Exhibit A

BARCLAYS CAPITAL

Liquidity Products

Equities | Electronic Trading

February 2012

Confidential Presentation

Exhibit A
047

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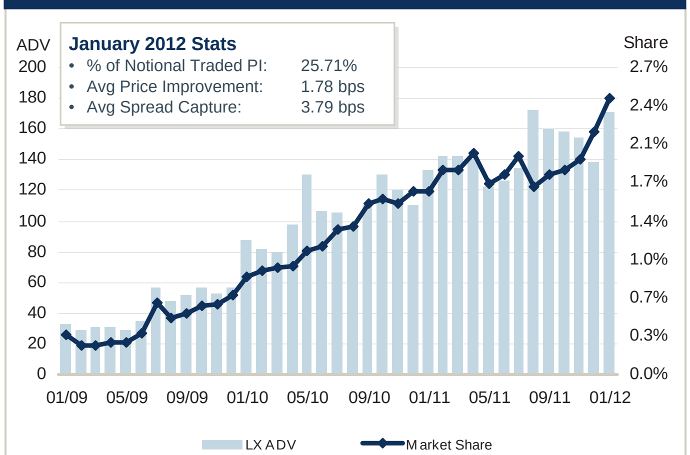
Barclays Capital Equities

Highlights

- #3 Liquidity Provider on Nasdaq[1]
- Barclays Capital's LX is the 3rd largest broker-dealer dark pool with ADV over 138M shares[2]
- Largest DMM on New York Stock Exchange, representing over 1,000 listed securities
- Automated Volatility Trading makes markets in over 2,000 options issues across 5 exchanges
- #2 for Overall Trading Quality in US Equities (*Greenwich Associates*, 2011)

LX ADV and Market Share Growth



Nasdaq Top Market Participants[1]

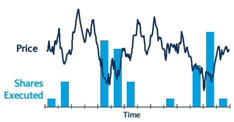
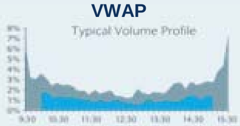
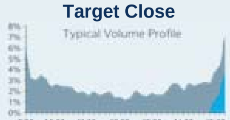
Rank	Market Maker	Volume	Market Share (%)
1	Citadel Securities LLC	78,452,798	7.55
2	Merrill Lynch, Pierce, Fenner & Smith	54,275,633	5.22
3	**Barclays Capital**	**50,851,664**	**4.89**
4	UBS Securities LLC	46,435,142	4.47
5	Goldman, Sachs & Co.	39,743,555	3.82
6	Deutsche Bank Securities Inc	37,157,191	3.58
7	JP Morgan Securities LLC	32,472,823	3.13
8	Knight Capital Americas LP	29,058,982	2.80
9	Citigroup Global Markets Inc	20,622,188	1.98
10	Pershing LLC	5,304,389	0.51

1. *Nasdaqtrader.com; Daily Share Volume Retrieved 3 February, 2012*
2. *Rosenblatt January 2012 market structure report – December 2011 data*

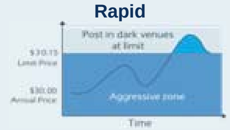
Algorithmic Trading Strategies

Equities Algorithmic Trading Strategies

Benchmark-Driven Strategies

Strategy	Description	US	EMEA	Asia
Implementation Shortfall 	Minimizes slippage relative to arrival price	●	●	○
VWAP 	Minimizes slippage relative to the market Volume-Weighted Average Price (VWAP)	●	●	●
With Volume 	Participates with actual market activity at a user-specified percentage	●	●	●
TWAP 	Spreads the order evenly over the user-specified time horizon	●	●	●
Portfolio Target Strike 	Minimize implementation shortfall on a portfolio level	●	○	○
Target Close 	Minimizes market impact into the close and controls participation in the closing auction	●	●	○

Trader-Defined Strategies

Strategy	Description	US	EMEA	Asia
BARX® Hydra 	Spreads child orders over multiple dark pools (including Barclays Capital LX Liquidity Cross); It rebalances the order based on fill success rates	●	●	○
Rapid 	Executes orders quickly whenever liquidity is available at a price better than the fair value	●	○	○
Escalate 	Adjusts aggressiveness dynamically based on price or relative performance to a user-specified benchmark	●	●	○
Pairs Trader 	Automatically execute paired buy and sell orders in relative value trades. The user specifies the deal terms, target spread and execution method	●	●	○
Custom Algorithms 	Create custom execution strategies using a combination of actions and triggers	●	○	○

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Electronic Equity Options Trading

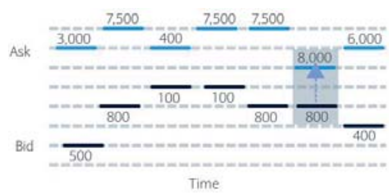
Barclays Capital offers best-in-class options execution tools, accessible from the most widely used order and execution management systems, in a streamlined, user-friendly package

Options Dynamic Router

The Dynamic Router is able to seek out liquidity based on the best available prices, combining sweeping, posting and reserve functionality in a single, low-latency execution product

Options Work & Pounce

The strategy works the order passively until aggressive size, price and time constraints are satisfied

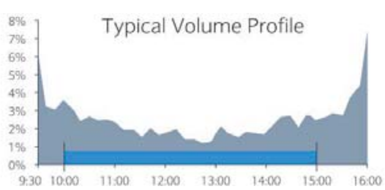


Spread Trader

Provides for greater access to liquidity by trading legs across all exchanges rather than being dependent on a single exchange

Options TWAP

TWAP allows traders to execute large options orders evenly over the specified time horizon to reduce impact and information leakage



Volatility Trader

The strategy works at a volatility level implied from user-specified reference prices and optionally executes stock to maintain desired delta exposure

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Implementation Shortfall (IS)

Barclays Capital's pioneering IS algorithmic trading strategy minimizes slippage relative to arrival price by dynamically optimizes order placement. The algorithm continuously evaluates the trade-offs between current price, market impact, expected future volatility and liquidity, across the entire trading period.

Traditional Strategies vs. Barclays Capital Implementation Shortfall

Traditional IS Strategies	Barclays Capital's Implementation Shortfall
• Static execution schedule is pre-determined at the beginning of the trading period	• Real-time dynamic approach optimizes placement of each child order
• Schedules tend to be front-loaded and favor rapid execution	• Dynamic scheduling executes across the entire allotted trading time period
• Execution risk does not take into account the opportunity costs of not executing	• Opportunity cost is explicitly accounted for in the modeling of execution risk
• No explicit anti-gaming features	• Undetectable trading pattern leaves minimal footprint, minimizes risk of gaming

Benefits

- Minimizes information leakage and potential for gaming created by pre-set schedules
- Based on real-time market conditions
- Behavior is consistent with traders' intuition but based on fully analytical model

Behavior Highlights

- The best case for this strategy is sustained two-sided volatility where the algorithm will opportunistically participate when prices are in-the-money
- The worst case is sustained momentum in the direction of the trade where the algorithm will slow down and be forced to complete the trade as the end time nears; optimal duration will reduce the horizon according to urgency to minimize the risk of extreme tail outcomes

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New BARX® Hydra
Maximize liquidity. Minimize footprint.

The all-new BARX Hydra is re-engineered and powered by our smartest logic yet. Because three brains are better than one.

The Three Brains of Hydra

What is the optimal order placement strategy?

No pre-determined trade scheduling here. Hydra is built on Barclays Capital's Implementation Shortfall strategy which determines the optimal order size in response to real-time price movements. Its dynamic behavior minimizes slippage and information leakage.

What is the optimal amount to get done in the dark?

The Step-Ahead function will take into consideration the impact of executing in the dark and will optimize the order size determined by IS to take advantage of liquidity and price.

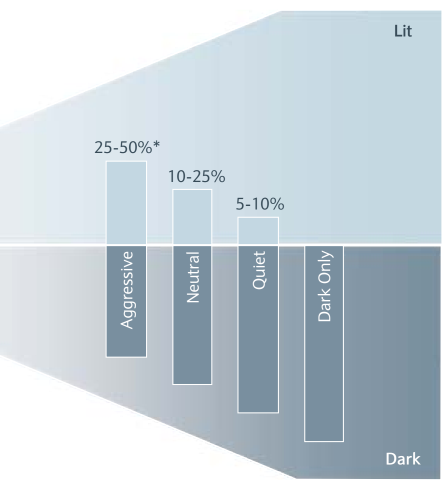
What is the optimal way to allocate the order among dark venues?

The Dark Liquidity Accessor (DLA) predicts and learns where liquidity resides at the symbol-by-venue level and manages the placement of dark orders to capture liquidity and avoid gaming. Dark and lit orders are simultaneously placed to further reduce footprint.

Configurable and Gaming Proofed

Configurable

Hydra maximizes execution rates in dark pools and opportunistically executes on traditional markets. It is configurable to execute in dark and lit venues, intelligently adjusting exposure when liquidity is discovered.



Gaming Proofed

- IS dynamic scheduling vs. static scheduling to minimize information leakage
- DLA optimal allocation across dark venues to avoid gaming
- Real-time detection and reaction to gaming by venue
- Cost of dark execution factored into dark allocation model
- Simultaneous placement of lit and dark orders reduces footprint

** Volume limits are approximate and may not reflect actual participation*

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When To Use…

Implementation Shortfall	vs.	BARX Hydra
■ IS will minimize slippage relative to the arrival price by utilizing a dynamic engine to continually optimize placement of child orders, based on current price, market impact, time remaining and expected future volatility ■ IS will complete the order, barring any volume or limit price restrictions		■ Hydra will use the same logic as IS, but will look to maximize execution rates in dark liquidity pools; Hydra will intelligently adjust exposure to certain dark pools once liquidity is discovered ■ Hydra will look to complete, but it is not guaranteed to do so depending on market volume.

- Both strategies have urgency level settings which can be adjusted to trade stocks of various market capitalization; a lower urgency level is a better tactic for small cap names (IS Low, Hydra Dark or Hydra Quiet)

Rapid	vs.	Dynamic Router

- When seeking liquidity aggressively, both Rapid and the Dynamic Router have access to major US exchanges, ECNs, LX Liquidity Cross and various liquidity partners and ATSs.

■ Unlike the Router, Rapid will oversize the order in search of reserve liquidity, a true pin-it-to-my-limit strategy ■ Rapid allows traders to tone down aggressiveness by configuring its cycle time and oversize parameters, allowing liquidity to replenish (e.g. “Take 30% of what’s displayed every 8 seconds.”) ■ Rapid’s ability to post hidden often makes it useful in small and micro-cap situations, allowing the trader to layer the book inside of a wide spread, without showing his hand		■ Dynamic Router uses a combination of historical and real-time data to choose the best venue to post out-loud; for this reason, Rapid does not work as well in deep books where out loud orders take priority.

VWAP	vs.	TWAP

- Both algorithms are schedule-based strategies useful for spreading an order over a specific time horizon.

■ VWAP is typically used by traders more sensitive to volume patterns by trading in proportion to expected market volume. The VWAP benchmark is widely used as a gauge of trading performance.		■ TWAP executes the order evenly over the user-specified time horizon and will remain on a tight schedule. This strategy is best used near the end of the day to equally spread the stock in to the closing auction.

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LX® Liquidity Cross

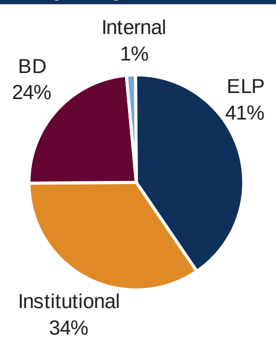
LX® Liquidity Cross

LX aggregates all available non-displayed liquidity within the firm for clients and is seamlessly integrated with our Dynamic Router and algorithmic trading strategies.

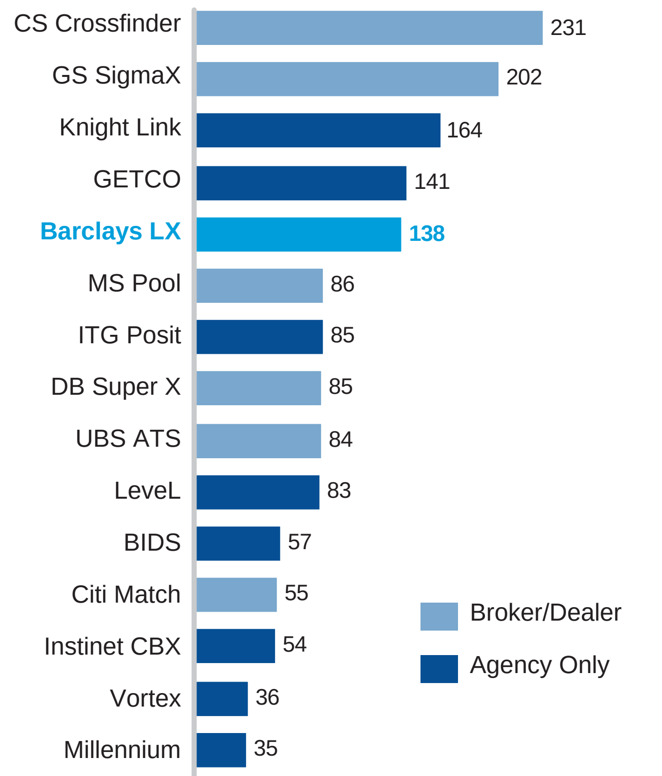
Liquidity Highlights

- **LX ADV in January was 170M shares, with 2.46% market share[1]**
- Consistent volume growth from institutional and BD client base
- Continued quantitative research on the Liquidity Profiling initiative to protect customer order flow
- Deployed new network hardware in the Savvis data center resulting in a 5% improvement in median ACK latencies

Liquidity Breakdown



US Dark Pool Competitive Landscape – December[2]



1. *Source: Barclays Capital internal reporting – February Report (double counted)*
2. *Rosenblatt Securities Inc.; January 2012 Report (double counted; December 2011 statistics)*

New LX® Liquidity Profiling

The objective of the new LX® Liquidity Profiling framework is to increase fill rates and improve performance for institutions trading in LX by targeting beneficial counterparties.

- **Legacy entitlement framework defines client segments statically**
  - Clients used to be statically assigned to a "segment" during onboarding as follows:
    - *Institutional* – Clients accessing LX via Barclays Capital's algorithms or Dynamic Router (40% of LX volume)
    - *Broker-Dealer* – Full-service and regional BDs sending agency order flow directly to LX (25%)
    - *Electronic Liquidity Providers (ELPs)* – High frequency and multi-strategy firms who make markets in LX (30%)
    - *Barclays Capital Internal* – Equity Market Making, NYSE DMM, and Options MM delta hedges (5%)
  - Clients had the ability to prevent crossing with specific segments

- **However, clients within a given segment exhibit divergent flow characteristics**
  - The ELP segment contains some clients that provide "aggressive" liquidity as well as clients that provide beneficial liquidity that should be accessed by all clients
  - The Broker-Dealer segment contains some "passive", beneficial flows, but also some aggressive flows where, for example, proprietary trading firms are using BDs to access LX

- **The new LX Liquidity Profiling framework scores individual clients based on the quality of their order flow**
  - Creates objective criteria to profile clients, e.g., short-term alpha, order size, provide vs. take ratio
  - A powerful tool to proactively monitor LX and work with clients to improve the quality of flows into the pool
  - Allows Barclays to regularly evaluate client profiles as opposed to a one-off categorization at onboarding

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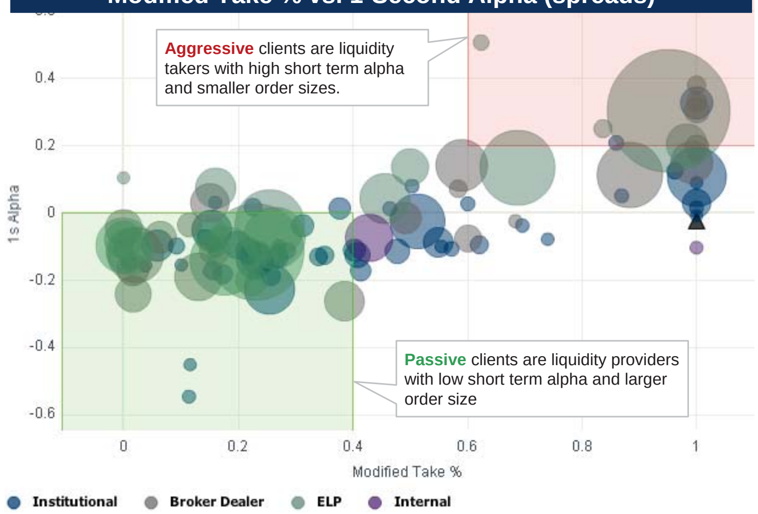
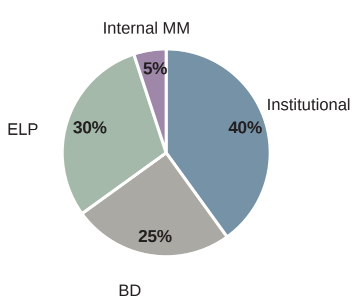
New LX® Liquidity Profiling

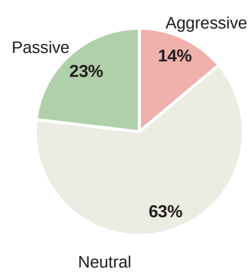
Modified Take % vs. 1-Second Alpha (spreads)



Legacy Segments



New Liquidity Profiles



Constantly Monitoring Flow Quality

- The new LX Liquidity Profiling framework provides Barclays Capital with transparency into the flow coming from individual participants in LX:
  - Firms classified as ELPs include both aggressive and *passive* liquidity providers, e.g. those operating market making strategies
  - Institutions and BDs segments include both passive and *aggressive* liquidity providers, e.g., those with high-alpha flows
- By understanding the characteristics of flow at the client level, Barclays Capital can improve the overall quality of LX liquidity:
  - Passive liquidity providers can be identified and encouraged
  - High alpha takers can be held accountable, e.g., by demanding liquidity providing strategies, or by refusing a client access
  - Natural selection – transparency means aggressive flows will tend to be suppressed by clients

Note: This chart represents the top 100 clients in LX (~86% of total flow). The analysis spans more than 11.3 million trades.

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Liquidity Profiling Factors

Factor	Definition
1-Second Take Alpha	**Movement of the mid-quote from the time of the trade to one second later, normalized by the size of the spread.** *Note: It was determined that the 1-second horizon is the most reliable metric based on experimentation with various horizons and feedback from many LX clients. 30- and 60-second alphas correlate well with 1-second alphas but have larger standard errors.*
Modified Take Percentage	**A measure of how often a client is attempting to provide versus take liquidity in LX.** *Note: Mid-point and passive pegged orders which are sent with a DAY time in force are always treated as liquidity providing, even if they cross on entry.*
Normalized Order Size	**Average client order size in LX, normalized by the average execution size in the market, for an individual name.** *For example, client sends 300 share orders in SPY, and LX average execution size in SPY is 235. Client therefore has a 1.27 score for order size.*

Analysis of factors continues, e.g., to include parent-level metrics for clients using Barclays Capital's algos. For example, how do various counterparties in LX affect slippage vs. time weighted average mid-quote or price drift.

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Dynamic Router

Dynamic Router

Barclays Capital's Dynamic Router uses unique market intelligence, predictive liquidity models, and high-performance technology to maximize fill rates while reducing information leakage.

Predictive Liquidity Models

Synthesizes historical and real-time data and executions to predict liquidity

- Probability of fill models for both aggressive and passive trading
- Dark and hidden liquidity forecasting
- Based on research at the symbol by venue level

Unique Market Intelligence

Utilizes the unique liquidity and technology throughout the firm to enhance execution logic

- #3 Broker-dealer ATS, Barclays Capital LX Liquidity Cross[1]

Dynamic Router

High-Performance Technology

Offers high performance access to all major exchanges and dark pools

- Co-located connectivity and market data
- Hardware accelerated technology

Maximizes fill rates

Minimizes information leakage

How Dynamic Router Compares

- ☑ **Symbol-based logic** vs. sector/capitalization models
- ☑ **Dynamic** capabilities vs. static logic
- ☑ **Latency arbitrage**
- ☑ **Predictive**: hunting liquidity through *probability of fill* models
- ☑ **Access to LX**

1. Rosenblatt Securities Inc. and Barclays Capital analysis

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Traditional SOR vs. Dynamic Router

Execution Logic

	Traditional Static Order Routers	Barclays Capital's Dynamic Router
Venue Ranking	▪ Venues ranked statically across groups of symbols	▪ Venues ranked dynamically at the symbol level, based on historical and real-time fill rate data
Dark Access	▪ Sequential pinging (All dark venues before going to lit markets) ▪ Orders continue to check venues that do not fill orders (leakage)	▪ Parallel routing to all venues based on probability of fill ▪ Orders to dark venues are sized to match the expected liquidity
Posting	▪ Orders posted to venues with the highest rebate	▪ Orders post to venues based on probability of fill ▪ Intelligent reserve order sizing to limit information leakage
Profiling	▪ Same execution logic across all stocks ▪ Models based on historical data only	▪ Stock specific logic based on market & order characteristics ▪ Models consider real time and historical events

VS.

Strategy

- Treat all venues the same based on execution quality
- Utilize Barclays Capital's volume to enhance real-time models
- Incorporate high frequency capabilities into product/systems
- Gain volumes from clients/internal desks and mindshare with regulators

Performance

	Traditional Static Order Routers	Barclays Capital's Dynamic Router
Exchange Fill Rate	75%	**95%**
Dark Fill Rate	10%	**25%**
Dark Symbols Pinged	4,000	**1,500**
Venues Per Order	5	**3**
Algo Posted Fill Rate	12%	**25%**
Latency	30ms	**15ms**

- Increased fill rates in lit and dark venues
- Reduced dark venues checked and pinged to reduce information leakage
- Increased overall order placement efficiency

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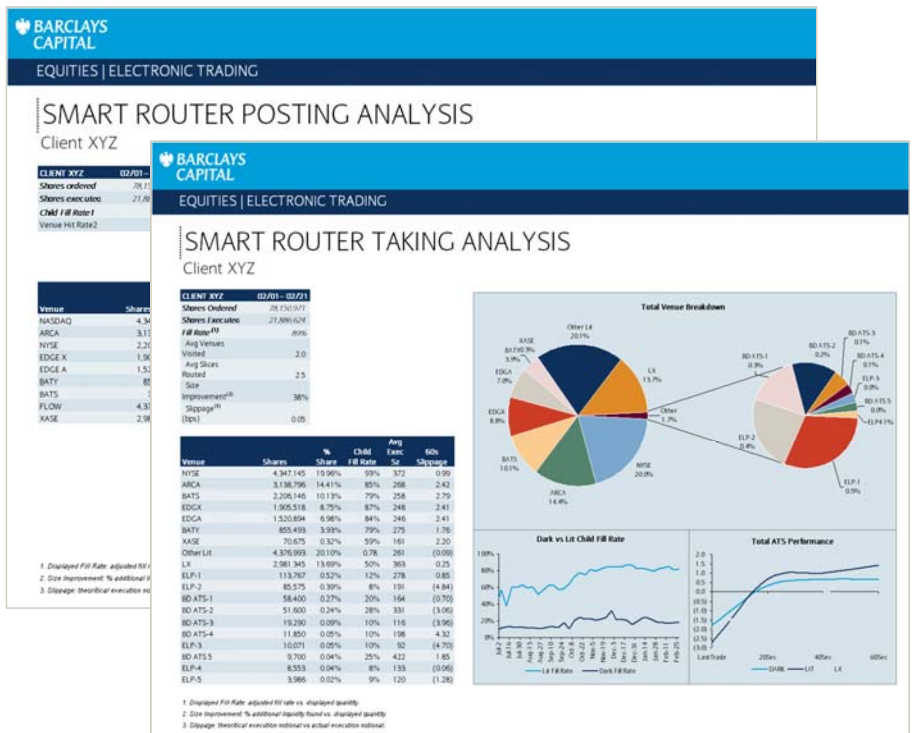
Dynamic Router Reporting

Measure execution quality with Dynamic Router performance reports

- Execution summaries for posting and taking
- Venue toxicity analysis
- Mean reversion analysis
- Symbol analysis



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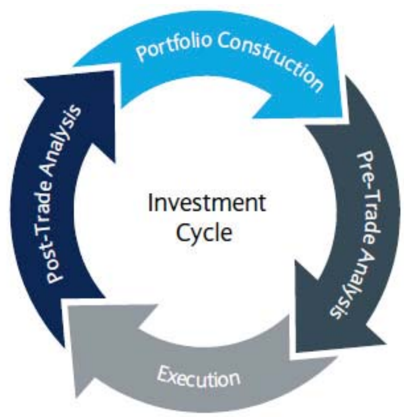
Portfolio WebBench® Analytics

Portfolio WebBench®

Portfolio WebBench® is Barclays Capital's flagship execution analytics toolkit for global equity portfolios, offering insight into every stage of the investment process, from portfolio construction to post-trade analysis.

Portfolio WebBench generates a broad range of analytical reports



Portfolio WebBench supports all phases of the investment cycle

- **Portfolio Construction:** Construction and rebalancing optimization tools that provide market impact cost accounting, risk factor analysis, optimal hedging strategies, and holdings analysis
- **Pre-Trade Analysis:** Liquidity screening, market impact cost forecasting, optimal trade scheduling, risk and volatility analysis, recent performance, and streamlined risk bids
- **Execution:** Real-time monitoring of progress and slippage relative to seventeen benchmarks
- **Post-Trade Analysis:** Slippage details and transaction summary reports

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Portfolio WebBench® Pre-Trade Analysis

New Dynamic Interface for Single Stock Analytics

Performance (new)

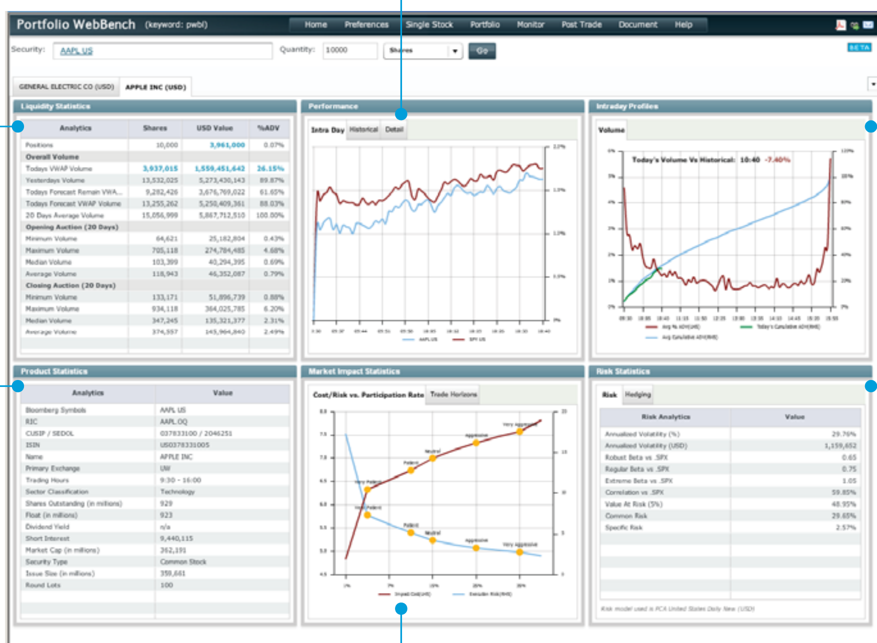
Charts intraday and historical performance and traded volumes of any stock against the market.

Liquidity Statistics

Predictive liquidity models analyze observed liquidity flows and provide forecasts based on proprietary technology.

Intraday Profiles

An intraday volume profile displays the aggregated ADV of a single name throughout the day.



Product Statistics

Individual product data statistics for the stock.

Risk Statistics

Calculates volatility on an annualized basis, as well as beta, stock risk and fundamental factor exposures for a given name.

Market Impact Statistics

View the market impact of any trade using various aggressiveness settings to plot Impact Cost and Execution Risk.

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Portfolio WebBench® Live

Real-time Order Transparency, Intra-trade Intelligence, Flexible Web Interface

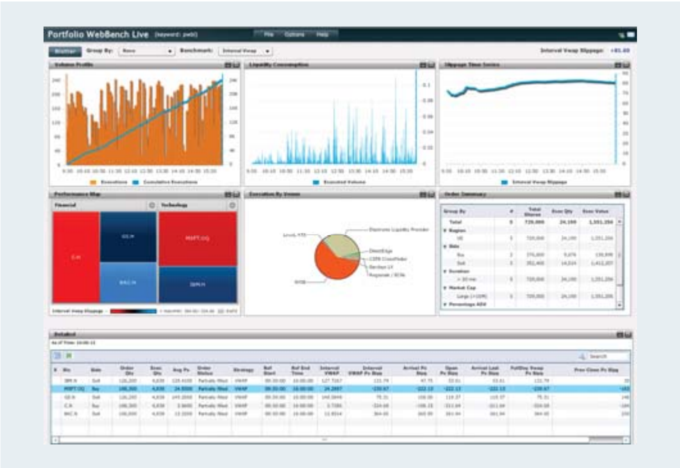
Portfolio WebBench® Live is a web-based execution monitoring application that provides a unique window into the performance of your trade through real-time transaction cost analysis. Portfolio WebBench Live offers enhanced order transparency, allowing traders to pinpoint and react to risk as a transaction unfolds.

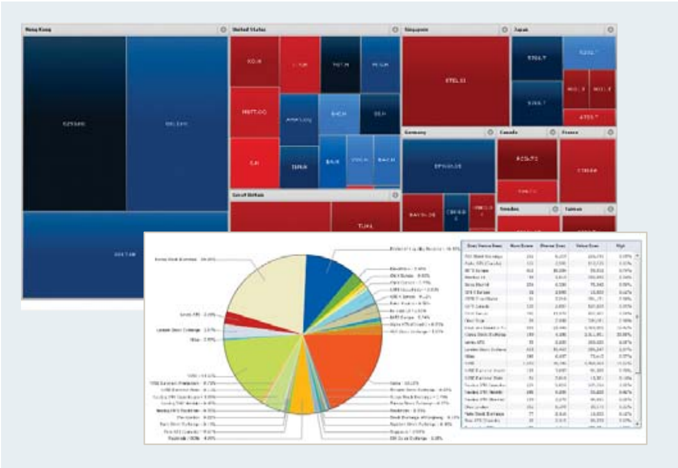
Real-Time Capabilities

- Live performance monitoring against multiple benchmarks
- Slippage decomposition by capitalization, region, order size, average daily volume percentage and side
- Execution venue breakdown, including displayed and non-displayed liquidity pools
- Performance heat map to assess slippage drivers
- Downloadable execution reports in Microsoft Excel® format

Intra-Trade Intelligence

- Monitor and measure performance in real time
- Identify and manage trading risks
- Measure aggregate performance by grouping orders
- Decompose slippage drivers to pinpoint problem areas
- Adapt trading strategies in response to real-time information
- Enhance communication and provide greater transparency





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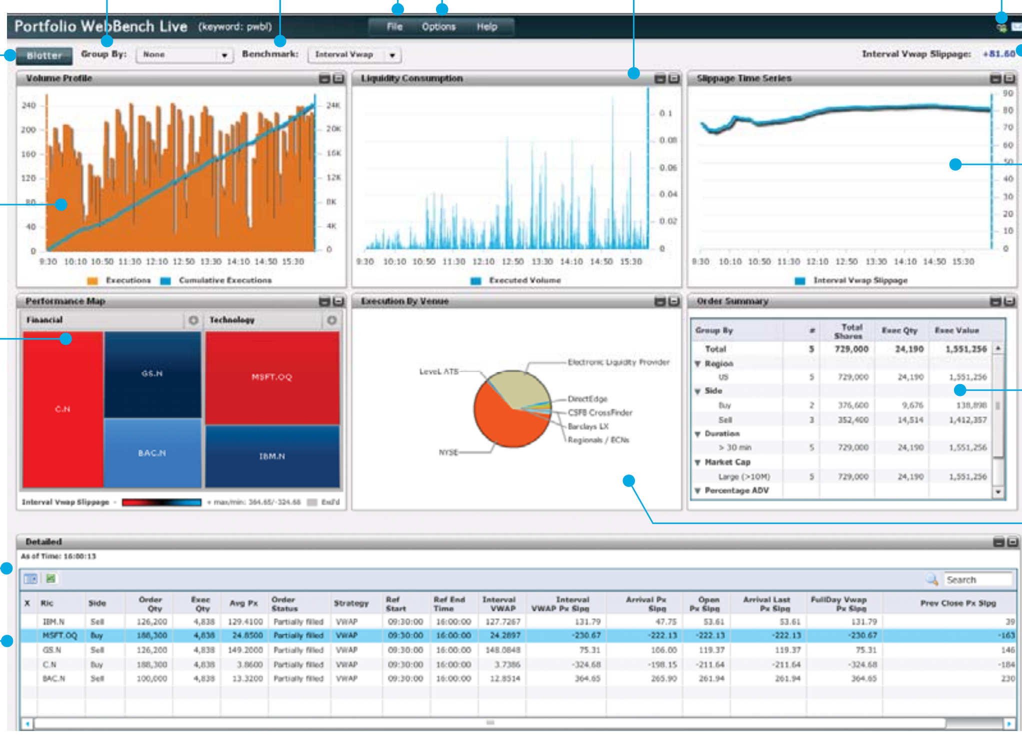
Portfolio WebBench® Live



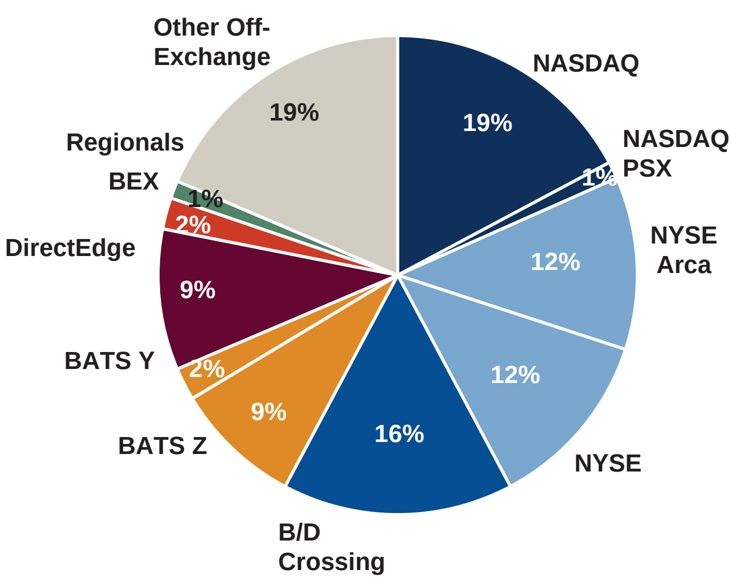
Appendix

US Equities Market

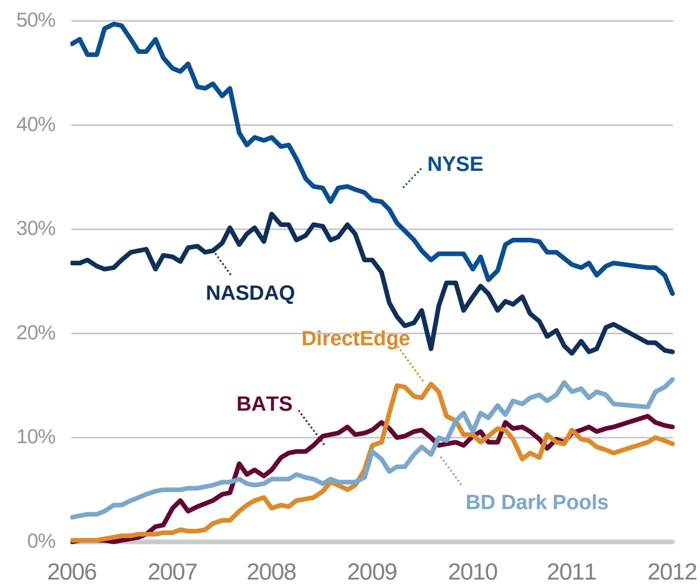
Broker-dealer crossing venues continue to take market share from traditional exchanges.

Market ADV – January 2012

Total ADV = 6.9 Billion Shares



Market Share Trends (2006-2012 YTD)



Sources: Barclays Capital Analysis, BATS Trading, Arca Vision

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