

White Paper

NICE · ACTIMIZE

A man in a blue suit is pointing at a computer monitor displaying data charts. Another man is partially visible in the foreground, looking at the screen. The background shows multiple monitors in a trading room.

The Complete Guide to Trade Reconstruction Compliance

v1.2 – Feb. 2018

Table of Contents

1	Why Trade Reconstruction, Why Now?	3
2	How Did We Get Here?.....	3
2.1	United States.....	4
2.2	EMEA.....	6
3	The Role of Trade Reconstruction in Enforcement.....	11
3.1	Insider Trading.....	11
3.2	Spoofing, Layering, and Front Running.....	13
4	Technology and How It Can Help	18
4.1	Trade Lifecycle Data (including pre and post execution)	18
4.2	The Process	18

1 Why Trade Reconstruction, Why Now?

Throughout 2017, the Commodity Futures Trading Commission (CFTC) and the National Futures Association (NFA), communicated, in no uncertain terms, that firms had sufficient time to fully implement the CFTC's swap record keeping regulations. NFA expects that swap dealers will maintain full, complete and systematic records of all swap activities as required by the CFTC's regulations. This includes a complete and accurate trade reconstruction under Regulation 23.202.

Almost five years after swap dealers first became provisionally registered, firms still struggle with this requirement. Examinations over the past 18 months found several swap dealers failed to maintain adequate records necessary to conduct a comprehensive and accurate trade reconstruction for each swap. In particular, NFA has uncovered deficiencies relating to the ability to recreate pre-trade communications. With the introduction of MiFID II in the European Union (EU), and ongoing NFA examinations in the United States (US), trade reconstruction is a challenge that firms must overcome immediately.

2 How Did We Get Here?

Reconstructing the events surrounding a trade is a challenge many firms are familiar with. Thousands of man hours have been spent locating, compiling, reviewing, and reporting on trade data and associated communications, on a segment of the billions of trades that occur every day. As regulations evolve through the various geographic regions of North America, EMEA, and APAC, trade reconstruction becomes an increasingly vital piece of regulatory compliance. As a result, efficient and complete trade reconstruction processes are a necessity for business operations.

To know where the regulatory environment is and where it is going, let's start with how we got here. The process of trade reconstruction had humble beginnings, as the human element and lack of technology limited the amount and type of data that could be returned. As advancements in technology have occurred, the demand by regulators for a clearer picture of all the elements of a trade has grown. Now the environment has reached the point where regulators are looking for a complete trade reconstruction including all communication channels and data from each part of the trade process. This requires effective data management of the disparate data and communications associated with a trade.

In spite of the continued challenges involved in the trade reconstruction process, the regulations requiring trade reconstructions continue to expand to worldwide significance. The largest markets in the world rely on trade reconstruction either directly, or implicitly, as a powerful regulatory tool. To that end, it is imperative that firms not only understand what a complete trade reconstruction consists of, but also how regulators in competent jurisdictions use them in enforcement actions and to preserve market integrity.

2.1 United States

Firms complying with Dodd-Frank are held to strict record keeping requirements. In the U.S., the Commodity Futures Trading Commission's trade reconstruction rules came into force in 2012. Record-keeping mandates detailed in 17 CFR 23.202 and 17 CFR 23.203 require firms to produce a complete time-sequenced record of a swap trade within 72 hours of a regulatory request.¹ The regulation may only be 6 years old, but the use of record keeping as an enforcement tool is hardly a new phenomenon. The origin of trade reconstructions dates back to the 1970's and 80's with the use of time stamps.

In a release issued on December 18, 1975, the CFTC announced its intention to require all contract markets that allowed dual trading "to establish a system for time sequencing trades in order to detect abuses more readily."² Throughout the late 70's and 80's, futures contracts were either traded through a competitive system called open-outcry, or in designated areas on the floor of the exchanges called 'trading pits.' Each system consisted of floor participants verbally bidding and offering to each other at centralized locations. Tickets were prepared and time stamped at various points throughout the process (i.e. receipt of an order from customer, upon receipt of an order ticket by the trading floor, or upon execution of the order).

Regulators would routinely pick up tickets from the trading floor and inspect them for a time stamp. If an unstamped ticket was discovered, the regulator would often compile the corresponding tickets from the trade, attempt to create a timeline of events, and reconcile the information. Any discrepancies were fined, sometimes instantly. The CFTC found that detecting trading abuses through the records kept by contract markets required a laborious cross-referencing of data. Gaps in the audit trail were frequent since time and sales data did not record the size of transactions. Consequently, in markets with rapidly fluctuating prices, it was often difficult to determine execution times for orders executed at similar or identical prices. While time and sales data permitted some trade reconstructions, the absence of computerized data retrieval systems made market surveillance efforts inefficient and prone to error.

2.1.1 Commodity Futures Trading Commission (CFTC)

Over 40 years later, there is a far larger and significantly more sophisticated trading environment. World market capitalization stands at \$65.6 trillion USD, compared to \$28.1 trillion USD only 14 years ago. Methods of communicating trade information, from turrets to electronic messages, enable people around the world to execute instantaneous transactions. In some cases human interaction is no longer required, as with the use of sophisticated algorithmic and high-frequency trading programs. The world economy has certainly evolved from shouting instructions and the use of hand signals that were common in the 1970's and 1980's. The proliferation of new innovative instruments is vital to the modern economy, but with that evolution come new and complex forms of illegal behavior. Trade reconstruction has similarly evolved, allowing regulators to keep pace with modern challenges to market integrity. Time stamped slips have been

¹ See also 17 CFR 1.35, 17 CFR 37.406, 17 CFR 38.256 (for related obligations).

² 40 Fed. Reg. 58660

modernized with computerized data, but the concept behind the enforcement remains the same – creating an audit trail used to deter and detect market abuses.

Section 731 of the Dodd-Frank Act amended the Commodity Exchange Act (CEA) by inserting Sections 4s(f) and 4s(g), which establish reporting, recordkeeping, and daily trading records requirements for swap dealers and major swap participants. Satisfaction of a CFTC inquiry under Dodd-Frank requires firms to maintain daily trading records of swaps (including related cash and forward transactions). Execution records must include all swap terms, trade tickets, unique swap identifier, a record of the date and time of execution, the name of the counterparty, the date and title of the agreement to which the swap is subject, the product name of the swap, the price at which the swap was executed, and related fees and commissions. Post-execution information includes records of post-execution processing and events including the confirmation, record of swap portfolio reconciliation and compression, ledgers reflecting payments and interest received, moneys borrowed and loaned, daily valuations, daily calculations of current and future exposure for each counterparty, daily calculation of initial and variation margin, collateral values, and charges against and credits to each counterparty's account.

The requirements of CFTC Rule 1.35 go further and include an obligation to record all related communications, such as electronic mail, instant messages, and phone calls. The Commission reiterated in the Adopting Release that any conversation, regardless of whether it occurs on a firm-provided or personal telephone, must be recorded if the contents fall within the rule. In practice, it can be difficult to record all oral communications concerning quotes, solicitations, bids, offers, instructions, trading, and prices that lead to the execution of a transaction in a commodity interest – however, that is just what modern law demands.

The result of the various forms of data captured is the present-day trade reconstruction. To sufficiently compile all the data necessary to recreate the life of a swap trade (from pre-trade, to execution, and post-trade), firms require a solution designed to tag, collect, organize, and export data from a variety of siloed data archives. Firms are all but obligated to implement robust technological solutions to remain compliant with trade reconstruction requests. This is consistent with other aspects of CFTC requirements for swap trades. For example, a clearing member (or DCO acting on their behalf) is required to accept or reject each trade for clearing in close to real time. The Commission established a standard acting “as quickly as would be technologically practicable if fully automated systems were used.” “The use of manual steps would be permitted so long as the process could operate within the same time frame as the automated systems.” In other words, you are not “required” to automate, but you are required to act as quickly as you would if you did automate. Using analogous logic, production of a fully complete trade reconstruction is required within 72 hours of a request, and most firms do not have the infrastructure capable of manually compiling all the relevant data in that timeframe. Firms are not “required” to automate this process, but in reality they must automate in order to remain compliant with multiple requests and strict mandatory deadlines.

The CFTC takes its mandate to protect market integrity very seriously, especially when abuses are identified upon investigation. Firms are required to share in this responsibility, and the Commission uses trade reconstruction as a tool to enhance due diligence on swap dealers. The

onus is placed on the firm to manage its own conduct, and that of its employees. As a result, the use of trade reconstruction will not be limited to reporting mandates. The Business Conduct Standards passed in 2012 impose duties upon swap dealers to, among other things:

- 1) Establish risk management procedures;
- 2) Diligently supervise all partners, members, officers, employees, and agents;
- 3) Make available all required information in a timely manner; and
- 4) Prohibit any anti-competitive activities.

If history is any indication, trade reconstruction will be the enforcement tool of the future. Firms can expect information contained within trade reconstructions to ensure not only compliance with reporting obligations, but as proof of “failure to supervise” liability. Ensuring complete and accurate completion within the 72 hour timeframe is only the first step. In order to achieve FULL compliance, firms will need trade reconstructions to guide their future operational and organizational development as well.

2.2 EMEA

2.2.1 United Kingdom

The UK’s use of trade reconstruction had a very different development path than that of the US. For almost a century, UK markets were largely self-regulated, dominated by the London Stock Exchange (LSE) and conducted almost exclusively of limited types of securities denominated in pounds sterling.

In 1974, the LSE developed surveillance facilities designed to identify insider transactions. It established a surveillance team in 1981. Originally, the program relied upon a stream of market prices from jobbers, or market makers, on the trading floor. The jobber acted as a principal, buying and selling securities for his own account, and providing continuous two-way prices for the brokers who contacted him for quotes. Suspicious price movements were manually detected and referred to an investigation’s manager if warranted. If the movements seemed other than a normal fluctuation, the Stock Exchange Council³ would conduct a preliminary investigation. Preliminary investigations were in-house inquiries, where evidence was taken from the firm. However, jobbers were notorious for leaving few written records, making the program inefficient. Furthermore, regulations at the time had no provision for the investigation of suspicious price movements. As a result, it was difficult to obtain sufficient evidence to prove all elements of insider dealing and most investigations were settled informally.

To encourage greater international trade, British securities markets went through a cycle of economic liberalization and reregulation in the mid-1980s in a two-part revolution. In 1986, the LSE deregulated in what is colloquially known as “Big Bang.” Seemingly overnight the British government abolished fixed minimum commission rates and mandated separation of brokering and dealing functions (“single capacity”). For the first time, firms could operate as both brokers

³ A committee which runs the London Stock Exchange and regulates members’ operations.

and dealers, trading for customers and for themselves. Big Bang opened up the markets, allowing British banks to become full-service financial institutions.

Two weeks later Parliament adopted the Financial Services Act. The Act signaled a dramatic shift from self-regulation to a more American style adversarial system. Banks and insurers found themselves under statutory regulation by the Bank of England and the Department of Trade and Industry (DTI), respectively. Steven Vogel once wrote that Big Bang day and the FSA represented “the proliferation of regulatory bodies, the endless creation of rules, and an invasion of lawyers.”

Shortly thereafter, the Secretary of State for Trade and Industry implemented robust insider trading provisions in the wake of several flagrant insider trading incidents. The Big Bang resulted in many technological developments, and as a result the information gathered from the stock market tape created greater market transparency. The price, volume, and time of all equities transactions were reported to the Stock Exchange within minutes of the transaction. Prior to the Big Bang, trades were reported the following day, and did not include the time of the transaction. This precursor to trade reconstruction proceeded to develop over the next few decades.

Introduced in 2000, the Financial Services Authority (FSA), later renamed the Financial Conduct Authority (FCA), oversees a statutory system for the regulation of investment business, banking and insurance in the UK. Among other measures, the FCA requires firms to have “appropriate systems in place to monitor that messages being sent or received are compliant.” The FCA further expects firms to ensure they have appropriate systems and governance in place to self-report incidents of suspicious behavior in a timely fashion. Beginning 2013, the FCA expected regulated entities to demonstrate a full audit trail of decision taking, and the rationale for these – in other words, a trade reconstruction.

In modern times, financial stability is a key objective of the new regulatory regimes. The FSA’s objectives were altered by the Financial Services Act 2010, with an emphasis on financial stability (contributing to the protection and enhancement of stability in the UK financial system). The FCA continues to introduce more intrusive supervision, including a commitment to challenge a firm’s own judgement concerning their business models, strategy, and product development.

In 2015, the FCA issued guidance stating “suitable monitoring and incident surveillance procedures need to be able to function effectively at all times.” They observed examples of effective real-time and post-trade monitoring, which included:

- 1) Dedicated real-time monitoring teams with detailed knowledge of control parameters and expected client trading activity;
- 2) Controls with alerts in place to provide warning before control levels are breached; and
- 3) Clearly defined procedures to ensure monitoring is performed in a time sensitive manner and with suitable escalation and recording plans.

Trade reconstruction will continue to play a large role in ensuring effective firm monitoring, protecting the UK financial system, and strengthening the relationship between UK and EU regulations.

2.2.2 European Securities and Markets Authority (ESMA)

Securities Regulation in the European Union has been substantially harmonized. National competent authorities collaborate in implementing EU directives and regulations like never before. There is no greater modern-day example of this than MiFID II. Arguably the broadest piece of financial legislation ever to hit Europe, MiFID II focuses on creating fairer, safer and more efficient markets. The directive will create an unprecedented requirement of transparency, and a renewed commitment to “Best Execution.” Trade reconstructions should be on the forefront of compliance with these objectives.

In law, recitals are a statement of facts that illustrate why a legal document, in this case a directive, was created. Under MiFID II, Recital 91 states “[i]t is necessary to impose an effective “best execution” obligation to ensure that investment firms execute client orders on terms that are most favorable to the client.” Many factors go into determining best execution, for example, firms may take into account:

- 1) price
- 2) costs
- 3) speed
- 4) likelihood of execution and settlement
- 5) size

However, other factors are highly subjective and require the knowledge and expertise of seasoned professionals. Those factors may include:

- 1) the characteristics of the client (retail or professional)
- 2) the nature and details of the client order
- 3) the particulars of the financial instruments subject to that order
- 4) the proclivities of the execution venues to which that order can be directed

Best execution can often be considered as much art as science. MiFID II understands the art form, and chose to include reference to it in the text. Article 27(1) requires that “investment firms take all sufficient steps to obtain, when executing orders, the best possible result for their clients taking into account...any other consideration relevant to the execution of the order.” Under those circumstances, traders regulated under MiFID II will be required to substantiate their claim of “best execution.” Trade data, market research, and execution reports will never tell the full story. The elements of a trade reconstruction (communications such as electronic mail, instant messages, and recorded phone calls) are vital to proving the narrative which includes all other considerations relevant to the execution of the order. Viewing trade data alone is incomplete without the communications supporting the trader’s logic. There is abundant evidence that the drafters fashioned the directive with this exact scenario in mind.

It is well understood that MiFID II requires the capture of more communications than ever before. Article 16(7), states, “[r]ecords shall include the recording of telephone conversations or electronic communications relating to, at least, transactions concluded when dealing on own account and the provision of client order services that relate to the reception, transmission and execution of clients orders...even if those conversations or communications do not result in the conclusion of such transactions or in the provision of client order services.” On its face, this section does not seem to apply to best execution principles. However, Recital 92 specifically states, “[a]dvances in technology for monitoring best execution should be considered when applying the best execution framework.”

Lastly, MiFID II and the Market Abuse Regulation (MAR) place a large emphasis on detecting and preventing market abuse. In its 22 May 2014 Consultation Paper, ESMA states, “market abuse is one of the most difficult offences to investigate and prosecute.” Good quality recordings of voice conversations and of electronic communications can assist National Competent Authorities (NCAs) in detecting, deterring, and indicting unlawful behavior. **“Capturing relevant conversations and communications will enable NCAs to capture and deter more inappropriate behaviour which would not be in the clients’ best interests.”** (*emphasis added*).⁴

The ESMA Consultation Paper highlights specific conversations and communications that should be recorded in relation to investment services. They are:

- i. the receipt of an order from a client
- ii. the transmission of an order (both where the investment firm will transmit the order, and where it will execute it)
- iii. the conclusion of a transaction when executing orders on behalf of clients
- iv. the conclusion of a transaction when dealing on own account regardless of whether a client is involved in the transaction

The items identified by ESMA are the very same elements that comprise a trade reconstruction, constituting “crucial, and sometimes the only, evidence to detect and prove the existence of market abuse as well as verify compliance by firms with investor protection and other requirements set out in th[e] directive.”⁵ In sum, in order to demonstrate adherence to the best execution requirements under MiFID II, complete and accurate trade reconstructions will provide vital, if not obligatory, evidence of compliance.

2.2.3 Asia Pacific (APAC)

The Asian region does not have the long, storied history of regulations that are found in the U.S. and EMEA but recent initiatives have begun to implement many of the regulations found in other parts of the world. Dr. Han Chen, chief executive of Ceinex, stated quite specifically, “We’ve just declared intentions to outline China’s version of MiFID II.”⁶ In October 2017, Guo Shuqing, the chairman of the China Banking Regulatory Commission (CRBC), made the statement to reporters

⁴ ESMA Consultation Paper, 22 May 2014, ESMA/2014/549.

⁵ MiFID II, Recital 144.

⁶ Michael McCaw, *China to model financial reforms on Mifid II*, Risk.net, Sept. 13, 2017.

that financial regulations in China will be stricter in the future as regulators seek to control financial risk and maintain stability. “The trend points towards stricter financial regulations, strict implementation of the law, rules and discipline.” Additionally, the Hong Kong Monetary Authority (HKMA) continues to make great strides in improving enforcement and supervision. Earlier this year, the HKMA released a statement to provide guidance to Authorized Institutions (AIs). “[T]he HKMA expects AIs to adopt a holistic and effective framework for fostering a sound culture within the institution.”⁷ “AIs should develop appropriate tools to monitor adherence of individual business units and relevant staff to an institution’s culture and behavioural standards.”

According to the G-20, regulators should implement global standards to reform derivatives markets “consistently in a way that ensures a level playing field and avoids fragmentation of markets, protectionism, and regulatory arbitrage.” The G-20 vision, and the comments emerging from China and Hong Kong, indicate a large-scale initiative towards the westernization and standardization of financial regulations throughout the APAC region.

2.2.4 SYNOPSIS

History tells us that there will always be a subset of individuals who attempt to find ‘shortcuts’ to achieve wealth or a goal. The trading community is full of examples of attempted market abuse, and although they can make for good entertainment through cinema, the reality is they can do permanent damage to a firm’s reputation and its bottom line. To prevent this situation, firms use technology and policies as the main tools to combat market abuse. Automated trade reconstruction is a good example of a firm’s ability to effectively manage risk and respond to regulatory requirements utilizing technology.

Dodd-Frank implemented the 72-hour requirement for a reconstruction of a trade upon request. Firms responded by enlisting groups of compliance analysts to manually reconstruct a timeline of events and communications that they have qualified as part of a trade. This process, which is far from perfect, proved adequate during the infancy of Dodd-Frank. The real challenge with the manual process is the unknown; did a firm capture all the data and communication with a trade or perhaps did they capture too much unrelated data? Time becomes the enemy. Manual processes can take hours or days to collect all pertinent data related to a trade. The time and energy spent in the collection phase leaves little leeway for review within the 72-hour deadline. The output often varies as well, leaving regulators the role of sifting through different data elements in a non-uniform format and with no effective timeline to determine their relevance to a trade. Understandably, the confidence level with any manual trade reconstruction is not great, leaving firms hoping for the best at the mercy of a regulator. As Dodd-Frank has matured, regulators increasingly tell firms their trade reconstruction process does not meet the necessary standards for compliance, leaving firms scrambling for alternative solutions.

Automated trade reconstruction solves many of the challenges that come with manual processes because it starts with effective data management. Firms are pressed with the sheer quantity and variety of data associated with trade activity. A typical firm will manage trade data, voice and

⁷ Hong Kong Monetary Authority, Letter to The Chief Executive All Authorized Institutions, Mar. 2, 2017.

email separately and under different leadership, as an example. This process, although effective in the capturing of data, makes creating the trade reconstruction far more challenging. The first step in effective data management is the aggregation, organization, enrichment and indexing of these different data types into a single system. The available data should allow for correlation to ensure that trade data records can be linked to related voice, email or chat communications to ensure the data can easily be recalled if a reconstruction proves necessary.

With effective data management the role of the analyst changes. Time spent on search and collection of multiple data elements is reduced to a simplified search and retrieval utilizing a central index of related data and the ability to correlate that data to reconstruct the time-line of events. Now the analyst can find all potentially relevant data to a trade in minutes allowing far more time for review to determine its relevance. Under manual processes an analyst would need to conduct multiple searches through multiple databases or make multiple requests to the data owners for any data that may be or not be relevant. The automated process of data management and correlation changes trade reconstruction from a 'fire drill' to a repeatable procedure that can be incorporated into a firms' risk management strategy and policies.

Additionally, the output format becomes significantly more advantageous. When requests are initiated by regulators, presenting output in a timely fashion with an easy-to-understand layout can speak volumes about a firms' willingness and ability to comply with the law. Through an automated process, the reconstruction can be reviewed and delivered in a uniform format promptly, thus providing the internal or external requestor with a clear, consistent, and accurate timeline of events and communications. Firms can be more confident the proper and complete data is provided to regulators.

3 The Role of Trade Reconstruction in Enforcement

Trade reconstruction is a tool used by regulators to subdue bad behavior. It is prudent then to understand the role of trade reconstructions in the various forms of market abuse. As noted above, the elements that make up a trade reconstruction have been instrumental in investigations. In the hands of a regulator, a trade reconstruction is a reactive construct. Understanding how trade reconstructions are used is just as important as knowing the information contained within them.

3.1 Insider Trading

Insider trading is arguably the most famous financial regulatory violation. Movies like Wall Street and The Wolf of Wall Street made antagonists like Gordon Gekko and Jordan Belfort household names. The reality of insider trading is far more sinister and destructive than the glamorous portrayals in Hollywood, and enforcement is complicated by the global nature of today's markets.

Insider trading is the buying or selling of a security by someone who has access to material nonpublic information about the security. Illegal insider trading refers generally to buying or selling a security, in breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, nonpublic information about the security.

3.1.1 United States

Historically, the United States has more aggressively and successfully enforced insider trading regulations than the European Union. A violation can result in administrative and civil sanctions, and in some cases criminal prosecution. In the U.S., insider trading actions can originate with the SEC, the Department of Justice, or through private civil claims. Each case requires the violation of a fiduciary duty – the highest standard of care under U.S. law.

Examples of insider trading cases that have been brought by the SEC are cases against:

- Corporate officers, directors, and employees who traded the corporation's securities after learning of significant, confidential corporate developments
- Friends, business associates, family members, and other "tippees" of such officers, directors, and employees, who traded the securities after receiving such information
- Employees of law, banking, brokerage and printing firms who were given such information to provide services to the corporation whose securities they traded
- Government employees who learned of such information because of their employment by the government

One of the most famous cases to date is the 2011 conviction of Raj Rajaratnam, former managing partner of Galleon Management LP founder. In late 2006, the Securities and Exchange Commission began investigating Rajaratnam and the Galleon Group for insider trading.

As part of this investigation, the SEC obtained access to millions of pages of documents, conducted multiple interviews, subpoenaed records, and took sworn testimony from Rajaratnam and others. The SEC compiled multiple trade reconstructions based upon the written data. District Judge Richard Holwell wrote in his opinion, "[a]nalysis of the documentary evidence was fairly sophisticated and while this revealed much circumstantial evidence of insider trading it also confirmed what one would expect: insider trading is typically conducted verbally. Thus it seems reasonably unlikely that additional documents would have produced qualitatively different evidence."⁸

In March 2008, in order to obtain additional evidence, the government sought a warrant to place a wiretap on Rajaratnam's cellphone. The wiretaps, and the evidence gained from them, helped convict Rajaratnam and led to numerous guilty pleas from money managers, traders, consultants, lawyers, and others associated with the insider trading charges in his case.⁹ The judge cited the "huge and brazen" nature of the crime and imposed a \$92 million civil penalty. U.S. District Judge Jed Rakoff was quoted as saying the crime "cries out for the kind of civil penalty that will deprive this defendant of a material part of his fortune."

⁸ UNITED STATES OF AMERICA, v. RAJ RAJARATNAM and DANIELLE CHIESI, United States District Court, SDNY, 09 Cr. 1184 (RJH), November 29, 2010 (24-25).

⁹ Pamela Johnston, Jaime Guerrero and Alexander Kramer, *Attacking Insider Trading and Other White Collar Cases Built on Evidence From Government Wiretaps: The Nuts and Bolts* (June 28, 2013).

Most insider trading cases are uncovered by sophisticated computer systems that are employed by the stock exchanges and by Self-Regulatory Organizations tasked with monitoring trading. The computer systems constantly monitor volume and price movements of all publicly traded stocks, and generate alerts if an anomaly is detected. As noted above, evidence proving insider trading is obtained through communication. In the post Dodd-Frank reality, the burden of creating complete and accurate trade reconstructions is placed upon the bank or firm, making the likelihood for successful regulatory investigations all the greater. Suspicious calls or chats, social media postings, or client emails must be identified, compiled, and reviewed to determine if firm employees are receiving or sharing material non-public information. Failure to do so will not only result in greater regulatory scrutiny, but may expose the firm to charges of failure to supervise.

3.1.2 European Union

In the European Union insider trading, or insider dealing, has been regulated much more recently than in the United States. Under U.S. law, no statute codifies the contours of the insider trading prohibition. The EU system, however, operates under a “parity-of-information theory,” which forms the foundation of the prohibition against insider trading. Under the parity of information theory, “anyone in possession of material inside information must either disclose it to the investing public, or . . . must abstain from trading in or recommending the securities concerned while such information remains undisclosed.”

At the core of the Market Abuse Directive of 2003 (“MAD”) is the definition of “inside information.” This definition requires information of a precise nature that has not been made public relating, directly or indirectly, to one or more securities. Information is classified as price sensitive in the sense that, if made public, it would likely have a significant effect on the price of the securities. Essentially, MAD revolves around equal access to information.

The EU, and specifically UK regulators, have been focusing especially hard on insider trading recently with a number of high-profile court cases and investigations. Operation Tabernula (Latin for “little tavern”) resulted in a jury conviction of Martyn Dodgson (a.k.a. Fruit) and Andrew Hind (a.k.a. Nob) of insider dealing. The former received a sentence of four and a half years in prison.

In areas of the EU, in this case the UK, the prosecution must establish that each person was a knowing party to the offense. That is incredibly difficult to do. The eight-year probe was originally mounted by the old Financial Services Authority and continued by its successor, the FCA.¹⁰ With the introduction of robust recording requirements of MiFID II, the use of complete trade reconstructions as a regulatory tool will become the new normal throughout Europe.

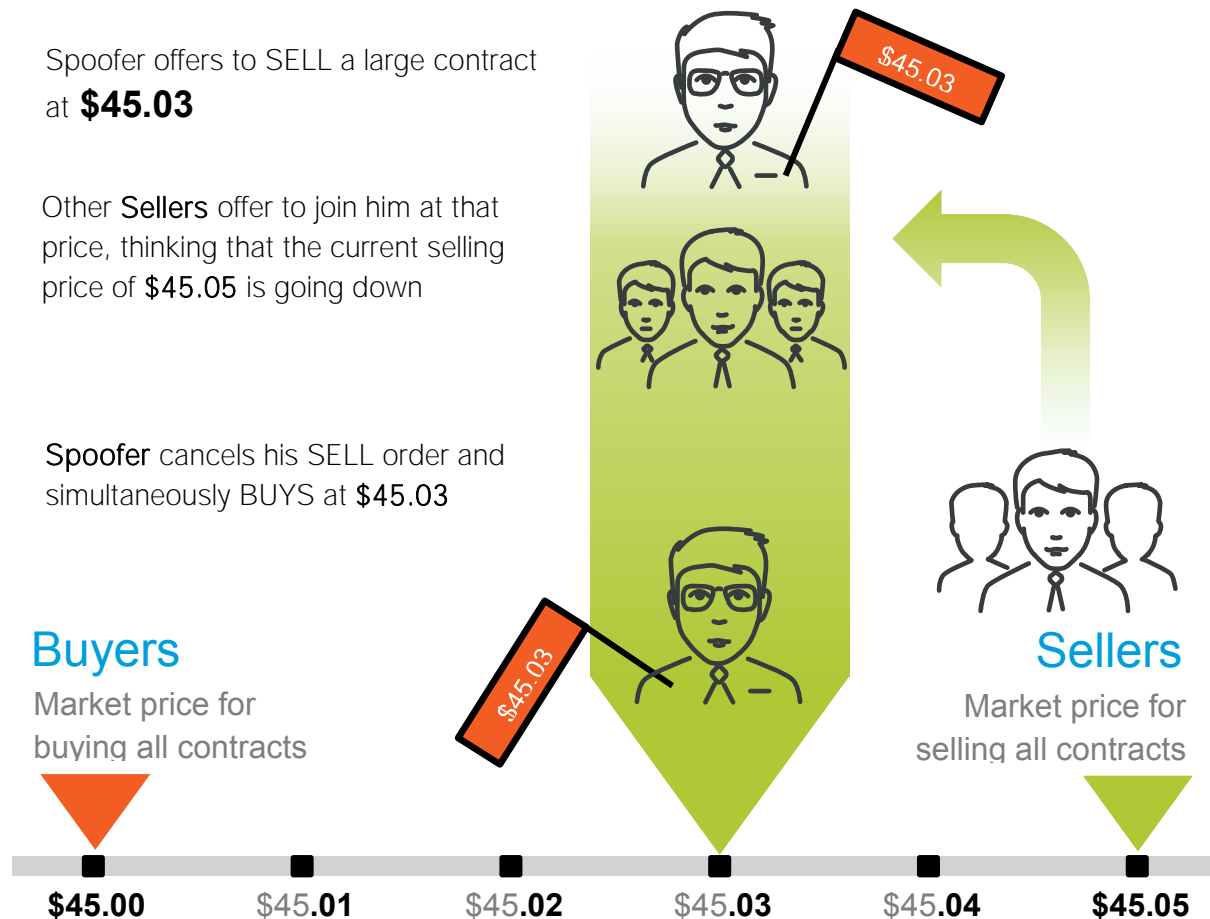
3.2 Spoofing, Layering, and Front Running

Spoofing, layering, and front running are forms of market manipulation whereby a trader uses different trading tactics to capitalize on a leading event in the marketplace.

¹⁰ Caroline Binham, *Insider trading case highlights the challenges facing prosecutors*, Financial Times, available at <https://www.ft.com/content/ddb82d9e-1686-11e6-9d98-00386a18e39d>

Some regulators use the terms spoofing and layering interchangeably since each method uses visible non-bona fide orders to deceive other traders on the supply or demand in the market. FINRA defines layering as entering multiple non-bona fide orders at multiple price tiers, whereas spoofing requires the entering of one or more non-bona fide orders at the top of the order book only.

In spoofing patterns, a trader enters a single visible order, or a series of visible orders, that either creates a new best bid or offer or adds significantly to the liquidity displayed at the existing best bid or offer. During the lifespan of that first order(s), or within a short time after it is cancelled, the same trader executes a trade on the opposite side of the market. The pattern is manipulative because the execution occurs at a more favorable price than the trader was likely to obtain in the absence of the first order(s). This is true regardless of whether the buy (sell) execution occurs at the pre-sequence best bid (offer) price, at the midpoint, or at the new best offer (bid) price set by the spoof order. In any of those scenarios, the trade is executed at price better than if the trader had hit the pre-spoof bid or had taken the pre-spoof offer. The following diagram illustrates this with a specific example.



Layering is a variant of spoofing where the trader enters multiple visible orders on one side of the market at multiple price tiers, which causes the midpoint of the spread to move away from those multiple orders, and the same trader executes a trade on the opposite side of the market. The execution occurs at a more favorable price than the trader was likely to obtain in the absence of the first orders.

The mere cancellation of trades is not spoofing, and is not illegal. Many legitimate, client-driven trades can involve large numbers of cancellations. For example, an institutional or retail client may direct market makers to cancel the bulk of their orders after missing the National Best Bid and Offer (NBBO). The NBBO system may not reflect the most up-to-date data, which means investors may not get the prices they were anticipating when the trades are actually requested. The ability to cancel trades when new instructions arrive is crucial to supply liquidity competitively to the benefit of investors. Canceling trades after receipt of client instructions allows market makers to submit more aggressive quotes and effectively perform their function of providing liquidity to the market.

It can be incredibly difficult to determine the intent behind cancellations. Using solely high cancellation rates as the primary means for identifying spoofers runs the very serious risk of

wrongly convicting market makers and others who cancel large numbers of orders as part of non-manipulative attempts to trade at NBBO. Only by compiling and analyzing the communications leading up to a trade cancellation can a firm definitively prove or disprove the subjective intent behind the action. Therefore, effective trade reconstructions are the only bona fide defense to a false allegation of spoofing.

3.2.1 United States

In the U.S., securities regulators have investigated spoofing since at least early 2000. Multiple regulations give various entities in the alphabet soup of regulators the ability to pursue alleged spoofers. Thus far, the main anti-fraud prohibitions utilized are Section 10(b) of the Securities Exchange Act of 1934, SEC Rule 10b-5, and Section 17(a) of the Securities Act of 1933, CFTC Regulation 180.1, and most recently Section 747 of the Dodd-Frank Act.

On August 7, 2017, the United States Court of Appeals for the Seventh Circuit held, in the first criminal prosecution under the spoofing statute, that the evidence at trial was sufficient to sustain trader Michael Coscia's convictions for spoofing and fraud. Coscia entered small orders on one side of the market and then entered numerous large orders on the other side, inducing other traders to move away from his large orders and to fill his small order. The Coscia case is the first futures spoofing action to arise with criminal penalties in effect. The civil case was settled quickly with both the CFTC and the FCA in the UK, but the Justice Department chose to pursue criminal charges.

The Commodity Exchange Act (the "CEA") Section 4c(a)(5)(C) defines spoofing as "bidding or offering with the intent to cancel the bid or offer before execution."¹¹ The word "intent" in the definition illustrates the need for the evidence provided by trade reconstructions. There is no way to know what is or could be considered spoofing when up to 95% of quotes are routinely cancelled before they are filled.¹² The communication, structured data, and unstructured data elements of the trade reconstruction are the only way to discern true intent. This can be a crucial differentiator between routine trading and suspicious trading between a block trader and client.

3.2.2 United Kingdom

In the UK, regulators have a similar focus on intent with respect to spoofing and layering. On Dec. 3, 2007, the London Stock Exchange issued a notice concerning a trader who was involved in layering of their order book. In this instance, multiple orders were submitted at different prices on one side of the order book and the client's true intention was to trade in the opposite direction

¹¹ 7 U.S.C. § 6c(a)(5)(C)

¹² If every time the market maker executes one order and moves its price, it cancels multiple corresponding orders (i.e. any orders on the other side, and orders on the same side at different exchanges). It may then have a cancellation rate of 95.5 percent. This is not typically spoofing because as a market maker, and targets prices to respond to supply and demand. In a fragmented market it requires the market maker to make offers in multiple places or exchanges simultaneously.

from the orders it had inputted. The exchange noted, “These actions may have created an impression of liquidity that could have misled the market.”

In August 2009, the FSA (now the FCA) issued a newsletter containing an article called Manipulation of the order book — ‘layering or spoofing.’ The trading strategy within that notice was identical to the events occurring two years earlier. The FSA stated, “This behavior may give a false or misleading impression about the supply and demand for securities,” and that such behavior could constitute market abuse under the Financial Services and Markets Act.

3.2.3 Front Running

Front-running is slightly different from spoofing and layering, since it includes only bona fide orders. A trader will enter into an equity trade, options or futures contract with advance knowledge of a block transaction that will influence the price of the underlying security to capitalize on the trade.

In October of 2017, currency trader Mark Johnson was found guilty of fraud for front-running a \$3.5 billion client order. Johnson was convicted of a scheme to ramp up the price of British pounds before executing a trade, making millions at the client’s expense.

With just four words, Mark Johnson allegedly passed a secretive signal to fellow traders to launch a buying spree of pounds using a phrase reminiscent of a movie plot: “My watch is off.”¹³

Johnson alerted the traders around the globe via phone calls and chat messages. At trial jurors listened to recordings of the calls, which prosecutors claim show Johnson tipped off a trader in Hong Kong. That signal eventually reached others on both sides of the Atlantic and sparked a flurry of trading. In another call, Johnson is heard discussing the effect of the deal on bankers’ compensation. Ultimately the reconstruction of the emails, trade data, and voice recordings were all the jurors needed, and Johnson was found guilty.

¹³ U.S. v. Johnson, 16-cr-457, U.S. District Court, EDNY.

4 Technology and How It Can Help

The [NICE Actimize Trade Reconstruction](#) solution gives users the ability to automate the trade reconstruction process by aggregating, analyzing, and indexing all relevant trading data, including voice and electronic communications. Intuitive applications enable correlating and reconstructing trade and communications data in a single solution with full end-to-end Risk Case Management. Natural Language processing and content analytics capabilities allow for greater context of the communications, including both voice and electronic communications, as well as the structured data like orders and executions. The solution can analyze all data for compliance risks based on predefined risk categories resulting in automatic alerts. Analysts can easily create trade reconstructions from any alert or ad-hoc search which provides compliance departments with greater insight into all communication and transaction data which is relevant to the trading activity.

4.1 Trade Lifecycle Data (including pre and post execution)

Fundamental to a trade reconstruction is the capture of all relevant trade records and communication channels of a trader, and the subsequent storage in an archive that is accessible to NICE Trade Reconstruction. The capture of transaction data and the ability to correlate it to the correct content is one of the most valuable elements vital to the recall of all data points related to swap identification, including pre and post trade information. Data may include counterparty, SWAP Document ID, SWAP Transition ID, SWAP deal names, stocks/currency/commodities names assisted with the SWAP, and many other possibilities.

Utilizing all available data points will improve the results of the correlation algorithm and give additional context to the transaction or trade event under investigation. Trade records can be one of the starting points for a trade reconstruction. This includes analyzing an individual trade record, an alert or even a standard communication. This is simply the threshold stage. Once all the information is captured we enhance the data with further information.

4.2 The Process

The reconstruction process consists of 6 steps, each building upon the previous action.

4.2.1 Step 1: Data Collection

The first step in the automated trade reconstruction process is connecting to the data that contains the trading events, including voice records, electronic communication records and trade, order and execution data. The metadata for these records are extracted and mapped to a standard data model for simple reference and basic search.

4.2.2 Step 2: Natural Language Processing and Text Extraction

Second, the content of the data is analyzed and prepared for content analytics in order extract meaningful information that can be used for correlations and contextual understanding of the records. Advanced speech analytics are used to convert the voice records into a transcript that can be easily analyzed and indexed. The content of the data from the communications, both

voice and text, is extracted and natural language processing techniques are used to recognize the languages used in conversation and to prepare the data for further advanced content analytics.

4.2.3 Step 3: Content Analytics

The next step analyzes the content to enrich the data available for search, correlation and visualization. A variety of techniques are used to extract information from the content. For example, statistical methods are used to identify key phrases and terms within the content. Dictionary and advanced query methods extract entities from the recorded data. Entities such as People, Counterparties, Trade Terms, Stock Names, Commodity Names, etc. are extracted and stored as metadata with the documents. This information is key to ensuring that the data can be correlated together when a trade reconstruction is required.

4.2.4 Step 4: Categorization

The categorization process organizes the data by classifying the communication based on the content analytics and policy based rules. In addition to the standard metadata from the data, the enriched data from the content analytics provides the ability to categorize the data with context giving users an ability to find needed information quickly and easily.

4.2.5 Step 5: Correlation

The correlation process starts once an analyst identifies a scenario which requires a trade reconstruction. An event such as a trading alert, communication alert, regulatory inquiry, or a simple ad-hoc search can trigger the process for correlation. Upon the trade reconstruction request, the system will correlate data to find the most relevant information for the scenario. NICE Trade Reconstruction uses all the information gathered in prior steps such as trade metadata, entity extraction, communication policies, and interaction metadata (time, counterparty etc.).

The patented correlation technique used in the process automatically recalls any interactions related to specific trade events and presents them to the user by relevancy to determine whether they should be included in the trade reconstruction.

4.2.6 Step 6: Time-line Review

The final phase in the process is the time-line review of the correlated events. The user queries for the data found around a trade, pulls all linked communications, and presents them in a visually well-organized interface. The result shows the user transaction data, communications, and all the pre and post execution communications as part of the reconstruction in a chronological timeline. The human element of the trade reconstruction process is now redefined - allowing for broader depth of review, improved efficiency, and greater accuracy.

ABOUT NICE ACTIMIZE

NICE Actimize is the largest and broadest provider of financial crime, risk and compliance solutions for regional and global financial institutions, as well as government regulators. Consistently ranked as number one in the space, NICE Actimize experts apply innovative technology to protect institutions and safeguard consumers and investors assets by identifying financial crime, preventing fraud and providing regulatory compliance.

The company provides real-time, cross-channel fraud prevention, anti-money laundering detection, and trading surveillance solutions that address such concerns as payment fraud, cyber-crime, sanctions monitoring, market abuse, customer due diligence and insider trading.

More than 100 of the world's top global financial institutions and regulatory bodies rely on NICE Actimize to increase their insight into real-time customer and employee behavior, transactions, and activities. As a result, these organizations have reduced and prevented financial crime activities, minimized money laundering exposure, increased investigator efficiency and improved regulatory compliance and oversight.

Learn more at www.niceactimize.com/compliance

CONTACTS

Global International HQ, Israel

T +972 9 775 3777

Americas, North America

T +1 201 964 2600

EMEA, Europe & Middle East

T +44 0 1489 771 200

Asia Pacific, Singapore Office

T + 65 6222 5123

Important Notice

NICE Ltd. shall bear no responsibility or liability to a client or to any person or entity with respect to liability, loss or damage caused or alleged to be caused directly or indirectly by any NICE product. This includes, but is not limited to, any interruption of service, loss of business or anticipatory profits or consequential damage resulting from the use or operation of any NICE products. Information in this document is subject to change without notice and does not represent a commitment on the part of NICE Ltd. The systems described in this document are furnished under a license agreement or non-disclosure agreement. To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability for the accuracy and completeness of the above information. The full list of NICE marks are the trademarks or registered trademarks of Nice Systems Ltd. For the full list of NICE trademarks, visit <http://www.nice.com/nice-trademarks> all other marks used are the property of their respective proprietors. Copyright © 2018 NICE. All rights reserved.