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PRACTICAL GUIDE FOR COMPLIANCE OFFICERS

Swap Trade Reconstruction in 4 Phases

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Swap Trade Reconstruction in 4 Phases

EXECUTIVE OVERVIEW

The Dodd-Frank Wall Street Reform and Consumer Protection Act, or "Dodd-Frank Act," represents the most comprehensive financial regulatory reform measures taken since the Great Depression. The reform created significant regulatory challenges for the financial industry with regulatory agencies issuing thousands of new rules impacting front, middle and back office business processes.

On February 23, 2012, the U.S. Commodity Futures Trading Commission (CFTC) adopted final rules regarding the internal business conduct of swap entities. The approved rules, detailed in CFTC 17 CFR Subpart F impose broad sweeping record retention and production requirements for Swap Dealers (SDs) and Major Swap Participants (MSPs).

Under these new rules, one of the most significant challenges for Compliance Officers is the work set surrounding the CFTC's trade reconstruction requirement. Trade reconstruction imposes a new standard on swap entities, requiring impacted firms to produce a time-sequenced complete reconstruction of a swap trade within 72 hours of the request by the CFTC.

In accordance with the trade reconstruction requirement, firms must be able to retain and produce the following categories of information and records:

- **Pre-trade data**, including communication records such as:
  - Oral communications
  - E-mail
  - Instant messages
  - Social Media platforms
  - Other pertinent business documents
- **Trade data**
- **Post-trade execution data**

While regulated firms have been previously exposed to the Securities and Exchange Commission's (SEC) record retention standard of Write Once, Read Many (WORM) storage media, the CFTC's trade reconstruction requirements have dramatically raised the bar for searchability of data throughout the trade lifecycle—normalized to Coordinated Universal Time (UTC)—including the ability to identify data using Legal Entity Identifiers (LEI) and Unique Swap Identifiers (USI).

Considering the complex lifecycle of a swap and totality of the data requirements, this new standard imposed by the CFTC creates one of the most daunting challenges ever faced by Compliance Officers. It's on this backdrop that Bloomberg hosted a Dodd-Frank Trade Reconstruction Expert Panel in June 2014 with representatives from more than 10 large swap trading firms. During the panel, an informal survey revealed that only 7% of firms felt confident that they are able to meet the CFTC trade reconstruction requirements today[1].

This white paper offers Compliance Officers practical guidance on meeting the trade reconstruction challenge based on emerging industry best practices. The paper initially analyzes the challenges, and then offers a phased project plan to help firms structure the process in a straightforward manner. The four phases include:

1. Identifying relevant data and systems;
2. Evaluating data and system compliance, ensuring:
   a. Data is stored on WORM storage media
   b. Searchable by LEI, USI and UTC; and
3. Data exportation; and
4. Trade reconstruction simulation

While the new CFTC trade reconstruction requirements have yet to be tested in practice by the regulators, Compliance Officers executing a project plan with a defensible data-by-data and system-by-system approach will drive their firms towards successful trade reconstruction and improved risk management.

KEY CHALLENGES OF TRADE RECONSTRUCTION

It is important to understand the main challenges introduced by the CFTC requirements before Compliance Officers can begin implementing a defensible plan and process for complete and timely trade reconstruction. The main challenges most firms are struggling with include:

- Searchability based on transaction and counterparty
- Timestamp in UTC
- Storage on WORM media
- Unstructured pre-trade documents
- Structured trade and post-trade data
- Production within 72 hours
- Unstructured communications data
  - Oral communications
  - Email and instant message
  - External third party systems
  - Social media

1 http://www.bloomberg.com/now/2014-06-11/cftc-trade-reconstruction-requirements-drive-nearly-9-10-compliance-executives-seek-outside-help/

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SEARCHABILITY BASED ON TRANSACTION AND COUNTERPARTY

The most challenging aspect of trade reconstruction often involves identifying specific unstructured and structured records that are relevant to a particular trade reconstruction. In order to allow for counterparty and transaction searchability, many firms have come to the conclusion that the data will need to be tagged with a counterparty identifier, such as LEI, and ideally a transaction identifier, such as USI. Each of these tags presents a unique set of challenges when attempting to tag swap trade records with this information.

Legal Entity Identifiers (LEI)

LEI is a unique ID associated with a single legal entity. Firms must create unique data fields in existing data schemas to add the LEI data to required records. Currently, LEIs contain the following attributes:

- 20 character unique ID
- Official name of the legal entity
- Address of the headquarters of the legal entity
- Address of legal formation
- Date of the first LEI assignment
- Date of last update of the LEI

The Global Markets Entity Utility (GMEI), operated by DTCC is currently creating and maintaining LEIs. Matching the LEIs to firm data presents unique challenges such as:

- Invalid counterparty names and legal entity information
- Poor data quality from incoming sources
- Duplicate records across systems
- Inaccurate or incomplete legal hierarchy information
- Lack of cross referencing between counterparties
- Difficulty sharing counterparty data between systems

Unique Swap Identifiers (USI)

USI is a unique identifier assigned to all swaps and identifies the transaction, by the swap and counterparties, uniquely through its duration. The identifier is composed of 32 alphanumeric characters and a permissible set of special characters. The first characters of the USI create a unique code that identifies the registered entity creating the USI. The remaining characters consist of a code created by the registered entity that must be unique with respect to all other USIs created by that registered entity. USIs are created by Swap Execution Facilities (SEF), Designated Contract Markets (DCM), SDs, MSPs and Swap Data Repositories (SDR) depending on the type of swap, where it is executed and who is the reporting counterparty.

The ability to associate unstructured data to a specific USI is a particular challenge of the CFTC trade reconstruction requirements. In a perfect world, all structured and unstructured data would be assigned one or more USIs to facilitate search and management of the records based on the associate swap trade. In reality, the USI does not exist at the time the pre-trade communications occur, which makes associating them with the USI extremely difficult.

Additional Challenges of LEIs and USIs

Since the GMEI is responsible for creating LEIs, firms must be able to match their customer information with the GMEI's customer information. Since the GMEI's database is not static, firms must have the ability to consistently update and amend LEIs. In other words, if a legal entity changes names or owners, the LEI will change. When this occurs, swap dealers will need to ensure their internal records have been updated to accurately reflect the LEI.

Conversely, firms are responsible for creating and maintaining their own respective USI databases. As with the creation and maintenance of any trade database or date warehouse, this will present a significantly greater work set for organizations versus being able to attaching an identifier provided by a third party. Firms must implement a strategy for USI assignment to ensure each identifier is unique and meets the regulatory requirements described above. An additional challenge is that the USI is often generated by a third party SEF, which means that the firm will need to receive the USI and trade data for management in their system of record.

TIMESTAMP IN UTC

A majority of the records required for trade reconstruction must be tagged with a timestamp in UTC to the nearest minute. UTC is an international time standard based on International Atomic Time and ensures that reconstructed trade data will be in a consistent time sequence regardless of source. This enables regulators to recreate an accurate timeline of global transactions with relative ease. The challenge is that support for UTC will vary widely across all of the different data sources, both structured and unstructured, involved in trade reconstruction. Often times third party systems will require extensive changes and enhancements from vendors in order to support the new requirements. The data will need to be stored in UTC, searchable in UTC and exported in UTC as well.

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DATA REQUIREMENTS

COMMUNICATION

STRUCTURED DATA

- Trade execution
- Post trade execution
- Ledgers
- Confirm/acknowledgement
- Margin & collateral records
- Position records

UNSTRUCTURED DATA

- Relationship
- Documentation
- Business records
- Complaints
- Sales & marketing materials

* Legal Entity Identifier (LEI) is a unique ID associated with a single corporate entity. Unique Swap Identifier (USI) is a unique identifier assigned to all swaps and identifies the transaction, by the swap and counterparties, uniquely through its duration.

Swap Trade Reconstruction in 4 Phases

WORM MEDIA

Swap trade records and related data may be stored on either "micrographic media" or "electronic storage media" for the required retention period. Micrographic media suggests microfilm, microfiche or similar medium for records that are not stored electronically. For electronic records, the storage media must preserve the native file format of the record. WORM media requirements are not a new concept for Compliance Officers, however, many firms have only implemented WORM media for a subset of the their data sources. Firms must review unstructured data, including communication data, and structured data related to trade reconstruction to ensure all systems are writing the required datasets to WORM media. For example, business records such as marketing materials, business plans and job descriptions are also required to be stored in an immutable format. Firms will need to identify at what point in the lifecycle of a swap trade such records become relevant to trade reconstruction and when said version should be written to WORM media.

UNSTRUCTURED COMMUNICATIONS DATA

Communications data for traders as well as Associated Persons (APs) needs to be retained and included in a trade reconstruction. An AP is defined under CFTC Rule 1.3(a) to include any partner, officer, employee or agent (or any natural person occupying a similar status or performing similar functions) in any capacity that involves the solicitation or acceptance of swaps (other than in a clerical capacity), or who supervises persons so engaged. Requirements for APs also apply to any person who directly supervises the solicitation of futures or swaps orders for counterparties. Communications span many different mediums and systems including oral communications, e-mail, instant messaging, external networks and social media.

Oral communications and voice requirements often present one of the largest challenges. Firms are challenged to accurately record turret trading stations, including open lines and squawk boxes. In addition, firms need to solve the issue of searchability to ensure relevant voice records are produced for trade reconstruction. The fastest and most reliable path to providing searchability is capturing the correct data at the time of recording. Most voice recording systems capture basic data such as the call initiator, call recipient and the start and end time of a call. Compliance Officers need to investigate their current recording solutions to determine if additional data can be captured. Leveraging data like trader names, trader IDs and the line names can quickly reduce the volume of voice records relevant to a particular trade reconstruction.

Although many firms are prohibiting cell phones for swap business, it is unlikely that this prohibition will stand the long-term test of regulators looking for voice records. Firms must entertain the idea of mobile recording solutions to ensure that all records are captured. There are a variety of emerging approaches for capturing mobile phone calls including SIM-based recording and conference line recording. Basic data capturing is still required to make mobile recordings searchable regardless of the recording method used.

Email and Instant Messages ("IM") have long been required to be maintained and produced by other rules and regulations such as SEC Rules 17a-3, 17a-4 and FINRA rule 3110. Compliance Officers who have responded to email and IM requests have first-hand knowledge that the unstructured format of this data makes its production an arduous and time consuming task. Trade reconstruction further exacerbates this challenge because it requires email and IMs to be searchable by transaction and counterparty within the 72-hour time frame. Legacy email archiving solutions were not designed to associate email message recipients to trading counterparties or to meet the more stringent search performance requirements. Compliance Officers and IT professionals now face the difficult challenge of developing complex processes in order to bridge this gap.

External Message and Chat systems such as Bloomberg and Reuters require special consideration. These systems are prevalent throughout the lifecycle of a swap trade (for example, up to 250 million messages and chats are exchanged daily via the Bloomberg Professional® service). Front office staff will typically communicate prices and other deal terms that culminate in trade execution via these external messaging and chat services. Some chat functionality can also be directly linked into trade idea generation tools and execution platforms with data elements that can be used for trade reconstruction. Therefore, these systems will possess some of the most crucial data related to complete trade reconstruction, particularly in the pre-trade workflow.

Social Media presents concerns similar to those described about email. However, the nature of social media communication makes the identification of counterparties involved much more difficult. As a result, some firms have considered prohibiting the use of social media for anything related to their swap business. Unfortunately, a prohibition policy may come under regulatory scrutiny depending on the usage of social media throughout the firm. Alternatively, a social media capture solution capable of routing messages to the enterprise archive should be implemented. Furthermore, members of the Compliance Department should work with

Swap Trade Reconstruction in 4 Phases

DATA REQUIRED FOR A RECONSTRUCTED TRADE

EXECUTION TRADE INFORMATION
- Trade ticket
- The unique swap identifier
- UTC
- Counterparty
- Unique counterparty identifier
- Date and title of the agreement
- Product name of each swap
- Unique product identifier
- Execution price
- Fees or commissions

NON-TRANSACTION RECORDS
- Corporate governance records
- Organizational charts
- Biographies
- Job description
- Internal and external audit reports
- Risk management reports
- Compliance reports
- Business plans
- Financial records reflecting assets and liabilities

CONFIRMATIONS/ ACKNOWLEDGEMENTS
- Draft Acknowledgements
- Acknowledgements
- Notification that a Swap transaction has not been accepted

COMPLAINTS
- Complaint notification
- Complaint disposition

POST-EXECUTION TRADE INFORMATION
- Confirmation
- Termination
- Novation
- Amendment
- Assignment
- Netting
- Compression
- Reconciliation
- Portfolio reconciliation
- Portfolio compression

MARKETING AND SALES MATERIAL
- Presentations
- Advertisements
- Literature
- Communications
- A record documenting that the SD has complied

MARGIN AND COLLATERAL RECORDS
- Initial margin to be posted by the SD
- Variation of margin payable to or receivable
- Value of collateral
- Transfers of collateral
- Charges against and credits to counterparty's account swap position records

SWAP TRADING RELATIONSHIP DOCUMENTATION
- Contractual agreement terms
- Credit support arrangements/terms and conditions
- Valuation process/procedures/documentation
- Disclosure of depository institution status
- Acceptance of swap transaction by clearing organization
- Audit of swap trading relationship documentation

LEDGERS
- Payments and interest
- Moneys borrowed loaned
- Value of each outstanding swap
- Current and potential future exposure for each counterparty
- Initial margin to be posted by the SD
- Variation margin payable to or receivable from each counterparty
- Value of all collateral

PRE-EXECUTION TRADE INFORMATION – ORAL AND WRITTEN COMMUNICATIONS
- Quotes
- Solicitations
- Bids
- Offers
- Instructions
- Trading
- Prices
- Telephone
- Voicemail
- Facsimile
- Instant messaging
- Chat rooms
- Electronic mail
- Mobile device
- Other digital or electronic media

SWAP POSITION RECORDS

business and administrative support teams to ensure that any social media usage is properly supervised and archived.

Pre-Trade and Other Unstructured Data

Trade reconstruction will require firms to implement a more disciplined manner in creating and maintaining pre-trade execution and other unstructured data such as client documentation, ensuring searchability and retention. Client documentation must be in writing and include all terms governing the trading relationship between the SD and counterparty. This documentation must be executed prior to entering into a swap transaction with any counterparty. Client documentation must include: contractual terms, credit arrangements, valuation procedures, disclosure of depository institution status, acceptance of swap transaction by derivatives clearing organization and a record of the result of each audit. Many firms are already required to maintain most forms of client documentation, but significant challenges exist with respect to incorporating UTC time stamping, correlation to LEI and ensuring the data is written to WORM media.

Business documentation is another form of pre-trade documentation that presents similar challenges to client documentation. But unlike client documentation, business documentation is created and maintained by a larger universe of employees that generate files and documents daily. A wide array of business-critical records may exist among Legal, Compliance, Front Office, Middle Office, etc., and these records are generally kept in file shares, Microsoft® SharePoint®, and on employees PCs. Overcoming challenges related to business documentation present a particularly difficult situation because firms do not have good control over files and documents generated by employees today. Employees should be trained and conditioned to store documents in accordance with the corporate records management policy. Such documentation includes corporate governance records, organizational charts, biographies, job descriptions, internal and external audit reports, risk management reports, compliance reports, business and strategic plans, financial records, complaints and sales and marketing material.

TRADE AND POST-TRADE DATA

The maintenance and retrieval of trade execution and post-trade data is often a more manageable requirement because there are existing processes in place to record and retain this dataset. SDs are required to create and keep daily records of all swaps executed, including all documents where transaction information is originally recorded. To accurately reconstruct a swap trade, these records must be maintained on WORM media and searchable by transaction and counterparty. Trade execution and post-trade execution records include:

- Reliable timing data for the initiation of the trade that would permit complete and accurate trade reconstruction; and
- A record of the date and time, to the nearest minute, using UTC, by timestamp or other timing device, for each quotation provided to, or received from, the counterparty prior to execution.
- All terms of each swap, including payment or settlement instructions, initial and variation margin requirements, option premiums, payment dates, and any other cash flows;
- The trade ticket for each swap;
- The unique swap identifier (USI);
- A record of the date and time of execution of each swap, to the nearest minute, (UTC);
- The name of the counterparty, including its LEI;
- The date and title of the agreement to which each swap is subject, including swap trading relationship documentation and credit support arrangements;
- The production name of each swap;
- The price; and
- Fees or commissions and other expenses.

Ledger, margin and collateral records are other forms of structured data that are currently maintained and audited by firms. The challenge for this data lies in matching these records sequentially with trading data during trade reconstruction. Similar challenges arise with portfolio compression and reconciliation data. The breadth of this data may be quite large and prove difficult to map to the original trade data.

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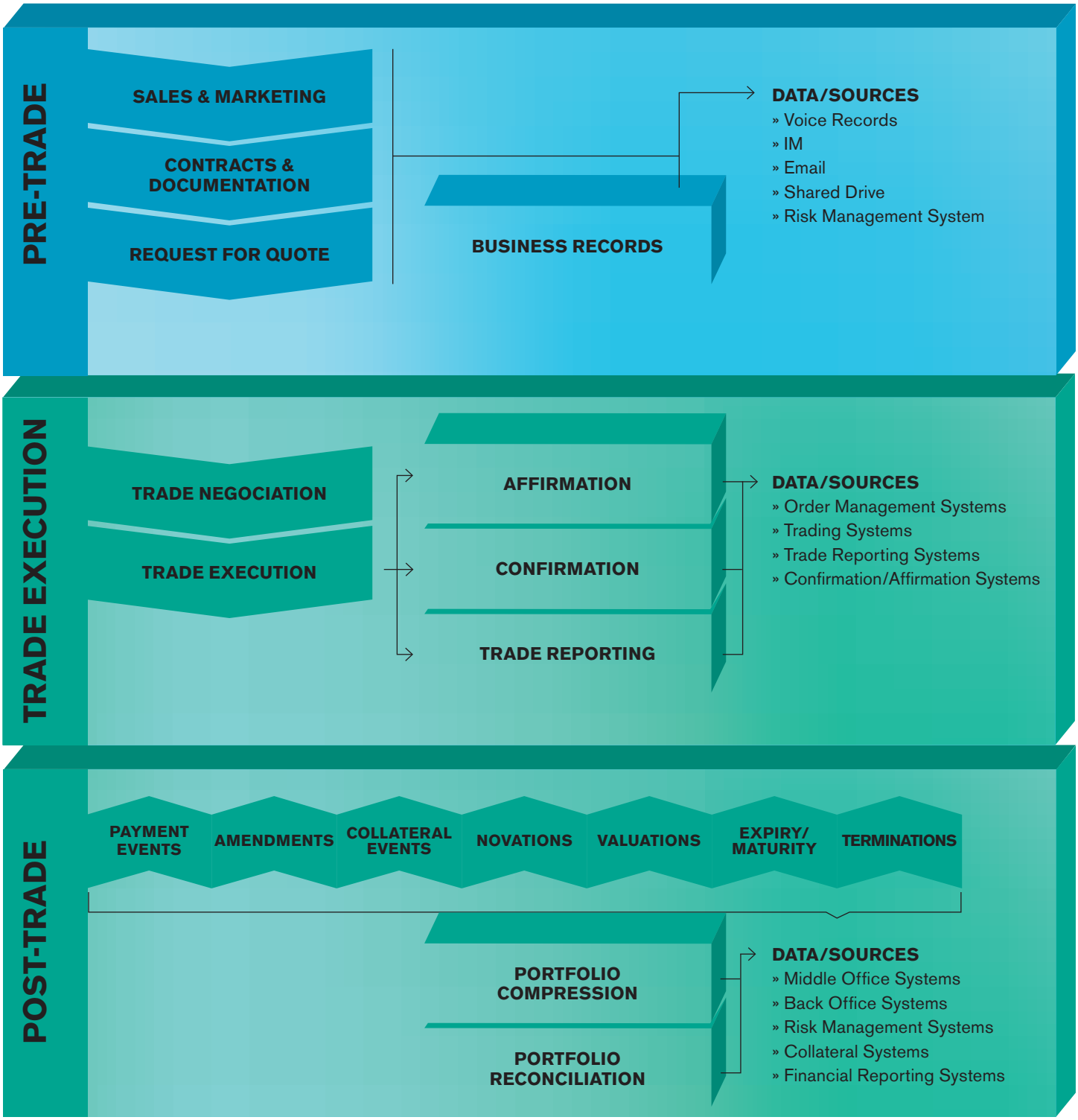
LIFECYCLE OF A SWAP



Swap Trade Reconstruction in 4 Phases

PRODUCTION OF DATA WITHIN 72 HOURS

Production of the data is the last step in trade reconstruction. Regardless of the number of different repositories that may contain different elements of a trade, all systems must be able to export the data for final collation or reconstruction of the dataset—and this must be accomplished within 72 hours of the trade reconstruction request. Ideally, all the required data would be available from a single repository. While it's safe to say a single repository is still an aspirational goal, most organizations will need to identify where the relevant data elements live and consolidate data repositories where possible. Organizations should identify data contained in systems maintained by third party vendors, determining if their current service levels support successful identification and exportation of the required datasets within the specified time (less than one day). Some firms develop an operational 'playbook' for trade reconstruction, to assist with readiness among the system owners impacted by a trade reconstruction request.

Until a global, holistic solution can be fully implemented, firms should consider ring-fencing employees and related systems subject to the rule. The process of creating and maintaining a list of employees and systems affected by these regulations allows firms to keep them separate from other people or data. This process alone will help eliminate a significant amount of noise when initially conducting trade reconstruction.

THE FOUR PHASED APPROACH TO CFTC SWAP TRADE RECONSTRUCTION

It's only a matter of time before regulators begin requesting trade reconstruction in conjunction with regulatory exams. However, market events could force the hand of regulators and initiate a trade reconstruction request for reasons not so flattering to all involved. Or, a single customer complaint could start the clock for an international swap trade affecting global operations to facilitate data collection. Considering the significant challenges that trade reconstructions create, firms must take a measured approach to address the problem. The end goal is a complete and repeatable trade reconstruction process. No firm should expect a perfect initial response, therefore, it is imperative to develop a defensible trade reconstruction process. The following four phases are a recommended guideline for developing such a process.

Phase I – Data & Systems Identification

The first phase of trade reconstruction preparation is to identify data and systems needed to reconstruct a trade. Furthermore, firms should identify data and system owners to educate and involve them in the process of trade reconstruction. Data and system owners must work hand in hand for the trade reconstruction process to be successful.

A "contact list" including data owners and system owners should be maintained, ensuring appropriate and timely delivery of requested information when required. The fewer systems and individuals involved in responding to a request, the easier the request will be to manage.

Questions that should be considered, include:

- What are all the different data sources involved in reconstructing trades?
- Who owns the data source and who is contacted to assist during a trade reconstruction?
- What format is the data stored in?
- Can systems be consolidated to facilitate a quicker trade reconstruction?

Phase II – Searchability and WORM Media

The second phase focuses on the searchability of the data based on LEI, USI and UTC and ensuring the unstructured and structured records are written to WORM media. Project managers need to determine a firm-wide solution that allows for identification and tagging of LEI, USI and UTC where appropriate. Project managers must work together with the data and system owners to integrate new technology, processes or procedures on a system by system basis. Finally, WORM media retention should be verified and tested for immutability and accidental disposal.

Questions that should be considered, include:

- Can the data be readily searched as part of a trade reconstruction request?
- Is the data stamped, searchable, and exported in UTC?
- Is it searchable by counterparty and/or trade details?
- How complex will it be to add LEIs and USIs to data in existing repositories?
- What data must be moved and consolidated in a centralized repository to support search-ability and correlation with LEI/USI?
- Are the systems and data involved writing to WORM media?
- Have third party record-keeping vendors provided the letters of 'attestation' required by the CFTC?

Phase III – Packaging and Delivery for Exportation

The third phase of the project is delivering a properly sequenced, easily formatted trade reconstruction. Packaging and sequencing is commonly overlooked. It does no good for a firm to perform the previous two phases without identifying the method of delivery for the dataset.

The questions that must be considered, include:

- What is the mechanism for review, consolidation, and packaging of the reconstructed trade?
- How will you provide the data securely to a requesting authority?

Swap Trade Reconstruction in 4 Phases

TRADE RECONSTRUCTION PROJECT PLAN

PHASE 1

IDENTIFY ALL SYSTEMS AND REQUIRED DATA

- COMMUNICATION
- STRUCTURED DATA
- UNSTRUCTURED DATA

PHASE 2

SEARCHABILITY

VOICE
- Identify voice systems and individual lines to be recorded
- Record lines/systems
- Build maintenance in system for changes to lines
- Link LEI to required data points
- Implement periodic review

LEI STREAM
- Determine vendor/database to retrieve LEI
- Link LEI to required systems and data points
- Build maintenance in system for changes to links
- Implement periodic review

USI STREAM
- Create/enhance database to maintain USI
- Link USI to required systems and data points
- Build maintenance in system for data input
- Implement periodic review

UTC STREAM
- Determine UTC origin
- Link UTC to required systems and data points
- Build maintenance in system for changes to outgoing links
- Implement periodic review

WORM STREAM
- Determine WORM method
- Implement worm method in each identified system
- Implement periodic review

PHASE 3

DATA PACKAGING AND DELIVERY

- DATA OWNER
- SYSTEM OWNER
- LEI INCLUDED

PHASE 4

TRADE RECONSTRUCTION SIMULATION

- SIMULATE PHASE 1–3
- IDENTIFY GAPS
- BUILD REMEDIATION PLAN

Swap Trade Reconstruction in 4 Phases

- Does technology exist to provide a third party access to the data once it has been collated?

Phase IV – Trade Reconstruction Simulation
The final step involves combining the previous three phases and running a trade reconstruction simulation. See Appendix for a Sample Trade Reconstruction Simulation Worksheet. The simulation will be helpful because it will verify the work each firm has completed in the previous three phases. Initial simulations will more than likely identify gaps within the process. After Compliance Officers create processes and implement technology solutions to bridge the gaps, simulations need to be repeated. After the process is mastered, it is in the best interest of Compliance Officers to regularly schedule trade reconstruction simulations to ensure internal continuity and awareness. Finally, the act of conducting self-initiated reconstruction exercises demonstrates the firm's commitment to compliance to regulators.

The ultimate question that must be front and center is:
- Can the firm reliably and accurately reconstruct a complete trade within 72 hours?
- What is the remediation plan for the identified gaps?

ON-GOING CONSIDERATIONS

Awareness and training regarding the rules and regulatory requirements imposed upon your firm is imperative. Each firm will more than likely encounter impacted individuals that are unaware of any rules or regulations governing their data. Mandatory training, the assignment of responsibility and ownership of the risk must extend beyond the offices Chief Compliance Officers. Firm management and supervisory staff must be well trained and understand the breadth and depth of the requirements as well as the solutions(s) that the firm has employed. As with trade reconstruction simulations, compliance training should be a regular and ongoing requirement.

Once a firm's trade reconstruction process is appropriately documented, it will remove any internal ambiguity regarding policies, procedures and ongoing responsibilities. Additionally, it will demonstrate and evidence an organization's commitment to strong and sound governance to its regulator. It is imperative that firms' establish a good rapport with their regulator, sharing such information such system improvements/enhancements and the associated timeframes for completion. This one step will build credibility and understanding with your regulator.

THE PATH TO TRADE RECONSTRUCTION

In conclusion, Trade Reconstruction is a daunting project for any firm to undertake. Identifying an early understanding of pre-trade, trade and post-trade data and all of the unique challenges present within each data source is integral to the implementation of a viable a solution. Firms will also need to consider service level agreements with vendors and other third parties to ensure the agreements require a 72-hour response time. Firms will then need to consider LEI's, USI's UTC, WORM and searchability and production of the reconstructed trade. Finally, a well thought out approach along with multiple trade reconstruction simulations and conversations with regulators can lead to a successful implementation.

As regulations continue to evolve, compliance organizations will face challenges in terms of managing large volumes of data and the ever-increasing costs associated with retrieving, analyzing and producing that data in a consistent and cohesive manner. While compliance organizations have had good success leveraging several technologies to improve efficiency and meet other discrete regulatory requirements, trade reconstruction represents a whole new level of distinct challenges that will force compliance leaders to take action to mitigate the risks associated with the identification, organization and production of information streaming from the multiple sources of structured and unstructured data sets. Organizations will need to consider multiple factors in determining the appropriate course(s) of action to create the necessary infrastructure required to meet the distinct regulatory challenges associated with trade reconstruction, including internal resource availability and constraints, organizational readiness and any potential economies of scale that may or may not exist. This will force organizations to consider whether or not they will "go it alone" and build the required functionality internally, utilize an out-sourced solution or create a "hybrid" approach to meet the onerous regulatory obligations discussed throughout this paper.

Appendix

DATA TYPES FOR TRADE RECONSTRUCTION

STRUCTURED DATA

» Execution trade information
- Trade ticket
- Unique swap identifier (USI)
- UTC time stamp
- Counterparty identifier (LEI)
- Date and title of the agreement
- Product name of each swap
- Unique product identifier (UPI)
- Execution price
- Fees or commissions

» Post-execution trade information
- Confirmation
- Termination
- Novation
- Amendment
- Assignment
- Netting
- Compression
- Reconciliation
- Portfolio reconciliation
- Portfolio compression

» Ledgers
- Payments and interest
- Moneys borrowed/loaned
- Value of each outstanding swap
- Current and potential future exposure for each counterparty
- Initial margin to be posted by the SD
- Variation margin payable to or receivable from each counterparty
- Value of all collateral

» Swap confirmations/acknowledgments
- Confirmations
- Draft acknowledgments
- Acknowledgments
- Notification that a swap transaction has not been confirmed

» Margins and collateral records
- Initial margin to be posted by the sd
- Variation of margin payable to or receivable
- Calculation of the value of collateral
- Transfers of collateral
- Charges against and credits to each counterparty's account

» Swap position records

UNSTRUCTURED DATA

» Pre-execution trade information
Oral and written communications provided or received concerning: quotes, solicitations, bids, offers, instructions, trading and prices whether communicated by:
- Telephone
- Voice mail
- Facsimile
- Instant messaging
- Electronic mail
- Chat rooms
- Mobile device
- Other digital or electronic media

» Swap trading relationship documentation
- Contractual agreement terms
- Credit support arrangements/terms & conditions
- Valuation process/procedures/documentation
- Disclosure of depository institution status
- Acceptance of swap clearing organization
- Audit of swap trading relationship documentation

» Non-transaction business records
- Corporate governance records
- Organizational charts
- Biographies
- Job descriptions
- Internal and external audit reports
- Risk management reports
- Compliance reports
- Consultant reports
- Business plans
- Financial records reflecting all assets and liabilities

» Complaint records
- Complaint
- Complaint notification
- Complaint disposition

» Marketing and sales materials
- Presentations
- Advertisements
- Literature
- Communications
- Record Documenting that the SD Has Complied

Appendix

SAMPLE TRADE RECONSTRUCTION WORKSHEET

RECORD REQUIREMENT	DATA OWNER	SYSTEM OWNER	LEI INCLUDED	USI INCLUDED	UTC	WORM	REQUEST RECEIVED	RESPONSE RECEIVED	REQUIRED ELEMENTS INCLUDED	FORMAT RECEIVED	COMMENTS
Swap Trading Relationship Documentation											
Contractual Agreement Terms											
Credit Support Arrangements/Terms and Conditions											
Valuation Process/Procedures/Documentation											
Disclosure of Depository Institution Status											
Acceptance of Swap Transaction by Clearing Organization											
Audit Of Swap Trading Relationship Documentation											
Oral and Written Communications											
Telephone											
Voicemail											
Facsimile											
Instant Messaging											
Chat Rooms											
Electronic Mail											
Mobile Device											
Other Digital or Electronic Media											
Execution Trade Information											
Trade ticket											
The unique swap identifier											
UTC											
Counterparty											
Unique counterparty identifier											
Date and title of the agreement											
Product name of each swap											
Unique product identifier											
Execution price											
Fees or commissions											
Post-Execution Trade Information											
Confirmation											
Termination											
Novation											
Amendment											
Assignment											
Netting											
Compression											
Reconciliation											
Portfolio reconciliation											
Portfolio compression											
Ledgers											
Payments and interest											
Moneys borrowed loaned											
Value of each outstanding swap											
Current and potential future exposure											
Initial margin to be posted by the SD											
Variation margin payable to or receivable											
Value of all collateral											
Swap Confirmations/Acknowledgements											
Confirmations											

LEARN MORE

To learn more about trade reconstruction solutions from Bloomberg Vault, please visit bloomberg.com/bvault.

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