

SEC Rule 613 – Consolidated Audit Trail (CAT)

Cost Study Overview and Assumptions



Topics

Introduction

Confidentiality of Information

Assumptions

See Attached: CAT Cost Excel Template

Introduction

Dear Respondent,

The undersigned eighteen registered national securities exchanges (the Exchanges) ¹ and the Financial Industry Regulatory Authority, Inc. (FINRA, and together with the Exchanges, the SROs) request your participation in the Consolidated Audit Trail (CAT) Cost Study. This study will assist the SROs in fulfilling their obligations under Rule 613, adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934 (Rule 613), which requires the SROs to submit a national market system (NMS) plan to create, implement, and maintain a consolidated order tracking system, or consolidated audit trail.

The cost study is intended to collect information related to the industry impact of the CAT. Rule 613 requires the SROs to assess:

- (1) baseline costs to the industry for regulatory reporting,*
- (2) the costs and benefits of the creation, implementation and maintenance of CAT*

The SROs recognize the potential complexity involved in providing the requested estimates and that several people in your organization may need to be involved in this effort. In collecting this information, the SROs seek your best estimates based on the assumptions provided in this document. The SROs recognize that once technical requirements are specified the actual cost of implementation may vary from estimates given. We have included an excel template to assist in capturing the relevant data points prior to completing the on-line form. Please reference the email sent to you individually to enter data for the study.

Should you have any questions please send them to feedback@catnmsplan.com. Please note, Deloitte has been selected as the independent third party facilitator for this study. The data is not intended for any other regulatory purpose outside of conducting analysis on the costs, benefits and impacts of Rule 613.

Sincerely,

The Self-Regulatory Organizations

BATS Exchange, Inc.; BATS Y-Exchange, Inc.; BOX Options Exchange, LLC; Chicago Board Options Exchange, Inc.; C2 Options Exchange, Inc.; Chicago Stock Exchange, Inc.; EDGA Exchange, Inc.; EDGX Exchange, Inc.; Financial Industry Regulatory Authority (FINRA); International Securities Exchange, LLC; ISE Gemini, LLC; Miami International Securities Exchange LLC; The NASDAQ Stock Market LLC; NASDAQ OMX BX, Inc.; NASDAQ OMX PHLX LLC; National Stock Exchange, Inc.; New York Stock Exchange, LLC; NYSE MKT, LLC; and NYSE Arca, Inc.

CONFIDENTIALITY OF INFORMATION

The information being requested in this study will be used solely for the purpose of developing the CAT NMS Plan and not for other regulatory purposes. Respondent information will be kept confidential and collected and analyzed by Deloitte & Touche LLP. The SROs will only receive anonymous aggregated information. The responses will remain anonymous, unless the submitting firm directs otherwise.

Study Assumptions

SEC Overview

The Commission adopted Rule 613 to create a comprehensive consolidated audit trail that would allow regulators to efficiently and accurately track all activity throughout the U.S. markets in National Market System (NMS) securities – both options and equities. Among other things, the rule requires the SROs to jointly submit a plan – called an NMS plan – to create, implement and maintain a consolidated audit trail. The rule specifies the type of data to be collected and when the data is to be reported to a central repository.

In particular, the rule mandates that the NMS plan:

- Require each SRO, as well as their respective members, to provide information as identified in Rule 613 to a central repository for each quote and order in an NMS security, and respective reportable event such as origination, modification, cancellation, routing, and execution
- Require certain data to be reported to the central repository by 8 a.m. Eastern Time the following trading day, and be subsequently available to regulators for their analysis
- Require all reportable events to be reported to the central repository in a way that allows the central repository to efficiently and accurately link them to an order through its entire lifecycle from origination through routing, modification, cancellation, or execution

Additional Resources for Review

Published information:

Consolidated Audit Trail (Adopting Release No. [34-67457](#); July 18, 2012)

<http://www.sec.gov/rules/final/2012/34-67457.pdf>

SEC Notice: <http://www.sec.gov/divisions/marketreg/rule613-info.htm>

For communication purposes related to Rule 613, the SROs have created a public website.

www.catnmsplan.com

Study Assumptions

Overview

As a Broker Dealer, you will be required to submit customer information, quote and order lifecycle events for NMS securities and OTC equities to the central repository.

For the purposes of this cost study:

- Please assume the following timeline for reporting:
 - By two years after the NMS plan becomes effective, all members of an SRO, except small broker-dealers as defined in SEC Rule 0-10(c), are required to report to the CAT
 - By three years after the NMS plan becomes effective, all SRO members that are small broker-dealers are required to report to the CAT
- Technical specifications for Broker Dealer reporting will be available nine months prior to the respective reporting effective dates.
- Anticipate a 20% Compound Annual Growth Rate (CAGR) of data
- Six-year data retention consistent with SEC Rule 17a-4

Scope

- All NMS Securities, including equities and options, and OTC equities
- All orders and equity quotes
- Options market maker quotes are not in scope

Study Assumptions

There are currently two general approaches being considered for the submission of quote and order lifecycle information. We are seeking your input on the costs associated with each approach:

Approach 1 – Industry and Exchange Protocols

CAT Reporters will submit NMS securities and OTC equities order events based on the formats aligned with certain industry and exchange protocols (e.g. OUCH, FIX, CMI, SQF, BATS BOE). Additional data elements will be needed to meet the requirements of the NMS plan and retire current regulatory reporting systems.

Approach 2 - Specified File Format

CAT Reporters will submit NMS securities and OTC equities order events in a specified file format (e.g. OATS). Additional data elements will be needed to meet the requirements of the NMS plan and retire current regulatory reporting systems.

For both Approach 1 and Approach 2:

- Daily order data submissions will be sent via bulk data uploads or web interface uploads
- Order events must be submitted by 8 a.m. Eastern Time the following trading day

Study Assumptions

Timestamps and Clock Synchronization

- Timestamp granularity for manual orders has to be at least in seconds and reported in a millisecond format
- All other reportable events to have a minimum timestamp granularity to the millisecond
- Maximum allowable clock drift is 50 milliseconds

Customer Information

- CAT Reporters will be required to submit the following:
 - customer and account information: each record will include a firm designated customer identifier and unique identifiers such as tax ID (TIN), Social Security Number (SSN), Legal Entity Identifier (LEI) and Large Trader ID, among others
 - account information: each record will include a firm-designated account ID, account type, effective date of account opening, account close date if applicable
 - a mapping of customer identifiers to firm-designated account IDs
 - changes to customer and account information on a daily basis. A refresh of the full set of customer and account information may be required monthly or quarterly
 - will monitor their customer and account information and correct inaccuracies as well as errors identified by the CAT processor

Allocations

- CAT Reporters will be expected to provide allocation information for the beneficial owners of the trade

Study Assumptions: The Cost Estimates

Estimates should not include costs previously incurred to build the regulatory reporting systems.

Study Elements:

- Hardware and software cost should include estimation of costs associated with servers, storage, software licensing, network
- Development and maintenance costs should include staffing costs associated with project management, development staff, DBAs, quality assurance
- Staffing costs should include costs associated with production support staff for regulatory reporting, error corrections, and operations/technology staff required to support regulatory inquiries. This would include resources deployed and cost associated with upgrades, staff required for bug fixes, rule changes and other modifications
- Compliance costs should include costs associated with legal, advisory, policies and procedures, among others
- Costs associated with reporting for OATS, EBS or Large Trader performed by a service bureau should be captured in questions 10b, 11b and 12b.
- Estimates should not include costs previously incurred to build the regulatory reporting systems

Estimates should include:

- Costs associated with primary production and backup systems, disaster recovery systems, archival systems, development/test/QA systems for regulatory reporting
- Capacity implications on processing/ telecommunications/ storage for CAT reporting based on peak message traffic
- Impact to customer on-boarding, processes for defining new customers to CAT, one-time process for defining existing customers to CAT, on-going reporting of new and changes to customer information
- Reconciliation and error correction responsibilities₁₀.

Appendix: Background Information

Overview of CAT NMS Plan

Rule 613, adopted by the SEC in July 2012, requires the SROs to submit to the SEC an NMS plan for the CAT.

The CAT will be a comprehensive audit trail that will allow regulators to more efficiently and accurately track activity in NMS securities throughout the U.S. markets. The purpose of the CAT NMS Plan is to create a central repository for the SROs and the SEC to perform surveillance on order event data, linked to customer and account information and to permit regulators to efficiently and effectively perform market reconstructions. The repository will be used exclusively by the SROs and the SEC for regulatory purposes (including, without limitation, market surveillance and reconstructions) and to oversee market activity using complete life-cycle order data that is linked to customer and account information.

Initially, the CAT NMS Plan the SROs intend to submit will cover all NMS securities as required by Rule 613 and OTC equities.

“The SEC, the SROs, and other market participants are also proceeding to implement the Consolidated Audit Trail Rule, which when operational will further enhance the ability of regulators to monitor and analyze the equity markets on a more timely basis. Indeed, it should result in a sea change in the data currently available, collecting in one place every order, cancellation, modification, and trade execution for all exchange-listed equities and equity options across all U.S. markets. It is a difficult and complex undertaking, which must be accorded the highest priority by all to complete” said SEC Chairman Mary Jo White in an address on February 2014.

The Consolidated Audit Trail (CAT)

Rule 613 represents a paradigm shift in the regulation of U.S. markets with the creation of a central database covering all market participants across multiple asset classes.

The CAT will...

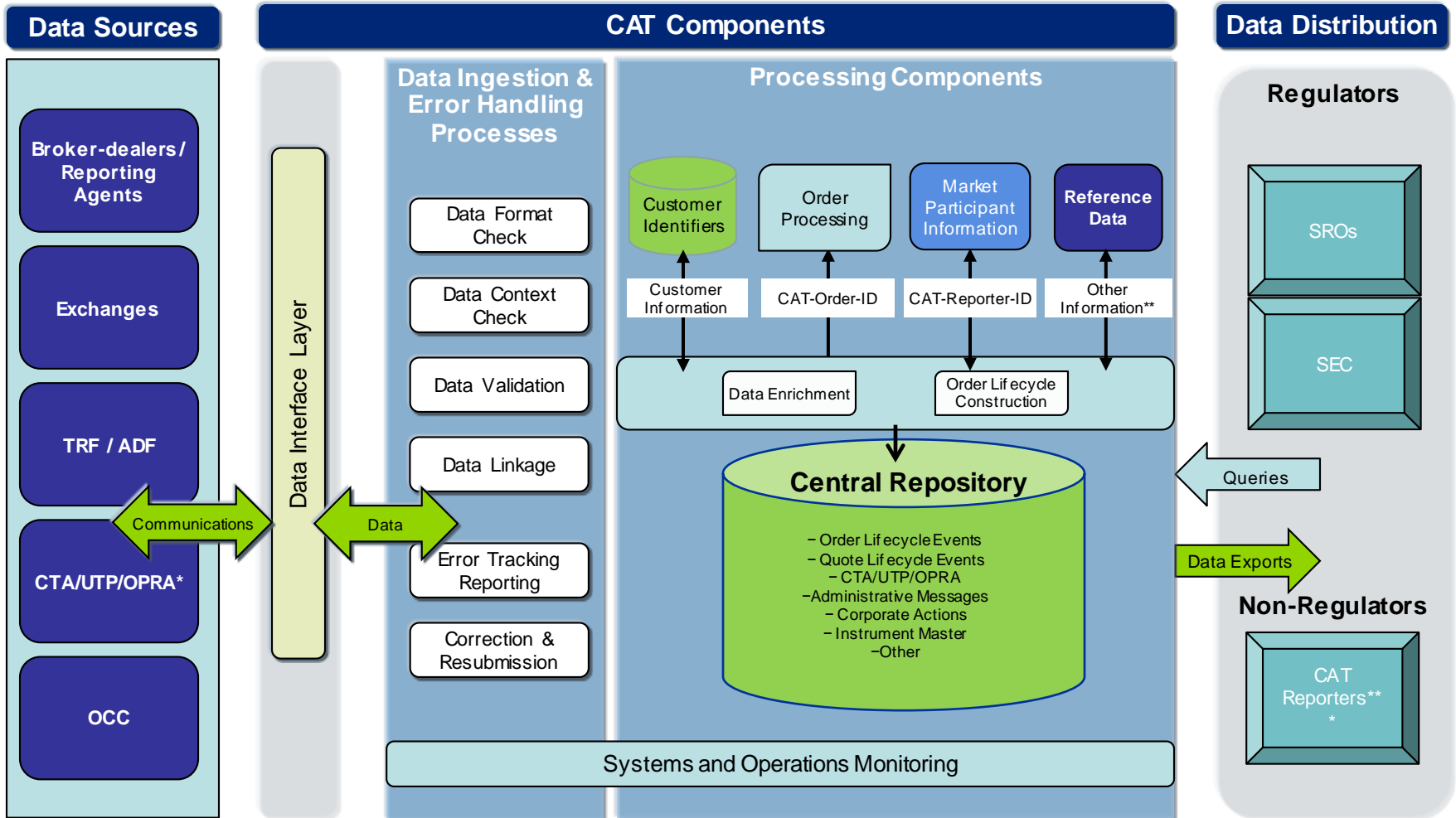
- Be the **world's largest data repository** of securities transactions
- Ingest approximately **58 billion** records of orders, executions, and quote life-cycles for equities and options **on a daily basis**
- Securely maintain data on more than **100,000,000** customer accounts and associated unique customer information
- Grow to an estimated **21 petabyte** footprint within five years of operation
- Maintain and support **thousands** of daily data and communication interfaces across the industry

..and as a result

- Will require approximately 2,000 firms and 19 SROs to report data (CAT Reporters)
- May impact changes to the Broker Dealer front, middle and back office operations
- May influence customer master information and associated processes (including client on-boarding, name/address changes, account relationship changes)
- Will emphasize the need for robust infrastructure for data retention and trade data repositories

Overview of the CAT Process

The following diagram provides a high level overview of how the data would move through the CAT environment and the necessary processes that will validate and enrich the data as it travels to the repository. The environment will be governed through a control framework driven by Data Governance, Security, Data Management, and audit requirements.



*CAT needs to support real-time reporting from SIPs

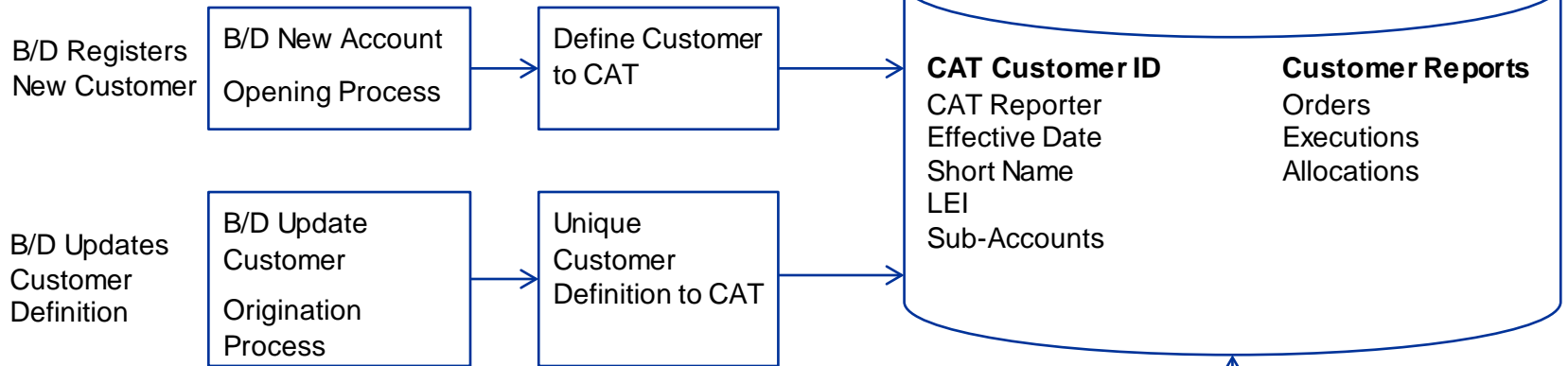
** For example, "other information" may include security definitions or corporate actions

***CAT Reporters will only receive reporting statistics as opposed to full data set extracts upon initial CAT implementation

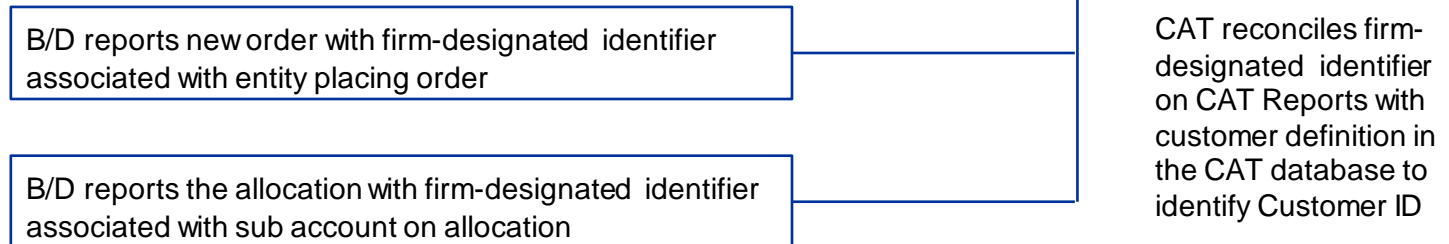
Study Assumptions: Customer-ID Approach

- CAT Customer Definition:** Broker-dealers have unique identifiers for customers (“firm-designated IDs”) in use today. In CAT, Broker-dealers would provide all relevant firm-designated identifiers (short-name, account numbers, LEIs, etc.) to CAT with associated customer information (e.g. name, address, tax ID, etc.). CAT would create and maintain a unique Customer ID within the CAT based on information provided by broker-dealers.
- CAT Order Event Reporting:** When reporting an order event to CAT, a broker dealer would use the appropriate firm-designated ID to identify the customer. The CAT Processor would link the firm-designated ID to the CAT Customer ID.

Customer Definition



CAT Order Reporting



Study Assumptions: CAT Reportable Events

CAT Reporters will need to capture all events needed to create a complete life cycle of an order, below are examples of CAT reportable events:

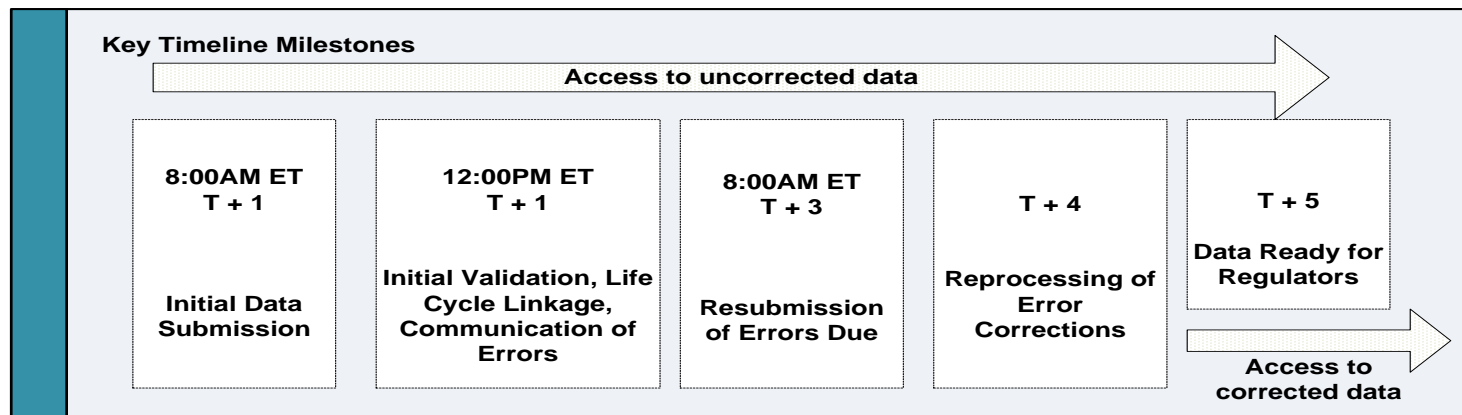
CAT reportable events:

- Original receipt or origination of an order
- Routing of order
- Receipt of routed order
- Order modification/cancellation
- Order execution
- Account allocations
- Post-execution modification/cancellation

As described in Rule 613(c)(7), these reportable events will include data elements such as Order-ID, date, time (millisecond format with second granularity for manual order entry), CAT-Reporter-ID (e.g., MPID, EPID), and other material terms of the order including, but not limited to, desk/dept ID, subaccount allocations, clearing or prime broker, etc.

Study Assumptions: Timeframe for Data Validation and Error Handling

- The SROs anticipate the following timeframes for the identification, communication and correction of errors from the time an order event is received by the processor:
 - 12:00 P.M. Eastern Time T+1 (transaction date + one day) – Initial data validation, lifecycle linkages and communication of errors to CAT Reporters
 - 8:00 A.M. Eastern Time T+3 (transaction date + three days) – Resubmission of corrected data
 - 8:00 A.M. Eastern Time T+5 (transaction date + five days) – Corrected data available to SRO regulatory staff and the SEC
- It is expected that at any point after data is received by the CAT and passes basic format validations, it will be available to SRO regulatory staff and the SEC
- The identification and correction of unlinked lifecycle events must be processed within established timeframes to ensure data is available to SROs and the SEC in a timely manner. The processing timelines start on the day the order event is received by the CAT for processing. Internal to the CAT, data validations will be thorough and efficient data accuracy checks. CAT Reporters will be notified of required error corrections.



Sunsetting of Existing Systems

Rule 613 requires the CAT NMS Plan to include “a plan to eliminate existing rules and systems (or components thereof) that will be rendered duplicative by the consolidated audit trail, including identification of such rules and systems (or components thereof)”.

For the purposes of this study, the reporting requirements that will be sunset provided the CAT demonstrably replaces the data currently provided, include:

Reporting Requirement
Order Audit Trail System (OATS)
Electronic Blue Sheets (EBS)
Large Trader Reporting
CBOE Rule 8.9
PHLX Rule 1022

Customer-ID

- The SROs are taking steps to formalize the “Customer Information Approach” outlined previously. As per this approach, each broker-dealer may be required to:
 - Assign a firm-designated identifier to each account which is unique across the firm
 - Provide detailed account information to the CAT, including but not limited to
 - Firm-designated identifier, effective date, account type
 - Provide detailed information on customer(s), associated with each firm-designated ID, including but not limited to
 - Name, address, date of birth, tax ID/social security number (SSN), individual’s role, Legal Entity Identifier (LEI), Large Trader ID (where applicable based on the customer)
 - Submit to the CAT daily updates for
 - Reactivated accounts
 - Newly established or revised firm-designated identifiers
 - Changes in the associated reportable customer information
 - Submit periodic complete refreshes

In Rule 613 commentary the Commission noted that including a unique customer identifier could enhance the efficiency of regulatory inquiries and aid regulators in reconstructing broad-based market events.¹

¹ Securities Exchange Act Release No. 67457 (July 18, 2012), 77 FR 45722, 45756 (August 1, 2012) (“Adopting Release”).

Study Assumptions: Inclusion of Over-the-Counter (OTC) Equities

The SROs have decided to include OTC equities in the first phase of CAT implementation.

- Benefits include:
 - Inclusion of OTC equities should present minimal additional burdens on CAT Reporters as many firms use the same order management and trade execution infrastructures for OTC equities and NMS stocks
 - Elimination of the need for CAT Reporters to filter OTC equities from systems that handle both OTC equities and NMS stocks
 - Sunsetting of existing regulatory systems (i.e., OATS and EBS) may be expedited by providing broader initial CAT coverage
 - Potential for a reduction in operating costs and resources to CAT Reporters associated with supporting multiple regulatory systems