITs. The ICI has established an STP committee, which meets 3 to 4 times a year. The objectives of this committee are to: 1) understand the various industry STP initiatives, 2) provide requested feedback and support to industry initiatives, 3) clearly define the impact of STP to investment managers in terms of technology, business processes and resources and 4)

Term	Acronym	Definition
		gather consensus on effective approaches and strategies for transitioning to STP.
Investment Counsel Association of America (ICAA)	ICAA	The ICAA is a non-profit association whose membership consists solely of federally registered investment advisory firms. Founded in 1937, the ICAA's membership today is comprised of about 300 firms that collectively manage over $3 trillion in assets for a wide variety of institutional and individual clients. The ICAA performs a wide range of advocacy services on behalf of the investment advisory profession, as well as conducting educational conferences and workshops.
Investment Manager/Asset Manager	IM or AM	An Investment Manager is responsible for the securities portfolio of an individual or institutional investor. Asset Managers may manage mutual funds, pension funds, investment funds, etc. The Asset Manager has a fiduciary responsibility to manage the assets prudently and choose the appropriate investments for the type of fund being managed.
Investor	--	A person who buys or sells securities for his or her own account or the account of others.
ISO 15022--	ISO 15022	International Standards Organization standard used for the communication of financial information.
ITPC Model	--	Proposed institutional transaction processing model developed by the SIA.
Institutional Transaction Processing Committee (ITPC)	ITPC	Institutional Trade Processing Committee. This committee developed the ITPC model, recommending a central matching solution for the institutional processing of DVP domestic equity trades.
Local Matching	--	Same as "internal matching." Local and internal matching is used to refer to the process of an investment manager or broker/dealer matching two items on their own, internal systems and then submitting this information back to the other party. Examples include an investment manager matching a Notice of Execution received from a broker/dealer to the order, or of an investment manager matching confirmations received from a broker/dealer (via TradeSuite) to their allocations and then affirming that confirmation. This is opposed to "central matching" in which the match takes place by third-party vendor (see Central Matching)
Matching	--	The process by which two brokerage firms that have engaged in a trade compare the settlement details of the trade provided by both counterparties. Matching is done to verify all aspects of a trade and ensure that all parties agree on the terms of the transaction. This comparison can be either through a clearing corporation that will net the trades or on a trade-by-trade basis.
Matching Utility (MU)	MU	A Matching Utility (MU) is a software model that allows for seamless, real-time matching of trade data throughout a trade's

Term	Acronym	Definition
		lifecycle. The MU treats the trade cycle as a unit from post-execution to settlement rather than as a group of loosely related messages and processes.
National Numbering agency's securities identifier ISIN	ISIN	A code that uniquely identifies a specific securities issue. The organization that allocates ISINs in any particular country is the National Numbering Agency (NNA).
Net Proceeds	--	Amount received from the sale of an asset after deducting all transaction costs.
Net Settlement	--	Settlement in which a number of transactions between or among participants are offset, reducing a large number of individual positions or obligations to a smaller number of positions that are then settled.
Notice of Execution (NOE)	NOE	A statement sent from the exchange to a broker/dealer and thereafter to an investment manager as notification of a partial or complete fill of an order.
OASYS--	**OASYS**	OASYS(tm) |Thomson ESG - The leading electronic trade allocation and acceptance service, OASYS enables investment managers and broker/dealers in the U.S. equity and fixed-income markets to exchange trade details and allocations automatically following trade execution.
Omgeo	--	Omgeo LLC is the leading provider of complete global trade management services. A unique partnership between the securities industry's leading utility and the commercial sector; Omgeo is industry-backed and market-oriented. Through its integrated suite of Intelligent Trade Management SolutionsSM, Omgeo helps clients move from traditional methods of trade processing to our new unified solutions for trade management. Omgeo provides clients with a managed transition to a new and more efficient way of processing trades and reducing risk and costs while safeguarding existing technology investments. Omgeo is a joint venture company owned equally by The Depository Trust & Clearing Corporation (DTCC) and Thomson Financial. For additional information, please visit www.omgeo.com.
Omgeo Central Trade Manager (CTM)	CTM	The global solution for central trade matching, offering real-time settlement instruction enrichment and settlement notification messaging, all in a secure and scalable environment. (Acceptable short version: Omgeo CTM)
Order Management Systems (OMS)	OMS	Order management systems.
Partial Allocations	--	Allocations that apply to partial NOEs processed by the MU.
Partial Notice of Execution (NOE)	Partially NOE	A NOE that reports execution information for a component of a Block Trade.
Receive versus Payment	RVP	A securities settlement system that provides a mechanism that ensures payment occurs if and only if receipt of securities occurs; inverse of DVP.

Term	Acronym	Definition
Reference Data Coalition	REDAC	Reference data coalition of industry firms and associations, that define the core issues and challenges associated with reference data on an independent basis.
Reference Data Users Group	RDUG	Group of industry participants that are direct users of reference data; with the group's initiatives including: collaboration on reference data standards, unique security identifiers, among other related issues.
Return on Investment	ROI	The income or return that an investment provides in a year.
Securities and Exchange Commission (SEC)	SEC	A federal agency that regulates the U.S. financial markets. The SEC also oversees the securities industry and promotes full disclosure in order to protect the investing public against malpractice in the securities markets.
Securities Industry Association (SIA)	SIA	The Securities Industry Association brings together the shared interests of nearly 700 securities firms to accomplish common goals. SIA member firms (including investment banks, broker-dealers, and mutual fund companies) are active in all U.S. and foreign markets and in all phases of corporate and public finance
Security Master Databases	--	General term used to refer to databases containing descriptive information and terms and conditions on securities, usually organized by unique identifiers.
Sell-Side	--	A retail broker, institutional broker and trader, or research department who engages in securities transactions. (See buy-side)
Service Bureaus	--	As a general term applies to vendors providing transaction processing services to the financial industry.
Settlement	--	Completion of a transaction by the delivery and crediting to the appropriate securities ledger and funds accounts of securities and payment respectively.
Settlement Cycle	--	Time frame for the conclusion of a securities transaction, from execution to settlement. Currently, regular-way delivery and settlement of stocks and corporate and municipal bonds is completed on the third full business day following the date of the transaction (T+3). Government bonds and options now settle the next business day. With the implementation of T+1 settlement, the majority of U.S. securities will settle on a T+1 cycle.
Society for Worldwide Interbank Financial Telecommunications (SWIFT)	SWIFT	Established in 1977, S.W.I.F.T. is an international cooperative organization that is owned by over 2,000 member banks around the world. It provides message standards and a message platform that connects nearly 6,000 institutions worldwide with over 600 million messages annually. S.W.I.F.T. has a dedicated telecommunications network, and it guarantees the rapid, cost-effective, secure and reliable transmission of financial data. S.W.I.F.T. provides standards,

Term	Acronym	Definition
		a modern telecommunications network, network compatible terminals, and interfaces and value-added products. The S.W.I.F.T. message types are in several categories: payments, ForEx, money markets, securities and trade finance.
Standing Instructions Database (SID)	SID	The Standing Instructions Database serves as the central repository for ID customer/account and settlement information maintained by institutions, executing broker/dealers, clearing brokers, agents and clearing agents.
Straight- Through Processing (STP)	STP	STP refers to the seamless integration of systems and processes to automate the trade process from end-to-end--trade execution, confirmation and settlement--without the need for manual intervention or the re-keying of data. Specifically, the STP scope for the industry is from Notice of Execution (NOE) through to settlement for institutional trading. For retail and corporate actions, the STP scope is broader. For individual firms, STP is also defined more broadly, and encompasses the streamlining of the operational infrastructure--front-, middle-, and back-office--of all industry participants (broker/dealers, investment managers, custodians, and clearance/settlement utilities). The SIA's goal is to achieve Straight-Through Processing (STP) in the financial services industry by mid-2004 for all participant types. While all products are included, the SIA's specific emphasis is on domestic equities, while The Bond Market Association's focus is on fixed income. STP is widely regarded as a necessary next step toward improving processing efficiency, reducing risk, increasing capacity, improving functionality and service, as well as gaining cost efficiencies in the securities industry. The SIA's STP committees each address a component of the trade processing lifecycle, and, therefore, identify different areas of focus, goals and objectives for their STP improvements.
SWIFT Network Communications (SWIFT)	--	SWIFT's messaging services help banks, broker-dealers, investment managers and market infrastructures in payments, treasury, derivatives, securities and trade services to reduce costs, improve automation and manage risk.
The Bond Market Association (BMA)	TBMA	The Bond Market Association represents securities firms and banks that underwrite, trade and sell debt securities, both domestically and internationally. The Bond Market Association speaks for the bond industry and advocates its positions.
Wraps	--	Term referring to the adoption of a related options root symbol in the event that a corporate action or market volatility causes the number of strike prices available under the standard root symbol to be inadequate to represent all the range of strikes

Term	Acronym	Definition
		available to trade on a particular underlying security or index.

10. Appendix IV: Interview Questions

1. **(a) What definition does your firm have for the term "straight-through processing" (STP)? Is it important to your firm to actively participate in moving STP forward as thus defined?**

   Note: In this question we are not seeking your firm's cost-benefit justification for pursuing STP (we cover this in question 6). Rather, we are trying to understand how different firms define (or perceive) the term and whether or not they think it is a worthy goal in the abstract.

   (b) The SIA defines STP as *the seamless integration of systems and processes to automate the trade process from end-to-end--trade execution, confirmation and settlement--without the need for manual intervention or the re-keying of data*. Do you see these as complementing or conflicting with your firm's vision?

2. **What internal STP-related projects do you have underway, or planned within the next few years? What benefits (tangible or intangible) do you expect as a result? Do you have an STP "program?"**

   (a) What are your firm's affirmation rates, for both equities and fixed income trading, on Trade date? & On T+1?

   (b) What are your firm's allocation rates, for both equities and fixed income trading, on Trade date? & On T+1?

3. **What STP-related projects are you doing, are you planning to do, or would you like to do, that you believe need or would benefit from industry-wide coordination?**

   Note: One way to think of this question is to differentiate purely "internal" STP projects from "external" projects, or those that involve counterparties or industry utilities.

4. **What are your highest priority initiatives, whether or not STP-related?**

   Note: What we are looking for here is information as to how STP, as you define it, ranks among other initiatives in the competition for resources. Do not limit your answers to purely "technology" or "operations" initiatives, because ultimately we understand that technology and operations initiatives largely derive from broader business initiatives.

5. **(We did not cover this question in the discussions as the answers were generally included in other segments of the interview) What portfolio management, client servicing, or trading related processes in your firm would benefit from further automation?**

6. **What would you wish STP to accomplish for your firm (for example, consolidate processing steps, reduce errors, reduce P/Ls, minimize administration)? What would make STP *more* important to you than it is now?**

   Note: In this question we are trying to understand your incentives and justification for expending resources on STP, to the extent you are doing so.

7. **Are you working toward implementing the ITPC model, or parts of it (such as moving away from confirmation/affirmation to matching)? How does implementation of this model affect your firm, and what issues or concerns do you see with it?**

   Note: Please answer the second part of this question even if you are not actively pursuing implementation at this time. If you need some background information about the ITPC model, we can supply it to you in advance of the meeting.

8. **What other forums does your firm participate in where STP issues are (or should be) discussed, and do you believe that your STP management style and needs are appropriate represented?**

