



The Evolving Role of the Buyside Trading Desk: Technology, Market Structure, & Regulation

Cornerstone Investment Partners trading fulfills its fiduciary duty to its clients by ensuring best execution and limiting trade costs, in the form of both commissions and market impact. The trading desk utilizes trading technology, streamlined trading processes and procedures, and adherence to a strict compliance system to fulfill this duty.

In order to maintain a trading desk that will continue to fulfill the fiduciary duty to our clients. Cornerstone must understand and be prepared for the impact of new technologies, regulations, and market structure changes. There has been a wave of change in all of the aforementioned factors affecting the ability of a trade desk to fulfill its fiduciary duty to the client. Cornerstone has taken measures to guarantee the desk is capable of exceeding client expectations.

Evolution of the Buyside Desk

Historically, there has been a clear separation between the roles of the buyside, their sellside brokers, and the exchanges. Traditionally, the buyside's primary role has been to gather and manage assets. The sellside broker's role was an intermediary between the buyside and the execution venue. Once executed, trade information was transmitted back to the buyside client. There was little knowledge of trade execution and pricing on the buyside as time was allocated to security selection and client service, while little time was dedicated to trade execution.

There are a number of factors causing a change in the relationship between the buyside trading desk and their brokers:

- Costs of execution, both explicit and implicit, have been reduced for the buyside trader.
 - Algorithmic trading, Direct Market Access (DMA) and crossing networks have dramatically driven down the commissions paid compared to the traditional model of sending orders to the sellside block trading desks. The electronic nature of these transactions requires little or no human intervention. The savings associated with the automation of trade processing have been passed on to the buyside.
 - Economies of scale in electronic trading have contributed to the lowering of commissions and trade processing fees.
 - The Regulation National Market System (Reg NMS) trade-through rule component states that trades must be routed where the best price is quoted. Reg NMS evens the playing field for smaller brokerages, creating a market where brokerages compete solely on execution cost.
- Market structure also plays a role.
 - The traditional execution venues, NYSE and NASDAQ, have seen their average execution size plummet due to decimalization and order slicing algorithms.
 - There has been growth of firms whose sole purpose is to offer execution venues exclusively designed for the buyside. These systems provide the buyside with more control over the execution quality by skirting the need to go through a sellside broker to access the traditional markets.

- There is the long held buy-side belief that the sell-side's control of execution allows their proprietary desks to profit from information provided by clients. Direct market access and algorithmic trading execution is controlled by the buy-side, eliminating information leakage.

As buy-side trading evolved, buy-side traders began performing their jobs through an Order Management System (OMS) and market data feed. Today's focus on execution quality, combined with a more fragmented market structure and best execution requirements, calls for a more complicated desk. Many desks now include Execution Management Systems (EMS), DMA, algorithms, block crossing network connectivity, as well as Transaction Cost Analysis (TCA) and risk systems, all used in conjunction with their OMS system.

The Cornerstone Trade Desk utilizes technology by identifying the best in breed service provider by following a thorough due diligence process. A service, or system, is added to the desk if it is determined to be a proper fit to the desk's needs. In this way, the trading desk is able to build a tightly integrated group of products to service all pre-trade analysis, order management, execution and post-trade analytics. This approach has allowed the desk to stay on the technological forefront while ensuring best execution for our clients.

Cornerstone's Trading Systems

Electronic Order Routing:

Electronic order routing connects trade desks with multiple brokerages and liquidity sources cheaply, while requiring little lead-time for new connectivity. It also gives traders the ability to take or exit positions quicker than historically used methods by utilizing electronic trading exchanges and interfaces. The ability to alter orders in real time allows the desk to take an active role in execution quality and allows for orders to be executed as quickly and accurately as possible.

Cornerstone uses the Financial Information eXchange (FIX) Protocol to route electronic trading. FIX is a message standard developed specifically for the real-time exchange of securities transactions. The FIX provider also provides transaction cost analysis on all trades routed through their FIX pipes. Cornerstone is connected to a number of traditional brokerages, algorithmic trading desks, block crossing networks and non-displayed liquidity aggregators

Order Management System (OMS):

Cornerstone utilizes an Order Management System (OMS). This speeds the investment processes by providing a single, centralized location for order management decision-making and execution.

Capabilities include:

- Modeling using consolidated groups or single portfolios, as well as the capability to import or build models within the system. Model based rebalancing is also available using the entire portfolio or specific asset classes, sectors, or security types.
- Electronic order routing uses standard FIX protocol message types; including new orders, order cancel/replace, execution reports, allocations. FIX supports custom tags, used to specify trade requirements, and two-way FIX messaging (orders out, fills back) as well as one-way or unsolicited trade requests (UTRs).
- Connectivity and integration with accounting and confirmation systems streamline post-trade functions. Trade executions are exported directly into the portfolio accounting system. Trade information is exported from the OMS to trade confirmation systems.

Market Data Feeds:

Cornerstone uses real-time equity, futures and options quotes. There is a database of company reports, key stats, real time links to spreadsheets as well as a 10 year history of company revenues and earnings, splits and corporate actions available to the desk.

Cornerstone has access to AutEx, which makes it easier for the trade desk to locate natural liquidity. Buyside firms receive targeted Indication's of Intent (IOIs) immediately from brokers. AutEx can be filtered by side, size, and broker, and then allows drill down to get a full picture of the market with consolidated recaps and detailed rankings by security, portfolio, and broker. Access to advertised trade volume data and intra-day rankings allows the trade desk find active trading partners and monitor their trade activity across a list of stocks and portfolios.

Algorithmic Trading and Non-Displayed Liquidity:

Algorithms are used to divide large trades into several smaller trades in order to manage market impact, opportunity cost, and risk. Most aim to systematically minimize execution shortfall relative to a specified benchmark, such as Volume Weighted Average Price (VWAP), Arrival Price, Target Percentage of Volume, or Market on Close. Other algorithmic strategies selectively choose dark liquidity destinations in order to minimize information leakage. Most algorithms are also flexible to client needs allowing the buyside more control of their trade execution and pricing.

Algorithms efficiently ferret out liquidity while preserving market anonymity and information leakage by slicing the trade into smaller trades. Algorithms allow the buyside to take a more active role in execution quality by determining the appropriate algorithmic strategy as well as the urgency level, percent of volume limits, time restraints and other parameters. Cornerstone has access to algorithms provided by a number of brokerages.

Non-displayed, or "dark", liquidity is trading volume created almost entirely from institutional orders, the majority of which are block trades executed away from the central exchanges. This liquidity is not displayed on order books, under current SEC regulations (See Regulations on pages 4-6 for more detail on possible legislative change). Non-displayed liquidity addresses buyside execution quality and market impact risk resulting from market fragmentation, miniscule average trade sizes, slippage and information leakage. Cornerstone has access to non-displayed liquidity pools through algorithms designed to locate and execute at non-displayed liquidity venues. The desk is also connected to a non-displayed liquidity aggregator, which links over twenty-five different pools of passive liquidity, including dark pools, streaming liquidity providers, and crossing networks through a single integrated source. The desk also has access to an institutional crossing network which allows for active negotiation when trading sizable blocks.

Compliance

Trade Flow:

There is a system of checks and balances built into the lifecycle of a trade. A member of the portfolio management team must sign and time stamp all tickets before trading will accept the order. The trader is responsible for the execution and allocation of the trades, while an operations team member is responsible for trade confirmation. A member of the operations team goes through an end-of-day trading checklist, which ensures that all trade were executed correctly, allocations were sent to brokers, and all post-close procedures were completed.

Restrictions:

The operations team and portfolio managers work with the trade desk to guarantee the restrictions in the OMS are current and complete. Cornerstone's OMS allows for restrictions based on

security, security type, asset class as well as industry and sector weights. Cash buffer requirements for portfolios are also available. Restrictions can be set as hard or soft, allowing for flexibility in order management process. Hard restrictions can not be manually overridden by the trader. These restrictions are set by the client. Soft restrictions are usually a reminder to the trader that a hard restriction is being approached, allowing the trader to determine the best course of action.

Best Execution Committee:

The best execution committee includes members of the trade desk, operations, compliance, and portfolio management. Transaction Cost Analysis data and performance information provided by the brokers are used to review each broker's trade execution for the quarter. The operations team maintains a log of any post trade issues, including late confirmations, trade errors originated by the broker, or incorrect allocations.

Each broker is graded using eleven measures weighted by importance to all parties involved in the trading lifecycle. Execution is the heaviest weighting, while soft dollar arrangement capabilities represent the lowest weight. Cornerstone does not use soft dollar or commission sharing agreements. Each broker receives a grade for each measure. An overall rating for each broker is determined from the weighted grades. A broker that is deemed unsatisfactory in consecutive quarters will be terminated.

Rotation:

Cornerstone maintains a trade rotation for each product which is used for all across the board trades. The use of a trade rotation helps to ensure that all clients are treated fairly.

Pre-clearance:

The policies and procedures in the Code of Ethics, Insider Trading, and Personal Trading are reviewed at a firm-wide meeting each quarter. The firm's fiduciary duty is to act always in the best interest of the clients and to place their interests before that of the firm and its associates. We have established guidelines and rules that require pre-clearance for trades that are on the firm's watch list, which includes all holdings in client accounts and securities that are currently under consideration for inclusion in client accounts. The Compliance Administrator and/or the CCO must approve all pre-cleared trades. Trading works with compliance to ensure all personal trades requiring pre-clearance are pre-cleared properly

Regulation

The SEC has issued a proposal addressing three issues with respect to dark liquidity: Actionable Indications of Intent (IOIs), Alternative Trading Systems (ATS) Display Obligations and ATS Post-Trade Transparency.

IOIs:

Indications of Interest (IOIs) are messages that some dark pools transmit privately to select market participants regarding actionable trade order information on National Market System (NMS) stocks. The Commission argues that these IOIs are intended to attract immediate executable order flow to the trading venue, and as such function similarly to a displayed quotation. Because this information is privately sent to select market participants, the Commission believes this has the potential to create two-tiered access to trading information. The commission states that the continued expansion of private IOIs could discourage public display of trading interest, reducing quote competition among markets and detracting from the efficiency and fairness of the NMS.

The commission is proposing an amendment to the definition of "bid" and "offer" in Regulation NMS to apply explicitly to IOIs. The revised definition would apply to all trading venues. The commission

states that some trading networks may use actionable IOIs to provide significant size discovery benefits, especially for institutional investors that need to efficiently trade in sizes larger than typically available in the publicly quoted markets. The amendment would exclude actionable IOIs for trades of NMS stock representing more than \$200,000 which are transmitted to those who are reasonably believed to represent contra-side trading interest at the \$200,000 level or greater. The excluded IOIs are referred to as size discovery IOIs.

ATS Display Obligations:

The commission is proposing to lower the trading volume threshold in Regulation ATS that triggers the obligation for the ATS to display their orders in the consolidated quote. The proposal would lower the threshold from the current level of 5% to .25%. The commission believes that the lower threshold will help assure the dissemination of trade data through the consolidated quote to the general investing public, which will lead to enhanced price transparency and fairer, more efficient markets. The proposed threshold of .25% is designed to promote competition by keeping barriers to entry low for new ATSs while reducing the amount of price discovery information selectively displayed outside the public quote system.

The Commission commented in Regulation ATS, adopted in 1998, that due to the significant volumes traded through ATSs, the integration of those orders to the NMS is essential to prevent a two-tiered market. The Commission now believes that due to advances in technology, communications and market structure, the 5% threshold is no longer valid. Market fragmentation has led to substantially less concentrated trading volumes, which the Commission argues, allows small trading centers to collectively impact price discovery. Because of the ability for smaller centers to affect the overall market the Commission states that to ensure a fair and efficient market system, the majority of information for NMS stocks from ATSs, whether through actionable IOIs or otherwise, should participate in the public price discovery process.

The Commission's proposed amendment to Regulation ATS, will exclude "orders having a market value of greater than \$200,000 that are displayed only to those who are reasonably believed to represent current contra-side trading interest of at least \$200,000." This is consistent with the proposed exception to Regulation NMS concerning actionable IOIs.

Post-Trade Transparency for ATSs:

ATSs trade in the OTC market, requiring them to be a member of FINRA, further requiring them to report their trades for inclusion in the consolidated trade data. Presently these trades do not identify the venue that executed the trade, unlike the reports of registered exchanges. The Commission is proposing that the real-time disclosure of trade data include the identity of the ATS, in hope to improve quality of information about the sources of liquidity in NMS stocks and increase public confidence in US equity markets.

Approximately 38% of trading volume in NMS stocks is reported as OTC, which includes ATS trading. The Commission argues that the lack of venue-specific information for ATS executions makes it difficult for the public to assess ATS trading in real-time and identify volumes in stocks on a venue basis. Requiring public disclosure of the execution venue would allow for reliable trading volume statistics, while equalizing the reporting requirements for exchanges and ATSs.

The Commission addresses the needs of those executing large size trades to control the information flow concerning their transaction and the fact that disclosure of execution venue could cause information leakage about their trading. The Commission states that the exemption for large trades strikes a balance between the institutional investors executing large blocks without information leakage and the right of the public to have access to that post-trade information.

Effect of Regulation to Trading:

Historically, trading floors of exchanges were a source of dark liquidity, as floor traders worked large block trades without revealing the full extent of their intentions. Broker-dealers have also acted as over-the-counter market makers, providing liquidity to their clients that is not reflected in the consolidated quote. The Commission's proposals do not affect those ATSS that are completely dark, meaning that they do not send any type of indication to market participants. These systems will continue to provide liquidity to their participants without announcing their intentions publicly, though the fill rate may be significantly lower. There are also brokers that specialize in large block executions who, similar to the floor traders and retail broker market makers of the past, find contra-side trading interest within their network of brokers without publicly displaying their trading interest.

These proposals are intended to limit the private nature of those pools providing price discovery information to a limited set of market participants. There are dark pools, referred to as block crossing networks, which specialize in size discovery, resulting in what would be post-trade exempt executions. These networks execute approximately 10% of the trading volume in dark pools presently, though one would suspect that number to rise once the proposed amendments by the Commission are put in place.

The trading volume of dark pools has continued to increase, though no single pool's volume exceeds 2% of equity market share. Were ATSS allowed to operate without further regulation at their present growth rates, there eventually would be a lack of publicly posted quotes. This would lead to unstable price discovery, both in the lit and dark markets as both market structures require an efficient price discovery mechanism. The narrower National Best Bid and Offer (NBBO) spreads and enhanced depth of book, if they truly are a result of the proposals, would improve the information discrepancy between the two tiers. These regulations could also limit the choices that an institutional trader has to execute trades, possibly resulting in a significant rise in trading costs, which is why the desk must diligently monitor the regulatory environment as it does market structure and trading technology.

Cornerstone constantly reassesses its trading partners, to ensure that our clients receive best execution in light of market structure and regulation changes. The proposed changes to display obligations of dark pools requires that Cornerstone use algorithms to break up larger orders to limit market impact. The desk will also need to utilize those trading partners that offer institutional size liquidity which will regularly offer blocks eligible for exemption under the new rules.

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