



Discussion Paper:

Consolidation Plan for a Consolidated Canadian Market

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I. Executive Summary

Alternative Trading Systems ('ATSS') are electronic marketplaces which offer participants access to new types of markets, based on technology. In order to take advantage of the features and services offered by these new marketplaces, it is necessary to establish a framework which will combine them with traditional market structures and preserve the benefits of a strong centralized market system.

This discussion paper sets forth a plan for consolidating traditional marketplaces (like exchanges) with these new marketplaces to provide a consolidated Canadian market. The plan provides for the collection, consolidation and dissemination of quote and trade information. Further, it proposes to integrate all markets in order that buyers and sellers have access to the best price available at time of execution.

All marketplaces would be required to provide quotation information regarding displayed orders and transaction information for all securities traded in their system to a Data Consolidator. The Data Consolidator will be a third party facilitator, chosen by the Canadian Securities Administrators ('CSA') as a result of a Request For Proposal (RFP). The Data Consolidator will distribute a consolidated data feed for all markets.

Market Integration provides the facility for any buyer or seller to access the best priced order in any marketplace. The plan proposes that market integration be achieved in a staged implementation. Phase 1 would require that each ATS establish a link to the principal market of the securities traded by the ATS. For a listed security, the principal market will include any exchange on which that security is listed. Phase 2 will require that all ATSS and all exchanges be linked through a Market Integrator. The Market Integrator may be chosen through an RFP process initiated by the CSA; this function could be provided by an existing exchange, an ATS, the Data Consolidator or another third party.

After the ATS Proposal is finalized, Data Consolidation and Phase 1 Market Integration is expected to be in place during mid-year 2000 while timing for Phase 2 integration would be determined at a later date. The Consolidation Plan sets the framework for establishing a centralized market structure which combines the positive benefits of these new alternative trading systems with traditional auction markets.

II. The Consolidated Market

A. Background

Over the past decade, advances in technology have had a significant impact on the trade execution process in the securities industry. Specifically, non-exchange electronic trading systems, currently referred to as ATSS, have offered features and services not typically provided by traditional exchange systems or dealers. The rapid growth of these alternative systems indicate that market participants welcome the opportunity to access new competitive liquidity pools¹.

The purpose of the ATS proposal is to provide a flexible framework that facilitates the establishment of competitive systems while still providing the advantages and benefits of a centralized market.

In Canada, although we do have a Consolidated Canadian Data Feed,² the electronic linking of exchanges has not been established to provide best execution for interlisted securities. To date, ATSS trading Canadian listed securities have been allowed to operate only as members of exchanges, primarily as a result of concerns over market fragmentation. In order to provide a flexible environment that will accommodate both traditional market structures and take advantage of the benefits offered by new technologies, it is necessary to establish a plan for a consolidated Canadian marketplace.

¹ In the United States, ATSS now account for over thirty percent of orders in NASDAQ listed securities and close to eight percent of orders in exchange listed securities. Until recently, ATSS have operated markets which were largely outside the National Market System ('NMS'). The National Market System in the US was established over 20 years ago at the direction of the Securities and Exchange Commission. Its primary objective was to provide for 'equally regulated, individual markets which are linked together to make their best prices publicly known and accessible.' Recent rule changes adopted by the SEC have modified the regulatory framework in order to better incorporate ATSS into the NMS.

² The Consolidated Canadian Data Feed (known as the CCDF) is operated by the CEG, Canadian Exchange Group, and provides a consolidated data feed of trade and quote information for the Toronto, Montreal, Vancouver, Winnipeg and Alberta exchanges, as well as CDN.

B. Purpose and Objectives

The purpose of developing a plan to consolidate ATs and other markets (the 'Consolidation Plan') is to provide an environment in which all markets can operate and to combine the positive benefits of competing systems while preserving the benefits of a centralized auction market.

The consolidation function consists of two principal components: data consolidation and market integration for order routing between markets. This Consolidation Plan provides for the collection, consolidation and dissemination of quotation and transaction information for all marketplaces and for the interlinkage of those marketplaces so that all buyers and sellers of a security have access to the best price for execution.

The objectives of the Consolidation Plan are:

1. To maintain the benefits of a centralized auction market.
2. To create this centralized market while requiring a minimum of superstructure to support it.
3. To enable all market participants to have full and complete access to market information.
4. To enable all market participants to have equal access to the best price available in the market.

C. Participants

The participants in the Consolidation Plan will include all marketplaces as defined in National Instrument 21-101, i.e., all exchanges and quotation and trade reporting systems recognized in the jurisdiction of the CSA and any Alternative Trading Systems, who are registered as dealers complying with National Instrument 21-101.

III. Data Consolidation

Data consolidation ensures that all participants in the market have access to full and complete information regarding the securities that they wish to trade. It includes two primary types of information: pre-trade and post-trade.

Pre-trade information includes the total volume bid/offered at each price level for all committed, disclosed orders in all participating systems.

Post-trade information provides summary data for all transactions which have been executed on a security on any participating system. Trade details include volume, price, time and system in which the trade took place.

A. Requirements for All Marketplaces

1. Quote Information

Each marketplace will be required to transmit to the Data Consolidator one or more data feeds containing quotation information and transaction information for all securities traded in its system.

Quotation information shall include:

- the symbol of the security
- the total volume bid/offered at the best five price levels for the security

The quotation information provided for the consolidated display will not provide any specific order information such as the number of buyers or sellers or the identity of any buyer or seller. Each participating system will continue to be able to provide complete and detailed information about its order book to its own participants, in accordance with the features and specifications of its own system.

Marketplaces will be required to provide quotation information only for orders that are disclosed on their system. Systems which offer a feature to allow orders to have a

reserve or undisclosed volume will not be required to display the reserve or undisclosed portion of the order. In other words, to the extent that a system discloses an order in its own system, it must also disclose the same order (or portion of order) in the Consolidated Market. ATs will thus be able to preserve the competitive features inherent in their systems and to offer the benefits of selective anonymity to their own participants.

2. Executed Transaction Information

Transaction information will include for each transaction:

- the symbol of the eligible security
- the volume traded
- the price of the trade
- the time of the trade (accurate to seconds - e.g. 10:26:02)
- the system on which it was traded
- applicable trade markers such as late trade, special terms , etc.

3. Timeliness and Accuracy

Marketplaces will be responsible for providing data to the Data Consolidator in an accurate and timely manner.³ In the event of a system problem in any participant system, any trades executed that cannot be reported until after resumption of operation will be marked as 'late'.

The distribution of the consolidated data feed will not alter the rights and abilities of each marketplace to enter into agreements with subscribers for the sale and distribution of proprietary data relating to securities traded in each system's market.

³It is expected that participant systems would provide data in the manner consistent with the operation of real-time systems.

B. The Data Consolidator

The Data Consolidator will receive and collect quotation and transaction information from each marketplace. The Data Consolidator will disseminate the consolidated information to market data vendors, news services and other customers in an accurate, timely and reliable manner.

1. Collection of Information

The Data Consolidator will receive information from each marketplace via a direct, high-speed computer-to-computer interface. The Data Consolidator will be responsible for determining the message protocol and the technical specifications of the data feed(s) sent by each system.

Pre-trade information will consist of a summary of total volume at each price for the top five levels of bids and offers. No information will be provided about the specific number of orders or the identity of the buyer or seller. This type of information is referred to as a 'Volume @ Price'⁴ display.

Post-trade information will consist of transaction details for all trades which have taken place on the marketplace. These details include volume, price, and time of the trade.

2. Dissemination of Information

The Data Consolidator will disseminate a Consolidated Market by Price Feed to its customers including data vendors, news services, and other information services. The Data Consolidator will be entitled to enter into agreements with customers for the dissemination of quotation and transaction information according to a fee schedule set

⁴ Volume @ Price is the terminology used generally to describe a display that groups all orders at a price level, indicating the total volume wanted or offered by all orders at a price level (the TSE uses the term 'Market By Price', which is a Trademark of the TSE). In Canada, the standard for Volume @ Price displays is to show the best five price levels. This matter may be further reviewed by the Governing Committee (see discussion of Governing Committee, Section III.B.6, Administration of the Data Consolidator).

by the Governing Committee⁵. A fee schedule, determined by the Governing Committee, will provide for reimbursement of data fees to each marketplace. The Data Consolidator will disseminate all information provided by the participant systems.

Each marketplace will retain the right to sell and distribute its own data feeds for information on securities in its own marketplace.

The Data Consolidator will disseminate the following information:

1. the full list of securities traded by each marketplace.
2. the total volume bid/offered at each of the best five price levels for each security traded for each marketplace.
3. all transactions that have taken place on securities reported by all marketplaces. Trade reports will include symbol, price of trade, market of execution and any appropriate trade markers such as late, correction, etc.
4. at the end of each trading day on the primary market, a closing price and closing bid/ask for each security.
5. all messages sent by the principal market related to stock status (pre-opening, open, halted) will be distributed by the Data Consolidator to its subscribers.

The Data Consolidator will be responsible for all administrative functions associated with the dissemination of data including record-keeping, billing, contracts and financial reporting.

3. Currency

The data collected and disseminated for all securities which are listed, quoted or approved by marketplaces in Canada, and which trade in Canadian dollars, will be shown in Canadian dollars by the Data Consolidator.⁶ All quote and trade prices provided to the Data Consolidator must reflect prices maintained in a Canadian dollar book, not merely be converted prices from a US\$ book. More importantly, they cannot be prices which are already quoted and represented in another foreign system

⁵ The Governing Committee is discussed in further detail in Section III.B.6, Administration of the Data Consolidator.

⁶ Some securities listed in Canada trade in US dollars. These securities may be displayed in US dollars by the Data Consolidator.

such as the National Market System ('NMS') in the US. This will mean that US systems who wish to trade Canadian listed securities for Canadian clients will quote and trade orders as part of the Canadian consolidated market. US systems who wish to operate in Canada will be required to maintain a separate Canadian book for securities listed, quoted or approved by recognized exchanges (including CDN) and to display these books in the Canadian consolidated market displays.

4. Data Display

The Data Consolidator will produce a data feed for vendors and other customers that will provide the information required for a consolidated "Volume @ Price" display, a consolidated tape, and a consolidated Previous Trades display. Vendors may also choose to develop a consolidated Time and Sales display.

Sample 'Volume @ Price' Display:

EXCH	6000 *	21.45	21.50 *	10000	ATS2
ATS1	4000 *	21.40	21.55 *	3000	EXCH
EXCH	3000 *	21.40	21.55 *	2000	ATS1
ATS2	1500 *	21.40	21.60 *	5000	EXCH
EXCH	4000 *	21.35	21.65 *	6000	EXCH

Note: Bids are shown in descending order (best bid at top) on the left side of the display; offers are shown on the right side of the display in ascending order (best offer at top). Each side shows the marketplace and the total volume bid/ offered at each price level.

Sample Previous Trades Display:

EXCH	5000	21.45	11:15
ATS1	2000	21.50	11:05
ATS3	5000	21.45	11:02
EXCH	2500	21.50	11:00
EXCH	1000	21.45	10:48

Note: Trades executed in all systems would show in reverse chronological order, (most recent first) indicating the marketplace in which the trade was executed, and the volume, price and time of the trade.

No information will be provided to or displayed by vendors relating to the identity of participants in any marketplace. Specifically, pre-trade information will show only the amount of the security that is bid/offered at each price level by a system; information will not be displayed regarding either the number of orders on the bid/offer, nor the identity of the buyer or seller. Similarly, in post-trade information displays, only the identity of the system on which the trade took place will be provided, not the identity of either the buyer or seller.⁷ Individual marketplaces may choose their own policy regarding information shown to their own participants so that additional proprietary information will provide value to members of that particular system.

5. Operations

The Data Consolidator will be in operation on each day on which trading takes place on the principal market for a security. Quotation and transaction information will be collected and disseminated during the regular operating hours of the principal market (approximately 8 a.m. to 6 p.m. EST) In addition, the Data Consolidator will collect and disseminate quotation information and transaction reports at any time when another marketplace is open for trading.

During any regulatory halts on any security, it is suggested that ATs be prohibited from trading. In the event of a regulatory halt, the Data Consolidator would then cease to disseminate information on that security until the halt has been lifted by the principal market and the security has entered a pre-opening period.

6. Administration of the Data Consolidator

The CSA will choose a third party facilitator to operate the Data Consolidator. The Data Consolidator will be supervised by a Governing Committee composed of representatives from all marketplaces and representatives appointed by the CSA including external business and technology experts. The Governing Committee will be chaired by a Chairperson appointed by the CSA and will be subject to review by the CSA.

⁷At the present time, on exchange and vendor systems, the broker ID of the buyer and seller is shown on pre-trade information to exchange members only and on post-trade information to all subscribers. ATs have policies regarding the display of information that vary.

The CSA currently expects that the Governing Committee will be responsible for oversight of matters including, but not limited to the following:

1. Implementation of the Consolidation Plan.
2. Operations of the Data Consolidator.
4. Determination of fees charged to subscribers.
5. Determination of formula used for cost-sharing and revenue-sharing.
6. Annual Reporting to the CSA.
7. Technology Specifications and Protocols.

7. Selection of the Data Consolidator

The Data Consolidator will be operated by a third party facilitator, chosen by the CSA. This Data Consolidator will be chosen from respondents to a Request For Proposal (RFP) issued by the CSA describing the functional and operational requirements for the Data Consolidator. The RFP will be publicized and distributed to all interested parties for response. Interested parties will be given 75 days to respond to the RFP. In their responses, interested parties will be asked to include detailed information about the technology that they will provide to perform the data consolidation function and the model they will use for cost recovery and revenue generation. Parties who may be perceived to have a conflict of interest will be asked to include in their response how they propose to manage any potential conflicts of interest.

The Data Consolidator will be chosen and will function as the consolidator for a period of five (5) years. The Data Consolidator's performance will be reviewed by the Governing Committee yearly and a full review of performance will be carried out by the CSA during the fifth year of the contract. Once the performance review is completed, the contract will be renewed or a new RFP issued.

IV. Market Integration

A. Staged Implementation

Market Integration means that any buyer or seller in a marketplace will have the right and the ability to access the best price offered or bid in any other marketplace, regardless of whether the buyer or seller is a participant in that system, or not. To accomplish this, each system must be able to route orders to any other marketplace's system in the consolidated market. In general, when any marketplace sends an order to another marketplace, the trade will take place on the marketplace receiving the incoming order, according to the priority rules of the receiving system.

Market integration is a complex task and raises some significant technology challenges. It is important to reward those systems that provide the best technology (assuming they also serve the best interests of the market) and not to make other systems wait for those who do not have the necessary technology. For this reason, a staged approach is preferred.

B. Phase 1: Principal Market Integration

Phase 1 integration will require any ATS who wished to operate in Canada, to establish a connection to the principal market for the securities being traded on its system. ATSs will be permitted to start operations when they have established this connection to the principal market. For listed securities, the principal market will be any of the exchanges on which the security is listed.⁸ For other securities, the principal market will be considered to be the market which has the largest trading volume for that security in Canada. Each ATS must satisfy any better priced bids or offers on the principal market before execution of a match in its system; i.e. no trade may take place on an ATS which will 'trade through' a better priced order on the principal market. Further, the principal market will also be required to satisfy a better bid/offer on any participating ATS. This approach protects any firm orders that have been entered and have established a bid or offer on the principal market.

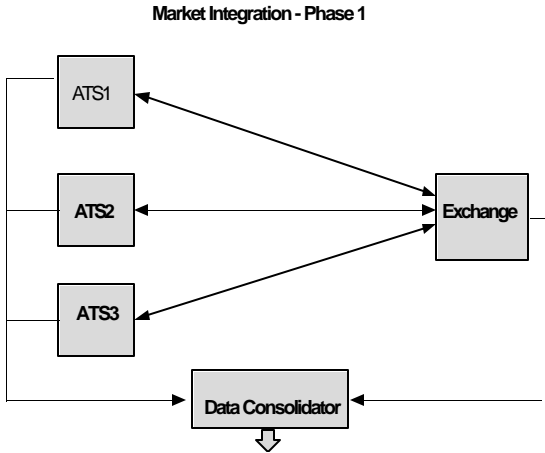
⁸At the time of writing, there are a number of Canadian equities which are interlisted on different markets. Should the proposed restructuring plan of the Canadian exchanges be implemented, then the Consolidation Plan will require the ATS to go to the single exchange on which a security is listed.

During Phase 1, integration will only be required between ATSs and the principal markets; ATSs will not be required to satisfy better bids and offers on other ATSs. While each ATS is only required to provide a connection to a principal market, any ATS may establish connections to any other ATS that it chooses.

Example:

System 'ATS1' has a buyer for 10,000 shares of XYZ at \$10 and a seller for 10,000 shares of XYZ at \$10. There is an offering for 2000 shares of XYZ on Exchange A, which is the principal market, at \$9.95. System 'ATS1' must buy the 2000 shares offered at \$9.95 on the exchange and then match the balance of 8000 shares at \$10. The buyer in system 'ATS1' will have bought 2000 shares at \$9.95 and 8000 shares at \$10. The seller in 'ATS1' will have sold only 8000 shares at \$10, since there was a seller with a better price in the principal market.

ATS systems who wish to establish a connection to a principal market will do so using the message protocol determined by the principal market.⁹ The interconnection between ATSs and the exchange is illustrated in the diagram below titled "Market Integration - Phase 1".



⁹ For listed securities, the current standard protocol used by the TSE, ME, VSE and ASE is the STAMP protocol.

C. Phase 2: Full Integration (No Trade-Throughs)

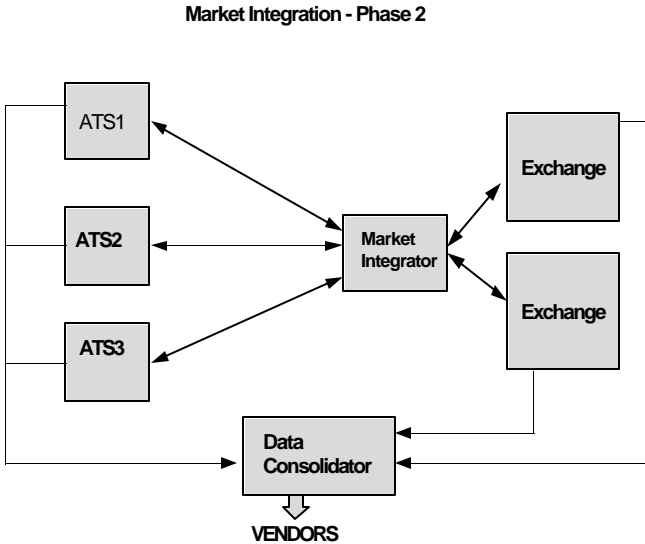
1. Order Routing requirements

Phase 2 integration will establish more complete market integration and order routing between all marketplaces in order to ensure that there will be price protection for all orders between all competing marketplaces. Each marketplace will have the responsibility to monitor the quotes in all other marketplaces and will send their orders to other systems via a direct connection or through a Market Integrator. Each system thus maintains control over its own orders and has responsibility for managing order execution.

Example:

'ATS1' gets an order to buy 10,000 shares at \$10.50. The offering in system 'ATS1' is \$10.55 for 6,000 shares. Exchange B also has an offering for 5000 shares at \$10.55 and System 'ATS2' has an offering for 4000 at \$10.50. The current bid in all three systems is \$10.45. Systems 'ATS1' will be required to send an order to 'ATS2' to buy the 4000 shares at \$10.50 and then bid for the remaining 6000 shares at \$10.50 in its own system. System 'ATS1' may send the order either via a direct connection to 'ATS2' or to the Market Integrator for routing to 'ATS2'.

The diagram shown below, entitled 'Market Integration - Phase 2', illustrates the integration between ATs and exchanges, assuming integration is performed through a Market Integrator.



2. Selection of a Market Integrator

There are several options regarding how Phase 2 integration could be implemented. In a distributed approach, each marketplace would be required to provide a connection to all other participating systems. In a centralized approach, a single integrator/consolidator could provide the interconnection between all marketplaces. In fact, both data consolidation and market integration could be provided by the same entity.

The distributed approach, where each marketplace connects to all other marketplaces, would result in substantial duplication of effort and multiple connections for all systems. The centralized approach, on the other hand, may mean establishing a new intermediary between marketplaces. It is important that a solution be chosen which is both technically sound and relatively easy to implement. The accepted solution will also very much depend on the number of participants in the consolidated market and the amount of activity which is generated between markets.

A recognized exchange or an ATS could provide the interlinkage between marketplaces to allow for access to better prices across all marketplaces. Each ATS would then have the choice of routing directly to another ATS or going through the central router system to access another ATS. In this way, all marketplaces would be interconnected for best price execution without having to create a new external structure for routing orders.

As with the selection of the Data Consolidator, there are several likely choices to provide this functionality. However, it is important to ensure that the best choice is made to provide the best technology solution and minimize any potential conflicts of interest. For this reason, an RFP may be issued to choose a third party facilitator to provide market integration functionality. The RFP would be publicized and distributed to all interested parties for response. Interested parties would be given approximately 75 days to respond. In their responses, interested parties should include detailed information about the technology that would be provided for market integration including technical specifications and protocols as well as expected response times, redundancy provisions, etc. Parties with a perceived conflict of interest would be required to include in their response how they propose to manage any potential conflict of interest. A Market Integrator would be chosen by the CSA from respondents to the RFP.

D. Response Times for Market Integration

When any marketplace sends an order to another system for execution, it should have a reasonable expectation that orders will be filled immediately. Systems which do not have the technology capacity to provide minimum response times will hinder the effective implementation of a consolidated market. For that reason, there will be a time-out allowed for response times on orders.

Any marketplace should reasonably expect to receive a response (a fill, a cancel or no fill response) to an order in under 3 seconds. If the principal market, or any other marketplace, has not responded within 3 seconds, the system may proceed with its match without compliance with the trade-through policy. It is not reasonable to slow the trade process for systems which cannot meet standards for quick and accurate response. Systems that repeatedly get “timed out” for slow response will not benefit from market consolidation to the extent that other more technically adept systems will. In addition, systems which repeatedly are unable to meet response standards will be subject to regulatory oversight and may be subject to penalties for non-compliance.

Trade-throughs may occur inadvertently, in a small percentage of trades, due to time delays in information reaching systems about better priced orders available in the consolidated market. It will be up to the parties performing market surveillance to examine message logs to determine that the better price had been established just prior to the trade through and that the system initiating the trade had not received the update prior to effecting their trade. Cross referencing of trade times, with published quote time, should be automated by the Data Consolidator; a grace period of up to 3 seconds may be allowed for any trades which had caused a trade-through to occur.

E. Clearing and Settlement

Each ATS system will be required to be a member of an exchange or to register as a dealer and be a member of an SRO, other than an exchange. An ATS that chooses not to be a member of an exchange, but is a member of the IDA, will have access to CDS and CDCC for clearing and settlement purposes. Reporting of trades done by ATSs to CDS could be done either directly by the ATS or through the Data Consolidator in a manner similar to the reporting currently done by each exchange for exchange trades. Each ATS will be responsible for delivery of information regarding trade details to its own service bureau providing clearing services with details relative to settlement instructions for their clients.

It is recommended that all marketplaces work with CDS and the appropriate clearing service bureaus to facilitate improvements to the flow of trade information from point of entry through to settlement. This is of particular importance for Straight-Through-Processing (STP). In simplest terms, STP means that all the details required to complete a transaction are attached to an order at the time of entry, resulting in automated processing of the complete transaction from initiation through clearing and settlement, without any participant having to re-enter trade details into multiple systems and then reconcile them. Under STP, all information required in the settlement of a trade is attached to an order at time of entry (or as soon as possible thereafter) so that, as the trade passes through each step of the trade process cycle, all of the appropriate information is passed with it. STP has several benefits, the most important of which is to reduce the requirements for reconciliation of data entered from separate systems and the associated errors resulting from transcribing of data from one system to another.

V. Summary

The preceding discussion outlines a consolidation plan to allow ATSS to operate effectively in Canada while preserving the benefits of a centralized market.

As noted earlier in this document, this paper has been prepared based on the existing exchange structure in Canada, with interlisted securities between exchanges. The CSA is currently reviewing any potential implications of the exchange restructuring proposal relative to the Consolidation Plan.

The Consolidation Plan describes consolidation of pre-trade and post-trade information and integration of marketplaces for access to best execution. This Plan sets the framework for a consolidated market structure and aims to achieve the following goals:

- 1. *Maintain the benefits of a centralized auction market through a consolidated central market structure.***
- 2. *Create this centralized market structure while requiring a minimum of superstructure to support it.***
- 3. *Enable all market participants to have full and complete access to market information.***
- 4. *Enable all market participants to have equal access to the best price available in the market.***