

Assessment of Canada's STP/T+1 Readiness and a Comparison of Canada's vs. United States' T+1 Readiness

STP/T+1 Readiness Assessment
Report for Canada

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** FINAL **

capco

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1. STP/T+1 Assessment Project Scope and Assumptions

Achieving T+1 is conditional, in many ways, on achieving straight-through processing (STP). Therefore, information relevant to the status of industry-wide STP is relevant in the analysis. The nine-week Capco Canadian STP/T+1 Assessment project addressed the following items:

PROJECT SCOPE

1. Identification of the elements that are critical, important or “nice-to-have” to achieve T+1 readiness. These elements were identified regardless of whether or not they have been identified within the existing Canadian Capital Markets Association (CCMA) project plan. These STP elements were defined by level of criticality to T+1 readiness, as follows:
 - a. Critical = must be achieved for T+1
 - b. Important = aspects that reduce risk and errors but are not essential to achieving T+1
 - c. Nice to have = aspects that optimize T+1 benefits.
2. Focus on those STP elements that are Critical for STP/T+1 readiness, with the goals of:
 - a. Identifying a reasonable critical path/maximum elapsed time for achieving STP/T+1 readiness
 - b. Identifying the status of related activities within the U.S. and Canadian capital markets
 - c. Ascertaining the overall time lag, if any, between the CCMA and Securities Industry Association (SIA) STP programs as regards to each market’s ability to achieve T+1 readiness by comparing each market’s status against each critical path/maximum elapsed time for achieving T+1 readiness
 - d. Explaining the reason for differences, identifying areas of concern (where Canada falls behind the U.S.), areas where Canada is ahead of the U.S. and areas of no concern
 - e. Commenting on the likelihood of the U.S. moving to a T+1 settlement cycle and when
3. Completion of a table in the format requested of the Ontario Securities Commission – critical path items in Canada and U.S. – contained in this document.
4. Preparation and delivery of a presentation to CCMA Core Group on June 1, 2004.

The following Project and Gap Analysis assumptions were identified early in the project and agreed to by both Capco and the Canadian Depository for Securities Limited (CDS) on behalf of the Canadian Capital Markets Association (CCMA). It is important to bear in mind these assumptions in order to provide the proper context and basis for the assessment results presented throughout the remainder of this document.

- **The goals of STP/T+1 readiness are similar for both markets**
 - Market differences between two countries affect the means to achieving these goals
- **Canada's date of conversion to T+1 must be the same as U.S.'s**
- **T+1 is used to set limits on overall work required for STP**
 - The critical path for STP and T+1 readiness are generally the same except where noted
- **The Capco STP/T+1 Assessment is *not* a business case**
 - Available objective statistical data was collected to allow for the most rigorous comparison possible
 - The Summary and Detailed Reports represent the feedback and views of the individuals interviewed for their respective market segments, and must be interpreted in that context
 - The comparative statistics that are presented throughout each report are representative of the market segment group that was interviewed, and Capco was not engaged to independently validate the data presented by those individuals
- **Cross-border was excluded by the CSA--but is included here due to its importance to the market**

- **Comparison highlights the largest potential gap**
 - **U.S. efforts and projects are well under way**
 - **Although it is recognized that much work has been done to date, Canada needs to transition from its focus on "planning" to "action" in order to begin to close the gap with the U.S.**
 - CDSX is already in place
 - FundSERV has moved to XML
- **Earliest possible U.S. T+1 readiness is used as the benchmark-- the date is based on current views of the SIA, and may change as efforts progress**
 - There is **no date yet established for the U.S. to move to T+1**; benchmark date used is based on the earliest the U.S. could be considered T+1 ready, as per U.S. industry leaders
 - There is **a range of views within the U.S. financial services industry regarding the likely timeframe for a move to T+1**
 - **At this time, the U.S. is not likely to move to T+1 by the end of 2007, however, that date is used as a possible U.S. T+1 readiness date**

2. Executive Summary

This year, both Canadian and United States (U.S.) financial services industries reached turning points in their respective straight-through processing (STP) programs. Although both markets have had action plans in place for several years, in some instances the activities and timelines were different. In the spring of 2004, both the Canadian and U.S. securities regulators issued requests for industry comments on proposed clearing and settlement changes. These regulatory requests are viewed as catalysts that are renewing the focus in both markets on the status of STP and T+1 readiness. As a result, the U.S. is responding via a Securities Industry Association (SIA) Securities and Exchange Commission (SEC) Concept Release Task Force to address the U.S. regulator's request. In Canada, the Canadian Depository for Securities Limited (CDS), on behalf of the Canadian Capital Markets Association (CCMA), commissioned Capco to assess the readiness of the Canadian marketplace in terms of STP and T+1 readiness and recommend the critical path for Canada to align its efforts with the U.S.

Overview of Project Objectives

The objectives of this analysis were as follows:

- **To establish a baseline critical path for achieving STP and T+1 readiness.**
- **To benchmark the Canadian market's state of readiness for T+1 vs. the U.S., determine what, if any, gap exists between the two markets, and identify the potential means of closing such a gap.**

The rationale for understanding current levels, and moving to greater levels, of STP and potentially a shortened settlement cycle is based upon several factors. Greater STP, defined as the seamless processing of a transaction from execution to settlement without manual intervention, significantly impacts the efficiency, cost and risk of a marketplace. The ability of member firms and the underlying settlement and clearance infrastructure to successfully process trades both internally and with counter parties is a fundamental precondition for a market to be optimally effective, competitive and volume insensitive. Furthermore, STP is a precondition for the move to shortened settlement cycles. In fact, T+1 readiness was used as a delimiter to determine the extent of progress that has been made in regard to STP efforts overall.

Establishing a Baseline Critical Path for Achieving STP/T+1 Readiness in Canada

The results of the analysis were based primarily on more than 40 interviews with over 100 key Canadian market participants and statistical data on trade efficiency provided by major infrastructure providers.

Some of the key findings include the following:

- The institutional marketplace is the key area on the critical path – it is the market most subject to global competitive forces, with multiple dispersed market participants.
- Retail trade processing, securities lending, dematerialization/immobilization to eliminate certificated trades and payments, as well as the need for a centralized entitlements notifications hub were not deemed to be on the critical path to T+1 readiness in Canada.

There is generally broad agreement that Canada and the U.S. must move to T+1 at the same time, if the U.S. makes such a decision at some point in the future. In fact, the settlement cycles in both markets were reduced from T+5 to T+3 on the same date in 1995 for the same reasoning. However, achieving equivalent levels of STP in both markets at the same time is not necessary other than as required for T+1 readiness.

Summary of Canadian Readiness for T+1

The assessment results suggest that the Canadian marketplace could be ready to move to T+1 settlement in approximately four years at its current pace.

In contrast, the U.S. market could be ready to move to T+1 settlement in approximately three years, once the goal of trade date matching of institutional trades is achieved, and a period of testing and parallel operation in a T+1-like environment is concluded.

The primary component of this gap is in the area of institutional trade processing. This is due primarily to the following factors:

- The U.S. has long had a system connecting the four key parties to an institutional trade (broker/dealer, investment manager, custodian and depository) and widely used Standing Settlement Instruction (SSI) databases. As well, New York Stock Exchange (NYSE) Rule 387 mandates how and when confirmation/affirmation occurs.
- Canada has no equivalent system linking all four parties, no widely used SSI database, no confirmation/affirmation rule that is enforced, and a relatively low affirmation rate on trade date compared with the current U.S. rate.

This is not to suggest that a definitive timeframe for U.S. achievement of T+1 readiness has been developed or agreed to. Rather, the capability of the U.S. to move to T+1 can possibly be achieved in this timeframe. In light of this, **the Canadian marketplace must now assess its willingness to advance its own trade matching and STP efforts to remain in sync with U.S. STP/T+1 readiness program, even without a definitive, hard date established for any potential change to a T+1 environment.**

Canada's STP/T+1 Critical Path Activities and Key Enablers

While we established that a potential gap exists between U.S. and Canadian efforts, we have also identified ways in which the gap can be effectively closed.

The gap between the Canadian and U.S. levels of readiness for T+1 (**approximately 14 months**) is based upon a consideration of the key building blocks (i.e., critical path elements) for STP and T+1 readiness that have been identified by the Canadian market participants in our study, and by the SIA. While the building blocks for STP and T+1 readiness are essentially the same, we have highlighted those actions that may not be required for shortened settlement, but that will nevertheless advance the level of STP in Canada.

Critical Path Activities

The following list of critical path activities has been identified by the Canadian marketplace as key to the accomplishment of further progress toward STP and the eventual shortening of the settlement cycle (if agreed to). In addition, several enablers of T+1 and key enhancements to further STP are listed as well.

1. INSTITUTE INDUSTRY-WIDE COMMITMENT, LEADERSHIP, MOBILIZATION AND RESOURCING

Our review highlighted the need for agreement as to the entity that will supply the governance necessary to mobilize and lead the efforts of the Canadian community toward STP and T+1 readiness. There is also a need for a strong program management office, with appropriate budget and resources that can identify issues and facilitate their resolution. We see this as a major opportunity to close the gap that currently exists between Canadian and U.S. efforts.

2. ENACT REGULATION, MEASUREMENT AND ENFORCEMENT

This relates to the need to foster common action with regard to institutional trade matching, as well as other enablers of STP and T+1 such as standardized entitlement reporting. There is broad support for a regulatory-driven approach to jumpstart key STP objectives, such as an institutional trade matching rule and mandated entitlement notifications, across all market segments.

3. EFFECTIVELY ENGAGE THE BUY SIDE INVESTMENT MANAGEMENT COMMUNITY

The buy side community is large and ranges considerably in terms of size and distribution; they have no single industry association to help broadly coordinate action. In addition, the sell side has not made clear to the buy side an economic incentive to embrace STP and T+1 readiness efforts. As has been noted by the SIA in the U.S., various segments of the investment management community need to be fully engaged to ensure any move to STP and T+1 readiness. Specifically, it is necessary to provide the economic incentive and/or the regulatory support for buy side changes in process and technology. In addition, it will be necessary to provide clarity to the buy side as to the timing and requirements for STP and T+1 readiness.

4. COMMUNICATE AND IMPLEMENT STANDARDS AND MARKET/BUSINESS PRACTICES

This critical path item refers to the need to more broadly syndicate and achieve adherence to standards and business/market practices that have been developed by the CCMA with regards to institutional trade processing, corporate actions, securities lending and direct registration systems. In addition, business/market practices need to be developed for investment funds. All of the above provide a key building block for connectivity and an initial roadmap for modifying internal systems and processes.

5. MODIFY INTERNAL SYSTEMS/PROCESSES

This building block encompasses the need for firms to modify their internal systems and processes, and thereafter to interact more seamlessly with their trading and settlement counterparts. This will enable intra-day allocation, matching and submission of trades for settlement. Firms will be guided in their efforts by emerging Canadian market standards, protocols and refined trade flow processes.

6. IDENTIFY AND COMPLY WITH ACCELERATED CLEARING CORPORATION DEADLINES

This effort largely refers to the need for intra-day submission of institutional sell side trades to the clearing corporation on trade date. The CCMA's institutional committee has undertaken the effort of conducting a survey to better identify bottlenecks in the current process to focus on effective solutions. While CDS accepts locked-in trades on trade date, there may be a need, pending further analysis, to accelerate the performance of the trade reconciliation service performed by CDS for its participants (to the extent that the sell side wants to complete this reconciliation on trade date), in a T+1 environment, to enable resolution of any customer side differences on trade date.

7. ACCOMPLISH TRADE MATCHING/AFFIRMATION ON TRADE DATE

The agreement of trade details between counter parties as soon as practicable after the trade is executed is a hallmark of risk reduction, as promoted by the G-30. In recognition of this fact, the Canadian Securities Administrators (CSA) has recently issued a draft rule requiring matching on trade date by July 2005. Efforts are underway in the U.S. to match 95% of trades between 9 AM and 12 PM (Eastern time) on T+1 within the next two years. This would likely be facilitated by passage of a rule in the U.S. At that point, matching on trade date can be accomplished soon thereafter, positioning the U.S. to be T+1 ready, if endorsed by the industry or mandated by the regulators. A process for accelerating trade matching in Canada will ensure synchronicity with the U.S. timetable, and effect the risk reducing benefits of earlier trade agreement. A key enabler of earlier trade matching will be the provision of electronic allocations by investment managers. It must also be determined if an industry-wide SSI database will be required to facilitate same day matching in Canada.

Key Enablers

While the following activities have not been deemed to be critical to be T+1 ready in Canada, they are nevertheless considered important milestones to accomplish in an effort to improve the safety, efficiency and cost effectiveness of the market, i.e., they are viewed as critical for STP.

8. ACCOMPLISH CROSS-BORDER IMPLEMENTATION

While Canada has made great strides in implementing effective cross-border processing, owing to the fact that approximately 25% of CDS settlements are with U.S. counter parties, further equalization of rules and processes with the U.S. is needed, and would be required if T+1 settlement were enacted. In addition, non-U.S. investors would still need to be addressed from a timing and foreign exchange settlement perspective, and more industry analysis is needed to fully vet this issue.

9. IMPROVE CORPORATE ACTIONS PROCESSING/ACHIEVE ELECTRONIC DELIVERY OF CORPORATE ACTIONS ANNOUNCEMENTS

At present, issues exist with regard to the quality and uniformity of corporate actions information received, giving rise to potentially significant operational losses, and impairing the degree of STP possible. Although the CCMA has issued standards and market/business practices, these need to be broadly syndicated and adhered to. Although the CCMA has determined the need for a central hub as critical for STP for this to proceed, a business case should be developed to determine the viability and need for a central repository of corporate actions information.

10. MODIFY INVESTMENT FUNDS PROCESSING AND REGULATION

System and process timing changes for T+1 readiness needs to be understood via a feasibility study, assuming investment funds need to be on same settlement cycle as underlying securities. Documentation agreements and use of trust accounts are expected to require changes to some or all of National Instrument 81-102 – Mutual Funds, Bankruptcy and Insolvency Act (BIA), Personal Information Protection and Electronic Documents Act (PIPEDA)/provincial equivalents, anti-money laundering/terrorist legislation, Corporations Act(s), and Securities Acts. In addition, current reconciliation practices between dealer systems and fund company activity would need to be accelerated, as this is happening on settlement date with compressed time for error correction.

Implementation Considerations and Timeframes for STP/T+1 Activities

Given the size and complexity of the challenge to move to greater levels of STP and be positioned for the possibility of T+1 settlement, the Canadian market is encouraged to move in an accelerated manner toward greater levels of coordinated, street-wide activity.

While much has been done by the CCMA and other organizations to further education and development of best practices and standards, a move to a more implementation-oriented approach is now recommended. It should be noted that our suggested timeframe for T+1 readiness assumes a start date of Q1 2005 at the current pace, to allow time for the decision processes and organizational efforts required for a coordinated effort to be completed. If a proactive organization were not fully engaged by then (which requires Q3 2004 initiation as outlined later in this report), it is likely that the momentum generated in the U.S. by virtue of its long-standing STP program (begun in 1999 with the T+1 Business Case), and by the plans already underway for same day matching, could exacerbate the gap that has been identified, and become problematic for the Canadian market, should the U.S. adopt T+1 settlement in the next few years.

Feasibility of the U.S. Moving to T+1 Settlement

At the present time, there is little support for T+1 settlement, in addition to varying views of its necessity, within the U.S. securities industry once STP goals are achieved.

The SIA's SEC Concept Release Task Force has reported that consideration of T+1 by the U.S. securities industry will likely be deferred until the accomplishment of same day trade matching. The goal is to reach matching between 9 AM and 12 PM (Eastern time) on T+1 within 24 to 30 months, at which time it will be feasible to move to matching on trade date soon thereafter. (In fact, while many U.S. participants feel that trade date matching will be feasible within two years, the stated goal of T+1 is meant to accommodate the high percentage of cross-border trades (i.e., with non-Canadian entities) in the U.S. The SEC is likely to respond to this feedback from the industry by year-end 2004. While it is unclear whether the SEC will accept this position, it is likely that they will encourage the move toward same day trade matching.

Therefore, the Canadian market is encouraged to consider actively moving toward the goal of matching on trade date as well. In addition, as a number of the building blocks identified for Canada have been accomplished by the U.S., concerted industry action in Canada is also recommended for those actions that would enable T+1 settlement. This is due to the fact that if the U.S. does adopt T+1 settlement within the next two years, the building blocks for T+1 in the U.S. will have largely already been accomplished. If the gap between the U.S. and Canada were not closed by that time, the Canadian industry might possibly face the prospect of moving to T+1 settlement after the U.S.

Critical Success Factors

We believe that the current gap in STP and T+1 readiness in Canada versus the U.S. can be closed, given close cooperation and proactive movements by the Canadian securities market.

This is due to some of the unique attributes of the Canadian market that have enabled successful completion of other industry initiatives, namely the following:

- The accepted use of and ability to increase block settlements of institutional trades.
- CSA's "stake in the ground" proposed rule enactment in July 2005 and continued pressure through CSA STP Readiness Surveys.
- The requirement for Canada's brokers to meet a one-hour cycle for broker-to-broker matching by June 2005.
- The agility and responsiveness of the Canadian market – the top 20 brokers represent 85% of the market, and 60% of those clear through 15 carrying brokers that have been preparing their systems to meet STP requirements for some years. In addition, all seven transfer agents are expecting to move to electronic direct registration systems (DRSs) and the top three are expected to introduce DRSs in early 2005.
- Relatively low trading volumes compared to the U.S., with no perceived capacity constraints.

In addition, the following elements will also positively impact the potential gap, and can be leveraged to actually close the gap if succinct decisions are made in the next few months:

- Immediate attention and focus on mobilization efforts, determining the appropriate governance structure, and developing a detailed implementation plan for the industry can potentially close the gap by as much as four to six months if started in Q3 2004.
- The industry-wide testing for the Canadian market can potentially be accomplished in a six to nine month period (versus 12 months for the U.S.), pending further focus and analysis on what is required for Canada and on the details of the implementation plan.

It is now necessary for the Canadian securities industry to select a governance structure that allows for addressing and monitoring certain institutional, regulatory and behavioral issues that will be critical to the success of the initiative.

Focusing on the following factors will enable the industry to successfully implement and fully realize the benefits of STP and position itself for T+1:

Establishment of a Disciplined Program: The establishment and enforcement of a disciplined program by the Canadian securities industry, in partnership with key regulators, will drive the industry's movement to STP and T+1 readiness in accordance with an agreed timeline. This includes the establishment of proactive steps to achieve the completion of the building blocks, full engagement of all market participants, as well as monitoring and reporting procedures established to manage the progress of participants and industry service providers. In addition, the program should encompass industry-wide tests of T+1 components prior to the launch of T+1, and the adoption of codes of practice that will guide and maximize the effectiveness of all participants in the effort.

A Clear and Common Vision: The Canadian securities industry must have a clear and common vision of the goals of the STP/T+1 effort, to ensure industry-wide adoption and continued action. Such industry consensus can be fostered by more broadly syndicating the CCMA's Standards and Market/Business Practices, and by agreeing the respective roles of the participants, the regulators and the industry infrastructure providers in this initiative.

Regulatory Partnership: Achieving the requirements for greater STP and T+1 readiness will require some modifications to existing regulations, as well as the enactment of new practices, including those for same day trade matching. The market needs to embrace those regulations that will foster cooperation and common action across all market segments, and seek to influence the content of such regulations, in partnership with the regulators to ensure the minimum disruption to current business, while ensuring a stronger platform for future growth and profitability.

Summary

The improvements that are required for the Canadian market involve technology, behavioral/process, and regulatory changes.

The Canadian securities industry has a number of critical path items to undertake in order to gain momentum and align its program goals with the U.S. All of these are critical components of change, and are necessary to be approached with equal weight in order to achieve success with the STP and T+1 readiness goals.

Canada remains committed to meeting T+1 on the same day as the U.S., should the U.S. and Canada decide to shorten the securities settlement cycle. Given the interrelationship of Canadian and U.S. capital markets, Canada and the U.S. share a common end goal, whether STP or T+1. How to get there will differ due to differences in market structure, market practices, infrastructure and other factors. The key for Canada is to mobilize quickly and then follow through, which will require a combination of monitoring, reporting and enforcement.

3. How to Read and Use This Report

Two documents were produced by Capco for the Canadian STP/T+1 Assessment project:

1. Detailed Report (this document) and
2. Summary Report

The Summary Report is a condensed version of all of the Assessment results. It presents the analysis findings in a concise, "bullet list" format, accompanied by various diagrams and illustrations representing the results.

The Detailed Report presents the comprehensive findings of the Assessment. This report contains all relevant supporting documentation for the Assessment findings, including quantitative data that was obtained wherever possible and as applicable to the analysis.

Executive Summary: Provides a concise summary of all of the report's key findings.

History and Background of the STP/T+1 Efforts in Canada and the U.S.: This section presents the relevant evolution of the T+1 programs in Canada and the U.S. and explains how and why they morphed into STP-focused programs. In addition, the current renewed interest on STP and T+1 programs is discussed, putting this current Assessment project in context. This section is intended for the reader who may not be completely familiar with how the STP/T+1 programs began and changed over the past few years, in both Canada and the U.S.

STP/T+1 Assessment Results: This section provides the core of the results from the nine-week Assessment project. This section identifies the STP and T+1 critical path elements for both the Canadian and U.S. markets. It is intended to provide the reader with a comprehensive explanation of what Canada's critical path to STP and T+1 is, which market participants are impacted, why each is deemed a critical path item, and the timing for both Canada and the U.S. From the market segment analysis, the reader can glean an understanding of the technology, regulatory, behavioral and process impacts of the critical path. Thereafter, U.S. efforts that are underway, yet do not impact the Canadian efforts, are explained.

Gap Analysis – Canadian versus U.S. Timeline: This section provides the current U.S. and Canadian timelines, based on results of the nine-week Assessment effort. As such, the timeline depicts the estimated potential gap between the Canadian and U.S. programs. Additionally, a proposed Canadian timeline is presented to show how any gap can be closed, so the two markets can stay in sync. Thereafter, a description of how the gap can be closed is presented.

Feasibility of Moving to T+1: This section discusses the current views of the U.S. industry, primarily from the efforts of the current SIA SEC Concept Release Task Force, on the likelihood of the U.S. shortening the settlement cycle. In addition, the feasibility of Canada moving to T+1 if the U.S. does so, is explained.

Getting There – Recommendations: This section provides the short- and longer-term recommendations based on the Assessment results to achieve the stated STP goals. The recommendations identify the critical path items that require immediate focus and those that require action soon thereafter.

Appendices: Several appendices are attached for the reader's reference. The glossary offers definitions so readers use terms in the same context. Relevant web links are listed for the reader to go to various sources for more information on entities referenced throughout the document. The list of Assessment project participants and their affiliations is also presented.

The results represent the feedback and views of the individuals interviewed for their respective market segments, and must be interpreted in that context. The comparative statistics presented throughout each report are representative of the market segment group that was interviewed, and Capco was not engaged to independently validate the data presented by those individuals.

4. History and Background of the STP/T+1 Efforts in Canada and the United States

The financial services industry has undergone tremendous change and advancement since the stock market crash in October of 1987. That experience influenced a move to increased liquidity and more efficient execution of financial markets globally. Industry experts in North America agreed that a move to settlement in a next day or T+1 environment would substantially reduce market risk. However, this solution is not without complication. In order to achieve trading and settlement in a T+1 environment, industry experts have identified the concept of STP as an enabler to T+1.

Through the late 1990s and early 2000s it was thought that the enabler of market efficiencies and risk reduction was a T+1 trading and settlement cycle. The perception was that the shortened settlement cycle would succeed in reducing risk and increase liquidity, thereby enabling the markets to become more efficient. It was then that trading and, more pointedly, operations were thrust into the spotlight. Experts were confronted with the operational issues of connectivity – both inter-firm and intra-firm – across market segments, with internal firm silos operating with outdated systems and support channels, and little uniformity in process, terminology and systems use across the entire industry.

As the markets experienced dynamically increasing volumes through the late 1990s, the industry moved no closer to achieving a T+1 trading and settlement date. The improvement in the economy brought about increased revenue industry-wide, which supported or justified many industry participants' significant internal investment for systems and process improvements. The outcome was not what was anticipated. The increased spending, ultimately, uncovered even more challenges and hence more confusion about how to now deal with the industry and market segment interconnectivity issues with now higher volumes and increased risk.

Focus abruptly shifted after the events of “9/11”. Firms were faced with larger issues than shortening settlement cycles. Decreasing revenue, economic downturn, disaster recovery, and the risk to business continuity were the topics that dominated the industry and would for the next three years.

Disaster recovery and business continuity planning would become key focal points for the financial services industry together with firms' needs to reign in costs and spending in order to weather the stormy economic environment. This forced industry experts to rethink their goal of aspiring to a T+1 environment. It forced firms to see their individual business as a piece in the bigger industry picture. How their businesses fit in and which other components of the market it affected became the new thinking. The focus on efficiencies throughout the industry and within individual firms – straight-through processing – became the new goal.

Resource reduction, systems integration, and seamless processing would account for reduced costs and increased trading margins. Tackling T+1 all at once proved before to be a daunting task. Experts, namely the SIA, agreed that focusing on STP in smaller, more specific projects would, albeit slowly, move the industry forward. As a result, the SIA outlined key STP projects that needed to be completed by the industry – ranging from the securities lending Automated Recall Management System (ARMS) to focusing on dematerialization of physical certificates, among other projects. Canada, through the CCMA, followed the U.S. shift in focus.

The recent U.S. SEC Concept Release proposal focuses on three key industry areas to achieve STP while the CSA released a comparable proposed rule and discussion paper for Canadian industry focus. Market values and volumes have returned to levels not seen in nearly four years. The smaller, more focused projects have been concurrently underway with analysis, working groups, white papers and regulation, on both sides of the border, and there has been a renewed

interest in the ultimate goal of T+1. The difference today is that the industry is armed with experience and understanding that the enabler to T+1 is the broadly defined concept of STP.

There are as many definitions of STP for securities transactions as there are securities practitioners. Yet they all have the same vision, to eliminate every manual or duplicate step or time barrier from trade origination through to final settlement. Getting the maximum benefit from moving to STP means participants must examine their firm's internal systems and processes. They must remove all the manual and redundant processing steps for the entire life cycle of a trade from end-to-end. STP refers to the seamless "round-trip" processing of a trade from any market participant's position along the trade processing life cycle. The process must not be isolated to the time an order is received through to reconciliation. STP can and should occur as early as new account set-up, when the client relationship is established, through credit authorizations, pre-trade compliance checks against trading guidelines and securities restrictions, money and securities transfers, corporate actions, securities lending and other related activities, ending with statement production and delivery.

To successfully implement STP, industry participants must look at all related systems and processes to ensure internal and external compliance with the following STP principles:

- Replacing manual steps with automated processing
- Meeting standards for data quality, timing and messaging
- Implementing real- or near real-time functionality, wherever possible
- Developing standard interoperability and interfaces.

Highlighting the Need for STP/T+1

Securities trading and settlement is more complex than a cash withdrawal, bill payment or money transfer, which commonly involve only the client and the bank. A single securities transaction often involves multiple primary processes operating sequentially and ancillary processes operating in parallel, requiring active involvement of several independent participants. Further complexities arise due to the existing manual interfaces between many of the internal processes and external participants.

The financial services industry has recognized the need to become STP capable in order to achieve better margins through lower processing costs and reduced risk. Further, STP is the enabler to a potential industry move to T+1.

The CCMA has identified that achieving STP will also require new industry functionality through infrastructure or service providers or other vendors. It will require regulatory change and governance (i.e., oversight of the program). Additionally it will require industry standards, business and market practices and enforced deadlines. Particular industry segments will develop many of these changes, for example, mutual and segregated fund work is being undertaken by FundSERV and the Investment Funds Institute of Canada (IFIC).

Refer to the CCMA's website (www.ccma-acmc.ca) and the SIA's website (www.sia.com) for details on the respective STP program details and milestones to date.

Historically, the industry has seen an increase in trading volumes and activity. Volumes are nearing 1999-2000 levels. STP is now viewed as the enabler to, and driver of, more efficiency and reduced risk in the markets of tomorrow. Ultimately, with an eye to faster processing and settlement in a T+1 environment, certain STP efforts will need to be fulfilled.

Current Efforts

In advance of an anticipated recommendation relating to STP and T+1 by the SIA, CDS has, on behalf of the CCMA, initiated and sponsored the Capco Canadian STP/T+1 Assessment Project.

The CCMA is interested in an assessment of the Canadian financial industry's level of STP and T+1 readiness. More specifically, the CCMA requested a comparative analysis of the Canadian and U.S. capital markets should the current settlement cycle be reduced from three days after trade date (T+3) to the day following a transaction (T+1), with a focus on achieving STP.

The CCMA, in addition to being the project sponsor of this assessment, 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. Their current priority is to promote STP strategies among Canadian capital market participants. The following are current CCMA Board members:



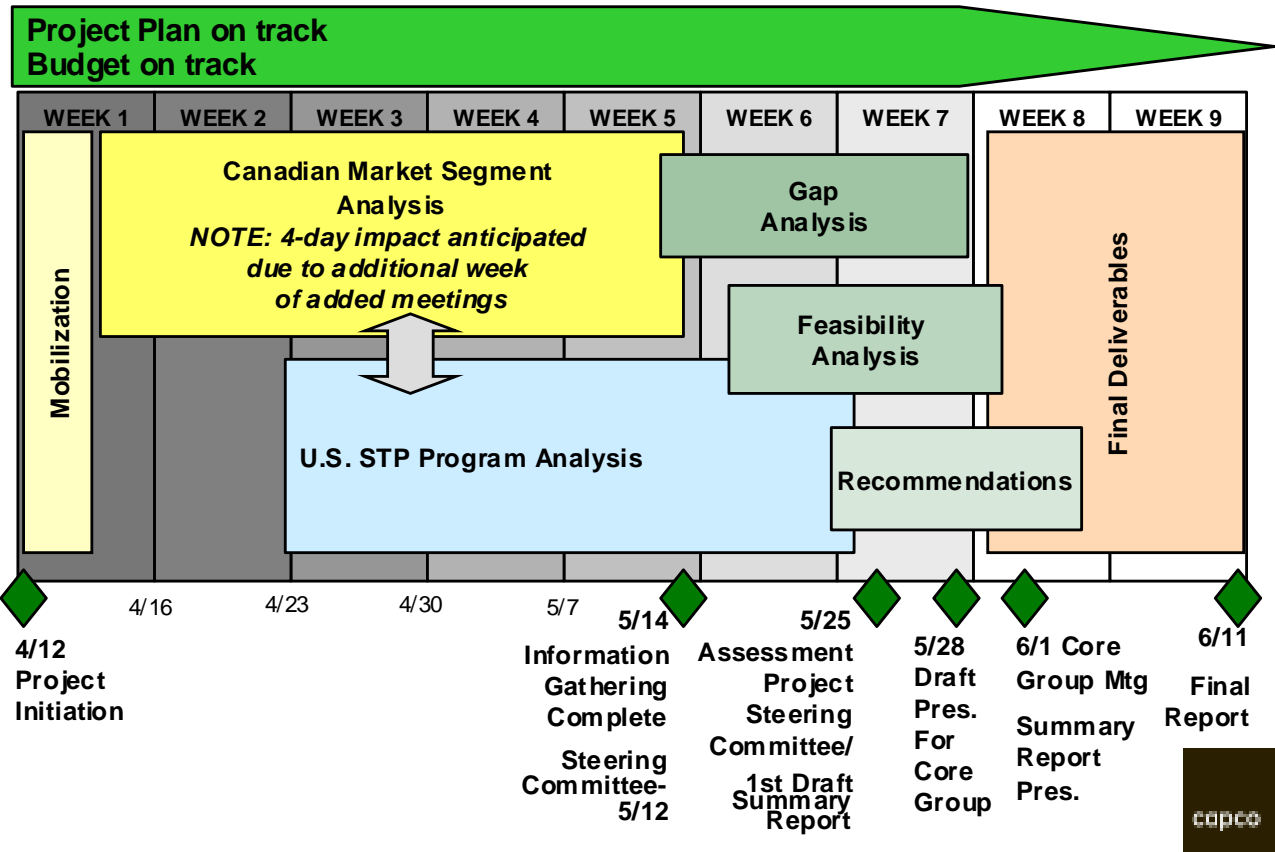
Capco was approached by the CCMA through CDS to conduct the Canadian STP/T+1 Assessment based on its extensive industry STP/T+1 involvement, experience, and demonstrated leadership. Capco's role was to provide an unbiased assessment of the Canadian STP/T+1 readiness and leverage its role in the U.S. STP/T+1 initiatives to provide a comparative analysis of both markets.

Capco's local Canadian presence and its understanding of the U.S. and Canadian markets positioned Capco to provide a comprehensive assessment of both markets in a nine-week period. Unparalleled insight in the U.S. STP/T+1 program enabled the team to provide fast project mobilization and jumpstart the entire assessment effort. Further, Capco has experience in assisting Canadian and U.S. institutions transform their organizations to enhance STP and has access to many of the industry leaders.



The following outlines Capco's approach to realizing the project objectives:

Project Timeline

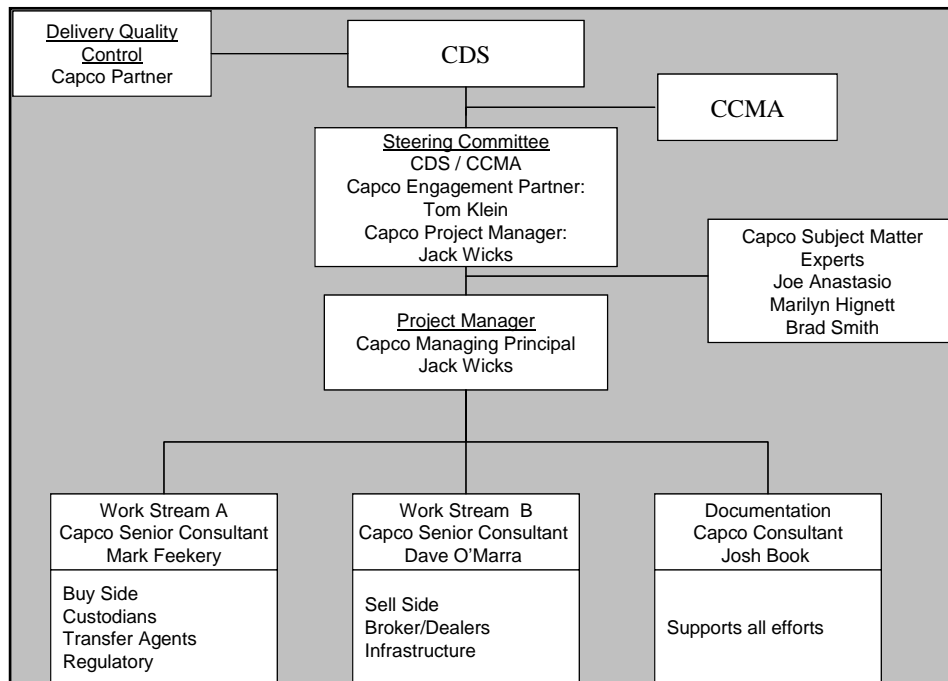


The Capco approach has entailed analysis of existing documentation, formal interviews with Canadian market segment chairpersons, sell side broker/dealers, buy side institutional investment managers, custodians, transfer agents, regulators, infrastructure providers, service bureaus and vendors. In addition, Capco's expanded approach was to carry out U.S. interviews and discussions with SIA STP Committee members, Task Force members, and others. In addition, we utilized insights gleaned from our experiences and contacts with regulators and senior executive-level contacts, and from our integral role as member of the SIA's SEC Concept Release Task Force.

The formal steps of our approach included the following:

1. **Mobilization Phase:** Initiated the project and established the project infrastructure, developed the project plan and interview schedule, and other logistical tasks (identifying contact people, relevant documentation, etc.).
2. **Market Segment Analysis:** During this stream Capco identified the elements that are critical to achieve T+1 from the CCMA project plans, interviews, and workshops; Capco established a current state baseline of efforts based on the information gathered. Insight from this analysis served to identify potential activities that are being undertaken that may not be critical to T+1, or those that may need to be accelerated to achieve T+1.
3. **U.S. STP/T+1 Program Analysis:** Analysis of the U.S. STP/T+1 program (including other driving factors, such as the recent SEC's Concept Release).
4. **Gap Analysis:** Analyzed differences between the U.S. and Canadian STP/T+1 efforts, identified areas of concern where Canada falls behind or is ahead of the U.S.
5. **Feasibility Analysis:** Capco understands there may be different interpretations as to what readiness for STP/T+1 means. Capco sees this as having two components: 1) the industry's capabilities within the different market segments to achieve STP/T+1 and 2) the performance component (i.e., the extent to which the capability of moving to T+1/STP is used). As such, Capco analyzed the capability of the Canadian markets to close the gaps identified during the Gap Analysis and the extent of current and anticipated adoption rates. Capco also used quantitative performance metrics (e.g., affirmation rates and other statistics) when and as available and relevant.
6. **Recommendations:** Capco developed its final recommendations, which includes a prioritized list of actions gleaned from our analysis.

The Canadian STP/T+1 Assessment was structured as follows:



5. STP/T+1 Assessment Results

The following sections present the comprehensive assessment details resulting from the nine-week Assessment project. These sections provide the core findings of the Assessment, and are organized to give a clear indication of the Canadian industry's current status, identify what needs to be completed in order to effect a positive change velocity within the Canadian STP/T+1 program, and provide a full comparison with the current status and views of the U.S. STP/T+1 program.

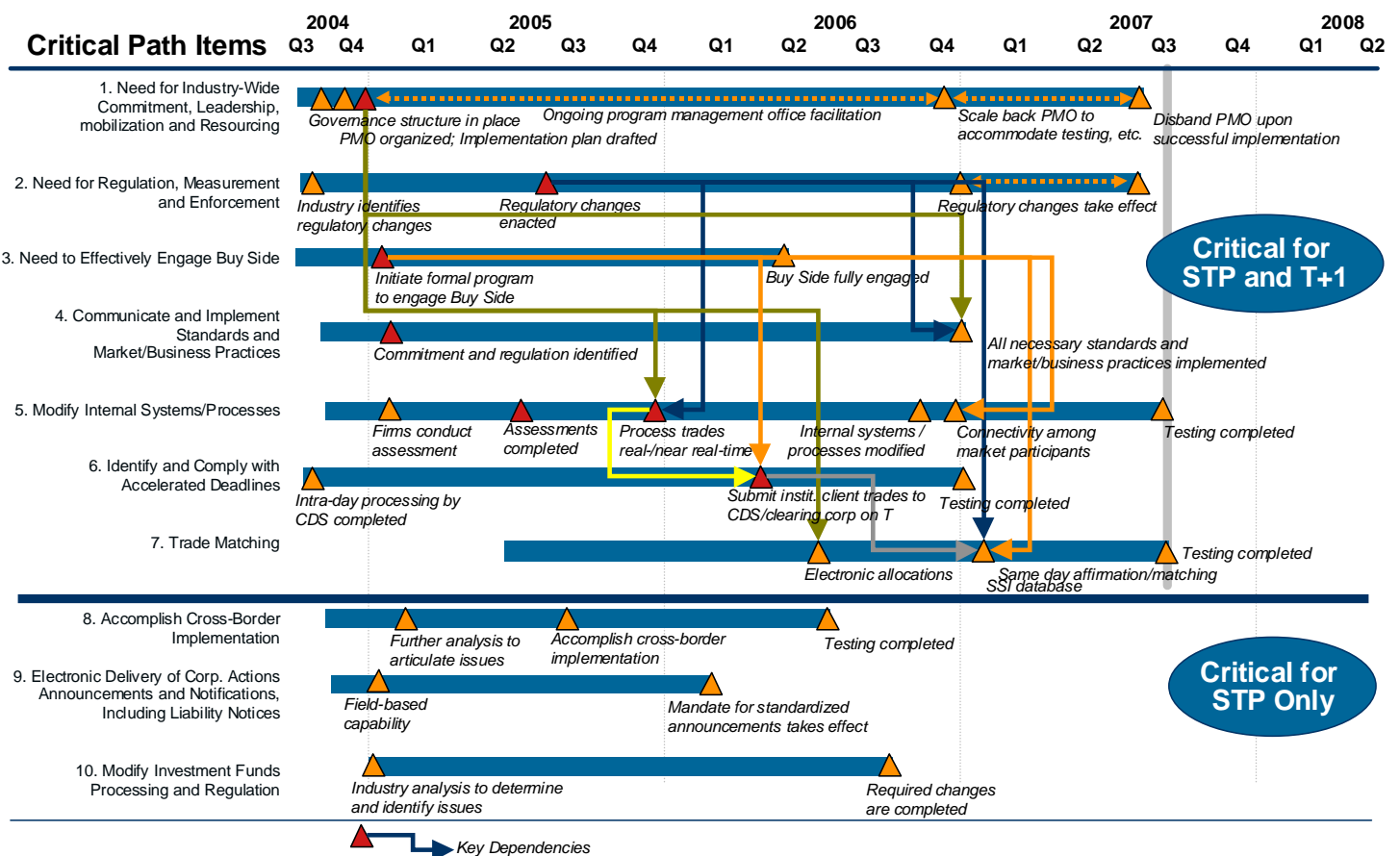
The key components of the Assessment Results include the following:

1. Proposed STP/T+1 Critical Path Timeline for Canada
2. STP/T+1 Critical Path Status and Timing: Canada and U.S.
3. STP/T+1 Critical Path Details: Canada and U.S.
4. Assessment Impact by Market Segment: Canada
5. Summary STP/T+1 Review by Project Focus: U.S.

Proposed STP/T+1 Critical Path Timeline for Canada

The following is a high-level implementation plan for the Canadian industry to achieve a T+1 readiness state by Q3 2007 – the time that has been reflected as the earliest possible U.S. industry readiness for T+1. The diagram shows the first seven critical path items, as defined by the industry, as integral to achieving a T+1 industry-wide state. It is important to note that there are interdependencies between the critical items that must be accounted for in any formal STP/T+1 program. Therefore, the PMO must take a milestone approach to any STP/T+1 program incorporating the cascading effect of the interdependencies.

The latter three items are critical for an industry-wide STP state but not integral for T+1 readiness. The timeline illustrates that these programs could be finished in advance of even the earliest possible T+1 industry-wide movement.



Critical Path Comparison and Status: Canada and U.S.

The following table depicts the items, status and timing that the industry has deemed critical both in Canada and the U.S. The first seven items are critical for STP and T+1 readiness. The remaining three are deemed critical for STP only.

Critical Path Items for STP and T+1		
Critical Path Item	Status	Timing
1) Need for Industry-Wide Commitment, Leadership, Mobilization and Resourcing	CANADA: No unanimous agreement on what body should champion STP and T+1. There is a need for full market participation, including the front office. Critical path items need to form the basis for industry implementation plan for achieving STP/T+1. There is a need for a strong program management office, with appropriate budget and resources, that can identify issues and facilitate their resolution.	CAN: 9 months
	U.S.: Not identified as a critical path item, however, buyside apathy does exist (see #5).	U.S.: 1-3 months
2) Need for Regulation, Measurement and Enforcement	Regulations/Rules CANADA: Industry agrees on the need for a rule for institutional trade processing and entitlements reporting. There is not full agreement on the "right" regulator(s) (TSX rule equivalent to Reg. 387). U.S.: Preliminary SIA Task Force recommendations support SEC regulation to mandate move to matching on T.	CAN: 1 year U.S.: 1 year
	Measurement CANADA: CDS can measure timing (assumes completeness, but not accuracy or adherence to best practices) of sellside data entry and custodian confirm; custodians give buyside "scorecards" on trade reporting but these are not published. U.S.: DTCC and Omgeo measure timeliness and accuracy. DTCC indicated they will provide stats on compliance.	CAN: 1 year U.S.: 1 year
	Enforcement CANADA: Canadian marketplace needs to agree on who would measure and apply appropriate enforcement remedies; to date, no broadly accepted "incentive" pricing and no publication of "slow" data enterers and confirmers. TSX Rule is not enforced. U.S.: SEC and other regulatory enforcement is necessary. DTCC is considering initiating incentive pricing for on-time delivery.	CAN: 1 year U.S.: 1 year
	CANADA: The buyside has been involved in the development of best practices, conclusions on VMU viability in Canada, targets, etc., since the CCMA's inception. General agreement from all industry segments, including the buyside, indicate that additional implementation planning and regulation are required to move the broader buyside to STP/T+1.	CAN: 12 – 15 months
	U.S.: Buyside apathy exists, and the buyside needs to be engaged, however, a foundation for mobilization is in place via The Bond Market Association, the asset Managers Forum, education, and the buyside involvement with the SIA's efforts over the previous 3 years in identifying obstacles and incentives needed to engage the buyside in general.	U.S.: 12 – 15 months

Critical Path Items for STP and T+1			
Critical Path Item	Status	Timing	
4) Communicate and Implement Standards and Market/Business Practices	<p>CANADA: Business Practices – Defines "who does what by when" and was completed by CCMA for institutional, corporate actions, securities lending and direct registration systems. These practices need to be broadly publicized and monitored for adherence. Business practices are needed for investment funds.</p> <p>Market Practices – Reference data (defines "what business data elements are used") was completed by CCMA for institutional, corporate actions, securities lending and direct registration systems. These practices need to be broadly publicized and monitored for adherence. Market practices are needed for investment funds.</p> <p>Standards – There are multiple message protocols, but there is convergence on ISO 15022 for custodians and CDS; for other market participants, there is an expectation that translation software and/or vendors will address the issue. FundSERV is expected to lead on investment fund standards.</p>	CAN: 2 years	
	<p>U.S.: The U.S. has developed market practice standards for institutional post-trade processing, corporate actions, securities lending and direct registration systems. There are multiple message protocols but there is convergence to ISO 15022 XML. There is ongoing work within ISO to develop a common data vocabulary and influence standards setting bodies. Timing standards are not being fully adhered to and will need to be mandated. For corporate actions and securities lending, there are established market practices, standard data elements and protocols. Similar to Canada, this work effort is estimated at two years' duration.</p>	U.S.: 2 years	
5) Modify Internal Systems/Processes	<p>A. Modify Internal Firm Processes and Systems</p>	<p>CANADA: Most firms put internal process and systems modifications on hold when T+1 was postponed; virtually all firms continued with efficiency, cost-savings and risk-reduction projects, some of which advanced STP.</p>	CAN: 2 years
		<p>U.S.: Most firms put internal process and systems modifications on hold when T+1 was postponed; virtually all firms continued with efficiency, cost-savings and risk-reduction projects, some of which advanced STP.</p>	U.S.: 2 years
	<p>B. Achieve Connectivity Among Market Participants</p>	<p>CANADA: A high percentage of IMs (2/3 of an estimated 250-300 third party IMs) connect to a single service provider, although these IMs do not use all available functionality, and most top tier IMs have a high degree of STP readiness; a high percentage of the institutional sellside uses the same communications system for trade allocations; addressing the remaining connectivity issues needs industry approval and commitment; initiating this goal is dependent on trade matching rule.</p>	CAN: 2 years
		<p>U.S.: DTCC's ID system links buy-side, sellside, custodian and DTCC, however, there remains a significant amount of faxes, etc., relied upon, and all available functionality is not used; initiating this goal is dependent on trade matching rule.</p>	U.S.: 1 - 2 years
	<p>C. Process Trades in Real-Time/Near Real-Time</p>	<p>CANADA: The Canadian service bureaus' systems that are used by nearly 90% of the dealers are either in production or in testing for processing trades in real-time/intra-day batch. Adoption by dealers to send trades to CDS/DTC has begun. Some dealers are using other internal systems to send trades intra-day to CDS. The remaining 10% of the dealers are processing very low volume or no debt and equities.</p>	CAN: 1 year
		<p>U.S.: DTCC has initiative that required U.S. firms to operate in a more real-time basis; however, client side processing is still done in batch. All of the service bureaus' systems are in production or otherwise ready for processing trades in real-time or intra-day batch.</p>	U.S.: Completed

Critical Path Items for STP and T+1		
Critical Path Item	Status	Timing
6) Identify and Comply with Accelerated Deadlines	<p>CANADA: CDSX is accepting and settling trades same-day today; broker-to-broker matching was implemented in June 2004.</p> <p>U.S.: DTCC will be capable of T+1 settlement by year-end 2004; e.g., intra-day and real-time trade capture and trade reporting; Real-Time Trade Matching (RTTM) for fixed income to be implemented in June 2004.</p>	CAN: Completed
		U.S.: December 2004
		CAN: 18 months
B. Trade Date Submission of Dealer Institutional Trades to Depository/Clearing Corporation	<p>CANADA: 70% of sell side client trades accepted by CDSX on Trade date; 10% of these trades make the 7:30pm cutoff at CDS. Behavioral, process and system changes are needed to be completed to submit more trades on trade date.</p> <p>U.S.: Sell side trades are confirmed through DTCC/Omgeo on T.</p>	U.S.: Essentially Completed
7) Trade Matching	<p>CANADA: Current Statistics – 3% affirmation on Trade date (defined as the agreement between the broker/dealer and the investment manager's custodian by CDS's 7:30pm cutoff), draft rule for institutional trade matching on trade date is currently out for comment. CSA Trade Matching Rule enactment and full implementation is required. There are mixed views on the need for a VMU, and the economic viability of a VMU for Canada is also questioned. Omgeo does not currently provide for Canada's block settlement practice; vendors are beginning to offer affordable alternatives for electronic allocations and matching re: matching utilities/SSI; CDSX has published specifications for VMU linkage with the depository (2003) and expects to have access built by early 2005.</p> <p>U.S.: Focus has changed to match or affirm trades on Trade date (defined as the agreement between the broker/dealer and the investment manager); currently at 23% - 26%; 80% affirmed on T+1. The SIA has documented functional requirements for matching utilities (although the means to get to matching are no longer being proposed as a single solution); vendors are also beginning to offer affordable alternatives for electronic allocations and matching. The goal is to reach matching between 9 AM and 12 PM (Eastern time) on T+1 within two years, at which time it will be feasible to move to matching on Trade date soon thereafter.</p>	CAN: 3 years
		U.S.: 24 – 30 months
		B. Electronic Allocations
U.S.: 18 - 24 months		
C. Development of Standing Settlement Instructions Database	<p>CANADA: There are mixed views on the need for an industry standing settlement instructions (SSI) database; closest operating example (ESIR) would require industry agreement to be industry-wide model and policy and systems changes; feasibility of a new or alternative model needs to be examined. There needs to be industry agreement and mobilization among Custodians, Broker/Dealers, Buy-Side and Depositories before implementation can occur.</p> <p>U.S.: SIA has agreed to using just in time enrichment for STP, but will make SSI database required for T+1; SID, Alert, TradeWeb are being integrated by Omgeo.</p>	CAN: 3 years
		U.S.: 1 year

Critical Path Item	Status	Timing
Critical Path Items for STP Only		
8) Accomplish Cross-Border Implementation	CANADA: CDSX settles in CAD and USD and CAD/USD already settles T+1 and is not expected to be an issue; CDS recognizes the need to adapt CDSX functionality to changes in DTCC requirements; overall, put on hold since postponement of T+1; still an obstacle for T+1 with timing and FX settlement issues.	CAN: 1 year
	U.S.: Put on hold since postponement of T+1; still an obstacle for T+1 with timing and FX settlement issues.	U.S.: 2 years
9) Achieve Electronic Delivery of Corporate Actions Announcements and Notifications, Including Liability Notices	CANADA: CDS currently extracts information filed in SEDAR and sends it electronically to participants with an electronic link to the SEDAR document; CDS's corporate actions service meets the majority of CCMA "minimum" and "desirable" entitlement hub requirements, with the key limitations being that (1) data is limited to CDSX-eligible securities, (2) it is not entered by the initiator in the chain (issuer, offeror or agent) and (3) it is not in fully field-based ISO 15022 compatible format. An electronic liability notification hub is not considered T+1 critical; however, the industry should consider implementing standard U.S. liability notification wording for use in the Canadian market. Required changes include: 1. Recommendations for rule changes to standardize and automate announcements was presented to regulators in 2003. 2. Field-based capability--expected in 2005.	CAN: 18 months 6 months
	U.S.: DTCC SMART/Track for electronic Liability Notification is currently under development; recommendations for rule changes to standardize and automate announcements (tender offers) has been presented to regulators.	U.S.: December 2004 Pilot (liability hub)
10) Modify Investment Funds Processing and Regulation	CANADA: System and process timing changes for T+1 need to be understood via a feasibility study assuming investment funds need to be on same settlement cycle as underlying securities; documentation agreements and use of trust accounts are expected to require changes to some or all of NI 81-102 - Mutual Funds, BIA, PIPEDA/provincial equivalents, CRA, anti-money laundering/terrorist legislation, Corporations Act(s), and Securities Acts.	CAN: 18 – 24 months
	U.S.: The majority of U.S. mutual funds currently settle in T+1. Sixty five to 75% of mutual fund trades get confirmed on Trade date (up to midnight on T is considered same-day confirmation). The remainder get confirmed the morning of T+1. Trades confirmed by 11 am on T+1 will settle that day. The U.S. does more no-load business which facilitates ease for T+1 settlement. Load funds typically settle on T+3. Further analysis needed to determine issues around load funds.	U.S.: 9 – 12 months

STP/T+1 Critical Path Details: Canada and U.S.

The following pages reflect a discussion on the status of what has been deemed critical to both the Canadian and U.S. industry's STP and T+1 programs. The first seven items have been viewed as critical for STP and T+1 for both Canada and the U.S. Items eight through ten have been deemed by the industry as critical for STP but not integral for an industry-wide move to T+1 in either market place. The last items, 11 through 14, are critical issues deemed as only affecting the U.S. STP and T+1 program.

STP and T+1 CRITICAL

1. NEED FOR INDUSTRY-WIDE COMMITMENT, LEADERSHIP, MOBILIZATION AND RESOURCING

WHAT: The revamped program management office (PMO) is envisioned as coordinating development of the detailed implementation plan for the industry; raising, tracking, and resolving issues; liaising between market participants (B/Ds, IMs, TAs, Utilities, Service bureaus, etc.). The Capco critical path assessment and gap analysis indicates a need to reinvigorate the governance structure for Canada's STP/T+1 efforts in order to identify which entity will provide leadership, mobilization and oversight of the program. This should lead to the establishment of an action orientated PMO with adequate funding and necessary resources that will serve as a true enabler and facilitator of the program objectives.

WHY: There is no unanimous agreement on what body should champion STP and T+1. Canada needs full market participation, including the front office. The critical path items need to form the basis for an industry implementation plan for achieving STP/T+1. There is a need for a strong PMO, with appropriate budget and resources that can identify issues and facilitate their resolution.

WHO: Senior industry leaders need to determine and establish a governance structure.

WHEN:

August 31, 2004	Establish governance structure.
October 31, 2004	Organize PMO
December 31, 2004	Develop Initial Implementation Plan

U.S.: This was not identified as a critical path item for the U.S. as the SIA, together with other industry organizations such as The Bond Market Association and the Asset Managers Forum have an established infrastructure in place with appropriate resources, current budget and a blueprint for STP initiatives. Furthermore, there appears to be critical momentum for continued implementation of STP initiatives.

2. NEED FOR REGULATION, MEASUREMENT AND ENFORCEMENT

WHAT: There is broad industry agreement that the mandating of institutional trade matching and entitlements reporting is necessary to jumpstart Canada's STP/T+1 program and enable market efficiency and risk containment. While there is agreement on what should be mandated, there is not broad agreement on which entity should regulate and enforce. Irrespective of which entity mandates, there needs to be clear agreement on standards and business/market practices, who measures compliance and how it is enforced. Additionally, other areas of legislation and rules have been identified and are in various stages of review and change. These include:

- Implementation of the Uniform Securities Transfer Act (USTA) and other provincial legislation supporting book entry holdings
- Amend the Quebec Company Act and Securities Act to allow use of book entry holdings as collateral

- Conclude an SRO rule review and alignment regarding clearing and settlement.

WHY: The lack of regulation by the appropriate regulator(s) is seen as an impediment for mobilizing all industry participants into a common change implementation plan for STP/T+1 readiness. While rules, such as TSX 5-105 Uniform Settlement Rule, provide SRO mandate on trade affirmation, they are not monitored or enforced. The CCMA Working Groups have completed Standards and Market/Business Practices for institutional, corporate actions and securities lending but standards and these practices are not broadly communicated or monitored for adherence.

WHO: CSA and SROs need to agree on an appropriate regime for regulation and enforcement.

WHEN: This total effort is estimated as having a one-year duration. A significant enabler like the institutional trade matching rule needs to be enacted and awaiting implementation by July 2005, in order for the mobilization and governance structure of the program to commence in full force and with maximum effect. Prior to that, by Q4 2004, the industry needs consensus and a determination of what level of regulatory changes must be enacted.

U.S.: The preliminary SIA Task Force recommendations support regulations that would apply to all parties of a trade (broker/dealers, investment managers and custodians), rather than a change to existing SRO rules such as NYSE 387 that regulate only the broker/dealer community. This implies that the SEC would need to work in harmony with other regulators such as those governing the banks. Furthermore, it needs to be determined how hedge funds, offshore investment managers and Asset Managers not currently regulated by the SEC (those with assets under management of less than USD\$25 million) would be regulated.

It should be noted that unofficial comments from other U.S. organizations and utilities such as The Bond Market Association and Omgeo will be recommending an SRO rule change as they view it to be a “cleaner” method to regulation which would result in a swifter implementation. For this reason, we estimate the U.S. effort to adopt such a rule, including the required comment period, could be done in a one-year period.

3. NEED TO EFFECTIVELY ENGAGE THE BUY SIDE

WHAT: Various segments of the buy side investment management community have not embraced the STP/T+1 program due to lack of clarity on timing of any movement to T+1, other segment-specific priorities and the absence of any other industry initiatives or regulation to do so. In addition, the buy side has expressed a strong need for clear direction on STP/T+1 initiatives and an understanding of the economic impact to their market segment.

WHY: The buy side has been involved in the development of standards and market/business practices conclusions on institutional trade matching in Canada and other CCMA initiatives since the CCMA's inception. There is general agreement from all industry segments, including the buy side, that additional implementation planning and regulation are required to move the broader buy side to full STP/T+1 involvement.

WHO: Insurance Companies, investment managers.

WHEN: The effort required has been estimated at 12 – 15 months. Assuming the CSA Trade Matching Rule is mandated and/or an industry implementation plan is published, efforts should begin no later than Q3 2004.

U.S.: The buy side has been reluctant to adopt some of the STP initiatives, and in particular, the institutional trade matching initiative. However, there has also been increased buy side uptake of Omgeo TradeMatch in recent months, which implies that a business case for implementing institutional post-trade processing improvements exists. In January 2003, there were 207 OASYS TradeMatch buy side clients. In December 2003, there were 248, an increase of approximately

20%. Omgeo anticipates that in December 2004 there will be approximately 300 TradeMatch clients, representing an additional 20% increase. Furthermore, the foundation for mobilization is in place via The Bond Market Association and the Asset Managers Forum. The buy side has been involved with the SIA's efforts over the previous three years in identifying obstacles and incentives needed to engage the buy side. Similar to Canada, a 12 – 15 month effort is estimated to complete this effort.

4. COMMUNICATE AND IMPLEMENT STANDARDS AND MARKET/BUSINESS PRACTICES

WHAT:

Business Practices: Defines "who does what by when" and was completed by the CCMA for institutional, corporate actions, securities lending and direct registration systems. These practices need to be broadly publicized and monitored for adherence. Business practices are needed for investment funds.

Market Practices: Reference data (defines "what business data elements are used") was completed by CCMA for institutional, corporate actions, securities lending and direct registration systems. These practices need to be broadly publicized and monitored for adherence. Market practices are needed for investment funds.

Standards: There are multiple message protocols, but there is convergence on ISO 15022 for custodians and CDS; for other market participants, there is an expectation that translation software and/or vendors will address the issue. FundSERV is expected to lead on investment fund standards.

WHY: A fundamental foundation for achieving STP as an enabler for T+1 is the broad market acceptance of business and market practices and communication standards. This provides a key building block for connectivity and an initial roadmap for modifying internal systems and processes. This can be achieved through consensus but is more likely to be embraced through regulation and the appropriate measurement and enforcement.

WHO: All market participants and service providers.

WHEN: This effort is estimated as a two year duration. Assuming it is part of the other systems and process efforts energized as part of the industry-wide implementation plan, it should be completed by January 2007 for industry-wide testing, an effort should commence no later than Q3 2004.

U.S: The U.S. has developed market practice standards for institutional post-trade processing, corporate actions, securities lending and direct registration systems. There are multiple message protocols but there is convergence to ISO 15022 XML. There is ongoing work within ISO to develop a common data vocabulary and influence standards setting bodies. Timing standards are not being fully adhered to and will need to be mandated. For Corporate Actions and Securities Lending, there are established market practices, standard data elements and protocols. Similar to Canada, this work effort is estimated as a two year duration.

5. MODIFY INTERNAL SYSTEMS/PROCESSES

5A. MODIFY INTERNAL FIRM PROCESSES AND SYSTEMS

WHAT: Internal process and systems capabilities needs to be assessed for changing the transaction flow model for institutional trades, and overall readiness for operating under shortened time frames and complying with evolving industry standards and market/business practices. All market participants will need to align with the industry blueprint for change and develop their own internal needs and priorities.

WHY: While most firms put T+1 related internal process and systems modifications on hold when T+1 was postponed, virtually all firms continued with efficiency, cost-savings and risk-reduction projects of which some advanced STP. An internal firm assessment and gap analysis needs to be completed in all firms in order to create project plans to ensure readiness for STP/T+1 milestones.

WHO: All industry participants and service providers.

WHEN: This is estimated to be a two-year effort, on average, but will vary by firm size, complexity and reliance on service providers. Allowing for six months of industry-wide testing, efforts should begin no later than Q4 2004 for Q3 2007 readiness.

U.S.: From a street-side (broker-to-broker) perspective, it appears that improvement initiatives made by DTC (e.g., real-time trade reporting and the pending inventory management system improvements) have resulted in requiring firms to modify their internal systems to comply with accelerated timelines. However, from an institutional processing perspective, there has been less progress as firms have put on hold the required real-time processing that would be needed in a T+1 environment. For this reason, it is believed that a two-year effort is required and will require the same change in momentum.

5B: ACHIEVE CONNECTIVITY AMONG MARKET PARTICIPANTS

WHAT: Achievement of industry-wide STP and any subsequent move to T+1 will require seamless connectivity between all market participants. Institutional trade matching on trade date will not be achieved without connectivity. This connectivity will be enabled by adoption of communication standards and reference data practices. These standards and practices have not been broadly communicated and adopted and may require mandating.

WHY: While a high percentage of investment managers (2/3 of an estimated 250 – 300 third party investment managers) and Broker/Dealers connect to a single service provider, they do not use all available functionality. Most top tier investment managers have a high degree of STP readiness utilizing existing vendor and proprietary solutions. A high percentage of the institutional sell side uses the same communications system for trade allocations; addressing the remaining connectivity issues needs industry approval and commitment and initiating this goal may be dependent on mandating a trade matching rule.

WHO: Institutional buy side, institutional sell side, custodians and infrastructure.

WHEN: This is estimated as a two-year effort but will vary by firm size, complexity and current usage of service providers. Allowing for six months of industry-wide testing, efforts should begin no later than Q4 2004 for Q3 2007 readiness.

U.S.: With the increase in connectivity options such as FIX 4.4, there appears to be increased interconnectivity among U.S. participants. However, much of this connectivity is done on a bi-lateral basis and, still, there remains a large constituency that relies on manual communications (investment managers to broker/dealers, investment managers to custodians). In a T+1 environment, it is believed that this interconnectivity will need to be increased. It is believed that a mandate to same day affirmation will either drive firms to a centralized matching solution, or will drive current manually intensive firms to improve bilateral communications through electronic interfaces with counter parties. The bottleneck is therefore the adoption of same day affirmation and matching and U.S. readiness is therefore estimated to be between one and two years.

5C: PROCESS TRADES IN REAL-TIME/NEAR REAL-TIME

WHAT: In order to execute, allocate, match and submit trades for settlement in a T+1 environment, overnight batch processing alone will not be sufficient. Systems will need to update status and enrich data elements throughout the day.

WHY: The Canadian service bureaus' systems that are used by nearly 90% of the dealers are either in production or in testing for processing trades in real-time/intra-day batch. Adoption by dealers to send trades real time and/or intra-day to CDS/DTC has begun. Some dealers are using other internal systems to send trades intra-day to CDS. The remaining 10% of the dealers are processing very low volume or specialize in other retail products.

WHO: Sell side participants and service providers.

WHEN: This is estimated as a one-year effort but firms will need to update their internal processes and complementary systems. Allowing for six months of industry-wide testing, efforts should begin no later than January 2005 for Q3 2007 readiness.

U.S.: Client side processing is still done largely in batch. All of the service bureaus' systems are in production or otherwise ready for processing trades in a real-time or intra-day batch.

6. IDENTIFY AND COMPLY WITH ACCELERATED DEADLINES

6A: INTRA-DAY PROCESSING BY DEPOSITORY/CLEARING CORPORATION

WHAT: CDSX can accept and settle trades same-day today.

WHEN: Changes enabling broker-to-broker matching were implemented in June 2004.

U.S.: DTCC is currently processing most items intra-day. Nearly 99.7% of street-side equity trades are locked-in (compared) by the exchanges. Furthermore, DTCC currently captures approximately 55% of these compared trades real-time and expects this number to increase significantly by year-end 2004. These trades are then input into CNS for Continuous Net Settlement where netting is also taking place on a real-time basis. As a result, it is believed that DTCC would be capable of moving to a shorter settlement cycle as early as year-end 2004.

6B: TRADE DATE SUBMISSION OF DEALER INSTITUTIONAL TRADES TO DEPOSITORY/CLEARING CORPORATION

WHAT: The principals to the institutional trades must be capable of electronic communication from market execution through to settlement reporting in a real-time/near real-time in order to achieve straight-through processing and shorten the settlement cycle. CDS issued on October 31, 2003, the Matched Institutional Trade Messaging Standard – CDSX Settlement Link, and are enhancing CDSX to receive matched trades no later than June 2005.

WHY: Presently, 70% of sell side client trades are accepted by CDSX on trade date, however, only 10% of these trades make the 7:30pm cutoff at CDS. Behavioral, process and system changes need to be completed in order to submit more trades on trade date.

WHO: Institutional dealers.

WHEN: This is estimated as an 18-month effort and needs to be completed by Q3 2006

U.S.: Any U.S. trade matching engine will need to have connectivity to the depository in order to obtain clearing agency exemption and serve as a matching provider in the U.S. market. Omgeo is currently the only approved 10b-10 compliant service provider so institutional trades are confirmed and affirmed by them. Since Omgeo currently submits these trades to the depository, it is not seen as an impediment to a shortened settlement cycle.

7. TRADE MATCHING

7A: SAME DAY AFFIRMATION/MATCHING

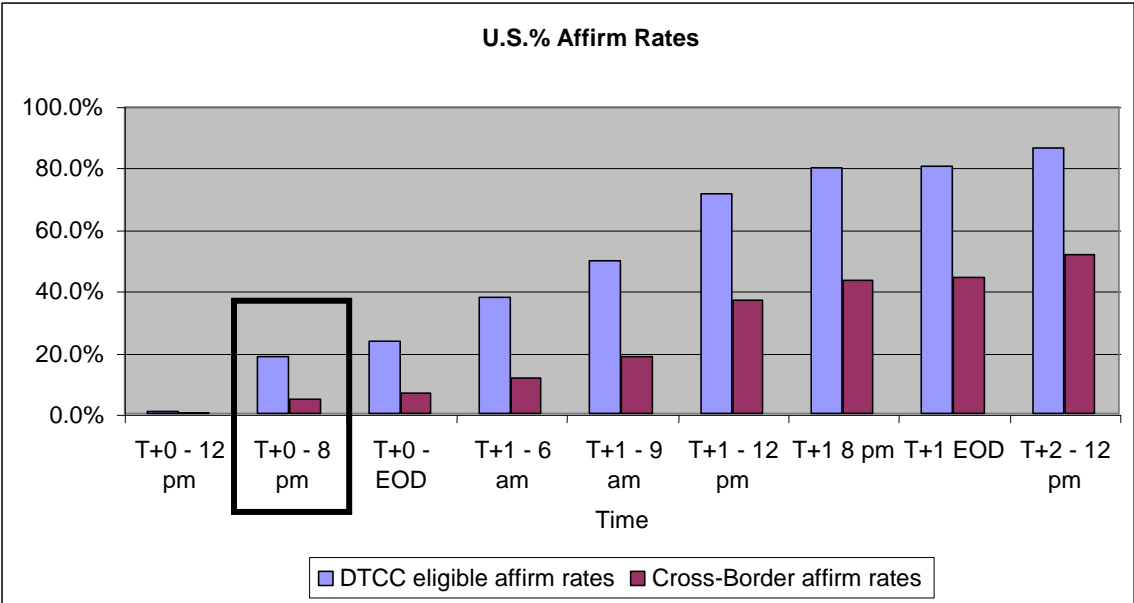
WHAT: A move to T+1 settlement will require institutional client trades be matched (confirmed/affirmed) on trade date. In Canada, the custodians have typically done the matching of institutional trades. The shortened settlement cycle will require that the counter parties to the trade perform the matching process. A number of vendors are looking to provide a central matching service to facilitate this process. In many cases, local matching will continue to be performed directly by the counter parties. A proposed matching rule has been issued by the CSA for industry comment. CDS has published specifications for central matching vendor linkage and expects to have access built in 2005.

WHY: Most recent statistics issued by CDS show an industry affirmation rate for institutional client trades of 3% on trade date. This is primarily due to lack of connectivity between the brokers, the buy side and the custodians. Three bottlenecks exist with the current process: 1) allocations have to be provided to the broker by the investment manager when block trades are being settled as individual trades, 2) the investment manager has to communicate trade instructions to the custodian(s) for matching and 3) where the custodian detects errors, they have to contact the investment manager and/or the broker/dealer for resolution.

WHOM: Buy side and sell side.

WHEN: It is estimated that, at the current pace, with no modifications to the Canadian program efforts, three years are required to put the regulatory and connectivity issues in place. This work must be compressed to a 24 to 30 month effort, commencing no later than Q3 2004, to be ready for industry-wide testing in 2007.

U.S.: The most recent statistics from DTCC show an industry affirmation rate between 19 – 20% by 8:00 PM on trade date (i.e., the closest time to the Canadian CDS cutoff time of 7:30 pm). The SIA has documented functional requirements for matching utilities (although the means to get to matching are no longer being proposed as a single solution); vendors are also beginning to offer affordable alternatives for electronic allocations and matching. Without regulatory changes and additional technology providers, the affirm rate will grow at an estimated 20% per year. The goal is to reach matching between 9 AM and 12 PM (Eastern time) on T+1 within 24 to 30 months, at which time it will be feasible to move to matching on trade date soon thereafter.



7B: ELECTRONIC ALLOCATIONS

WHAT: The use of blocks for trading requires that allocations be provided to the broker/dealer for input to the clearing system for settlement. This process is completed today by use of electronic communication links between the investment manager and manual instructions. Allocation decisions are often not made until end of trade date or T+1. These practices are reflected in current trade reporting and affirmation rates for institutional trades.

WHY: With the advent of mandated trade matching and a potential move to T+1, allocations will need to be provided electronically on trade date in order to complete same day matching.

WHO: Investment managers and broker/dealers.

WHEN: It is estimated that, at the current pace, with no modifications to the Canadian program efforts, three years are required to put the regulatory and connectivity issues in place. This work must be compressed to a two-year effort, commencing no later than Q4 2004 to be ready for industry-wide testing by Q1 2007.

U.S.: As electronic allocations are viewed as a prerequisite to same day affirmation or matching, improvements in allocation rates are expected to be in sync with affirmation rate increases.

7C: DEVELOPMENT OF STANDING SETTLEMENT INSTRUCTIONS DATABASE

WHAT: There are mixed views on the need for an industry SSI database. CDS has developed the Electronic Settlement Instruction Registry (ESIR) which is a common registry of settlement agent instructions originating from the settlement agents and is used during the reporting of client trades. ESIR has been used for a number of years but has generally not been maintained.

WHY: In a T+1 settlement environment, trade matching on trade date requires the prompt enrichment of trade records with settlement agent details. A database maintained by the settlement agents reduces the incidence of incorrect settlement information and increases the match (confirm/affirm) rates.

WHOM: Custodians, sell side and CDS would need to agree on an operating model.

WHEN: This effort has been estimated at three years, at the current pace, with no modifications to the Canadian program efforts. This work must be compressed to a two-year effort, commencing no later than Q4 2004 to be ready for industry-wide testing by Q1 2007.

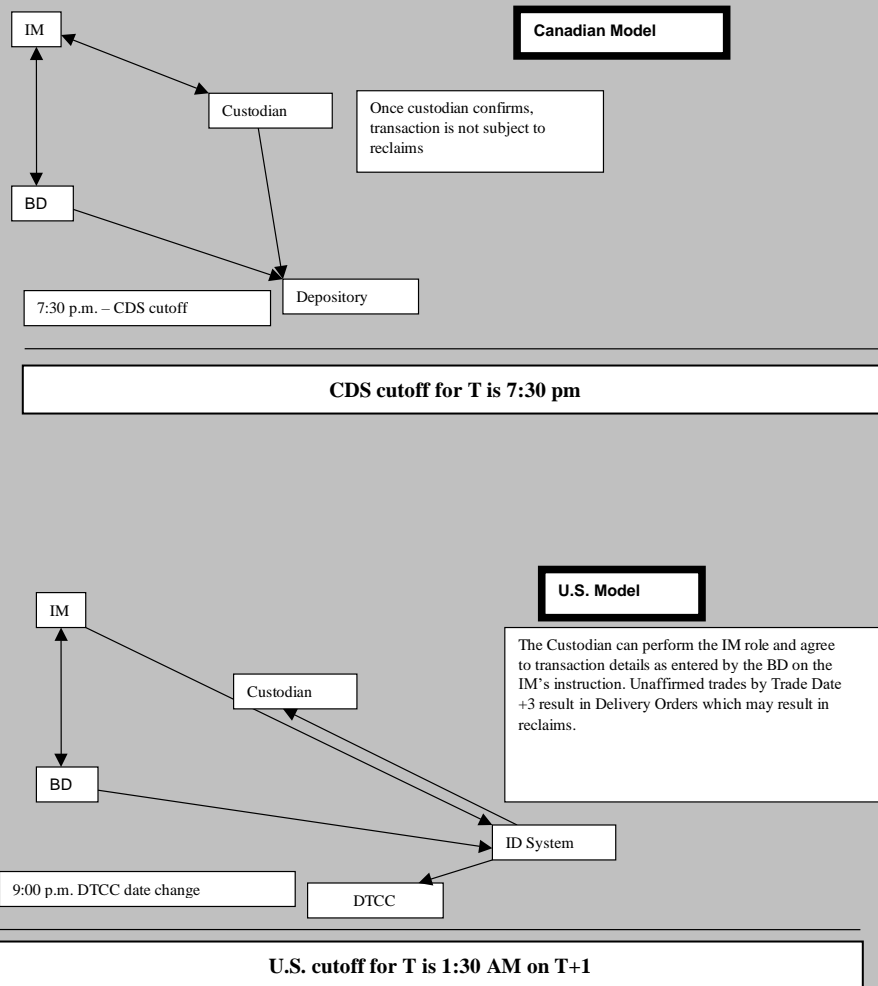
U.S.: The SIA has agreed to use just-in-time (JIT) enrichment for STP, but would probably make an SSI database a requirement for T+1. With the recent acquisition of TradeWeb by Thomson, it is anticipated that the combination of the Alert database with SID and Thomson's AccountNet would be a formidable combination. Should market forces drive a T+1 settlement cycle and an SSI database were required, it is estimated that a viable system could be up and running within one year.

SPECIAL NOTE: CONFIRM/AFFIRM – COMPARATIVE PERFORMANCE MEASUREMENT

In Canada, trades are matched (confirmation/affirmation) when trade instructions from the investment manager match those entered by the broker and the custodian confirms that the investment manager has or will have position by affirming the confirmation in CDSX. For purposes of performance measurement, trade date effectively ends at 7:30 p.m. Eastern Time (ET) on T although transactions can continue to come in to CDS. These are held until the system opens again and are dated the following day (T+1). There are no delivery orders and reclaims in the Canadian system. For purposes of calculating when trade details are matched (confirmation/affirmation) at DTCC, Trade Date ends early on the morning of T+1 (1:30 a.m.). At this time, there is trade detail agreement between the broker/dealer and investment manager and/or the custodian on the investment manager's instruction and the clearing system at DTCC has been updated to expect settlement. For trades that are not matched (confirm/affirmation) by trade date + 3, a delivery order is created. Delivery orders can result in a reclaim as the receiver backs out of the trade.

What percentage of transactions end in reclaims? According to DTC, 11% of institutional trades are never affirmed and result in Delivery Orders. Of these, 7.4% result in reclaims as the receiver backs out. The reclaim rate for affirmed or matched trades is 0.2% making it 37 times more likely that an unaffirmed trade will be reclaimed. As a result, DTCC would like to see only affirmed trades settle which would be consistent with the Canadian model.

How does this impact comparative confirm/affirm statistics? The different way of handling unaffirmed trades between DTCC and CDS has no impact on comparative affirmation rates between T and T+3.



STP CRITICAL ONLY**8. ACCOMPLISH CROSS-BORDER IMPLEMENTATION**

WHAT: Canada currently has very robust cross-border model with three services in place. Currently, some services have both a U.S. and Canadian ledger that causes inventory management problems. The move to a single ledger would facilitate STP/T+1. CDS currently handles settlement in both USD and CAD dollars. DTCC is working towards handling CAD dollars. CDS just moved to a value-at-risk model for risk proofing, which is similar to the DTCC model.

WHY: CDSX settles in CAD and USD and the CAD/USD spot market already settles T+1 and is therefore not an issue for north/south activity. CDS recognizes the need to adapt CDSX functionality to changes in DTCC requirements but is looking for some harmonization of rules and process. Non-U.S. investors into Canada will still be an obstacle for T+1 with timing and FX settlement issues, and this issue requires further industry analysis.

WHO: CDS, custodians and Sell side.

WHEN: This is estimated as a one-year effort and can be completed by Q4 2005.

U.S.: It is estimated that approximately 30% of the transactions settling at DTCC originate from non-U.S. locations. A shortened settlement cycle could impose significant hardships on foreign investors who typically fund U.S. securities purchases through a foreign exchange transaction. Because foreign exchange transactions settle in two days, foreign investors can concurrently effect the securities transaction and the foreign exchange trade knowing that the U.S. currency will be delivered in time for the securities transaction to be settled. In a T+1 settlement cycle, there would be a settlement mismatch and foreign investors would be placed at an economic and operational disadvantage relative to their U.S. peers for they would need to either pre-fund their trades or execute the foreign exchange on the spot market. This effort is estimated to require 18 – 24 months to resolve.

9. ACHIEVE ELECTRONIC DELIVERY OF CORPORATE ACTIONS ANNOUNCEMENTS AND NOTIFICATIONS (INCLUDING LIABILITY NOTICES)

WHAT: The mandating of electronic corporate actions information was identified as a critical path item for STP. Entitlement information needs to be available in electronic format with timely delivery to all interested parties. The industry agreed on what the standards and market/business practices should be. Although published by the CCMA, these standards and practices have not been broadly publicized and monitored for adherence. Canada is a very complex market in terms of corporate actions event types and needs to manage the process and resultant risk. In addition, an industry feasibility study on the need for a central repository for filing entitlement information should be conducted.

WHY: Investors and their agents receive entitlement information from numerous sources and by various means. CDS currently extracts information filed in the System for Electronic Document Analysis and Retrieval (SEDAR) and sends it electronically to participants with an electronic link to the SEDAR document. The current CDS corporate actions service meets the majority of CCMA entitlement information requirements. The key limitations, however, are 1) data is limited to CDSX-eligible securities, 2) it is not entered by the initiator in the chain (issuer, offerer or agent) and 3) it is not in fully field-based ISO 15022 compatible format. An electronic liability notification hub is not considered critical. However, the industry needs to implement standard U.S. liability notification wording for use in the Canadian market. Consistency in information delivery and practice will enable STP process improvements for as many event types as possible.

WHO: Issuers, offerers and agents.

WHEN: The total duration to broadly publicize industry practices and standards, review possible rule changes and implementation is estimated at 18 months. This effort should start by January 2005 with implementation by July 2006.

U.S.: DTCC SMART/Track for electronic Liability Notification is currently under development and expected to go live by the end of 2004. Recommendations for rule changes to standardize and automate announcements (tender offers) have been presented to regulators with favorable feedback. A Liability Hub pilot is planned for December 2004 implementation. Therefore, it is believed that given consideration for full industry adoption, the U.S. will have adopted the necessary rules, processes and technologies to automate the corporate actions process by 2005.

SPECIAL NOTE: ELECTRONIC DELIVERY OF CORPORATE ACTIONS ANNOUNCEMENTS AND NOTIFICATIONS

During the interview process, we received many different views on the issues around Corporate Actions and their criticality for STP and T+1.

Industry representatives from the Sell side and the Buy side raised issues around corporate actions processing as their information requirements were largely managed by service bureaus/vendors and custodians. Issues raised included processing problems with failed trade positions undergoing a corporate action and linked trade fails due to non-payment of shares on value date. These issues are not specific to STP capability and are not enhanced by a shorter settlement cycle.

A consistent message from all market segments was a need to mandate how issuers/agents deliver corporate actions information into the market place. It needs to be available in electronic format with timely delivery to all interested parties. The industry needs to implement standards and market/business practices. Although published by the CCMA, they have not been broadly publicized and monitored for adherence.

An area of debate throughout the interview process was the need for an information “hub” for the electronic entitlement information. CDS has shown some interest in providing this capability. For purposes of this study, the destination of the information is not an issue as long as there is broad availability for all interested parties.

This issue was initially identified as a critical path item for STP/T+1. The availability of electronic corporate action information with agreed upon standards and market practice enables the maximum automation of entitlement processing. Many types of corporate actions will never be completely eligible for end to end electronic processing due to their complexity and risk. However, stability on the front-end with information availability and format allows the maximum possible automation.

In conclusion, the availability of electronic corporate actions information with agreed upon standards and market practice will enable STP. The effective to value date cycle is not driven by any current convention and will not be impacted by a movement to the Trade settlement cycle. As a result, this item is identified STP critical only, pending further industry analysis and final determination.

10. MODIFY INVESTMENT FUNDS PROCESSING AND REGULATION

WHAT: The significant challenge facing T+1 settlement for all investment fund types is the confirmation delivery to the retail investor after settlement date and error corrections. This issue exists today for money market funds that settle on T but is not a significant issue for funds holding debt and equities as they settle the same as the underlying assets on T+3.

Investors send purchase/redemption orders based on yesterday's unit price. The cost/proceeds of these transactions is based on an end of trade day unit price and confirmed to the fund dealer at end of day. The fund dealer then updates its internal client account system on T+1 or later with a back-dated transaction. With T+1 settlement, this activity produces a confirm available to the investor after settlement. Additionally, reconciliation between the dealers' system and the fund company activity is happening on settlement date with compressed time for error correction.

Impediments to STP include the client paper that has to be shipped to the Fund Company by the distributor and cheques payable to the Fund Company for client name purchases.

WHY: System and process timing changes for T+1 need to be understood via a feasibility study assuming investment funds need to be on same settlement cycle as the underlying securities. Documentation agreements and use of trust accounts are expected to require changes to some or all of National Instrument 81-102 – Mutual Funds, BIA, PIPEDA/provincial equivalents, Canada Revenue Agency (CRA), anti-money laundering/terrorist legislation, Corporations Act(s), and Securities Acts.

WHO: CCMA Retail Trade Processing Working Group.

WHEN: This work effort is estimated at 18 – 24 months and could be completed by Q4 2006.

U.S.: The majority of U.S. mutual funds currently settle in T+1. Sixty five to 75% of mutual fund trades get confirmed on trade date (up to midnight on T is considered same-day confirmation). The remainder get confirmed the morning of T+1. Trades confirmed by 11 AM on T+1 will settle that day. The U.S. does more no-load business which facilitates ease for T+1 settlement. Load funds typically settle on T+3. Further analysis needed to determine issues around load funds.

STP and T+1 Critical – U.S. ONLY

Note: Please refer to the “U.S. STP/T+1 Efforts Not Impacting Canada “ and the “Gap Analysis: Canadian versus U.S. Timeline” sections later in this report for more details on the timing of the following U.S. items.

11. Reduce Reliance on Cheques and Use Alternative Means of Payment

U.S.: Further analysis of the SIA STP Payment Processing committee concluded that paper cheques are here to stay, at least for the foreseeable future. Although there are indications that the use of the paper cheque is slowly downsizing, the securities industry must adapt to finding ways to hasten the availability of funds in a T+1 settlement environment and even today in our current settlement cycle.

The SIA encourages the migration to electronic payments but the challenge for firms is building on the existing cheque process, for example, through electronic conversion, while remaining open to investment in one or possibly several alternative electronic payment methods. The near-term evolution of payments will likely require firms to maintain several payment processing systems, possibly for both paper and electronic methods.

The committee has also come to the conclusion that there is not one industry solution that meets all of the ideal payment characteristics required for retail securities transactions. While there exists a number of front-end initiatives, firms must look at the actual payment system(s) to understand the inherent risks they need to manage. There are only three electronic payment systems in existence today and they are ACH, Fedwire, and CHIPS. The ACH network remains the most viable electronic payment alternative while the committee continues to investigate the potential impact and benefits of Check 21 (refer to www.sia.com to access SIA's White Paper on Check 21).

Finally, the committee believes that the migration to electronic payments does not have to wait until the settlement cycle changes. The drive for change exists today.

The SIA, however, recently approved the establishment of the Global Treasury Management Committee. This Committee will be a community of U.S.-based broker/dealers committed to improving standard operating efficiency and reducing risk within global Corporate Treasury functions, primarily through providing a centralized repository of best practices including standards, benchmarks, and guidelines. It will also be an industry forum for the exchange of ideas and experience covering the essential areas of Corporate Treasury.

12. Immobilize Shares Prior to Conducting Transactions

U.S.: In 2002, the SIA conducted an analysis to clarify the meaning and operational requirements of “return to the system before executing a sale” as recommended by the SIA Physical Securities committee in their T+1 white paper published in May 2000. The aim of this exercise was to define a process that reduces the risks of executing sell trades when the sold asset is in a physical certificate form, held by a third party in custody or in a DRS registration.

After further analysis, members representing broker/dealers and banks revealed concerns over their ability to support the recommendations to delay order entry. The recommended approach places additional burdens on the individual investor who holds certificates in order to mitigate risk to themselves, the selling broker/dealer, and to facilitate street-side settlement on settlement date. The likely outcome of placing greater burdens on investors who hold physical certificates will be that their preference for certificates will continue to decline. The committee's rough estimate of physical securities issued on buys and trades range from 0.5% to 3.0% and declining. The proposed new burdens would likely further reduce these percentages.

It is anticipated that once investor preference for physical certificates declines to a fairly *de minimus* level, the SEC would support regulatory changes which basically eliminate the issuance of certificated new issues. Therefore, the committee has put this initiative on hold, and in turn, will focus on encouraging all new issues to be in book entry form (ownership either in firm name via DTCC or in DRS registration).

13. Revise Prospectus Delivery and Procedures for IPOs

U.S.: Any consideration of shortening the settlement cycle raises the same issues that the industry confronted in moving settlement from T+5 to T+3, issues that have yet to be resolved. While the due diligence process may be streamlined to accommodate a shorter cycle for some deals (e.g., equity initial public offerings, IPOs, in which the forecasted proceeds accurately reflect the actual proceeds), it would not be possible to reduce the process on a consistent basis for all syndicate trades. The SIA T+1 Syndicates and Electronic Storage committee in March 2002 determined that it would be possible, however, to remove one day from the process to shorten the syndicate settlement cycle to T+3 for virtually all U.S.-based and IPO syndicate deals. Therefore, in order to provide a consistent standard in the U.S. marketplace, the SIA recommends that the standard settlement cycle for IPOs and follow-on offerings be no shorter than T+3, with the flexibility of allowing longer settlement periods for foreign deals in which settlement cycles may be longer or for deals requiring added due diligence.

Generally, IPOs and follow-on offerings would have to be processed on a “when-issued” basis. Because the “when-issued” process would be prohibitively cumbersome to Operations and because it is too manually intensive to streamline, the SIA T+1 Syndicates committee recommended an alternative processing approach for both IPOs and follow-on offerings.

Proposed IPO Processing

Instead of a “when-issued” process, the committee proposed that IPOs would settle on a predetermined “extended settlement” basis. The default settlement date would be T+3 but could vary based on due diligence requirements and settlement conventions. These recommendations would be applicable to both equity and fixed income products. The exchanges and the street would be advised of the new issue delivery date to allow for “other than standard processing.” Additionally, systems logic would need to be developed to identify trades, which are exceptions to the standard processing settlement cycle. The extended settlement would only apply to trading on the first day of secondary trading following pricing as settlement minus one day (S-1) trades would coincide with the normal T+1 settlement cycle.

The proposed extended settlement process would enable the elimination of one day from the current settlement cycle (T+4 to T+3) and still allow for the required due diligence process. Additionally, since the settlement date is known, the when-issued symbol would not be needed. This would further eliminate the need for firms to cancel and rebill trades and the subsequent breaks that occur with the regular way and when-issued symbols and CUSIPs. Finally, open orders on the specialist’s book would not need to be cancelled and only one confirmation would need to be sent.

The processing changes would necessitate that firms amend their internal systems to enable the extended settlement date and potentially receive a direct feed from the exchanges to automatically override their internal systems. NYSE, Nasdaq and DTCC systems would require a change to allow for the syndicate settlement date to be included in the trading transaction files. Additionally, the exchanges would need to ensure that they could provide timely notification to the street and vendors of the extended settlement date. Systems could be modified to capture the first delivery date of a security. Logic could then be developed that would permit the correct settlement date to be applied to trades executed on different dates. This process would benefit equities and most fixed income products, including municipals.

Proposed Follow-On Offering Processing

Processing follow-on trades in the same extended settlement process as proposed for IPOs would be an additional challenge because of the ongoing secondary trading of the existing outstanding shares. However, while purchasers of newly traded IPOs on S-2 (the first day of secondary market trading following pricing) would settle on an extended settlement basis, this would not be true for purchasers of follow-on offerings because they would purchase the already existing outstanding shares and would follow the regular settlement cycle. Because there are existing shares trading in the market, which will settle regular-way, a when-issued symbol would still be required to differentiate the follow-on offering shares trading in the secondary market from the outstanding shares of the company.

Decoupling Prospectus and Confirmation Delivery

The SIA believes that the SEC should decouple the confirmation process from the prospectus delivery requirement. The existing requirement for delivery of a final prospectus prior to or simultaneously with written confirmation of a sale is extremely burdensome in a T+3 environment and would be impossible in a shorter settlement cycle. Investors are adequately protected in making their investment decisions so long as all material information has been effectively made available to them (as compared to delivered to them) at or prior to the time of confirmation. As a result, the Commission should permit the final prospectus to be delivered separate from and within a reasonable period after the confirmation. The prospectus should be made available to investors both electronically and in paper form.

14. Amend Depository Trade Guarantee Process to Provide Guarantee on Trade Date

U.S.: NSCC and DTC have well-established risk management controls that are designed to minimize the risk that a participant will fail to settle to the clearing corporation/depository, or for operational or other reasons, will not be able to continue as a participant without jeopardizing NSCC or DTC or their participants. One of these risk management controls at NSCC is the trade guarantee, which protects participants against counter party risk. The guarantee currently takes effect for most trades at midnight on T+1, if NSCC receives the trades on trade date. Once the guarantee takes effect, NSCC becomes the counter party to the trade. To cover risk resulting from this action, participants are required to deposit collateral with the clearing corporation.

An earlier trade guarantee provides participants with the maximum protection against counter party risk regardless of the length of the settlement cycle. Accelerating the timing of the trade guarantee to trade date will ensure that the safety and soundness participants have historically experienced in the clearance and settlement of their transactions will continue.

Collateralizing the risk of open positions is a fundamental part of the trade guarantee. The earlier guarantee of trades on the night of trade date in a T+3 settlement environment effectively adds a day of trades to what NSCC currently guarantees and could increase NSCC's risk exposure. This will require the earlier collection of additional collateral at DTCC. The NSCC is actively exploring the risk issues involved with accelerating the trade guarantee including DTCC's ability to collect additional collateral from participants in a timely manner as well as timely access to regulatory information and is developing a comprehensive systemic approach for collateralizing unsettled obligations. Any decision regarding a change in the timing of the trade guarantee is dependent upon a cost/benefit assessment of the effect of such a change on the level of participants' required clearing fund deposits in relation to the overall risk reduction for the industry.

At the present time, DTCC does not plan to move the timing of trade guarantee. However, this will be reconsidered if the industry moves to a T+1 settlement cycle.

6. Assessment Impact by Market Segment: Canada

The following section provide a comprehensive overview of each of the Canadian market segments and how they are each impacted by the necessary efforts to achieve STP and T+1 readiness. Each of the market segments presented includes an overview, identification of current capabilities and impediments (with respect to technology, regulatory framework, and behavior/process). In addition, the relevant critical path items are discussed for each segment, again in terms of technology, regulatory framework, and behavior/process.

Sell Side Investment Dealers

Overview

Canada's 199 Investment Dealers (also referred to as the sell side) are members of the Investment Dealers Association of Canada (IDA) which is a national Self-Regulatory Organization (SRO). For more information about the IDA visit their website www.ida.ca. Each of these member firms is also required to become a member of the Canadian Investors Protection Fund (CIPF) which provides insurance protection to the investing public should an Investment Dealer become bankrupt. For more information about CIPF visit their website www.cipf.ca.

The member firms of the IDA offer a variety of services, but for the purpose of this report the focus is on the general service categories of Retail Full Service, Retail Discount Trading, and Institutional Trading. Retail refers to the investing public or individuals. Institutional Trading is focused on trading for the Investment Management (IM) firms or otherwise referred to as the buy side.

Administration and Record Keeping of Client Information

Investment Dealers in Canada may enter into what is called an Introducing and Carrying relationship. This is when one SRO member firm wishes to use the infrastructure and system resources of another SRO member firm for services including trade execution, trade processing, settlements, custody and customer account record keeping. There are four types of Introducing and Carrying relationships that exist today, of which each has differences in capital requirements and/or services to be provided.

The Carrying Broker provides system access for the Introducing Broker to view and/or process data for its customer accounts. The main books of records system used by the majority of Carrying brokers in Canada is one of three systems, two of which are owned by ADP and the other owned by IBM. For more information related to the Introducing/Carrying agreement please follow the link below http://www.ida.ca/files/regulation/regufaq/introcarrel/c111_en.pdf (link active as of June 21, 2004).

Summary of the Introducing/Carrying relationships among SROs in Canada:

Total IDA Member firms	Self Clearing firms	Introducers
199	78 *	121

Source IDA 2004 * 15 of the 78 firms are carrying firms, some only carry for related firm

It should be noted that the high percentage of firms using another firm for processing purposes bodes well for moving to greater levels of STP and potentially T+1, as consolidated effort will be made by some for the benefit of many.

Institutional Trading Equities

Current Capabilities/Impediments

Institutional Equity trading firms in Canada are at varying degrees of STP capability. Information from the interviews with the sell side dealers revealed that some firms are very straight-through, with external and internal interfaces, while others rely on fax, phone and other manual keypunch methods.

An example of a straight-through processing firm is one that uses electronic interfaces to capture trade allocations from the IM via FMCNet into an internal system. This internal system enriches the account information and trade details, sends the trade details for overnight processing into the back office system and then sends the trade on to the clearing and settlement agent (CDS) intra-day, awaiting affirmation from the custodian – all on trade date.

In a manual processing example, trade allocations are faxed to the Dealer's trading assistants who then write trade tickets with the account information and trade details and then keypunch the trade details into the back office processing system. The back office processing system sends files overnight to the clearing and settlement system (i.e., CDS) awaiting affirmation from the custodians on T+1.

It is important to note that even if a sell side firm were ready to automate its processes to 100% they are still at the mercy of the buy side (i.e., IM) which are not all at the same level of automation. Historically, if the buy side uses FMC, SWIFT, fax, e-mail or other electronic systems for trade allocations, it becomes a requirement for the sell side to use all of these systems if they wish to continue doing business with the IM.

Technology

As described above, there are sell side dealers that are at opposite ends of the STP processing spectrum. Throughout the information gathering phase of this assessment, some firms stated it was acceptable for the smaller firms to be in a manual mode of processing now and would expect that they could remain that way going forward. These smaller firms would remain using carriers that would be STP and thus provide an acceptable interface to them. The rationale for staying manual is that there is no cost benefit (i.e., no business case incentive) for them to build systems and increase automation to handle the relatively low volume of transactions being processed with a minimal number of staff to handle it. The assumption that was made was that the manual processing method did not increase the number of cancel and amends as the preparation of trade information and keypunching was highly accurate, although the process would be subject to fluctuation during higher volumes, vacation time and in the event of staff turnover.

There was also a clear understanding from the smaller dealers that they are waiting for and are dependent upon their back office service bureau to provide the key functionality to accept trades intra-day and to send the completed trades to CDS intra-day when the industry mandates this change.

Some other firms that use the same back office service bureaus have already built their own solutions outside of the service bureau and are only feeding the back office system in the traditional overnight batch process.

Apart from the smaller firms' cost benefit/rationalization to move to a more automated solution versus fax, etc., it was noted that there is no single solution that would make sense for each firm to use. In addition, there needs to be a justifiable business case incentive for small, medium and large size dealers.

Regulatory Framework

Overall, it was agreed that regulation and governance is required to fully enable STP/T+1, particularly in the areas of trade matching, standards and market/business practices. This agreement came without a consensus as to which entity should regulate and enforce the regulations.

In April 2004 the CSA published three discussion papers: 1) Request for Comment – Discussion Paper 24-401 on Straight-Through Processing, 2) Request for Comment Proposed National Instrument 24-101 Post-Trade Matching and Settlement Rule, and 3) Proposed Companion Policy 24-101CP to National Instrument 24-101 Post-Trade Matching and Settlement. These documents are open for comment until July 16, 2004. The Post Trade Matching and Settlement document attempts to bring together a common set of rules that the buy side must adhere to with the sell side prior to executing a trade. Below are the links to these CSA papers:

CSA 24-401, STP Discussion Paper:

http://www.osc.gov.on.ca/en/Regulation/Rulemaking/Notices/conceptpro/cp_20040416_24-401_csa-roc-on-stp.htm (Active link as of May 17, 2004).

CSA 24-101, Proposed National Instrument:

http://www.osc.gov.on.ca/en/Regulation/Rulemaking/Rules/rule_20040416_24-101_ni-roc.htm (Link active as of May 17, 2004).

CSA 24-101cp, Companion Policy:

For more information on regulation please refer to the Regulatory section of this document.

Behavioral/Process

The Industry requires a hard date to move to T+1, or an agreed upon industry-wide work plan that shows all of the detailed pieces of work needing completion to progress to STP or that must be in production for T+1 readiness. The industry participants need to agree on this plan and assign ownership of the work items. Without a detailed plan and ownership of the plan components, each firm from the various market segments will continue to progress to STP/T+1 readiness on their own timeframe, as there is no catalyst to move ahead on an industry level.

Critical Path Items and Timing

The following critical path items have been identified as impacting the sell side. In addition, please note that Critical Path items (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing impacts essentially all market segments in one way or another. Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings.

- **Identify and Comply with Accelerated Deadlines (6)**
 - Trade date submission of Dealer Institutional Trades to Depository/Clearing Corporation (6b)
- **Modify Internal Systems/Processes (5)**
 - Achieve Connectivity Among Market Participants (5b)
 - Process Trades in Real-Time/Near Real-Time (5c)
- **Trade Matching (7)**
 - Electronic account allocations (7b)
 - Development of Standing Settlement Instructions Database (7c)

Future Required Actions

Technology

The processing of sell side trades needs to be moved to a more real-time basis. Once all of the completed trade allocations have been sent to the dealers in electronic format the dealers need to capture these trades electronically, and add additional information such as internal account numbers, market the securities were traded on, commission details, etc. Once the trade has all of the information, the dealer's service bureau or alternative system will calculate the trade details awaiting the next step in the process.

Once the dealer's system has calculated the trade extension details on the trade allocations from the IM, the dealer's system needs to send the trade details to the designated VMU for matching, if this method of matching is chosen. Regardless of matching method, for all exceptions, the dealer's system needs to communicate these exceptions intra-day, in order for action to be taken to correct the problems and to resubmit the trade for matching.

After the trades have been matched in the VMU, the matched trades need to be sent to the clearing and settlement agent on trade date. Once the settlement agent receives the trades they are placed in a status of confirmed and are ready for settlement between the dealer and the IM's custodian on T+1.

Regulatory Action/Industry Agreement

There needs to be agreement regarding the timeline and processing for institutional matching, most likely driven by regulatory fiat. All participants who are party to a trade need to become connected for a much higher percentage of trades than exists today. As part of this agreement, an industry position should be taken with regard to the need for a central virtual matching utility (VMU). The U.S. industry currently has one approved vendor (Omgeo) as their virtual matching utility to match all institutional trades between the dealer and the IM prior to sending the trade over to the clearing and settlement corporation (DTCC in the U.S.) In Canada there are still a few different vendors who are willing to work with the industry to build a solution and others who are modifying their current systems to be ready. However, the U.S. views seem to currently lean toward matching on T, irrespective of the means to accomplish this. Omgeo has indicated it would be able to support the Canadian market place trades after system modifications are done in order to accommodate differences in the way trades are reported and processed in Canada.

A companion issue to the trade matching issue is the use of just-in-time (JIT) or a centralized SSI database. There are mixed views on the need for an industry SSI database in Canada. There needs to be industry-wide agreement in order to utilize, as the industry model, the closest operating example (i.e., ESIR) in addition to the policy and systems changes that also must occur. Feasibility of a new or alternative model needs to be examined. There needs to be industry consensus and mobilization among custodians, broker/dealers and Depositories before implementation can occur.

Behavior/Process

At present, institutional trades processed on trade date currently are sent by most of the Dealers' systems to late for CDS to process within the CDS batch processing cycle for same day trades. If trades were sent before the CDS cutoff then opportunities to affirm trades on trade date would become available.

T+1 Enablers

Block Settlements for Dealers to the Custodian

In Canada the dealers are not accountable for full retail Know Your Customer (KYC) rules for the client accounts that are the benefactors of the trades executed by the dealer on behalf of the IM. The IM has the relationship with the underlying clients, not the dealer. Due to this accepted practice, the dealer community would much rather execute the block trades for the IM and settle the completed trades as block settlements to the custodian designated by the IM. The custodian then processes the allocations into the underlying beneficial owner's accounts as instructed by the IM.

Corporate Actions Issues

Institutional Debt and Equities

Corporate actions and entitlements processing for the sell side for institutional transactions pose no significant issues since all of the assets of the clients are delivered to the custodian to hold and process. The exception to the rules in this type of transaction is when there are failed trades. If a trade has failed over the record date on securities for dividends or a stock split, the entitlement is paid to the deliverer of the securities and the receiver may need to claim the proceeds. When a trade is failing over a corporate action expiration, then the deliverer must tender the shares under the terms of the offer on behalf of the receiver, if they cannot make delivery of the shares within the guarantee of delivery period.

Securities Lending Issues

There were no significant issues identified with securities lending that were raised throughout this assessment. However, the automation of recalls would enhance STP as these are done today by phone and fax. This is a low priority given that recalls result from 5% of trades and average 225 per month in Canada. Vendor solutions are also being implemented in 2004 and will be able to link to DTCC for U.S. positions.

Institutional Trading Debt

Current Capabilities/Impediments

The institutional debt business on the sell side shares the majority of requirements for STP/T+1 with institutional equities. Refer to the diagram below for the high level interaction among the key entities along with the systems that are used for institutional debt trading.

The chart below provides a sample comparison between institutional debt and institutional equity business. (This is not meant to be a complete comparison, rather, a sample based upon the information provided and researched as part of this study).

Process/Comparative Statistic	Equities	Debt
Number of institutional client trades settlements (CDS April 2004 trade processing report card statistics)	249,018	85,841
How many days to settle after trade date	T +3	T+2 & T+3. Short term Canada bonds settle in two days and long term settle in three days
Street-side trades confirmation in aggregate and netting prior to settlement	Almost all listed exchange trades are netted	All street-side trades are matched trade for trade, however a net settlement process is done on settlement date to assist in the number of trade for trade settlements that would be required
Institutional Trade allocations	Most of the trades are allocations to the dealer	A smaller volume of debt trades involves allocations
Use of FMCNET	High percentage use due to allocations	Use of FMCNet is less as there are more block trades and less allocations
Inter-dealer trading	Most trades are executed at the exchange, or trade crosses between institutional clients.	A large volume of debt trading is done through the inter-dealers, the remaining trades are still trade for trade with another dealer or client on a trade for trade basis
Trade confirmation matching street-side	Low volume of street-side confirmation as most of the equity trades done on the street-side are on the exchange and become CNS. Jitney trading between dealers on listed and unlisted securities is processed as direct participant trades that do require trade confirmation. CDS has built a trade for trade matching function to match these types of non-exchange trades.	For all inter-dealer trading the dealer produces a trade confirmation and is required to match off trades with the inter-dealer on T+1. This process is STP internally in some firms and a manual process in others. Use of the CDS trade matching service has not been discussed as part of this assessment, however it is capable to be used for inter-dealer trades so long as the inter-dealer or its custodian is a member of CDS.
Securities lending and borrowing	Equity borrow and lends are completed by the dealer using cash and/or collateral to secure the deals without processing trades.	For debt, the dealers for the most part conduct re-purchase (Repo) and reverse Repo trades to satisfy the borrowing and lending requirements. These trades need to be matched among the trade counterparts.

Critical Path Items and Timing

The following critical path items have been identified as impacting the sell side. In addition, please note that Critical Path items (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing impacts essentially all market segments in one way or another. Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. The number in parentheses corresponds to the number in the critical path list.

- **Modify Internal Systems/Processes (5)**
- **Trade Matching (7)**
 - Electronic account allocations (7b)**

The critical path items identified are some of the same as the institutional equity requirements. To accomplish the above critical path, certain technological, regulatory and behavioral changes will be required. Please refer to the details in the Critical Path for Moving to T+1 section, for institutional equities.

T+1 Enablers

The enablers listed below were collected from interviews and do not necessarily represent consensus of the entire community. Dealers are at various stages of STP readiness and it is expected that some or all of the enablers could be in production at some firms but not at others.

Connectivity Between Inter-dealer Systems and Front-end Trading System

Trades executed on the inter-dealer's proprietary trading screen could be transmitted to the dealer's trading system to produce an electronic confirmation that the order outstanding on the trader's system was completed. This interface could also act as a confirmation to the trader versus recapping the trades done at the end of the day between two systems.

Trading Systems Link With FMC/Other Trade Allocation System and Back Office/Service Bureau Systems

For full STP, electronic capture of trade allocations into the dealers' systems, trade detail enrichment required for internal processing, and submission of trades for processing into the back office system/service bureau systems and/or to the clearing system are all required.

Auto-matching of Inter-dealer Trade Confirms Against Internal Back Office System

After trades are processed into the back office dealer's systems, the trade confirmations should then be automatically compared to the trade confirms produced by the inter-dealer's system.

Retail Trading

Current Capabilities/Impediments

For the purposes of this analysis, the retail trading business is broken into two distinct streams of business.

1. Investment Fund products
2. All other retail products with specific focus on debt and Equity.

Retail Trading Investment Funds

The sell side processing of Mutual Funds is currently at 98% STP for purchases, switches and redemptions among the top six sell side firms in Canada.

The remaining industry participants are in some cases reaching a high percentage of accuracy comparable to the investment dealers' but are processing smaller volumes; the exceptions include many of those operating in client name, which often remains a manual paper-intensive process.

Account Transfers Between MFDA and IDA Members

IDA members who are also CDS members are mandated to use the CDS Account Transfer Online Notification (ATON) system to transfer accounts, including mutual fund holdings. Currently, the majority of MFDA members are not CDS members, however, CDS has begun accepting the MFDA members, as users, that have applied for the use of ATON.

The sell side IDA members are currently running at a 98 – 99% STP rate for regular mutual fund account transfers in nominee name.

Technology

Enhancements in the next scheduled release of FundSERV 15 are considered mandatory for STP. This release is to allow for XML file transfers in addition to the flat files that are in use today. XML will open the gate to allow new types of products to be created and become eligible for processing within the FundSERV system. The use of XML will promote better development and faster to market capabilities. In the next FundSERV release scheduled for June 2005, address changes will be completed more efficiently, and accommodation of future dated and flexible settlement dates on transactions is also planned.

Behavioral

One of the challenges is that the industry cannot fully change the client name working model even though transactions are paper-based and manual. Cost/benefits to automate for the end investor would not be realized for a number of the smaller firms.

Critical Path Items and Timing

The following critical path items have been identified as impacting the sell side. In addition, please note that Critical Path items (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing impacts essentially all market segments in one way or another. Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. The number in parentheses corresponds to the number in the critical path list.

- **Need for Regulation, Measurement and Enforcement (2)**
- **Modify Internal Systems/Processes (5)**
- **Communicate and Implement Standards and Market/Business Practices (4)**

The following enabling actions must be taken to address these critical path items:

Technology

The adoption of technology/tools for all fund participants is the ultimate goal in order to achieve T+1 readiness. This solution is not easily implemented, as mandating these types of industry-wide initiatives requires a business case to be developed for all market participants as well as regulation and enforcement of those regulations.

Behavioral

The significant challenge facing T+1 settlement for all investment fund types is the confirmation delivery to the retail investor after settlement date. This issue exists today for money market funds but is not a significant issue for debt and equity funds as they settle in sync with the underlying assets on T+3. Investors send purchase/redemption orders based on yesterday's unit price. The cost/proceeds of these transactions is based on an end of trade day price and confirmed to the fund dealer at end of day. The fund dealer then updates their internal client account system on T+1 or later with a backdated transaction. This activity produces a confirm available to the investor after settlement. Additionally, reconciliation between the dealers' system and the fund company activity is happening on settlement date with compressed time for error correction. More analysis/feasibility study is required to identify the impacts/issues around processing of investment funds in Canada under a shortened settlement cycle of T+1.

Regulation, Measurement and Enforcement

Enforcement of standards and practices for all products among all participants in the investment fund industry is required, once regulations are mandated. In addition, higher industry STP would be achieved if there was greater use of FundSERV for all trading and settlement of funds in Canada.

The retail trading group for investment funds is planning to meet with the OSC to discuss a number of issues, including the following:

- Documentation requirements for Mutual Fund industry
- National Instrument 81-102
- Bankruptcy Act
- Trust Act
- Standardization of rules when given an MFDA membership

T+1 Enablers

Reduction in the number of client name accounts is required in order to become T+1 capable. An interim step to become more STP enabled is to enhance the rules for accepting electronic documentation and to utilize documentation agreements to eliminate the transfer of paper.

Retail Trading Non-Investment Funds

Current Capabilities/Impediments

The consensus among the interviewees is that order execution and processing for retail debt and equity is at 98% STP. Based upon this level of current STP readiness there are no critical STP/T+1 issues that have been identified that would preclude a move to a T+1 settlement cycle. The following is a list of some of the issues that were discussed at meetings with the study participants, but all participants agreed that there were no items deemed "critical" for moving to T+1.

Restricted share certificates (restricted shares under the SEC Rule 144-144A Stock Legend for Private Placements)

Legend restricted shares require legal and regulatory approval in order to sell. The issues are the following:

- Late paper-work from clients means it takes a minimum of a week, and upwards of six weeks, to get certificates issued; sometimes even getting the necessary form is a problem
- Rules are not structured

- Registrar treatment is slow and tedious
- Restricted shares that are trust units cannot be borrowed, which increases the risks of being bought-in on the trades

Stock option plans for employees:

Options issued to employees of publicly traded companies, when exercised to obtain the underlying securities, are processed manually. The process needs to be more STP. The issue for the client who now owns the underlying shares, and wants to sell them, is that the dealer who sells them does not receive the shares for upwards of several days after the settlement date and accepts the risk of doing so. The current process is listed below:

- Registrar waits for funds from Treasury
- Registrar issues physical shares
- Registrar courier certificates to the defined recipient (Dealers/Trust company, etc.) as per instructions from the Issuer
- Recipient processes receipt of shares to the customer accounts
- Securities are deposited in the depository
- Shares are credited to CUID

*Most Important Retail Issues***Delivery Against Payment (DAP) Trades**

The handling of retail DAP trades to be reported and affirmed on trade date in order to settle on T+1, was considered by all of the interviewees to be a primary issue for STP (but a low transaction volume issue) especially in supporting the high net worth customers.

Cash Management

Cash management improvements are required prior to moving to T+1, but efforts are currently continuing among the firms that were interviewed. Efforts to educate and provide alternative methods of moving funds in and out of customers' sell side accounts to other internal and external accounts being operated by their customers is well on track.

Street-side Trade Reconciliation on Trade Date

Please refer to this topic in the institutional sell side section of this document for details.

Dependency Upon Service Bureau Systems

Small to medium-size firms are more dependent upon their Service Bureau system providers to deliver industry required STP/T+1 system enhancements. Some larger firms have already funded, or have the infrastructure to fund internal developments that facilitate their needs in conjunction with using the service bureau applications.

Technology

Technology is currently 98% STP for order execution and processing. Interconnectivity for corporate action information received and requiring distribution is required, but the interviewees do not see this as an impediment for moving toward a T+1 settlement cycle.

Regulatory Framework

There was a consensus on the topic of restricted stock trading and processing, as requiring improvement for STP. Regulatory changes are required to trade restricted stock under a second CUSIP and allow for the Class C shares to become immobilized. In addition, there are different

procedures in place today depending on whether you are a Securities Transfer Association of Canada (STAC) member or not.

Behavioral

When a date is established for conversion to T+1, there are expectations that corporate communication plans will be required for communicating the changes/impacts to processes and procedures to internal employees and also to external clients.

Critical Path for Moving to T+1 for Retail Non-Investment Funds

There were no critical path issues identified for this category.

T+1 Enablers

Corporate Actions

Retail Full Service and Discount

Unlike the institutional business that delivers the client's assets on the settlement date of the trade to the custodian, the Dealer holds their retail client's assets. These assets will attract dividend and interest income and are subject to any corporate actions that take place in the market place.

There are not many differences between the Dealer's requirements versus the custodian's requirements when it comes to corporate actions and entitlements from an external point of view, as both sides receive information from the same depositories. The main differences are in the systems used. A large custodian would have more automated internal systems and processes to support a much larger asset base and corporate action/entitlement volumes than a typical dealer. Dealer service bureau systems are not as robust as the custodians' are, however some of the larger dealers have built other internal system solutions to support this business processing area.

For more details on the issues and requirements for corporate actions please refer to the custodians section of this document.

Buy Side Investment Managers

Background

The buy side investment manager community is a diverse group of industry participants comprised of:

1. Insurance Companies
2. Pension Plans
3. Mutual Fund companies
4. Third party discretionary and non-discretionary investment managers
5. Individual retail investors

The insurance companies, mutual fund companies and large pension plans typically manage all or a significant part of their investments through in-house investment managers and/or outsource segments of their portfolios to third-party managers. The third-party investment managers are appointed by both institutional and retail clients to handle their portfolio investments. Investment managers specialize in certain asset types, investment strategies and retail and/or institutional clients. Individual retail investors appoint an investment manager and/or access the market through a broker/dealer or other financial intermediary.

Given the range in size of the buy side market participants, their relative level of automation and focus on investment process efficiencies varies accordingly. Large self-managed pension funds and mutual fund companies view their operational costs for investment management as a direct charge against fund rates of return. Consequently, they tend to be motivated to look in-house for processing efficiencies, invest in technology and connectivity and hold their custodians accountable for performance and cost. Insurance companies have been distracted by demutualization and consolidation over the last ten years and are focused on efficiencies around their revenue generating product lines and internally focused investment management efficiencies from the front office to the back office. Institutional and retail clients, who appoint third party investment managers, have traditionally focused on the investment performance of their managers. While their investment managers may have been self-motivated to look at their own internal operational costs, they have lacked motivation to embrace external efficiencies that flow through to their client's operational costs. Custodians who have traditionally subsidized the inefficiencies of the investment managers on behalf of their mutual clients have exacerbated this situation.

In Canada, there is no facility to connect non-depository market participants to the clearing system. The non-depository market participants provide their trade instructions to a settlement agent for affirmation for settlement.

The following chart shows affirmation statistics for April 1 – 30, 2004:

OVERALL CONFIRMED		
Debt + Equity	# Trades	% Industry
T	8,876	2.98%
T+1	131,506	47.14%
T+2	94,094	78.73%
T+3	57,215	97.94%
T+3 >	6,123	100.00%
Total	297,814	

The following is a breakdown of the market profile:

MARKET PROFILE	
Participant Type	Number
Mutual Fund Managers	67 (IFIC)
Insurance Companies -- Life	109 (Statistics Canada 2002)
Insurance Companies -- P&C	230 (Statistics Canada 2002)
Investment Managers	275 – 300 (from CCMA)
Pension Funds	

Current Capabilities and Adoption Rates

Technology

The large self-managed pension funds and mutual fund companies have focused on in-house investment management efficiencies and connectivity to their custodians. They use communication vendors such as Financial Models Company (FMC), Swift and proprietary links to communicate trade instructions. They report a high adoption rate in providing electronic trade instructions to their custodians and this is validated by the custodians. There is a significant breakdown in connectivity with the broker/dealers who are either not participating in electronic communication systems or are not providing trade confirmations through these systems. Where pension plans and mutual fund companies use a third party investment manager, this is also a problem area. Their custodians report a low adoption rate for electronic trade instructions in many cases and they are now beginning to focus on managing their compliance.

While the insurance companies have many internally focused technology initiatives from the front office to the back office, industry STP is not a key area of focus, according to interviewees.

Third-party investment managers appear to run the full spectrum in terms of connectivity to other market participants. There is general agreement that the solutions in place and adoption rates would align to their assets under management (AUM). The medium to larger firms report connectivity solutions in place and a high adoption rate of trade communication with their custodian partners. According to some of the interviewees, the STP aware firms make up approximately 40 – 50% of the total number of investment managers. They generally report a low connectivity and adoption rate with the broker/dealers who are either not participating in electronic communications systems or are not providing trade confirmations through these systems.

The custodians report a 75 – 80% adoption rate for institutional electronic trade delivery, which supports the capability and adoption rates, reported by the medium to larger investment managers. The balance of the trade instructions are received by fax, which would account for the remaining small to medium size investment managers that reportedly make up 50 – 60% of the firms in number.

The investment managers do not understand the business case for a VMU. Those who believe that central matching is a good idea do not necessarily want to pay for it. Most support local matching together with the additional use of block settlements.

FMC reports that 190 investment managers and that 95 of 117 broker/dealers are on the FMCNet communication system. The push for the broker/dealers to use FMCNet comes from the third party investment managers and self-managed mutual and pension funds.

Regulatory Framework

The large financial institutions such as insurance companies, mutual fund companies and pension plans are regulated by the Office of the Superintendent of Financial Institutions (OSFI) which does not have regulatory oversight of the securities industry. Their attitude towards additional regulatory involvement to facilitate industry STP goals aligns with their current focus on those goals. Some industry interviewees believe that the insurance industry sees the proposed CSA Rule 24-101 as merely a recommendation because it has no enforcement mechanism.

The provincial securities regulators regulate the discretionary investment managers. The group that was interviewed is receptive to the proposed institutional trade-matching Rule 24-101 and saw an easy transition for their respective firms. For cross border activity, an SSI database needs to be in place because of the number of sub-brokers and the data standards identified by the Institutional Trade Processing Working Group need to be enforced. The small to medium firms, whose connectivity to other market participants is lacking, will have to close this gap in order to adopt this new function under straight-through processing.

Behavioral/Process

The majority of mutual fund companies, large pension plans and STP aware investment managers are actively supporting the industry initiatives for STP and are receptive to the necessary changes.

The current insurance company focus is on governance, pension plans, consolidations and financial reporting transparency. There is little focus on STP and the industry is heavily reliant on third parties and service providers to play an active role. Ultimately, legislation with penalties may be necessary to ensure compliance and the associated behavioral changes that may be required.

Critical Path Items and Timing

The following critical path items have been identified as impacting the buy side investment managers. Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. In addition, please note that Critical Path items (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing impacts essentially all market segments in one way or another. For the following Critical Path items that are more germane to the buy side, the numbers in parenthesis refer to the Critical Path number of each item.

- **Need for Regulation, Measurement and Enforcement (2)**
- **Need to Effectively Engage the Buy side (3)**
- **Communicate and Implement Standards and Market/Business Practices (4)**
- **Modify Internal Systems/Processes (5)**
 - **Modify Internal Firm Processes and Systems (5a)**
 - **Achieve Connectivity Among Market Participants (5b)**
 - **Process Trades in Real-Time/Near Real-Time (5c)**
- **Identify and Comply with Accelerated Deadlines (6)**
 - **Trade Date Submission of Dealer Institutional Trades to Depository/Clearing Corporation (6b)**
- **Trade Matching (7)**
 - **Same Day Affirmation/Matching (7a)**
 - **Electronic Allocations (7b)**
 - **Development of Standing Settlement Instructions Database (7c)**
- **Achieve Electronic Delivery of Corporate Actions Announcements and Notifications, Including Liability Notices (9) – STP Critical Only**
- **Modify Investment Funds Processing and Regulation (10) – STP Critical Only**

Technology

The STP aware investment managers and large pension funds and mutual fund companies see connectivity with broker/dealers as a critical path item for STP/T+1. The completion of the inter-connectivity to all market participants in real-time or near real-time is critical to achieve institutional trade matching.

The insurance companies and remaining investment managers must get connected and this is critical to industry-wide STP/T+1. Lack of connectivity is largely a behavioral issue and engaging the remaining buy side will jumpstart this issue. The vendor solutions exist for full connectivity by the buy side and the advent of a mandated matching rule will facilitate this connectivity.

Regulatory Framework

The STP aware investment managers and the large pension funds and mutual fund companies believe the mandating and enforcement of trade matching is on the STP/T+1 critical path. This mandating will facilitate the engagement of the remaining buy side. Additionally, although the CCMA has published standards and market/business practices for institutional trades, they have not been broadly communicated or monitored for adherence.

Behavioral/Process

The STP aware investment managers questioned the definition of “end of day” in a T+1 environment and what impact a potentially longer processing day may have on all market participants, systems, etc. This is an area that requires further study as part of industry-wide planning for a shorter settlement cycle.

Corporate Actions Issues

The investment managers expressed concerns with corporate actions processing by the custodians. They see inconsistency in how proceeds are calculated by the different custodians they interact with for their mutual clients. A concern raised is that the custodians are unable to credit proceeds from corporate actions in time for settling linked trades in a T+3 environment. They did not see an issue around information or the need for a central hub.

The large insurance company that participated in the interviews viewed corporate actions as a critical path item. There needs to be standards on data elements and processing, although not necessarily a central hub.

Investment Funds Issues

For retail mutual funds and segregated funds, the investment managers are looking to FundSERV and IFIC for direction and structure on analyzing and facilitating industry movement to STP/T+1. The challenges are not around transaction capture but the movement of funds from the distribution channels. The independent agents are a problem with funds movement as they operate in client name and do not operate trust accounts. This results in cheques being sent directly to the fund or Insurance Company. The industry is currently at approximately 60 – 75% nominee name but the independent agents are holding up further adoption as they feel they own the client name.

Summary

The buy side is a fragmented group with significant differences in capability, priority and awareness of STP/T+1 and its implications. The investment manager firms are currently connected to the custodians or can be easily connected via existing vendors. In order to handle matching in a STP environment, connectivity with the broker/dealers is a critical path issue. Both the broker/dealers and the buy side see the problems around connectivity as originating with each other. The large Mutual Fund and Pension Funds are focused on operational efficiencies and generally welcome any mandating that pushes their counter parties into STP compliance. The insurance industry is not focused on STP but, overall, is viewed as capable to “fast follow” in order to comply and avoid reputation risk. All buy side participants viewed corporate actions issues on the critical path. Although a centralized information hub is not seen as critical, standards around data information, processing and timing of payments were deemed critical.

Next Steps

1. The insurance industry and many of the small to medium third party investment managers need to be mobilized to meet the milestones for industry-wide STP.
2. Standards and business rules around information, processing and timing of payments for corporate action events need to be broadly publicized and adopted.
3. The broker/dealers need to be connected to the buy side participants in order to facilitate trade confirmation and matching.

Custodians

Background

Market consolidation in the last ten years has left Canada with three significant custodians – CIBC/Mellon, State Street Canada, Royal Trust. In addition, Citibank, Northern Trust, Caisse Desjardins and National Bank, and other smaller custodians, concentrate their services in regional markets or the corporate sector. The full service custodians offer domestic and global custody to a full range of institutional and retail client segments.

Royal Trust is a member of the Royal Bank Financial Group, Canada's largest Schedule I Bank, State Street Canada is a wholly owned subsidiary of State Street and CIBC/Mellon is a joint venture between CIBC and Mellon Bank. Because of their relative size and ownership, these full service custodians make large investments in technology and/or share a global technology platform with their parent organizations. As their fee revenue is largely based on asset market value and transaction volumes, they have a significant incentive to focus on operational efficiencies and lower unit costs. This makes STP part of the internal culture for custodians and such initiatives, in general, make good business sense.

Current Capabilities and Adoption Rates

Technology

From the custodian's vantage point, connectivity with third parties for institutional trades is the issue that defines STP. In Canada, there is no facility to connect non-depository market participants to the clearing system. Non-depository market participants provide trade instructions to settlement agents for positive affirmation.

The industry operates in an electronic environment and interconnectivity with all market participants is a major issue for the custodians. Custodians gather data in many different ways and have to satisfy many different client types so they are motivated to adopt standards and market/business practices and maximize connectivity and accuracy.

Custodians' adoption rates for institutional trade capture range from 75 – 80% received electronically with the remainder received by fax and manually keyed into their custody systems. Of those received electronically, 65 – 90% are received "STP-qualified", in that they require no manual repair or scrubbing. Today, not all clients/investment managers elect to send in trades electronically and the custodians feel they are "over accommodating" in interpreting and re-entering free format instructions and data received. There is no penalty imposed directly on investment managers who do not utilize electronic communication, as this has not been mandated and they are typically not measured by their clients' custodian costs.

There are no perceived gaps in the communications capability and the recognition of messaging standards through the use of vendors. A total connectivity solution exists although often not adopted by all industry segments. There may be some asset type that is not fully accommodated, but 80% of trade activity is domestic and standard.

On average, international counter parties provide higher quality data than domestic counter parties because of their usage of Swift and its international messaging standards. Establishing data elements and standards has been difficult in Canada. The custodians feel moving to full electronic communication is relatively easy but the quality of data remains an issue and behavioral changes are needed.

The following chart shows confirmation statistics for institutional trades for the period April 2004:

OVERALL CONFIRMED		
Debt + Equity	# Trades	% Industry
T	8,876	2.98%
T+1	131,506	47.14%
T+2	94,094	78.73%
T+3	57,215	97.94%
T+3 >	6,123	100.00%
Total	297,814	

Regulatory Framework

The custodians are regulated by OSFI, which has no mandate over the securities industry. Additionally, large buy side firms such as pension plans, mutual funds and insurance companies are under similar regulation to the custodians. The provincial securities regulators regulate the third party investment managers. The current market regulations around trade processing are through the SROs, which don't extend directly to these third parties.

While the custodians see a need for market rules to formalize roles, responsibilities and standards, the industry does not need legislation too early in the process. The industry needs to develop tangible initiatives, plans and strategies with milestones that are achievable. It is important to demonstrate that the industry is interested in efficiencies on an ongoing basis without the threat of a finish line date. These initiatives have to be bottom line driven.

Behavioral/Process

There must be an industry standard for interconnectivity between all participants. Traditionally, all standards and guidelines have been self-imposed by the custodians with adoption by persuasion. With the recent publication of standards and market practices, the industry has cross-developed industry standards for the first time but there is not much additional incentive to adopt.

There are important accounting and reporting functions that take place once a trade arrives on the custodian's systems. Without good quality data from the outset, subsequent processing and reporting is directly impacted. The more efficient the process is at the front end, the better the overall processing downstream. The investment managers are beginning to get this message with the mutual help of both the custodians and the sell side.

Most of the custodians have implemented tiered settlement pricing that encourages the use of electronic trade capture. This is another tactic for driving improved adoption rates by the investment manager when the mutual client of the IM and the custodian can measure the cost of non-compliance on custodial fees. Even with the existence of such incentive pricing, the custodians have been reluctant to impose it on many of their larger and sensitive clients.

The custodians felt that improved connectivity to the U.S. market would be important for STP/T+1 as well as standardization and equalization of processes and rules.

Critical Path Items and Timing

The following critical path items have been identified as impacting the custodians. Please refer to the critical path table in the section Proposed Critical Path for STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. The number in parentheses corresponds to the number in the critical path list.

- **Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing (1)**
- **Need for Regulation, Measurement and Enforcement (2)**
- **Need to Effectively Engage the Buy Side (3)**
- **Communicate and Implement Standards and Market/Business Practices (4)**
- **Identify and Comply with Accelerated Deadlines (6)**
 - **Trade Date Submission of Dealer Institutional Trades to Depository/Clearing Corporation (6b)**
- **Trade Matching (7)**
 - **Same Day Affirmation/Matching (7a)**
 - **Electronic Allocations (7b)**
 - **Development of Standing Settlement Instructions Database (7c)**
- **Accomplish Cross-Border Implementation (8) – STP Critical Only**

Behavioral/Process

Although standards and market/business practices for institutional trades have been published by the CCMA, they have not been broadly publicized and adopted. The problem continues to be the matching of institutional trades. The custodians are not looking to protect their traditional role of matching broker confirms to investment manager trade instructions as it is not necessarily a business line for custodians. They encourage local or central matching between the principals to a trade although in Canada the investment managers believe they are not part of this process. This change of attitude and roles will be critical to facilitating a move to T+1.

The industry needs some agreed upon priorities and next steps to energize the execution phase of the STP development. The industry needs to identify the Canada – U.S. gaps and move forward with bite sized initiatives that make business sense. The current fiscal year is a good funding opportunity and the industry needs to identify who will drive the market forward.

The broker, in the quantities allocated by the investment manager, should submit trades to CDSX for settlement. Submitting multiple trade confirms for settlement in incremental quantities that require matching to a single investment manager trade instruction for the full allocations diminish STP success rates. This issue will fall into the investment managers' hands as they are forced to play a direct role in trade matching as per the proposed institutional processing model and CSA rule 24-101.

The custodians felt that improved connectivity with the U.S. market would be important for STP/T+1 as well as standardization and equalization of processes and rules. The current model works under the rules of DTCC as CDS is a participant of DTCC but they are not of CDS.

Technology

The adoption of infrastructure changes that facilitate interconnectivity by all market participants to an institutional trade is critical to STP and T+1. There are vendor solutions in the marketplace that provide the connectivity and functionality to process institutional trades under the current processing model. FMC is enhancing FMCNet to function as a VMU and Omgeo is also in the marketplace. The principals to the institutional trades must be capable of electronic communication from market execution through to settlement reporting in real-time/near real-time in order to achieve straight-through processing and shorten the settlement cycle. CDS issued on

October 31, 2003, the Matched Institutional Trade Messaging Standard – CDSX Settlement Link and are enhancing CDSX to receive matched trades no later than June 2005.

Regulatory Framework

The appropriate rules are needed to formalize roles, responsibilities and standards for all market participants. The CSA issued a discussion paper on April 16, 2004 for proposed rule 24-101 Post Trade Matching and Settlement. There is no specific endorsement of the CCMA published standards and market/business practices although their endorsement is a question asked for comment. Additionally, the proposed matching rule does not address the issues of monitoring and compliance enforcement. The CSA will determine its next steps based on comments received.

Corporate Action Issues

At the senior executive level, corporate actions information and processing standards were identified as a critical path item for STP/T+1. Although published by the CCMA, they have not been broadly publicized and monitored for adherence. Corporate Actions are one of the most manual processes and it would be a mistake to ignore this function in the context of STP. Canada is a very complex market in terms of corporate action event types and the industry needs to manage the process and resultant risk. It is an area that needs a behavioral change that will be resisted and the market needs stringent compliance guidelines.

Securities Lending Issues

As the major lenders in Canada, the custodians did not identify any critical path issues around securities lending to achieve STP/T+1. Current connectivity with the borrowers is through fax and phone but the business volumes do not justify a fully automated system. The one potential bottleneck identified is the processing of recalls, which are time sensitive and linked to trade transactions. Based on low volumes (5% of sales of lent securities/approximately 225 per month) this was not seen as a critical path item. Additionally, a number of vendor enhancements and DTCC may provide some functionality in this area.

Summary

The custodians see connectivity and processing rules and standards as the critical driver for institutional trade STP and a subsequent move to T+1.

Corporate action information and processing standards is also seen as a critical path item for STP/T+1. Although not specifically advocating the need for a central information hub, the mandating of data standards, information content, format, timing and electronic availability is seen as critical. Additionally, standardized processing rules and practices need to be embraced.

One senior executive from a major custodian felt that Canada could reach T+1 in sync with the U.S. should a date be announced, as the market is relatively agile. Canada has a history of being a “fast-follower” and would close the gap between the U.S. to achieve the same end result.

Next Steps

1. Implementation of the proposed Post Trade Matching and Settlement rule augmented by the necessary connectivity and adoption of messaging standards and business rules.
2. Implementation of corporate actions Market and Business Practices and Standards for information and processes.

Regulatory

Background

In Canada, the regulation of the securities industry is a provincial responsibility. Each province is responsible for creating the legislation and regulation under which the industry must operate. In several provinces, much of the day-to-day regulation is delegated to Securities Commissions. In other provinces, Securities Administrators, who are appointed by the province, take on the regulatory function. This system is viewed as fragmented and inefficient with growing pressure for national bodies or a single national body to regulate these markets. In the absence of a consensus to transfer authority to the federal government, the provincial regulators have formed a number of organizations to work toward uniformity of regulations through provincial cooperation.

Provincial Securities Legislators

REGULATORY ENTITY	DESCRIPTION
Ontario Securities Commission	Provincial Securities Commission
Alberta Securities Commission	Provincial Securities Commission
B.C. Securities Commission	Provincial Securities Commission
Saskatchewan Financial Services Commission	Provincial Securities Administrator
Manitoba Securities Commission	Provincial Securities Commission
New Brunswick Securities Administration Branch	Provincial Securities Administrator
Securities Commission of Newfoundland and Labrador	Provincial Securities Commission
Nova Scotia Securities Commission	Provincial Securities Commission
Registrar of Securities NWT	Securities Administrator
Registrar of Securities Nunavut	Securities Administrator
Securities Office P.E.I.	Provincial Securities Administrator
L'Autorite des marches financiers (Québec)	Provincial Securities Administrator
Registrar of Securities Yukon	Securities Administrator

Canadian Securities Administrators

The thirteen provincial/territorial Canadian Securities Regulatory Authorities (SRAs) are members of the CSA. The CSA is an umbrella organization that is positioned to serve as a virtual national securities commission. Its mission is to give Canada a securities regulatory system that protects investors from unfair, improper or fraudulent practices and that fosters fair, efficient and vibrant capital markets, through the Canadian Securities Regulatory System (CSRS), a national system of harmonized securities regulation, policy and practice. As observers on the CCMA Legal/Regulatory Working Group, the CSA have identified the legal/regulatory changes required for T+1 and greater levels of STP.

Provincial Securities Commissions

The SRAs oversee the securities industry in their respective jurisdictions through Securities Commissions or Administrators. The three major objectives of provincial securities legislation are 1) Investor Protection, 2) Fair Access to Markets and 3) Reduction of Systemic Risk in the securities markets.

Self-Regulatory Organizations

In the Canadian securities industry, self-regulatory organizations (SROs) are responsible for ensuring that their members meet the standards prescribed by provincial laws governing securities. The SROs regulate markets and trading as well as member firms, their employees and their business practices. In general terms, SROs set standards for participants, create rules for business and/or market practices, examine and monitor participants and investigate suspected infractions. The following SROs are recognized in Canada:

Investment Dealers Association of Canada (IDA) – is the national SRO for the broker/dealer industry. It regulates the business activities of investment dealers in order to maximize investor protection. Member firms must be able and willing to conduct their business in accordance with the prescribed rules and are subject to ongoing supervision. The IDA regulates members selling all investment products including mutual fund products.

Mutual Fund Dealers Association (MFDA) – is a not-for-profit corporation established with the objective of acting as a SRO for the mutual fund dealers in Canada. It regulates the distribution side of the mutual fund industry, not the funds or fund manufacturers. Changes required to their rules for greater STP and T+1 have been submitted to the CCMA Legal/Regulatory Working group.

Stock Exchanges – the Toronto Stock Exchange (TSX), the Canadian Venture Exchange (TSXV) and the Bourse de Montreal (Canadian Derivatives Exchange) are the three exchanges in Canada. They each have by-laws and rules that their members must observe. The TSX and the TSXV have retained Market Regulation Services Inc. (RS) to administer and adhere to their regulatory services. RS is an independent regulation services provider for Canadian equity markets. RS is a joint initiative of the TSX and the IDA. It is recognized as an SRO by the provincial securities commissions in Alberta, British Columbia, Manitoba, Ontario and Quebec. RS is responsible for the administration, interpretation and enforcement of a common set of trading rules consistently in all markets in Canada. Whereas the IDA regulates business practices, RS regulates marketing practices through the Universal Market Integrity Rules (UMIR).

Office of the Superintendent of Financial institutions (OSFI) –The Office of the Superintendent of Financial Institutions is responsible for regulating and supervising all banks, and all federally incorporated or registered insurance, trust and loan companies and pension plans. Its activities can be divided into two broad functions:

1. **Regulation** – involves developing and interpreting legislation and regulations and approving requests from federally regulated institutions.
2. **Supervision** – involves assessing the safety and soundness of financial institutions on an ongoing basis.

Market Participants and Regulation

The following table presents the market participant types, with the associated regulatory body:

MARKET PARTICIPANT	REGULATOR
Broker/Dealer	IDA, RS, CSA, Exchanges
Custodian	OSFI or provincial
Transfer Agents	OSFI or provincial
Insurance Companies	OSFI or provincial
Pension Plans	OSFI or provincial
Mutual Fund Companies (financial institutions)	OSFI or provincial
Mutual Fund Dealers	IDA, MFDA
Discretionary Asset Managers	CSA
Issuers	CSA, TSX
Canadian Depository for Securities	OSC, AMF, Bank of Canada
TSX	RS, OSC (Lead), ASC, BCSC
TSXV	ASC/BCSC (Lead) ASC, AMF, RS
Bourse de Montreal	AMF
RS	CSA

Critical Path Items and Timing

The following critical path items have been identified in discussions with various regulators: Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. The number in parentheses corresponds to the number in the critical path list.

- **Need for Industry wide Commitment, Leadership, Mobilization and Resourcing (1)**
- **Need for Regulation, Measurement and Enforcement (2)**
- **Need to Effectively Engage the Buy Side (3)**
- **Communicate and Implement Standards and Market/Business Practices (4)**
- **Modify Internal Systems/Processes (5)**
 - **Modify Internal Firm Processes and Systems (5a)**
 - **Achieve Connectivity Among Market Participants (5b)**
 - **Process Trades in Real-Time/Near Real-Time (5c)**
- **Identify and Comply with Accelerated Deadlines (6)**
 - **Intra-Day Processing by Depository/ Clearing Corporation Readiness (6a)**
 - **Trade Date Submission of Dealer Institutional Trades to Depository/Clearing Corporation (6b)**
- **Trade Matching (7)**
 - **Same Day Affirmation/Matching (7a)**
 - **Electronic Allocations (7b)**
 - **Development of Standing Settlement Instructions Database (7c)**

Investment Dealers Association of Canada

The IDA has worked closely with the CCMA working groups to identify obstacles within the IDA by-laws and rules to achieving STP/T+1. All required changes have been documented and submitted to the CCMA Legal/Regulatory Working Group.

The IDA is relying on the CCMA to identify the critical path items for the IDA member firms. The IDA is actively participating on the appropriate committees and is represented on the Core Group. The key obstacle for the IDA member firms to meet STP challenges and milestones is the engagement of the buy side.

The goal is connectivity with the investment management community, which, as the client, influences the endorsement or rejection of systems and/or processes. This challenges the investment dealers in adopting STP because of these trade-processing hurdles.

The IDA has been identified as a potential enforcer of Rule 24-101, Institutional Trade Matching, if enacted. While there is broad agreement for the need for trade matching mandating, agreement has not yet been reached as to who should mandate such action. In any event, measurement and enforcement remedies for non-compliance have to be determined.

Toronto Stock Exchange/Regulation Services (TSX/RS)

The TSX/RS do not see any outstanding issues that are mission critical to the migration of the TSX to STP/T+1. The rulebooks for participating organizations and issuer manuals are under review and proposed amendments are expected to be provided to the CSA for approval by the end of 2004. In the attached appendix, changes identified and submitted to the CCMA Legal/Regulatory Working Group are outlined with their current status.

Capco noted that TSX Rule 5-105 Uniform Settlement Rule was not included on the list. While this rule is analogous to NYSE Rule 387 and NASDAQ 11860, it is little known and not enforced.

Discussion with the Legal Department at the TSX revealed that they are reviewing all of Section 5, Clearing and Settlement, of the TSX rules. It is the intention of the TSX to discuss with CDS and RS which clearing rules should reside in the TSX/TSXV Rulebooks, UMIR and CDS rules.

Ontario Securities Commission

The Ontario Securities Commission (OSC) regulates all discretionary and non-discretionary investment advisors in Ontario as do provincial regulators in other jurisdictions. Internal advisors within pension funds and insurance companies do not need to be registered as they are providing internal advice. This is the most at risk segment as SROs cannot directly impact their compliance. However, matching can be enforced under contract law in the proposed CSA rule 24-101 currently out for industry comment by July 16, 2004..

The OSC believes that the Canadian market is tracking up to eighteen months behind the U.S. market in readiness for STP. This is due to the fact that Canada lacks the building blocks that the U.S. has in place such as utilities and commercial law framework. Canada has identified Market/Business Practices and Standards for institutional, corporate actions, securities lending and direct registration systems but these need to be broadly publicized and monitored for adherence. Business/Market practices and standards need to be developed for retail and investment funds.

The OSC believes that the focus of STP should be on intra-organizational as well as inter-organizational. The small players are waiting for inter-organization solutions before looking at internal solutions. Two key issues include the adoption of standardized messaging formats, and the promulgation of standardized business practices.

To accelerate the progress toward STP in the Canadian market, the OSC believes the industry needs a significant Program Management Office that identifies issues and helps facilitate resolution. In addition, the industry needs to institute a clear governance model to lead future efforts. The front office also needs to be more fully engaged in the process of moving to greater levels of STP.

The OSC acknowledges that STP is generally thought to begin at market execution but will monitor closely the order entry management process as well. They are working on electronic audit trail requirements for broker/dealers, which will require that orders be recorded electronically and available for transmission to regulators. Although this initiative is not tied directly to STP/T+1, it may foster increased emphasis on STP efforts from the client order stage of the process as well as increased focus on market practices.

While settlement at the block level is a distinct feature of the Canadian market, as opposed to the US, the OSC has not seen evidence that this is a problem and is not inclined to advocate a change. Compliance officers review allocation procedures and there is no evidence of abuse, so there should be no impediment to the continued and potential expanded use of block settlement. (The increased usage of block settlements is seen by many in the Canadian market as a key enabler of STP/T+1.)

Local matching rather than a central matching utility is what the OSC perceives as preferred in the industry. The proposed rule requires dealers to use a recognised matching utility if that route is chosen. The OSC focus is to ensure safe and reliable clearance and settlement systems regardless of the means, similar to the current views of the U.S. market.

Retail issues are not perceived by the OSC to be as problematic to the accomplishment of STP as institutional trades. For example, with regard to dematerialization, the CSA 2003 Survey Results showed that certificates make up only 0.01% of trade volume. (This area is being removed from the 2004 Survey although it may be an issue for some smaller dealers.) Other issues under review, such as securities lending, corporate actions and Mandatory Large Value Transfer System (LVTS) usage are also not deemed to be critical impediments. The view is that the industry needs to further understand the cost and benefits of a centralized corporate actions hub, and LVTS is seen as an effort that CDS should pursue to support its own internal STP levels.

L'Autorité Des Marchés Financiers

The Quebec Securities regulators have expressed support for the CSA Discussion Paper 24-401 on Straight-Through Processing. There is a need to recognize that securities laws and regulations in Quebec may not be identical to the rest of Canada due to the differences between the Code civile and common law. Quebec will implement its equivalent of the USTA and changes to its Company Act to address the current requirement for mutual fund certificates as collateral for loans.

Alberta Securities Commission

The Alberta Securities Commission (ASC) confirmed the regulatory framework with respect to the custodians, insurance companies and pension plans as securities market participants. With regard to proposed Rule 24-101, the ASC believes the rule can be extended to custodians as market participants using Rule 21-101 Marketplace Operation as precedent. The purpose of the proposed matching rule is to serve as a catalyst in bringing efficiencies to the market.

The results of the 2003 CSA Survey would suggest that Canada is not ready for STP but the 2004 Survey, which is scheduled for completion between June 14 – July 5 with release of the results in early September, should provide some additional quantitative indications. Additionally, the comments due by July 16, 2004, on the proposed Rule 24-101 may provide some further insight. The draft rule is seen as a potential catalyst to encourage market efficiencies.

Summary

There is general consensus within the regulatory bodies that institutional processing is the most significant impediment to greater STP and potentially shortening the settlement cycle. In this regard, the lack of engagement of the Buy Side is a critical risk issue for industry wide STP. This risk has a spillover effect to the Sell Side as the resultant trade processing challenges may hinder their adoption of STP. Standard messaging and standard business/market practices to accommodate are key issues holding back inter-participant STP. Canada may be behind the U.S. due to the absence of key building blocks such as utilities, standards and commercial law. Lastly, the CCMA is under-funded and needs to evolve into an action-orientated organization that can mobilize all market sectors and participants.

Note: Input was received from the British Columbia Securities Commission after the initial interview and information gathering phase of this Assessment project. In their view, the primary motivation for firms to get ready for T+1 should be their own economic interest.

Recommended Next Steps

1. Review funding and mandate of the CCMA to mobilize the industry efforts toward developing priorities and target dates for achieving industry wide STP.
2. Develop a plan to ensure Buy Side engagement and monitor their progress toward industry established milestones.
3. Enhance, enforce and publicize business/market practices and standards to enable inter-participant STP.

Transfer Agents

Overview

The Canadian financial services industry is served by seven transfer agents: 1) Computershare, 2) CIBC/Mellon, 3) Pacific Corporate Trust, 4) Equity Transfer Services, 5) National Bank, 6) Valiant Trust Company and 7) Olympia Trust. In terms of relative size, Computershare and CIBC/Mellon dominate with a combined estimate of 85% market share. The transfer agents have a national association, the Securities Transfer Association of Canada (STAC) to discuss common issues and concerns.

Canada is largely a book entry market due to the successful dematerialization and immobilization of physical certificates through CDS. Most government securities are issued in book entry form and CDS maintains a book entry position via Deferred Certificate Inventory (DCI) as holder of record on the registry for most corporate debt and equity issues. This has resulted in the elimination of 90 to 95% of the physical securities previously held by CDS. Where DCI is not in place for an issue, CDS maintains jumbo certificates and maintains a working supply in its vaults. While Canada does not currently have a Direct Registration System (DRS) similar to the U.S., the transfer agents are planning to bring such services to market in 2005.

CDS is the custodian and paying agent of the underlying securities registered in their nominee name, CDS & CO. Transfer agents, as agents of the issuers, are required to validate transfer of ownership and, as paying agent, make payments to registered holders, of which CDS & CO is one. The CDSX clearance and settlement system was designed to allow STP Transactions between CDS Participants and transfer agents as validators of registered securities and between CDS Participants and CDS as custodian, as well as paying agent on the securities held in the name of CDS & Co. This was intended to support the movement to LVTS and obtain STP efficiencies such as the electronic movement of instructions and securities. All Canadian transfer agents have entered into a CDS Transfer Agent Agreement that defines their validator role.

CDS has not pursued or indicated an interest in transferring some of its responsibilities and functions as custodian and paying agent with the transfer agent community. Transfer agents understand that in order to take on these additional responsibilities, they would be required to become CDS Participants and subject to all of the rules, costs and risks as would any other CDS Participant. There is no class of CDS Participant that is limited in scope to the functions that transfer agents could assume from CDS in support of extending STP in the securities marketplace. Further, custodian responsibility may affect transfer agent insurance policies and capitalization requirements.

CDS Participants can still use the functionality of CDSX as originally intended, but it has not removed CDS from being the middleman with responsibility for accumulating, aggregating and reporting on tenders and disbursing entitlements.

The validator function allows the transfer agent to confirm the deposit of a security once the physical securities are received by the transfer agent. CDS Participants receive credit for deposited securities once the transfer agent has validated the physical certificate, which may take a day or two depending on the location of the certificate at the time the CDS Participant records the deposit in CDSX and the location of the transfer agent. When DRS is implemented, transfer agents will be able to validate online in CDSX without the need to receive the physical certificate, thereby allowing immediate credit in the participant's ledger.

The relationship between CDS and the transfer agents is covered by a legal contract in order to provide the validator service. In order to provide full functionality in CDSX, the transfer agents would need to upgrade their interface with CDS and agree to provide the other functions within CDSX. Until that occurs, full STP efficiencies will not occur.

Key Statistics

- 4000 issuing companies on Canadian exchanges
- CAD\$28 billion in securities with custodians/brokers registered in client name or bearing legends/restrictions
- Three million registered holders representing CAD\$250 billion in TSX 300 companies
- Six to seven million registered shareholders on registry of seven transfer agents
- One million new certificates issued annually

Current Capabilities and Adoption Rates

Technology

Under legal agreements, all of the transfer agents act as validators within CDSX through interfaces or online access. Deposit and withdrawal instructions flow to the transfer agents electronically and are validated online. Until the certificates supporting the deposit reach the transfer agents and can be authenticated and cancelled, the transfer agent cannot validate the deposit. The use of "Paperless Legals" will allow paper intensive deposits to move electronically through CDSX. These types of deposits are accompanied by additional legal documentation such as letters of probate, etc. Under the concept of paperless legals, the depositing intermediary guarantees the validity of the deposit without sending the accompanying documentation.

The CDSX system allows for online tendering of corporate action instructions and the disbursement of shares and cash for entitlements between CDS and its Participants. This functionality could be expanded to be directly between the participants of CDS and the transfer agents given the appropriate consultations, conditions and agreement.

Regulatory Framework

While there is a requirement for issuers or their agents to deliver many corporate actions event notifications to SEDAR in text format, there is no requirement for key data elements (market practices) and reporting formats (standards) to be made available for all event types. It is generally agreed that entitlement reporting standards and practices should be mandated.

The existence of physical certificates is viewed as an impediment to achieving full STP efficiencies, as the processes must accommodate them but is not viewed as a critical path item for T+1. The legal issues requiring certificate issuance have recently been addressed or are in process. Provincial laws in Quebec, PEI, Nova Scotia and New Brunswick are under review and the USTA is under review in all jurisdictions. While these changes will eliminate the need to issue certificates and recognize the validity of book entry ownership and transfer, the option to receive a physical certificate will remain.

CDS currently extracts entitlement information filed in SEDAR and sends it electronically to participants with an electronic link to the SEDAR document. However, the data is limited to CDSX eligible securities, it is not entered by the initiator and is not in field base ISO 15022 compatible format. The CCMA Corporate Actions Working Group has issued standards and market/business practices but these have not been broadly communicated and monitored for adherence.

Although connectivity for deposits and withdrawals with the transfer agents exists through CDSX, it is not being fully utilized. The lack of system edits permits intermediaries to send incomplete information (e.g., lack of certificate details to the transfer agents. These transactions are not usually rejected as the transfer agent uses the information printed on the share certificate to complete and validate the deposit. One transfer agent, who is connected in real time to CDSX, rejects the transfers at source of input if key data elements required to complete the deposit without manual intervention are not provided. Most of the transfer agents are not utilizing real time connectivity in order to achieve full STP for these transactions.

The large transfer agents are exploring DRS as a means to reduce the need for certificate validation. DRS would allow transfer of ownership and deposit/withdrawal of client securities into/from the CDS nominee system without the need for movement of a physical security.

Critical Path Items and Timing

The following critical path items have been identified as impacting the transfer agents. Please refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. In addition, please note that Critical Path item (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing impacts essentially all market segments in one way or another. For the following Critical Path items that are more germane to the transfer agents, the numbers in parenthesis refer to the Critical Path number of each item.

- **Need for Regulation, Measurement and Enforcement (2)**
- **Communicate and Implement Standards and Market/Business Practices (4)**
- **Achieve Electronic Delivery of Corporate Actions Announcements and Notifications, Including Liability Notices (9) – STP Critical Only**

The mandating of electronic delivery of corporate actions announcements and notifications is seen as critical for STP. Additionally, the adoption of communication standards and market/business practices is required. The transfer agents need to resolve the issues for achieving STP, although there is not broad agreement on the need for eliminating the existence of physical certificates or introducing a DRS system. The connectivity and legal framework for leveraging CDSX is not on the critical path for both STP and T+1 although it would enable the transfer agents, CDS and its participants to achieve the full benefits of the electronic movement of instructions and securities.

Technology

1. The existence of physical certificates will always hinder complete STP for all transaction processing. Unless book entry issuance for all securities is mandated, the existence of physical securities will continue. This has been measured as relatively insignificant as far as trade volumes are concerned (2/3 of 1%) but are still a potential obstacle to achieving full STP. To date, the regulators are showing no appetite to deny investors the right to have a physical certificate unless so chosen by the issuer.
2. At least three of the transfer agents are planning to launch Direct Registration Systems in 2005. Although the recent de-mutualization of insurance companies saw success with a DRS option, issuers have shown limited interest to date.

Regulatory Framework

Changes to provincial legislation to eliminate the need to issue certificates and the final implementation of the USTA.

The mandating of electronic delivery of corporate actions announcements is seen as critical for full industry-wide STP. Additionally, the adoption of communications standards and market/business practices is required.

Behavioral/Process

The resolution of the transfer agents' relationship with CDS will allow the industry to leverage its investment in CDSX. As custodian for the securities for which it acts as issuer/agent, CDS could achieve full NCI capability and eliminate physical certificates from its vaults. As paying/issuer agents in the system, participants could deal directly with the transfer agents for corporate actions

and entitlements. CDS would no longer have to tabulate participant instructions and process them with the transfer agent. Share and cash entitlement proceeds would be paid directly to the participants within the CDSX system.

Summary

Regulatory action on entitlement reporting for corporate actions are necessary accompanied by broad communication and adoption of corporate action standards and market/business practices. The infrastructure exists for the significant transfer agents to achieve STP through connectivity to other market participants. The ongoing existence of physical certificates will generate a limited amount of manual intervention with deposit/withdrawal transactions although this may be reduced with the adoption by issuers of a DRS model. The completion of the legal/regulatory changes for certificate issuance and book entry ownership/transfer as well as further interfaces by the transfer agents in the settlement and clearing system will facilitate STP and enable a shorter settlement period.

Next Steps

1. Mandate the electronic delivery of corporate actions announcements.
2. Broadly publicize corporate actions standards and market/business practices.
3. Implementation of the legal/regulatory changes for certificate issuance and book entry ownership/transfer in all jurisdictions.
4. Pursue further interfaces by the transfer agents in the settlement and clearing system.

Infrastructure

Overview

STP/T+1 infrastructure for the purpose of this study will focus on the exchanges, clearing corporations, and vendors that provide systems and services to the key market participants within the most critical areas of business requiring STP/T+1 readiness efforts. There are a number of developments ongoing or planned from a number of vendors who are looking to provide potential solutions to the market participants but these vendors will be out of scope for this analysis.

Infrastructure/Vendors in Scope

ADP Canada (Brokerage services)
ADP Dataphile
CDCC
CDS
FMC
FundSERV
IBM (SIS Division)
Montreal Exchange
TSX
TSX Venture

Market Participants using/dependent upon Vendors/Infrastructure

Market Participant	CDS	IBM (SIS) ADP	ADP	ADP Dataphile	TSX	TSX Venture	Montreal Exchange	CDCC	FundSERV	FMC
Sell Side	X	X	X	X	X	X	X	X	X	X
Buy Side									X	X
Custodian	X									X
Transfer Agent	X									

Canadian Depository for Securities Limited

The Canadian Depository for Securities Limited (www.cds.ca) is Canada's national securities depository, clearing and settlement hub and a key information provider for Canada's capital markets. CDS was established in 1970 to improve the efficiency of the financial sector through the provision of securities-related services in both domestic and international markets.

Current Capabilities/Impediments

Technology

CDSX is STP-ready using a combination of batch and real-time systems. The system currently handles settlements on trade date.

Use of messaging (MQ) is necessary to take full advantage of CDSX in real-time. A number of the larger CDS participants are taking advantage of the messaging capabilities with the larger volumes still being reported in overnight batch. The Canadian custodians have been using messaging, however, the sell side community for the most part needs to move into this form of information transmission.

CDS receives an end of day trade file from TSX for the purpose of trade reconciliation. CDS currently converts the file format from TSX into MQ messaging for use by CDSX. This process could be moved to intra-day once CDS, TSX and sell side firms are ready to make the change. The sell side must change internal processes and work with service bureaus to coordinate matching of trades from TSX and the service bureau system on behalf of sell side dealers

Connectivity between CDS and its participants is varied. Large firms use intra-day messaging while smaller firms use a combination of batch and messaging.

Critical Path Items and Timing

The following critical path items have been identified as impacting the Canadian infrastructure providers. Refer to the critical path table in the section Proposed Critical Path to STP/T+1: Canada and U.S. for the complete critical path listings with status and timings. In addition, please note that Critical Path items (1) Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing and (3) Need to Effectively Engage the Buy Side, impact essentially all market segments in one way or another. For the following items that are more germane to infrastructure providers, the numbers in parenthesis refer to the Critical Path number of each item.

- **Need for Regulation, Measurement and Enforcement (2)**
- **Communicate and Implement Standards and Market/Business Practices (4)**
- **Modify Internal Systems/Processes (5)**
 - **Process Trades in Real-Time/Near Real-Time (5c)**
- **Identify and Comply with Accelerated Deadlines (6)**
 - **Intra-Day Processing by Depository/ Clearing Corporation Readiness (6a)**
 - **Trade Date Submission of Dealer Institutional Trades to Depository/Clearing Corporation (6b)**
- **Accomplish Cross-Border Implementation (8) – STP Critical Only**
- **Achieve Electronic Delivery of Corporate Actions Announcements and Notifications, Including Liability Notices (9) – STP Critical Only**
- **Modify Investment Funds Processing and Regulation (10)**

Behavior/Process

The items that were identified as critical by CDS:

- Cross-border links with DTCC require more standardization and equalization.
- Harmonization of relationships with transfer agent service levels and standards. The issuer currently has up to ten days to pay and no one receiving knows when to expect the funds.
- All entitlement payments to CDS should be made via Large Value Transfer System (LVTS)
- Messaging standards to be agreed upon and utilized
- Input should be obtained on the current issues from the Issuer community, along with their support to make changes
- Harmonization of cut-off times with the U.S.

Technology

As mentioned earlier in this document, the CDSX system is already STP/T+1 enabled and already reports and settles trades same day. Below are the technology requirements of external clients of CDS and or enhancements to the level of service provided by CDS once these changes are completed

- Standards need to be enforced.
- Corporate actions information needs to be delivered electronically on a more timely basis.
- Transfer agents need to be more fully integrated in CDS and leverage capabilities of CDSX.
- All CDS participants will need to move to intra-day batch and/or real-time connectivity with CDS.
- The current TSX trade feed would need to move to intra-day batch or a real-time messaging facility.

Regulatory Framework

There were no critical regulatory requirements apart from all entitlements need to be filed to a single source or at least a smaller number of sources than what is done today.

IBM (SIS Division)

The Securities Industry Services (SIS) division of IBM Global Services has provided a comprehensive front and back office shared processing environment for the Canadian banks and brokerage firms since 1967, continually evolving its services to meet the changing needs of the industry.

Current Capabilities

Technology

IBM has been working to automate manual processing through workflow enablement of account management, exception processing, and order processing. Enhancements to their trade reporting function allow for intra-day submission of trades to CDS.

Other enhancements are listed below:

- Enhancements to real time functionality
- Real-time processing enabled for trade calculation, position and balances, cancel and correct, entitlements, and order processing
- Enhancements to standard interfaces/operability
- Enhancements in communication mechanisms and timing

Electronic message based interfaces enabled for:

- Trade reporting to CDS, real time settlements
- Flexible interfaces

Enhancements to Data Integrity and Standards:

- Workflow web applications and data scrubbing enabled for security master, trade innovator, entitlement feeds

New systems built by the service bureaus will only be utilized by their clients if there is a cost benefit to do so and once the sell side can make the necessary internal processing changes to support the new way of conducting business. The capability has been developed and the transition to adopt the new technology has begun.

ADP Canada (Brokerage Services)

Brokerage Processing Services

Brokerage Processing Services (BPS) is ADP's back office processing system, supporting real-time processing of North American equities, options, mutual funds and fixed-income securities. BPS handles everything from order management to clearance and settlement, and ensures that all regulatory reporting and other back office requirements are covered.

Current Capabilities

Technology

All new system developments are geared towards real-time and STP. ADP's systems have been undergoing re-writes to enable them to accept new file formats.

The service bureau community in Canada is driven by the needs of their clients and the industry regulatory requirements that are required for their clients.

ADP is building an internal system that will support intra-day/real-time trades and files to be captured and sent on to the clearing and settlement agents. Although the systems being built are intra-day/real-time there is still a need for the transactions to be processed overnight batch to update the core books and records system for close of business sub-system processing and report generation.

New systems built by the service bureaus will only be utilized by their clients if there is a cost benefit to do so and once the sell side can make the necessary internal processing changes to support the new way of conducting business. At present there is only a small volume of debt transactions being sent intra-day to CDS. The capability has been developed and the transition to adopt the new technology has begun.

ADP Dataphile

ADP Dataphile, an ADP company, delivers innovative real-time solutions and services for independent securities and mutual fund dealers. ADP is the world's largest brokerage processing service provider. With offices in Vancouver and Toronto, ADP Dataphile has more than 40 clients across Canada.

Current Capabilities

The current Dataphile system is a real-time system and uses real-time messaging. Dataphile currently has 22 direct IDA member firm clients using their system, ten correspondent clearing firms and four MFDA member firms.

Technology

Dataphile is aware that the Canadian market, as a whole, has a goal to have full STP. As a service provider, Dataphile can react to market changes. In the current environment, there is not a clear facility provided by the Canadian Depository for the investment manager, broker/dealers, CDS and custodians to facilitate trade notification and affirmation in an all-encompassing solution. There is a movement in Canada to have vendors fill this gap between the investment manager, broker/dealers, CDS and custodian to facilitate trade notification and affirmation in an all-encompassing solution.

As none of its customers have identified a vendor to integrate with or a vendor providing specifications, Dataphile is awaiting the development of these standards. Capability is there, however, only 10% of Dataphile's customers use automated Dataphile to FMC for trade allocations and 0% of Dataphile customers send calculated trade confirms back into FMC for matching by the IMs to their records

TSX

TSX Markets facilitates trading on both Toronto Stock Exchange (TSX) and TSX Venture Exchange with dependable trading services and systems – Trading over 4000 securities and averaging over 250 million shares per day.

Current Capabilities

Market Data and Exception Handling

- Market trade data systems are real-time end-to-end (100%)
- Daily trade exceptions identified by dealers on T+1 are communicated to CDS that, in turn, reports them to the TSX on T+1. Dealers validate that T+1 trade adjustment requests are processed on T+2

Issuer Information

- Issuers provide dividend and corporate actions information to the TSX seven days prior to payable date at the latest.
- Issuer communication methods vary from phone/fax, among other methods.
- Once the information is received by the TSX it is keyed into its reporting system manually. An estimated volume of 5000 dividends are processed on an annual basis

Technology

Market Data Automation (TSX Trade data)

Real-time messaging is used for Trade and Market information data to and from vendors and clients.

TSX Trade Reconciliation and Exception Handling

TSX can provide real-time trade feeds to CDS. CDS and TSX need to assess the effort required to change the current method of file transfer and to review the efforts with the sell side Dealers who may be impacted by the change. Potential use of this data would be to reconcile the dealers' trades processed intra-day on their vendors' systems to the fills executed on the TSX to produce a trade reconciliation report at least by day-end on trade date.

Behavioral/Process

More standardized communications of issuer information into TSX from the issuers may be required. Once this information is more standardized we would look at moving from keying information to file transfers from issuer into the TSX system.

Regulatory Framework

There are currently no outstanding issues that are critical to the successful migration of TSX to STP/T+1. Rulebooks for members and participating organizations are under review and proposed amendments are expected to be provided to regulators for approval by the end of the year.

Critical Path Items and Timing

The TSX does not have any critical path T+1 items. There are two items that need to be considered to achieve full STP-Low volumes move them off the critical path:

- Build automated links from the issuers' systems to the TSX entitlement system and reduce/eliminate keying (before T+1)
- Automate the trade error notification process from the dealer to CDS and CDS to the TSX on T+1 as well automating the trade errors that are reported by the sell side traders, intra-day on trade date.

Montreal Exchange

Known as the Canadian Derivatives Exchange, the Montreal Exchange (ME) is a business corporation, that is a profit-making company pursuing business goals and belonging to its shareholders. Established in 1874, it is Canada's oldest exchange and has always distinguished itself as an innovator. In 1975, it was the first Canadian exchange to list options and, soon after, to establish a major futures market. Today, the Exchange offers both individual and institutional investors a wide range of equity, interest rate and index derivatives. It also offers clearing services through its corporation, the Canadian Derivatives Clearing Corporation (CDCC).

Current Capabilities

As described in the CDCC section, all trading of the equity options are already fully STP. The key products are the equity assignments and bond deliveries from the futures contracts and the remaining products listed on the Montreal Exchange are not at risk for STP/T+1.

Canadian Derivative Clearing Corporation (CDCC)

Canadian Derivatives Clearing Corporation (www.cdcc.ca) is the issuer, clearinghouse, and guarantor of equity, index and interest rate financial derivative contracts traded on the Montréal Exchange. CDCC also provides clearing and settlement services to the Winnipeg Commodity Exchange (WCE).

Current Capabilities

Option/future trading from the exchange and settlements are already STP and real-time. Member firms of CDCC can view all of their transactions online.

Technology

File transfers for option assignments are sent to CDS on T+1 currently. This process would need to be enhanced before moving to T+1.

Regulatory Framework

As a course of doing business CDCC would follow its participants requirements and also follow the Options Clearing Corporation (OCC) in the changes that they implement. Following OCC protocol allows CDCC's Membership to have one set of processes for the North American marketplace and therefore reduces the potential for errors by the members.

Critical Path Items and Timing

CDCC will need to send the exercise/assignment files on the night of T to CDS. CDS will need to process to participants on the night of T or at the latest T+1 am. The Participants' systems would need to process on T or at the latest on the morning of T+1.

Financial Models Company (FMC)

Financial Models Company Inc. (FMC) (www.fmco.com), established in 1976, is a leading provider of comprehensive investment management systems and services. Its mission is to provide software and solutions for the investment world. FMC develops and supports a full suite of front-, mid- and back office products to promote STP throughout the global investment management community. FMCNet is a global trade network linking investment managers, broker/dealers, clearing agencies, custodians and interested parties. For more information about this product visit their website at www.fmco.com.

Current Capabilities

The FMCNet product is widely used among all of the institutional market participants namely the buy side, sell side and custodians. FMC has 95 Dealers, 190 investment managers and three main Canadian custodians using FMCNet. Out of the approximately 300 FMCNet users 68 of the 190 IM's have been converted over to FMCNet2 which is intended to provide matching utility functionality.

Technology

The technology in production today is STP enabled, but not all market participants are STP into their internal systems. The highest percentage of STP automation is with the IM community followed by the custodians. The sell side firms are mixed with their interconnectivity from FMCNet into their internal systems. Sell side systems pushing post Trade confirmations back into FMCNet for matching with the IM is currently running at a very low percentage of use. For the most part, trades that are submitted by the sell side are done on T+1 at the earliest.

FMCNet 2 will be capable of matching but there are no dates yet established as to when FMC will start working on the interfaces to report confirmed trades to CDS, however, it is expected that the interface will be completed by yearend 2004. No interfaces with DTCC are scheduled, as FMC is not formally "approved" as an official VMU. The main outstanding item for FMC to be approved is to move to two hours from the current four hours for BCP.

Behavioral/Process

Canadian service bureaus and their respective clients need to process and transmit trades on trade date intra-day versus the current day end batch processing.

Regulatory Framework

FMC requires the U.S. SEC exemption for FMC to become an approved VMU. The requirements for the Canadian VMU are similar to those for U.S. exemption.

Critical Path Items and Timing

The items below are not necessarily required for the entire industry but does represent the views of a vendor who has a product that is currently the solution going forward:

- Need for real-time systems and or use of the real-time systems in the dealer community. The Canadian service bureau vendors are not currently providing trade files on trade date back to FMC for matching with the IM. The files being provided today for the most part are overnight batch trade files.
- Dealers to complete trades throughout the day on trade date.
- Dealers' service bureau systems or other internal dealers systems to transmit completed trades on trade date.
- Implementation of FMCNet2 to all current users of FMCNet1
- Implement standards and market/business practices.
- Entice/bring on the remaining 10% of the industry who are not interconnected.
- ISIN's must be affordable.

Omgeo

Omgeo LLC (www.omgeo.com) is a leading provider of global trade management services. A partnership between the securities industry's leading utility and the commercial sector, Omgeo is industry-backed and market-oriented. Omgeo is a joint venture company owned equally by The Depository Trust & Clearing Corporation (DTCC) and Thomson Financial.

Current Capabilities

Omgeo has a solution to be the VMU for the U.S. The Canadian industry has been looking at Omgeo, as well, to become their solution with no overall consensus from the Canadian participants. It was stated in the interviews that Omgeo would need to make a significant amount of system changes to support the Canadian block trading and settlement processes that are different from the way they are handled in the U.S.

Critical Path for STP

If the Canadian market wants to use Omgeo as the central VMU, then Omgeo would need to complete necessary system changes that are required to support the Canadian market-place. This would include a detailed business requirements document from the Canadian industry participants and agreement to support this infrastructure solution.

FundSERV

Current Capabilities

FundSERV Inc. provides information technology infrastructure to facilitate interaction within the investment fund industry. Their mission is to be the preferred supplier of value-added network and application services for business-to-business (B2B) initiatives that minimize risk and promote timely, cost-effective interactions within the Canadian investment fund industry.

FundSERV Core Applications and Services:

Transaction Forwarding System

Transaction Forwarding System (TFS) provides their customers with the ability to electronically place a variety of investment fund transactions and receive corresponding responses.

File Forwarding System

File Forwarding System (FFS) enables the automated exchange of various industry standard files among FundSERV customers.

Net Settlement Reporting

FundSERV's Net Settlement Reporting (N\$R) application matches orders to settlement instructions, facilitates reconciliation, aggregates and reports net settlement amounts and distributes settlement instruction information to the distribution channel.

Net Settlement Messaging

Net Settlement Messaging (NSM) facilitates the exchange of customer net settlement payment messages (wire transfers). FundSERV makes payments to customers in a net receivable position through the Royal Bank Automated Funds Transfer System (RAFT\$).

For FundSERV's Canadian dollar payment exchange, the Royal Bank uses the Canadian Payments Association's (CPA) Large Value Transfer System (LVTS). LVTS is the electronic wire transfer system that enables businesses to exchange irrevocable, same-day payments in Canadian dollars. For FundSERV's U.S. dollar payment exchange, the Royal Bank uses the Fedwire system.

Technology

FundSERV is currently 80% real-time interactive with 19% batch processing and 1% via the Web. FundSERV's next scheduled software release in October 2004 will deliver XML capabilities for order entry files. The order entry files will be accepted in XML format; XML is required in order to allow the variety of products that are now being created; this is the first core processing application within FundSERV to migrate to XML.

Behavior/Process

FundSERV's statistics show that an estimated 50 – 70% of mutual fund orders are automated. This is based on the fact that FundSERV processes most but not all Mutual Funds, and that their STP rate depending upon transaction types is at 70 – 95%. With reasonable assumptions they would expect that automation for all of the investment funds be at 30 – 50%.

Regulatory Framework

Some interviewees felt that there should be greater use of FundSERV for all funds that are capable to be processed via FundSERV. This would standardize the industry with a mission to continue enhancing the system and/or developing standards for the Manufactures/Distributors of investment funds to follow.

7. Summary U.S. STP/T+1 Review

The following sections provide an overview of the U.S. efforts that are currently underway by the SIA committees. This work is based on activities and functions, rather than market segment.

Buy Side

The SIA STP Buy Side Committee conducted a survey among buy side firms in the U.S. in 2003. Results of the survey shows that there is 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 return on investment (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.

Summary of Findings

Buy side 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 SIA has concluded 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 counter parties. 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 7,852¹ 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).

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 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.

¹ ICAA/NRS 3rd annual joint report, *Evolution/Revolution* May 28, 2003

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. It was found that smaller firms, more frequently than larger firms, mention top-line growth and client acquisition/retention as key firm-wide priorities. The 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.

STP Rates in Buy Side Firms

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

Following is a summary of the results:

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

- 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.
- 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

- 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 four out of 18 firms affirming 100% of their international equity trades by T+1.
- 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.

Domestic (U.S.) Fixed Income Electronic Affirmation and Allocation Rates

- 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%
- 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

- For international fixed income trades, out of 18 firms, only one firm is able to achieve 85% of electronic affirmations by trade date. The affirmation rates are slightly higher on T+1 since two out of 18 firms are able to achieve the hurdle rate.
- For international fixed income trades, out of 18 firms, only one firm is able to achieve electronic allocations by trade date. The allocation rates remain the same for T+1; with only one firm achieve electronic allocations by T+1.

The above data indicates 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%.

Current Status

Although the SIA has not been able to obtain commitment from the buy side to engage the buy side in the STP/T+1 initiative, there has been an increased understanding of buy side issues and requirements. The SIA has also recognized the need of an ROI analysis among buy side firms, and to further educate them on post-trade processing solutions. However, these initiatives have been put on hold by the SIA due to lack of resources from committee members.



Securities Lending

The SIA's analysis indicates that virtually all securities lending transactions involving U.S. equities and corporate bonds are currently arranged and settled on a same day basis and that STP, or the opportunity for industry participants to achieve STP, exists today with respect to most components of this business. In fact, the only transactional component of this business that operates today in such a manner that STP cannot be achieved is the loan recall process. The current process is highly manual, with lenders and borrowers relying on manual transmission of faxes and telephone conversations to effectuate the recall of securities on loan.

Based on extrapolating a sample industry survey of 18 institutions, conducted between July 16th and August 24th, 2001, it was estimated that there are approximately 4,000 to 5,000 recalls per day involving U.S. securities. Therefore the implications of non-STP in the current recall process are substantial, particularly if settlement cycles are shortened in the future. These implications may include decreased liquidity, increased risk and increased fail costs – for all participants. All of these result from the fact that the current paper-based, manual notification process impacts the ability of borrowers to react to recalls and return securities to meet settlement. If lenders increase buffers to avoid sell fails, or are not able to issue recalls in time to facilitate sale settlement, liquidity in the lending market will decrease and general fail rates in the market will increase. Furthermore, regulations relating to possession and control by broker/dealers may necessitate automated systems and revised standards.

The SIA STP Securities Lending subcommittee, hence, recommended the following steps to introduce efficiency in the recall process to facilitate STP:

- The development of one or more “Automated Recall Management System(s)” (ARMS) to facilitate the notification, acknowledgement, and maintenance of recalls, and
- The establishment of a set of business practice standards focused on the recall process.

Although the T+1 initiative provided the impetus to review the recall process, the benefits of a more automated approach to recalls will accrue to industry participants today, as well as positioning the business for any future reduction in the settlement cycle. The benefits that automation and standardization of the recall process would bring include:

- Improved risk management
- Increased liquidity
- Improved efficiency
- Reduced fail costs, and
- Uniform market practices/standards

While the current focus of the STP efforts have been on the settlement of U.S. domestic securities, the SIA strongly supports the use of ARMS for non-U.S. securities and non-U.S. participants. Therefore, it will be most prudent for ARMS to be developed with the scalability, flexibility, and scope to accommodate non-U.S. securities and non-U.S. participants. ARMS will also need to be able to interface effectively with multiple systems and other central information sources.

ARMS Benefits

Decreased Costs – It is estimated that lenders and borrowers will save between USD\$25,000 and \$200,000 per firm per year (via direct and indirect costs*), depending on the size of their lending or borrowing program and current levels of automation. These savings will be realized through improved levels of automation and standardization of the stock loan recalls process. There are currently approximately 5,000 recalls per day for domestic securities, and an additional 5,000 non-US recalls that can be automated through the ARMS process.

Improved Liquidity – Liquidity will improve as lenders may reduce reserve requirements due to greater confidence in the timely receipt of recalled securities – especially important for “hard to borrow securities”.

Reduced Risk – Risk will decrease as exposure to buy-ins resulting from inadvertently not returning shares by the due date because of errors in receiving or handling manual based recalls is reduced.

Improved Management Reporting – by automating the process, lenders and borrowers will have improved insight through management reporting of open and aged recalls and by counter party.

Improved Client Relationships – Less chance of errors due to miscommunication of manual based messages. Reduced chance of negative impact on relationships resulting from buy-ins.

Preparation for Shortened Settlement Cycles – Should the industry elect to shorten the settlement cycle, the securities lending industry will not have any obstacles (the initial impetus for the ARMS concept).

Globally Accepted Standards – The ARMS recall, intent to buy-in and buy-in messages have been adopted as part of the ISO 15022 message standards – an internationally accepted standard which will assist in global adoption.

Timely access to proceeds due to improved return procedures and therefore a reduction in the cost of failed settlements.

Standards

In 2003, the SIA's STP Securities Lending subcommittee successfully developed and documented ISO 15022 compliant messages with SWIFT. The subcommittee has also developed an "acknowledgement" message for lenders who request borrowers to actively acknowledge receipt of a recall notice. This requirement has resulted in the documentation of an MT509 message, which is being adopted by vendors offering Automated Recalls Message System (ARMS) functionality.

In addition to the ISO 15022 compliant message format, the SIA has also established the following standards for the recall notification process:

1. Sale Notification from Beneficial Owner: The lending agent receives a sale notification from the beneficial owner of a loaned security and attempts to reallocate the loan. If the reallocation is not successful, the lending agent will issue a recall. Beneficial owners should continue the practice of trade notification to agent lenders at the earliest opportunity to encourage STP and meet future potential shortened settlement time frames.

2. Recall Issuance Method: Recalls should be issued using an ARMS, as it is anticipated to provide efficiency in the processing and tracking of recalls.
3. Transmission Deadlines: Deadline for transmission of a recall notification in the current environment be 3:00 PM Eastern Time for U.S. domestic securities. Recalls received after 3:00 PM Eastern Time will be considered as a next day notification, and should be treated as such by the ARMS.
4. Recall Period: The recall period will remain unchanged. In most cases by contract it is the standard settlement cycle beginning from the effective date of the recall.
5. Recall Notification Acknowledgement: The method of acknowledging a recall notification should not be manual. Therefore, at a minimum, the recaller should obtain automated confirmation from its ARMS that a recall notice has been successfully transmitted. Successful transmissions that are not cancelled are considered to be active recalls from time of delivery to the counter party. Furthermore, should the recaller prefer, it could establish specific bilateral arrangements with various counter parties to send, via ARMS, a recall confirmation message. The recall confirmation messages be utilized as a tertiary level of acknowledgement, and not as a mandatory requirement, to further the goal of STP in the recall process.
6. Rejection Standards: If a successfully transmitted recall notice is incorrect from the viewpoint of the recalled counter party, the recalled counter party reject or "DK" the recall notice *within one hour from the time of receipt*. The rejection notice should include the reason(s) for the rejection (e.g., discrepancies regarding share quantity or security, etc.). A rejection does not effectuate cancellation of the recall. The recall remains valid until the recall issuer has cancelled the recall, presumably after agreeing with the rejection. Recallers are encouraged to research the outstanding rejection notices and cancel recalls when appropriate *as soon as possible*, with assistance from reporting by the ARMS.
7. Expiration of Recall Period: A recall is considered to have failed if it has not been closed as a result of the return of the recalled securities or cancelled – prior to the expiration of the recall period. As the recall issuer updates the status of the recall in the ARMS, the recall issuer has the discretion of determining the form and timing of penalties for the recall recipient.
8. Termination of Recall: A recall can be terminated by a cancellation, a return of the recalled security, or a buy-in. Until one of these events occurs, the recall will continue to age. Industry participants should diligently review their list of outstanding recalls to prevent prolonged fails in the market.
9. Cancellation of Recall: To avoid being obligated to accept a return, a recall issuer that wishes to cancel a recall should do so before the borrower has initiated the process for returning the securities. Since it is recommended that rejections of recalls be performed within one hour from time of receipt, cancellations should be done in just as expeditious a manner (when possible), since a recall is still active until it is cancelled or closed. Timely cancellations, in response to timely rejections, minimize the accumulation of unnecessary long positions by borrowers and lenders.
10. Return of Recalled Security: A loaned security that is returned in response to a recall be transacted under a DTC reason code distinct from normal loan returns. The recall issuer then closes out the recall on the ARMS through either manual entries or automated uploads from its systems. Its status should now be considered settled and closed.
11. Buy-Ins: ARMS should be used to communicate the *Notice of Impending Buy-in*, as well as the *Buy-in Execution Notice* itself, which contains the buy-in details.
12. Corporate Actions: The participant and its ARMS update recalls should be based on mandatory corporate actions affecting securities that have been recalled, by ensuring that mandatory corporate actions reflected on participants' core systems be appropriately reflected in any recalls that are issued by the participant in the ARMS.

Inter-operability Requirements

ARMS will be able to interface effectively with multiple systems and other central information sources. It is mandatory that all ARMS be developed with interoperability features so that each industry participant need only use one ARMS in order to communicate with any other participant regardless of which ARMS the other participant chooses to use.

To avoid each ARMS expending excessive efforts developing interoperability bilaterally with all other ARMS vendors, DTCC has developed a central messaging hub. An ARMS will then only have to ensure connectivity with the DTCC messaging hub, with the DTCC messaging hub directing messages to other ARMS. The DTCC messaging hub would also permit industry participants that do not wish to utilize a vendor-provided ARMS to benefit from automation in the recall process by connecting to the DTCC messaging hub directly.

Interoperability also requires that each ARMS allows its participants to communicate effectively with other industry participants that do not utilize automated means of issuing or receiving recalls. The SIA recognizes that each participant will introduce automation in its recall process over time, and that there is no ability to mandate the adoption of automated recall processes by all industry participants at the same time. However, participants that automate should not be penalized by suffering from the lack of interfaces for STP and non-STP recalls. Therefore, each ARMS provider should implement solutions to provide automated handling for its customers regardless of the level of automation of their counter parties.

Figure 1 – Proposed Automated Recalls Message Flow Using ARMS

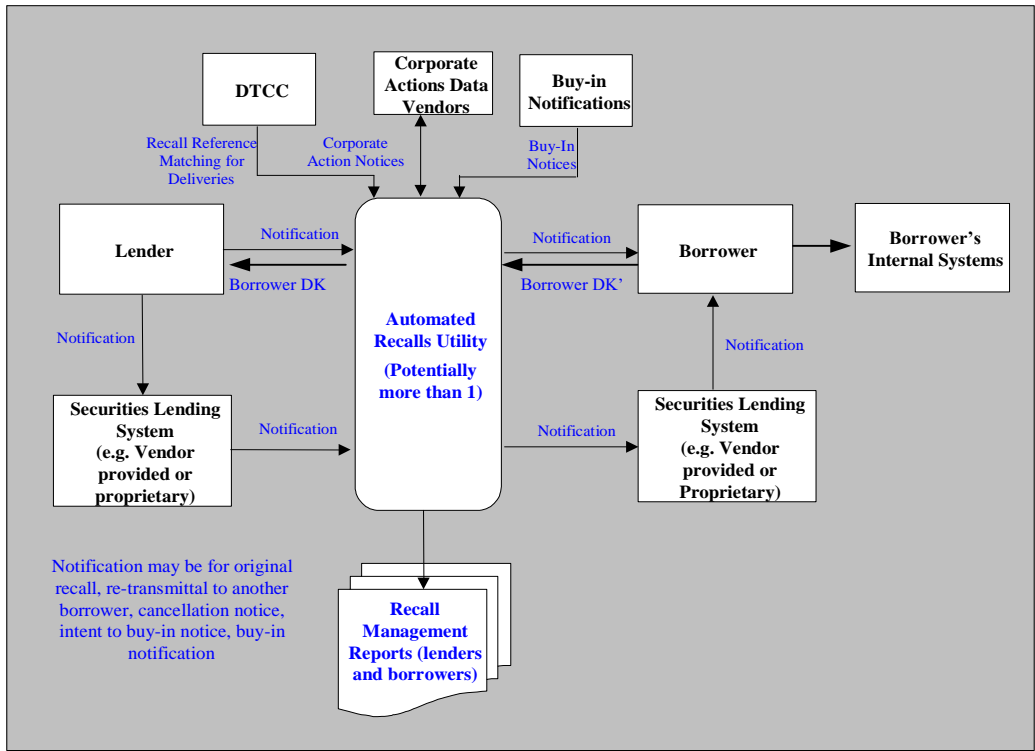
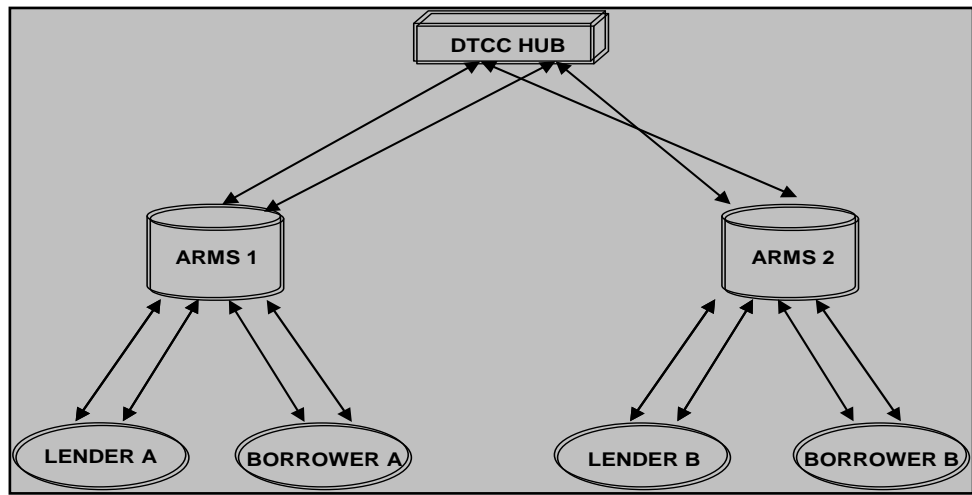


Figure 2 – Proposed automated recalls messageflow using DTCC Messaging Hub



Current Status

Equilend, SunGard and Anetics are currently offering ARMS functionality to their members. These vendors are currently conducting inter-operability testing with DTCC and resolving implementation issues.

Payments Processing

Payment by check continues to be the dominant method to settle retail obligations in the U.S. In the U.S., approximately 45 to 55 billion checks are written each year and many “electronic” bill presentment and payment services continue to receive paper invoices and send paper checks². The U.S. spends between 1 – 3% of GDP on check processing. While wholesale large-value dollar payments migrated to electronic solutions many years ago, smaller retail payments remain significantly behind the curve. This is the paradox of the U.S. payments landscape.

There have been and continue to be many efforts to reduce check usage. In 2001 the Federal Reserve Bank of Atlanta performed the first comprehensive check study in the U.S. since 1979. Comparing the results of the two studies suggest that the growth of checks may have peaked with a trend towards substitution by electronic methods. It should be noted that the Federal Reserve Study was not exclusive to retail payments; business-to-business and government payments were included, and it did not specifically analyze those retail checks pertaining to securities transactions.

The SIA performed surveys in both 1999 and 2001 gathering input from its member firms on a range of comprehensive metrics related to Operations including payments data. The results were published in the 1999 and 2001 SIA “Report on Operations in the Securities Industry.” The information provided by the participating firms confirms that for both collection and disbursement, the paper check is the predominant method of payment for securities transactions. Electronic payment methods such as ACH and wire transfers accounted for a small percentage of the total.

Major electronic payment methods that are available in the U.S. today:

Fedwire

There are approximately 9,500 depository institutions in the U.S. that have access to Fedwire, which is operated by the Federal Reserve Banks (FRBs). Fedwire is generally considered to be a wholesale payment system for high-dollar value funds transfers and is considered a universal payment system. The average payment for a Fedwire transaction is in excess of USD\$3.5 million and payments can range from USD\$.01 to USD\$999,999,999.99.

The most significant advantage of the Fedwire is that it provides ‘true’ finality and immediate availability of payment.

While depository institutions pay between USD\$0.15 and USD\$0.31 for a wire transfer to the Fed, the current bank charge to retail consumers fluctuates from USD\$10.00 to USD\$30.00 because payments are typically initiated manually at a bank branch.

Due to the existing manual transfer initiation process and high cost to the average retail consumer, Fedwire is impractical to use for lower value retail transactions at this time. The Fedwire may continue to be a consumer initiated option for high value transactions that require immediate availability and finality of payment. Some banks now offer wire transfer initiation through the home banking applications which may increase the perceived ease of use.

² Richard Oliver: A Snapshot of the Retail Payments System: Research Results from the Federal Reserve, April 2002.

CHIPS

The Clearing House Interbank Payments System (CHIPS) is an electronic payments system that transfers funds and settles transactions in U.S. dollars. CHIPS enables banks to transfer and settle payments more quickly by replacing official bank checks with electronic bookkeeping entries. As of January 2002, CHIPS had 59 members, including large U.S. banks and U.S. branches of foreign banks.

CHIPS is governed by a ten-member board consisting of senior officers of large banks that establishes rules and fees and admits and reevaluates participants. CHIPS handles about 240,000 transactions a day with a total dollar value of about USD\$1.2 trillion. Historically, CHIPS specialized in settling the dollar portion of foreign exchange transactions, and CHIPS estimates that it handles 95% of all U.S. dollar payments moving between countries. However, the CHIPS focus has shifted to domestic business since CHIPS introduced payment finality in January 2001.

Until January 2001, CHIPS conducted all of its settling payments at the end of the business day. Now, however, CHIPS provides intra-day payment finality through a real-time system. CHIPS settles small dollar value payments, which can be accommodated by the banks' available balances, individually. Other payments are netted bilaterally, without any actual movement of funds between CHIPS participants. The average payment amount for a CHIPS transaction is USD\$5.2 million while payments range from USD\$.01 to USD\$9,999,999.99.

Since the ultimate CHIPS settlements are provided by Fedwire, CHIPS is a participant, as well as a competitor, of Fedwire. The vast majority of CHIPS members are also Fedwire participants, and the daily value of CHIPS transfers is about 80% of Fedwire's non-securities transfers.

CHIPS has recently added Electronic Data Interchange (EDI) capability to its payment message format. EDI allows participants to transmit business information (such as the purpose of a payment) along with their electronic funds transfers.

The primary function of CHIPS remains the settlement of inter-bank payment obligations. However, even with a shift in focus to domestic business, it is the opinion of this Committee that CHIPS will be impractical for low value retail transactions similar to Fedwire.

ACH

The ACH Network is a highly reliable and efficient nationwide batch-oriented electronic funds transfer system operated by the Federal Reserve and three private sector organizations. Currently, the ACH Network provides payment services utilized by 20,000 financial institutions, four million businesses, and 115 million individuals. In 2001, 7.8 billion ACH payments were transmitted over the Network for a total worth of more than USD\$20 trillion.

The ACH Network handles both debit and credit payments, small and large dollar value transactions, and is the only U.S. payment system that is universal to the point of being used by virtually all commercial banks and most thrifts and credit unions.

Traditionally, the ACH Network has been utilized for recurring payments, e.g., payments occurring at regular intervals, for such applications as Direct Deposit, Direct Payment, and business-to-business payments. Over the last few years, the ACH Network has experienced an increase in usage for new applications that are characterized by being non-recurring payments utilizing new technologies. These applications, which allow ACH payments to be authorized over the Internet, telephone, or by electronic check mechanisms, have brought new volume, new opportunities and new challenges to the ACH Network.

Bill Payments

Securities firms currently receive payments processed by bill payment companies on behalf of their mutual clients. These companies include Internet-based payment services as well as the online banking services associated with major banks. Where broker/dealers receive such payments, there should be an awareness of related operational issues that may affect the timeliness of payment receipts and client perceptions related thereto.

Although these originating payments are initiated electronically, the majority of these payments are currently settled through the use of checks. In such cases, the amount of time between the initiation of the payment via the electronic interface and the actual settlement of the obligation to the broker may extend even further than is the case with the client originated paper check.

If the payment processor has a large mutual client base with a particular securities firm they may try to establish an ACH transmission. Such a transmission could be originated by either entity, with the prerequisite that the securities firm can accept ACH transmissions.

Either approach has limitations within the context of a T+1 payments environment. Where bill payment providers issue checks in settlement of their obligations to a securities firm, mailing time and finality continue to be issues. Additionally, the receiving securities firm has little knowledge of when the payer initiated the transaction or how long the bill payment company may have held funds in the interim.

While conversion of these bill payment companies' payments to ACH eliminates the mailing time and finality issues (excepting the unlikely event of return of the ACH since the client likely initiated the payment online), the timing of the originating payment by the mutual client could still be two to five days prior to receipt.

The existing workflow processes for bill payment services vary considerably but the majority offer a "free" product that cover costs from the benefit of mail and other types of float. This may explain why the ability to initiate an ACH transaction is not currently an option offered by bill payment providers. However, some broker/dealers have developed a product to allow clients to directly originate debits and credits from their own cash management accounts, an approach that might be considered by other firms concerned about the impact of bill payment provider initiated settlement transactions in the T+1 settlement environment.

Check Truncation

The President signed Check 21 into law (Public Law No. 108-100) on October 28, 2003, and the new law becomes effective on October 28, 2004. Check 21 is designed to foster innovation in the payments system and to enhance its efficiency by reducing some of the legal impediments to check truncation. The law facilitates check truncation by advancing the use of a new negotiable instrument referred to as a substitute check.³

The new law, in effect, enables the widespread creation and use of substitute checks as a routine practice, not simply for replacing damaged or destroyed checks. Banks can truncate original checks and Check 21 enables them to deliver substitute checks to banks that want to continue receiving paper checks. A properly prepared substitute check would be the legal equivalent of the

³ There is a common misconception that "Image Replacement Documents" (IRDs) and substitute checks are the same. However, IRD is a technical term that could be a substitute check (assuming it is properly created) or the IRD could be another form of a replacement document that is not a substitute check. The Fed is encouraging the use of the term "substitute checks" to reduce this confusion.

original check and would include all the information contained on the original check. The law does not require banks to accept checks in electronic form nor does it require banks to use the new authority granted by the act to create substitute checks.

Check 21, as enacted, will alter the process of clearing checks in the U.S. payment system. The new law will allow a depository institution that receives a check to provide the paying depository institution a substitute check, rather than the original check itself. A properly prepared substitute check is the legal equivalent of the original check for all purposes, including any provision of federal or state law. The use of substitute checks under Check 21 would therefore preempt state laws, including the Uniform Commercial Code (UCC), to the extent that those laws require an original check. Original checks may be truncated at any time during the payment process – from initial point-of-service (POS) locations to check presentment and payment.

Best Practices

The SIA STP Payments Processing committee has published "BCP Best Practices for Payments" (<http://www.sia.com/stp/pdf/BCPPaymentsGuidelinesFinal.pdf>) in December 2003 which aimed to provide guidelines for securities firms for the execution, receipt, and reconciliation of payments in the event of a crisis. The committee has identified four general categories of payment-specific best practices that can be utilized by securities firms in the assessment of their individual payment risk profiles in the event of a large-scale disruption, as well as in the formulation of their respective business continuity plans. The best practices cover four main categories: Communication and Plan Awareness, Planning and Training, Liquidity Management, and Exposure and Fail Management.

Current Status

The Payments committee has concluded that paper checks are here to stay, at least for the foreseeable future. Although there are indications that the use of paper checks is slowly downsizing, the securities industry must adapt to find ways to hasten the availability of funds in a T+1 environment and even today in our current settlement cycle. The SIA encourages the migration to electronic payments but the challenge for firms is building on the existing check process, for example, through electronic conversion, while remaining open to investment in one or possibly several alternative electronic payment methods. The near-term evolution of payments will likely require firms to maintain several payment processing systems, possibly for both paper and electronic methods.

The subcommittee has also come to the conclusion that there is not one industry solution that meets all of the 'ideal' payment characteristics required for retail securities transactions. While there exists a number of front-end initiatives, firms must look at the actual payment system(s) to understand the inherent risks they need to manage. There are only three electronic payment systems in existence today and they are ACH, Fedwire, and CHIPS. The ACH network remains the most viable electronic payment alternative while the subcommittee continues to investigate the potential impact and benefits of Check 21.

Finally, the subcommittee believes that the migration to electronic payments does not have to wait until the settlement cycle changes. The drive for change exists today.

SIA Global Treasury Management Committee

As the work of the STP Payments Processing comes to an end, representatives of the SIA's member firms realized a need for a forum to discuss industry issues as they relate to payment activities among brokerage firms. Hence, the SIA has recently approved the establishment of the Global Treasury Management Committee. This Committee will be a community of U.S. based broker/dealers committed to improving standard operating efficiency and reducing risk within global Corporate Treasury functions, primarily through providing a centralized repository of best practices including standards, benchmarks, and guidelines. It will also be an industry forum for the exchange of ideas and experience covering the essential areas of Corporate Treasury.

The committee's goal will focus on conveying a consolidated industry view on current management practices with the aim of highlighting "best practices". The committee will review the existing Treasury Management environment of the broker/dealer community and create management practices affecting the essential areas of Corporate Treasury. This will be accomplished by examining industry trends, establishing performance metrics and benchmarking, as well as documenting recommendations regarding current best practice standards across all member firms. The analysis of these Treasury specific processes will allow committee members to evaluate if the work products and recommendations of the committee warrant replication at their firms. Additionally, this committee will continue to monitor and maintain existing "best practices" documents related to Global Treasury Management such as BCP. The scope of this committee will be limited to U.S. based broker/dealers but include all currencies.

Corporate Actions

In 2000, the SIA established the Corporate Actions subcommittee to identify the challenges facing the U.S. securities industry in processing Corporate Actions in a T+1 settlement environment. The Subcommittee determined that the issues could be grouped into six main categories: 1) Announcements; 2) Trading and Settlement; 3) Liability; 4) the Payment Process; 5) Physical Processing, and 6) Global Issues. While many of the issues discussed may not be directly tied to T+1, they are inefficiencies that exist which must be addressed to reduce risk and ensure seamless processing in a T+1 environment.

The scale of corporate action processing is considerable and should not be overlooked. During 2003, there were more than 10,500 reorganization events, 282,000 redemptions and calls, and 3.4 million income payments processed at DTC, the P&I value reaching nearly USD\$2.1 trillion.

After detailed examination of the processes and issues, the subcommittee identified the following recommendations:

- All shareholder communications and Corporate Actions announcements should be delivered to DTCC, or any other depository where securities are held, on the announcement date in electronic form. All notices must contain an industry accepted identification number (i.e., CUSIP; ISIN; SEDOL; etc.).
- Promote the electronic delivery of Proxy and Corporate Actions materials, and the electronic submission of proxy votes and voluntary Corporate Action instructions.
- Support industry initiatives to reduce the number of trades that settle outside of the CNS environment.
- Parties that are failing to deliver securities on the last day of a voluntary Corporate Action, whether it be for a trade, stock loan, or any other reason, will automatically be liable for any and all damages that may accrue. The party that is failing to receive the security shall only need to communicate with the fail to deliver party in the case where they are not being held liable for all or some of the shares, or when there are multiple options to notify the failing party which option they are being held liable for.
- Liability rules must be consistent across all self regulatory organizations (SROs) and industry utilities.
- Liability rules should include fails to deliver as well as stock loans. The issue of institutional liability must also be included in the rules.
- All cash distributions (i.e., dividends, interest, cash mergers, cash tenders, bond maturities and bond calls) should be paid by the paying agents via Fedwire by the depositories' established cutoff time on the payable date. A breakdown of the Fedwire, that includes an industry accepted identification number (i.e., CUSIP; ISIN; SEDOL; etc.) and the amount of money associated with each security should also be sent to the depositories.
- All mandatory Corporate Actions where shareholders are receiving new securities in exchange for their old securities (mergers, name changes, reverse splits), should be processed by the SROs and the depositories on the company declared effective date.
- All mandatory Corporate Actions for cash should be paid by the paying agent within 48 hours of the effective date.
- All voluntary Corporate Actions should be paid by the paying agent within 48 hours of the latter of the expiration date, or the end of the "Protect" period.
- There should be a central electronic messaging "Hub" through DTCC that links to NSCC, all stock lending systems, and the Virtual Matching Utilities (VMUs), for the transmission of liability messages to NSCC, brokers, and institutions.
- Actively support the recommendations of the SIA T+1 Physical Securities Subcommittee to reduce physical certificates.

In addition to the above recommendations, the subcommittee has also identified the following rule changes:

- Existing rules allow beneficial owners to appoint “registered” investment advisors to receive proxy material, and to vote the proxies on their behalf. The term “registered” should be removed from these rules. The investment advisor, who in many cases is making all of the investment decisions on behalf of the beneficial owner, should be able to receive any material relating to those investments if appointed by the beneficial owner.
- Amend NYSE Rule 451 to include “All Types of Offering Material.”
- NYSE Rule 451.6 refers to a broker/dealer’s responsibilities to transmit materials even if requested not to by the beneficial owner. This rule should be amended to allow beneficial owners to request, in writing, that materials not be transmitted to them by the broker/dealer.
- Rule changes should be enacted to establish timeframes for the turnaround of physical certificates submitted to Agents for Corporate Action events, akin to the 48 hour rule for routine transfers currently in effect.
- Changes should be made to NYSE Rule 180, ASE Rule 752, and NASD Rule 11810, along with NSCC Rules on liability, to ensure consistency.

As the SIA program changed gear to focus on STP, efforts of the Corporate Actions subcommittee has also become a priority. Among the recommendations listed above, the subcommittee has concentrated in three main areas:

Liability

Rules & Regulations

The issue of liability on a voluntary Corporate Action due to a fail to receive or stock loan in a T+1 environment is a major concern of the Subcommittee. Currently, liability for fails to receive between brokers is passed through Liability notices as mandated by the rules and regulations of the various SROs and industry utilities. The rules surrounding liability between brokers vary between the SROs, and NSCC. Some rules require 24 hour notice prior to being able to hold a broker liable; others just state that by virtue of a broker failing to deliver securities they are liable for any and all damages that may accrue to the receiving broker. Industry practice has been for the custodian that is failing to receive the security to notify the custodian that is failing to deliver that they will be held liable for the terms of the offer.

The regulations of the SROs only pertain to contracts between members of the specific SRO. Fails to receive from customers, and any liability caused by a stock loan are governed by a custodian’s account agreement with their clients, or the signed stock loan agreement between the parties. Yet many custodians rely on letters of liability, that quote the NYSE, ASE, and NASD rules as the basis for liability for client fails and stock loans. From a purely legal standpoint this practice is questionable, and these liability letters may not be enforceable in a court of law.

The Subcommittee also discussed the likelihood that protect periods would decrease from the current three days to one day, adapting to the T+1 environment. Although no action is currently being recommended, some members of the Subcommittee, and their firms, advocated that regulations should be enacted mandating that protect periods be no less than two business days.

Liability Notification Process

The liability notification process is a process utilized by a firm failing to receive securities from another firm, where the securities are needed to participate in an expiring Corporate Action event. Notification is transmitted by the firm failing to receive the securities. The notice specifies: the securities required and the initiator’s need to participate in an expiring Corporate Action. A cut off date for the delivery of the failing securities is set and the failing party is cautioned that failure to

complete delivery before the required date may result in damages to the notice's initiator. In the event timely delivery is not made and the notice's initiator fails to participate in the corporate action, the initiator will look to the firm failing to deliver to assume damages.

The current process is paper intensive, time consuming and subject to transmission problems. Notices are being communicated via fax and followed up by phone. Hence, this has become a major opportunity for STP.

As such, a working group was established and tasked to define the requirements for a liability notification hub, which will standardize and centralize the process. DTCC has also committed to developing the system. In Q2 2003, the group completed the requirements document for the liability hub and submitted to DTCC. The requirements were then revised and finalized. Smart/Track for Corporate Actions Liability (official name of the Liability hub) will be a web based system and participants must register for this service. The system has been designed to be user friendly, cost effective, with standardized data fields. The main functionality of the hub are:

- Transmit notices
- View Notices Received
- View Notices Transmitted
- Search for Notices

Currently, development of the system is underway. Development is targeted for completion by Q3 2004 and a pilot will be available by Q4 2004. DTCC is working very closely with the SIA and the Corporate Actions Division to ensure that the public is well educated of this new system and to achieve critical mass in the near future.

Physicals, DRS, and Payments Processing

The Corporate Actions subcommittee formed the Physicals, DRS, Payments work group to look at Corporate Actions issues specifically related to physicals, DRS, and payments processing. Upon completion of detailed analysis, the work group recommended the following reforms:

- Standardization and automation of corporate action announcements by issuers to exchanges, transfer agents, and shareholders
- Standardization of how issuers allocate payments to transfer agents and shareholders
- Expansion of dematerialization through the use of book-entry alternatives for entitlements/allocations
- Establishment of processing standards for transfer agents, broker/dealers, and depositories
- Standardization of trading newly issued securities across all markets

The processing of physical certificates for Mandatory and Voluntary Corporate Actions in the current environment is inefficient, time consuming, and adds processing costs and risk. There are many potential points of failure in the current process. Unlike routine transfers, there are no current regulations surrounding the processing of physical certificates involved in a corporate action. Securities must be received in negotiable form and submitted to the correct processing agent, or deposited with DTC. T+1 will only add to the issues and challenges of physical certificates involved in Corporate Actions. As the industry continues its' discussions on restricting trading unless the shares or money is in the client account investors will become more concerned about delays in the processing of physical certificates and receiving their entitlements from Corporate Actions. Alternatives to certificated asset ownership should be pursued and encouraged, such as "street name" and DRS, with the added functionality provided by Networking for Equities (NFE). This will reduce and ultimately eliminate risk associated with the processing, mailing, and presentment of physical certificates for corporate actions.

Cash payments for Corporate Actions have also been a long-standing challenge for the industry. Many inconsistencies exist in today's payment process, which has a significant negative impact on achieving STP. A large payable date (i.e., January or July 1st) could have DTC looking to receive and pay out hundreds of thousands of dividend and interest payments. While automation has improved the process, it is possible for the total funds received to be for a different amount than the CUSIP breakdown provided, requiring discrepancies to be researched, and possibly delaying payment to participants. In other cases, where the issuer/paying agent does not provide a breakdown, DTC must manually research the funds received, and again the distribution of funds to participants is possibly delayed. In efforts to achieve STP/T+1, the industry has discussed limiting/prohibiting investors from purchasing securities unless there are good funds in the client account. Delayed corporate action payments by issuers and their agents may cause investors to "miss-the-market" and create investor dissatisfaction, investor complaints, and the possibility of arbitration cases.

The working group issued a white paper in May 2004 with recommended best practices for the industry. The best practices are available on the SIA http://www.sia.com/stp/pdf/CA_PDP_Recs.pdf.

Standardization

Corporations notify their shareholders of imminent corporate actions through announcements, or informational material, sent directly to them or their designees that describe the action that is about to take place. Processing of these corporate actions is one of the most difficult and risk-intensive functions, and not to mention costly, in the operations area, as they result in hard dollar losses.

Corporate actions market risk can arise from a variety of processing errors, including processing a dividend reinvestment using an incorrect dividend rate and inaccurate or incomplete processing of client instructions on a voluntary corporate action. Any such processing error is compounded by the fact that each corporate action may affect anywhere from hundreds to hundreds of thousands of shareholders at one time.

The difficulty the security holders and the industry face today is that industry participants, and those who develop the disclosure materials that are prepared and released on the Tender Offers, have been interpreting the disclosure requirements differently, and are not clearly identifying the salient and most critical terms and conditions of the Offer. As a result some critical information is not considered or known, and this results in hard dollar losses due to incorrect decisions.

Standardization not only eliminate the risks, costs and delays associated with missing or inaccurate information of a corporate action event, individual investors and industry participants, following are other benefits:

- More timely receipt and distribution of corporate actions announcements to shareholders;
- Immediate identification of affected security undergoing a corporate action event;
- Detailed disclosure and clearer understanding of Terms and Conditions, Entitlements and/or Election choices; and
- Elimination of missed opportunities for shareholders due to material entitlement details being "hidden" in the offering prospectus.

Corporate actions process continues to be one of the most challenging, least standardized processes in the U.S. financial industry. The subcommittee reviewed both the street-wide practices in this area and also the relevant rules and regulations, including Schedule TO, Regulation M-A, Tender Offers by Issuers, and Tender Offers by Third Parties *and* concluded that the "foundation" rule is Regulation M-A, as it is referenced in other rules on where to view the disclosure requirements sections regarding the terms of the transaction.

In March 2003, the subcommittee submitted the following recommendations to the SEC to amend Regulation M-A, which the subcommittee believes, will aid to achieve greater efficiencies and a stepping stone to STP/T+1:

- Standardization of data elements required in the disclosure of tender offers by issuers and third parties. Fifty four data elements have been identified as essential to corporate action announcements, specific to Mergers and Acquisitions. Many of these data elements are usually included in some shape or form. The regulation today only lists 12 general terms. Data should also be submitted in the recommended reorganized format.
- Amend Regulation M-A to require the following:
 - a one-page Summary Term Sheet of the consolidated, material terms and conditions of the proposed transaction (specifically, the 54 standard announcement data elements that the Subcommittee has identified) accompany all disclosure documents for the registration of tender offers;
 - on subsequent pages of the disclosure document, there is a continuation of the summary terms that is written in plain English and
 - the one-page Summary Term Sheet and the plain English Summary Pages cross-reference the more detailed discussion of the terms and conditions contained elsewhere in the disclosure document.
- Electronic Transmission of Disclosure Documents
 - Consider more broadly directing companies to report this information to these interested parties directly in XML or XBRL.
 - Require that the standard data elements be filed with the Edgar system in XML using a standard schema. Using XBRL may make it more efficient for all of the interested parties, including shareholders, vendors and reporting companies to utilize standardized software and thereby reduce the overall cost of reporting and analyzing this information.

There is broad industry consensus to advance the standardization of industry practices in corporate actions processing. Standardization is the key to efficient and accurate processing as well as risk reduction, and also comprises an important step toward our ultimate goals of fully automating corporate actions processing, achieving straight-through processing in an electronic environment, and ensuring that the individual security holder and the securities industry is prepared for processing corporate actions in a T+1 environment.

Representatives from the Corporate Actions subcommittee and the Legal & Regulatory subcommittee met with the SEC in April 2003 to discuss the recommendations regarding changes to Regulation M-A. The committee is optimistic that there may be a market release in regards to the rule changes. The SEC also suggested that there might be other corporate actions rules that they need to review and may need assistance from the SIA and Corporate Actions Division. The next step is for the SEC to review the letter and discussion that took place at the meeting and schedule another meeting with the subcommittees.

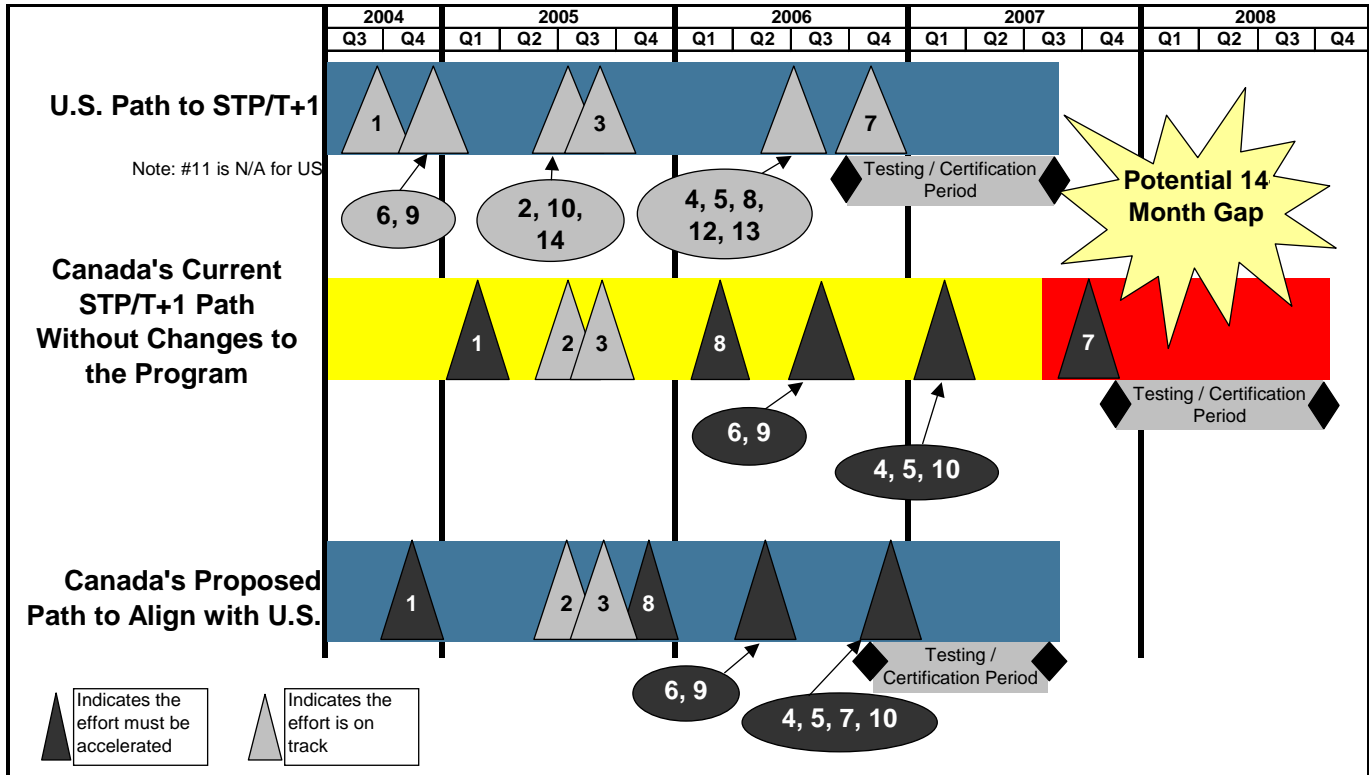
U.S. STP/T+1 Efforts Not Impacting Canada

The following items have been deemed critical to the U.S. industry effort only. These critical path items are not applicable to the Canadian industry for the reasons described in the table. However, because of the impact to the U.S. industry these items have been included in the report.

Critical Path Item	Status	Timing
Critical Path Items--U.S. Only		
11) Reduce Reliance on Cheques and Use Alternative Means of Payment	CANADA: 25% of payments below CAD25 million that go through the Automated Clearing Settlement System (ACSS) are paper; 75% are electronic per CPA; pre-funding and margin options exist, as well as a growing number of other payment options at the retail level, including electronic funds transfer, bill payments, via automated teller machine and internet banking; CPA changed "cheque truncation and electronic cheque presentment" project to cheque imaging by 2006; already in effect between some market participants	CAN: Not Applicable
	U.S.: Still strong reliance on cheques but pre-funding may still be a viable solution; new check truncation legislation (Check 21) in effect in October 2004.	U.S.: Timing not applicable, as this is now an ongoing effort, not critical to T+1
12) Immobilize Shares Prior to Conducting Transactions	CANADA: Viewed as an STP-enabler, but not T+1 critical; only an estimated 2/3 of 1% of transactions involve certificates; DRSs are expected to be introduced in Canada in 2005 and all seven Canadian TAs are expected to participate; there are other ways to address issues surrounding certificates – may be left as a company decision; Canadian banks/brokers have undertaken concerted efforts over the past several years to educate clients on risks and downsides of certificates and there is currently work underway on a toolkit (to be ready this summer/fall for use in fall/winter) re: DRSs for those only holding in certificate form due to the desire to remain on issuer/TA register or because they trade infrequently – DRSs expected to be less paper- and manual-intensive than U.S. DRS and CDRS is a less-paper-intensive alternative; enactment of Uniform Security Transfer Act is considered important and is being supported and pursued by both industry and government. (Note: Implications of a change in U.S. listing requirements to require DRS eligibility may have an impact on Canadian interlisted firms, which remains t	CAN: Not Applicable
	U.S.: Subcommittee focus has been on both immobilization and dematerialization of certificates; difficulty in gaining momentum but working with regulators to drive change (e.g., changing listing requirements at exchanges to include DRS eligibility); SIA has also published an Immobilization and Dematerialization Guide as well as an Investor Toolkit for paperless education. There is need for a ruling to achieve dematerialization.	U.S.: 18-24 months (not for full dematerialization, but enacting appropriate ruling and thereby initiating a dematerialization plan)
13) Revise the Prospectus Delivery Rules and Procedures for IPOs	CANADA: Not an issue for T+1 settlement.	CAN: Not Applicable
	U.S.: Not aggressively being pursued at the moment but is considered a primary obstacle to T+1 settlement. There is a rule change that accommodates the decoupling of the prospectus from the confirm. IPO due diligence would require at least T+2 settlement-only plain vanilla-others are extended settlement.	U.S.: 18-24 months
14) Amend Depository Trade Guarantee Process to Provide Guarantee on Trade Date	CANADA: CDSX can do this on T+1 today if settlement moves to T+1; not considered a T+1/STP issue.	CAN: Not Applicable
	U.S.: Still under consideration in U.S., but on hold in T+3.	U.S.: 1 year

8. Gap Analysis: Canadian versus U.S. Timeline

The following chart and subsequent table illustrates the gap between the Canadian and U.S. industry STP/T+1 programs.



Note: For the U.S., item #11 is not shown, as it does not have any timing associated with it at this time.

Critical for STP and T+1	
1	Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing
2	Need for Regulation, Measurement and Enforcement
3	Need to Effectively Engage the Buy Side
4	Communicate and Implement Standards and Market/Business Practices
5	Modify Internal Systems/Processes
6	Identify and Comply with Accelerated Deadlines
7	Trade Matching
Critical for STP Only	
8	Accomplish Cross-Border Implementation
9	Achieve Electronic Delivery of Corporate Actions Announcements and Notifications, Including Liability Notices
10	Modify Investment Funds Processing and Regulation
Critical for STP/T+1 for U.S. Only	
11	Reduce Reliance on Cheques and Use Alternative Means of Payment
12	Immobilize Shares Prior to Conducting Transactions
13	Revise Prospectus Delivery and Procedures for IPOs
14	Amend Depository Trade Guarantee Process to Provide Guarantee on Trade Date

9. Feasibility of Moving to T+1

U.S. Feasibility of Moving to T+1

There has been a great deal of discussion surrounding the U.S. securities industry and a potential move to T+1. The following shows where the U.S. is on critical T+1 projects, in addition to current feedback to status on these projects, and thus a reasonable estimate for the feasibility of an official industry-wide move to T+1.

- The SIA is advocating continued implementation of STP initiatives before considering shortening the settlement cycle to T+1
- While street-side processing should be capable of a T+1 settlement by year-end 2004, institutional processing continues to be a major challenge
- The key obstacles to a shortened settlement cycle from the institutional processing perspective are
 - Affirming or matching trades on trade date
 - Coordinating FX settlements (while pre-funding and same day FX are viable, they are not optimal)
 - Working with cross-border participants to obtain trade level details (allocations) in a timely manner
- It is believed that it will be a 24 to 30 month effort before the levels of same day affirmation/matching make T+1 a viable consideration in the U.S.
- Since same day affirmation is on the critical path, it is estimated that the U.S. would not be capable of a shortened settlement cycle until at least late 2007

Feedback on U.S. Efforts and Direction

- SIA Task Force leaning toward supporting a phased-in approach to matching on T
 - To be based on current capabilities and a current state assessment
- The Task Force is not likely to support mandating the means for matching, i.e., how trades are matched or agreed
- Rule changes/enforcement for confirm/affirm on trade date likely to be supported
 - SEC is seen as the preferred regulatory body
- Dematerialization is supported, with immobilization as interim step
- Achieving a 100% confirm/affirm rate on trade date is viewed as a prerequisite to shortening the settlement cycle
- SIA Task Force supports the continued focus on STP
 - Supports only considering a possible move to T+1 when all identified STP initiatives and goals are in place
- SIA is not considering a possible move to T+2

Canadian Feasibility of Moving to T+1 if the U.S. Moves to T+1

The following comments are meant to describe Canada's ability to move to T+1 given the current U.S. feasibility and suggested timeline.

Canada can achieve T+1 readiness in sync with the U.S. timeline, if:

- Action is initiated ***immediately*** on the first three critical path items:
 1. Need for Industry-wide Commitment, Leadership, Mobilization and Resourcing
 2. Need for Regulation, Measurement and Enforcement
 3. Need to Effectively Engage the Buy Side
- Action is taken to compress and accelerate the remaining critical path items:
 4. Communicate and Implement Standards and Market/Business Practices
 5. Modify Internal Systems/Processes
 6. Identify and Comply with Accelerated Deadlines
 7. Trade Matching

It should be carefully noted that if Canada delays initiating actions on these critical path items, there will be direct negative impact on Canada's ability to align with the U.S. program over a three year period.

10. Getting There: Capco Recommendations

Capco recommends a program based on four pillars: 1) mobilization, 2) structure, 3) a detailed implementation plan, and 4) leadership that covers the critical path items discussed in order to align with the current and ongoing U.S. STP/T+1 program. The following efforts **must** occur in order for the Canadian program to be in sync with the U.S. program:

BY August 31, 2004: Reinvigorate the governance structure that identifies which entity will provide leadership, mobilization, and oversight of the program:

- Includes funding and resourcing requirements
- CCMA is recommended lead.

BY October 31, 2004: Kick-start mobilization once a governance structure is in place:

- Organize a program management office that will serve as true facilitator and enabler of the program objectives
- Must know what level of regulatory changes must be enacted.

BY December 31, 2004: Develop the detailed Implementation Plan for industry-wide achievements of the identified critical path items.

In terms of specific regulation necessary to create a successful program platform the following have been discussed by various industry experts:

- CSA (or CSA and IDA) rule regarding trade match or confirm/affirm
- Mandate filing of all public company entitlement info "somewhere"
- USTA and some provincial legislation supporting electronic holding
- SRO or other for business/market practices and standards (at least institutional)
- Quebec *Company Act* and *Securities Act* of Quebec to allow use of book-entry holdings as collateral
- RS, IDA change for standard requirement regarding clearing and settlement

Immediate focus is needed for:

- 1. Industry mobilization and leadership**
- 2. Development of a detailed implementation plan**
- 3. Ongoing oversight of the program**

- Canadian financial services industry needs to determine the needed Canadian regulatory actions required to act as catalyst for achieving STP/T+1 goals
- An acceleration of key critical path items is essential
 - Specifically trade matching
- Canada must leverage the unique features of the Canadian marketplace
 - Ability to increase block settlements of institutional trades
 - Agility and responsiveness of Canadian market
 - Relatively low trading volumes compared to the U.S. market, with no perceived capacity constraints

Appendices

Appendix A: Important and “Nice to Have” Items for STP/T+1

The following provides a brief explanation of items that, by the industry, have been deemed important for STP and T+1 but not absolutely critical.

- **Corporate Actions Proceeds:** Share proceeds are not always credited by custodians on payable date which adds settlement risk to their linked trades. This issue becomes more of a problem with a shorter settlement cycle.
- **Cross-Border Linkages:** CDS currently offers three different services for cross border activity. The services are subject to the rules of DTCC. They are working to provide standards and equalization of service rules.
- **Changes to Legislation/USTA:** The necessary changes to provincial legislation to eliminate the need for certificates and to recognize book entry ownership and transfer.
- **MBS/ABS:** It is estimated that changes at CMHC and the industry facilitate T+1 settlement of MBS/ABS securities would require sixteen months elapsed time from the start of any effort.
- **Block Settlements:** The sell side Dealers would much prefer to process one block settlement for each custodian for each block trade completed versus processing multiple trade allocations for settlement to the various custodians.
- **Street-side Trade Reconciliation:** This initiative is for the sell side Dealers to match the trades that they process internally on their books and records system to each trade that they have had executed on the exchanges system.
 - Today the exchanges and the sell sides' internal systems send files to CDS. CDS then runs a compare program and produces an exception report for each sell side Dealer on T+1. This process needs to be accelerated to be completed on trade date
 - These Reconciliation's are required for TSX, DTCC/NSCC and potentially ACT/Access
- **Inter-Dealer System Interface/Links to Sell Side Traders' System:** When a sell side trader executes a trade using the trading screen of an Inter-Dealer the trader then acknowledges the trade being completed and then keypunches the trade details into his/her system. An interface from the traders internal system to the Inter-Dealers systems would eliminate the need for manual updating
- **Auto Trade Match Inter-Dealers' Bond Trades to Sell Side Trades:** On T+1 today the sell side matches trades with the Inter-Dealer by comparing paper trade confirms to trade confirms or fax sheets or by exchange of spreadsheets etc. These trades should be confirmed electronically today on T+1 but will need to be matched on trade date going forward.
- **Restricted Shares:** The rules and the manual processing required today for handling the clearance and settlement of restricted shares needs to be enhanced in order to meet an even further reduction in the number of days between trade and settlement date. The risk of Buy-ins will be dramatically increased in a shorter settlement cycle.
- **Stock Option Plan Share Issuance:** This item is similar to the previous item for restricted stock as it's the manual process that exists today which needs to be more automated and moved from a physical security issuance request into a book based environment.
- **Delivery Against Payment (DAP) Trades:** DAP trades processed by retail and/or institutional sell side firms have the same characteristics as institutional trade settlements since the Dealer must deliver the securities to the clients custodian against payment. The key differences with this transaction is there is no IM in the middle of the trade, just a sell side

retail sales advisor, the retail client and the custodian. Due to the smaller dollar size of these typical transactions they will not attract the same amount of urgency to resolve issues therefore causing a greater number of failed trades.

- **LVTS to be Used for All CDS Payments:** CDS would be required to implement a policy to only accept LVTS payments in conjunction with the Canadian Payments Association (CPA) who would need to lower the minimum dollar amount requirement from CAD\$25 million.
- **TSX to Automate Receipt of Issuer Entitlements Information:** TSX receives fax and email entitlement information from the issuers and then manual keypunches this information into their internal systems. Current volumes are around 5000 events per year.

The following issue has been deemed a “nice to have” for STP and T+1 but in no way reflects criticality to achieving industry readiness.

- **Direct Registration System (DRS)/Custodian Direct Registration Systems (CDRS):** A number of the transfer agents are working on Direct Registration and custodian Direct Registration Systems to offer an alternative to physical certificates.

Appendix B: Glossary of Terms

The following glossary is intended to provide the key terms used throughout this report. For additional definitions for more general industry terminology, go to the CCMA and/or SIA websites.

Term	Definition
Affirm a trade	1. To state that the trade is valid. When trading online, a trade is legally confirmed when the first party confirms the transaction and the second party affirms the confirmation of that transaction. 2. DTCC's matching of trade details includes sending the confirmation to the IM and custodian based on trade details submitted by the BD. The IM Affirms the Confirmation and the Affirmed Confirm is then sent to the custodian and the BD by DTCC.
Affirmation	See "Confirm/Affirm"
Best Practices	Includes business and market practices. See below for Business and Market Practices.
Business Practices	Identifying who does what and when; generally accepted and agreed timing and behavior practices.
Buy Side	Class of professional investor who is an indirect market participant; includes banks, mutual funds, pension funds and other entities that participate in the market only on behalf of the members/participants. (Source: G-30)
Carrying Broker	Introducing and Carrying relationship: This is when one SRO member firm wishes to use the infrastructure and system resources of another SRO member for services including trade execution, trade processing, settlements, custody and customer account record keeping. (Source: IDA)
Continuous Net Settlement (CNS)	A settlement mode where all purchases and sales are netted on a continuous basis into one buy or sell for each customer and security, and allotted into one net position between the participant and depository; any portion of the net CNS position is then settled automatically against any available ledger balance each settlement cycle.
Confirm/Affirm Confirmation/Affirmation	In the U.S., confirm/affirm refers to the confirmation of a trade by the broker/dealer upon receipt of the allocations from the investment manager, and the affirmation of that confirm by the investment manager. In Canada, confirm/affirm refers to the agreement between the broker/dealer and the investment manager's custodian by CDS's 7:30 PM cutoff.
Electronic Settlement Instruction Registry (ESIR)	A common registry of settlement agent instructions originating from the settlement agents that may be used by CDS participants during the reporting of client trades.

Term	Definition
Local Matching	Same as "internal matching". Local and internal matching are 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.
Market Practice	The business data elements used for domestic debt, equity, fund and other investments.
Net Asset Value (NAV)	The value of all the holdings of a mutual fund, less the fund's liabilities; NAV divided by the number of units outstanding equals price per unit.
NYSE Rule 387 and NASD 11860	NYSE Rule 387 & NASD 11860 state that members (broker-dealers) cannot accept an order from a customer where payment or delivery will be made to or by an agent of the customer unless: i. The member organization has received from the customer prior to or at the time of the order, the name and address of agent and name/account number of the customer on file with the agent. ii. It is a COD/POD (payment on delivery) order iii. The B/D delivers a confirmation to the customer no later than the close of business on the next business day after execution iv. The B/D has obtained agreement from the customer that the customer will furnish his agent instructions to the B/D promptly upon receipt of the confirmation and to his agent by T+2 for COD purchases and T+1 for sales (POD).
"on Trade Date"	In practical terms, the date the trade was entered, or the established time at which transactions are entered before midnight on trade date ("T") at a depository and are still registered as being entered "on Trade date"; for CDS, it is 7:30 pm. Any trades entered after that cutoff are registered as T+1.
Sell Side	In U.S. terminology, a retail broker, institutional broker and trader or research department which engages in securities transactions. (Source: SIA Glossary)
Standards	The protocols and syntax for communications.
Standing Settlement Instructions (SSI) Database	Central repository for customer/account and settlement information, e.g., client name, custodian's client account number, custodian ID, investment manager ID.
Straight-Through processing (STP)	Seamlessly passing financial information electronically, on a timely, accurate, system-to-system basis, to all parties in the end-to-end securities transaction chain without manual handling or redundant processing. From the SIA and CCMA, 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.

Term	Definition
TSX Rule 5-105 Uniform Settlement Rule	Canadian exchange (i.e., TSX) rule similar to NYSE 387, but not widely acknowledged or enforced. For complete description, refer to: http://www.tsx.com/en/pdf/TSXRulebook.pdf
Uniform Securities Transfer Act (USTA)	Purpose is to clarify property rights associated with indirectly held securities and non-certificated securities.
Virtual Matching Utility (VMU)	Virtual Matching Utility (VMU): Software model that allows for seamless, real-time matching of trade data throughout a trade's lifecycle, from post-execution to settlement, from investment manager to broker/dealer to custodian to settlement body; also know as Central Matching Utility (CMU) or Matching Utility (MU).

Appendix C: Relevant Web Links

Banks and Trust Companies

<http://www.cibc.com>
<http://www.royalbank.com>
<http://www.statestreet.ca>

Investment Dealers

<http://www.bmonesbittburns.com>
<http://www.cibcwm.com>
<http://www.gs.com>
<http://www.ml.com>
<http://www.rbcds.com>
<http://www.scotiacapital.com>
<http://www.tdwaterhouse.ca>

Government and Regulators and Depositories

<http://www.albertasecurities.com>
<http://www.bcsc.bc.ca>
<http://www.cvmq.com>
<http://www.cdcc.ca>
<http://www.cds.ca>
<http://dctservices.dtcc.com>
<http://www.nasd.com>
<http://www.osc.gov.on.ca>
<http://www.sec.gov>

Exchanges

<http://www.amex.com>
<http://www.cboe.com>
<http://www.me.org>
<http://www.nasdaq.com>
<http://www.nyse.com>
<http://www.tse.com>

Other Groups and Associations

<http://www.bondmarkets.com>
<http://www.cba.ca>
<http://www.ccma-acmc.ca>
<http://www.ific.ca>
<http://www.sedar.com>
<http://www.sec.gov/edgar.shtml>
<http://www.sia.com>

Appendix D: STP/T+1 Assessment Report Participants

Organization	First Name	Last Name	Industry Committee
Broker			
BMO Nesbitt Burns	Fionnuala	Martin	ITPWG, ITPAC, BPSOC
BMO Nesbitt Burns	Michelle	Peacock	Core Group
Casgrain & Company	Pierre	Mital	Mtl.
CIBC World Markets	Phipps	Lounsberry	
CIBC World Markets	Tim	Reid	SLWG
e3m Investments	Bill	Oates	ITPWG, ITPAC
GMP Securities	Ed	Charron	PSC
Goldman Sachs	Brent	Watson	ITPWG, ITPAC
HSBC	Evana	De Paolis	
HSBC	Jacques	Fleurant	
Investment Dealers Association of Canada	Answerd	Ramcharan	LRWG
Investment Dealers Association of Canada	Keith	Rose	PSC, Finance
Scotia Capital	Norm	Graham	Core, PSC
Merrill Lynch	Tom	White	ITPWG, ITPAC
Scotia Capital	Paul	Ferrier	RTPWG
Scotia Capital Inc./Bank of Nova Scotia	Ed	Jablonky	BPSOC
Scotiabank	Lorne	Rintoul	ITPWG, ITPAC
TD Bank	Jerry	Beniuk	RTPWG
TD Waterhouse	Vicki	Alexander	CAWG, ITPWG, DWG, RTPWG
TD Waterhouse	Caroline	Copto	CAWG
TD Waterhouse	Dimitri	Michalopoulos	
TD Waterhouse	Gerry	O'Mahoney	Core
TD Waterhouse	Doug	Thompson	
TD Waterhouse	Ray	Tucker	
TD Waterhouse	Paul	White	
RBC Dominion Securities Inc. (RBCDS)	Torstein	Braaten	
RBCDS	Brian	Calvert	CEWG, ITPAC
RBCDS	Blair	Morton	
Custodian			
CIBC Mellon	Savie	Fiorini	ITPWG, ITPAC, SLWG, PSC
CIBC Mellon	Tom	MacMillan	Core, PSC
CIBC Mellon	Warren	Maynard	
Desjardins Trust	Roger	Lévesque	Mtl.
RBC Global Services	Andy	Pauksens	CAWG
RBC Global Services	Glenn	Crawford	CAWG
RBC Global Services	Pierre	Légaré	Mtl.
RBC Global Services	José	Placido	Core
RBC Global Services	Barry	Stienstra	ITPWG, ITPAC
State Street Trust	Charles	Murray	SLWG
State Street Trust	Tim	Robertson	ITPWG, ITPAC
State Street Trust	Michael	Garneau	Mtl.

BPSOC	Best Practices and Standards Oversight Committee
CAWG	Corporate Actions Working Group
CCMA	Canadian Capital Markets Association
CEWG	Communications and Education Working Group
Core	Core Group of the CCMA
DWG	Dematerialization Working Group
ITPAC	Institutional Trade Processing Advisory Committee
ITPWG	Institutional Trade Processing Working Group
LRWG	Legal/Regulatory Working Group
Mtl.	STP Implementation Working Group, Quebec Division
PSC	Program Steering Committee
RTPWG	Retail Trade Processing Working Group
SLWG	Securities Lending Working Group

Organization	First Name	Last Name	Industry Committee
Infrastructure			
Canadian Derivatives Clearing Corporation (CDCC)	Michel	Favreau	
CDCC	Roger	Warner	ITPWG
The Canadian Depository for Securities Limited (CDS)	Barbara	Amsden	CEWG
CDS	Bruce	Butterill	
CDS	Allan	Cooper	
CDS	Keith	Evans	
CDS	Aaron	Ferguson	ITPWG, ITPAC, DWG
CDS	Ian	Gilhooley	
CDS	Ron	Meyer	Mtl.
CDS	Al	Nanji	CAWG
FundSERV Inc.	Carol	De Veau	
FundSERV Inc.	Alan	Hutton	Core, PSC
TSX Group	Deanna	Dubrowsky	LRWG
TSX Group	Derrick	Lynden	LRWG
TSX Group	Catherine	McGravey	LRWG
TSX Group	John	Schwarz	CAWG
TSX Group	Greg	Allen	LRWG
Insurance			
MFC Global Investment Management	Phil	Armstrong	Core
Manulife	Bill	Devolin	RTPWG
Issuer			
Blunn and Company Director, Canadian Investor Relations Institute (CIRI)	Ron	Blunn	
Kingsdale Shareholder Services President, Canadian Society of Corporate Secretaries	Wes	Hall	
Investment Manager			
Aim Trimark	Shaquila	Nazir	
AMI Partners	Joanne	Skalos	
Burgundy	Ruby	De Souza	
CDP Capital	Daphne	Guerci	ITPWG, ITPAC, Mtl.
CDP Capital	Jacques	Lavallée	Core, Mtl
CN	Louis-Philippe	Constantin	Mtl.
Fiera Capital	Jean-François	Proulx	Mtl.
Jones Heward	Cliff	Bowers	ITPWG, ITPAC
KBSH	Jackie	Humber	
Mackenzie Financial	Marilyn	Smolsky	RTPWG
OMERS	Michael	Kehoe	SLWG
OMERS	Jenny	Tsouvalis	ITPWG, ITPAC
Phillips, Hager & North	Darren	Marr	
Van Arbor Asset Management Ltd.	Andrew	Parkinson	Core, PSC

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RTPWG	Retail Trade Processing Working Group
SLWG	Securities Lending Working Group

Organization	First Name	Last Name	Industry Committee
Regulator			
Alberta Securities Commission	Patty	Johnston	
Alberta Securities Commission	Patricia	Leeson	
Alberta Securities Commission	Ken	Parker	
Autorité des marchés financiers (AMF)	Serge	Boisvert	Mtl.
Autorité des marchés financiers (AMF)	François	Proulx	Mtl.
Autorité des marchés financiers (AMF)	Nicolas	Roy	Mtl.
British Columbia Securities Commission	Doug	Hyndman	
Ministère des Finances	Guy	Émond	Mtl.
Ontario Securities Commission	Alina	Bazavan	Mtl.
Ontario Securities Commission	John	Kearns	
Ontario Securities Commission	Darren	McKall	
Ontario Securities Commission	Max	Paré	LRWG
Ontario Securities Commission	Randee	Pavalow	Core
Ontario Securities Commission	Emily	Sutlic	DWG
Service Provider			
ADP	Rob	Hale	ITPWG
Assante Advisory Serv.	David	Ravencroft	RTPWG
CGI	Nicole	Gadbois-Lavigne	Mtl.
Dataphile	Paul	Strijckers	ITPWG
FMC	Sylvain	Audet	Mtl.
FMC	Bob	Shaw	ITPWG
IFDS Group	Pat	Dunwoody	RTPWG
Monetary Dynamics	Allan	Flancman	CAWG, ITPWG
MRS	Patricia	Milloy	RTPWG
Penson Canada	Richard	Ness	Mtl.
Sungard	Maureen	Campbell	SLWG
Unisen	Stuart	Reynolds	
Unisen	Robert	Smuk	Core
Transfer Agent			
CIBC Mellon	Rob	Shier	BPSOC
Computershare	Bob	Mackenzie	CAWG
Pacific Corp. Trust Co.	Bill	Brolly	DWG
Computershare Security Transfer Association of Canada (STAC)	Terry	Martinuk	DWG, PSC
Consultant			
Alternative GC Inc.	Guylaine	Couture	Mtl.
e-Clientscope	Bob	Smythe	SLWG, DWG
Independent	Sue	Granger	CAWG
Independent	Dennis	Horgan	RTPWG

BPSOC	Best Practices and Standards Oversight Committee
CAWG	Corporate Actions Working Group
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ITPWG	Institutional Trade Processing Working Group
LRWG	Legal/Regulatory Working Group
Mtl.	STP Implementation Working Group, Quebec Division
PSC	Program Steering Committee
RTPWG	Retail Trade Processing Working Group
SLWG	Securities Lending Working Group

STP/T+1 Readiness Assessment Report for Canada

The following table presents the SIA's SEC Concept Release Task Force members. The Task Force was charged with producing an SIA response to the SEC's request for comments on the Concept Release. The status and plans of the U.S. efforts represented in this report were gleaned from insights from Capco's involvement in the Task Force, the SIA STP Program Committees, as the current SIA STP Program Management Office, and from involvement in three conferences in which the views of the Task Force have been publicly shared (namely, SIA Operations Conference, Omgeo Partners Conference, and SIA Technology Conference).

Last Name	First Name	Organization
Alix	Michael	Bear Stearns
Anastasio	Joe	Capco
Bernstein	Jeff	Bear Stearns
Browne	Vincent	CSFB
Callahan	Mary Ann	DTCC
Cato	Richard	HSBC
Cirrito	John	ING
Cutrone	Lee	Omgeo
Davidson	John	Morgan Stanley
DiMarco	Frank	Merrill Lynch
DiSanza	Ray	Charles Schwab
Duffy	Michael	PJC (Piper Jaffray)
Dupay	Mary	Goldman Sachs
Dziemian	Dan	Lehman Brothers
Eaker	Norman	Edward Jones
Fappiano	MaryAnn	Morgan Stanley
Itner	Tom	FMR
Johnston	Peter	Goldman Sachs
Kelly	Steve	Goldman Sachs
Kessler	Ron	A G Edwards
Koster	Jim	DTCC
Kyproglou	Vicky	UBS
Lambert	Cheryl	DTCC
Liguori	Joeseeph	JP Morgan
Mahon	Patrick	Bear Stearns
Marinovich	Nenad	Merrill Lynch
Martin	Frank	First Clearing
Mathison	Michael	FMR
McCarthy	Tom	DTCC
Morillo	Larry	Pershing
Panchery	John	SIA
Pittarelli	Ernie	UBS
Quinn	Tom	Tom Quinn & Associates
Rossi	Charlie	Equiserve (STA)
Smith	Judith	Morgan Stanley
Vatsa	Sanjay	Merrill Lynch
Wilson	Tim	Caxton
Winters	Charles	Merill Lynch
Winterer	Chuck	Wachovia

