
Equity Options Trading 2008: Rising Out of Obscurity



Vision

A perfect storm is about to hit the options market. Trading volume is reaching record levels seemingly on a monthly basis. Volatility—a critical component of any options trade—is flirting with historical highs and the resulting stock market gyrations seems to be the focus of every morning, noon and evening talk show. Regulatory initiatives and new technologies are changing the way options are being traded, resulting in greater demand from institutional investors and shining even more light on the potentialities of options.

Long perceived as a financial flea market where the naïve and uninitiated speculators attempted to get rich overnight, the options market is now a sophisticated bazaar where professionals ply their trade, using refined financial techniques that can no longer be viewed or portrayed as remotely speculative.

Seemingly insatiable demand is emanating from every quadrant of the institutional asset management community. Hedge funds and proprietary trading desks are developing and implementing new strategies that arbitrage incremental opportunities faster than the human mind can possibly comprehend. Institutional investors are increasingly using options as part of elaborate portfolio management activities that seek to improve, maintain and enhance their alpha-generating opportunities.

Even staid pension funds, which have long shied away from using derivatives as part of their investing activities, are beginning to stick their collective toes in the water, and are allowing the derivatives to be used in externally managed accounts. The recognition that options can protect returns, efficiently capture alpha and constitute an asset class unto themselves will fuel the next stage in options usage. Certainly there are accounts that will never trade or use options, but many managers are already exploring the use of options and fully expect to increase their use in the future. Although TABB Group estimates that just 30% of institutional investors are actively using options as part of their portfolio strategies today, the market's potential provides almost limitless opportunity, with the number of institutional accounts that will begin trading options expected to double in the years ahead.

Yet it seems that whenever a trader, financial institution, government agency or entire marketplace implodes (think sub-prime CDOs), derivatives instruments are there to act as a scapegoat for any and all catastrophes. But perceptions regarding the use of equity options across the financial industry are changing, and not just at sell-side trading desks and market making firms that stand to benefit the most from a growing options market. Perceptions are also changing within the investment community, laying the foundation for a drastically different marketplace, where the buy side will seek to wield even greater influence over its own destiny.

Although the industry has come a long way from the days when derivatives were viewed with disdain, much remains to be done. There is a need for greater

understanding of the benefits of options, both by the public and the fiduciaries that are responsible for managing assets. These efforts, initially led by industry associations in the past, will now be carried out by brokers as they promote the benefits of options strategies to clients who are just beginning to deploy options in their strategies.

The highly dispersed and consequently illiquid nature of the options market still favors high-touch trading services, but options trading is not immune to the universal pull of electronic trading. Unlike the retail and wholesale options trading sectors, where most trading is done electronically, the buy side remains highly dependent on voice trading. Sensing opportunity, tools and systems for sophisticated, high-volume trading institutions are being designed, tested and rolled out to trading desks by sell-side banks and technology vendors alike. The snowball effect is just beginning, but by 2010, two-thirds of all buy-side options trading will be conducted electronically.

Sell-side trading desks need not trash their trading turrets just yet, however, as options traders will continue to rely on the ability to reach out and touch their favorite trading relationship. However, they will actively work to control their future destiny, trying to remain independent by using tools that allow them to operate outside the purview of the marketplace at large, hiding intentions from competitors and improving execution results.

Long a fixture in other markets, sell-side trading firms and related consortia are launching crossing networks and dark pools, which attempt to match willing participants behind the scenes, while algorithmic trading is being promoted by major dealers and trading-system vendors. One of the earliest block-crossing ventures launched to date is still working through regulatory obstacles, and it will be interesting to see if the market is ready for its promise.

As block trading becomes more commonplace, competing ventures will surely look to jump in with guns blazing. If the equity markets provide any guide, the number of dark pools and block-crossing networks will grow exponentially in the next few years. Dealer systems will quickly be launched, especially by those firms that see significant options flow.

Algorithms are also beginning to see rapid adoption, and based on our research, more than one-third of total volume will be traded algorithmically by 2010, up from a de minimus level today. This will provide a strong boost to overall volume levels, as rapid embracement of algorithmic trading will promote greater electronic trading and raise overall liquidity.

The options market is coming of age, and is increasingly in vogue not only in Boston, Chicago and New York, but even in Washington, where the regulatory environment is providing more tailwinds than headwinds of late. There is no question that options are a rapidly growing asset class with a bright future. The only question is how fast they will become ingrained as part of the buy side's never-ending effort to improve—and retain—alpha.

Many of the forces that will impact the market—such as penny pricing, dollar strikes, alternative execution venues, and the emergence of innovative options trading strategies—are in and of themselves enough to shift market structure. But the combination of all of these factors occurring in tandem promises to radically alter the options trading landscape. Liquidity will become even more fragmented, which will create insatiable demand for trading tools that can help manage the more complicated market structure that evolves. Although in their infancy, algorithmic trading schema will quickly grow to have a formidable presence in the options market. And as options trading strategies evolve and seek to arbitrage hidden opportunities for alpha, crossing networks and dark pools will become a viable part of the options market tapestry.

But you don't have to practice tasseography to realize that a change is coming to the options market. All signs are pointing to an impending evolutionary jump in the options market, as structural forces are coalescing that will accelerate its transitory path. You may be tempted to sit back, relax and grab a cup of fresh-brewed tea. But don't even think about trying to divine the leaf pattern solidifying in the bottom of the cup. By the time you get a good read, the market will have passed you by.

Table of Contents

VISION.....	1
TABLE OF CONTENTS.....	4
INTRODUCTION	5
BLASTING DOWN THE AUTOBAHN WITH YOUR SEATBELT FASTENED.....	7
REGULATIONS ARE A'CHANGING.....	8
METHODOLOGY	9
NOT SO SCARY ANYMORE	12
CHECKS AND BALANCES.....	13
UNTAPPED DEMAND FROM PENSION FUNDS	14
FINDING THE PERFECT MATCH.....	16
WATER EVERYWHERE AND NOT A DROP TO DRINK.....	17
PENNIES FROM HEAVEN	20
FULL COUNT, BASES LOADED	21
THE TRADER'S TOOLBOX	23
BUILD IT AND THEY WILL COME	25
SO MANY EXCHANGES, SO LITTLE TIME TO CARE.....	26
I FEEL THE NEED	27
HERE COME THE ALGORITHMS.....	29
SMARTER THAN THE AVERAGE BEAR.....	30
CROSSING OVER THE THRESHOLD	33
WHERE WE'RE GOING, WE DON'T NEED ROADS.....	35
THE OVER-THE-COUNTER OPTION.....	37
CAN'T LIVE WITHOUT MY BROKER.....	41
STILL LOOKING FOR LIQUIDITY	41
INFORMATION IS KING	42
THE COST ADVANTAGE OF THE FLICKERING BYTE.....	44
COOLEST KID ON THE BLOCK.....	45
STAYING TOGETHER THROUGH IT ALL	47
HAVING IT WITH A CHERRY ON TOP	48
GIMME SOME CREDIT	51
CONCLUSION	54
ABOUT.....	56
TABB GROUP.....	56
THE AUTHORS	56

Introduction

The options markets are exploding. Not just in terms of trading volume but also with respect to new participants who are suddenly discovering the potential benefits associated with options. Institutional investors are flooding into the market, as options are becoming a more acceptable risk management tool as well as a component of innovative strategies that leverage the growth and liquidity evolving in the market. At the same time, a number of regulatory fiats are acting as catalysts for further growth by resolving market deficiencies that have diminished institutional demand for options.

“In the last three years we increased our option trading threefold.”

(Medium-sized Investment Manager)

A perfect storm of institutional demand and regulatory overhaul is already rocking the marketplace, causing

volume to reach record levels on a seemingly monthly basis. Options trading soared to a record 2.8 billion contracts in 2007, a 41% jump from 2006's prior record.

Comparatively, options trading volume rose 24% from 2003 to 2005 (see Exhibit 1).



“In the past three months, speed has become extremely important due to the volatility.”

(Small-sized Hedge Fund)

The reemergence of market volatility is another major driver of volume gains. The international contagion of the credit crisis and subsequent violent swings of global equity markets are causing severe spikes in U.S. market volatility, as measured by the CBOE's VIX index—a broadly used measure of market volatility—which has surged to levels last seen in 2002. The increased volatility benefits arbitrage strategies that exploit dramatic price shifts, which have been significant contributors to the record levels of options trading that occurred in the latter half of 2007. If the beginning of 2008 is any indication, volatility will remain an important

“I think that the image of derivatives is still generally negative...I think that image makes utilizing derivatives more difficult for clients.”
(Small-sized Investment Manager)

backdrop to the near-term evolution of the options markets (see Exhibit 2).

The current—and impending—changes rippling through the options market are also being caused in part by a sea of change in investor sentiment.

Options are no longer viewed solely as a speculative instrument used by hedge funds and levered accounts; instead, options are increasingly becoming an accepted component of conservative investment strategies as asset managers relax their restrictions on trading options (see Exhibit 3).

And even hedge fund managers, who generally have fewer restrictions on options trading to begin with, are adjusting their policies, with almost one-third loosening restrictions on trading options.

There is also the emergence of a new type of investor - one who creates strategies based solely on the characteristics of the options market. More akin to market makers, the strategies of these investors involve trading options based on proprietary quantitative models that arbitrage price differentials between different options, the underlying equity or other related asset.

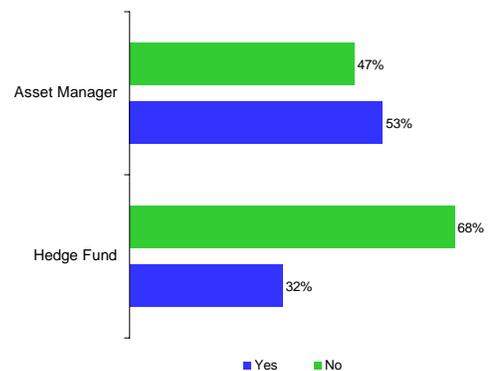
Exhibit 2
CBOE Volatility Index (VIX)



Source: CBOE

Source: Chicago Board of Options Exchange

Exhibit 3
Have you relaxed your internal restrictions on trading options?



Source: TABB Group

These high-volume trading firms rarely have restrictions on the types of options they are able to trade, and represent an important source of liquidity in the options market.

Blasting Down the Autobahn with Your Seatbelt Fastened

“We don’t really have any hard and fast restrictions.”
(Large-sized Hedge Fund)

Although we live in a free society and abhor restrictions that limit our ability to do what we want, many restrictions are in place for our own safety, such as traffic lights at busy intersections, buckling seat belts or speed limits on highways. Even the freewheeling state of Montana ultimately decided that allowing drivers to drive at “reasonable and prudent” speeds (AKA no posted speed limit) during daylight hours provided too much of an incentive for crazy out-of-state drivers looking to peg the needle to the 200MPH mark on their speedometers.

The same is true in the securities markets. Restrictions are in place to limit activities to the particular strategy or philosophy of the fund. The feeling of safety from risk created by over exposure provided by internal restrictions and market regulations however, has proven to be the right formula for options market growth.

Many historical restrictions were in place to make sure that a trader didn’t violate a fiduciary trust by speculating in instruments that he or she did not fully understand or that could potentially result in millions of dollars in losses. But blanket mandates that prohibited an entire class of securities are being revisited and, in many cases, adapted to the new risk disciplines of modern portfolio management.

There is a palpable shift occurring in the attitude toward derivatives. This shift is readily apparent on the trading desk, with a bare minority of the traders we interviewed citing a tightening of options trading policies. Despite the new attitudes, the largest and most sophisticated global money managers still have significant restrictions against using derivatives, some because of a lack of understanding about when and how to employ derivatives, and others because of the glacial pace of amending the mandates.

This is the classic “half-full” or “half-empty” conundrum. Options market growth will either be restrained by these

policies, or there is room for significant growth to come from major players who have yet to enter the options arena. TABB Group believes the latter is the case and expects that growth will continue apace in the years to come.

Regulations are a'changing

Increased investor interest in options has also attracted the attention of the Securities and Exchange Commission (SEC), which has promulgated a number of actions that will have far-reaching consequences for the options markets. Two of these actions, the Penny Pricing Pilot and modifications to the Portfolio Margining Rules, were both implemented in 2007 and their impacts are just beginning to be felt by the market.

“Any money that comes in is subject to the rules in our charter.”
(Medium-sized Hedge Fund)

The introduction of the Penny Pilot has already resulted in major structural changes at one exchange, as NYSE ARCA Options has implemented a new maker-taker pricing schedule for the Pilot options. The model, which provides rebates for liquidity providers, closely resembles pricing practices in the order-driven equity markets. Not to be outdone, the Boston Options Exchange followed suit with a similar pricing schedule later in the year. These pricing changes will have significant impacts as order flow is diverted between exchanges and investors begin to adapt trading behavior to account for the price differentials, especially in support of high-volume accounts that benefit from the new pricing schema.

TABB Group views these changes as the opening salvo of an exchange war that will permeate the options industry, especially when NASDAQ launches its long-planned options exchange later in 2008. The new exchange brings a number of structural innovations to the options market, both from a functionality and pricing perspective. The combination of the maker-taker pricing schema and NASDAQ's proposed structural changes—assuming they are approved by the SEC—will facilitate a gradual shift toward an order-driven market, as opposed to the quote-driven markets that have dominated the equity options field in the past.

The SEC also approved long-awaited modifications to portfolio margining rules that will result in increased demand for a broad range of derivatives instruments, including options. The new rules, which implement a risk-based margining approach instead of an inflexible

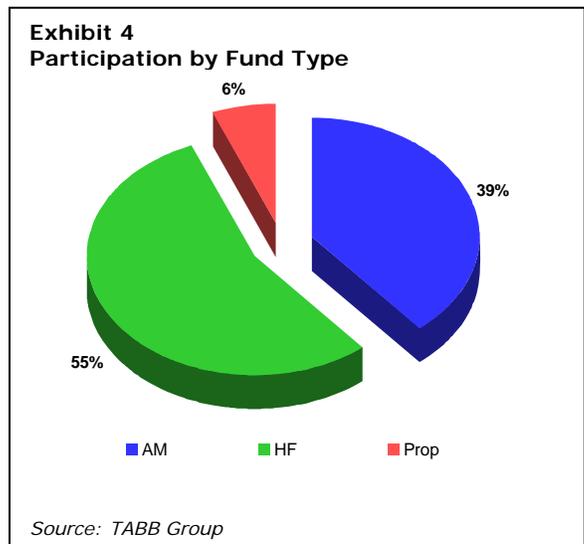
formula-based approach, will ultimately encourage greater utilization of options strategies. The new rules have had minimal impact to date, mainly due to lack of implementation of the new accounts by broker-dealers. Once the new accounts are more widely available, there will be a measured increase in demand for options, especially given the benefits they provide under the new risk-based approach.

If all of the factors transforming the options market were occurring in isolation, then we all could sit back, relax and watch the story unfold. But the confluence of regulatory, structural and behavioral change is going to radically alter the options landscape. In a few years, institutional options traders will surely chuckle about the good old days when trading occurred almost exclusively on the phone, in regimented markets, and technology was a tool of convenience, not survival. But Ma Bell's dominance of the options trading desk is coming to a close. Whether a massive hedge fund employing sophisticated arbitrage strategies, a market maker, or Joe and Jane Retail, the inevitable changes resulting from greater acceptance, regulatory initiatives and the embracement of technology will dramatically impact the way business is done.

Methodology

The charts for this study are based on conversations with 49 traders at a broad variety of hedge funds, asset managers and proprietary options trading institutions. The data is supplemented by informal conversations with numerous TABB market participants, including pension plan sponsors, options market making firms, exchanges and other liquidity pools, as well as the institutional options trading desks of major broker-dealers.

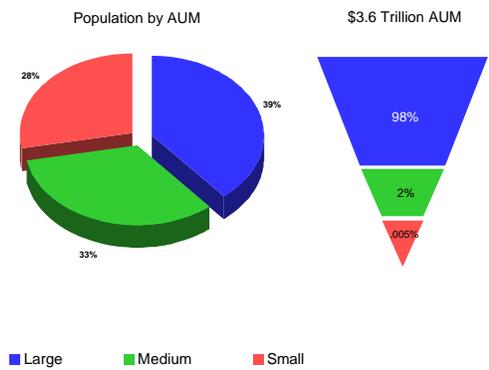
Hedge funds make up the majority (55%) of our respondents, with the remainder dominated by Asset Managers (see Exhibit 4). Only three study



participants classified themselves as proprietary trading shops. Although the responses from these firms are used in aggregate charts, comparison statistics in this report focus on the relationship between hedge funds and asset managers.

We also segment our participants by assets under management (AUM). Respondents categorized as "Large" had AUM of \$1 billion or more, "Medium," between \$100 million and \$999 million, and "Small," less than \$100 million. Although the participants were relatively evenly spaced amongst the categories, large firms accounted for 98% of total AUM (see Exhibit 5). This is synonymous with the hedge fund industry as a whole, with the top few containing the vast majority of the assets.

Exhibit 5
Participation by Assets under Management (\$USD AUM)



Source: TABB Group

We also have segmented our results based on trading volume. Large institutions traded 100,000 or more contracts per month, while small traded less than 100,000 contracts per month. Low trading-volume funds dominated our population, comprising 69% of the participants, yet when viewed on a volume-weighted basis, high-volume funds accounted for the majority of trading, representing 93% of total contracts executed by our study participants.

Key Points

- ▲ *Options trading soared to a record 2.8 billion contracts in 2007, a 41% jump from the prior record in 2006.*
- ▲ *Since 2003, options trading has experienced a CAGR of 33%, a substantial acceleration from the 24% rate in the 2003 to 2005 period.*

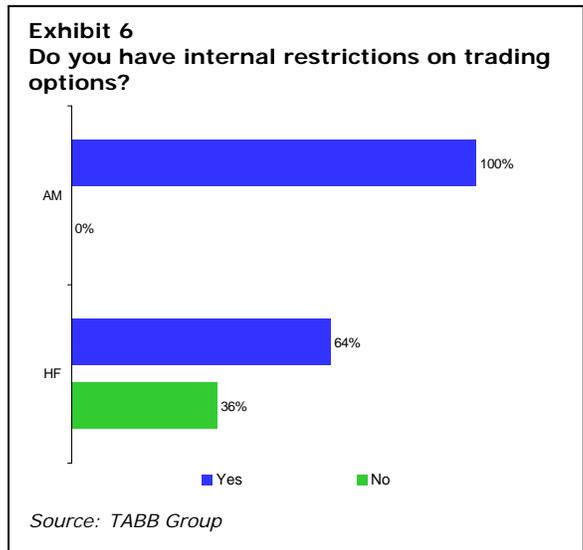
- ▲ *Options are becoming an accepted component of conservative investment strategies, as asset managers relax their restrictions on trading derivatives.*
- ▲ *Two SEC actions—the Penny Pricing Pilot and new Portfolio Marging Rules—will force significant structural change in the U.S. listed options market, resulting in increased participation by institutional investors.*
- ▲ *This study is based on conversations with 49 traders at a broad variety of hedge funds, asset management firms and proprietary options trading institutions.*

Not So Scary Anymore

Today's financial markets provide a number of challenges to all involved, not least of which is the need to comply with restrictions that govern how, which and where securities are traded. These restrictions include not only those imposed by regulators, but more often those set forth by investors who are entrusting managers with their funds. However, attitudes toward the use of options are changing and their use is becoming more widely accepted.

“We don't have any rules restricting options trading in our charter; we have a general understanding with our investors.”
(Large-sized Hedge Fund)

The use of options within institutional money management is growing yet limited. Instead of not being able to trade options at all, fund managers are limited in terms of strategies they can use (e.g., straddles, writing calls), the types of options they can trade (single-stock versus index contract; calls versus puts), or have position limits that restrict exposure to one or a group of instruments. In most cases, managers are able to execute conservative strategies that limit the amount of potential downside risk such as covered



calls, or hedging portfolios through married puts. As would be expected, asset managers are far more likely than hedge funds to have restrictions on trading options, as their long-standing policies prohibiting derivatives transactions are still broadly in place (see Exhibit 6).

From an investor standpoint, the easing of restrictions is in part due to the educational efforts of a number of industry bodies, institutions and associations collectively acting to dispel negative connotations traditionally associated with derivatives. However, the recognition that options can protect returns, efficiently capture alpha, and represent an asset class unto themselves will fuel the next stage in options usage. Certainly, there are accounts

that will never trade or use options, but many managers are already exploring the use of options and fully expect to increase their use in the future. Even anecdotally, we see growing interest from the number of traders who didn't trade options this year, and thus couldn't participate in our study, but expect to be doing so next year.

Checks and Balances

The recognition of the benefits of options is just the first step to wider options usage. Approval processes associated with initiating options trades or new strategies vary by firm and by the level of sophistication of the principals involved in the activity. Traditional asset managers tend to have more formal approval processes in place, as they are larger, more bureaucratic and were founded under charters from a period in time when derivatives were considered less acceptable, especially given the retail nature of their client base.

It may seem surprising that a majority of hedge funds have formal approval processes for trading options, however, their stereotypical portrayal as "shoot from the hip," cowboy-type investors is a relic from a different era.

"We don't have many restrictions on what we can trade. My guys can bet on the Knicks game if they think they can make money doing it."
(Large-sized Hedge Fund)

Although many hedge funds still fit this stereotype, those that have been around for more than a few years have become more institutional, and have put more formal processes in place--especially larger hedge funds that have significant numbers of staff.

Those firms without a formal approval process generally were smaller firms--in terms of number of staff--where principals or founders played an active role in trading activities, or had inflexible strategies generated by quantitative models and requiring little need for a formal approval process (see Exhibit 7).



Untapped Demand from Pension Funds

The pension fund industry remains the sector most reluctant to embrace options with any vigor. Whether public or private, pension funds have long had policies that precluded the use of options. For better or worse, these attitudes have been reinforced each and every time derivatives strategies have been blamed for spectacular fund blow-ups, such as Orange County, California; Long Term Capital Management; Amaranth; Société Générale; and the list goes on and on.

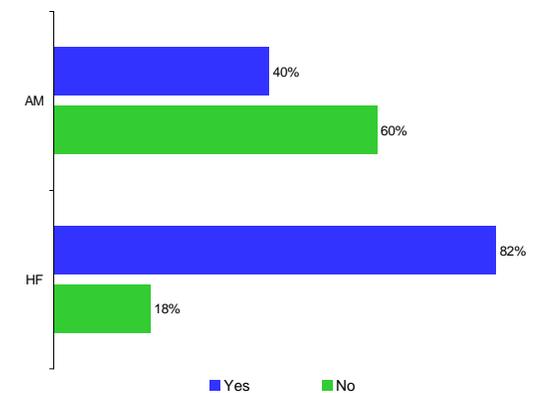
“We are trying to reach out to our counterparties to present them with updated materials that will allow us to do more in the derivative space.”
(Large-sized Investment Manager)

It is not surprising that pension funds have an aversion to derivatives strategies. Imagine a fund manager entrusted with billions of dollars in assets and the fiduciary responsibility to manage those assets to meet future liabilities for a pool of retirees. The mere thought of breaching this trust has caused many a manager to wake up in the middle of the night in a cold sweat. The portfolio manager has little to gain and much to lose. However, there is no direct prohibition against the use of options positions for public pensions. Rather, the Department of Labor simply states that the plan sponsor must be prudent in deciding on the use of derivatives.

In addition, the consequences of a misdirected derivatives strategy are much too great for most trustees, boards or oversight committees. They fear the inevitable public attention on being blamed for “speculative” use of derivatives, even if all they are doing is protecting for downside risk. It may seem counterintuitive, but in the eyes of most oversight boards, losing \$300 million in a broad market decline is preferable to a loss of \$2 million on a protective options position that expires worthless.

However, the potential benefits of incorporating a diverse set of strategies, including those that employ derivatives, have attracted a lot of attention.

Exhibit 8
Have your pension clients recently changed their attitudes towards derivatives?



Source: TABB Group

It is a tale of two cities. Although pension plans are allocating increasing amounts of assets to hedge fund managers with greater latitude over investment decisions, such as options trading, asset managers are still saddled with restrictions (see Exhibit 8). The silver lining is that pension funds that allocate external investments to hedge funds are more apt to allow options strategies, since they are allocating money to a hedge fund that operates a particular strategy, which may or may not include options components. Thus, in a perverse way, the practice of allocating assets to a hedge fund is a stepping-stone toward a wider adoption of options for more traditional strategies.

Key Points

- ▲ *Although institutional investors have significant restrictions on using options, the recognition that options can protect returns and efficiently capture alpha will fuel the next stage in options usage.*
- ▲ *Asset managers and hedge funds may operate under different investment strategies and charters but both typically have approval processes associated with initiating options trades.*
- ▲ *Hedge funds are increasingly seeing a positive shift in pension fund attitudes toward derivatives. The trend of allocating external investments to hedge funds may be the first step in the movement toward the broader use of options as part of their investment activities.*

Finding the Perfect Match

It's no easy task meeting the person of your dreams. Even when choices are plentiful, finding someone that fits your needs is tough. Similarly, buy-side traders face an uphill battle finding a match when trading options (see Exhibit 9).

"I think, for us, the biggest problem would just be liquidity...in everything."
(Large-sized Hedge Fund)

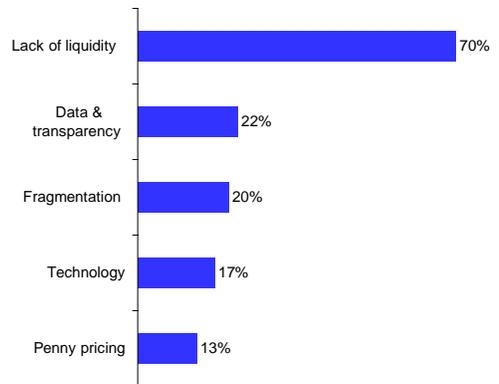
Although finding liquidity is a problem common to many markets—just as finding a spouse is a universal dilemma—the liquidity challenges facing options traders are unique. With each underlying security having dozens of

expiration dates and strike prices, choosing the most suitable option for your needs can feel like choosing the best color from the big crayon box. Even when the choice is made, the industry's capital is spread across so many issues that finding liquidity in your chosen contract is difficult at best.

The primary driver behind the liquidity problem is the sheer number of contracts available for trading. There is an average of forty different options contracts per underlying stock. New options contracts are created by any of the options exchanges on demand from the buy side, both for newly listed stock and already existing securities that have gained higher volume and/or market capitalization. The resurgence of volatility is spawning a greater demand for options because, depending on the manager's perspective, they can provide risk management or enhanced returns. The number of options contracts per underlying security will continue to grow, as demand driven by market volatility shows no sign of slowing.

However, even if the number of options contracts per underlying stock remains stable (which it won't), the growth of ETF listings is leading to additional option

Exhibit 9
What is the biggest issue facing the options market?



Source: TABB Group

“There is a lack of real liquidity. Five hundred contracts up is not real liquidity.”
(Medium-sized Hedge Fund)

chains, beyond those of single stocks and traditional equity-index listings. The number of available ETFs has risen nearly seven-fold since 2001 to almost 700, 175 of which have listed options on them. Options contracts on ETFs provide the same leverage and risk management that have long been available on broad equity indices to more tightly focused investment perspectives, including style- and sector-focused strategies. Index strategies with options were once focused around a few major contracts, such as the S&P 500 and NASDAQ 100. Now, investors have hundreds of alternative indices to choose from, each with their own set of option chains.

Water Everywhere and Not a Drop to Drink

Although this growth has created choices for investors, it is also the primary factor for thinning liquidity in options. While forty separate firms may simultaneously need to hedge positions in the same underlying stock, they will likely each choose a different option contract to best suit their various strategies. The liquidity in the options market is like the research analyst forced to cover too many stocks—very broad but no depth.

This is not to say that traders looking to establish an options position are unable to complete the trade. Instead, they turn to brokers for assistance. Liquidity in less frequently traded series, or in series where there is little open interest, can often be found through the assistance of a broker that can find contra sides or is able to put its own capital at risk to execute the trade.

Trading strategies can require trading across all points of an options chain, however, liquidity tends to concentrate in contracts that are “at-” or “near-the-money,” with the bulk of trading in near-the-money contracts; little trading occurs outside of these bands. Although it varies with market conditions, about three-quarters of the options trading volume for a highly liquid stock is concentrated among options whose strike prices are within 15% of the stock’s current market price. Even so, that still includes fifteen different options contracts to choose from.

In addition, the volume of trading in a particular company’s options is closely correlated to the company’s capitalization. Smaller-capitalization companies may have limited options activity, while large-capitalization companies measure trading in the tens of thousand contracts per day. So, the most liquidity is to be found

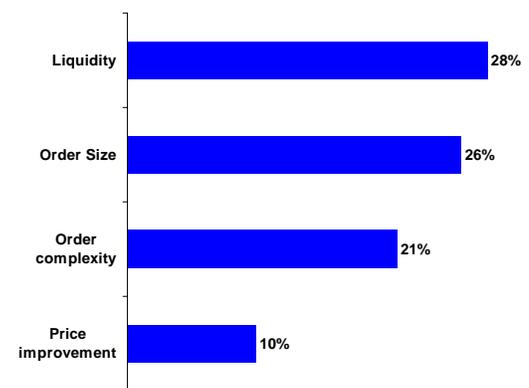
within the at- or near-the-money contracts of liquid stocks, while out-of-the-money contracts for small-cap stocks may trade as infrequently as the Cubs win the World Series.

The more liquid a contract, the more likely it is that the liquidity will be found on electronic markets. This phenomenon is similar to the underlying equities market. Liquidity begets electronic trading. Thus, at-the-money contracts for large-cap names are traded electronically more often than other contracts. Volatility arbitrage traders focusing on options for the most actively traded ETFs or single stocks may be able to access electronic liquidity to fulfill their strategies. However, a small-cap trader looking to hedge a large position in a less-liquid stock is unlikely to find the necessary liquidity on an electronic screen.

“Our need for research drives where we trade. We prioritize some of our upstairs order flow where we need to.”
(Medium-sized Hedge Fund)

When trading moves out of heavily traded contracts, into the arid fields of wide spreads and thin volume, traders turn to brokers to make markets, find contra orders or structure a customized OTC contract (see Exhibit 10).

Exhibit 10
Based on what factors do you choose to trade human vs. electronic?



Source: TABB Group

Unfortunately, these alternatives are not always appropriate or available for the buy side, for reasons ranging from cost to mandates restricting OTC usage. Although custom OTC option contracts can help ease liquidity concerns in some instances, it is certainly not a catch-all acting as merely another tool in the trader's arsenal.

Many of the same traders whose needs spawned the creation of additional options are also the ones citing liquidity as a primary concern. Does that mean the market should slow or stop the creation of new products until liquidity improves? Should scientists stop creating new medication until the old ones are perfect? Of course

not. Innovation is unavoidable and imperative, so traders must adapt and find methods to manage the low liquidity borne from their new product desires.

“My initial reaction to penny increments is that it’s simply not worth doing.”
(Medium-sized Investment Manager)

“I think penny pricing is a good thing, as it allows us to trade a little bit more electronically than before and tightens spreads.”
(Large-sized Hedge Fund)

Pennies from Heaven

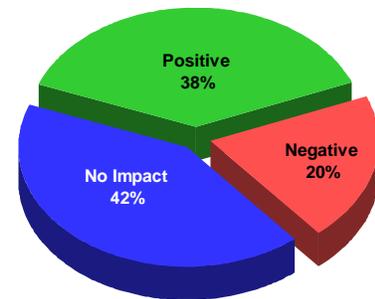
The impact of regulatory initiatives on liquidity can not be underestimated. The Penny Pricing Pilot is one regulatory fiat that will have an as yet undetermined impact on liquidity. While many of the hedge funds we spoke with see the upside of Penny Pricing, traditional asset managers remain skeptical, and in some cases believe it will exacerbate the liquidity problem (see Exhibit 11).

The Penny Pilot is poised to cause significant disruption to a wide swath of participants in the options market--not just to buy-side traders. Technology vendors continue to build out solutions and infrastructure capabilities to

handle increased data levels. Exchanges have had to revamp technological infrastructure to handle the increased data needs, while at the same time experiencing significantly higher levels of activity. Dealers are also not immune to the impact as they upgrade systems and capabilities to answer client demand from small retail investors and high-velocity hedge funds alike. The group seeing the greatest impact is the market makers, who must deal with shrinking spreads and declining profit margins.

Although some view the impact as analogous to the implementation of penny pricing within the U.S. equity markets in 2001, the penny-pricing initiative raises a number of issues that are unique to the options market. At a minimum, the sheer number of options chains and the subsequent need to update pricing based on underlying instruments will result in enormous increases in data and messaging rates.

Exhibit 11
How does Penny Pricing impact your options trading?



Source: TABB Group

“If they ever go to dollar-strike prices for options, I will lose my mind.”
(Small-sized Investment Manager)

Further fragmentation of liquidity, always an issue of concern, will surely keep buy-side traders awake at night. Meanwhile, market makers expect to struggle with tighter spreads and the greater adoption of pricing schemes that are more akin to order-driven markets. Penny pricing is intended to make the options markets more efficient, but efficiency for some may come at the expense of others.

In response to market forces and new regulations, exchanges are radically changing their fee structures. Although little-noticed by the market at large, these rule changes will have dramatic impacts on market structure by diverting order flow to venues with the most attractive transaction pricing structure for particular investment strategies. For example, NYSE Arca Options instituted a new pricing scheme for Penny Pilot issues that rewards providers of liquidity. The new maker-taker pricing model breaks years-old traditions that are the status quo in the options markets, which have traditionally relied on pro-rata pricing schemas that protect the interests of market makers.

Although the maker-taker model is considered the norm for the more technologically advanced and liquid equity markets, its introduction in the options markets will have a considerable influence on market practices at exchanges, especially when rolled out beyond options classes in the Penny Pilot program.

Full Count, Bases Loaded

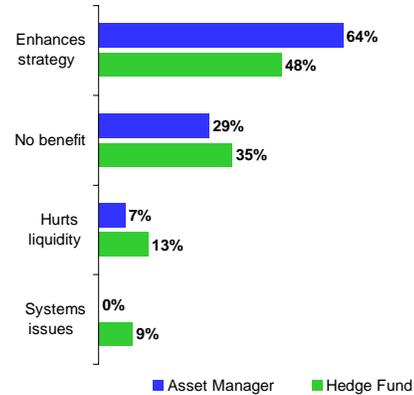
“More strikes, fifty cent strikes, quarter strikes...I don't care; the more the merrier.”
(Large-sized Hedge Fund)

If the SEC allows strike prices to move from five-dollar to one-dollar increments, we could theoretically see a five-fold increase in the number of contracts available for trading – from a staggering 280,000 to a possibly unbearable one million. Given the SEC's blessing, options exchanges will be permitted to decide what strike prices make the most sense for each underlying stock. However, the number of new strike prices that are actually established will be closely correlated to volatility, as investors look to establish new positions around the current price of the underlying equity.

Overall, the proposal for dollar-strike prices received a warm reception from the buy side, with hedge fund traders expressing more enthusiasm than their asset manager counterparts. Those less enthusiastic cited the danger of further fragmented liquidity across even more contracts. For certain lower priced stocks, however, more

than half of the options traders indicated that dollar-strike prices would actually result in increased trading volume, as more price points would improve the ability to execute their strategies (see Exhibit 12). An overall increase in options volume could very well counteract the potential fragmentation of liquidity.

Exhibit 12
Would dollar strike prices work better for your trading style?



Source: TABB Group Outreach

Key Points

- ▲ *Liquidity is the biggest challenge facing options traders, as the fragmented nature of the market and the sheer number of options present a formidable obstacle for accessing liquidity.*
- ▲ *Electronic liquidity is closely correlated to the amount of trading for a particular option. When there is a lack of electronic liquidity, traders turn to brokers to make markets, find contra orders or structure customized OTC contracts.*
- ▲ *The SEC Penny Pricing Pilot will result in greater fragmentation, tighter spreads and the need for significant technological infrastructure investments.*
- ▲ *Hedge funds are more receptive to the SEC's proposal to expand strike prices to dollar increments, as they expect their trading activity to increase under the new rules.*

The Trader's Toolbox

Buy-side traders have a myriad of options for executing their options trades. Sales traders, OTC options, direct market access (DMA) platforms, smart order-routers (SORs), algorithms, and the coming alternative trading venues provide a variety of ways for accessing liquidity. It's like searching for the perfect tool at your neighborhood home store; there are so many choices and the clerks only want to sell you what's on sale. Who's to know what choice is best?

"I am going to be on the phone with the guy trying to get the price that I want. It's hard to do that electronically."
(Medium-sized Investment Manager)

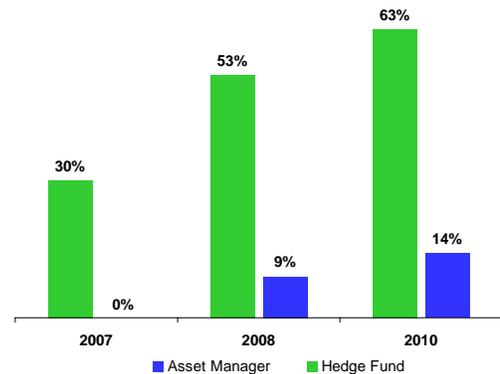
In a world dominated by floor traders and voice executions, the latest and greatest options execution tools are not a cure-all. Several classes of option contracts still trade primarily on exchange floors, and cultural norms on many trading desks continue to encourage relationships that rely on executing over the phone. That's why picking up the phone and talking to a sell-side desk still

accounts for nearly half of all buy-side flow (see Exhibit 13). High-volume traders show the greatest preference for electronic methods, but only half of their order flow is executed away from the phone. Options traders

continue to place a premium on capital commitment and the ability of their broker to find the liquidity they require.

Interestingly, this is in stark contrast to two other sectors of the market, where electronic trading accounts for the majority of all activity. Retail options trading is almost exclusively electronic due to smaller order sizes and the prevalence of online trading. The wholesale markets are also more reliant on electronic trading services, as the majority of activity occurring on exchanges is submitted and matched electronically.

Exhibit 13
What percentage of orders do you place through low-touch methods?



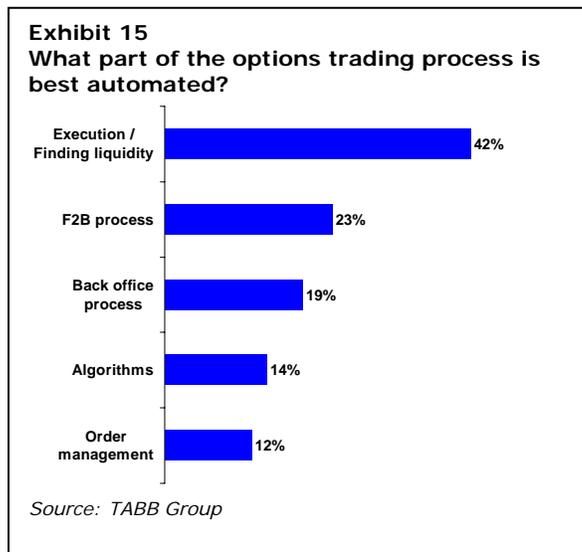
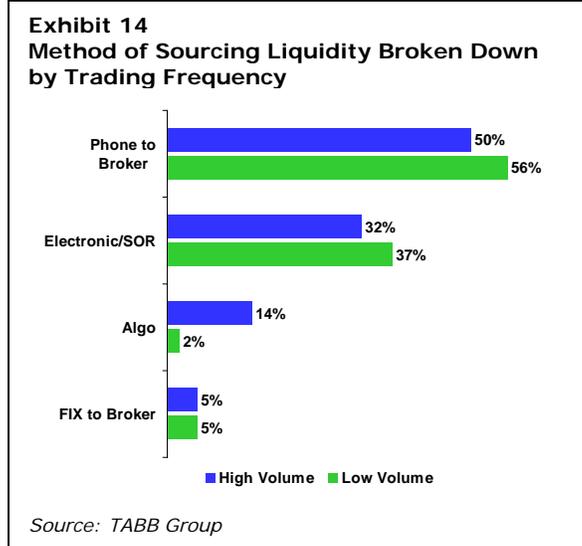
Source: TABB Group

“Electronic (trading) is by far the cheapest way we can do business. It’s very clean, efficient, and anonymous.”
 (Medium-sized Hedge Fund)

Despite trader phone addiction rivaling that of a teenager, the desire for more efficient options trading will continue to drive the overall portion of trading done through DMA, SORs and other electronic access methods (see Exhibit 14). Buy-side

traders must first develop a level of comfort with the basics of electronic trading, such as DMA and SOR, before moving toward more advanced automated trading. The progression is inevitable, as much of the technology already exists. But adoption will take time, as traders’ faith takes longer to build than a trading system.

Although they are not total converts, buy-side option traders are beginning to understand the benefits of automating the liquidity-seeking process through the use of SORs and algorithms (see Exhibit 15). Further automating the downstream flow, such as the settlement and confirmations process, is also crucial; however, enhancements that quickly boost revenue get the most attention. This sentiment clearly indicates the growing demand from the buy side for improved liquidity-seeking strategies.



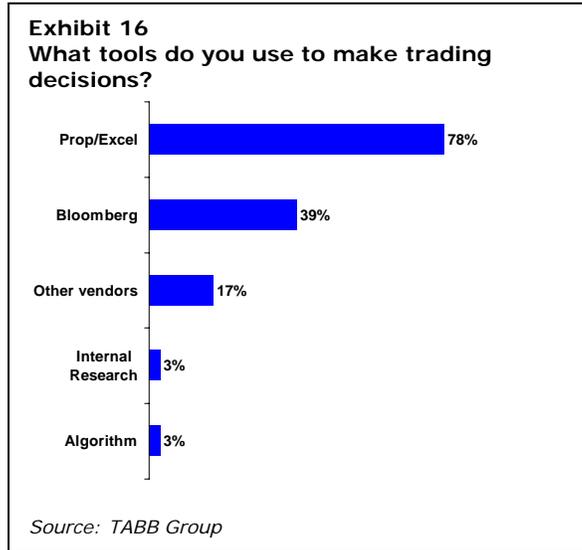
Build it and they will come

Despite an ever-growing level of sophistication amongst these solutions and an increasing number of vendor-provided platforms, the majority of options trading and analytical tools are homegrown Excel-based applications. More than three-quarters of traders use Excel-based models to develop and execute trading strategies, with just over a third relying on Bloomberg screens.

Old habits die hard, and traders are loath to abandon complex spreadsheet-based models and proprietary applications, to

which they have devoted significant time and effort to develop. To some extent, they remain both unaware of and under-confident in vendor-provided solutions, and are unwilling to give up the familiarity and flexibility they

have built into their increasingly complex spreadsheet and proprietary models (see Exhibit 16).



“We use Excel spreadsheets that we have developed through the years.”
(Small-sized Hedge Fund)

However, the demand from traders for even more sophisticated tools, coupled with an abundance of expensive and hard-to-maintain proprietary solutions, have paved the way for vendors to attack this market with vigor, despite low success thus far. Solutions designed to meet the needs of options traders are popping up daily, from the rolling out of options algorithms to nascent efforts to create crossing networks intended to enhance block-trading efforts. Options analytic tools alone present a huge opportunity for software providers. TABB estimates show the options analytics market growing to nearly \$94 million in the next 3 years.

So Many Exchanges, So Little Time to Care

With all six – soon to be seven - options exchanges operating at least partially electronic, the execution venue is nearly irrelevant to the trader as long as he gets his fill. In days past, volume for particular options contracts was largely concentrated on the floor of one of the few major exchanges. A call to the floor broker at the CBOE, for example, was the best way to find and gauge liquidity. As new electronic markets such as the ISE emerged, liquidity left its traditional venue, as faster and cheaper executions caused traders to abandon the floor brokers they had interacted with for years.

Early DMA schema provided simple consolidation tools that aggregated top-of-book quotes from each exchange on a single screen, allowing traders to route orders directly to the market with the best price. This provided much-needed relief, as liquidity began to fragment across new electronic exchanges.

The consolidated order book for options, although still not ubiquitous for traders, has given way to SORs. By evaluating current market conditions, along with disparate trading fees and market rules, the SOR takes much of the guesswork out of routing an order to a given exchange. It also allows traders to leave the time-consuming search for liquidity in less-liquid names to the machines. Over half of study participants routed orders at the discretion of either their broker or smart order-router, displaying no ultimate concern about which exchange the order traded on (see Exhibit 17).

The vast majority cited electronic matching as the overall best market structure, with hybrid markets coming in as a distant second (see Exhibit 18).

Exhibit 17
How do you choose where to route your orders?



Source: TABB Group

Electronic matching removes the middleman, and allows buyers and sellers to match up based on the price and quantity of what they are selling. Buy-side traders can feel confident that their order is executed based on real market demand with no bias. Hybrid

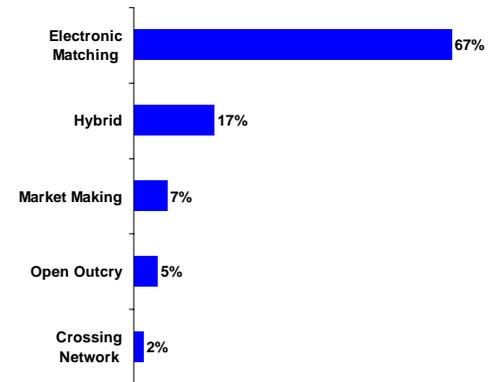
markets provide a bit of a safety net. If while walking the electronic trading tightrope a trader begins to wobble, a call to her broker will ensure the net below will catch her and execute her order safely.

I Feel the Need

As automation begins to occur, so too has the need for speed. Options traders are increasingly seeing speed as a crucial component of their trading strategies, whether they are using electronic or manual voice-based trading methodologies (see Exhibit 19). In 2007, just 7% of buy-side traders we interviewed viewed speed of execution as important; this year, more than half cited its growing importance.

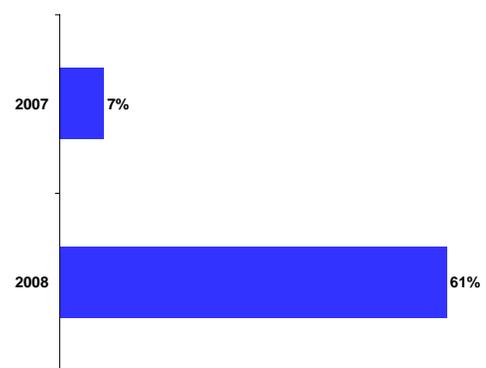
“I think it is always worth sacrificing speed to get a little bit better price”
(Large-sized Hedge Fund)

Exhibit 18
What is the best overall market structure in which to trade?



Source: TABB Group

Exhibit 19
Percentage of participants who said speed is important



Source: TABB Group

The rapid electronification of the options market has had another impact as well. Not only is liquidity hard to find in the marketplace, it is also fleeting. Milliseconds of latency when sending an order to the exchange could

mean the difference between an acceptable fill or no fill at all. Even in cases where the exact execution price is not important to the overall strategy, missing a fill in an illiquid option could equate to missing your only chance to complete your order and execute your intended strategy. In this case, it's the fastest bird that catches the worm.

Key Points

- ▲ *The phone remains the instrument of choice when routing orders, with the majority of trading still occurring by voice.*
- ▲ *Electronic trading will account for a greater proportion of order flow in coming years, and by 2010, hedge funds expect to route almost two-thirds of their order flow through electronic systems while just 14% of traditional buy-side flow will be traded electronically by 2010.*
- ▲ *As trading levels have risen, the need to automate the options trading process has become even more critical for the buy side.*
- ▲ *Traders have little preference for where orders get executed, and instead simply seek to get the best price for their order, regardless of venue.*
- ▲ *Speed of execution is becoming more important for options traders, as strategies are increasingly dependent on fleeting execution opportunities. It is no longer just about price; instead, getting to the price first is now a competitive advantage.*

Here Come the Algorithms

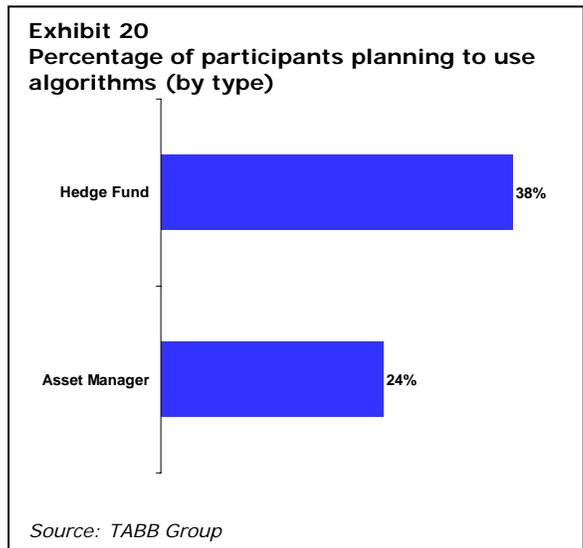
“The traders here seem to like using algorithms...a lot.”
(Medium-sized Hedge Fund)

As traders become more comfortable with trading options electronically, solutions to the options liquidity problem are becoming more and more advanced. Fragmented markets with significant electronic trading volumes have created opportunities for new, sophisticated trading strategies that take advantage of the current market structure to make traders more efficient and profitable. They represent fertile ground for new tools that can automate the trader's search for liquidity and increased alpha. Enter algorithmic trading for options. Once a term reserved for computer scientists, “algorithm” is now on the tip of nearly every sell-side broker's tongue and is quickly infiltrating the buy-side options trading desk.

A number of firms began offering options algorithms to their clients in 2007, including UBS, Goldman Sachs, Credit Suisse, Morgan Stanley, Lehman and BNY ConvergeX. Despite only moderate demand from the buy side, sell-side firms saw the potential advantage algorithms could provide to their option trading clients. These broker-provided algorithms focus not only on order routing, but also order/time slicing, iceberg and other intention-obfuscation strategies.

Hedge funds and proprietary trading firms looking to profit from the opportunities presented by the fragmented electronic marketplace report the highest rate of algorithm adoption (see Exhibit 20). Since trading options is a relatively new discipline for many asset managers, even when the buy-

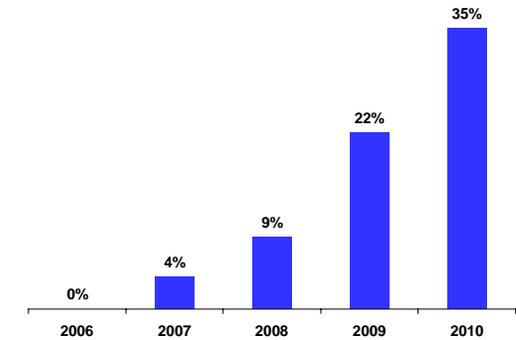
side trader wants to execute an order algorithmically, he will rely on the sales trader to place the order.



“Algorithmic trading for options is nonsense.”
(Large-sized Hedge Fund)

While algorithm adoption is still limited, more than one-third of buy-side traders are planning to use algorithms within the next two years, up from virtually none in 2006 (see Exhibit 21). As volume in the market has grown and investors have become more aggressive with trading strategies, algorithms that seek out disparate liquidity and hide intentions are beginning to attract a growing user base.

Exhibit 21
Adoption Rate of Algorithms

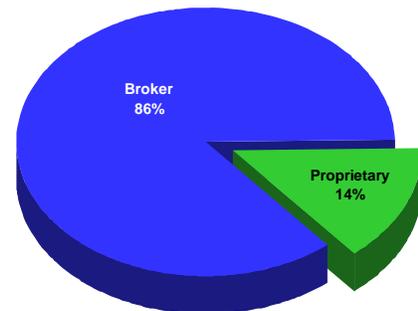


Source: TABB Group

“We would look at algorithmic trading tools, as they could help with some of what we do.”
(Medium-sized Hedge Fund)

Of the traders who want to use algorithms, the vast majority will look to their brokers to provide the trading logic rather than develop algorithms on their own (see Exhibit 22). Building proprietary algorithms is not feasible for most institutions, as the cost and time-to-market are often insurmountable obstacles.

Exhibit 22
Whose algorithms do you use?



Source: TABB Group

Beyond the cost of technology needed to implement such algorithms, simply finding and retaining quants to develop algorithms can be more costly and difficult than using “off-the-shelf” products.

Smarter than the Average Bear

While the benefits of algorithms are readily clear for equity trading, the options market has only just begun to understand and adopt these practices. Current options

“It’s an open search; don’t have one nailed down yet.”
(Medium-sized Investment Manager)

algorithms encompass functionality originally developed for equities and assist buy-side traders searching for liquidity at the best available price.

Just as Yogi and Booboo are constantly seeking new picnic baskets to feed Yogi’s insatiable appetite, traders are constantly looking for tools that can make their jobs less complicated. More sophisticated algorithms—such as those used for delta hedging—are increasingly available, and work by adapting to changes in underlying reference instruments. As the price of underlying instruments change, these algorithms trigger corresponding options trades so that a target delta is maintained for a given position. Delta-hedging algorithms hold tremendous potential for high-volume buy-side strategies, given their need to constantly hedge positions within a broad portfolio.

Long in use at market-making firms, these auto-hedging systems are only now migrating onto the buy-side desktop. The biggest roadblock to their ultimate adoption is not only gaining buy-side traders’ trust, but also their continued adoption of electronic trading.

From brokerage offerings to overall usage, we’ve only seen the tip of the iceberg for using algorithms in options trading. The newly electronic options marketplace has spawned a broad range of new strategies that focus on arbitrage opportunities, and algorithms are the natural evolution of tools to help exploit the new market structure. The concepts and technology have already been vetted through years of trial and error in the equities market; therefore, their uptake for options will be much faster. Despite the overwhelming benefits to the buy side, education and the dismantling of old processes remain as crucial a component to the adoption of algorithms as the adoption of algorithms themselves.

Key Points

- ▲ *2007 marks the first time that dealers offered algorithmic trading capabilities for options.*
- ▲ *Institutional investors expect to quickly accelerate their use of algorithmic trading functionality, and by 2010 nearly 35% of all orders will be routed via algorithms.*
- ▲ *Hedge funds and proprietary trading firms will quickly grasp the power of algorithms, with asset managers*

entrusting sales-trading desks to manage orders on their behalf.

Crossing Over the Threshold

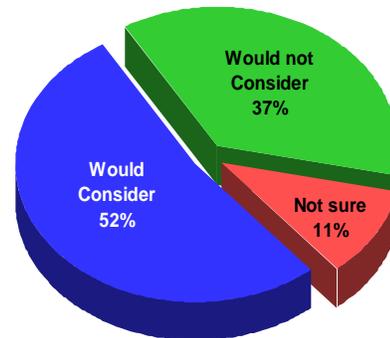
“If I have the ability to interact with like-minded people who trade in size, then the best way to trade that order would be off of the floor.”
(Medium-sized Hedge Fund)

Block-crossing networks have gained wide acceptance and success in equity markets due to the value inherent in executing large blocks anonymously. However, it took a number of

years for equity crossing networks to achieve critical mass. The unique characteristics of the options market, however, pose significant roadblocks to their success. Not only are there a large number of different

contracts for each underlying equity, but the existing regulatory environment forestalls the implementation of any crossing networks that would operate similarly to the dark pools that have become popular for U.S. equities. Nevertheless, the majority of buy-side traders recognize the potential benefits of block-crossing networks for options (Exhibit 23).

Exhibit 23
Would you use an options block crossing network?



Source: TABB Group

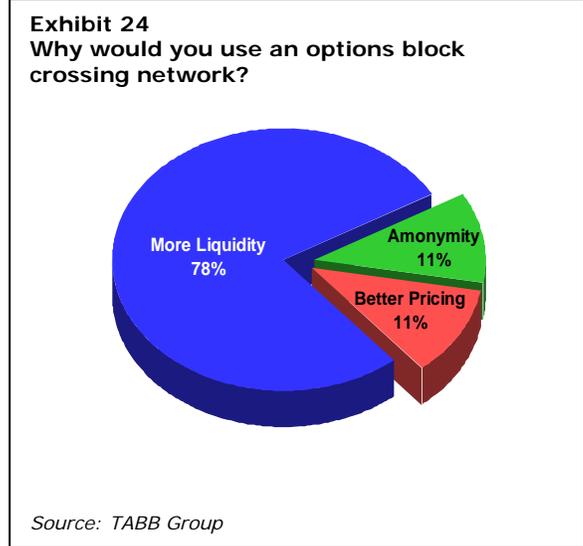
The reasons behind the buy side’s interest in block-crossing networks are similar to the factors that have led block crossing to account for more than 15% of overall U.S. equity volume, according to the TABB Group study, “U.S. Institutional Equity Trading 2007.” Liquidity will always be a primary motivator for trying a new execution venue, particularly at sizes not available in public markets. But as the saying goes, liquidity begets liquidity, and the success or failure of these venues resides within the details of how the venue operates.

Anonymity will be critical to attracting the first participants in an options block-crossing network, because there isn’t much reason for someone to expose his order, particularly on a new network, without that kind of protection. Furthermore, if the price they are going to get is no better than what is on the exchange, it

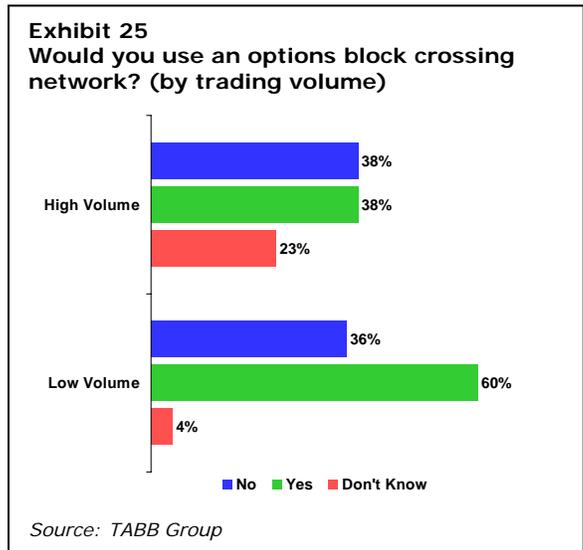
“I didn’t know dark pools existed for options.”
(Medium-sized Hedge Fund)

also limits the reasons for exploring a new type of trading (Exhibit 24).

Interestingly, low-volume traders expressed considerably more interest in alternative trading venues than their high-volume counterparts. Typically, options are not part of their core strategy, and the ability to execute a block of options in a single transaction at a pre-arranged price provides a quick and potentially lower cost alternative to traversing publicly displayed liquidity pools (see Exhibit 25).



One of the first attempts to provide a crossing network was launched in 2007. Archangel, an options crossing network operated by 3-D Markets, takes a unique approach by allowing trades to be entered and matched based on risk profile characteristics instead of an exact match of underlying options. Whether this works in practice and provides liquidity opportunities to entice traders remains to be seen.



Meanwhile, the bulge-bracket brokers are weighing their choices in the space. Although none have publicly made a move into this space, it is likely they will begin investing in options crossing technology – whether someone else’s

or their own – based on the buy side’s increasing demand.

Where We’re Going, We Don’t Need Roads

Although some have found ways to operate within the current environment, regulatory hurdles present the biggest challenges to crossing networks in the options market. Listed options trading must be conducted on a registered exchange. If an agency broker finds a natural match between two customer orders, those orders must be exposed on the floor – whether virtual or not – to allow potentially improved bids and offers for the order. Under the current regulatory structure, counterparties crossing a trade in a crossing network are not necessarily locked in at the decided price, because the order must still be displayed on an exchange. If a better price can be obtained at an exchange, only one of the two original counterparties will walk away with an executed order. Crossing networks can still operate in this environment; however, keeping the network truly “dark” will remain a challenge.

“There are hundreds of strikes, so the ability to find natural counterparties is difficult.”

(Small-sized Hedge Fund)

Although the current regulatory structure represents a challenge to their potential success, TABB Group believes that it is only a matter of time before the current regulatory structure is updated and revised to allow for the unencumbered establishment of crossing networks in the options marketplace. Although to some it may represent a potential step backward given its potential to decrease transparency, trading in certain liquid options classes has evolved to a point that crossing networks can provide a valid reference market for transactions matched in private pools. Automated trading tools have allowed market makers and others with similar trading strategies to quote prices in even the most illiquid names.

As long as completed transactions are disclosed to the market in a timely manner, the utility of dark pools will only grow over time. Just as over-the-counter markets exist to provide customized liquidity on demand, so too will dark pools in matching orders between willing counterparties. By no means will dark pools supplant the century-old exchange model, but they will provide a valid alternative to currently fragmented liquidity.

Key Points

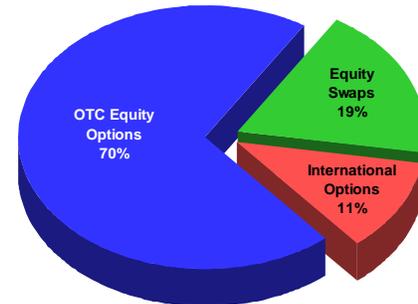
- ▲ *The majority of buy-side traders recognize the potential benefits of block crossing, with the need for liquidity acting as the primary driver.*
- ▲ *Only one option crossing network exists to date;, however, bulge-bracket brokers will likely invest in the sector in the near future.*
- ▲ *Regulatory hurdles present the biggest challenges to crossing networks in the options market, as options contracts cannot be traded away from a registered exchange.*

“We are indifferent as to whether a trade occurs on the floor of an exchange or via an OTC contract.”
(Medium-sized Investment Manager)

The Over-the-Counter Option

As hedge funds and asset managers continue to look for new ways to use derivatives to create and capture alpha, the customized nature of these strategies often requires products not found on an exchange. The most frequently used type of OTC equity derivative was for US equity options; however, traders also gained exposure through equity swaps and international OTC options (see Exhibit 26).

Exhibit 26
What types of OTC equity derivatives do you use?

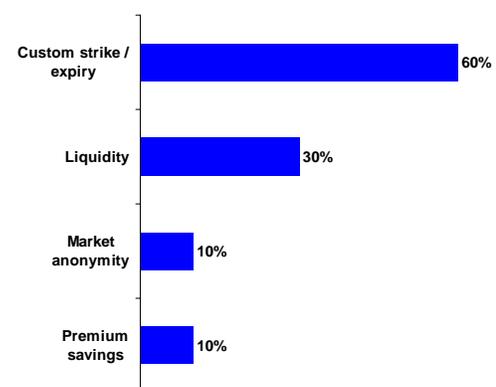


Source: TABB Group

Unique expirations, strike prices set to situational events and non-conforming contract sizes all require traders to turn to the OTC options market. Although the variation in the listed options market is vast, exchange-traded products must conform to standards that often do not fit precisely with a trader's strategy. This need for customization was the main reason for using OTC options today (see Exhibit 27).

The buy side cited several other reasons it chose to stay off of the exchange. Rather than searching out liquidity, arranging a customized trade with brokers proved more efficient. Additionally, trading OTC provides a level of anonymity that is not achievable by executing in the listed market. Despite

Exhibit 27
Why do you use OTC derivatives?

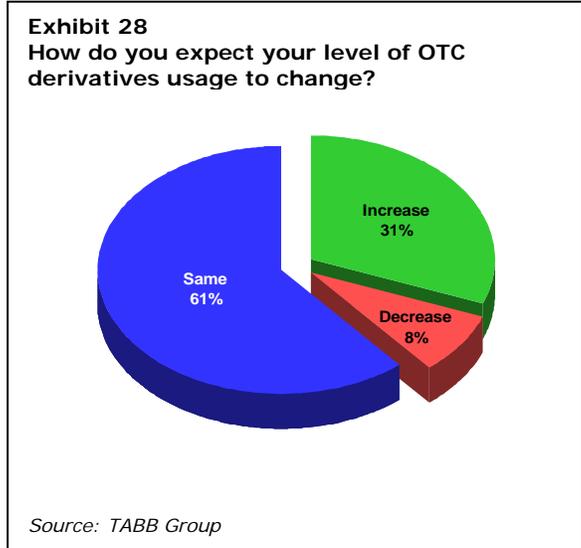


Source: TABB Group

“We like liquidity and flexibility in our strikes”
 (Large-sized Investment Manager)

higher broker fees, some in our survey also found they saved on premium costs on OTC options for larger quantities.

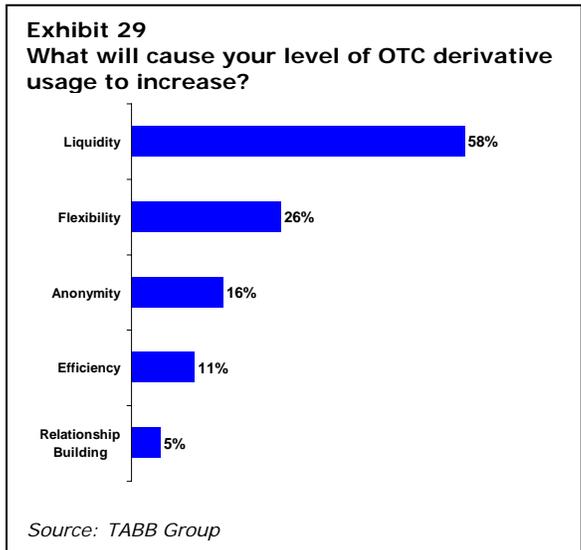
The OTC options market will become increasingly important as nearly one-third of traders plan to increase their OTC options activity, with hardly anyone expecting a decline in usage (see Exhibit 28). As more buy-side firms take a risk-based approach



to investing and look to take unique views on the market, the total notional amount of OTC option contracts traded will continue to grow along with exchange-traded volume, as the needs of some buy sideers can be met in no other way in today's market.

“We go OTC if a manager is in a spot where he needs a specific hedge on something that he can't find any other way”
 (Large-sized Hedge Fund)

The primary factor behind the future growth of OTC option usage, however, is the need for liquidity (see Exhibit 29). Executing large orders in illiquid contracts is challenging, especially when spreads are wide and depth of market is thin.



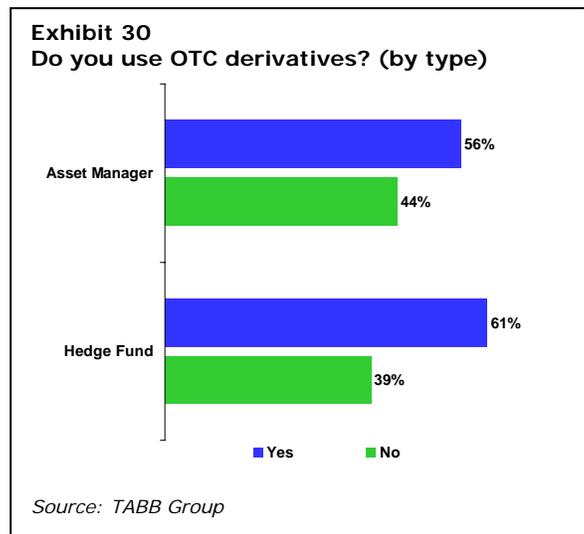
Working with a sell-side broker to create an options contract of the required notional size and price is often the only solution that can meet the trader's needs, and they are willing to pay dearly for this service.

OTC equity options are not the answer for everyone. More than a third of participants do not use OTC derivatives for a number of reasons. The cost as a percentage of notional is often higher than executing an order in a similar exchange-traded product, because the custom nature of the trade requires more time and capital commitment from the broker.

In recent months, the specter of counterparty credit has also become an important part of the decision process for traders seeking to enter into an OTC transaction with a dealer. As losses from the sub-prime crisis loom over a bank's balance sheet, counterparty risk is a factor that must be taken into account in any private transaction, especially those with terms measured in years. The perceived weakening of dealer counterparties may negatively impact demand for OTC agreements, but only time will tell if the current credit crisis will have a lasting impact on demand for customized OTC options.

Additionally, when time is of the essence, OTC derivatives are not practical because legal contracts must be drawn up and agreed upon by both sides outlining the

terms (size, price, cash flows) of the deal. Finally, without the proper infrastructure to review and record the custom contract, risk-managing these positions becomes difficult for the buy side (Exhibit 30).



Key Points

- ▲ *The vast majority of OTC derivative use by the buy side is in OTC options contracts.*
- ▲ *The need for customized contract terms (expiration, strike price, etc.) is the primary driver for OTC derivative use.*

- ▲ *The OTC options market will become increasingly important, as nearly one-third of traders plan to increase their OTC options activity, driven in large part by a need for liquidity.*
- ▲ *OTC derivatives are not suited to all buy-side firms, as they pose higher costs, increase execution times and require OTC-enabled risk management systems.*

Can't Live Without my Broker

Brokers continue to play a key role in the options market, whether they are providing electronic access, trading advice or supplying detailed color on the trading landscape. Both hedge funds and asset managers rely on brokers to provide a broad range of services that ultimately allow them to trade the options they want in a method consistent with their investment strategies.

“Brokers have a lot more exposure to asset classes, and are more knowledgeable about trading multiple instruments.”
(Large-sized Hedge Fund)

Yet brokers are not defined solely by their electronic offerings or trading desks, but by an intricate combination of the products they provide to their clients. Higher levels of service and coverage are still clearly in demand, as commission rates can be multiple magnitudes greater than electronic executions.

There is a consistent difference between the opinions of high-volume and low-volume traders with respect to the importance of brokerage services. Small trading institutions, typically those firms that have less options trading experience, naturally look to brokers for support. This support can encompass part or all of the transaction process, including pre-trade as well as post-trade processes that suffer from a lack of automation for options trading activity.

Firms must rely on their brokers' technologies because they have not invested in infrastructure to support options activities. However, even the specialist option trading firms with proprietary models still look to brokers for a mix of services that can help them improve returns.

Still Looking for Liquidity

The search for liquidity is also a key service provided by brokers. Buy-side traders evaluate where to find liquidity every time they make a trade, taking into account a number of factors for each order. However, not everyone's decision tree is the same. High-volume players look to brokers for orders of significant size, while smaller players use brokers to find liquidity in less frequently traded names, especially when they are unable to find needed liquidity in electronic markets.

Complexity of orders was also a key consideration, with lower volume trading accounts leaning on brokers for assistance in completing complicated trades, such as

“The \$3 commission is not as steadfast as it used to be. That number will come down as more options are traded electronically.”
(Large-sized Hedge Fund)

those with multiple legs, contingent components or straddles in less-liquid instruments (see Exhibit 31).

Price improvement is another important reason for going to a sales trader since dealers will often offer price improvement through capital commitment or by taking the trade into or out of the portfolio to balance their own risk positions.

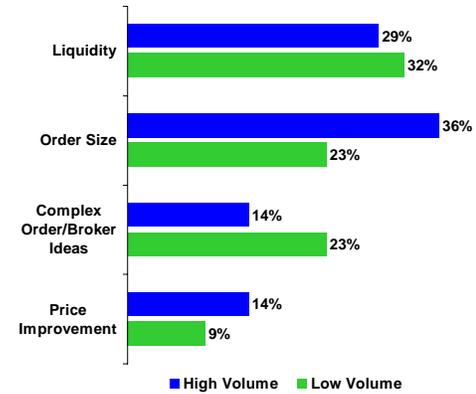
Higher-priced options with wider spreads will remain a capital-intensive business. Less-liquid options that trade at higher price points will remain a key battleground for brokers, since they will compete by using balance sheets and service, instead of by reducing commissions to the point of minimal profitability.

Information is King

The challenge for brokers is providing a package of low-touch technology offerings with traditional voice-based trading services to best service all of their clients. Large asset managers that use options in hedging strategies have sporadic trading patterns, sometimes trading large volumes at the end of the quarter, while at other times trading nothing for days. Electronic access may work for the smaller orders, but a broker needs to be able to support the block trades as well. They also need to be able to provide feedback on strategies and activity that are specific to the trading patterns of each client. There is no one-size-fits-all strategy.

Providing an electronic trading platform and a phone number for support may work for fully electronic clients, but these clients are few and far between. Most buy-side traders need more than just a user interface. Electronic trading tools, experienced voice brokers, sophisticated trading strategies and accurate market color are critical in the options markets, and all of these remain key elements to a successful client offering.

Exhibit 31
How do you choose whether to execute via human or electronic? (by trading volume)–



Source: TABB Group

“Our broker knows something that we are missing, or that something is out there. I love stuff like that.”
(Small-sized Investment Manager)

“We are so much more advanced than our brokers that they are not providing me much valuable color at all.”
(Medium-sized Hedge Fund)

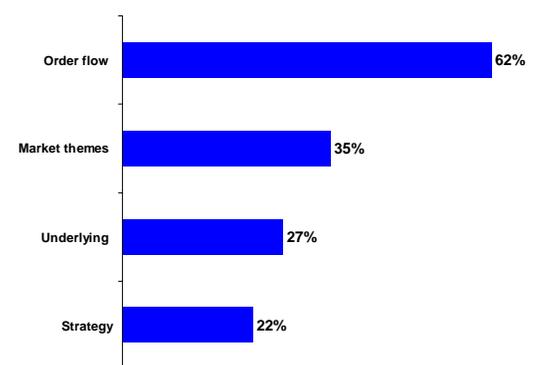
Although trading desks still facilitate orders for buy-side clients, they also provide a wide range of critical services and support. Trading strategies, analytics and overall market themes are all important to buy-side traders; however, market color on order flow and available liquidity are the two most valued brokerage services. So although brokers are no longer the only method of execution, they remain a key source of market information that is integral to almost every execution strategy.

The mix of services used by particular clients differs depending on type of organization, strategy and volume of trading. More than two-thirds of all participants consider the ability to pick up the phone and get a snapshot of order flow to be an important piece of market color. Obviously, high-volume trading firms that trade large blocks of options on a daily basis want the

information. Yet, it is also important to other participants, whether small or large, a hedge fund or an asset manager. In a market structure with so much choice and so little liquidity, the capability to share information and talk things

over will remain a critical service (see Exhibit 32).

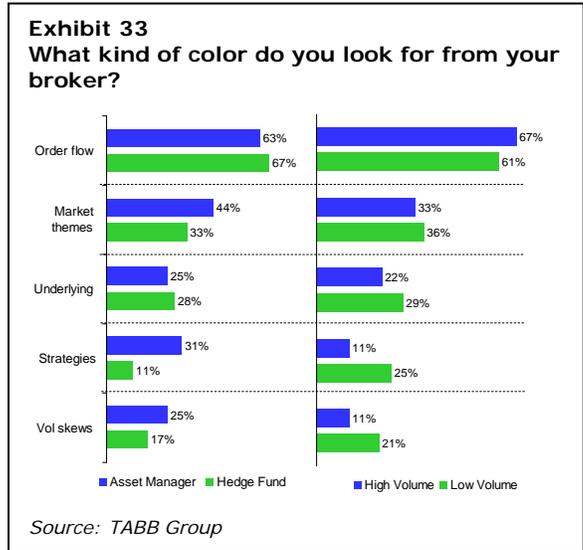
Exhibit 32
What kind of color do you want from your broker?



Source: TABB Group

The value proposition of market color differs substantially for the provision of strategic color. Information on the ability to execute a particular strategy was more valuable for less sophisticated trading institutions that may not have the tools or the capabilities to analyze a new or different strategy. Nearly one-third of the asset managers valued market color relating to strategies, while only 11% of the hedge funds found market color to be a valuable source of information. The bifurcation

was similar between low- and high-volume accounts. One quarter of lower volume trading institutions value color, as compared to just 11% of higher-volume traders (see Exhibit 33).



“I think we are seeing less of a human factor as we get more into the electronic stuff.”
(Small-sized Hedge Fund)

Not all institutional investors rely on their brokers for advice, especially secretive hedge funds that have spent significant time and resources on developing proprietary black-box strategies that they seek to keep proprietary. They have little need for market color or research; all they want is a fast, low-cost execution with as little interaction with a sell-side broker as possible. The one exception is order flow, the lifeblood of many a strategy. High-volume trading shops covet this type of data, as it provides key information on market sentiment, as well as potential pockets of liquidity that can make or break a strategy.

The Cost Advantage of the Flickering Byte

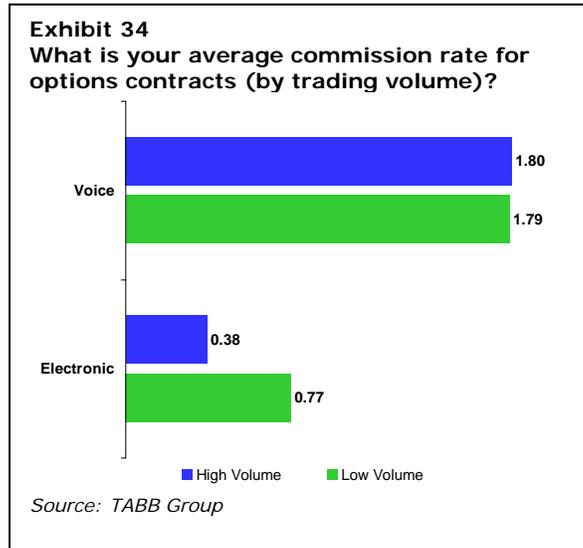
Commissions are under pressure across nearly all markets in which brokers provide services to buy-side clients. Nowhere has this been more evident than in the listed equities markets, where some players are paying sub-penny per share rates for orders executed using low-touch trading tools such as DMA, smart routing and algorithmic trading. The same factors are at work in the options markets, however, the importance of voice

trading services is cushioning the blow of falling commissions.

The traditional price-based range of \$1, \$2 and \$3 commissions is alive and well in the options market (and for one trader we spoke with, a \$4 rate for high-priced options was not out of the question).

However, commission rates for low-touch order flow are substantially below voice rates, with high-volume traders gaining a considerable discount due to

the amount of electronically traded contracts (Exhibit 34). However, no such high-volume discount exists in the voice business. Large clients that pump significant volumes through the trading desk do not have any advantage over their smaller competitors.



“A couple of brokers that we currently deal with are a little behind on the technology curve.”
(Large-sized Investment Manager)

Higher-touch transactions cost more for one simple reason: service. The value of this service is a big reason behind the tenacity of the traditional options commission rates. Providing strategic advice, a look at what’s going on in the market or managing a complicated order can significantly improve execution results for a trader, whether she is trading for a \$1 trillion asset manager or a \$10 million hedge fund. Many traders we interviewed felt that commission rates for these transactions were acceptable, given the importance of the relationship with the broker. That interviewee was happy with current commission rates, and, given the high level of handholding received, was not aggressive in trying to trim these rates.

Cooler Kid on the Block

Sell-side brokerage firms are taking notice of the explosive growth in options trading. As option trading proliferates, the competition for order flow has become fierce. Brokers will increasingly differentiate themselves

by way of their response to the pressure to develop new tools and provide enhanced customer service.

In fact, the range of services required by options traders allows the full-service brokerage firms to dominate the space. It takes deep balance sheets, broad offerings, high-quality service and subject-matter expertise to tackle the options space. Nine of the top ten brokers identified by our study group were bulge-bracket firms. It didn't matter much whether the firm was large or small, high-volume or low-volume: bulge-bracket firms dominated the rankings in every situation (see Exhibit 35).

“The only way I would switch brokers would be by someone putting a shotgun to my head.”
(Large-sized Hedge Fund)

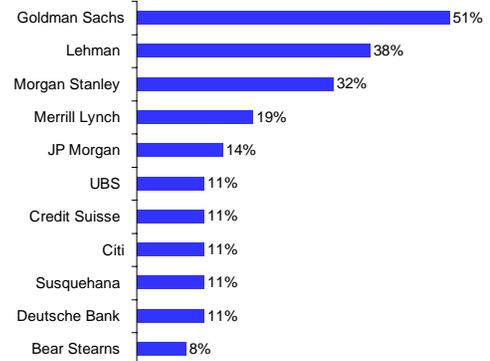
In order to be considered a top-tier client and benefit from the breadth of a bulge-bracket's offering, buy-side firms are sending the bulk of their order flow to a small group of favored brokers. Smaller firms

concentrate flow to become more important clients and more effectively negotiate for

research, access, or preferential pricing. High-volume traders use a greater number of brokers and are less likely to concentrate volume with their top three brokers. They do this to help manage concentration

risk, lower commissions, and access services such as capital, contra-order flow and timely market color from as many brokers as possible (see Exhibit 36).

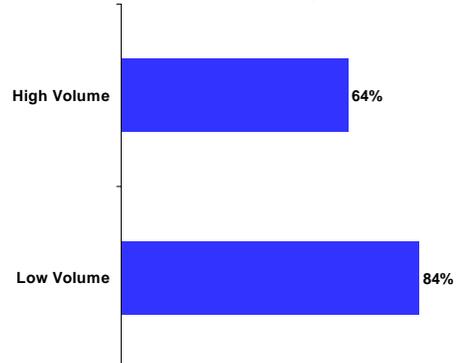
Exhibit 35
Most frequently used brokers



Note: 15 other brokers were each mentioned once

Source: TABB Group

Exhibit 36
Order flow executed with top 3 brokers



Source: TABB Group

Staying Together Through It All

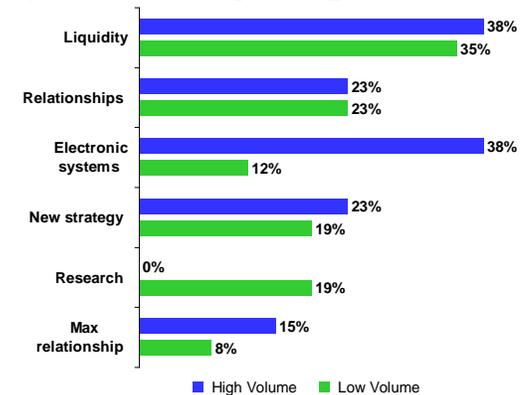
With such a competitive landscape, it might appear that – at least among the top ten brokers – the similarities between sell-side offerings would make it difficult for the buy side to choose with whom it is best to trade. With broker relationships established via other asset classes, and commission pricing a non-factor, why not just trade options with favored counterparties and in a familiar environment?

Unfortunately, the sell side cannot count on the buy side's complacency. Although relationships remain critically important in the options trader's reasons for choosing counterparties, there are factors that could influence a trader to switch to a new broker. True to form, finding additional liquidity was foremost in the minds of traders we interviewed.

“We have a ‘top three’ and they do a really good job...they know our strategy and how we do our trades.”
(Medium-sized Investment Manager)

A broker's ability to find a contra side, whether by committing its own capital or by working an order in the market, represents a formidable competitive advantage in both obtaining and retaining clients (see Exhibit 37).

Exhibit 37
What factors would compel you to change options brokers (by trading volume)?



High-volume traders are also swayed by new technology and tools that would enhance their strategies. Automated trading strategies require sophisticated interfaces and processing engines that can efficiently handle large numbers of transactions. As trading volume increases, reducing fees becomes critically important for improving the profitability of a particular strategy. The importance of a broker's electronic offering is being driven by the need for speed and the desire to lower costs. Research is also a valued service, however, only for smaller-volume clients.

The quality of the overall relationship between the broker and the client also plays an important role for the client. In today's market this is no simple task. When orders are communicated via phone, the relationship naturally evolves. With the onset of DMA and automated trading, however, the sell side needs to become proactive and ensure that the relationship will not disappear into 1s and 0s.

However, the complexity of options and the rapidly changing market landscape are key characteristics of the options market that create tailor-made reasons for communicating with the client. Providing educational services, strategic advice or the latest analytical tools results in frequent opportunities to engage clients, reinforcing the value of the relationship.

For sophisticated clients who do not need higher-touch services, the key to client satisfaction is more tangible, but also more highly scrutinized. These clients demand fast and efficient execution through electronic tools that can meet the complexities of their strategies. Direct connectivity to dealer desks will become an important piece of the puzzle, especially as they lean on dealers to commit capital. They not only need to execute quickly, but they also need to have friction-free processes that allow them to be more efficient with work flow. Back-office connectivity becomes critically important for high-volume trading institutions, as are the latest and greatest electronic tools for trading.

“I would be interested in seeing natural order flow information from a broker.”
(Small-sized Hedge Fund)

There is little doubt that electronic order flow will continue to grow in importance, and brokers seeking to attract this flow need to continually upgrade their technological capabilities in order to retain this flow. Providing DMA may have worked in 2007, but sophisticated capabilities such as algorithms, direct FIX connections to sales trading desks, and the ability to automate complex strategies will be the benchmarks against which brokers will be measured in 2008 and beyond. If trading eventually evolves into an electronic-only relationship, then the broker will need to have the best technology and lowest fees on the street. Otherwise, the client will walk.

Having it with a Cherry on Top

The importance of brokerage services would be expected to vary dramatically by the sophistication and trading activity of a particular type of client. There is no one-

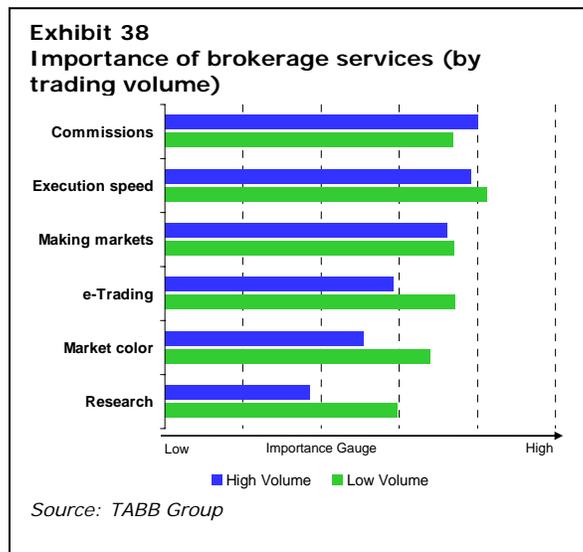
size-fits-all strategy. Even though Baskin-Robbins started with just 31 flavors, the company has since added more than 1,000 flavors, to keep up with the demands of its clientele.

The brokerage industry is no different. It seeks to enhance its value proposition for clients by providing new flavors in the form of enhanced capital, trading tools and customized strategies. Electronic trading may work for some clients, but the more valuable, higher-margin clients—those most coveted by brokers—will be provided with a menu of services that meets their more complicated palettes.

There was little disagreement between high-volume and low-volume accounts regarding the most important services offered by their brokers. Commissions, execution speed and making markets are equally important factors for both asset managers and hedge funds. After all, the trader's job is to seek out liquidity at the lowest possible cost. Commission levels are crucial to all traders, as those costs can eat away at alpha or reduce the effectiveness of a hedge. Pressure from the

“We want to pay a competitive rate, but not necessarily the cheapest rate.”
(Medium-sized Investment Manager)

buy side will act as an additional catalyst for downward pressure on commissions for options trading using electronic systems. And as electronic trading costs drop, the value proposition for moving orders away from sales traders will grow (see Exhibit 38).



Low-volume clients value research and market color because—in some cases—they are less familiar with the intricacies of the options market. They also prefer electronic trading, since they want to be able to streamline operations for improved efficiency. In contrast, high-volume traders are much more familiar with electronic trading tools, and oftentimes even build their

own front-end interfaces, so the ability to view broker tools is considered less important. But the key differentiator that determines the level and kind of services brokers require relates to the way the fund executes its strategy, the instruments it selects, and the question of whether the trade can be completed at a lower cost through DMA or through another advanced-execution technique.

Satisfaction with broker services is relatively high across the board, with execution speed receiving top marks from both high- and low-volume traders. The brokers are also doing a good job of putting capital to work, with both trading groups ranking their satisfaction about equally.

However, satisfaction with commission levels, although ranked highest in terms of importance, are failing to meet the buy side's expectations, with high-volume accounts reporting being markedly less satisfied than low-volume trading accounts.

The results were similar for both research and market color, with lower-volume accounts ranking their satisfaction higher than the more-active trading desks (see Exhibit 39).

High-volume clients are often indifferent to broker market color. In the case of one of the traders with whom we spoke, he felt that his firm would be able to provide more market color to the broker than vice versa. The direction and order flow of one of the largest buy-side trading accounts we interviewed—more than 3 million contracts monthly—equals or exceeds the total customer volume of many a mid-market broker.

Broker research has less appeal for high-volume trading accounts as well, as they execute trading strategies they have honed through quantitative models developed over



“In the world of options trading, we have found that most of the systems the banks are providing are not up to speed with what you can get from a private vendor.”
(Medium-sized Hedge Fund)

many years and through many different market conditions. Research on the latest and greatest ways to profit on market mis-valuations or through pairs-trading strategies simply does not influence high-volume firms' trading activity. The strategy rarely changes, and when it does, it is almost certainly not because an analyst proposes a new trading strategy based on the market's perception that a potential merger is in jeopardy.

Gimme Some Credit

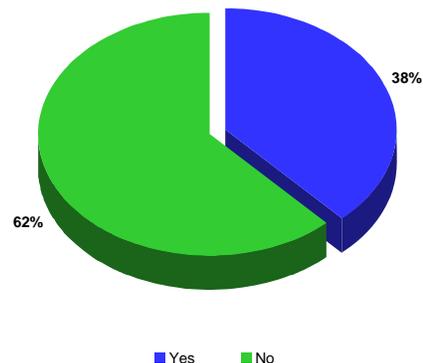
The never-ending search for services that can be offered out to desirable hedge fund clients got a shot in the arm last year when the SEC approved new portfolio-margining rules that increase the appeal of derivatives instruments. However, although the SEC authorized the use of new risk-based formulas for calculating margin requirements in July 2007, very few firms have taken advantage of the potential leverage and netting capabilities. Although a number of factors have forestalled their adoption, the greatest single obstacle is the lack of support for portfolio margining by broker-dealers. As is true with any new regulatory environment, the market has not quite caught up to, nor is it ready for, the new rules. Many prime brokers have not updated their systems to allow for the new margining techniques.

"I think we will get a little more leverage out of the new portfolio-margining rules."
(Medium-sized Hedge Fund)

A combination of administrative burden, the complexity of revamping back-office systems, and the lack of a crying demand have all contributed to their scant availability. As broker-dealers overcome these obstacles, portfolio margining will become more widely available, and will be used more heavily by accounts that are able to benefit from the leverage and the powerful risk treatment available under the new structure.

Illustrating the lack of current support for portfolio-margining accounts, almost two-thirds of the

Exhibit 40
Have the new portfolio margining rules impacted your trading?



Source: TABB Group

“We don’t use a lot of leverage, so we are not interested in the new portfolio margining rules.”
(Small-sized Investment Manager)

traders we interviewed felt that the new rules had little impact on their options trading activity. Nearly half of these hedge funds felt that the new rules provided little benefit, since they were not big users of leverage or were able to obtain advantageous financing leverage using alternative structures (see Exhibit 40). But many expressed an interest in using the new rules once their brokers were able to support the accounts.

“The problem is, none of our brokers provide portfolio margining. It is a technology issue, and the people we do business with do not support the new rules.”
(Large-sized Investment Manager)

Even though the new margin rules have not had any major impacts on our hedge fund traders, most were generally supportive of the new rules, as they lowered internal costs and streamlined operations through the elimination of burdensome and expensive broker-dealer registrations that they may have used in the past. The advantageous accounting treatment available for options positions created under a broker-dealer registration were—prior to the new rules—a more efficient way to trade and finance options trading activity. However, the new rules provide an opportunity for hedge funds to eliminate the burdensome broker-dealer registration obligations and essentially receive the same accounting treatment by using portfolio margining.

Perhaps even more telling is the opportunity presented to current options market makers, who may be eyeing the new portfolio margining rules as a potential way to move from the increasingly competitive wholesale options market making business into trading for their own accounts - in effect becoming proprietary trading shops. Eliminating the market maker obligation and taking advantage of the new portfolio margining rules lowers costs for these institutions dramatically, allowing them to become more opportunistic - and presumably more profitable - through the transition from traditional market maker, to a hedge fund or proprietary trading firm.

Key Points

- ▲ *Although important, the electronic offerings of a broker will remain only a portion of the service they must provide to retain valuable buy-side clients.*
- ▲ *The need to share information and talk things over will remain a critical service in a market structure with so much choice and so little liquidity.*
- ▲ *Commission rates for low-touch order flow are substantially below voice rates.*

- ▲ *Bulge-bracket firms dominate the institutional options brokerage space, and nine out of the top ten fall into that category.*
- ▲ *As electronic trading costs drop, the value proposition for moving orders away from sales traders will grow.*
- ▲ *Although relationships remain critically important to options traders, access to liquidity and the ability to commit capital are the primary reasons the buy side would look to a new broker.*
- ▲ *Nearly half of hedge funds felt that portfolio-margining provided little benefit, since they were not big users of leverage, or were able to obtain advantageous financing leverage by using alternative structures.*

Conclusion

Options have often been maligned as dangerous financial instruments that should only be used by sophisticated investors, and even then only in measured doses. Yet the options market of today is no Cerberus, the three-headed monster from Greek mythology. It is more akin to Dionysus, a little mysterious, volatile, and subject to irrevocable change, but not as dangerous as it once may have been perceived.

As more market participants enter the options market, liquidity is growing. The appearance of a new user that seeks to use options as an asset class is contributing to exponential volume growth through the trading of complex, multi-legged quantitative strategies. Add to this the growing acceptance of options trading strategies for risk management and alpha-generating strategies by the most prudent of institutional asset managers and you have a market that is becoming more vibrant with every passing day. Restrictions are becoming more relaxed—even at conservatively-managed pension funds—yet at a measured pace, and with the full buy-in of oversight boards, investment committees and those with fiduciary responsibilities.

Options trading for the buy side is still dominated by telephone calls, instant messages and e-mails. As investment managers increasingly use options in portfolio strategies, they will turn to their trusted advisors, who always stand willing to provide advice, counsel, and of course, capital to execute their strategies. Despite the unstoppable trend toward more automated trading activities, the relationship between broker and client will remain a critical link in the transaction chain.

However, the buy side has the innate need to control its own destiny, and it will always look to use tools that reduce its dependence on “conflicted” brokers. The desire for independence is one driver toward electronic trading mechanisms that help automate the execution process. Much work remains to be done, however, as the idiosyncratic options trading process is still in the early stages of its transition to electronic trading. As screen-based liquidity continues to grow and technological resources are targeted at options trading desks, the inevitable march to electronic trading will continue.

Brokers will be quick to take advantage of the rapidly changing market environment in order to leverage existing relationships with institutional investors. Brokers will need to provide a broad range of services to both nascent and established options trading clients. New users will require significant hand-holding as they move up the learning curve and better utilize options strategies in their activities. More established and experienced trading institutions will still demand support, but in the form of sophisticated tools that leverage technology to make their more-aggressive tactics efficient to execute.

No matter what type or size of client, brokers will be regarded as the needed expert in the transaction chain, particularly those that can provide a package of services to

clients, including market know-how, capital and execution tools that can leverage the electronic market structure that evolves. However, an options trading desk staffed with voice brokers will remain critically important, especially for clients that demand that extra level of service and willingly pay commissions that can be four or five times larger than for electronic executions.

Recent regulatory rulings will also provide a stronger foundation for the options market of the future. TABB Group believes penny pricing will ultimately be mandated across all options classes. This is not to imply that bid-offer spreads will shrink to penny increments across every single options class and strike price; instead, supply and demand will dictate the spread between bid and offer prices, whether it is in pennies, nickels or dimes. The end result will be better markets for investors, although it may reduce profitability for market makers as spreads narrow and edge disappears. The one hope is that the reduced spread will be made up through greater trading volumes. One impact is clear: penny increments will force market makers to become more efficient and to rely increasingly on technology to manage activities.

The combination of greater investor participation and acceptance, as well as the complementary regulatory environment that has evolved, will grease the skids for option trading's future importance to investors. Options are not the end-all and be-all for every investor segment, but they do represent a critically important asset class for investors seeking to better manage risk and improve the ability to capture and retain alpha.

About

TABB Group

TABB Group is a financial markets' advisory and thought leadership firm. Focusing on the intersection of the financial markets and technology, TABB Group produces major studies on the future of trading and the impact of market structure changes on the financial industry. TABB Group members are regularly cited in the press and speak at industry conferences. For more information about TABB Group, go to www.tabbgroup.com.

The Authors

Andy Nybo

Andy Nybo has more than 20 years of experience in marketing, research and technology applications in the global capital markets and has been a senior analyst at TABB Group since August 2006. Currently focusing his research efforts on the listed equity derivatives markets, examining how technology is playing an increasingly integral role on both the buy-side and sell-side desktop, he has written the TABB Group studies "Exchange-Traded Equity Derivatives: The Buy-Side's Increasing Exposure", "Cross-Asset Trading Systems: Controlling the Trader's Desktop", and "Futures Trading Platforms: The Evolution of Point and Click Trading?".

Kevin McPartland

Kevin joined TABB Group as a Senior Analyst in September 2007. He was most recently with Detica (formerly m.a.partners), where he was a senior manager in the Global Financial Markets division responsible for strategic and implementation projects across equities, derivatives and fixed income for the firm's top tier investment banking clients. Prior to joining Detica, Kevin held positions at JPMorgan Chase in both the Equities and Futures & Options divisions where he managed the development and implementation of electronic trading systems, as well as project management and business analysis of major business and technology initiatives, strategic architecture design and business process definition.





www.tabbgroup.com

Westborough, MA
+ 1.508.836.2031

New York
+ 1.646.722.7800

London
+ 44 (0) 207 368 3377