

Bull Session

Some news you should know about your Ex

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what's new?

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questions?

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An ArcaEx Activity Update

Since the Archipelago Exchange (ArcaEx) was launched in March we have reached a number of major milestones and have seen our listed business evolve and grow. Our top five volume days all occurred in the month of October and we continue to see our overall market share rise. In the month of September our listed market share was 1.8% and grew to almost 2.3% in October. Share volume for October was 837 million shares, almost double of what it was in September 2002.

Try It, You'll Like It

ArcaEx is proving to be a good place to trade listed stocks that have recently had informational events (like S, TXU and COF during the week of 10/14/02), the ultra-liquid names (TYC, IBM, and GE) in addition to the original electronic naturals -- ETFs (see following story). ArcaEx's advantages -- like fast order entry and cancellation, strict price/time priority, anonymity and true agency brokerage, display of full depth of book -- have proven valuable to clients, as have innovative trading tools such as discretionary and reserve orders. If you're aware of the advantages the Archipelago ECN provides for OTC names, take the opportunity to get to know our "listed side" as some of our clients have recently done.

A good example is GE. A couple of months ago clients brought liquidity, including some large orders, in GE to ArcaEx during a two-day period. These large orders attracted a lot of liquidity and that liquidity has stuck. And the fact that ArcaEx is at the inside in many active names is also attracting liquidity. During the week of October 21, 2002, ArcaEx was at the NBBO almost 80% of the time in LU, over 70% of the time in NT and almost 60% of the time in KM. That same week, ArcaEx was alone at the inside almost 17% of the time in IBM.

Date	Volume
10/15/02	45,767,777
10/09/02	45,277,819
10/11/02	42,813,196
10/24/02	41,928,033
10/17/02	41,864,841

ArcaEx Listed Reports

If you would like to receive daily or weekly activity reports simply subscribe to these reports by emailing your request to:

[join-listed-weekly@
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Similar reports are available for ETFs. Current reports can be viewed in the ARCA Data Center on our website:

www.archipelago.com

The Ever-changing World of ETF Trading

Not only are Exchange Traded Funds some of the most actively traded issues, there has also been a flurry of recent activity surrounding ETF trading. In late August, the SEC approved a nine month pilot program for a trade-through exemption of .03 cents for the most actively traded ETFs--QQQ, SPY and DIA. Additionally, Island went “dark” and their quotes are no longer being disseminated in some of the actively traded ETFs; Instinet took a breather for a few weeks in SPY trading, before electing to join the Nasdaq Intermarket. And if that weren’t enough there have been many new entrants in the ETF trading arena making the competition for ETF order flow greater than ever. The ArcaEx scorecard has been updated with these recent changes and here’s the new batting order.

A Nine Inning Pilot Program

On August 28, an order was issued by the SEC granting a de minimis exemption from the trade-through restrictions of the Intermarket Trading System (ITS) Plan in QQQ, SPY and DIA. A 9-month pilot trade-through exemption covers transactions on these ETFs that are executed no more than three cents (.03) away from the national best bid and offer (NBBO) displayed in the consolidated quote.

ArcaEx has altered three of our order types to accommodate this exemption and allow orders to be executed at a price no more than \$0.03 away from the NBBO in the exempted securities:

NOW – A limit order that will be routed to one or more NOW Recipients (electronic execution destinations like ECNs and electronic exchanges) for immediate execution at a price no more than \$.03 away from the NBBO if the order cannot be executed on ArcaEx no more than \$.03 away from the NBBO. The order will be immediately canceled if not executed.

Example: A NOW order in QQQ to sell 2000 @ \$39.95 is entered

Quote	Bid	Offer
NBBO	1000 @ 40.00	2000 @ 40.02
ArcaEx Book	1000 @ 39.98 1000 @ 39.96	500 @ 40.05
NOW Recipient 1	500 @ 39.97	500 @ 40.05
Non-Electronic Market	500 @ 39.97	500 @ 40.05
NOW Recipient 2	2000 @ 39.96	1000 @ 40.06

Execution: 1000 shares are immediately executed at \$39.98 against the ArcaEx Book and 500 shares at \$39.97 are executed against NOW Participant 1.

In this example, there are 1000 shares that can be immediately executed at \$39.98 and 500 shares that can be executed at \$39.97 against NOW Recipient 1, within the \$0.03 requirement. The remaining 500 shares are rejected because they cannot trade with a non-electronic market or the ArcaEx Book and Now Recipient 2 bid at \$39.96 because it is \$0.04 less than the best bid (\$0.01 over the requirement).

Note: Though NOW orders allow you to become more aggressive than using an IOC

NOW Orders Processing (non-pilot names)

NOW orders find liquidity on the ArcaEx Book and against NOW Recipients (all-electronic markets) only. Any balances are canceled if the order cannot be sent to a NOW Recipient or would trade through the NBBO. NOW orders allow you to interact with all-electronic liquidity for an immediate execution within the trade-through rules.

or PNP order, it is important to consider the higher transaction cost associated with routing outside the ArcaEx Book.

Post No Preference (PNP) – A PNP order will never be routed outside of ArcaEx. Exempt ETFs will no longer be automatically canceled at the time of order entry if the order would lock or cross the NBBO. PNP orders in exempt ETFs will be executed at a price no more than \$0.03 away from the NBBO. PNP orders that would cause a trade-through in excess of the \$0.03 threshold will be canceled.

Example: A PNP order in SPY to buy 1000 @ \$50.01 is entered

Quote	Bid	Offer
NBBO	1000 @ 50.00	2000 @ 50.01
ArcaEx Book	1000 @ 49.97	500 @ 50.05

Execution: None, since the order cannot be executed in the ArcaEx Book within the \$0.03 threshold. However, the PNP order is posted to the ArcaEx Book at \$50.01.

Immediate-or-Cancel (IOC) – A market or limit order that will be executed in whole or in part at a price no more than \$0.03 away from the NBBO as soon as it is received, and the portion not executed will be canceled.

Example: An IOC order in QQQ to sell 2000 @ \$39.95 is entered

Quote	Bid	Offer
NBBO	1000 @ 40.00	2000 @ 40.02
ArcaEx Book	1000 @ 39.98 1000 @ 39.96	500 @ 40.05

Execution: 1000 shares are immediately executed at \$39.98

The 1000 shares can be immediately executed at \$39.98 because the price is \$0.02 less than the best bid and falls under the \$0.03 requirement. The remaining 1000 shares are rejected because they cannot trade with the buy order of 1000 @ \$39.96 because it is \$0.04 less than the best bid (\$0.01 over the requirement).

An Unexpected Night Game

On September 20, 2002 the Island ECN stopped disseminating a private quote in QQQ, SPY, DIA, SMH, and MKH, in compliance with SEC Regulation ATS, which requires marketplaces to display a public quote when they reach 5% market share for 4 of the past 6 months. Shortly thereafter Instinet stopped displaying in SPYs for the same reason, though they reinstated a SPY quote on November 1 after joining the Nasdaq Intermarket. In the ETFs in which Island is “dark,” ArcaEx no longer integrates them into our routing decisions. We maintain linkage to all other electronic venues, including Nasdaq Intermarket via CAES, as well as to the traditional

ArcaEx ETF Fees/Rebates

Liquidity Takers:

- 3/10¢ Fills against the Book
- 4/10¢ Fills routed away

Liquidity Providers:

2/10¢ Credit plus 50% Tape rebate on AMEX listed ETFs and 40% Tape rebate on NYSE listed ETFs.

ArcaEx Display in NMS

The best bid and offer on ArcaEx is displayed in the National Market System as “PSE”, since ArcaEx is regulated by the PSE and operates its equity trading business. The depth of the book is available on the Arca website, via FIX and through market data providers like RealTick®.

markets.

We continue to believe that public display of prices and effective use of routing choices provides the right mix of speed and best price -- an approach validated by our 1-5 data, which illustrate that our ETF effective spreads are less than half of our electronic competitors, and substantially less than traditional markets. The ETF marketplace is not a stylized bipolar world of “the quick” and “the dead.” Rather, it is a highly competitive environment with lots of choices one can undertake in finding the right blend of price and speed.

The Ins and Outs of Smart Routing on ArcaEx

Unlike traditional exchanges, ArcaEx uses more than the Intermarket Trading System (ITS) when making routing decisions to access the best price if it is not available in the ArcaEx Book. To reach listed liquidity, ArcaEx uses an array of routes including ITS, multiple DOT connections, CAES to Nasdaq Intermarket dealers and direct links to ECNs. Our SmartBook™ routing algorithm uses historical data to determine how quickly various market participants respond and how likely they are to execute orders, including those that exceed the displayed price. As the competition heats up in the listed trading arena, ignoring non-traditional routing choices can lead to an unnecessary and potentially costly limitation in the search for liquidity.

Evaluating Intermarket Competition

ArcaEx’s SmartBook immediately spots the best price and routes the order or multiple orders in sub-second speeds. It’s easy to make a routing decision when there is only one market participant at the best price. It’s when there are multiple participants at the inside that makes our routing “smart”. The basic premise is pretty simple: we go where can we get the order filled fastest, at the best price:

1. ArcaEx Order Book

The fastest path to the best price occurs when orders are matched against orders residing on the ArcaEx Book. Our internal liquidity has grown and we are seeing an internal match rate approaching 60%. We anticipate that this number will continue to rise as new clients give ArcaEx a try in addition to the recent completion of the migration of the REDIBook listed order flow to the ArcaEx platform.

*Fill Rate and Response Stats
Median Response Times
(in Seconds)*

Nov. 4-8 2002 excluding ETFs

Route	Fills	DK
Primary	11	57
CAES	1	1
ECNs	<1	<1
CSE	1	1
Other Regionals	9	23

2. Electronic marketplaces

The highest priority is given to auto-execution destinations like ECNs, the Cincinnati Stock Exchange (CSE) and ITS/CAES. By routing an order to an electronic marketplace you can be assured of a fast fill or an immediate cancel. We use proprietary direct links to other ECNs and see sub-second response times for fills or declines. Overall response times from the CSE and CAES are slightly slower than ECN response times however they are still lightning fast, with turnarounds in the 1 second range, compared to non-electronic markets.

3. DOT/PERS

When routing to the NYSE or AMEX, DOT or PERS is used. We use multiple connections allowing us to closely monitor response times across various lines. The median response time on fills is about 11 seconds however the

median for declines is 57 seconds. On the high end it can take over 48 seconds for a fill and a decline can take more than a minute, an eternity if the market is moving.

4. ITS

Though not the most modern of systems it still allows us to access the best displayed price on regional exchanges. The much maligned ITS system can be used to access liquidity efficiently with ITS response rates and times varying from exchange to exchange. For example, the Boston Stock Exchange (BSE), Chicago Stock Exchange (CHX), and the Philadelphia Stock Exchange (PHX) median fill times are 8, 12, and 8 seconds respectively. In the 95th percentile fill times jump between 23 to 26 seconds. The bad news is that the median response time to decline an ITS order typically take the BSE and the CHX 30 seconds. But help is on the way, we have been working with the BSE and the CHX to access their quotes through their own systems, Beacon and MAX, to improve performance.

Our algorithm is consistently checked, evaluated and adjusted to reflect the performance we are seeing. When we see improvements in a route it is elevated in the routing order. Conversely when we see performance suffer it is moved to a lower priority. By building this functionality into ArcaEx, SmartBook can operate as efficiently as possible, taking into account the changes in this dynamic landscape.

To Route or Not to Route....That is the Question

Though we have advanced routing logic, the ArcaEx platform was built to provide a trader with choices. You can choose not to route outside of ArcaEx, if for example speed is an issue, by using Post No Preference (PNP) or Immediate or Cancel (IOC) order types. Additionally the NOW Order allows you to interact with electronic liquidity only (see NOW Order Processing sidebar on page 2). When you do choose to have your order interact with other markets our algorithm maximizes your ability to get your order done. For example, when you enter a reserve order that becomes marketable, ArcaEx will sweep all the available liquidity up to your reserve size. For a complete list of order types and the sessions for which they are available go the Archipelago website www.archipelago.com/exchange/order_types.asp. You can decide when and if you route, putting the *control* in your hands.

Fill Rate and Response Stats 95th Percentile Response Times (in Seconds)

Nov. 4-8 2002 excluding ETFs

Route	Fills	DK
Primary	48	66
CAES	2	2
ECNs	1	1
CSE	2	2
Other Regionals	24	29

ArcaEx Thanksgiving Holiday Hours

Thursday, November 28, 2002 Closed

Friday, November 29, 2002 8:00 a.m.- 3:00 p.m. ET

Opening Session: 8:00 a.m. to 9:30 a.m. ET

1. Opening Auction: 8:00 a.m. ET
2. Market Order Auction 9:30 a.m. ET

Core Trading: 9:30 a.m. to 1:00 p.m. ET

All orders entered for the core session will be cancelled at 1:00 p.m. ET.

Extended Hours: 1:00 pm to 3:00 p.m. ET

Limit Orders entered after 1:00 p.m. ET will be cancelled at 3:00 p.m. ET.